



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 February 1, 2003

or

☐

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

For the transition period from N/A to

Commission file number 0-30877

Marvell Technology Group Ltd.

(Exact name of registrant as specified in its charter)

Bermuda  
(State or other jurisdiction of  
incorporation or organization)

77-0481679  
(I.R.S. Employer  
Identification No.)

4th Floor, Windsor Place, 22 Queen Street, P.O. Box HM 1179, Hamilton HM EX, Bermuda

(Address of principal executive offices)

(441) 296-6395

(Registrant's telephone number, including area code)

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

None

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

Common stock, \$0.002 par value per share

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 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 the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to the Form 10-K. ☐

Indicate by check whether the registrant is an accelerated filer (as defined in Rule 12b-2 of the Act). Yes ☒ No ☐

The aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately \$901,384,641 based upon the closing price of such common stock on the Nasdaq National Market on August 2, 2002. Shares of common stock held by each executive officer known by the registrant to own 5% or more of the outstanding stock based on Schedule 13G filings, have been excluded since such persons may be deemed affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 31, 2003, there were 121,761,683 shares of common stock of the Company outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the Company's Definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with the Company's 2003 Annual General Meeting of Shareholders are incorporated by reference into Part III hereof.

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## MARVELL TECHNOLOGY GROUP LTD.

## PART I

**Item 1. Business**

*The statements contained in this Report on Form 10-K that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements regarding our expectations, beliefs, intentions or strategies regarding the future. Words such as “anticipates,” “expects,” “intends,” “plans,” “believes,” “seeks,” “estimates” and similar expressions identify such forward-looking statements. These forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those indicated in the forward-looking statements. These are statements that relate to future periods and include statements relating to our intention to invest considerable resources in developing new and enhanced technology; the potential opportunities in storage applications for our broadband processing technologies; to our strategy and components of our strategy, including our intention to expand our market position by developing new signal processing technologies, to leverage our current technology for broadband communications applications, to continue to develop and introduce advanced products and technologies for storage market applications, to strengthen and expand our relationship with customers using a variety of techniques, the anticipated needs of our customers, our intention to continue to use widely available CMOS processes to manufacture our products, and our intention to expand our system-level approach to design in order to improve our time-to-market and production of our products; forecasts relating to consumer electronic devices; the amount of sales we conduct directly and through distributors; continued efforts relating to the protection of our intellectual property; the amount of customer concentration in the future; the amount of our future sales in Asia; expected results, cash flows, expenses including those related to sales and marketing, research and development and general and administrative; expected revenue and sources of revenue and make-up of revenue; expected impact, if any, of legal proceedings; the adequacy of liquidity and capital resources; growth in business and operations; and the effect of recent accounting pronouncements. Factors that could cause actual results to differ materially from those predicted, include but are not limited to, the impact of international conflict and continued economic downturns in either domestic or foreign markets; our dependence upon the hard disk drive industry and integrated circuit industry, both of which are highly cyclical; our dependence on a small number of customers; our ability to develop new and enhanced products; our success in integrating businesses we acquire and the impact such acquisitions may have on our operating results; our ability to estimate customer demand accurately; the success of our strategic relationships with customers; our reliance on independent foundries and subcontractors for the manufacture, assembly and testing of our products; our ability to manage future growth; the development and evolution of markets for our integrated circuits; our ability to protect our intellectual property; the impact of any change in our application of the United States federal income tax laws and the loss of any beneficial tax treatment that we currently enjoy; and the outcome of pending or future litigation. Additional factors, which could cause actual results to differ materially, include those set forth in the following discussion, and, in particular, the risks discussed in Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations — Additional Factors that May Affect our Future Results.” These forward-looking statements speak only as of the date hereof. Unless required by law, we undertake no obligation to update publicly any forward-looking statements*

**Overview**

We are a leading global semiconductor provider of complete broadband communications and storage solutions. The Company’s diverse product portfolio includes switching, transceiver, wireless, PC connectivity, gateways, communications controller and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, and storage networking. Our core technologies were initially focused on the storage market, where we provide high-performance products to disk drive manufacturers such as Fujitsu, Hitachi, Samsung, Seagate and Toshiba. We subsequently applied our technology to the high-speed, or broadband, communications market, where we provide industry-leading physical layer transceivers, which provide the interface between communications systems and data transmission media, to manufacturers of

high-speed networking equipment including Cisco, 3Com Corporation, Foundry Networks, Dell Computer, Intel and NETGEAR.

Marvell Technology Group Ltd. was incorporated in Bermuda in January 1995. Our registered address in Bermuda is 4th Floor, Windsor Place, 22 Queen Street, P.O. Box HM 1179, Hamilton HM EX, Bermuda, and our telephone number there is (441) 296-6395. The address of our United States subsidiary is Marvell Semiconductor, Inc., 700 First Avenue, Sunnyvale, California 94089, and our telephone number there is (408) 222-2500. We also have offices in Israel, Singapore, Germany, China, Japan, Taiwan, and the United Kingdom. During fiscal 2000, we changed our fiscal year-end to the Saturday nearest January 31. For presentation purposes, we refer to January 31 as our fiscal year-end for all periods. Our website address is located at <http://www.marvell.com>. The information contained in our website does not form any part of this Annual Report on Form 10-K. However, we make available free of charge through our website our annual reports on Form 10-K, our quarterly reports on Form 10-Q, our current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after we electronically file this material with, or furnish it to, the SEC.

## Industry Background

### *Satisfying Bandwidth Demand*

Businesses and consumers today are creating rapidly growing demand for broadband access to large volumes of information in multiple forms, including voice, video and data. This demand is driven by the introduction of new data-intensive computing, communications and consumer electronics applications, such as web-based commerce, streaming audio and video, enterprise-wide information systems and telecommuting. In addition, information is increasingly available via networks through a variety of access devices, including personal computers, digital cable set-top boxes, handheld computing devices known as personal digital assistants, and wireless phones. These applications and devices require increasingly higher data transfer rates within computing systems and the data storage devices that support them and across the network communication infrastructures that serve them.

Achieving high integrity data recovery and transmission becomes increasingly difficult at higher data transfer rates. Data transfer rates, often referred to as bandwidth, are measured in terms of bits per second transmitted over a given medium. In addition, computing and communications systems must transfer data reliably at very high speeds using a wide range of physical transmission media, including magnetic and optical storage disks, twisted pair copper wire, coaxial cable, fiber-optic cable and open air.

A critical element of these systems is a physical layer device, which performs the important interface functions between the computing and communications systems and the storage or transmission media. In computing systems and in emerging consumer electronic devices, data is stored on a hard disk drive in analog form, but these analog signals must be converted to digital signals for use within these systems. Similarly, in communications systems, data is typically transferred over the transmission medium using analog signals; however, within the communications systems, data is processed digitally. The physical layer device provides the critical interface between the analog signals stored on magnetic disk drives and transmitted across physical media and the digital data that computers and communications systems can understand and manipulate. Physical layer devices often determine the overall performance of the system. In order to achieve high integrity in data transmission and recovery at high transfer rates, physical layer devices must overcome a number of factors that can impair signal quality and introduce errors, including substandard media, noise, signal level degradation over distance, adjacent line and multi-path interference and signal echo. In many computing systems and communication networks, bandwidth bottlenecks arise where the media and physical layer devices are incapable of supporting the required data transfer rates. As transmission speeds approach the fundamental limits of a particular transmission media, physical layer devices must increasingly employ sophisticated signal processing algorithms and techniques to accurately recover the transmitted data.

When the data is transmitted wirelessly through the open air, an added level of complex signal processing algorithms and techniques are required to maximize interference immunity, performance range and to enable a high level of data security. Additionally, the wireless solutions need to employ sophisticated radio frequency,

or RF, technologies utilizing radio communications. As most wireless applications are utilized by mobile devices, low power consumption is also a critical requirement for such devices.

To meet the demands of increasingly higher data transfer rates within computing systems and across communications networks, the data must be more reliably and intelligently transmitted across the systems. This is resulting in a transition from repeater to switch connections. Switches route data through the communications system with bandwidth dedicated to each end-user and have the potential to intelligently manage the data transmission. Unlike a switch, a repeater, which also transmits data across the system, provides less intelligence and shares the bandwidth among end-users resulting in less reliable and predictable transmission. Additionally, there is an increased demand on today's switches as previously separate voice communications systems, video communications systems and data communications systems are converged into single systems that handle voice, video and data seamlessly.

Also, as the rate and variety of data transmission increases, the communications systems that support such transmissions must handle more data and employ more sophisticated functions. This puts an increasing strain on the host central processing unit, or CPU, within the system and, as a result, makes the subsystems that support the CPU more critical. The system controller supports the CPU by managing the movement of data to the various data processing functions to free up the host CPU so that it can concentrate its resources on other more processor intensive functions while the data movement is taking place.

### ***The Storage of Data***

A substantial portion of all business and personal information is recorded on magnetic disk drives in data servers, workstations, personal computers and other consumer devices. As end-user data requirements increase, disk drive suppliers must consistently offer drives with faster data transfer rates and higher capacities. Disk capacity is measured by areal density, which is the amount of data stored on one square inch of disk space. Current high-performance disk drive systems offer data transfer rates of approximately 750 to 950 megabits per second and capacities of up to 200 gigabytes. In comparison, high-performance disk drive systems in 1998 offered data transfer rates of approximately 200 to 250 megabits per second and capacities of up to 50 gigabytes. Also, the transmission of data from the disk drive to the motherboard is transitioning to Serial ATA technology from Parallel ATA technology. Serial ATA technology will allow data to be transmitted at higher speeds but will require new silicon components on both the disk drive and the motherboard.

A critical component in every disk drive is the read channel. The read channel is a physical layer device that transmits and receives the data that is stored on the magnetic disk and converts it to the digital data required for use in computing systems. The read channel plays a critical role in enabling the disk drive to achieve higher data transfer rates and areal densities. Often, the read channel can become the limiting bottleneck for the entire disk drive system because higher data transfer rates complicate recovery of the data stored on the disk. As data tracks are packed more closely together to achieve greater areal density, problems arise from interference between adjacent data tracks. These challenges require increasingly sophisticated read channel designs.

In addition, as disk drive manufacturers seek to reduce costs, they are increasingly demanding that functions traditionally performed by stand-alone integrated circuits be combined with the read channel into a single integrated circuit referred to as a System-on-Chip, or SOC. Components which are now integrated into a single chip include the read channel, hard disk controller, embedded memory and one or more microprocessors.

### ***The Transmission of Data***

In recent years there has been a rapid increase in the volume of data transmitted across and within computer networks, the public telephone infrastructure and the Internet. Communications infrastructures are constantly evolving to support this increase in data transmission demand. In computer networks that span relatively large geographical areas, known as wide area networks, or WANs, this increase in data transmission demand has driven the deployment of high capacity fiber-optic transmission systems and new broadband

access technologies, such as cable modems and digital subscriber lines. In computer networks that span relatively small geographical areas, known as local area networks, or LANs, this increase in data transmission demand has resulted in a transition from the 10 Megabit per second Ethernet technology to the 100 Megabit per second Fast Ethernet technology and 1,000 Megabit per second Gigabit Ethernet technology. In addition, 10 Gigabit Ethernet, which provides data transfer rates of 10,000 Megabits per second, is now being used in server and backbone connections.

In the broadband communications market, physical layer devices, switches, system controllers and communications controllers are critical to the deployment of new, higher data rate transmission technologies. Gigabit data transmission rates present significant data recovery and management challenges. We believe that many businesses have made significant investments installing computer networks using copper twisted pair wires. A number of problems, such as interference from adjacent lines and signal echo, arise when transmitting data at Gigabit rates on the existing copper twisted pair wire. The most common form of copper twisted pair wire installed was originally designed to support 100 Megabit per second data transfer rates. As a result, the deployment of Gigabit Ethernet requires either the costly and time-consuming task of upgrading this wiring or the deployment of new physical layer devices that enable Gigabit transmission rates on the existing infrastructure.

Additionally, with the adoption of Institute of the Electrical and Electronics Engineers' (IEEE) 802.11 industry standards for wireless transmission of data, many wireless applications have been developed. Many new emerging applications are beginning to adopt 802.11 wireless technologies. We believe that 802.11 technologies will be broadly deployed in many diverse electronic devices if reliable, low cost and low power 802.11 radios and processors can be provided.

### ***The Management of Data***

Today's communication networks are being re-architected to efficiently support voice, video and data. Instead of equipping and managing disparate systems — one for voice, one for video, one for data — the convergence of these systems creates a single, more efficient system. In the rush to provide converged networking advantages to their customers, today's broadband communications companies face significant issues, including the fact that voice networks are inefficient for transferring data and data-optimized networks were not designed to carry voice or video. To efficiently support voice, video and data, each point in the network must be re-architected to allow these different types of data to move through a single converged network with reliability and quality. Data must be managed and routed intelligently through the system in such converged networks. Sophisticated data management techniques differentiate voice, video and data in order to seamlessly transmit voice and video transmissions without interruption. Additionally, the management of data allows for service providers to guarantee Quality of Service, to bill for services, to establish service level agreements, to provide redundancy for high reliability, and to effectively bridge Ethernet to other technologies like Packet-Over-SONET and asynchronous transfer mode, or ATM.

### ***The Opportunity for New Integrated Circuit Solutions***

We believe the rapidly growing demand for products that enable the storage, transmission and management of large volumes of data at high speeds is creating the need for a new generation of integrated circuit solutions:

- Disk drive read channel chips and SOC devices that are capable of handling increasingly higher data transmission rates with sophisticated error correction features.
- Physical layer devices that are capable of supporting increasingly higher data transmission rates over existing media infrastructures.
- Switches that have the intelligence to process and provide routing management functions and carry information in multiple forms including voice, video and data.
- System controllers that improve CPU subsystem performance, enabling the quick and efficient movement of data.



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- WAN communication controllers that bridge the LAN with the Internet infrastructure.
- Wireless LAN chipsets that enable reliable, high-speed data transmission for wireless connectivity.
- Serial connectivity chips that connect disk drives with motherboards at increased data transfer rates using Serial ATA technology.

To keep the power consumption of these new solutions at acceptable levels, more efficient yet powerful signal processing algorithms, implemented in silicon, are required. These next-generation devices must also satisfy market demands associated with large production volumes, competitive pricing, high reliability and decreased size. Also to meet these demands, we expect the trend to continue towards integrating into one chip various functions that are generally implemented in discrete integrated circuits. Integration reduces the overall number of components in a system, reducing overall system cost.

### **Our Solution**

Our integrated circuits incorporate precise mixed-signal technologies and complex signal processing algorithms. Our products are designed to allow our customers to store and move digital data reliably at high data transfer rates while using existing media infrastructures or wirelessly through the open air. Our products are also used for transmitting and recovering digitally converted analog signals to and from various types of broadband communications media.

Our products target high volume markets where some of the most critical success factors are performance, features, power consumption, quality and cost. We initially applied our mixed-signal and digital signal processing technology to storage applications, where we provide read channel devices and preamplifiers to meet the high data transfer rate, high areal density and data integrity requirements of our customers. A preamplifier amplifies the low level electrical signal transmitted to and from the recording heads in a disk drive device. Subsequently, our leadership position in read channel technology enabled us to successfully develop SOC products for disk drives. Our SOC's are integrated devices incorporating the read channel, hard disk controller, embedded memory and one or more microprocessors into a single integrated circuit. We have also applied our core technology to developing high-performance physical layer devices for computers and communications systems that transmit data in analog form but process the data internally in digital form. We have developed physical layer devices for 10 and 100 Megabit per second Ethernet and Fast Ethernet applications, and Gigabit Ethernet physical layer devices for use with existing copper twisted pair wiring infrastructures as well as over fiber-optic cabling. Our Fast Ethernet physical layer devices provide long distance signal transmission capability and low power consumption. Our Gigabit Ethernet physical layer devices address the reduced signal quality of Gigabit data rate signals on existing copper twisted pair wiring infrastructures. Additionally, we have also developed 10 Gigabit Ethernet physical layer devices that can be used, among other applications, in the backplane for interconnection between line cards.

To address the need for wireless connectivity, we have developed a family of wireless integrated circuit chipsets in accordance with standards set by the Institute of Electrical and Electronics Engineers' (IEEE) 802.11 standards. Our highly integrated two chip Libertas<sup>TM</sup> solutions include an RF transceiver and a baseband / Media Access Controller, or MAC, processor. The RF transceiver sends and receives data using advanced radio technology coupled with an integrated power amplifier to boost or reduce RF signals. The baseband / MAC processor employs sophisticated digital signal processing techniques to process and manage the data as well as provide data security. These two chips are used to wirelessly connect computers as well as many consumer devices such as personal digital assistants, or PDAs, cell phones, and video game consoles. By integrating our Fast Ethernet physical layer technology, the chipset can also be used in access points that connect the wireless devices to the wired communications systems. Additionally, the chipset can be designed with our multi-port integrated switches to cost-effectively develop wireless gateway routers for the home or small office.

We also design integrated circuits that perform the critical functions in converged network systems, in which voice, video and data are handled seamlessly using Internet Protocol, or IP, techniques. We have developed several product families for broadband communication system vendors that address the important

subsystems in communication systems — the CPU subsystem, the LAN subsystem and the WAN subsystem. As the increased system bandwidth places higher demands on the CPU, our highly integrated Discovery<sup>TM</sup> system controllers greatly improve CPU subsystem performance. The strong technical foundation established for the creation of the system controller products has been used to create our Horizon<sup>TM</sup> WAN communication controllers. Our WAN communication controllers consist of products that integrate most of the system blocks needed to implement converged voice/data routers. We also offer switched Ethernet controllers and processors for the LAN subsystems. Our physical layer technology and expertise combined with our system-level technology and expertise is designed to provide our customers with complete solutions, which we believe enables them to introduce their products to the market more quickly than they can with other solutions.

Key features of our technology solutions include:

- *Mixed-Signal Broadband Analog Front-End Technology.* One of the most critical components of many communications-related mixed-signal integrated circuits is the analog front-end. The analog front-end is the analog-to-digital and digital-to-analog converter that serves as the interface between the digital signal processor and the physical transmission medium. We are able to design these broadband analog front-ends due to a number of innovations, including proprietary self-calibration techniques that compensate for the inherent variations of these processes. Our analog circuits are designed to be highly reusable across many of our products.
- *Custom Digital Signal Processors.* We have designed high-performance, low power usage digital signal processors for broadband communications applications. These processors are customized to execute our suite of advanced digital signal processing algorithms in real time at high speeds. For example, our latest generation read channel device performs several hundred billion operations per second.
- *Proprietary Digital Signal Processing Algorithms.* Our advanced digital signal processing algorithms enable data transmission at high speeds across a wide range of physical media with low data error rates. These digital signal processing algorithms improve performance in the presence of media imperfections such as substandard media, noise, signal-level degradation over distance, adjacent line and multi-path interference and signal echo. We have developed a broad suite of communications algorithms targeted at both storage and broadband communications applications.
- *Reusable Building Blocks for Integrated System-On-Chip Design.* We have developed a proprietary set of manufacturing process design rules that we believe are scalable over several generations of manufacturing process geometries. We have also collected a significant library of circuit building blocks that can be reused with modification in successive generations of products. These design methodologies allow us to reduce time-to-market for new products.
- *Internet Protocol Knowledge.* Internet Protocol technologies have been widely selected as the core technologies for converged networks. We have developed intimate knowledge in IP technologies. This has allowed us to develop integrated circuits that exemplify the implementation of a state-of-the-art set of products that uses IP technologies to deliver a comprehensive solution for networks where it is critical to effectively carry multiple types of media, to guarantee Quality of Service, to bill for services and establish service level agreements, to provide redundancy for high reliability and to effectively bridge to other technologies like Packet-over-SONET, or PoS, and ATM.

Key benefits for our customers are:

- *High Performance.* For storage applications, our products achieve high data transfer rates and areal densities. For computer and communications systems, our products can achieve the required low error rates when used with lower quality media and attain superior signal transmission distance when used with standard media.
- *Low Power.* Our custom digital signal processors can use fewer transistors to perform data transfer functions than the standard designs used by some of our competitors, thereby reducing overall system power usage. We also implement our designs in advanced processes that can further reduce power

requirements. These designs allow our customers to reduce costly heat reduction components in their products. Additionally, as many of our devices are targeted at consumer handheld devices, our low power consumption can greatly extend the battery life in such applications.

- *Cost-Effective.* We are able to lower our manufacturing costs by using advanced manufacturing processes and our custom digital signal processing technology. These processes and technologies allow us to use a smaller silicon chip size, which results in more integrated circuits per wafer. In addition, our products generate less heat, which allow us to use less expensive packaging technologies and achieve lower cost system implementations than for products that generate more heat. These manufacturing advantages reduce the cost of next-generation communications equipment, enabling our customers to offer their products at competitive prices.
- *High Integration Capability.* The combination of our manufacturing processes, small silicon chip size and low power requirements allows us to increase the number of functions in a single integrated circuit. These capabilities position us to integrate elements of our customers' designs, currently implemented in discrete integrated circuits, into our products. Integration reduces the overall number of components in a system, thereby reducing overall system cost.
- *Accelerated Time-to-Market.* We help our customers rapidly introduce higher performance, lower cost products. Many features of our integrated circuits are software-configurable, allowing our customers to customize circuit operation for their specific applications. In addition, although our customers have traditionally internally developed the key application-specific integrated circuits, or ASICs, for their network systems or have used programmable logic, such as field programmable gate-arrays, they have recently begun to outsource this product. We can develop these products more rapidly and at a lower cost while achieving higher performance than our customers can develop them internally because of the larger size of our potential market and the resources we dedicate to such functions. In product areas where reconfiguration or flexibility is important, we also offer software configurable control circuits and modules. Additionally, many of our new products are supported by evaluation boards and reference designs to accelerate our customer's development activities. Evaluation boards facilitate the adoption of our semiconductor devices by closely resembling actual end-products or subsystems within them.

Based on our operational management and financial reporting structure, we have determined that we have one reportable business segment: the design, development and sale of integrated circuits. Please see the financial information regarding this reportable business segment set forth in Item 6 of this Form 10-K and the information regarding our net revenues and long-lived assets based on geographic regions included in Note 12 to our Consolidated Financial Statements set forth in Item 8 of this Form 10-K.

## **Our Strategy**

Our objective is to be a leading provider of extreme broadband system-level communications integrated circuit solutions. Key elements of this strategy include the following:

### ***Expand Market Position by Developing New Signal Processing Technologies***

We have built expertise in core areas of technology, including mixed-signal circuit design methodologies, broadband signal processing algorithms, custom digital signal processors and system-level expertise. We intend to continue to invest considerable resources in developing new and enhanced algorithms and improved mixed-signal and digital signal processing technologies. We expect that our investment will allow us to develop products that can achieve data transmission speeds approaching the fundamental limits of particular physical media infrastructures. Our core signal processing technologies can be applied to a wide range of applications used in the personal computer, or PC, business infrastructure, and consumer markets.

***Leverage Technology for Broadband Communications Applications***

We initially expanded our mixed-signal and digital signal processing technology expertise beyond storage applications for computers and communications equipment through the introduction of physical layer devices using the Fast Ethernet networking protocol. These physical layer devices provide long distance signal transmission capability and low power consumption. We then applied our technology to developing Gigabit Ethernet and 10 Gigabit Ethernet physical layer devices. Additionally, we have now integrated our physical layer devices with functions previously provided by other integrated circuits, such as the MAC. The MAC is the component that controls access by different devices to the physical media to ensure that signals sent from different devices over the same channel do not collide.

We have combined our physical layer transmission solutions with our high-performance switching and internetworking products. By utilizing our system architecture expertise we have integrated multiple product functions to address the demands of today's communications equipment. Our complete product offering is targeted at the business infrastructure markets where networks are being converged to handle voice, video, and data across LANs and WANs.

***Extend Leadership Position for Storage Market Applications***

Storage applications present a large volume opportunity for our broadband mixed-signal and digital signal processing technologies. We believe our technology effectively addresses the increasing data access rates and higher data integrity and reliability requirements of storage systems. We have achieved significant market share in enterprise and mobile computing disk drives. These disk drives demand the highest performance read channel products.

We intend to extend our leadership position with enterprise and mobile disk drives by continuing to develop and introduce products enabling higher data transfer rates and areal densities. In addition, we intend to extend our market position in disk drives for the desktop personal computers segment as well as disk drives used in emerging consumer electronics.

We believe that, for us, storage applications are one of the technology and logistics drivers for the rapid and cost-effective development of many of our products and, therefore, it is important that we continue to develop new high-performance products and product enhancements for storage applications. Applying our mixed-signal and digital signal processing technology to develop products for the high-performance disk drives, and testing and improving the products for these applications adds to our library of proprietary technology and allows us to more rapidly apply this technology to develop products for other applications and markets. In addition, the demanding logistics of product delivery to the storage market has required us to establish systems that enable efficient and timely delivery systems to support other targeted markets.

***Strengthen and Expand Our Relationships with Current and Potential Customers***

We intend to continue to strengthen and expand our relationships with customers by identifying our customers' evolving needs and by designing new products and product functions to meet these needs. For example, while we design products that can be used by multiple customers, we often customize our products to incorporate our customers' specific requirements. As the markets we address become increasingly complex and competitive, we anticipate that many of our customers will increasingly wish to combine elements of their designs with our own designs. We intend to jointly develop highly integrated products with our customers to meet their cost and performance requirements and to strengthen relationships with them.

***Capitalize on Widely Available Manufacturing Processes and Fabless Operating Model***

We intend to continue to use widely available processes to manufacture our advanced mixed-signal and digital signal processing products. We believe this will better enable us to reliably manufacture our products in volume, thereby decreasing our time-to-market and costs, while also facilitating the development of highly integrated products. We have recently developed our own embedded memory technology for complex System-on-Chip designs. We are also in the process of developing products that integrate our core mixed-signal and

digital signal processors with other internal solutions, and we are developing and are in production with various products integrating our customers' silicon components and on-chip memory with our own technology.

We are a fabless integrated circuit manufacturer in the sense that we rely on third parties to manufacture, assemble and test our products. Our fabless model allows us to focus our resources on the development of proprietary and innovative mixed-signal and digital signal processing designs, while reducing capital and operating infrastructure requirements.

#### ***Expand Our System-Level Approach to Design***

We intend to expand our use of a system-level approach to develop products to improve the time-to-market and production of our products, and in turn to assist our customers to more rapidly introduce their products to the market. Our system-level approach considers the various components in a system to anticipate and effectively evaluate the various systems issues and tradeoffs that our customers will face when designing our products into their equipment. Our architects, designers, technical marketing engineers and applications engineers have broad knowledge of communications system architectures and advanced microprocessors, allowing us to take a system-level approach in the design of our products. This helps us to partition our devices properly and to attain appropriate levels of integration. A system-level approach also results in modular offerings: a device may operate on a stand-alone basis as a complete basic system or various devices may be interconnected to form a more complex system.

In designing a product, we also conduct system-level simulations in which the software model of a new device interacts with models of the devices with which it will interface in a typical system in order to test system-level operability. These simulations are often conducted with key customers that provide extensive feedback to our design team. As a result, we have successfully designed products highly functional on first silicon. Additionally, with our pending acquisition of RADLAN Computer Communications Ltd., a leading provider of embedded networking software, we will be able to combine our system-level designs with RADLAN's embedded networking software to provide our customers with production-ready designs and kits.

#### **Markets**

We target computers, communications-related and consumer applications that require integrated circuit devices for high-speed data storage, transmission, and management. We currently offer solutions for three major markets: PC, business infrastructure and consumer markets.

##### ***PC Market***

Within the PC Market our products currently address the needs of storage electronics, Ethernet connectivity through both network interface cards (NICs) or directly through LAN on the motherboard (LOM), wireless LAN, or WLAN connectivity and other applications.

We believe there is a transition underway in the way computers connect to communications networks. Wired connections to the communications networks are transitioning to Gigabit Ethernet connections and mobile computers are quickly adopting WLAN connectivity. We provide Gigabit Ethernet and WLAN connectivity integrated circuits tailored specifically for all three PC market segments — enterprise, mobile, and desktop.

Demand for storage in the PC market is increasing rapidly due to the introduction of new data-intensive computing and communications applications, such as web-based commerce, streaming audio and video, enterprise-wide information systems and telecommuting. Also, the connection between the computer's disk drive to the motherboard is transitioning from a slower parallel connection (Parallel ATA) to a faster, more cost-effective serial connection (Serial ATA). We provide solutions tailored to the specific storage requirements of the enterprise, desktop and mobile computer segments of the PC market.

*Enterprise Computer.* The proliferation of new technologies such as Redundant Array of Independent Disks (RAID) systems and network-based storage systems is resulting in increased usage of high-performance storage devices. Enterprise computing applications require systems that are capable of storing

and retrieving large amounts of data at high rates. As a result, manufacturers of storage devices for the enterprise computer segment place primary importance on disk drive performance, reliability and capacity and are less concerned with size, power consumption and absolute cost. To accommodate these requirements, we provide the integrated circuits that produce reliable storage devices with high data transfer rates and high capacity for complex, large-scale processing environments.

Additionally, enterprise computers frequently use multiple disk drives such as RAID configurations. The market is increasingly adopting Serial ATA as a new connection technology between the disk drive and the motherboard. We provide Serial ATA integrated circuits for both disk drive electronics as well as for the connection on the motherboard. Our Serial ATA integrated circuits for the motherboard allows the Serial ATA connection of multiple disk drives to the motherboard.

*Desktop Computer.* Personal computer users are becoming increasingly price sensitive. As a result, disk drive manufacturers focused on this segment require integrated circuit components that facilitate design for high volume, low cost manufacturing. Our CMOS-based design is well-suited for high volume, low cost manufacturing, scalable performance and integration. Due to our ability to deliver high data transfer rates while meeting the cost requirements of the desktop computer segment, we offer cost-conscious manufacturers of desktop computer storage products with a migration path for building the high-performance drives of the future.

*Mobile Computer.* We believe manufacturers of storage devices for the mobile computer segment are primarily concerned with power consumption, heat dissipation, cost and areal density. Our product family targeted at this market segment incorporates advanced digital signal processing technologies. To attempt to meet the requirements of this segment, we provide very low power consumption integrated circuits that can accommodate relatively high data transfer rates, which enables high areal density disk drives.

#### ***Business Infrastructure Market***

As businesses and consumers seek faster access to increasing amounts of information through LANs, Metropolitan Area Networks, or MANs, and WANs, such as the Internet, these networks are constrained in their ability to process and transmit information quickly. As a result, business infrastructure equipment and systems are undergoing a transformation to allow for increased data transmission speed and the sophistication to intelligently route and process voice, video and data. Previously processed by disparate systems — one for voice, one for video, one for data — these systems are being converged to create a single, more efficient system. Additionally, vendors of business infrastructure equipment are increasingly faced with time-to-market pressures and resource constraints, which have augmented the vendors transition from internally developed solutions to third-party semiconductor devices. In addition to the vendors' transition to third party semiconductor devices, many vendors' are also looking for third party support for their software needs. Our pending acquisition of RADLAN, expected to close in the early part of our second quarter of fiscal 2004, will allow us to offer both semiconductor devices and software to such vendors.

We provide solutions tailored to specific needs of the enterprise networking, carrier access, small office/home office and residential networking, and storage networking segments of the business infrastructure market.

*Enterprise Networking.* LANs are comprised of different types of equipment interconnected by copper, fiber and/or coaxial cables over a computer networking protocol called Ethernet. As the volume of data transmitted over these networks continues to increase, communications bottlenecks are appearing and new technologies such as Fast Ethernet and Gigabit Ethernet are being employed to replace the older 10 Megabit per second technologies. Most desktop connections have migrated to the 100 Megabit per second Fast Ethernet standard, and we believe that the 1,000 Megabit per second Gigabit Ethernet standard has become the predominant technology for servers and backbone infrastructures that support LANs. We further believe that as the desktop connections continue to migrate to the Gigabit Ethernet standard that the server and backbone connections will eventually migrate to the new 10,000 Megabit per second standard, known as 10 Gigabit Ethernet.

Additionally, enterprise switching equipment is decreasing in physical size while increasing the number of switched connections, or ports. The smaller, high port count equipment helps lower the overall system cost on a per port basis while requiring less space. Such systems demand highly integrated, low power consumption physical transceiver and switched Ethernet controller integrated circuits.

We offer a variety of transceivers, Ethernet switches and system controllers for the specific requirements of the enterprise networking market. Upon the close of our pending acquisition of RADLAN, we will also offer the embedded networking software for such equipment.

*Carrier Access.* The convergence of circuit switched and IP packet based technologies is requiring systems to reliably and intelligently route and process voice, video and data. Carrier access equipment is transitioning from legacy telephony equipment that simply bridges traffic to equipment that performs many higher level functions, including voice over IP, or VoIP, Virtual Private Networks, or VPNs, IP Multicast, Multi-Protocol Label Switching, or MPLS, and Network Address Translation, or NAT. Additionally, service providers are constantly exploring new opportunities to generate revenues across their networks. Integrated circuits within carrier access equipment are being required to support a wide variety of mechanisms to transact service level agreements, provisioning and advanced billing, all while guaranteeing reliability, security and redundancy. Also, the increased sophistication and speed of carrier access equipment is placing greater demands on system and communication controllers to drive CPU subsystem performance. Our internetworking, switching and high-speed transceiver products have been specifically developed to meet the requirements of these new systems. Additionally, as such equipment becomes more and more complex; many networking vendors require software support to drive such higher-level functions. RADLAN's software has been optimized to drive the performance of our semiconductor devices in delivering such higher-level functions.

*SOHO/ Residential Networking.* The increase in the number of multi-PC households and the use of Internet appliances has driven the demand for home networking solutions, including the desire for shared broadband Internet access. This shared access requires advanced switching products. Manufacturers of Small Office/ Home Office, or SOHO, switches are primarily concerned with reduced design complexity to minimize time-to-market concerns. Additionally, they demand integrated circuits that are low cost, highly reliable, and that allow for the development of systems that are flexible and easy to use. We provide a product family of multi-port Ethernet LAN switches for this market. We also offer a combination of our SOHO switches with our WLAN integrated circuits for our customers to produce wireless SOHO routers and switches.

The use of wireless networking technologies within the SOHO/residential networking market is growing rapidly due to strong demand for increased convenience in mobile PC applications. WLAN solutions based upon the IEEE 802.11 standard allow consumers and businesses to have high-speed wireless access to their LANs in the home and office. Applications that will benefit from the advancement of 802.11 technologies include mobile and desktop personal computers, personal digital assistants, or PDAs, Internet appliances, wireless IP phones and handheld devices with roaming Internet access. In January 2002, we introduced our first Libertas wireless IEEE 802.11b chipset solution for the SOHO/residential networking market.

*Storage Networking.* As companies rely more heavily on data-intensive applications, the amount of information that needs to be managed and stored by organizations is increasing rapidly. Servers and peripheral storage devices such as tape libraries, RAID disks and optical storage systems are adequate for storing data, but server capacity is limited and access to peripheral devices can be slow. As a result, companies have moved toward the use of Storage Area Networks, or SANs, and Network Attached Storage, or NAS, systems.

A SAN connects multiple servers to a centralized pool of disk storage. In a SAN, disk maintenance and routine backups are easier to schedule and control because all of the company's storage is treated as a single resource. In some SANs, the disks themselves can copy data to other disks for backup without any processing overhead at the host computers. The NAS system is a related storage device. The NAS is a specialized file server that attaches to the LAN like any other server or workstation; however, rather than containing a complete operating system, it generally uses a slimmed-down operating system and file system specialized for handling file-only reads and writes. SAN and NAS systems require high-performance circuitry. We provide physical layer transceivers and system controllers to the storage networking market.

## **Consumer Electronics Market**

There is an expanding proliferation of consumer electronic devices such as PDA's, digital cameras, digital video recorders, digital audio entertainment centers and gaming consoles. The ever-increasing sophistication of these devices and faster processing power has resulted in a growing trend for these devices to adopt disk drive storage electronics. Additionally, many consumer electronic devices are forecasted to adopt WLAN connectivity to allow the devices to easily connect to the communications network.

We currently offer storage solutions and WLAN solutions targeted at the consumer electronics market. This market demands very reliable, low cost and power efficient products. We have specifically designed our integrated circuits to address these specific requirements.

## **Products**

We offer our customers a wide range of integrated circuit solutions using proprietary Communications Mixed-Signal Processing, or CMSP, and digital signal processing technologies. We are applying our mixed-signal, digital signal processing, and complex digital design technologies in a variety of applications targeted at the PC, business infrastructure and consumer electronics markets. Our broad product portfolio consists of switching, transceivers, wireless, PC connectivity, gateways, communications controllers and storage devices.

### **Switching Products**

We have a broad portfolio of switching solutions for the enterprise networking, carrier access and SOHO/residential networking markets. Our switching products enable voice, video, and data traffic to be seamlessly carried through the network with full fidelity. Additionally, we are enabling the emergence of packet-based Internet communications of real-time traffic such as telephony and video-on-demand.

*Presteria<sup>TM</sup> Switching Architecture.* The Presteria<sup>TM</sup> architecture, our sixth generation of switching solutions, is designed to enable system manufacturers to build families of products that address high-density Gigabit solutions for the enterprise and Small and Medium Size Businesses (SMB) as well as terabit densities for MANs. Using this switching architecture, manufacturers can introduce high-performance, feature-rich and cost-effective products that not only meet today's market needs but also provide a scalable platform for future requirements. The Presteria-MX 10 Gigabit multi-layer switching family of products are fully integrated 10 Gigabit per second wire-speed configurable devices targeted at metropolitan edge and access systems in service provider networks. The Presteria-MX devices target MAN switching applications, including Layer 2/3 switching, Layer 2 to Layer 5 traffic classification for millions of flows, wire-speed ACLs, traffic policing and shaping, granular SLA, longest prefix match, NAT and MPLS functions. The Presteria-EX family of packet processors is designed to deliver multi-layer enterprise switching to drive Gigabit to the desktop with exceptional price and performance ratios and industry-leading features. The Presteria-EX family are designed to provide a complete line of Fast Ethernet, Gigabit Ethernet and 10G switching solutions with 100% software compatibility. The Presteria-DX family of packet processors offers new levels of integration and performance targeted at desktop Gigabit Ethernet switches in SMB networks. Addressing the cost-sensitive unmanaged and lightly managed desktop switching market, the processors enable system vendors to design affordable, plug-and-play, high-density, standalone switches. These products accelerate the proliferation of Gigabit switching in LAN and MAN environments.

*Link Street<sup>TM</sup> SOHO Multi-Port Integrated Switches.* Our integrated 10/100 Link Street<sup>TM</sup> Fast Ethernet switch product family, which support 3-, 5-, 6- and 7-port configurations, provide solutions for the SOHO market, where cost, ease-of-use, and flexibility are of paramount importance. Our current product offerings include a product family of multi-port Ethernet LAN Switches, targeting the SOHO LAN switching market. These integrated products can reduce design complexities and time-to-market barriers typically associated with switch development. Our third-generation Link Street family of highly integrated Fast Ethernet switches, built upon our proven switch and PHY technology, incorporate the industry's most advanced features including smart power management, which dramatically reduces power consumption by more than 50%, as well as Virtual Cable Tester<sup>TM</sup> technology, which performs cable diagnostics, reducing overall network support costs. These enhanced features have secured a wide range of designs with SOHO



applications such as standalone switches, media converters, IP phones, firewall appliances, wireless and wired gateway routers, and wireless access points. All Link Street switches include a high-speed switch fabric designed to provide SOHO customers with a low cost, low power generating reduced footprint solution. The Link Street switches integrate multiple independent Fast Ethernet MACs, multiple 10BASE-T/100BASE-TX transceivers, a high-speed non-blocking switch fabric, a high-performance address lookup engine, and an embedded frame memory. These devices enable PCs and IP phones to connect through a broadband Internet access pipeline such as DSL modem, cable modem, or fiber WAN to the Internet, with all ports switched at 100 Megabits per second bandwidth Ethernet.

*GalNet®-2.* Our GalNet-2 family comprises more than twenty products, from Fast Ethernet and Gigabit Ethernet switch controllers, to G.Link crossbars and bridges — all offering what we believe to be a comprehensive switched Ethernet solution. Applications for GalNet-2 devices span the range from SOHO products and rack systems supporting full-wire-speed performance, stacking and state-of-the-art features, to mini-chassis and full-chassis systems designed to provide enterprise users with full converged networking support. Systems using the GalNet-2 device use our proprietary G.Link bus to interconnect switch controllers and crossbar switch fabrics. A very flexible bus, G.Link supports development of very high-performance systems via its high bandwidth and our G.Link crossbar switches. Crossbars are used to route messaging and data between distributed switch controllers and, if present, the management CPU complex. Our G.Link crossbar switches range from 4 to 12 G.Link ports to support the development of a wide variety of system architectures. Crossbars may also be interconnected in meshes to support larger numbers of G.Link ports. GalNet-2 crossbars are also used with GalNet-2+ and GalNet-3 switched Ethernet controllers, for advanced Layer 2 and Layer 3/4/5 system applications. GalNet-2 switched Ethernet controllers are available supporting a wide range of features and configurations. These switches are combined with others to build systems with up to 256 Fast Ethernet ports, 32 Gigabit Ethernet ports or combinations utilizing up to thirty-two switch controllers and CPUs. A major benefit of the GalNet-2 devices is software compatibility among switch controllers. Shorter time-to-market is supported via the leveraging of previously developed code in new system applications, often with little or no modification.

*GalNet®-2+.* Utilizing the same architecture as our GalNet-2, our GalNet-2+ devices add integrated memory and support for advanced Quality of Service, or QoS, via support for packet prioritization. The GalNet-2+ Ethernet controllers support the native QoS requirements of Windows 2000, which is providing an important catalyst for the development of multimedia applications. The GalNet-2+ devices integrate both the packet and control memories into the switch controller, providing a high level of integration, low chip-count and features. The GalNet-2+ switches are combined using GalNet-2 crossbars to enable the development of high-performance end products, such as 1U rack-mount stacking switches and modular systems with up to 256 Fast Ethernet ports or 32 Gigabit Ethernet ports.

*GalNet®-3.* Our GalNet-3 family of converged voice/video/data network switch processors provides full-featured Layer 2/3/4/5 switch processors supporting the development of high-performance enterprise and edge routers, MAN switches and other communications applications requiring state-of-the-art multimedia support and performance. The GalNet-3 products support advanced functions such as 5-quintuple flow classification, bandwidth reservation, rate policing and flow statistics gathering. These features enable system developers to design sophisticated applications, such as IP PBXs supporting monitoring and compliance to service level agreements negotiated with Internet service providers. The GalNet-3 switches support communications over Ethernet, Fast Ethernet, Gigabit Ethernet and OC-12c Packet-over-SONET, or PoS. In addition to ATM connection support, PoS allow designers to develop converged systems connecting LANs to MANs and WANs.

#### ***Transceiver Products***

We have a line of low power, high-performance physical layer transceiver solutions for demanding networking applications. We provide these transceivers to the enterprise networking and storage networking markets.

*Alaska® Gigabit Ethernet Transceivers.* We believe our Alaska® family of Gigabit Ethernet transceivers is the ideal solution for enterprise networking systems where high performance and low power dissipation are absolutely necessary. Each product contains optional built in 1.25 Gigabit Serializer/ Deserializer, or SERDES, function which allows the device to work seamlessly over either copper or fiber-optic cabling. The devices also support value-added features such as Virtual Cable Tester™ technology, which is used to diagnose the attached cable plant. This technology can allow end-users to quickly and remotely analyze the quality and attributes of the cable, thereby, avoiding unnecessary equipment returns and on-site service calls. The advanced built-in diagnostics help pinpoint the cause of network malfunctions without deploying field support personnel or bring down the network, significantly reducing installation time and cable debug efforts/requirements. The design for these products incorporates sophisticated digital signal processing algorithms and power management techniques to achieve low power dissipation. Target applications include Network Interface Cards, LOMs, routers and next-generation switches.

*Alaska X 10 Gigabit Ethernet Transceivers.* Our Alaska X 10 Gigabit Ethernet and backplane transceiver products accelerate the deployment of 10 Gigabit capable systems for the LAN, MAN and WAN markets. The Alaska X transceiver family leverages four or eight generations of SERDES technology from our single, dual and quad-port Alaska Gigabit Ethernet products. The Alaska X transceiver family's features include low power consumption, high performance, and small form factor.

*Fast Ethernet Transceivers.* Our physical layer products for the Fast Ethernet communications market are highly integrated devices containing the active circuitry, or ports, needed for interfacing with five, six or eight independent network connections and are typically used by our customers in Fast Ethernet repeaters, hubs, switches and routers. Our products are designed to enable reliable communication over long cable distances and lower quality cable installations. Our current DSP-based Fast Ethernet transceivers offer several advantages, including low power consumption at only 150 mWatts per port, enabling network system manufacturers to decrease system cost by reducing both power supply and fan requirements. Our Fast Ethernet transceivers integrate our Virtual Cable Tester technology for remote cable diagnostics and the support of lower power modes. Other features include Automatic-MDI/ MDIX crossover designed to automatically and transparently detect and correct improperly wired cables. This can make the installation, debugging and maintenance of the network easier and less expensive for the end user. We were the first to market with a device that supports the Source Synchronous option of the Serial Media Independent Interface, or SMII, specification. This enables simplified system design by reducing the I/ O pin count between the transceiver and the MAC/switch as well as extending the allowed printed circuit board trace distance. Additional features of our Fast Ethernet transceivers include simplified board design for lower overall system cost, low power consumption for more reliable networking systems and effective utilization of networking bandwidth with jumbo frame support.

#### **Wireless Products**

*Libertas™ Wireless LAN Products.* The Libertas family of chipsets represents our wireless IEEE 802.11b all-CMOS solution for the SOHO/residential, enterprise networking, and other emerging markets. Our Libertas 802.11b client and access point chipsets represent the industry's first integrated two-chip 802.11b solutions for use in WLAN, or WLAN applications while the physical layer solution chipset represents the first all-CMOS IEEE 802.11b highly integrated baseband and Radio Frequency, or RF, chipset. The Libertas chipset's highly integrated, high-performance and low power consumption features enable customers to build very cost-effective solutions for mass deployment of WLAN applications. Our current solution provides a high-performance and cost-effective solution that meets all IEEE 802.11b WLAN specifications and supports a higher performance 22 Megabit per second data communications mode. Our wireless IEEE 802.11b solution achieves high bandwidth and robust radio communications performance from a combination of leading-edge DSP and RF technologies. To achieve high signal integrity and optimized throughput, our chipset implements an adaptive signal quality monitoring engine that continually monitors and adapts to the wireless environment, which distinguishes the real networking signal from the surrounding noise. Our RF transceiver integrates the power amplifier, low noise amplifier, voltage controlled oscillator and frequency synthesizer, which are typically implemented in as many as five ICs. In February 2003, we

introduced our new integrated two-chipset solution targeted to be in compliance with the new IEEE 802.11g standard, which is expected to be ratified in fiscal 2004. This new solution supports data transfer rates of up to 54 Mbps according to the pending IEEE standard and a proprietary data transfer rate of 72 Mbps.

#### ***PC Connectivity Products***

*PC Connectivity Products.* Our PC connectivity product consists of the Yukon™ Gigabit Ethernet controllers, which were designed for volume deployment of Gigabit PC connections. The Yukon family of single-chip desktop and server network connectivity solutions offers unprecedented integration of our market-leading Alaska Gigabit PHY and MAC technology with a comprehensive software suite. The Yukon devices are offered in an ultra-small form factor with low-power requirements, and are ideally suited for client and server NIC and LOM applications. The Yukon products provide a wide variety of innovative manageability features such as Virtual Cable Tester technology, which reduces network installation and support costs, and is optimized for 32-bit PCI clients. With the lowest pin count for such a device, the Yukon product minimizes board space, simplifies signal routing and reduces the number of required PCB layers, resulting in the most cost-effective motherboard and low profile NIC implementation on the market.

#### ***Gateway Products***

*LinkStreet™ Gateway Products.* Our Link Street™ family of highly integrated gateway router devices provide a superior level of functionality, performance, and security for business, SOHO and residential gateway solutions. The Link Street SOHO gateways provide a full-wire-speed 100 Mbps integrated gateway router solution by integrating a high-performance RISC CPU cores plus a multi-port Fast Ethernet switch and Fast Ethernet PHYs into a single mixed-signal integrated chip solution. The Link Street solutions are based on advanced technologies and include comprehensive hardware reference designs, and Software Development Kits (SDKs) for wired and wireless gateways. By providing the ability to combine Fast Ethernet and wireless IEEE 802.11b networks, the Link Street gateway routers deliver an integrated, cost-effective chipset solution that networks individual PCs and enables Internet sharing. The latest firewall capabilities are designed to allow the Link Street gateways to isolate and protect WAN/ LAN networks from virus intrusion. Features like built-in Virtual Cable Tester diagnostics deliver maximum up-time, while faster FTP downloads and packet routing deliver superior performance. We believe the extensive network reach and the ability to easily expand networks make the Link Street gateway routers ideal for home office and small business networks.

#### ***Communications Controller Products***

We have a broad offering of high performing and highly integrated system and communication controllers. These devices can be combined with leading embedded RISC microprocessors to form complete MIPS™ and PowerPC™ CPU-based communication systems. Our controllers are used in a broad range of applications including routers, switches, digital subscriber line access multiplexers, access concentrators, wireless base stations, Voice-over-IP (VoIP) gateways, and storage area networks.

*Discovery™ System Controllers.* We provide high-performance Discovery system controllers for MIPS™® and PowerPC™® CPU-based communication systems. Our controllers are used in systems developed by leading OEMs for the Internet infrastructure. These include switches, LAN to WAN edge routers, enterprise routers, access concentrators and telecom equipment. Our highly-integrated system controllers can be combined with the leading embedded RISC microprocessors to form complete CPU subsystems. Our system controllers contain all of the key control blocks needed to build high-performance 32-bit and 64-bit CPU subsystems, including a — DRAM controller, a peripheral device controller, direct memory access engines, timers, PCI interfaces, and interrupt controllers. These system controllers provide system designers with the ability to match their CPU performance to the targeted overall system price/performance. An additional advantage to OEMs using our system controllers over internally developed solutions is that new products are generally software-compatible with older generations — supporting fast development time by re-using software which might otherwise need to be re-developed.

Our latest generation system controllers, the Discovery™ II system controllers, are targeted at high-bandwidth communication system applications such as Internet core routers, wireless base stations, and infrastructure equipment for xDSL, storage area networks and imaging applications. The Discovery II chips integrate high-performance system peripherals and LAN/ WAN communication ports with the 64-bit RISC system controller. Our Discovery II system controller devices are designed for high-performance communications systems based on industry-standard 64-bit MIPS microprocessors, as well as for industry-leading PowerPC processors, including the Motorola MPC74xx and MPC75x families, and IBM's 750 series CPUs. Each Discovery chip combines an advanced high-performance crossbar architecture for any-to-any connectivity. Providing up to 100 Gigabits per second of aggregate throughput, the crossbar supports non-blocking concurrent transactions among peripherals at full bus speeds, delivering break-through performance for advanced Internet infrastructure equipment. The Discovery II system controllers are highly integrated and offer leading-edge peripherals on-chip, including up to three Gigabit MACs, up to two PCI-X interfaces and DDR memory support. All Discovery II system controllers are software compatible with other Discovery II devices as well as our other leading system controller products.

*Horizon™ WAN Communication Controllers.* We believe our Horizon™ family of advanced communications controllers provides all of the required network interfaces that bridge the LAN with the Internet infrastructure and combines most of the common functions found in multi-service access routers into a single chip. These devices target the core of next-generation multi-service edge routers and remote access equipment that merge the functions of LAN-to-WAN routers, Voice-over-IP gateways, network security equipment and remote access concentrators. The Horizon family has been designed to enable end-to-end Quality-of-Service for applications that run at the edge of a network with the integration of hardware support for Differentiated Services and 802.1p and 802.1q support. Our Horizon system controllers provide new packet processing capabilities for systems that require the convergence of voice, video and data at the edge of the network. The integrated NetGX™ coprocessor can handle compute-intensive tasks such as flow-classification based on layer 3-5 packet information, encryption and authentication for security purposes and virtually any other packet processing function typically handled by the host CPU. The NetGX coprocessor can free compute power so that the CPU can run multi-service applications such as managing virtual private networks, firewalls and integrated voice services.

### ***Storage Products***

We offer (a) many generations of advanced Partial Response, Maximum Likelihood, or PRML, read channel products that are designed to deliver the specific performance requirements for every computing platform, (b) highly integrated system-on-chip solutions incorporating our high-performance read channel along with other functionality such as the disc controller and memory and (c) a complete line of preamplifier integrated circuits designed for use with Magneto-Resistive, or MR, Giant Magneto-Resistive, or GMR, and Tunneling Magneto-Resistive, or TMR read/write heads.

*Read Channel.* A read channel is an integrated circuit that provides the interface between the analog signals stored on magnetic disk drives and the digital signals that computers can understand and manipulate. The performance of the read channel normally drives the performance of the overall storage system. We utilize advanced mixed-signal and digital signal processing technologies in our array of PRML read channel products. Our technology incorporates an efficient data-encoding scheme in addition to advanced digital filtering and data-detection techniques. Our read channel products are designed to allow customers to achieve high areal density in addition to fast data transfer rates for their hard disk drives. Our read channels utilize custom digital and analog blocks running at a very high frequency while achieving low power consumption.

Our read channel integrated circuits target specific feature and performance requirements of the enterprise, desktop and mobile computing markets. We have implemented a strategy to consolidate the signal processing algorithms required by each of our different market segments into a single integrated circuit design. This strategy can result in cost savings and reduced product line complexity. Our current read channel products achieve data transfer rates ranging from 380 megabits per second to 1.8 Gigabits per second.

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*System-On-Chip.* Our integrated drive electronics platform is a flexible SOC solution that provides increased performance, reduced power consumption and cost savings essential for next-generation hard disk drives. Utilizing our leading-edge read channel physical layer devices as the core for integration, we have the flexibility to either add any number of functional blocks available in our portfolio or to integrate customer provided intellectual property. With our high data transfer rates, our integrated SOC platform provides solutions that have the ability to span multiple product generations, allowing for risk-reduction, cost savings and accelerated time-to-market. These advantages make our integrated SOC platform an ideal solution for enterprise, desktop and mobile systems. Our current SOC products incorporate the read channel, hard disk controller, embedded memory and one or more microprocessors into a single integrated circuit, and achieve data transfer rates ranging from 400 Megabits per second to 1 Gigabit per second.

*Preamplifier.* A preamplifier is an integrated circuit that amplifies the low-level electrical signal transmitted to and from the recording heads in a disk drive device. Preamplifiers operate in two basic modes: read and write. In read mode, preamplifiers provide initial amplification of the high-bandwidth signal from the read head. In write mode, the preamplifier provides the write head with the high-frequency switched current required for writing on the magnetic media.

We offer a comprehensive line of preamplifier integrated circuits for enterprise, desktop and mobile storage systems. Our preamplifier products are designed to provide high-performance, cost-effective solutions for these market segments and are designed for use with MR, GMR, and TMR read/write heads. Our current preamplifiers achieve data transfer rates ranging from 300 Megabits per second to 1 Gigabit per second.

*Serial ATA.* Serial ATA, or SATA, is the next generation internal storage interconnect designed to replace the existing ATA interface. SATA is the evolution of the ATA interface from a parallel bus to a serial bus architecture. The SATA interface is optimized for internal primary storage and provides the capability for future enhancements. SATA technology can offer extensive performance gains and manufacturing efficiencies to the mainstream PC storage user. With a transfer rate of 1.5 Gigabits per second (Gbps) and scalable to 3.0 Gbps and 6.0 Gbps, SATA technology also enables the application of a cost-effective, storage interface to enterprise storage applications which, until now, have required more expensive interface technologies such as Fibre Channel and SCSI.

Our SATA solutions leverage our physical layer transceiver (PHY) technology with our extensive storage expertise. Our family of SATA offerings provides storage OEMs with a platform for developing mainstream PC storage as well as high-performance enterprise subsystems and arrays.

## **Customers, Sales and Marketing**

Our direct sales force targets emerging high growth markets that have high intensity communications processing requirements. Our customers for read channel and preamplifier products are manufacturers of hard disk drives for the enterprise, desktop and mobile computing markets and the emerging consumer applications market. Our target customers for our communications physical layer devices, switches and controllers are manufacturers of high-speed networking equipment. Sales of storage products represented 56%, 57% and 85% of our net revenues in fiscal 2003, 2002 and 2001, respectively, and sales of broadband communications products represented 44%, 43% and 15% of our net revenues in fiscal 2003, 2002 and 2001, respectively. A small number of customers have historically accounted for a substantial portion of our revenue. Customers representing 10% or more of our net revenue in fiscal 2003, 2002 and 2001 are set forth below:

Customer(2)	2003	2002	2001
Intel	18%	*	*
Samsung	17%	17%	34%
Hitachi	11%	*	*
Seagate	11%	13%	22%
Toshiba	10%	13%	*
Accton(1)	*	12%	*
Fujitsu	*	*	11%

(1) The majority of sales to Accton represented designs won by us at companies such as Enterasys Networks, 3Com and Alcatel which are designed and manufactured in Taiwan under Original Design and Manufacturing (ODM) contracts.

(2) In addition, Wintech Microelectronics, our distributor in the Far East, accounted for 10% of our net revenues in fiscal 2003.

\* Less than 10% of net revenue

Currently, all of our storage product sales are made through our direct sales force. We also complement and support our direct sales force with manufacturers' representatives for storage and communications products in North America, Europe and Asia. In addition, we have distributors who support our sales and marketing activities in the communications markets in the United States, Europe and Asia. We also use stocking representatives outside of the United States for our communication products. We anticipate that the total amount of sales through distributors will increase in future periods; however, we expect a significant percentage of our sales will continue to come from direct sales to key customers. As of March 31, 2003, our sales and marketing organization consisted of 238 employees, 17 manufacturers' representatives and 6 distributors.

Our sales are made under purchase orders typically received between one week and four months prior to the scheduled delivery date. These purchase orders can be cancelled without charge if notice is given within an agreed upon period. Because of the scheduling requirements of our foundries, we generally place firm orders for products with our suppliers up to sixteen weeks prior to the anticipated delivery date and typically prior to an order for the product. We generally warrant our products for a ninety-day period.

Our marketing team works in conjunction with our sales force and is organized around our product applications. Due to the complexity of our products, we introduce new products to major customers with a global tour by a marketing, sales and engineering team. We believe that individual meetings are the most effective and rapid means of communicating the capabilities, benefits and extremely technical specifications of each new product.

We use field application engineers to provide intensive technical support and assistance to existing and potential customers in designing, testing and qualifying systems designs that incorporate our products. We believe that superior field applications engineering support plays a pivotal role in building long-term relationships with customers by improving our customers' time-to-market, maintaining a high level of customer satisfaction and encouraging customers to use our next-generation products.

## Backlog

Our sales are made primarily pursuant to standard purchase orders for delivery of products. Due to an industry practice that allows customers to cancel or change purchase orders with limited notice prior to the scheduled shipment dates, we believe that backlog is not a reliable indicator of future revenue.

## Research and Development

We believe that our future success depends on our ability to introduce improvements to our existing products and to develop new products that deliver cost-effective solutions for both existing and new markets.

Our research and development efforts are directed largely to the development of proprietary circuit designs for high-bandwidth communications-related applications. We devote a significant portion of our resources to expanding our core technology library with designs that enable high-performance, reliable communications over a variety of physical transmission media. We are also focused on incorporating functions currently provided by stand-alone integrated circuits into our products to reduce our customers' overall system costs.

We have assembled a core team of engineers who have extensive experience in the areas of mixed-signal circuit design, digital signal processing, CMOS technology and system-level architectures. As of March 31, 2003, we had 807 employees in engineering and process development. We have invested, and expect that we will continue to invest, significant funds for research and development. Our research and development expense was approximately \$145.7 million in fiscal 2003, \$93.4 million in fiscal 2002 and \$35.2 million in fiscal 2001.

## **Manufacturing**

We believe that our fabless manufacturing approach provides us with the benefits of superior manufacturing capability as well as flexibility to move the manufacture, assembly and test of our products to those vendors that offer the best capability at an attractive price. Our engineers work closely with our foundries and other subcontractors to increase yields, lower manufacturing costs and improve quality.

### ***Integrated Circuit Fabrication***

Our integrated circuits are fabricated using widely available CMOS processes, which provide greater flexibility to engage independent foundries to manufacture integrated circuits. By outsourcing manufacturing, we are able to avoid the cost associated with owning and operating our own manufacturing facility. This allows us to focus our efforts on the design and marketing of our products. We currently outsource substantially all of our integrated circuit manufacturing to Taiwan Semiconductor Manufacturing Company, or TSMC. We work closely with TSMC to forecast on a monthly basis our manufacturing capacity requirements. Our integrated circuits are currently fabricated in several advanced, sub-micron manufacturing processes. Because finer manufacturing processes lead to enhanced performance, smaller silicon chip size and lower power requirements, we continually evaluate the benefits and feasibility of migrating to smaller geometry process technology in order to reduce cost and improve performance.

### ***Assembly and Test***

Most of our products are shipped from our third-party foundries to third-party assembly and test facilities where they are assembled into finished integrated circuit packages and tested. We outsource all product packaging and substantially all testing requirements for these products to several assembly and test subcontractors, including ST Assembly Test Services in Singapore, Siliconware Precision Industries in Taiwan, ASE Electronics in Taiwan and Malaysia, and Amkor Technology in the Philippines. We also perform some in-house testing of new production and pre-production materials prior to transferring the volume packaging and testing offshore to our third-party assembly and test subcontractors. The remainder of our products are manufactured on a turnkey basis, in which we purchase fully assembled and tested products from our foundries. Our products are designed to use low cost, standard packages and to be tested with widely available test equipment. In addition, we specifically design our integrated circuits for ease of testability, further reducing production costs.

### ***Quality Assurance***

We build quality into our products starting with the design and development process. Our designs are subjected to extensive circuit simulation under extreme conditions of temperature, voltage and processing before being committed to manufacture. We pre-qualify each of our subcontractors and conduct regular in-depth quality audits. We closely monitor foundry production to ensure consistent overall quality, reliability and yield levels. All of our independent foundries and assembly and test subcontractors have been awarded ISO 9000 certification.

## Intellectual Property

Our future revenue growth and overall success depend in large part on our ability to protect our intellectual property. We rely on a combination of patents, copyrights, trademarks, trade secret laws, contractual provisions and licenses to protect our intellectual property. We also enter into confidentiality agreements with our employees, consultants, suppliers and customers and seek to control access to, and distribution of, our documentation and other proprietary information. Despite these precautions, it may be possible for a third-party to copy or otherwise obtain and use our products and technology without authorization, develop similar technology independently or design around our patents. In addition, we often incorporate the intellectual property of other companies into our designs, and we have certain obligations with respect to the non-use and non-disclosure of their intellectual property. It is possible, however, that the steps taken by us to prevent misappropriation or infringement of our intellectual property or our customers' intellectual property may not be successful.

As of March 31, 2003, we have been issued forty-six United States patents on various aspects of our technology, with expiration dates ranging from 2016 to 2021, and we have filed a number of additional United States patent applications. However, there can be no assurance that patents will ever be issued for these applications. Furthermore, it is possible that our patents may be invalidated, circumvented, challenged or licensed to others. Additionally, the laws of some foreign countries in which our products are or may be developed, manufactured or sold, including various countries in Asia, may not protect our products or proprietary information to the same extent as do the laws of the United States and thus make the possibility of piracy of our technology and products more likely in these countries. We may need to engage in litigation in the future to enforce our intellectual property rights or the rights of our customers, to protect our trade secrets or to determine the validity and scope of proprietary rights of others, including our customers. Such litigation could result in substantial costs and diversion of our resources and could materially and adversely affect our business, financial condition and results of operations.

We have expended and will continue to expend considerable resources in establishing a patent position designed to protect our intellectual property. While our ability to compete is enhanced by our ability to protect our intellectual property, we believe that, in view of the rapid pace of technological change, the combination of the technical experience and innovative skills of our employees may be as important to our business as the legal protection of our patents and other proprietary information.

From time to time, we may desire or be required to renew or to obtain licenses from third parties in order to further develop and effectively market commercially viable products. We cannot be sure that any necessary licenses will be available or will be available on commercially reasonable terms.

The integrated circuit industry is characterized by vigorous pursuit and protection of intellectual property rights, which has resulted in significant and often time consuming and expensive litigation. From time to time, we receive, and may continue to receive in the future, notices that claim we have infringed upon, misappropriated or misused the proprietary rights of other parties. Although we defend these claims vigorously, it is possible that we will not prevail in pending or future lawsuits. In addition, we may be sued in the future by other parties who claim that we have infringed their patents or misappropriated or misused their trade secrets, or who may seek to invalidate one or more of our patents. Any of these claims could materially and adversely affect our business, financial condition and results of operations. Even if claims against us are not valid or successfully asserted, these claims could result in significant costs and a diversion of management and personnel resources to defend. In that event, our business, financial condition and results of operations could also be materially and adversely affected. In any of the pending or future claims or actions asserted against us, we may seek to obtain licenses under a third party's intellectual property rights. However, we may not be able to obtain such licenses on commercially reasonable terms, if at all.

## Competition

The markets for storage and broadband communications devices are intensely competitive and characterized by rapid technological change, evolving standards, short product life cycles and pricing pressures imposed



by high-volume customers. We expect competition to intensify as current competitors expand their product offerings and new competitors enter the market.

We believe that our ability to compete successfully in the rapidly evolving markets for our products depends on a number of factors, including:

- performance, features, quality and price of our products;
- the timing and success of new product introductions by us, our customers and our competitors;
- the emergence of new industry standards;
- our ability to obtain adequate foundry capacity;
- the number and nature of our competitors in a given market; and
- general market and economic conditions.

Our current products face competition from a number of sources. We believe that our principal competitors in the read channel and storage SOC market are Agere Systems and STMicroelectronics. Our primary competitors in the preamplifier market are Agere Systems and Texas Instruments. In the broadband communications market for transceivers, we compete with Broadcom, Intel and National Semiconductor. Our switching products compete against Broadcom and Intel. In the market for system controllers, our competitors include Tundra and PLX Technology, and our WAN communications controllers compete directly with products from companies such as Motorola and PMC-Sierra. In the wireless LAN market, our competitors include Agere Systems, Intel, Intersil, Texas Instruments and Broadcom. In addition, we expect increased competition in the future from other emerging and established companies.

Many of our current competitors and potential competitors have longer operating histories, greater name recognition, access to larger customer bases and significantly greater financial, sales and marketing, manufacturing, distribution, technical and other resources than we do. As a result, they may be able to respond more quickly to changing customer demands or to devote greater resources to the development, promotion and sale of their products than we can. Our current or future competitors may develop and introduce new products that will be priced lower, provide superior performance or achieve greater market acceptance than our products. In addition, in the event of a manufacturing capacity shortage, these competitors may be able to manufacture products when we are unable to do so.

Furthermore, current or potential competitors have established or may establish financial and strategic relationships among themselves or with existing or potential customers or other third parties to increase the ability of their products to address the needs of customers. Accordingly, it is possible that new competitors or alliances among competitors could emerge and rapidly acquire significant market share, which would harm our business.

In addition, many of our customers and potential customers have substantial technological capabilities and financial resources. Some customers have already developed, or in the future may develop, technologies that will compete directly with our products. We may also face competition from suppliers of products based on new or emerging technologies.

Historically, average unit selling prices in the integrated circuit industry in general, and for our products in particular, have decreased over the life of a particular product. We expect that the average unit selling prices of our products will continue to be subject to significant pricing pressures. In order to offset expected declines in the average unit selling prices of our products, we will likely need to reduce the cost of our products. We intend to accomplish this by implementing design changes that lower the cost of manufacturing, assembly and testing by negotiating reduced charges by our foundries as and if volumes increase and by successfully managing our manufacturing, assembly and testing relationships. Because we do not operate our own manufacturing, assembly or testing facilities, we may not be able to reduce our costs as rapidly as companies that operate their own facilities. If we fail to introduce lower cost versions of our products in a timely manner or to successfully manage our manufacturing, assembly and testing relationships, our business would be harmed.

**Management**

Set forth below is certain information regarding the executive officers of Marvell, together with the positions currently held by those persons, as of March 31, 2003.

Name of Officer	Age	Positions Held with Marvell and its Subsidiaries
Sehat Sutardja	41	President, Chief Executive Officer and Co-Chairman of the Board of Marvell Technology Group Ltd.; President, Chief Executive Officer and Director of Marvell Semiconductor, Inc.
Weili Dai	41	Executive Vice President, Corporate Secretary and Director of Marvell Technology Group Ltd.; Executive Vice President, General Manager of the Communications Business Group and Director of Marvell Semiconductor, Inc.
Pantas Sutardja	40	Vice President and Director of Marvell Technology Group Ltd.; Chief Technology Officer and Director of Marvell Semiconductor, Inc.
George Hervey	56	Vice President of Finance and Chief Financial Officer of Marvell Technology Group Ltd.; Vice President of Finance and Chief Financial Officer of Marvell Semiconductor, Inc.

Set forth below is certain information concerning the business experience during the past five years of each of the individuals named above.

*Dr. Sehat Sutardja, Ph.D.*, is a co-founder of Marvell. Dr. Sutardja has served as our President since inception and as our Co-Chairman of the Board and Chief Executive Officer since February 1995. In addition, he has served as President, Chief Executive Officer and a Director of Marvell Semiconductor, Inc. since its inception. Dr. Sutardja holds Master of Science and Ph.D. degrees in Electrical Engineering and Computer Science from the University of California at Berkeley. Dr. Sutardja is the spouse of Weili Dai and the brother of Dr. Pantas Sutardja.

*Weili Dai* is a co-founder of Marvell. Ms. Dai has served as our Vice President and a Director since inception and our Corporate Secretary since June 2000. Ms. Dai was appointed Executive Vice President in 1996. Ms. Dai has also served as Executive Vice President and a Director of Marvell Semiconductor, Inc. since its inception. Ms. Dai has also held the position of General Manager of the Communications Business Group of Marvell Semiconductor, Inc. since 1999. Ms. Dai holds a Bachelor of Science degree in Computer Science from the University of California at Berkeley. Ms. Dai is the spouse of Dr. Sehat Sutardja.

*Dr. Pantas Sutardja, Ph.D.*, is a co-founder of Marvell. Dr. Sutardja has served as our Vice President and a Director since inception and as Vice President of Engineering for Marvell Semiconductor, Inc. from its inception until 1999, when he was appointed Chief Technology Officer. Dr. Sutardja has also been a Director of Marvell Semiconductor, Inc. since its inception. Dr. Sutardja holds Bachelor of Science, Master of Science and Ph.D. degrees in Electrical Engineering and Computer Science from the University of California at Berkeley. Dr. Sutardja is the brother of Dr. Sehat Sutardja.

*George Hervey* joined Marvell in April 2000 as our Vice President of Finance and Chief Financial Officer, and serves in a similar capacity for Marvell Semiconductor, Inc. From March 1997 to April 2000, Mr. Hervey served as Senior Vice President, Chief Financial Officer and Secretary for Galileo Technology Ltd., which Marvell acquired in January 2001. From June 1992 to February 1997, Mr. Hervey was Senior Vice President and Chief Financial Officer of S3 Incorporated, a designer and manufacturer of graphics and video accelerators for personal computers and related peripheral products. Mr. Hervey holds a Bachelor of Science degree in Business Administration from the University of Rhode Island.

## **Employees**

As of March 31, 2003, we had a total of 1,272 employees, of which 807 were in research and development, 238 in sales and marketing, 110 in operations and 117 in general administration. Our employees are not represented by any collective bargaining agreements, and we have not experienced any work stoppage. We consider our relations with our employees to be good.

## **Item 2.        *Properties***

As of March 31, 2003, our primary facility, housing research and design functions as well as elements of sales, marketing, administration and operations, is located in Sunnyvale, California. This facility consists of approximately 213,000 square feet and has a lease term expiring in March 2006. In addition to this property, we lease approximately 92,000 square feet in Israel for research and design, administration and operations, and approximately 20,000 square feet in Singapore for operations, sales, marketing and administration. We also lease smaller facilities in Bermuda, China, Germany, Japan, Taiwan, the United Kingdom, and the United States, which are occupied by administrative offices, sales offices, design centers and field application engineers. Based upon our estimates of future hiring, we believe that our current facilities will be adequate to meet our requirements through fiscal 2004.

We also lease two buildings in California, totaling approximately 72,000 square feet, which are unoccupied as of March 31, 2003. We are attempting to secure subtenants for these buildings. For further discussion of these two facilities and their effect on our financial condition and results of operations, see “Item 7 — Management’s Discussion and Analysis of Financial Condition and Results of Operations” and Note 11 to our Consolidated Financial Statements in “Item 8 — Financial Statements and Supplementary Data.”

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

On July 31, 2001, a putative class action suit was filed against two investment banks that participated in the underwriting of our initial public offering, or IPO, on June 29, 2000. That lawsuit, which did not name Marvell or any of our officers or directors as defendants, was filed in the United States District Court for the Southern District of New York. Plaintiffs allege that the underwriters received “excessive” and undisclosed commissions and entered into unlawful “tie-in” agreements with certain of their clients in violation of Section 10(b) of the Securities Exchange Act of 1934. Thereafter, on September 5, 2001, a second putative class action was filed in the Southern District of New York relating to our IPO. In this second action, plaintiffs named three underwriters as defendants and also named as defendants Marvell and two of our officers, one of whom is also a director. Relying on many of the same allegations contained in the initial complaint in which Marvell was not named as a defendant, plaintiffs allege that the defendants violated various provisions of the Securities Act of 1933 and the Securities Exchange Act of 1934. In both actions, plaintiffs seek, among other items, unspecified damages, pre-judgment interest and reimbursement of attorneys’ and experts’ fees. These two actions relating to our IPO have been consolidated with hundreds of other lawsuits filed by plaintiffs against approximately 40 underwriters and approximately 300 issuers across the United States. Defendants in the consolidated proceedings moved to dismiss the actions. In February 2003, the trial court issued its ruling on the motions, granting the motions in part, and denying them in part. Thus, the cases may proceed against the underwriters and us as to alleged violations of section 11 of the Securities Act of 1933 and section 10(b) of the Securities Exchange Act of 1934. Claims against the individual officers have been voluntarily dismissed with prejudice by agreement with plaintiffs. These claims and any resulting litigation could result in substantial costs and could divert the attention and resources of our management.

On September 12, 2001, Jasmine Networks, Inc. (“Jasmine”) filed a lawsuit in the Santa Clara County Superior Court asserting claims against our personnel and us for improperly obtaining and using information and technologies during the course of the negotiations with Company personnel regarding the potential acquisition of Jasmine by Marvell. The lawsuit claims that our officers improperly obtained and used such information and technologies after we signed a non-disclosure agreement with Jasmine. We believe the claims asserted against our officers and us are without merit and intend to defend all claims vigorously. Based on

currently available information, we do not believe that the ultimate disposition of this lawsuit will have a material adverse impact on our business or financial condition.

We are also party to other claims and litigation proceedings arising in the normal course of business. Although the legal responsibility and financial impact with respect to such claims and litigation cannot currently be ascertained, we do not believe that these matters will result in our payment of monetary damages, net of any applicable insurance proceeds, that, in the aggregate, would be material in relation to our consolidated financial position or results of operations. There can be no assurance that these matters will be resolved without costly litigation, in a manner that is not adverse to our financial position, results of operations or cash flows or without requiring royalty payments in the future which may adversely impact gross margins.

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

No matters were submitted to a vote of security holders during the quarter ended January 31, 2003.

**PART II**

**Item 5.           Market for Registrant’s Common Equity and Related Stockholder Matters**

**Market Information**

Our shares of common stock are traded on the Nasdaq National Market under the symbol “MRVL.” Our common stock began trading on June 27, 2000, upon completion of our initial public offering. The following table shows, for the periods indicated, the high and low intra-day sale prices for our common stock on the Nasdaq National Market.

	Fiscal Year 2003		Fiscal Year 2002	
	High	Low	High	Low
First Quarter	\$43.95	\$30.69	\$42.00	\$ 7.94
Second Quarter	\$41.24	\$15.23	\$32.75	\$19.00
Third Quarter	\$22.21	\$11.51	\$34.88	\$12.51
Fourth Quarter	\$24.33	\$17.06	\$46.24	\$22.03

As of March 31, 2003, the approximate number of record holders of our common stock was 534.

**Dividends**

We have never declared or paid a cash dividend on our common stock and do not anticipate paying any cash dividends in the foreseeable future.

**Item 6. Selected Financial Data**

The following selected financial data should be read together with “Item 7 — Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Item 8 — Financial Statements and Supplementary Data” contained elsewhere in this Form 10-K.

	Years Ended January 31,				
	2003	2002	2001	2000	1999
(In thousands, except per share amounts)					
<b>Consolidated Statement of Operations Data:</b>					
Net revenue	\$ 505,285	\$ 288,795	\$ 143,894	\$81,375	\$21,253
Operating costs and expenses:					
Cost of goods sold(1)	233,039	130,807	67,047	33,773	10,103
Research and development(2)	145,722	93,422	35,152	14,452	5,837
Selling and marketing(3)	48,491	40,170	21,686	10,436	4,631
General and administrative(4)	14,303	13,191	6,185	3,443	1,190
Amortization of stock-based compensation	7,491	15,022	8,259	2,175	42
Amortization and write-off of goodwill and acquired intangible assets(5)	107,645	418,032	8,031	—	—
Acquired in-process research and development(5)	—	—	234,874	—	—
Facilities consolidation charge	19,562	—	—	—	—
Total operating costs and expenses	576,253	710,644	381,234	64,279	21,803
Operating income (loss)	(70,968)	(421,849)	(237,340)	17,096	(550)
Interest and other income, net	7,318	9,994	4,559	330	74
Income (loss) before income taxes	(63,650)	(411,855)	(232,781)	17,426	(476)
Provision for income taxes	8,524	3,299	2,339	4,356	483
Net income (loss)	\$ (72,174)	\$ (415,154)	\$ (235,120)	\$13,070	\$ (959)
Basic net income (loss) per share	\$ (0.61)	\$ (3.63)	\$ (3.55)	\$ 0.32	\$ (0.03)
Diluted net income (loss) per share	\$ (0.61)	\$ (3.63)	\$ (3.55)	\$ 0.16	\$ (0.03)
Weighted average shares — basic	119,240	114,353	66,259	41,094	32,470
Weighted average shares — diluted	119,240	114,353	66,259	81,545	32,470
<b>Consolidated Balance Sheet Data:</b>					
Cash, cash equivalents and short-term investments	\$ 265,228	\$ 250,244	\$ 224,063	\$16,600	\$ 5,515
Working capital	316,720	254,898	215,787	22,611	6,865
Total assets	2,100,296	2,091,055	2,447,486	46,500	16,563
Notes payable and capital lease obligations, net of current portion	13,755	10,017	—	36	897
Mandatorily redeemable convertible preferred stock	—	—	—	22,353	17,524
Total shareholders’ equity (deficit)	1,950,138	1,989,727	2,356,666	7,940	(9,350)

(1) Excludes amortization of stock-based compensation of \$339, \$298, \$416, \$11 and \$0 in fiscal 2003, 2002, 2001, 2000 and 1999.

(2) Excludes amortization of stock-based compensation of \$4,732, \$9,837, \$3,367, \$1,373 and \$27 in fiscal 2003, 2002, 2001, 2000 and 1999.

- (3) Excludes amortization of stock-based compensation of \$1,605, \$2,655, \$3,997, \$211 and \$4 in fiscal 2003, 2002, 2001, 2000 and 1999.
- (4) Excludes amortization of stock-based compensation of \$815, \$2,232, \$479, \$580 and \$11 in fiscal 2003, 2002, 2001, 2000 and 1999.
- (5) In the fourth quarter of fiscal 2001, we acquired Galileo Technology Ltd. in a transaction recorded as a purchase. In connection with this acquisition, we recorded an in-process research and development charge of \$234.9 million and recorded goodwill and intangible assets of \$2.1 billion, which, prior to the adoption of SFAS 142 in February 2002, were all being amortized over their estimated economic lives by charges to the statement of operations.

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

**Overview**

We are a leading global semiconductor provider of complete broadband communications and storage solutions. The Company's diverse product portfolio includes switching, transceiver, wireless PC connectivity, gateways, communications controller, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, and storage networking. We were founded in 1995. We are a fabless integrated circuit company, which means that we rely on independent, third-party contractors to perform manufacturing, assembly and test functions. This approach allows us to focus on designing, developing and marketing our products and significantly reduces the amount of capital we need to invest in manufacturing products. In January 2001, we acquired Galileo Technology Ltd. (now Marvell Semiconductor Israel Ltd, or MSIL) in a stock-for-stock transaction for aggregate consideration of approximately \$2.5 billion. MSIL developed high-performance internetworking and switching products for the broadband communications market. The acquisition was accounted for using the purchase method of accounting, and the operating results of MSIL have been included in our consolidated financial statements from the date of acquisition.

In the communications market, we offer transceiver products, switching products, internetworking products and wireless local area network products. Our primary customers for our communications products are manufacturers of high speed networking equipment.

In the storage market, our products include read channel devices, SOCs and preamplifiers. Our customers for our storage products are manufacturers of hard disk drives for the enterprise, desktop and mobile computer markets and the emerging consumer applications market. The storage market is highly competitive and is dominated by a small number of large companies. These companies have historically experienced marginal profit levels from sales of their storage products and are under enormous pricing pressure from their customers, which they typically pass through to their integrated circuit suppliers.

Historically, a relatively small number of customers have accounted for a significant portion of our revenue. In fiscal 2003, approximately 67% of our net revenue was derived from sales to five significant customers, each of whom individually accounted for 10% or more of our net revenue during this period. In fiscal 2002, approximately 55% of our net revenue was derived from sales to four significant customers, and in fiscal 2001, approximately 67% of our net revenue was derived from sales to three significant customers. We expect to continue to experience significant customer concentration in future periods. In addition, a significant portion of our sales are made to customers located outside of the United States, primarily in Asia. Sales to customers in Asia represented approximately 87%, 83% and 92% of our net revenue for the years ended January 31, 2003, 2002 and 2001, respectively. Because many manufacturers and manufacturing subcontractors of communications and storage devices are located in Asia, we expect that a significant portion of our revenue will continue to be represented by sales to customers in that region. Substantially, all of our sales to date have been denominated in United States dollars.

Our sales have historically been made on the basis of purchase orders rather than long-term agreements. In addition, the sales cycle for our products is long, which may cause us to experience a delay between the time we incur expenses and the time revenue is generated from these expenditures. We expect to increase our research and development, selling and marketing, and general and administrative expenditures as we seek to

expand our operations. We anticipate that the rate of new orders may vary significantly from quarter to quarter. Consequently, if anticipated sales and shipments in any quarter do not occur when expected, expenses and inventory levels could be disproportionately high, and our operating results for that quarter and future quarters may be adversely affected.

Our fiscal year is the 52- or 53-week period ending on the Saturday closest to January 31. In a 52-week year, each fiscal quarter consists of 13 weeks. The additional week in a 53-week year is added to the fourth quarter, making such quarter consist of 14 weeks. Fiscal year 2003 was comprised of 52 weeks. Fiscal year 2002 was comprised of 53 weeks, and fiscal year 2001 was comprised of 52 weeks. For presentation purposes, our financial statements and notes and this “Management’s Discussion and Analysis of Financial Condition and Results of Operations” refer to January 31 as our year-end.

### **Critical Accounting Estimates**

The preparation of 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 disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates, and such differences could affect the results of operations reported in future periods. We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

*Revenue recognition.* We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable and collection is reasonably assured. Under these criteria, product revenue is generally recognized upon shipment of product to customers, net of accruals for estimated sales returns and allowances. However, some of our sales are made through distributors under agreements allowing for price protection and rights of return on product unsold by the distributors. Product revenue on sales made through distributors with rights of return is deferred until the distributors sell the product to end-customers. Additionally, collection is not deemed to be “reasonably assured” if customers receive extended payment terms. As a result, revenue on sales to customers with payment terms substantially greater than our normal payment terms is deferred and is recognized as revenue as the payments become due. At January 31, 2003, revenue of \$16.0 million with an associated gross profit of \$12.5 million was deferred. At January 31, 2002, revenue of \$14.8 million with an associated gross profit of \$8.9 million was deferred.

Our provision for estimated price protection, sales returns and allowances on product sales is recorded in the same period the related revenues are recorded. These estimates are based on historical sales returns, analysis of credit memo data and other known factors. If actual price protection granted to distributors or product returns exceeds our estimates, additional reductions of revenue would result. Our total allowance for sales returns was \$1.4 million and \$0.6 million as of January 31, 2003 and 2002, respectively. Actual future returns could be different than the returns allowance established.

We also enter into development agreements with some of our customers. Development revenue is recognized under the percentage-of-completion method, with the associated costs included in research and development expense. We estimate the percentage-of-completion of our development contracts based on an analysis of progress toward completion, which is measured using input measures such as the percentage of completion.

*Accounting for income taxes.* To prepare our consolidated financial statements, we estimate our income taxes in each of the jurisdictions in which we operate. This process involves estimating our actual tax exposure together with assessing temporary differences resulting from the differing treatment of certain items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included within our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and, to the extent we believe that recovery is not likely, we must establish a valuation allowance.

Significant management judgment is required in determining deferred tax assets and liabilities and any valuation allowance recorded against net deferred tax assets. We have recorded a valuation allowance of \$11.1 million against our net deferred tax assets as of January 31, 2003, due to uncertainties related to our ability to utilize some of our deferred tax assets before they expire. The valuation allowance is based on our estimates of taxable income in the jurisdictions in which we operate and the period over which our deferred tax assets will be recoverable.

To estimate our tax provision, we consider our taxable income in the various tax jurisdictions in which we operate. We enjoy tax holidays in Bermuda, Singapore and Israel, which expire at various dates and which are subject to our compliance with various terms and conditions set by the local tax authorities. In the United States, we pay income tax on the income of our U.S. subsidiary, Marvell Semiconductor, Inc., and may be subject to the U.S. income tax and on any income that is considered to be effectively connected with the conduct of a trade or business in the United States. The determination of whether the income of a foreign corporation is effectively connected with the conduct of a trade or business in the United States requires significant management judgment, as it involves a consideration of all the facts and circumstances and the application of legal standards that are uncertain. Our position is that our foreign business operations do not generate any income that is effectively connected with a United States trade or business. We recorded a tax provision of \$8.5 million in the year ended January 31, 2003.

In the event that actual results differ from these estimates or we adjust these estimates in future periods we may need to record additional income tax expense or establish an additional valuation allowance, which could materially impact our financial position and results of operations.

*Accounts receivable reserves.* We perform ongoing credit evaluations of our customers and adjust credit limits based upon payment history and the customers' current credit worthiness, as determined by our review of their current credit information. We continuously monitor payments from our customers and maintain a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically been within our expectations and the provisions established, we cannot guarantee that we will continue to experience the same credit loss rates that we have in the past. Since our accounts receivable are concentrated in a relatively few number of customers, a significant change in the liquidity or financial condition of any one of these customers could have a material adverse impact on the realization of our accounts receivable and our results of operations.

*Inventory reserves.* We value our inventory at the lower of the actual cost of the inventory or the current estimated market value of the inventory, cost being determined under the first-in, first-out method. We regularly review inventory quantities on hand and record a provision for excess and obsolete inventory based primarily on our estimated forecast of product demand and production requirements. Demand for our products can fluctuate significantly from period to period. A significant decrease in demand could result in an increase in the amount of excess inventory quantities on hand. In addition, our industry is characterized by rapid technological change, frequent new product development and rapid product obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Additionally, our estimates of future product demand may prove to be inaccurate, in which case we may have understated or overstated the provision required for excess and obsolete inventory. In the future, if our inventory is determined to be overvalued, we would be required to recognize such costs in our cost of goods sold at the time of such determination. Likewise, if our inventory is determined to be undervalued, we may have over-reported our cost of goods sold in previous periods and would be required to recognize such additional operating income at the time of sale. Therefore, although we make every effort to ensure the accuracy of our forecasts of future product demand, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our results of operations.

*Valuation of long-lived assets, intangible assets and goodwill.* We assess the impairment of long-lived assets, intangible assets and goodwill whenever events or changes in circumstances indicate that the carrying value of such assets may not be recoverable. We are also required to perform annual assessments of goodwill impairment. Factors we consider important which could trigger an impairment review include (i) significant underperformance relative to expected historical or projected future operating results, (ii) significant changes



in the manner of our use of the acquired assets or the strategy for our overall business, (iii) significant negative industry or economic trends, (iv) a significant decline in our stock price for a sustained period and (v) a significant change in our market capitalization relative to our net book value. An impairment loss is recognized if the sum of the expected future cash flows (undiscounted and before interest) from the use of the asset is less than the net book value of the asset. The amount of the impairment loss will generally be measured as the difference between net book values of the asset and its estimated fair value.

In July 2001, the FASB issued Statement of Financial Accounting Standards No. 142 ("SFAS 142"), Goodwill and Other Intangible Assets. SFAS 142 requires, among other things, a goodwill impairment test within six months of adoption and annual impairment tests thereafter. We adopted SFAS 142 in February 2002. As required by SFAS 142, we ceased amortizing goodwill of \$1.3 billion beginning February 1, 2002 and have reclassified the carrying value at January 31, 2002 of the acquired workforce of \$10.4 million into goodwill because this intangible asset did not arise from contractual or other legal rights and cannot be separated from the acquired entity and sold, transferred, licensed, rented or exchanged. In January 2003, we decided to no longer use the Galileo trade name in selling and marketing activities going forward and changed the name of our Israel subsidiary from Galileo Technology Ltd. to Marvell Semiconductor Israel Ltd. As a result, we wrote-off the remaining \$22.4 million net book value of the trade name in the fourth quarter of fiscal 2003. The impairment test required upon adoption of SFAS 142 and annual impairment review were completed and did not identify any impairment of goodwill. We plan to perform an annual impairment review during the fourth quarter of each year, beginning in fiscal 2004, or more frequently if we believe indicators of impairment exist.

*Facilities consolidation charge.* During fiscal 2003, we recorded a total of \$19.6 million of charges associated with costs of consolidation our facilities. These charges included \$12.6 million in lease abandonment charges relating to the consolidation of our facilities in the Silicon Valley into one location. The lease abandonment charge includes the remaining lease commitments of these facilities reduced by the estimated sublease income throughout the duration of the lease term. The facilities consolidation charge also includes \$6.0 million consisting of the write-down of certain property and leasehold improvements associated with the abandoned facilities. Additionally, we incurred charges of \$1.0 million through April 30, 2002 as a result of duplicate lease and other costs associated with the dual occupation of its current and abandoned facilities. We are currently attempting to secure subtenants for the remainder of our lease terms for these facilities and estimate that we will have subleases in place by the fourth quarter of fiscal 2004. The facilities consolidation charge is an estimate as of January 31, 2003 and may change as we obtain subleases for the abandoned facilities and sublease income is known. Should there be further changes in the real estimate market conditions or should it take longer than expected to find a suitable tenant to sublease the remaining vacant facilities, adjustments to the facilities consolidation charge may be necessary in future periods based upon then current actual events and circumstances.

*Litigation costs.* From time to time, we are involved in legal actions arising in the ordinary course of business. There can be no assurance these actions or other third party assertions will be resolved without costly litigation, in a manner that is not adverse to our financial position, results of operations or cash flows or without requiring royalty payments in the future which may adversely impact gross margins. We are aggressively defending these litigation matters and believe no material adverse outcome will result. However, given uncertainties associated with any litigation, if our assessments prove to be wrong, or if additional information becomes available such that we estimate that there is a possible loss or possible range of loss associated with these contingencies then we would record the minimum estimated liability, which could materially impact our results of operations and financial position.

*Valuation of equity investments.* We hold minority interests in companies. We record an investment impairment charge when we believe an investment has experienced a decline in value that is other than temporary. Future adverse changes in market conditions or poor operating results of underlying investments could result in losses or an inability to recover the carrying value of the investments, thereby possibly requiring an impairment charge in the future. The recorded value of our equity investments at January 31, 2003 is \$19.2 million.

## Results of Operations

The following table sets forth information derived from our consolidated statements of operations expressed as a percentage of net revenue.

	Years Ended January 31,		
	2003	2002	2001
Net revenue	100.0%	100.0%	100.0%
Operating costs and expenses:			
Cost of goods sold	46.1	45.3	46.6
Research and development	28.8	32.3	24.4
Selling and marketing	9.6	13.9	15.1
General and administrative	2.8	4.6	4.3
Amortization of stock-based compensation	1.5	5.2	5.7
Amortization and write-off of goodwill and acquired intangible assets	21.3	144.8	5.6
Acquired in-process research and development	—	—	163.2
Facilities consolidation charge	3.9	—	—
Total operating costs and expenses	114.0	246.1	264.9
Operating income (loss)	(14.0)	(146.1)	(164.9)
Interest and other income, net	1.4	3.4	3.1
Income (loss) before income taxes	(12.6)	(142.7)	(161.8)
Provision for income taxes	1.7	1.1	1.6
Net income (loss)	(14.3)%	(143.8)%	(163.4)%

### Years Ended January 31, 2003 and 2002

**Net Revenue.** Net revenue consists primarily of product revenue from sales of our semiconductor devices, and to a much lesser extent, development revenue derived from development contracts with our customers. Net revenue is gross revenue, net of accruals for estimated sales returns and allowances. Net revenue was \$505.3 million for the year ended January 31, 2003 compared to \$288.8 million for the year ended January 31, 2002. The increases in net revenue reflect a significant increase in volume shipments of our storage and Gigabit Ethernet products during the year ended January 31, 2003, primarily due to increased acceptance of our SOC storage products which began shipping in volume in the second half of fiscal 2002 and continued adoption of the Gigabit Ethernet products as a replacement for Fast Ethernet products. Revenue from storage products was \$284.8 million in fiscal 2003 compared to \$164.0 million in fiscal 2002. Revenue from communications products was \$220.5 million in fiscal 2003 compared to \$124.8 million in fiscal 2002. Revenue derived from development contracts increased in fiscal 2003, but represented less than 10% of net revenues for each year and decreased as a percentage of net revenues in fiscal 2003 compared to fiscal 2002. We expect that revenue from storage products for fiscal 2004 will increase from the level of revenue from storage products we reported in fiscal 2003 due to increases in shipments and volume production of our storage SOCs, which have been widely adopted by the mobile computer sector and which we expect to be adopted by the desktop computer sector during this fiscal year, and production volume shipments of new desktop design wins. In addition, we expect growth in revenue from communications products in fiscal 2004 compared to fiscal 2003 primarily due to increases in shipments of our Gigabit Ethernet products, which we expect will continue to be adopted as the replacement for Fast Ethernet products, as well as new revenue opportunities for our WLAN products.

**Cost of Goods Sold.** Cost of goods sold consists primarily of the costs of manufacturing, assembly and test of integrated circuit devices and related overhead costs, and compensation and associated costs relating to manufacturing support, logistics and quality assurance personnel. Gross margin, which is calculated as net

revenue less cost of goods sold, as a percentage of net revenue, decreased to 53.9% in the year ended January 31, 2003 from 54.7% in the year ended January 31, 2002. The decrease in gross margin in fiscal 2003 compared to fiscal 2002 was primarily due to a product mix change which included production ramps of large volume, lower margin desktop computer products in fiscal 2003 compared to fiscal 2002. In addition, higher period costs related to increased inventory reserves of \$1.8 million for older, slower-moving products contributed to a decrease in gross margins in fiscal 2003 compared to fiscal 2002. Our gross margins are primarily driven by product mix; however, our margins may fluctuate in future periods due to, among other things, changes in the mix of products sold, increased pricing pressures from our customers and competitors, and changes in the amount of development revenue recognized.

*Research and Development.* Research and development expense consists primarily of compensation and associated costs relating to development personnel, prototype costs, depreciation and amortization expense, and allocated occupancy costs for these operations. Research and development expense was \$145.7 million, or 28.8% of net revenue, for the year ended January 31, 2003 compared to \$93.4 million, or 32.3% of net revenue, for the year ended January 31, 2002. The increase in research and development expense in absolute dollars in fiscal 2003 compared to fiscal 2002 was primarily due to the hiring of additional development personnel and personnel related to our acquisition of SysKconnect, which resulted in an increase in salary and related costs of \$18.2 million, increased costs of \$14.2 million for prototype and related product tape-out costs arising from an increase in new product initiatives at more costly lower process geometries, increased depreciation, amortization and software maintenance expense of \$10.0 million arising from purchases of property, equipment, technology licenses and computer aided design software, and other allocated expenses of \$7.7 million related to our expanding operations. We expect that research and development expense will increase in absolute dollars in future periods as we develop new products, migrate to lower process geometries, expand into new markets and technologies, and hire additional personnel.

*Selling and Marketing.* Selling and marketing expense consists primarily of compensation and associated costs relating to sales and marketing personnel, sales commissions, promotional and other marketing expenses, and allocated occupancy costs for these operations. Selling and marketing expense was \$48.5 million, or 9.6% of net revenue, for the year ended January 31, 2003 compared to \$40.2 million, or 13.9% of net revenue, for the year ended January 31, 2002. The increase in selling and marketing expense in absolute dollars in fiscal 2003 compared to fiscal 2002 was primarily due to the hiring of additional sales and marketing personnel and personnel related to our acquisition of SysKconnect, which resulted in an increase in salary and related costs of \$6.8 million, increased other costs of \$1.6 million related to expanding our sales and marketing activities as we broaden our customer and product base, and increased facility and other allocated expenses of \$1.3 million related to our expanding operations, partially offset by a reduction in commission expense of \$2.0 million. The reduction in commission expense was due to the transition of all of our storage customers to a direct selling basis as of the end of the first quarter of fiscal 2003 instead of using outside sales representatives. We expect that selling and marketing expense will increase in absolute dollars in future periods as we hire additional sales and marketing personnel and expand our sales and marketing efforts into emerging product markets such as consumer applications.

*General and Administrative.* General and administrative expense consists primarily of compensation and associated costs relating to general and administrative personnel, fees for professional services and allocated occupancy costs for these operations. General and administrative expense was \$14.3 million, or 2.8% of net revenue, for the year ended January 31, 2003 compared to \$13.2 million, or 4.6% of net revenue, for the year ended January 31, 2002. The increase in general and administrative expense in absolute dollars in fiscal 2003 compared to fiscal 2002 was primarily due to the hiring of additional administrative personnel which resulted in an increase in salary and related costs of \$0.5 million and other professional fees of \$0.5 million due to our expanding operations and attorney fees associated with our on-going legal proceedings. We expect that general and administrative expense will increase in absolute dollars in future periods due to increased professional fees and additional personnel to support expansion of our operations through growth and acquisitions.

*Amortization of Stock-Based Compensation.* We have recorded deferred stock-based compensation in connection with the grant of stock options to our employees and directors prior to our initial public offering of

common stock, in connection with the assumption of stock options as a result of our acquisition of MSIL, and in connection with the grant of stock options as a result of our acquisition of SysKonnnect. Deferred stock-based compensation is being amortized using an accelerated method over the remaining option vesting period. Amortization of stock-based compensation was \$7.5 million, or 1.5% of net revenue, for the year ended January 31, 2003 compared to \$15.0 million, or 5.2% of net revenue, for the year ended January 31, 2002. The decrease in amortization expense in both absolute dollars and percentage of net revenue of fiscal 2003 compared to fiscal 2002 primarily resulted from a reduced balance of deferred stock-based compensation being amortized in fiscal 2003 compared to fiscal 2002.

*Amortization and Write-Off of Goodwill and Acquired Intangible Assets.* In connection with the acquisition of MSIL in the fourth quarter of fiscal 2001, we recorded \$1.7 billion of goodwill and \$434.7 million of acquired intangible assets. Goodwill was initially amortized over its estimated economic life of five years, and acquired intangible assets are being amortized over their estimated economic lives. In accordance with Statement of Financial Accounting Standards No. 142 ("SFAS 142"), Goodwill and Other Intangible Assets, we ceased amortizing goodwill of \$1.3 billion beginning February 1, 2002 and have reclassified the carrying value at January 31, 2002 of the acquired workforce of \$10.4 million into goodwill because this intangible asset did not arise from contractual or other legal rights and cannot be separated from the acquired entity and sold, transferred, licensed, rented or exchanged. In January 2003, we decided to no longer use the Galileo trade name in selling and marketing activities going forward. As a result, we wrote-off the remaining \$22.4 million net book value of the trade name in the fourth quarter of fiscal 2003. The impairment test required upon adoption of SFAS 142 and annual impairment review were completed and did not identify any impairment of goodwill. We plan to perform an annual impairment review during the fourth quarter of each year or more frequently if we believe indicators of impairment exist. Goodwill and acquired intangible asset amortization expense and write-off of trade name was \$107.6 million, or 21.3% of net revenue, for the year ended January 31, 2003 compared to \$418.0 million, or 144.8% of net revenue, for the year ended January 31, 2002. The decrease in goodwill and acquired intangible assets amortization expense in absolute dollars in fiscal 2003 compared to fiscal 2002 was primarily due to goodwill no longer being required to be amortized in fiscal 2003 partially offset by the \$22.4 million write-off of the trade name in fiscal 2003.

*Facilities Consolidation Charge.* During fiscal 2003, we recorded a \$19.6 million charge associated with costs of consolidation of our facilities. This charge included \$12.6 million in lease abandonment charges relating to the consolidation of our three facilities in the Silicon Valley into one location. This charge includes the remaining lease commitments of these facilities reduced by the estimated sublease income throughout the duration of the lease term. Facilities consolidation charge also includes \$6.0 million associated with property and leasehold improvements relating to the abandoned facilities. We also incurred charges of \$1.0 million through April 30, 2002 as a result of duplicate lease and other costs associated with the dual occupation of our current and abandoned facilities. The facilities consolidation charge is an estimate as of January 31, 2003 and may change as we obtain subleases for the abandoned facilities and sublease income is known. At January 31, 2003, cash payments of \$3.2 million had been made in connection with this charge, and \$15.4 million had been accrued and is payable through 2010.

*Interest and Other Income, Net.* Interest and other income, net consists primarily of interest earned on cash, cash equivalent and short-term investment balances, offset by interest paid on capital lease obligations. Interest and other income, net was \$7.3 million for the year ended January 31, 2003 compared to \$10.0 million for the year ended January 31, 2002. The decrease in interest and other income, net in fiscal 2003 compared to fiscal 2002 was primarily due to an overall decline in interest rates on comparable invested cash balances and an increase in interest expense on capital lease obligations, partially offset by realized gains of \$1.6 million on the sale of marketable securities in fiscal 2003 versus \$1.2 million of realized gains on the sale of marketable securities in fiscal 2002.

*Provision for Income Taxes.* Our effective tax rate was (13.4)% for fiscal 2003 compared to (1.0)% for fiscal 2002. For fiscal years 2003 and 2002, the effective rates were both affected by stock-based compensation and non-deductible expenses related to the acquisition of MSIL in the fourth quarter of fiscal 2001, which was recorded using purchase accounting. However, the acquisition-related expenses in fiscal 2002 created a larger

loss than the fiscal 2003 acquisition-related expenses. Additionally, in fiscal year 2003 income earned in locations outside the US were taxed at lower income tax rates.

On January 21, 2001, we acquired MSIL. MSIL's Israeli operations have been granted Approved Enterprise Status by the Israeli government under the Law for the Encouragement of Capital Investments, 1959 (the "Investment Law"). The Approved Enterprise Status provides a tax holiday on undistributed income derived from operations within certain "development regions" in Israel. This tax holiday is conditional upon our fulfillment of the conditions stipulated by the Investment Law, regulations published thereunder and the instruments of approval for the specific investment in Approved Enterprises. As the tax holidays expire, we expect that we will start paying income tax on our operations within these development regions. Some of our regional tax holidays have already expired and we are currently paying income taxes in these regions.

#### **Years Ended January 31, 2002 and 2001**

*Net Revenue.* Net revenue consists primarily of product revenue from sales of our semiconductor devices, and to a much lesser extent, development revenue derived from development contracts with our customers. Net revenue is gross revenue, net of accruals for estimated sales returns and allowances. Net revenue was \$288.8 million for the year ended January 31, 2002 compared to \$143.9 million for the year ended January 31, 2001. The increase in net revenue reflects a significant increase in volume shipments of our communications products during the year ended January 31, 2002, in part due to our acquisition of MSIL. The increase in net revenue also reflects the commencement of volume shipments of our SOC storage products during the year ended January 31, 2002. Revenue from communications products totaled \$124.8 million in fiscal 2002 compared to \$21.0 million in fiscal 2001. Revenue from storage products was \$164.0 million in fiscal 2002 compared to \$122.9 million in fiscal 2001. Revenue derived from development contracts increased sequentially during fiscal 2002 and 2001, but represented less than 10% of our net revenues for each year.

*Cost of Goods Sold.* Cost of goods sold consists primarily of the costs of manufacturing, assembly and test of integrated circuit devices and related overhead costs, and compensation and associated costs relating to manufacturing support, logistics and quality assurance personnel. Gross margin, which is calculated as net revenue less cost of goods sold, as a percentage of net revenue, was 54.7% in the year ended January 31, 2002 compared to 53.4% in the year ended January 31, 2001. The increase in gross margin in fiscal 2002 compared to fiscal 2001 was primarily due to higher margins on our storage products, which resulted from improved manufacturing yields in 2002, as well as a shift in product mix to newer, higher-margin products such as our Gigabit Ethernet transceivers. Also contributing to the increase in gross margin was an increase in the amount of development revenue recognized in fiscal 2002 compared to fiscal 2001. The costs associated with contracted development work are included in research and development expense. Our gross margins are primarily driven by product mix; however, our margins may also fluctuate in future periods due to, among other things, increased pricing pressures from our customers and competitors and changes in the amount of development revenue recognized.

*Research and Development.* Research and development expense consists primarily of compensation and associated costs relating to development personnel, prototype costs, depreciation and amortization expense, and allocated occupancy costs for these operations. Research and development expense was \$93.4 million, or 32.3% of net revenue, for the year ended January 31, 2002 compared to \$35.2 million, or 24.4% of net revenue, for the year ended January 31, 2001. The increase in research and development expense in absolute dollars in fiscal 2002 compared to fiscal 2001 was primarily due to the hiring of additional development personnel and the addition of MSIL's development personnel which resulted in an increase in salary and related costs of \$32.1 million, increased costs of \$4.7 million for prototype and related product tape-out costs for new product initiatives, increased depreciation and amortization expense of \$8.2 million arising from purchases of property, equipment and technology licenses and the additional depreciation expense recorded on Galileo's property and equipment, and increased facility and other allocated expenses of \$5.9 million related to our expanding operations.

*Selling and Marketing.* Selling and marketing expense consists primarily of compensation and associated costs relating to sales and marketing personnel, sales commissions, promotional and other marketing expenses, and allocated occupancy costs for these operations. Selling and marketing expense was \$40.2 million, or 13.9% of net revenue, for the year ended January 31, 2002 compared to \$21.7 million, or 15.1% of net revenue, for the year ended January 31, 2001. The increase in selling and marketing expense in absolute dollars in fiscal 2002 compared to fiscal 2001 was primarily due to the hiring of additional sales and marketing personnel and the addition of MSIL's sales and marketing personnel which resulted in an increase in salary and related costs of \$9.7 million, increased sales commissions of \$2.4 million, and increased facility and other allocated expenses of \$3.5 million related to our expanding operations.

*General and Administrative.* General and administrative expense consists primarily of compensation and associated costs relating to administrative personnel, fees for professional services and allocated occupancy costs for these operations. General and administrative expense was \$13.2 million, or 4.6% of net revenue, for the year ended January 31, 2002 compared to \$6.2 million, or 4.3% of net revenue, for the year ended January 31, 2001. The increase in general and administrative expense in absolute dollars in fiscal 2002 compared to fiscal 2001 was primarily due to the hiring of additional administrative personnel and the addition of MSIL's administrative personnel which resulted in an increase in salary and related costs of \$3.3 million and increased legal and other professional fees of \$2.0 million due to our expanding operations and attorney fees associated with our on-going legal proceedings.

*Amortization of Stock-Based Compensation.* In connection with the grant of stock options to our employees and directors prior to our initial public offering of common stock and in connection with the assumption of stock options as a result of our acquisition of Galileo, we have recorded deferred stock-based compensation. Deferred stock-based compensation is being amortized using an accelerated method over the remaining option vesting periods. Amortization of stock-based compensation was \$15.0 million, or 5.2% of net revenue, for the year ended January 31, 2002 compared to \$8.3 million, or 5.7% of net revenue, for the year ended January 31, 2001. The increase in amortization expense in absolute dollars in fiscal 2002 compared to fiscal 2001 primarily resulted from additional amounts of deferred stock-based compensation being recorded in the fourth quarter of fiscal 2001 due to the assumption of stock options in connection with our acquisition of MSIL.

*Amortization of Goodwill and Acquired Intangible Assets.* In connection with our acquisition of MSIL in the fourth quarter of fiscal 2001, we recorded \$1.7 billion of goodwill and \$434.7 million of acquired intangible assets. Goodwill was amortized over its estimated economic life of five years, and acquired intangible assets are amortized over their estimated economic lives of five to ten years. Goodwill and acquired intangible asset amortization expense was \$418.0 million, or 144.8% of net revenue, for the year ended January 31, 2002 compared to \$8.0 million, or 5.6% of net revenue, for the year ended January 31, 2001. The increase in goodwill and acquired intangible asset amortization expense in absolute dollars in fiscal 2002 compared to fiscal 2001 was due to goodwill and acquired intangible assets being amortized for the full year in fiscal 2002 compared to only seven days of amortization in fiscal 2001.

*In-Process Research and Development.* In connection with our acquisition of MSIL in the fourth quarter of fiscal 2001, we purchased in-process research and development, or IPRD, of approximately \$234.9 million, which represented approximately 9.4% of the total purchase price. As of the acquisition date, the IPRD efforts had not yet reached technological feasibility, and the IPRD had no alternative future uses. Accordingly, the value of the purchased IPRD was expensed on the date of acquisition.

The fair values of MSIL's IPRD, as well as their developed technologies, were determined using the income approach, which discounts expected future cash flows to present value. The discount rates used in the present value calculations were derived from a weighted-average cost of capital analysis and venture capital surveys, adjusted upward to reflect additional risks inherent in the development life cycle. A discount rate of 16.5% was used for developed technology, and rates between 21.5% and 34.0% were used for IPRD, depending on the stage of completion of each technology.

*Interest and Other Income, Net.* Interest and other income, net consists primarily of interest earned on cash, cash equivalent and short-term investment balances and realized gains from the sale of marketable

securities, offset by interest paid on capital lease obligations. Interest and other income, net was \$10.0 million for the year ended January 31, 2002 compared to \$4.6 million for the year ended January 31, 2001. The increase in interest and other income, net in fiscal 2002 compared to fiscal 2001 was primarily due to interest being earned on higher invested cash balances, as well as realized gains of \$1.2 million on the sale of marketable securities in fiscal 2002. The net proceeds from our initial public offering of common stock in June 2000, as well as the net cash received as a result of our acquisition of MSIL in January 2001, contributed to this increase in invested cash balances

*Provision for Income Taxes.* Our effective tax rate was (1)% for each of the years ended January 31, 2002 and 2001. Our effective rate for fiscal 2002 was affected by stock-based compensation expense as well as non-deductible expenses relating to our acquisition of MSIL in the fourth quarter of fiscal 2001, which was recorded using the purchase method of accounting. Excluding the effect of stock-based compensation expense and non-deductible, acquisition-related expenses, our effective tax rate for fiscal 2002 was 15%. Excluding the effect of non-deductible, acquisition-related expenses, our effective tax rate for fiscal 2001 was 23%. Our effective tax rate has decreased to 15% in fiscal 2002 from 23% in fiscal 2001 as a result of our acquisition of MSIL in the fourth quarter of fiscal 2001. A substantial majority of MSIL's pretax income is generated in Israel, where MSIL's operations have Approved Enterprise Status. This status provides us with a tax holiday on undistributed income generated in specified regions within Israel.

## **Liquidity and Capital Resources**

Our principal source of liquidity as of January 31, 2003 consisted of \$265.2 million of cash, cash equivalents and short-term investments. We raised net proceeds of \$94.0 million through our initial public offering in June 2000. In addition, we received \$70.0 million of cash and cash equivalents and \$39.9 million of short-term investments, before acquisition costs, as a result of our acquisition of MSIL in the fourth quarter of fiscal 2001. We also received \$1.1 million of cash and cash equivalents, before acquisition costs, as a result of our acquisition of SysKonnnect in June 2002.

Net cash provided by operating activities was \$40.8 million for the year ended January 31, 2003 compared to \$50.0 million for the year ended January 31, 2002 and \$12.2 million for the year ended January 31, 2001. The cash inflow from operations in fiscal 2003 was primarily the result of our generation of income during the period (excluding the impact of non-cash charges) and changes in working capital. Non-cash charges in fiscal 2003 included \$107.6 million related to the amortization and write-off of goodwill and intangible assets, \$23.3 million of depreciation and amortization expense, and \$7.5 million of amortization of stock-based compensation. Significant working capital changes contributing to positive cash inflow in fiscal 2003 included an increase of \$16.3 million in accounts payable resulting primarily from amounts due to our suppliers related to increased inventory purchases during fiscal 2003, an increase of \$15.4 million relating to an accrued facilities consolidation charge recorded during fiscal 2003 as a result of the consolidation of our facilities and an increase of \$8.1 million in income taxes payable resulting from effective tax rates that were affected by stock-based compensation expense and non-deductible expenses related to our acquisition of MSIL in the fourth quarter of fiscal 2001.

Significant working capital changes offsetting positive cash flow in fiscal 2003 included a \$42.6 million increase in accounts receivable which was primarily due to increases in our total net revenues in fiscal 2003 as compared to fiscal 2002. Inventory increased by \$14.3 million, primarily as a result of increased volumes of sales and associated purchases of inventory required to meet customer demand. Prepaid and other assets increased by \$7.3 million primarily due to prepayment of a royalty to a customer.

During fiscal 2002, net cash provided by operating activities of \$50.0 million was the result of our generation of income during the period (excluding the impact on non-cash charges) and changes in working capital. Non-cash charges in fiscal 2002 included \$418.0 million related to the amortization of goodwill and intangible assets, \$16.7 million of depreciation and amortization and \$15.0 million of amortization of stock-based compensation. We generated cash flow primarily from a decrease in inventory of \$7.3 million and increases in accounts payable of \$6.2 million, accrued liabilities and other of \$6.2 million, accrued employee compensation of \$5.3 million and income taxes payable of \$8.1 million. Partially offsetting these benefits were

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increases in accounts receivable of \$4.6 million, prepaid and other assets of \$7.7 million and deferred income taxes of \$5.5 million. The decrease in inventory is attributable to improved management of inventory in fiscal 2002 as compared to fiscal 2001, which included inventory obtained from the acquisition of MSIL. The increase in accounts payable is primarily due to the timing of payments to our suppliers. The increase in income taxes payable is attributable to effective tax rates that were affected by stock-based compensation expense and non-deductible expenses related to our acquisition of MSIL in the fourth quarter of fiscal 2001.

In fiscal 2001, net cash provided by operating activities of \$12.2 million was the result of our generation of income during the period (excluding the impact on non-cash charges) and changes in working capital. Non-cash charges in fiscal 2001 were comprised of \$234.9 million related to in-process research and development charges in connection with our acquisition of MSIL, \$8.0 million related to the amortization of goodwill and intangible assets, \$4.7 million of depreciation and amortization and \$8.3 million of amortization of stock-based compensation. We generated cash flow primarily from an increase in accounts payable of \$10.1 million, accrued liabilities and other of \$2.3 million and income taxes payable of \$2.5 million. Partially offsetting these benefits were increases to accounts receivable of \$9.3 million, inventory of \$8.7 million and prepaid expenses and other assets of \$7.0 million. The increase in our inventories was due to the ramp up of inventory in anticipation of increased sales. The increase in accounts receivable was primarily due to an increase in our total net revenues in fiscal 2001 as compared to fiscal 2000. The increase in accounts payable resulted primarily from the increase in inventory. The increase in prepaid and other assets is primarily attributable to purchases of technology licenses, prepaid maintenance on software licenses and prepaid insurance.

Due to the nature of our business, we experience working capital needs for accounts receivable and inventory. We typically bill customers on an open account basis with net thirty to sixty day payment terms. If our sales levels were to increase as they have in all fiscal years, it is likely that our levels of accounts receivable would also increase. Our levels of accounts receivable would also increase if customers delayed their payments or if we offered extended payment terms to our customers. Additionally, in order to maintain an adequate supply of product for our customers, we must carry a certain level of inventory. Our inventory level may vary based primarily upon orders received from our customers and our forecast of demand for these products, as well as the initial production ramp for significant design wins. Other considerations in determining inventory levels may include the product life cycle stage of our products and competitive situations in the marketplace. Such considerations are balanced against risk of obsolescence or potentially excess inventory levels.

Net cash used in investing activities was \$50.3 million for the year ended January 31, 2003 compared to net cash used in investing activities of \$151.6 million for the year ended January 31, 2002 and net cash provided by investing activities of \$56.4 million for the year ended January 31, 2001. The net cash used in investing activities in fiscal 2003 was primarily due to purchases of short-term investments of \$79.3 million, equity investments in other companies of \$18.3 million, purchases of property, equipment and technology licenses of \$29.2 million, partially offset by the proceeds from the sale and maturities of short-term investments of \$75.5 million. The net cash used in investing activities in fiscal 2002 was primarily due to purchases of short-term investments of \$118.7 million, the payment of \$29.5 million of accrued acquisition costs relating to our acquisition of MSIL, and purchases of property, equipment and technology licenses of \$28.6 million, partially offset by the proceeds from maturities of short-term investments of \$27.8 million. The net cash provided by investing activities in fiscal 2001 was attributable to the net cash received as a result of our acquisition of MSIL of \$70.0 million, partially offset by purchases of property and equipment of \$12.2 million.

Net cash provided by financing activities was \$20.3 million for the year ended January 31, 2003 compared to \$31.9 million for the year ended January 31, 2002 and \$99.0 million for the year ended January 31, 2001. In fiscal 2003 and 2002, net cash provided by financing activities was attributable to proceeds from the issuance of common stock under our stock option plans and our employee stock purchase plan. In fiscal 2001, net cash provided by financing activities resulted from the proceeds of our initial public offering of common stock in June 2000 as well as proceeds from the exercise of stock options.

Our relationships with the foundries we utilize allow us to cancel all outstanding purchase orders, provided we pay the foundries for all expenses they have incurred in connection with our purchase orders



through the date of cancellation. As of January 31, 2003, foundries had incurred approximately \$27.7 million of manufacturing expenses on our outstanding purchase orders.

In October 2001, we entered into a lease agreement with Yahoo! Inc. to lease a building in California consisting of approximately 213,000 square feet. The lease commenced on January 1, 2002 and continues through March 16, 2006. Total rent payments over the term of the lease will be approximately \$19.4 million. In February 2002, we consolidated our three existing facilities in California into this new building. The lease on one of our former facilities expired in February 2002, but we have ongoing, non-cancelable leases for the two other facilities. We are currently attempting to secure subtenants for the remainder of our lease terms for these two facilities. Since we have been unable to sublease these two facilities, we will continue to be required to pay the full amount of our contracted lease payments while the facilities are vacant or if they are subleased at a future date at lesser rates. In the first quarter of fiscal 2003, we recorded a \$17.8 million charge associated with costs of consolidation of our facilities. This charge includes the remaining lease commitments of these facilities reduced by the estimated sublease income throughout the duration of the lease term. During the three months ended October 31, 2002, we recorded an additional \$1.8 million charge associated with the consolidation of our facilities due to a decline in the real estate market in Silicon Valley. The charge represents additional lease abandonment charges related to a change in estimated future sublease income for the abandoned facilities. The facilities consolidation charge is an estimate as of January 31, 2003 and may change as we obtain subleases for the abandoned facilities and sublease income is known. At January 31, 2003, cash payments of \$3.2 million had been made in connection with this charge. Approximately \$15.4 million is accrued for the facilities consolidation charge as of January 31, 2003 of which \$3.7 million is the current portion while the long-term portion totaling \$11.7 million is payable through 2010.

On February 6, 2003, we entered into a definitive agreement to acquire RADLAN Computer Communications Ltd., a leading provider of embedded networking software. Under terms of the agreement, we will issue a combination of cash, shares, warrants and stock options to purchase our common stock for the remaining outstanding shares of RADLAN capital stock and employee stock options. It is estimated that this exchange and the closing of the merger transaction will occur early in our second quarter of fiscal 2004. Upon the closing, we will issue a total of 1.6 million shares of common stock and options to purchase common stock. In addition, we will also issue warrants to purchase 0.5 million shares of our common stock at an exercise price of \$18.41 per share. Subsequent to this exchange with the RADLAN shareholders and employees, we will also issue either an additional 1.2 million shares of common stock or \$22.5 million to RADLAN shareholders, depending upon the share price of Marvell's common stock upon a date as defined in the merger agreement. It is estimated that this second distribution will occur within ninety days of the closing of the merger transaction. Additionally, 1.0 million shares of our common stock will be reserved for the future issuance to both RADLAN shareholders and employees upon the resolution of certain contingencies involving achievement of milestones as defined in the merger agreement.

We intend to fund our capital requirements, as well as our liquidity needs, with existing cash, cash equivalent and short-term investment balances as well as cash generated by operations. We believe that our existing cash, cash equivalent and short-term investment balances will be sufficient to meet our working capital needs, capital requirements, investment requirements and commitments for at least the next twelve months. However, our capital requirements will depend on many factors, including our rate of sales growth, market acceptance of our products, costs of securing access to adequate manufacturing capacity, the timing and extent of research and development projects and increases in operating expenses, which are all subject to uncertainty. To the extent that our existing cash, cash equivalent and investment balances and cash generated by operations are insufficient to fund our future activities, we may need to raise additional funds through public or private debt or equity financing. We may enter into acquisitions or strategic arrangements in the future, which could also require us to seek additional debt or equity financing. Additional funds may not be available on terms favorable to us or at all.

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The following table summarizes our contractual obligations as of January 31, 2003 and the effect such obligations are expected to have on our liquidity and cash flow in future periods (in thousands):

	Payments Due by Period			
	Less than 1 Year	1 - 3 Years	After 3 Years	Total
Contractual obligations:				
Operating leases	\$ 8,264	\$17,518	\$10,352	\$36,134
Capital lease obligations	5,773	12,510	2,004	20,287
Purchase commitments to foundries	27,703	—	—	27,703
Total contractual cash obligations	\$41,740	\$30,028	\$12,356	\$84,124

## Inflation

The impact of inflation on our business has not been material for fiscal 2003, 2002 and 2001.

## Recent Accounting Pronouncements

In July 2001, the FASB issued Statement of Financial Accounting Standards No. 143 (“SFAS 143”), “Accounting for Asset Retirement Obligations,” which addresses accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. SFAS No. 143 is effective for fiscal years beginning after June 15, 2002. We are currently assessing the impact of SFAS No. 143 on our consolidated financial statements.

In October 2001, the FASB issued Statement of Financial Accounting Standards No. 144 (“SFAS 144”), Accounting for the Impairment or Disposal of Long-Lived Assets, which is effective for fiscal years beginning after December 15, 2001. SFAS 144 supercedes SFAS 121, Accounting for the Impairment of Long-lived Assets and Assets to be Disposed Of, and certain provisions of Accounting Principles Board Opinion No. 30, Reporting the Results of Operations — Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions. SFAS 144 requires that long-lived assets to be disposed of by sale, including discontinued operations, be measured at the lower of carrying amount or fair value less cost to sell, whether reported in continuing operations or in discontinued operations. SFAS 144 also broadens the reporting requirements of discontinued operations to include all components of an entity that have operations and cash flows that can be clearly distinguished, operationally and for financial reporting purposes, from the rest of the entity. We adopted SFAS 144 on February 1, 2002, and the adoption did not have a significant impact on our financial position or results of operations.

In April 2002, the FASB issued Statement of Financial Accounting Standards No. 145 (“SFAS 145”), Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections.” SFAS 145 will generally require gains and losses on extinguishments of debt to be classified as income or loss from continuing operations rather than as extraordinary items as previously required under SFAS 4. Extraordinary treatment will be required for certain extinguishments as provided in APB Opinion No. 30. The statement also amended SFAS 13 for certain sales-leaseback transactions and sublease accounting. We adopted the provisions of SFAS 145 effective February 2, 2003 and adoption of SFAS 145 is not expected to have a significant impact on our financial position or results of operations.

In June 2002, the FASB issued Statement of Financial Accounting Standards No. 146 (“SFAS 146”), Accounting for Costs Associated with Exit or Disposal Activities. SFAS 146 addresses financial accounting and reporting for costs associated with exit or disposal activities and nullifies Emerging Issues Task Force (EITF) Issue No. 94-3, Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit and Activity (including Certain Costs Incurred in Restructuring). SFAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized when a liability is incurred rather than when an exit or disposal plan is approved. We are required to adopt the provisions of SFAS 146 for any exit or disposal activities initiated after December 31, 2002. The adoption of SFAS 146 did not have a significant impact on

our financial position or results of operations. However, we may in certain circumstances change the timing of recognition of restructuring costs.

In November 2002, the FASB issued FASB Interpretation No. 45 ("FIN 45"), "Guarantor's Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others." FIN 45 will significantly change current practice in the accounting for and disclosure of guarantees. FIN 45 requires certain guarantees to be recorded at fair value which is different from the current practice of recording a liability only when a loss is probable and reasonably estimable, as those terms are defined in SFAS No. 5, "Accounting for Contingencies." FIN 45 also requires a guarantor to make significant new disclosures, even when the likelihood of making any payments under the guarantee is remote, which is another change from the current practice. FIN 45 disclosure requirements are effective for financial statements of interim or annual periods ending after December 15, 2002, while the initial recognition and initial measurement provisions are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. We have adopted the disclosure provisions of FIN 45 for the year ended January 31, 2003 and since December 31, 2002, the recognition and measurement provisions of FIN 45 has not had a material impact on the consolidated financial statements.

In December 2002, the FASB issued Statement of Financial Accounting Standards No. 148 ("SFAS 148"), "Accounting for Stock-Based Compensation — Transition and Disclosure — an amendment of FASB Statement No. 123." SFAS 148 provides alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. SFAS 148 also requires that disclosures of the pro forma effect of using the fair value method of accounting for stock-based employee compensation be displayed more prominently and in a tabular format. Additionally, SFAS 148 requires disclosure of the pro forma effect in interim financial statements. The transition and annual disclosure requirements of SFAS 148 are effective for fiscal years ended after December 15, 2002. The interim disclosure requirements are effective for interim periods beginning after December 15, 2002. We have chosen to continue to account for stock-based compensation using the intrinsic value method prescribed in APB Opinion No. 25 and related interpretations. Accordingly, compensation expense for stock options is measured as the excess, if any, of the estimate of the market value of our stock at the date of the grant over the amount an employee must pay to acquire our stock. We have adopted the annual disclosure provisions of SFAS 148 in our financial reports for the year ended January 31, 2003 and will adopt the interim disclosure provisions for our financial reports for the quarter ending May 3, 2003. As the adoption of this standard involves disclosures only, we do not expect a material impact on our consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46 ("FIN 46"), "Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51." FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective for all new variable interest entities created or acquired after January 31, 2003. For variable interest entities created or acquired prior to February 1, 2003, the provisions of FIN 46 must be applied for the first interim or annual period beginning after June 15, 2003. We are currently evaluating the impact of the adoption of FIN 46 on our financial position or results of operations. It is reasonably possible that we are the primary beneficiary of or hold a significant variable interest in a variable interest entity. We have a 46% equity interest in a company that conducts research and development primarily on our behalf. Our maximum exposure to loss as a result of our investment with the potential variable interest entity is our investment of \$3.3 million, as we are not obligated to provide any additional financing.

#### **Related Party Transaction**

In October 2001, we entered into a lease agreement with a privately-held design technology firm for certain computer-aided design software. We selected this product after an evaluation of competitive products on the strength of its merits. One of the officers of the design technology firm is the brother of an officer and director of Marvell and is also a shareholder of Marvell. The design technology firm was acquired by Cadence Design Systems in December 2001 and the lease agreement was subsequently amended in

June 2002. Total principal, interest and maintenance payments over the 3 1/2-year term of the lease will be \$20.7 million. The remaining lease payments as of January 31, 2003 are included in the capital lease commitment table in Note 11 to the Consolidated Financial Statements.

#### **Additional Factors That May Affect Future Results**

In addition to the factors discussed in the “Overview” and “Liquidity and Capital Resources” sections of this “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” the following additional factors may affect our future results. Many of these factors are beyond our control, including business cycles and seasonal trends of the computing, semiconductor and related industries.

***The continuing worldwide economic slowdown, acts of war, terrorism, international conflicts and related uncertainties may adversely impact our revenues and profitability.***

Slower economic activity, concerns about inflation, decreased consumer confidence, reduced corporate profits and capital spending, adverse business conditions and liquidity concerns in the telecommunications and related industries, the war in Iraq and recent international conflicts, and terrorist and military activity have resulted in a continuing downturn in worldwide economic conditions. We cannot predict the timing, strength and duration of any economic recovery in the semiconductor industry and in particular, the broadband communications markets. In addition, the events of September 11, 2001 and the continuing international conflicts and terrorist acts and the possibility of an extended war in Iraq can be expected to place further pressure on economic conditions in the United States and worldwide. These conditions make it extremely difficult for our customers, our vendors and for us to accurately forecast and plan future business activities. If such conditions continue or worsen, our business, financial condition and results of operations will likely be materially and adversely affected.

***We are dependent upon the hard disk drive industry, which is highly cyclical and experiences rapid technological change.***

Sales to customers in the hard disk drive industry represented approximately 56%, 57% and 85% of our net revenue in fiscal 2003, 2002 and 2001, respectively. The hard disk drive industry is intensely competitive, and the technology changes rapidly. As a result, this industry is highly cyclical, with periods of increased demand and rapid growth followed by periods of oversupply and subsequent contraction. These cycles may affect us as our customers are suppliers to this industry. Hard disk drive manufacturers tend to order more components than they may need during growth periods, and sharply reduce orders for components during periods of contraction. In addition, advances in existing technologies and the introduction of new technologies may result in lower demand for disk drive storage devices, thereby reducing demand for our products.

Rapid technological changes in the hard disk drive industry often result in significant and rapid shifts in market share among the industry’s participants. If the hard disk drive manufacturers using our products do not retain or increase market share, our sales may decrease.

***Our Marvell Semiconductor Israel Ltd. subsidiary is incorporated under the laws of, and its principal offices are located in, the State of Israel and therefore its business operations may be harmed by adverse political, economic and military conditions affecting Israel.***

Marvell Semiconductor Israel Ltd. (MSIL) is both incorporated under the laws of and has its principal offices in the State of Israel. In addition, MSIL maintains its research and development operations in Israel. Thus, MSIL is directly influenced by the political, economic and military conditions affecting Israel. Major hostilities involving or within Israel could disrupt MSIL’s research and development and other business operations. For example, continued hostilities between Israel and the Palestinian Authority in recent months have caused substantial political unrest, which could lead to a potential economic downturn in Israel. Additionally, the on-going war in Iraq could lead to more economic instability and uncertainty in the State of Israel and the Middle East. Also, the interruption or curtailment of trade between Israel and its present trading partners or a significant downturn in the economic or financial condition of Israel could reduce MSIL’s

sales and its financial results. A number of countries restrict business with Israel or Israeli companies, and if the countries in which MSIL's customers or potential customers conduct their businesses adopt restrictive laws or policies toward Israel or Israeli businesses, this could harm MSIL's ability to retain or increase its sales.

***We depend on a small number of large customers for a significant portion of our sales. The loss of, or a significant reduction or cancellation in sales to, any key customer would significantly reduce our revenues.***

In fiscal 2003, approximately 67% of our net revenue was derived from sales to five customers, each of whom individually accounted for 10% or more of our net revenue during this period. Of these customers, Intel accounted for 18%, Samsung accounted for 17%, Hitachi accounted for 11%, Seagate accounted for 11% and Toshiba accounted for 10%. Sales to our largest customers have fluctuated significantly from period to period primarily due to the timing and number of design wins with each customer, as well as the continued diversification of our customer base as we expand into new markets, and will likely continue to fluctuate dramatically in the future. The loss of any of our largest customers, a significant reduction in sales we make to them, or any problems we encounter collecting amounts from them would likely seriously harm our financial condition and results of operations. Our operating results in the foreseeable future will continue to depend on sales to a relatively small number of customers, as well as the ability of these customers to sell products that incorporate our products. In the future, these customers may decide not to purchase our products at all, to purchase fewer products than they did in the past, or to alter their purchasing patterns in some other way, particularly because:

- substantially all of our sales are made on a purchase order basis, which permits our customers to cancel, change or delay product purchase commitments with little or no notice to us and without penalty;
- our customers may develop their own solutions;
- our customers purchase integrated circuits from our competitors; and
- our customers may discontinue sales in the markets for which they purchase our products.

***If we are unable to develop new and enhanced products that achieve market acceptance in a timely manner, our operating results and competitive position will be harmed.***

Our future success will depend on our ability, in a timely and cost-effective manner, to develop new products for the broadband communications market and to introduce enhancements to our products for the storage market. We must also achieve market acceptance for these products and enhancements. If we do not successfully develop and achieve market acceptance for new and enhanced products, our ability to maintain or increase revenues will suffer. The development of our products is highly complex. We occasionally have experienced delays in completing the development and introduction of new products and product enhancements, and we could experience delays in the future. In particular, we have a limited history in developing products for the broadband communications market and may encounter technical difficulties in developing wireless LAN or other products for this market that could prevent or delay their successful introduction. Unanticipated problems in developing broadband communications products could also divert substantial engineering resources, which may impair our ability to develop new products and enhancements for the storage market, and could substantially increase our costs. Even if the new and enhanced products are introduced to the market, we may not be able to achieve market acceptance of these products in a timely manner.

Successful product development and market acceptance of our products depends on a number of factors, including:

- timely and cost-effective completion and introduction of new product designs;
- adoption of our products by customers that are among the first to adopt new technologies and by customers perceived to be market leaders;

- timely qualification and certification of our products for use in our customers' products;
- the level of acceptance of our products by existing and potential customers;
- cost and availability of foundry, assembly and testing capacity;
- availability, price, performance, power, use and size of our products and competing products and technologies;
- our customer service and support capabilities and responsiveness;
- successful development of our relationships with existing and potential customers and strategic partners; and
- our ability to predict and respond to changes in technology, industry standards or end-user preferences.

In addition, our longstanding relationships with some of our larger customers may also deter other potential customers who compete with these customers from buying our products. To attract new customers or retain existing customers, we may offer certain customers favorable prices on our products. If these prices are lower than the prices paid by our existing customers, we would have to offer the same lower prices to certain of our customers who have contractual "most favored nation" pricing arrangements. In that event, our average selling prices and gross margins would decline. The loss of a key customer, a reduction in sales to any key customer or our inability to attract new significant customers could materially and adversely affect our business, financial condition and results of operations.

***Any future acquisitions and transactions may not be successful.***

We expect to continue to make acquisitions of, and investments in, businesses that offer complementary products, services and technologies, augment our market segment coverage, or enhance our technological capabilities. We may also enter into strategic alliances or joint ventures to achieve these goals. We cannot assure you that we will be able to identify suitable acquisition, investment, alliance, or joint venture opportunities or that we will be able to consummate any such transactions or relationships on terms and conditions acceptable to us, or that such transactions or relationships will be successful.

Any transactions or relationships will be accompanied by the risks commonly encountered with those matters. Risks that could have a material adverse affect on our business, results of operations or financial condition include, among other things:

- the difficulty of assimilating the operations and personnel of an acquired businesses;
- the potential disruption of our ongoing business;
- the distraction of management from our business;
- the potential inability of management to maximize the financial and strategic position of us as a result of an acquisition;
- the potential difficulty maintaining uniform standards, controls, procedures and policies;
- the impairment of relationships with employees and clients as a result of any integration of new management personnel;
- the risk of entering market segments in which we have no or limited direct prior experience and where competitors in such market segments have stronger market segment positions; and
- the potential loss of key employees of an acquired company.

***Our pending acquisition of RADLAN and any future acquisitions could harm our operating results and share price.***

On February 6, 2003, we entered into a definitive agreement to acquire RADLAN Computer Communications Ltd., a leading provider of embedded networking software. Under terms of the agreement, we will issue

a combination of cash, shares, warrants and stock options to purchase our common stock for the remaining outstanding shares of RADLAN capital stock and employee stock options. It is estimated that this exchange and the closing of the merger transaction will occur early in our second quarter of fiscal 2004.

Any acquisitions, including our pending acquisition of RADLAN could materially adversely affect our operating results as a result of possible concurrent issuances of dilutive equity securities. In addition, the purchase price of any acquired businesses may exceed the current fair values of the net tangible assets of the acquired businesses. As a result, we would be required to record material amounts of goodwill and other intangible assets, which could result in significant impairment charges and amortization expense in future periods. These charges, in addition to the results of operations of such acquired businesses, could have a material adverse effect on our business, financial condition and results of operations. We cannot forecast the number, timing or size of future acquisitions, or the effect that any such acquisitions might have on our operating or financial results.

Under generally accepted accounting principles, we are required to review our intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. In addition, we are required to review our goodwill and indefinite-lived intangible assets on an annual basis. Over the last year, there has been a slowdown in worldwide economies, including the United States, which has affected our business. End customers for our products have slowed their purchases of next-generation technology and have delayed or rescheduled existing orders for products that incorporate our technology. If the economic downtrend continues or if other presently unforeseen events or changes in circumstances arise which indicate that the carrying value of our goodwill or other intangible assets may not be recoverable, we will be required to perform impairment reviews of these assets, which have carrying values of approximately \$1.6 billion as of January 31, 2003. An impairment review could result in a write-down of all or a portion of these assets to their fair values. The impairment test required upon the adoption of SFAS 142 and annual impairment review were completed and did not identify any impairment of goodwill. We will perform an annual impairment review during the fourth quarter of each fiscal year or more frequently if we believe indicators of impairment exist. In light of the large carrying value associated with our goodwill and intangible assets, any write-down of these assets may result in a significant charge to our statement of operations in the period any impairment is determined and could cause our stock price to decline.

***We are a relatively small company with limited resources compared to some of our current and potential competitors, and we may not be able to compete effectively and increase or maintain revenue and market share.***

We may not be able to compete successfully against current or potential competitors. If we do not compete successfully, our market share and revenues may not increase or may decline. In addition, most of our current and potential competitors have longer operating histories, significantly greater resources and name recognition, and a larger base of customers than us. As a result, these competitors may have greater credibility with our existing and potential customers. Moreover, our competitors may foresee the course of market developments more accurately than us. They also may be able to adopt more aggressive pricing policies and devote greater resources to the development, promotion and sale of their products than us, which would allow them to respond more quickly than us to new or emerging technologies or changes in customer requirements. In addition, new competitors or alliances among existing competitors could emerge. We expect to face competition in the future from our current competitors, other manufacturers and designers of integrated circuits, and innovative start-up integrated circuit design companies. Many of our customers are also large, established integrated circuit suppliers. Our sales to and support of such customers may enable them to become a source of competition to us, despite our efforts to protect our intellectual property rights.

In the wireless LAN market, we face competition from a number of additional competitors who have a longer history of serving that market. Many of these competitors have more-established reputations in that market and longer-standing relationships with the customers to whom we sell our products, which could prevent us from competing successfully. Competition could increase pressure on us to lower our prices and lower our margins, which, in turn, would harm our operating results.

***Due to our limited operating history, we may have difficulty in accurately predicting our future sales and appropriately budgeting for our expenses, and we may not be able to maintain our existing growth rate.***

Our limited operating experience, combined with the rapidly changing nature of the markets in which we sell our products, limits our ability to accurately forecast quarterly and annual sales. Additionally, because many of our expenses are fixed in the short term or are incurred in advance of anticipated sales, we may not be able to decrease our expenses in a timely manner to offset any shortfall of sales. We are currently expanding our staffing and increasing our expense levels in anticipation of future sales growth. If our sales do not increase as anticipated, significant losses could result due to our higher expense levels.

Although we have experienced sales and earnings growth in prior quarterly and annual periods, we may not be able to sustain these growth rates, particularly in the period of economic slowdown we are currently experiencing. Accordingly, you should not rely on the results of any prior quarterly or annual periods as an indication of our future performance.

***Because we do not have long-term commitments from our customers, we must estimate customer demand, and errors in our estimates can have negative effects on our inventory levels, sales and operating results.***

Our sales are made on the basis of individual purchase orders rather than long-term purchase commitments. In addition, our customers may cancel or defer purchase orders. We have historically placed firm orders for products with our suppliers up to sixteen weeks prior to the anticipated delivery date and typically prior to receiving an order for the product. Therefore, our order volumes are based on our forecasts of demand from our customers. This process requires us to make multiple demand forecast assumptions, each of which may introduce error into our estimates. If we overestimate customer demand, we may allocate resources to manufacturing products that we may not be able to sell when we expect or at all. As a result, we would have excess inventory, which would harm our financial results. Conversely, if we underestimate customer demand or if insufficient manufacturing capacity is available, we would forego revenue opportunities, lose market share and damage our customer relationships. On occasion, we have been unable to adequately respond to unexpected increases in customer purchase orders, and therefore, were unable to benefit from this increased demand.

***Our future success depends in significant part on strategic relationships with customers. If we cannot maintain these relationships or if these customers develop their own solutions or adopt a competitor's solutions instead of buying our products, our operating results would be adversely affected.***

In the past, we have relied in significant part on our strategic relationships with customers that are technology leaders in our target markets. We intend to pursue and continue to form these strategic relationships in the future but we cannot assure you that we will be able to do so. These relationships often require us to develop new products that may involve significant technological challenges. Our partners frequently place considerable pressure on us to meet their tight development schedules. Accordingly, we may have to devote a substantial amount of our limited resources to our strategic relationships, which could detract from or delay our completion of other important development projects. Delays in the development could impair our relationships with our strategic partners and negatively impact sales of the products under development. Moreover, it is possible that our customers may develop their own solutions or adopt a competitor's solution for products that they currently buy from us. If that happens, our business, financial condition and results of operations could be materially harmed.

***We rely on independent foundries and subcontractors for the manufacture, assembly and testing of our integrated circuit products, and the failure of any of these third-party vendors to deliver products or otherwise perform as requested could damage our relationships with our customers, decrease our sales and limit our growth.***

We do not have our own manufacturing or assembly facilities and have very limited in-house testing facilities. Therefore, we must rely on third-party vendors to manufacture, assemble and test the products we design. We currently rely on TSMC to produce substantially all of our integrated circuit products. We also



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currently rely on TSMC and other third-party assembly and test subcontractors to assemble, package and test our products. If these vendors do not provide us with high-quality products and services in a timely manner, or if one or more of these vendors terminates its relationship with us, we may be unable to obtain satisfactory replacements to fulfill customer orders on a timely basis, our relationships with our customers could suffer, our sales could decrease and our growth could be limited. Other significant risks associated with relying on these third-party vendors include:

- our customers or their customers may fail to approve or delay approving our selected supplier;
- we have reduced control over product cost, delivery schedules and product quality;
- the warranties on wafers or products supplied to us are limited; and
- we face increased exposure to potential misappropriation of our intellectual property.

We currently do not have long-term supply contracts with any of our third-party vendors. Therefore, they are not obligated to perform services or supply products to us for any specific period, in any specific quantities, or at any specific price, except as may be provided in a particular purchase order. None of our third-party foundry or assembly and test subcontractors have provided contractual assurances to us that adequate capacity will be available to us to meet future demand for our products. These foundries may allocate capacity to the production of other companies' products while reducing deliveries to us on short notice. In particular, foundry customers that are larger and better financed than us or that have long-term agreements with these foundries may cause these foundries to reallocate capacity to those customers, decreasing the capacity available to us. If we need another integrated circuit foundry or assembly and test subcontractor because of increased demand, or the inability to obtain timely and adequate deliveries from our providers at the time, we might not be able to develop relationships with other vendors who are able to satisfy our requirements. Even if other integrated circuit foundries or assembly and test subcontractors are available at that time to satisfy our requirements, it would likely take several months to acquire a new provider. Such a change may also require the approval of our customers, which would take time to effect and could cause our customers to cancel orders or fail to place new orders.

***If our foundries do not achieve satisfactory yields or quality, our relationships with our customers and our reputation will be harmed.***

The fabrication of integrated circuits is a complex and technically demanding process. Our foundries have from time to time experienced manufacturing defects and reduced manufacturing yields. Changes in manufacturing processes or the inadvertent use of defective or contaminated materials by our foundries could result in lower than anticipated manufacturing yields or unacceptable performance. Many of these problems are difficult to detect at an early stage of the manufacturing process and may be time consuming and expensive to correct. Poor yields from our foundries, or defects, integration issues or other performance problems in our products could cause us significant customer relations and business reputation problems, harm our financial results and result in financial or other damages to our customers. Our customers could also seek damages from us for their losses. A product liability claim brought against us, even if unsuccessful, would likely be time consuming and costly to defend. In addition, defects in our existing or new products could result in significant warranty, support and repair costs, and divert the attention of our engineering personnel from our product development efforts.

***The complexity of our products could result in unforeseen delays or expenses in undetected defects or bugs, which could adversely affect the market acceptance of new products, damage our reputation with current or prospective customers, and materially and adversely affect our operating costs.***

Highly complex products such as the products that we offer frequently contain defects and bugs when they are first introduced or as new versions are released. We have in the past experienced, and may in the future experience, these defects and bugs. Historically, we have been able to design workarounds to fix these defects and bugs with minimal to no disruption to our business or our customers' business. Going forward, if any of our products contain defects or bugs, or have reliability, quality, or compatibility problems, we may not

be able to successfully design workarounds. Consequently, our reputation may be damaged and customers may be reluctant to buy our products, which could materially and adversely affect our ability to retain existing customers, attract new customers, and our financial results. In addition, these defects or bugs could interrupt or delay sales to our customers. To alleviate these problems, we may have to invest significant capital and other resources. Although our products are tested by our suppliers, our customers and ourselves, it is possible that our new products will contain defects or bugs. If any of these problems are not found until after we have commenced commercial production of a new product, we may be required to incur additional development costs and product recall, repair or replacement costs. These problems may also result in claims against us by our customers or others. In addition, these problems may divert our technical and other resources from other development efforts. Moreover, we would likely lose, or experience a delay in, market acceptance of the affected product or products, and we could lose credibility with our current and prospective customers. As a result, our financial results could be materially harmed.

***We may experience difficulties in transitioning to smaller geometry process technologies or in achieving higher levels of design integration, which may result in reduced manufacturing yields, delays in product deliveries and increased expenses.***

In order to remain competitive, we expect to continue to transition our semiconductor products to increasingly smaller line width geometries. This transition requires us to modify the manufacturing processes for our products and to redesign some products. We periodically evaluate the benefits, on a product-by-product basis, of migrating to smaller geometry process technologies to reduce our costs. In the past, we have experienced some difficulties in shifting to smaller geometry process technologies or new manufacturing processes, which resulted in reduced manufacturing yields, delays in product deliveries and increased expenses. We may face similar difficulties, delays and expenses as we continue to transition our products to smaller geometry processes. We are dependent on our relationships with our foundries to transition to smaller geometry processes successfully and cannot assure you that our foundries will be able to effectively manage the transition. If our foundries or we experience significant delays in this transition or fail to efficiently implement this transition, our business, financial condition and results of operations could be materially and adversely affected. As smaller geometry processes become more prevalent, we expect to continue to integrate greater levels of functionality, as well as customer and third party intellectual property, into our products. However, we may not be able to achieve higher levels of design integration or deliver new integrated products on a timely basis, or at all.

***We depend on key personnel with whom we do not have employment agreements to manage our business, and if we are unable to retain our current personnel and hire additional personnel, our ability to develop and successfully market our products could be harmed.***

We believe our future success will depend in large part upon our ability to attract and retain highly skilled managerial, engineering and sales and marketing personnel. The loss of any key employees or the inability to attract or retain qualified personnel, including engineers and sales and marketing personnel, could delay the development and introduction of, and harm our ability to sell, our products. We believe that our future success is highly dependent on the contributions of Dr. Sehat Sutardja, our co-founder, President and Chief Executive Officer; Weili Dai, our co-founder and Executive Vice President; and Dr. Pantas Sutardja, our co-founder and Vice President and Chief Technology Officer. We do not have employment contracts with these or any other key personnel, and their knowledge of our business and industry would be extremely difficult to replace.

There is currently a shortage of qualified technical personnel with significant experience in the design, development, manufacture, marketing and sales of integrated circuits for use in communications products. In particular, there is a shortage of engineers who are familiar with the intricacies of the design and manufacture of products based on analog technology, and competition for these engineers is intense. Our key technical personnel represent a significant asset and serve as the source of our technological and product innovations. We may not be successful in attracting and retaining sufficient numbers of technical personnel to support our anticipated growth.

***Our officers and directors own a large percentage of our voting stock, and three existing directors, who are also significant shareholders, are related by blood or marriage. These factors may allow the officers and directors as a group or the three related directors to control the election of directors and the approval or disapproval of significant corporate actions.***

As of March 31, 2003, our executive officers and directors beneficially owned or controlled, directly or indirectly, approximately 36% of the outstanding shares of our common stock. Additionally, Sehat Sutardja and Weili Dai are husband and wife and Sehat Sutardja and Pantas Sutardja are brothers. All three are directors and together they held approximately 29% of our outstanding common stock as of March 31, 2003. As a result, if the directors and officers as a group or any of Sehat Sutardja, Weili Dai, and Pantas Sutardja act together, they will significantly influence, and will likely control, the election of our directors and the approval or disapproval of our significant corporate actions. This influence over our affairs might be adverse to the interests of other shareholders. In addition, the voting power of these officers or directors could have the effect of delaying or preventing an acquisition of us on terms that other shareholders may desire.

Under Bermuda law all of our officers, in exercising their powers and discharging their duties, must act honestly and in good faith with a view to our best interests and exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances. Majority shareholders do not owe fiduciary duties to minority shareholders. As a result, the minority shareholders will not have a direct claim against the majority shareholders in the event the majority shareholders take actions that damage the interests of minority shareholders. Class actions and derivative actions are generally not available to shareholders under the laws of Bermuda, except the Bermuda courts would be expected to follow English case law precedent, which would permit a shareholder to bring an action in our name if the directors or officers are alleged to be acting beyond our corporate power, committing illegal acts or violating our Memorandum of Association or Bye-laws. In addition, minority shareholders would be able to challenge a corporate action that allegedly constituted a fraud against them or required the approval of a greater percentage of our shareholders than actually approved it. The winning party in such an action generally would be able to recover a portion of attorneys' fees incurred in connection with the action.

***Our rapid growth has strained our resources and our inability to manage any future growth could harm our profitability.***

Our rapid growth has placed, and any future growth of our operations will continue to place, a significant strain on our management personnel, systems and resources. We anticipate that we will need to implement a variety of new and upgraded operational and financial systems, procedures and controls, including the improvement of our accounting and other internal management systems. We also expect that we will need to continue to expand, train, manage and motivate our workforce. All of these endeavors will require substantial management effort. If we are unable to effectively manage our expanding operations, our operating results could be harmed.

In March 2003, we completed the implementation of a new Enterprise Resource Planning, or ERP, system. An ERP system implementation is a very complex, costly and time-consuming process. Any unforeseen delays or difficulties after we begin transacting on the new system or in performing financial closes on the new systems, may divert the attention of management and other employees and disrupt our ongoing business and could have a material adverse impact on our financial condition and results of operations.

***If we are not successful in subleasing our unused office space at rates that we have estimated in determining our facilities consolidation charge, we will be required to record a period charge for the difference between the total actual and estimated sublease income and our lease cost.***

In October 2001, we entered into a lease agreement with Yahoo! Inc. to lease a building in California consisting of approximately 213,000 square feet. The lease commenced on January 1, 2002 and continues through March 16, 2006. Total rent payments over the term of the lease will be approximately \$19.4 million. In February 2002, we consolidated our three existing facilities in California into this new building. The lease on one of our former facilities expired in February 2002, but we have ongoing, non-cancelable leases for the

two other facilities. We are currently attempting to secure subtenants for the remainder of our lease terms for these two facilities. Since we have been unable to sublease these two facilities, we will continue to be required to pay the full amount of our contracted lease payments while the facilities are vacant or if they are subleased at a future date at lesser rates. In fiscal 2003, we recorded a total of \$19.6 million of charges associated with costs of consolidating our facilities. These charges include the remaining lease commitments of these facilities of \$15.7 million reduced by the estimated sublease income of \$9.5 million throughout the duration of the lease term. The facilities consolidation charge is an estimate as of January 31, 2003 and may change as we obtain subleases for the abandoned facilities and sublease income is known.

***We face foreign business, political and economic risks, which may harm our results of operations, because a majority of our products and our customers' products are manufactured and sold outside of the United States.***

A substantial portion of our business is conducted outside of the United States and, as a result, we are subject to foreign business, political and economic risks. All of our products are manufactured outside of the United States. Our current qualified integrated circuit foundries are located in the same region within Taiwan, and our primary assembly and test subcontractors are located in the Pacific Rim region. In addition, many of our customers are located outside of the United States, primarily in Asia, which further exposes us to foreign risks. Sales to customers located in Asia represented approximately 87%, 83% and 92% of our net revenue in fiscal 2003, 2002 and 2001, respectively.

We anticipate that our manufacturing, assembly, testing and sales outside of the United States will continue to account for a substantial portion of our operations and revenue in future periods. Accordingly, we are subject to risks associated with international operations, including:

- difficulties in obtaining domestic and foreign export, import and other governmental approvals, permits and licenses;
- compliance with foreign laws;
- difficulties in staffing and managing foreign operations;
- trade restrictions or higher tariffs;
- transportation delays;
- difficulties of managing distributors, especially because we expect to continue to increase our sales through international distributors;
- political and economic instability, including wars, terrorism, other hostilities and political unrest, boycotts, curtailment of trade and other business restrictions; and
- inadequate local infrastructure.

Because all of our sales to date have been denominated in United States dollars, increases in the value of the United States dollar will increase the price of our products so that they become relatively more expensive to customers in the local currency of a particular country, potentially leading to a reduction in sales and profitability for us in that country. A portion of our international revenue may be denominated in foreign currencies in the future, which will subject us to risks associated with fluctuations in exchange rates for those foreign currencies.

***Our third-party foundries and subcontractors are concentrated in Taiwan and elsewhere in the Pacific Rim, an area subject to significant earthquake risks. Any disruption to the operations of these foundries and subcontractors resulting from earthquakes or other natural disasters could cause significant delays in the production or shipment of our products.***

Substantially all of our products are manufactured by Taiwan Semiconductor Manufacturing Company, which is located in Taiwan. Currently our only alternative manufacturing sources are located in Taiwan and China. In addition, substantially all of our assembly and testing facilities are located in Singapore, Taiwan and

the Philippines. The risk of an earthquake in Taiwan and elsewhere in the Pacific Rim region is significant due to the proximity of major earthquake fault lines to the facilities of our foundries and assembly and test subcontractors. In September 1999, a major earthquake in Taiwan affected the facilities of several of these third-party contractors. As a consequence of this earthquake, these contractors suffered power outages and disruptions that impaired their production capacity. In March 2002, another major earthquake occurred in Taiwan. Although our foundries and subcontractors did not suffer any significant damage as a result of this most recent earthquake, the occurrence of additional earthquakes or other natural disasters could result in the disruption of our foundry or assembly and test capacity. Any disruption resulting from such events could cause significant delays in the production or shipment of our products until we are able to shift our manufacturing, assembling or testing from the affected contractor to another third-party vendor. We may not be able to obtain alternate capacity on favorable terms, if at all.

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

We sell our communications products to customers primarily through distributors and manufacturers’ representatives. Our relationships with some of our distributors and manufacturers’ representatives have been established within the last two years, and we are unable to predict the extent to which our distributors and manufacturers’ representatives will be successful in marketing and selling our products. Moreover, many of our manufacturers’ representatives and distributors also market and sell competing products. Our representatives and distributors may terminate their relationships with us at any time. Our future performance will also depend, in part, on our ability to attract additional distributors or manufacturers’ representatives that will be able to market and support our products effectively, especially in markets in which we have not previously distributed our products. If we cannot retain our current distributors or manufacturers’ representatives or recruit additional or replacement distributors or manufacturers’ representatives, our sales and operating results will be harmed. The loss of one or more of our distributors or manufacturers’ representatives could harm our sales and results of operations. We generally realize a higher gross margin on direct sales and from sales through manufacturers’ representatives than on sales through distributors. Accordingly, if our distributors were to account for an increased portion of our net sales, our gross margins may decline.

***The average selling prices of products in our markets have historically decreased rapidly and will likely do so in the future, which could harm our revenues and gross profits.***

The products we develop and sell are used for high volume applications. As a result, the prices of those products have historically decreased rapidly. Our gross profits and financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing our costs, or developing new or enhanced products on a timely basis with higher selling prices or gross profits. We expect that our gross profits on our storage products are likely to decrease over the next fiscal year below levels we have historically experienced due to (i) pricing pressures from our customers, and (ii) an increase in sales of SOC’s, which typically have lower margins than standalone read channel devices, and (iii) an increase in sales of products into consumer application markets, which are highly competitive and cost sensitive. In addition, if our sales of storage products into the desktop computer market were to increase as a percentage of total storage revenues, our margins would also likely decrease because gross margins on sales into this market are generally lower than for sales into the enterprise and mobile computer markets, where we currently generate the substantial majority of our storage product revenues.

Additionally, because we do not operate our own manufacturing, assembly or testing facilities, we may not be able to reduce our costs as rapidly as companies that operate their own facilities, and our costs may even increase, which could also reduce our margins. In the past, we have reduced the average selling prices of our products in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. We expect that we will have to do so again in the future.

***We have a lengthy and expensive storage product sales cycle that does not assure product sales, and that if unsuccessful, may harm our operating results.***

The sales cycle for our storage products is long and requires us to invest significant resources with each potential customer without any assurance of sales to that customer. Our sales cycle typically begins with a three to six month evaluation and test period, also known as qualification, during which our products undergo rigorous reliability testing by our customers.

Qualification is typically followed by a twelve to eighteen month development period by our customers and an additional three to six month period before a customer commences volume production of equipment incorporating our products. This lengthy sales cycle creates the risk that our customers will decide to cancel or change product plans for products incorporating our integrated circuits. During our sales cycle, our engineers assist customers in implementing our products into the customers' products. We incur significant research and development and selling, general and administrative expenses as part of this process, and this process may never generate related revenues. We derive revenue from this process only if our design is selected. Once a customer selects a particular integrated circuit for use in a storage product, the customer generally uses solely that integrated circuit for a full generation of its product. Therefore, if we do not achieve a design win for a product, we will be unable to sell our integrated circuit to a customer until that customer develops a new product or a new generation of its product. Even if we achieve a design win with a customer, the customer may not ultimately ship products incorporating our products or may cancel orders after we have achieved a sale. In addition, we will have to begin the qualification process again when a customer develops a new generation of a product for which we were the successful supplier.

Also, during the final production of a mature product, our customers typically exhaust their existing inventory of our integrated circuits. Consequently, orders for our products may decline in those circumstances, even if our products are incorporated into both our customers' mature and replacement products. A delay in a customer's transition to commercial production of a replacement product may cause the customer to lose sales, which would delay our ability to recover the lost sales from the discontinued mature product. In addition, customers may defer orders in anticipation of new products or product enhancements from our competitors or us.

***We are subject to the cyclical nature of the integrated circuit industry. The current and any future downturns will likely reduce our revenue and result in excess inventory.***

The integrated circuit industry is highly cyclical and is characterized by constant and rapid technological change, rapid product obsolescence and price erosion, evolving standards, short product life cycles and wide fluctuations in product supply and demand. The industry has experienced, and is currently experiencing, significant downturns, often connected with, or in anticipation of, maturing product cycles of both integrated circuit companies' and their customers' products and declines in general economic conditions. These downturns have been characterized by diminished product demand, production overcapacity, high inventory levels and accelerated erosion of average selling prices. The current downturn and any future downturns may reduce our revenue or our percentage of revenue growth on a quarter-to-quarter basis and result in us having excess inventory.

Furthermore, any upturn in the integrated circuit industry could result in increased competition for access to third-party foundry, assembly and test capacity.

***When demand for foundry capacity is high, we may take various actions to try to secure sufficient capacity, which may be costly and harm our operating results.***

Availability of foundry capacity has in the recent past been reduced due to strong demand. In order to secure sufficient foundry capacity when demand is high, we may enter into various arrangements with suppliers that could be costly and harm our operating results, including:

- option payments or other prepayments to a foundry;
- nonrefundable deposits with or loans to foundries in exchange for capacity commitments;

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- contracts that commit us to purchase specified quantities of integrated circuits over extended periods;
- issuance of our equity securities to a foundry;
- investment in a foundry; and
- other contractual relationships with foundries.

We may not be able to make any such arrangement in a timely fashion or at all, and any arrangements may be costly, reduce our financial flexibility, and not be on terms favorable to us. Moreover, if we are able to secure foundry capacity, we may be obligated to use all of that capacity or incur penalties. These penalties may be expensive and could harm our financial results.

***The development and evolution of markets for our integrated circuits are dependent on factors, such as industry standards, over which we have no control. For example, if our customers adopt new or competing industry standards with which our products are not compatible or fail to adopt standards with which our products are compatible, our existing products would become less desirable to our customers and our sales would suffer.***

The emergence of markets for our integrated circuits is affected by a variety of factors beyond our control. In particular, our products are designed to conform to current specific industry standards. Our customers may not adopt or continue to follow these standards, which would make our products less desirable to our customers and reduce our sales. Also, competing standards may emerge that are preferred by our customers, which could also reduce our sales and require us to make significant expenditures to develop new products.

We have made a significant investment in the development and production of our Gigabit Ethernet products, including our physical layer devices and switched Ethernet products. However, the Gigabit Ethernet technology is relatively new compared to the more established 10 and 100 Megabit per second Fast Ethernet technologies. If the Gigabit Ethernet technology does not achieve widespread market acceptance, our revenue and operating results may be harmed. We have also made a significant investment in the development of wireless LAN products based on the IEEE 802.11b standard and the pending IEEE 802.11g standard. Wireless LAN technologies are relatively new and many competing standards, such as IEEE 802.11a and Bluetooth™, exist. If the 802.11b standard and pending 802.11g standard does not achieve widespread market acceptance, our revenue and operating results may be harmed.

***We may be unable to protect our intellectual property, which would negatively affect our ability to compete.***

We believe one of our key competitive advantages results from our collection of proprietary technologies that we have developed since our inception. If we fail to protect these intellectual property rights, competitors could sell products based on technology that we have developed, which could harm our competitive position and decrease our revenues. We believe that the protection of our intellectual property rights is and will continue to be important to the success of our business. We rely on a combination of patent, copyright, trademark and trade secret laws, as well as nondisclosure agreements and other methods, to protect our proprietary technologies. We also enter into confidentiality or license agreements with our employees, consultants and business partners, and control access to and distribution of our documentation and other proprietary information. We have been issued several United States patents and have a number of pending United States patent applications. However, a patent may not be issued as a result of any applications or, if issued, claims allowed may not be sufficiently broad to protect our technology. In addition, it is possible that existing or future patents may be challenged, invalidated or circumvented. Despite our efforts, unauthorized parties may attempt to copy or otherwise obtain and use our products or proprietary technology. Monitoring unauthorized use of our technology is difficult, and the steps that we have taken may not prevent unauthorized use of our technology, particularly in foreign countries where the laws may not protect our proprietary rights as fully as in the United States.

***Significant litigation over intellectual property in our industry may cause us to become involved in costly and lengthy litigation, which could subject us to liability, require us to stop selling our products or force us to redesign our products.***

Litigation involving patents and other intellectual property is widespread in the high-technology industry and is particularly prevalent in the integrated circuit industry, where a number of companies aggressively bring numerous infringement claims to protect their patent portfolios. From time to time we receive, and may continue to receive in the future, notices that claim we have infringed upon, misappropriated or misused the proprietary rights of other parties. These claims could result in litigation which, in turn, could subject us to significant liability for damages. These lawsuits, regardless of their success, would likely be time-consuming and expensive to resolve and would divert management time and attention. Any potential intellectual property litigation also could force us to do one or more of the following:

- stop selling products or using technology that contain the allegedly infringing intellectual property;
- pay damages to the party claiming infringement;
- attempt to obtain a license to the relevant intellectual property, which license may not be available on reasonable terms or at all; and
- attempt to redesign those products that contain the allegedly infringing intellectual property.

***We are incorporated in Bermuda, and, as a result, it may not be possible for our shareholders to enforce civil liability provisions of the securities laws of the United States.***

We are organized under the laws of Bermuda. As a result, it may not be possible for our shareholders to effect service of process within the United States upon us, or to enforce against us in United States courts judgments based on the civil liability provisions of the securities laws of the United States. Most of our executive officers and directors are residents of the United States. However, there is significant doubt as to whether the courts of Bermuda would recognize or enforce judgments of United States courts obtained against us or our directors or officers based on the civil liability provisions of the securities laws of the United States or any state or hear actions brought in Bermuda against us or those persons based on those laws. The United States and Bermuda do not currently have a treaty providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any federal or state court in the United States based on civil liability, whether or not based solely on United States federal or state securities laws, would not be automatically enforceable in Bermuda.

***Our Bye-laws contain a waiver of claims or rights of action by our shareholders against our officers and directors, which will severely limit our shareholders' right to assert a claim against our officers and directors under Bermuda law.***

Our Bye-laws contain a broad waiver by our shareholders of any claim or right of action, both individually and on our behalf, against any of our officers and directors. The waiver applies to any action taken by an officer or director, or the failure of an officer or director to take any action, in the performance of his or her duties with or for us, other than with respect to any matter involving any fraud or dishonesty on the part of the officer or director. This waiver will limit the rights of our shareholders to assert claims against our officers and directors unless the act complained of involves actual fraud or dishonesty. Thus, so long as acts of business judgment do not involve actual fraud or dishonesty, they will not be subject to shareholder claims under Bermuda law. For example, shareholders will not have claims against officers and directors for a breach of trust, unless the breach rises to the level of actual fraud or dishonesty.

***We are subject to uncertainty regarding how the United States federal income tax laws apply to our business. If our position is disputed, our operating results could be harmed.***

In the United States, we pay income tax on the income of our U.S. subsidiaries and may be subject to the U.S. income tax and on any income that is considered to be effectively connected with the conduct of a trade or business in the United States. The determination of whether the income of a foreign corporation is



effectively connected with the conduct of a trade or business in the United States requires significant management judgment, as it involves a consideration of all the facts and circumstances and the application of legal standards that are uncertain. Our position is that our foreign business operations do not generate any income that is effectively connected with a United States trade or business. If our position is disputed, the amount we have accrued in our financial statements for United States federal income taxes may be insufficient to the extent of the difference between the income tax rate ultimately determined to apply and the tax rate that we have used to accrue for income taxes in our financial statements. In addition, we could be required to make significant cash payments for back taxes and interest based on the difference between the income tax rate ultimately determined to apply and the rate at which we paid those taxes.

***Tax benefits we receive may be terminated or reduced in the future, which would increase our costs.***

Under current Bermuda law, we are not subject to tax on our income or capital gains. We have obtained from the Minister of Finance of Bermuda under the Exempt Undertakings Tax Protection Act 1966, as amended, an undertaking that, in the event that Bermuda enacts any legislation imposing tax computed on income or capital gains, those taxes should not apply to us until March 28, 2016. However, this exemption may not be extended beyond that date.

The Economic Development Board of Singapore granted Pioneer Status to our wholly-owned subsidiary in Singapore in July 2000 for a period of at least six years, commencing July 1, 1999. As a result, we anticipate that a significant portion of the income we earn in Singapore during this period will be exempt from the Singapore statutory tax rate. We are required to meet several requirements as to investment, headcount and activities in Singapore to retain this status. If our Pioneer Status is terminated early, our financial results could be harmed.

The Israeli government has granted Approved Enterprise Status to our wholly-owned subsidiary in Israel, which provides a tax holiday on undistributed income derived from operations within certain “development regions” in Israel. In order to maintain our qualification, we must continue to meet specified conditions, including the making of investments in fixed assets in Israel. As our tax holidays expire, we expect that we will start paying income tax on our operations within these development regions. Some of our regional tax holidays have already expired and we are currently paying income taxes in these regions.

***If we are classified as a passive foreign investment company, our shareholders may suffer adverse tax consequences.***

Because we are incorporated in Bermuda and have operations in the United States, Israel and Singapore, we are subject to special rules and regulations, including rules regarding a passive foreign investment company, or PFIC. We believe that we are not a PFIC, and we expect to continue to manage our affairs so that we will not become a PFIC. However, whether we should be treated as a PFIC is a factual determination that is made annually and is subject to change. If we are classified as a PFIC, then each United States holder of our common stock would, upon qualifying distributions by us or upon the pledge or sale of their shares of common stock at a gain, be liable to pay tax at the then prevailing rates on ordinary income plus an interest charge, generally as if the distribution or gain had been earned ratably over the shareholder’s holding period. In addition to the risks related to PFIC status, we and our shareholders could also suffer adverse tax consequences if we are classified as a foreign personal holding company, a personal holding company or a controlled foreign corporation.

***Class action litigation due to stock price volatility or other factors could cause us to incur substantial costs and divert our management’s attention and resources.***

On September 5, 2001, a putative class action was filed in the Southern District of New York relating to our initial public offering, or IPO. In this action, the plaintiffs named several defendants including Marvell and two of our officers, one of whom is also a director. This complaint relating to our IPO has been consolidated with hundreds of other lawsuits by plaintiffs against approximately 55 underwriters and approximately 300 issuers across the United States. Plaintiffs allege that defendants violated various provisions of the Securities

Act of 1933 and the Securities Exchange Act of 1934. In these actions, plaintiffs seek, among other items, unspecified damages, pre-judgment interest and reimbursement of attorneys' and experts' fees. A Consolidated Amended Class Action Complaint against Marvell and two of our officers was filed on April 19, 2002. Subsequently, defendants in the consolidated proceedings moved to dismiss the actions. In February 2003, the trial Court issued its ruling on the motions, granting the motions in part, and denying them in part. Thus, the cases may proceed against the underwriters and us as to alleged violations of section 11 of the Securities Act of 1933 and section 10(b) of the Securities Exchange Act of 1934. Claims against the individual officers have been voluntarily dismissed with prejudice by agreement with plaintiffs. These claims and any resulting litigation could result in substantial costs and could divert the attention and resources of our management.

In the past, securities class action litigation often has been brought against a company following periods of volatility in the market price of its securities. Companies in the integrated circuit industry and other technology industries are particularly vulnerable to this kind of litigation due to the high volatility of their stock prices. Accordingly, we may in the future be the target of securities litigation. Any securities litigation could result in substantial costs and could divert the attention and resources of our management.

***Future sales of our common stock in the public market may depress our stock price.***

A substantial number of our shares remain available for sale pursuant to Rule 144. Future sales of a substantial number of shares of our common stock in the public market could cause our stock price to decline. As of March 31, 2003, we had 121,761,683 shares outstanding and none of these shares are subject to any lock-up agreements. The market price of our stock could drop significantly if holders of a substantial number of our shares sell them or are perceived by the market as intending to sell them. In addition, the sale of our shares could impair our ability to raise capital through the sale of additional stock.

***Our Bye-laws contain provisions that could delay or prevent a change in corporate control, even if the change in corporate control would benefit our shareholders.***

Our Bye-laws contain change in corporate control provisions which include:

- authorizing the issuance of preferred stock without shareholder approval;
- providing for a classified board of directors with staggered, three-year terms; and
- requiring a vote of two-thirds of the outstanding shares to approve any change of corporate control.

These change in corporate control provisions could make it more difficult for a third-party to acquire us, even if doing so would be a benefit to our shareholders.

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

**Interest Rate Risk.** The primary objective of our investment activities is to preserve principal while at the same time maximize the income we receive from our investments without significantly increasing risk. Some of the securities that we have invested in may be subject to market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate. For example, if we hold a security that was issued with a fixed interest rate at the then-prevailing rate and the prevailing interest rate later rises, the principal amount of our investment will probably decline, while variable rate securities may produce less income than expected if interest rates fall. To minimize this risk, we maintain our portfolio of cash equivalents and short-term investments in a variety of fixed and variable rate securities including money market funds; corporate debt securities; Federal, State, county and municipal debt securities; and foreign government securities. In general, money market funds are not subject to market risk because the interest paid on such funds fluctuates with the prevailing interest rate. The following table presents the amounts of our cash equivalents and short-term investments that are subject to market risk by range of expected maturity and weighted-average interest rates as of January 31, 2003 (in thousands). This table does not include money market funds because those funds are not subject to market risk.

	Expected Fiscal Year Maturity Date				Total	Fair Value
	2004	2005	2006	2007		
Variable Rate	\$13,105	\$ —	\$ —	\$ —	\$ 13,105	\$ 13,105
Average Interest Rate	1.32%	—	—	—	1.32%	
Fixed Rate	\$36,062	\$53,287	\$45,436	\$2,326	\$137,111	\$139,076
Average Interest Rate	3.66%	3.33%	3.57%	3.31%	3.49%	

**Investment Risk.** We invest in equity instruments of privately-held companies for business and strategic purposes. These investments, which totaled \$19.2 million at January 31, 2003, are included in other non-current assets in the accompanying balance sheets and all but one of the investments are accounted for under the cost method as our ownership is less than 20% and we do not have the ability to exercise significant influence over the operations on these companies. Since we own approximately 46% of one privately-held company, we are accounting for the investment using the equity method. We record our percentage of the net income (loss) to interest and other income (net). To date, amounts recorded to interest and other income (net) have not been significant. Since our initial investment, one of these equity investments in a privately-held company has become marketable upon the investee completing an initial public offering. Such an investment is subject to significant fluctuations in fair market value due to the volatility of the stock market. This investment is recorded at market value and is classified as a short-term investment in the accompanying balance sheets. We monitor these investments for impairment and make appropriate reductions in carrying value when an impairment is deemed to be other than temporary.

**Foreign Currency Exchange Risk.** Substantially all of our sales and the majority of our expenses to date have been denominated in United States dollars, and, as a result, we have relatively little exposure to foreign currency exchange risk. We do not currently enter into forward exchange contracts to hedge exposures denominated in foreign currencies or any other derivative financial instruments for trading or speculative purposes. However, in the event our exposure to foreign currency risk increases, we may choose to hedge those exposures in the future.

Item 8. Consolidated Financial Statements and Supplementary Data

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**REPORT OF INDEPENDENT ACCOUNTANTS**

To the Shareholders and Board of Directors of Marvell Technology Group Ltd.:

In our opinion, the accompanying consolidated balance sheets and the related consolidated statements of operations, of shareholders' equity and of cash flows present fairly, in all material respects, the financial position of Marvell Technology Group Ltd. and its subsidiaries (the "Company") at January 31, 2003 and 2002, and the results of their operations and their cash flows for each of the three years in the period ended January 31, 2003, in conformity with accounting principles generally accepted in the United States of America. These financial statements are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits of these statements in accordance with auditing standards generally accepted in the United States of America, which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 1 to the consolidated financial statements, effective February 3, 2002, the Company changed its method of accounting for goodwill and other intangible assets in accordance with Statement of Financial Accounting Standards No. 142, "Goodwill and Other Intangible Assets."

/S/ PRICEWATERHOUSECOOPERS LLP

San Jose, California

February 26, 2003

**MARVELL TECHNOLOGY GROUP LTD.**

**CONSOLIDATED BALANCE SHEETS**

	January 31,	
	2003	2002
	(In thousands, except par value)	
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 125,316	\$ 114,483
Short-term investments	139,912	135,761
Accounts receivable, net of allowances of \$2,039 and \$1,232.	86,175	42,150
Inventory	39,712	23,600
Prepaid expenses and other current assets	11,801	14,135
Deferred income taxes	8,178	9,287
Total current assets	411,094	339,416
Property and equipment, net	69,246	52,924
Goodwill	1,338,768	1,330,816
Acquired intangible assets	231,875	349,924
Other noncurrent assets	49,313	17,975
Total assets	\$2,100,296	\$2,091,055
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 47,672	\$ 30,990
Accrued liabilities	15,491	14,083
Accrued employee compensation	11,464	11,755
Income taxes payable	2,247	17,744
Deferred income	12,481	8,907
Current portion of capital lease obligations	5,019	1,039
Total current liabilities	94,374	84,518
Capital lease obligations	13,755	10,017
Other long-term liabilities	42,029	6,793
Total liabilities	150,158	101,328
Commitments and contingencies (Note 11)		
Shareholders' equity:		
Preferred stock, \$0.002 par value; 8,000 shares authorized; no shares issued and outstanding	—	—
Common stock, \$0.002 par value; 242,000 shares authorized; 121,260 and 118,577 shares issued and outstanding, respectively	243	238
Additional paid-in capital	2,674,095	2,646,757
Deferred stock-based compensation	(5,899)	(10,099)
Accumulated other comprehensive income	1,988	946
Accumulated deficit	(720,289)	(648,115)
Total shareholders' equity	1,950,138	1,989,727
Total liabilities and shareholders' equity	\$2,100,296	\$2,091,055

See accompanying Notes to Consolidated Financial Statements.

**MARVELL TECHNOLOGY GROUP LTD.**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**

	Years Ended January 31,		
	2003	2002	2001
	(In thousands, except per share amounts)		
Net revenue	\$505,285	\$ 288,795	\$ 143,894
Operating costs and expenses:			
Cost of goods sold(1)	233,039	130,807	67,047
Research and development(2)	145,722	93,422	35,152
Selling and marketing(3)	48,491	40,170	21,686
General and administrative(4)	14,303	13,191	6,185
Amortization of stock-based compensation	7,491	15,022	8,259
Amortization and write-off of goodwill and acquired intangible assets	107,645	418,032	8,031
Acquired in-process research and development	—	—	234,874
Facilities consolidation charge	19,562	—	—
Total operating costs and expenses	576,253	710,644	381,234
Operating loss	(70,968)	(421,849)	(237,340)
Interest and other income, net	7,318	9,994	4,559
Loss before income taxes	(63,650)	(411,855)	(232,781)
Provision for income taxes	8,524	3,299	2,339
Net loss	<u>\$ (72,174)</u>	<u>\$ (415,154)</u>	<u>\$ (235,120)</u>
Net loss per share:			
Basic and diluted	<u>\$ (0.61)</u>	<u>\$ (3.63)</u>	<u>\$ (3.55)</u>
Weighted average shares:			
Basic and diluted	<u>119,240</u>	<u>114,353</u>	<u>66,259</u>

(1) Excludes amortization of stock-based compensation of \$339, \$298 and \$416 in fiscal 2003, 2002 and 2001.

(2) Excludes amortization of stock-based compensation of \$4,732, \$9,837 and \$3,367 in fiscal 2003, 2002 and 2001.

(3) Excludes amortization of stock-based compensation of \$1,605, \$2,655 and \$3,997 in fiscal 2003, 2002 and 2001.

(4) Excludes amortization of stock-based compensation of \$815, \$2,232 and \$479 in fiscal 2003, 2002 and 2001.

See accompanying Notes to Consolidated Financial Statements.

**MARVELL TECHNOLOGY GROUP LTD.**

**CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY**

	Common Stock		Additional Paid-in Capital	Deferred Stock-based Compensation	Accumulated Other Comprehensive Income	Retained Earnings (Accumulated Deficit)	Total
	Shares	Amount					
(In thousands)							
<b>Balance at January 31, 2000</b>	48,932	98	17,580	(11,897)	—	2,159	7,940
Issuance of common stock in public offering, net of issuance costs	6,900	14	93,968	—	—	—	93,982
Conversion of Mandatorily Redeemable Preferred Stock into common stock	26,805	54	22,699	—	—	—	22,753
Issuance of common stock and options in connection with acquisition	29,110	58	2,473,253	(19,837)	—	—	2,453,474
Common stock options exercised	4,468	9	3,794	—	—	—	3,803
Common stock warrants exercised	230	—	—	—	—	—	—
Common stock repurchased	(1,212)	(2)	(478)	—	—	—	(480)
Issuance of common stock under the employee stock purchase plan	104	—	1,323	—	—	—	1,323
Deferred stock-based compensation, net	—	—	4,638	(4,638)	—	—	—
Amortization of deferred stock-based compensation	—	—	—	8,259	—	—	8,259
Tax benefit from employee stock transactions	—	—	713	—	—	—	713
Comprehensive loss:							
Unrealized gain on available-for-sale investments, net of tax	—	—	—	—	19	—	19
Net loss	—	—	—	—	—	(235,120)	(235,120)
Total comprehensive loss							(235,101)
<b>Balance at January 31, 2001</b>	115,337	231	2,617,490	(28,113)	19	(232,961)	2,356,666
Common stock options exercised	3,053	6	26,258	—	—	—	26,264
Common stock repurchased	(216)	—	(115)	—	—	—	(115)
Issuance of common stock under the employee stock purchase plan	403	1	6,116	—	—	—	6,117
Reversal of deferred stock-based compensation	—	—	(2,992)	2,992	—	—	—
Amortization of deferred stock-based compensation	—	—	—	15,022	—	—	15,022
Comprehensive loss:							
Unrealized gain on available-for-sale investments, net of tax	—	—	—	—	927	—	927
Net loss	—	—	—	—	—	(415,154)	(415,154)
Total comprehensive loss							(414,227)
<b>Balance at January 31, 2002</b>	118,577	238	2,646,757	(10,099)	946	(648,115)	1,989,727
Common stock options exercised	2,211	4	13,911	—	—	—	13,915
Common stock repurchased	(5)	—	(5)	—	—	—	(5)
Issuance of common stock under the employee stock purchase plan	456	1	8,324	—	—	—	8,325
Issuance of common stock and options in connection with acquisition	21	—	7,266	(5,449)	—	—	1,817
Reversal of deferred stock-based compensation	—	—	(2,158)	2,158	—	—	—
Amortization of deferred stock-based compensation	—	—	—	7,491	—	—	7,491
Comprehensive loss:							
Unrealized gain on available-for-sale investments, net of tax	—	—	—	—	1,042	—	1,042
Net loss	—	—	—	—	—	(72,174)	(72,174)
Total comprehensive loss							(71,132)
<b>Balance at January 31, 2003</b>	121,260	\$243	\$2,674,095	\$ (5,899)	\$1,988	\$(720,289)	\$1,950,138

See accompanying Notes to Consolidated Financial Statements.



**MARVELL TECHNOLOGY GROUP LTD.**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**

	Years Ended January 31,		
	2003	2002	2001
	(In thousands)		
<b>Cash flows from operating activities:</b>			
Net loss	\$ (72,174)	\$(415,154)	\$(235,120)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation and amortization	23,342	16,661	4,713
Amortization of stock-based compensation	7,491	15,022	8,259
Amortization and write-off of goodwill and acquired intangible assets	107,645	418,032	8,031
Acquired in-process research and development	—	—	234,874
Tax benefit from employee stock transactions	—	—	713
Changes in assets and liabilities, net of assets acquired and liabilities assumed in purchase acquisition:			
Accounts receivable	(42,625)	(4,607)	(9,254)
Inventory	(14,258)	7,324	(8,720)
Prepaid expenses and other assets	(7,280)	(7,744)	(6,981)
Accounts payable	16,291	6,172	10,078
Accrued liabilities and other	(2,278)	5,301	2,261
Accrued employee compensation	1,387	3,953	1,746
Accrued facilities consolidation charge	15,370	—	—
Income taxes payable	8,065	8,143	2,512
Deferred income	3,574	2,391	771
Deferred income tax assets	(3,732)	(5,477)	(1,691)
Net cash provided by operating activities	40,818	50,017	12,192
<b>Cash flows from investing activities:</b>			
Cash received from purchase acquisition	1,098	—	69,990
Purchases of short-term investments	(79,316)	(118,728)	—
Sales and maturities of short-term investments	75,480	27,784	—
Purchases of equity investments	(18,345)	—	—
Acquisition costs	—	(29,450)	(1,423)
Purchases of property and equipment	(28,780)	(24,620)	(12,161)
Purchases of technology licenses	(400)	(4,017)	—
Other	—	(2,556)	(25)
Net cash provided by (used in) investing activities	(50,263)	(151,587)	56,381
<b>Cash flows from financing activities:</b>			
Proceeds from the issuance of common and convertible preferred stock	22,240	32,381	99,508
Repurchases of common stock	(5)	(115)	(480)
Principal payments on capital lease obligations and notes payable	(1,957)	(341)	(73)
Net cash provided by financing activities	20,278	31,925	98,955
Net increase (decrease) in cash and cash equivalents	10,833	(69,645)	167,528
Cash and cash equivalents at beginning of period	114,483	184,128	16,600
Cash and cash equivalents at end of period	\$125,316	\$ 114,483	\$ 184,128
<b>Supplemental cash flow information:</b>			
Cash paid for interest	\$ 435	\$ 45	\$ 2
Cash paid for income taxes	\$ 2,184	\$ 802	\$ 318
Acquisition of property and equipment under capital lease obligations	\$ 10,769	\$ 11,360	\$ —
Acquisition of technology licenses with deferred payments	\$ 800	\$ 3,333	\$ —

See accompanying Notes to Consolidated Financial Statements.

**MARVELL TECHNOLOGY GROUP LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS****Note 1 — The Company and its Significant Accounting Policies:*****The Company***

Marvell Technology Group Ltd. (the “Company”), a Bermuda company, was incorporated on January 11, 1995. The Company is a leading global semiconductor provider of complete broadband communications and storage solutions. The Company’s diverse product portfolio includes switching, transceiver, wireless, PC connectivity, gateway, communications controller, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, and storage networking. On January 21, 2001, the Company acquired Galileo Technology Ltd. (“Galileo”), an Israeli corporation. Galileo develops high-performance internetworking and switching products for the broadband communications market. In January 2003, Galileo’s name was changed to Marvell Semiconductor Israel Ltd. (MSIL). On June 19, 2002, the Company acquired SysKonnnect GmbH (“SysKonnnect”), a German corporation. SysKonnnect develops and markets client-server products.

***Initial Public Offering***

In June 2000, the Company completed its initial public offering of common stock. A total of 6,900,000 shares were sold by the Company at a price of \$15.00 per share. The offering resulted in proceeds to the Company of approximately \$94.0 million, net of underwriting discounts and offering costs. At the closing of the offering, all issued and outstanding shares of the Company’s Mandatorily Redeemable Convertible Preferred Stock were converted into an aggregate of 26,804,920 shares of common stock.

***Basis of Presentation***

The Company’s fiscal year is the 52- or 53-week period ending on the Saturday closest to January 31. In a 52-week year, each fiscal quarter consists of 13 weeks. The additional week in a 53-week year is added to the fourth quarter, making such quarter consist of 14 weeks. Fiscal year 2002 was comprised of 53 weeks, and fiscal years 2003 and 2001 were comprised of 52 weeks. For presentation purposes, the financial statements and notes refer to January 31 as the Company’s year-end.

***Use of Estimates***

The preparation of 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 disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates, and such differences could affect the results of operations reported in future periods.

***Principles of Consolidation***

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated. The functional currency of the Company and its significant subsidiaries is the United States dollar.

***Fair Value of Financial Instruments***

The fair value of a financial instrument is the amount at which the instrument could be exchanged in a current transaction between willing parties. The carrying amounts for cash and cash equivalents, accounts receivable, prepaid expenses and other current assets, accounts payable, accrued liabilities, accrued employee compensation and accrued acquisition costs approximate their respective fair values because of the short-term nature of these items.

**MARVELL TECHNOLOGY GROUP LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)*****Cash and Cash Equivalents***

The Company considers all highly liquid investments with a maturity of three months or less from the date of purchase to be cash equivalents. Cash and cash equivalents consist of cash on deposit with banks, money market funds and commercial deposits.

***Investments***

The Company's marketable investments are classified as available-for-sale securities and are reported at fair value. Unrealized gains and losses are reported, net of tax, in accumulated other comprehensive income, a component of shareholders' equity. Realized gains and losses and declines in value judged to be other than temporary on available-for-sale securities are included in interest and other income, net. The Company views its available-for-sale portfolio as available for use in its current operations. Accordingly, the Company has classified all marketable investments as short-term, even though the stated maturity date may be one year or more beyond the current balance sheet date. The specific identification method is used to determine the cost of securities sold. Interest and dividends on securities classified as available-for-sale are included in interest and other income, net.

The Company also has equity investments in privately-held companies. These investments are recorded at cost as the Company does not have the ability to exercise significant influence over the operating and financial policies of these companies. These investments are included in other non-current assets on the accompanying balance sheets. The Company monitors these investments for impairment and makes appropriate reductions in carrying values when an impairment is deemed to be other than temporary.

Where the Company has investments in which it has the ability to exercise significant influence over operating and financial policies, these investments are accounted for using the equity method. Accordingly, the Company's share of the income/(loss) in these investments is included in other operating income/(loss).

***Concentration of Credit Risk and Significant Customers***

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist principally of cash equivalents, short-term investments and accounts receivable. The Company places its cash primarily in checking and money market accounts. Cash equivalents and short-term investment balances are maintained with high quality financial institutions, the composition and maturities of which are regularly monitored by management. The Company believes that the concentration of credit risk in its trade receivables with respect to the storage and communications industries, as well as the limited customer base, located primarily in the Far East, are substantially mitigated by the Company's credit evaluation process, relatively short collection terms and the high level of credit worthiness of its customers. The Company performs ongoing credit evaluations of its customers' financial condition and limits the amount of credit extended when deemed necessary based upon payment history and the customer's current credit worthiness, but generally requires no collateral. The Company recorded charges for allowance for bad and doubtful accounts of \$557,000, \$200,000 and \$1,118,000 in fiscal years 2003, 2002 and 2001, respectively. Receivables written off against the allowance aggregated \$555,000 and \$186,000 in 2003 and 2002, respectively, and none in 2001. The allowance for bad and doubtful accounts at January 31, 2003, 2002 and 2001 was \$2,039,000, \$1,232,000 and \$1,218,000, respectively.

## MARVELL TECHNOLOGY GROUP LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The following table sets forth sales to end users comprising 10% or more of the Company's net revenue for the periods indicated:

Customer	Years Ended January 31,		
	2003	2002	2001
A	18%	*	*
B	17%	17%	34%
C	11%	*	*
D	11%	13%	22%
E	10%	13%	*
F	*	12%	*
G	*	*	11%

\* Less than 10% of net revenue

The Company's accounts receivable were concentrated with three customers at January 31, 2003, representing 20%, 19% and 10% of accounts receivable, and were concentrated with three customers at January 31, 2002, representing 17%, 15% and 14% of accounts receivable.

In fiscal 2003, one distributor accounted for 10% of the Company's net revenue. This distributor also accounted for 8% of total accounts receivable as of January 31, 2003. The Company continuously monitors the creditworthiness of our distributors and believe their sales to diverse end customers and to diverse geographies further serve to mitigate our exposure to credit risk.

**Concentration of Other Risk**

The semiconductor industry is characterized by rapid technological change, competitive pricing pressures, and cyclical market patterns. The Company's results of operations are affected by a wide variety of factors, including general economic conditions, both at home and abroad; economic conditions specific to the semiconductor industry and to the data storage and data communication portion of that industry; demand for the Company's products; the timely introduction of new products; implementation of new manufacturing technologies; manufacturing capacity; the ability to manufacture efficiently; the availability of materials and supplies; competition; the ability to safeguard patents and intellectual property in a rapidly evolving market; and reliance on assembly and wafer fabrication subcontractors and on independent distributors and sales representatives. As a result, the Company may experience substantial period-to-period fluctuations in future operating results due to the factors mentioned above or other factors.

**Inventory**

Inventory is stated at the lower of cost or market, cost being determined under the first-in, first-out method. The Company has taken adjustments to write-down the cost of obsolete and excess inventory to the estimated market value based on historical and forecasted demand for its products. If actual future demand for the Company's products is less than currently forecasted, additional inventory adjustments may be required. Once a reserve is established, it is maintained until the product to which it relates is sold or otherwise disposed of. This treatment is in accordance with Accounting Research Bulletin 43 and Staff Accounting Bulletin 100 "Restructuring and Impairment Charges." The Company recorded charges for inventory obsolescence of \$3,000,000, \$1,250,000, and \$180,000 for fiscal years 2003, 2002 and 2001, respectively.

**MARVELL TECHNOLOGY GROUP LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)*****Property and Equipment***

Property and equipment, including capital leases and leasehold improvements, are stated at cost less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, which ranges from three to five years. Assets held under capital leases and leasehold improvements are amortized over the shorter of term of the lease or their estimated useful lives.

***Goodwill and Acquired Intangible Assets***

Goodwill is recorded when the consideration paid for an acquisition exceeds the fair value of net tangible and intangible assets acquired. The Company adopted Statement of Financial Accounting Standards No. 142 ("SFAS 142"), Goodwill and Other Intangible Assets on February 3, 2002. SFAS 142 requires, among other things, the discontinuance of amortization of goodwill and other intangible assets with indefinite useful lives, the reclassification of certain existing recognized intangibles into goodwill, reassessment of the useful lives of existing recognized intangibles, reclassification of certain intangibles out of previously reported goodwill and the testing for impairment of existing goodwill and other identified intangible assets. At the beginning of fiscal 2003, the Company discontinued the amortization of goodwill, reclassified the carrying value of the acquired workforce of \$10.4 million into goodwill and reassessed the useful lives of identified intangible assets. Acquisition-related identified intangible assets are amortized on a straight-line basis over their estimated economic lives of five years. The Company reviews its goodwill and identified intangible assets at least annually for impairment, or more frequently if indicators of impairment exist. See Note 5, "Goodwill and Purchased Intangible Assets," for detail of the activities in these accounts during fiscal years 2003 and 2002.

***Long-Lived Assets***

Long-lived assets include equipment, furniture and fixtures, privately held equity investments and intangible assets. Whenever events or changes in circumstances indicate that the carrying amount of long-lived assets may not be recoverable, we estimate the future cash flows, undiscounted and without interest charges, expected to result from the use of those assets and their eventual cash position. If the sum of the expected future cash flows is less than the carrying amount of those assets, we recognize an impairment loss based on the excess of the carrying amount over the fair value of the assets.

***Foreign Currency Transactions***

The functional currency of the Company's non-United States operations is the United States dollar. Monetary accounts maintained in currencies other than the United States dollar are re-measured using the foreign exchange rate at the balance sheet date. Operational accounts and nonmonetary balance sheet accounts are measured and recorded at the rate in effect at the date of the transaction. The effects of foreign currency re-measurement are reported in current operations. The effect of foreign currency re-measurement was not significant in fiscal years 2003, 2002 or 2001.

***Reclassifications***

Certain items have been reclassified to be consistent with current presentation. The reclassifications have no effect on previously disclosed net loss or shareholders' equity.

***Revenue Recognition***

The Company recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred, the price is fixed or determinable and collection is reasonably assured. Under these criteria, product revenue is generally recognized upon shipment of product to customers, net of accruals for estimated sales returns and allowances. However, some of the Company's sales are made through distributors under

**MARVELL TECHNOLOGY GROUP LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

agreements allowing for price protection and rights of return on product unsold by the distributors. Product revenue on sales made through distributors with rights of return is deferred until the distributors sell the product to end customers. Additionally, collection is not deemed to be “reasonably assured” if customers receive extended payment terms. As a result, revenue on sales to customers with payment terms substantially greater than the Company’s normal payment terms is deferred and is recognized as revenue as the payments become due. Deferred revenue less the related cost of the inventories is reported as deferred income.

The provision for estimated sales returns and allowances on product sales is recorded in the same period the related revenues are recorded. These estimates are based on historical sales returns, analysis of credit memo data and other known factors. Actual returns could differ from these estimates.

The Company also enters into development agreements with some of its customers. Development revenue is recognized under the percentage-of-completion method, with the associated costs included in research and development expense. The Company estimates the percentage-of-completion of its development contracts based on an analysis of progress toward completion.

Revenue from licensed software is recognized when persuasive evidence of an arrangement exists and delivery has occurred, provided that the fee is fixed and determinable and collectibility is probable. Revenue from post-contract customer support and any other future deliverables is deferred and earned over the support period or as contract elements are delivered.

***Research and Development***

Research and development costs are expensed as incurred.

***Stock-Based Compensation***

The Company’s employee stock based compensation is accounted for in accordance with Accounting Principles Board Opinion No. 25 (“APB 25”), Accounting for Stock Issued to Employees and complies with the disclosure provisions of Statement of Financial Accounting Standards No. 123 (“SFAS 123”), Accounting for Stock-Based Compensation. Expense associated with stock-based compensation is amortized on an accelerated basis over the vesting periods of the individual awards consistent with the method described in Financial Accounting Standards Board Interpretation No. 28 (“FIN 28”). Application of FIN 28 to awards that vest progressively over five years results in amortization of approximately 46% of the compensation in the first 12 months of vesting, 26% of the compensation in the second 12 months of vesting, 15% of the compensation in the third 12 months of vesting, 9% of the compensation in the fourth 12 months of vesting and 4% of the compensation in the fifth 12 months of vesting. The Company accounts for stock issued to non-employees in accordance with the provisions of SFAS 123 and Emerging Issues Task Force Consensus No. 96-18 (“EITF 96-18”), Accounting for Equity Instruments that are Offered to Other Than Employees for Acquiring of in Conjunction with Selling Goods or Services. Under SFAS 123 and EITF 96-18, stock option awards issued to non-employees are accounted for at their fair value using the Black-Scholes valuation method. The fair value of each non-employee stock award is remeasured at each period end until a commitment date is reached, which is generally the vesting date.

The Company accounts for employee and director stock options in accordance with APB 25 and complies with the disclosure provisions of SFAS 123. The Company accounts for stock options issued to non-employees in accordance with the provisions of SFAS 123 and EITF 96-18. Under SFAS 123 and EITF 96-18, stock options issued to non-employees are accounted for at their fair value using the Black-Scholes valuation method. No deferred stock-based compensation was recorded during fiscal 2002. During fiscal 2001 and 2000, the Company recorded deferred stock-based compensation of approximately \$5,761,000 and \$13,852,000, respectively, related to stock options granted to employees and directors. Also during fiscal 2001, the Company recorded \$19,837,000 of deferred stock-based compensation relating to the assumed options of MSIL. During

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

fiscal 2003, the Company recorded \$5,449,000 of deferred stock-based compensation relating to the grant of stock options to SysKonnnect employees as a result of the acquisition of SysKonnnect. Such deferred stock-based compensation is being amortized using an accelerated method over the remaining vesting periods of the options.

SFAS 148 amends SFAS 123 in December 2002 to require that disclosures of the pro forma effect using the fair value method of accounting for stock-based employee compensation be displayed more prominently in tabular format. Had compensation expense for all the Company's stock options been determined based on the fair values, as prescribed by SFAS 123, the Company's net loss would have been as follows (in thousands, except per share amounts):

	Years Ended January 31,		
	2003	2002	2001
Net loss:			
As reported	\$ (72,174)	\$(415,154)	\$(235,120)
Adjustments:			
Stock-based employee compensation expense included in reported net loss, net of tax effects	7,491	15,022	8,259
Stock-based employee compensation expense determined under fair value based method for all awards, net of tax effects	(77,941)	(67,742)	(17,723)
Pro forma	<u>\$(142,624)</u>	<u>\$(467,874)</u>	<u>\$(244,584)</u>
Basic and diluted net loss per share:			
As reported	\$ (0.61)	\$ (3.63)	\$ (3.55)
Pro forma	<u>\$ (1.20)</u>	<u>\$ (4.09)</u>	<u>\$ (3.69)</u>

For the purpose of the above SFAS 123 pro forma disclosure, the fair value of each stock option granted prior to the Company's initial public offering in June 2000 was estimated on the date of grant using the minimum value method, which does not consider stock price volatility, as prescribed by SFAS 123. Stock options granted subsequent to the Company's initial public offering have been valued using the Black-Scholes option pricing model. Among other things, the Black-Scholes model considers the expected volatility of the Company's stock price in arriving at an option valuation. The fair values of the Company's stock options granted in fiscal 2001 subsequent to the initial public offering were estimated using an expected volatility of 70%, and the fair values of the Company's stock options granted in fiscal 2002 and fiscal 2003 were estimated using an expected volatility of 85% and 89%, respectively. The following table summarizes the estimated fair value of options granted and additional assumptions used in the SFAS 123 calculations:

	Stock Option Plans			ESPP		
	2003	2002	2001	2003	2002	2001
Estimated fair value	\$14.45	\$10.49	\$7.80	\$8.81	\$8.46	\$5.06
Expected term (in years)	4.4	3.6	3.3	1.0	1.0	0.4
Risk-free interest rate	3.6%	4.3%	6.3%	1.7%	5.0%	5.3%
Dividend yield	—	—	—	—	—	—

**Comprehensive Loss**

For the years ended January 31, 2003, 2002 and 2001, comprehensive loss is comprised of net loss and unrealized gains and losses on available-for-sale securities, net of tax. For the years ended January 31, 2003

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

and 2002, \$1,638,000 and \$1,192,000, respectively of net unrealized gains were reclassified as realized gains and recognized in the accompanying statement of operations upon the sale of the related securities.

Accumulated other comprehensive income, as presented on the accompanying balance sheets, consists of net unrealized gains and losses on available-for-sale securities, net of tax. As of January 31, 2003 and 2002, accumulated other comprehensive income is presented net of income taxes of \$13,000 and \$755,000, respectively.

***Net Loss Per Share***

The Company reports both basic net loss per share, which is based upon the weighted average number of common shares outstanding excluding contingently issuable or returnable shares, and diluted net loss per share, which is based on the weighted average number of common shares outstanding and dilutive potential common shares. The computations of basic and diluted net loss per share are presented in the following table (in thousands, except per share amounts):

	Years Ended January 31,		
	2003	2002	2001
Numerator:			
Net loss	\$ (72,174)	\$ (415,154)	\$ (235,120)
Denominator:			
Weighted average shares of common stock outstanding	119,899	116,390	71,074
Less: unvested common shares subject to repurchase	(659)	(2,037)	(4,815)
Weighted average shares — basic and diluted	119,240	114,353	66,259
Basic and diluted net loss per share	\$ (0.61)	\$ (3.63)	\$ (3.55)

Options to purchase 24,807,248 common shares at a weighted average exercise price of \$17.09 per share and 659,337 common shares subject to repurchase by the Company have been excluded from the computation of diluted net loss per share for the year ended January 31, 2003 as their effect would have been anti-dilutive.

***Warranty***

Our products are generally subject to warranty and we provide for the estimated future costs of repair, replacement or customer accommodation upon shipment of the product in the accompanying statements of operations. Our warranty accrual is estimated based on historical claims compared to historical revenues and assumes that we have to replace products subject to a claim. For new products, we use our historical percentage for the appropriate class of product.

***Recent Accounting Pronouncements***

In July 2001, the FASB issued Statement of Financial Accounting Standards No. 143 ("SFAS 143"), "Accounting for Asset Retirement Obligations," which addresses accounting and reporting for obligations associated with the retirement of tangible long-lived assets and the associated asset retirement costs. SFAS No. 143 is effective for fiscal years beginning after June 15, 2002. The Company is currently assessing the impact of SFAS No. 143 on its consolidated financial statements.

In October 2001, the FASB issued Statement of Financial Accounting Standards No. 144 ("SFAS 144"), Accounting for the Impairment or Disposal of Long-Lived Assets, which is effective for fiscal years beginning after December 15, 2001. SFAS 144 supercedes SFAS 121, Accounting for the Impairment of Long-lived Assets and Assets to be Disposed Of, and certain provisions of Accounting Principles Board



**MARVELL TECHNOLOGY GROUP LTD.****NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Opinion No. 30, Reporting the Results of Operations — Reporting the Effects of Disposal of a Segment of a Business, and Extraordinary, Unusual and Infrequently Occurring Events and Transactions. SFAS 144 requires that long-lived assets to be disposed of by sale, including discontinued operations, be measured at the lower of carrying amount or fair value less cost to sell, whether reported in continuing operations or in discontinued operations. SFAS 144 also broadens the reporting requirements of discontinued operations to include all components of an entity that have operations and cash flows that can be clearly distinguished, operationally and for financial reporting purposes, from the rest of the entity. The Company adopted SFAS 144 on February 1, 2002, and the adoption did not have a significant impact on its financial position or results of operations.

In April 2002, the FASB issued Statement of Financial Accounting Standards No. 145 (“SFAS 145”), Rescission of FASB Statements No. 4, 44, and 64, Amendment of FASB Statement No. 13, and Technical Corrections.” SFAS 145 will generally require gains and losses on extinguishments of debt to be classified as income or loss from continuing operations rather than as extraordinary items as previously required under SFAS 4. Extraordinary treatment will be required for certain extinguishments as provided in APB Opinion No. 30. The statement also amended SFAS 13 for certain sales-leaseback transactions and sublease accounting. The Company adopted the provisions of SFAS 145 effective February 2, 2003 and adoption of SFAS 145 is not expected to have a significant impact on its financial position or results of operations.

In June 2002, the FASB issued Statement of Financial Accounting Standards No. 146 (“SFAS 146”), Accounting for Costs Associated with Exit or Disposal Activities. SFAS 146 addresses financial accounting and reporting for costs associated with exit or disposal activities and nullifies Emerging Issues Task Force (EITF) Issue No. 94-3, Liability Recognition for Certain Employee Termination Benefits and Other Costs to Exit and Activity (including Certain Costs Incurred in Restructuring). SFAS 146 requires that a liability for a cost associated with an exit or disposal activity be recognized when a liability is incurred rather than when an exit or disposal plan is approved. The Company is required to adopt the provisions of SFAS 146 for any exit or disposal activities initiated after December 31, 2002. The adoption of SFAS 146 did not have a significant impact on the Company’s financial position or results of operations. However, it may in certain circumstances change the timing of recognition of restructuring costs.

In November 2002, the FASB issued FASB Interpretation No. 45 (“FIN 45”), “Guarantor’s Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others.” FIN 45 will significantly change current practice in the accounting for and disclosure of guarantees. FIN 45 requires certain guarantees to be recorded at fair value which is different from the current practice of recording a liability only when a loss is probable and reasonably estimable, as those terms are defined in SFAS No. 5, “Accounting for Contingencies.” FIN 45 also requires a guarantor to make significant new disclosures, even when the likelihood of making any payments under the guarantee is remote, which is another change from the current practice. FIN 45 disclosure requirements are effective for financial statements of interim or annual periods ending after December 15, 2002, while the initial recognition and initial measurement provisions are applicable on a prospective basis to guarantees issued or modified after December 31, 2002. The Company has adopted the disclosure provisions of FIN 45 for the year ended January 31, 2003 and since December 31, 2002, the recognition and measurement provisions of FIN 45 has not had a material impact on the consolidated financial statements.

In December 2002, the FASB issued Statement of Financial Accounting Standards No. 148 (“SFAS 148”), “Accounting for Stock-Based Compensation — Transition and Disclosure — an amendment of FASB Statement No. 123.” SFAS 148 provides alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. SFAS 148 also requires that disclosures of the pro forma effect of using the fair value method of accounting for stock-based employee compensation be displayed more prominently and in a tabular format. Additionally, SFAS 148 requires disclosure of the pro forma effect in interim financial statements. The transition and annual disclosure

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

requirements of SFAS 148 are effective for fiscal years ended after December 15, 2002. The interim disclosure requirements are effective for interim periods beginning after December 15, 2002. We have chosen to continue to account for stock-based compensation using the intrinsic value method prescribed in APB Opinion No. 25 and related interpretations. Accordingly, compensation expense for stock options is measured as the excess, if any, of the estimate of the market value of our stock at the date of the grant over the amount an employee must pay to acquire our stock. The Company has adopted the annual disclosure provisions of SFAS 148 in its financial reports for the year ended January 31, 2003 and will adopt the interim disclosure provisions for its financial reports for the quarter ending May 3, 2003. As the adoption of this standard involves disclosures only, the Company does not expect a material impact on its consolidated financial statements.

In January 2003, the FASB issued FASB Interpretation No. 46 ("FIN 46"), "Consolidation of Variable Interest Entities, an Interpretation of ARB No. 51." FIN 46 requires certain variable interest entities to be consolidated by the primary beneficiary of the entity if the equity investors in the entity do not have the characteristics of a controlling financial interest or do not have sufficient equity at risk for the entity to finance its activities without additional subordinated financial support from other parties. FIN 46 is effective for all new variable interest entities created or acquired after January 31, 2003. For variable interest entities created or acquired prior to February 1, 2003, the provisions of FIN 46 must be applied for the first interim or annual period beginning after June 15, 2003. The Company is currently evaluating the impact of the adoption of FIN 46 on its financial position or results of operations. It is reasonably possible that the Company is a primary beneficiary of or hold a significant variable interest in a variable interest entity. The Company has a 46% equity interest in a company that conducts research and development primarily on its behalf. The Company's maximum exposure to loss as a result of its investment with the potential variable interest entity is its investment of \$3.3 million, as the Company is not obligated to provide any additional financing.

**Note 2 — Acquisitions:**

Effective January 21, 2001, the Company acquired MSIL in a stock-for-stock transaction. MSIL develops high-performance communications internetworking and switching products for the broadband communications market. The acquisition has been accounted for using the purchase method of accounting, and the operating results of MSIL have been included in the Company's consolidated financial statements from the date of acquisition. The total purchase price for this acquisition was approximately \$2.5 billion. The purchase price was allocated to the tangible and intangible assets acquired and liabilities assumed based upon their respective fair values at the acquisition date. The purchase price consisted of 29,110,455 shares of the Company's common stock with an estimated fair value of \$2.1 billion, options to purchase 6,833,032 shares of the Company's common stock with an estimated fair value of \$381.4 million and acquisition-related expenses of approximately \$16.1 million. The allocation of the purchase price is presented in the following table (in thousands):

Net tangible assets	\$ 125,710
Intangible assets:	
Goodwill	1,674,142
Developed technology	388,955
Trade name	33,241
Workforce	12,532
Deferred stock-based compensation	19,837
In-process research and development	234,874
	<hr/>
Total	\$2,489,291
	<hr/>

## MARVELL TECHNOLOGY GROUP LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The amounts allocated to goodwill and other intangible assets were amortized on a straight-line basis over periods between five and ten years until adoption of SFAS 142 on February 3, 2002 when the Company ceased amortizing goodwill and reclassified certain intangibles into goodwill (see Note 1).

The amount allocated to deferred stock-based compensation relates to the intrinsic value of the unvested MSIL stock options assumed. The MSIL stock options generally vest over a period of four years. This deferred stock-based compensation is being amortized on an accelerated basis over the vesting period of the individual awards consistent with the method described in FIN 28 (see Note 1).

The amount allocated to in-process research and development was determined based on an appraisal completed by an independent third party using established valuation techniques in the high-technology industry and was expensed upon acquisition because technological feasibility had not been established and no future alternative uses existed. The fair values of MSIL's in-process research and development ("IPRD"), as well as their developed technologies, were determined using the income approach, which discounts expected future cash flows to present value. The discount rates used in the present value calculations were derived from a weighted-average cost of capital analysis and venture capital surveys, adjusted upward to reflect additional risks inherent in the development life cycle. A discount rate of 16.5% was used for developed technology, and rates between 21.5% and 34.0% were used for IPRD, depending on the stage of completion of each technology.

The unaudited pro forma information below assumes that MSIL had been acquired at the beginning of fiscal 2001 and includes the effect of amortization of goodwill and other intangible assets from that date. The impact of charges for purchased in-process research and development has been excluded. This data is presented for informational purposes only and is not necessarily indicative of the results of future operations or the results that would have been achieved had the acquisition taken place on that date. The pro forma information is presented in the following table (in thousands, except per share data):

	Year Ended January 31, 2001
Net revenue	\$ 250,425
Net loss	\$(393,668)
Basic net loss per share	\$ (4.15)
Diluted net loss per share	\$ (4.15)

On June 19, 2002, the Company acquired 100% of the shares of SysKonnnect through a share purchase agreement. SysKonnnect develops and markets client-server products. The acquisition has been accounted for using the purchase method of accounting, and the operating results of SysKonnnect have been included in the Company's consolidated financial statements from the date of acquisition.

The total purchase price of the acquisition was approximately \$9.5 million. The purchase price consisted of restricted shares and options granted to SysKonnnect shareholders to purchase a total of 300,000 shares of the Company's common stock (fair value of \$7.3 million), settlement of a loan receivable of \$1.9 million, and acquisition related expenses of approximately \$0.3 million.

The aggregate purchase price was allocated as follows (in thousands):

Net tangible assets	\$4,061
Deferred compensation	5,449
Aggregate purchase price	\$9,510

The amount allocated to deferred stock-based compensation relates to the intrinsic value of the unvested restricted stock and stock options issued. The restricted stock and stock options vest over a period of four

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

years. This deferred stock-based compensation is amortized on an accelerated basis over the vesting period of the individual awards consistent with the method described in FIN28.

**Note 3 — Available-for-Sale Securities:**

The amortized cost and fair value of available-for-sale securities at January 31, 2003 and 2002 are presented in the following tables (in thousands):

January 31, 2003				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Corporate debt securities	\$105,404	\$1,744	\$(76)	\$107,072
Federal, State, county and municipal debt securities	44,812	297	—	45,109
Equity securities	800	36	—	836
	<u>151,016</u>	<u>2,077</u>	<u>(76)</u>	<u>153,017</u>
Less amounts classified as cash equivalents	(13,105)	—	—	(13,105)
Short-term investments	<u>\$137,911</u>	<u>\$2,077</u>	<u>\$(76)</u>	<u>\$139,912</u>

The contractual maturities of available-for-sale debt securities classified as short-term investments at January 31, 2003 are presented in the following table (in thousands):

	Amortized Cost	Estimated Fair Value
Due in one year or less	\$ 36,062	\$ 36,368
Due between one and four years	101,049	102,708
	<u>\$ 137,111</u>	<u>\$139,076</u>

January 31, 2002				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Corporate debt securities	\$100,232	\$ 461	\$(738)	\$ 99,955
Federal, State, county and municipal debt securities	25,870	10	(97)	25,783
Foreign government debt securities	13,163	—	(92)	13,071
Equity securities	2,400	2,157	—	4,557
	<u>141,665</u>	<u>2,628</u>	<u>(927)</u>	<u>143,366</u>
Less amounts classified as cash equivalents	(7,605)	—	—	(7,605)
Short-term investments	<u>\$134,060</u>	<u>\$2,628</u>	<u>\$(927)</u>	<u>\$135,761</u>

MARVELL TECHNOLOGY GROUP LTD.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

Note 4 — Supplementary Financial Information (in thousands):

	January 31,	
	2003	2002
<b>Inventory:</b>		
Work-in-process	\$ 21,176	\$ 16,727
Finished goods	18,536	6,873
	<u>\$ 39,712</u>	<u>\$ 23,600</u>
<b>Property and equipment:</b>		
Machinery and equipment	\$ 58,640	\$ 38,621
Computer software	40,403	25,019
Furniture and fixtures	8,680	8,154
Leasehold improvements	14,751	13,940
	<u>122,474</u>	<u>85,734</u>
Less: Accumulated depreciation and amortization	<u>(53,228)</u>	<u>(32,810)</u>
	<u>\$ 69,246</u>	<u>\$ 52,924</u>

Property and equipment included \$22,129 and \$11,360 of assets under capital lease at January 31, 2003 and 2002, respectively. Accumulated depreciation on these assets was \$2,593 and \$95 at January 31, 2003 and 2002, respectively.

	January 31,	
	2003	2002
<b>Other noncurrent assets:</b>		
Equity investments	\$19,178	\$ 833
Other	30,135	17,142
	<u>\$49,313</u>	<u>\$17,975</u>

	January 31,	
	2003	2002
<b>Other long-term liabilities:</b>		
Long-term facilities consolidation charge	\$11,652	\$ —
Income taxes payable long-term	22,835	—
Other	7,542	6,793
	<u>\$42,029</u>	<u>\$6,793</u>

	January 31, 2003
<b>Warranty reserve:</b>	
Balance as of January 31, 2002.	\$ 474
Charges to costs and expenses	593
Payments	(541)
	<u>\$ 526</u>
Balance as of January 31, 2003.	\$ 526

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**Note 5 — Goodwill and Purchased Intangible Assets:**

As required by SFAS 142, the Company ceased amortizing goodwill of \$1.3 billion beginning February 1, 2002 and has reclassified the carrying value at January 31, 2002 of the acquired workforce of \$10.4 million into goodwill because this intangible asset did not arise from contractual or other legal rights and cannot be separated from the acquired entity and sold, transferred, licensed, rented or exchanged. In January 2003, the Company decided to no longer use the Galileo trade name in selling and marketing activities going forward. As a result, the Company wrote-off the remaining \$22.4 million net book value of the trade name in the fourth quarter of fiscal 2003. The impairment test required upon the adoption of SFAS 142 and annual impairment review were completed and did not identify any impairment of goodwill. The Company plans to perform an annual impairment review during the fourth quarter of each year or more frequently if indicators of impairment exist.

The following table presents the impact of SFAS 142 on net loss and net loss per share had SFAS 142 been in effect for the years ended January 31, 2003, 2002 and 2001 (in thousands, except per share amounts):

	Year ended January 31,		
	2003	2002	2001
Net loss — as reported	\$(72,174)	\$(415,154)	\$(235,120)
Adjustments:			
Amortization of goodwill	—	334,828	6,431
Amortization of acquired workforce previously classified as a purchased intangible asset	—	2,088	—
Change in amortization life of trade name	—	(3,324)	—
Net adjustments	—	333,592	6,431
Net loss — as adjusted	\$(72,174)	\$( 81,562)	\$(228,689)
Basic and diluted net loss per share — as reported	\$ (0.61)	\$ (3.63)	\$ (3.55)
Amortization of goodwill	—	2.93	0.10
Amortization of acquired workforce previously classified as a purchased intangible asset	—	0.02	—
Change in amortization life of trade name	—	(0.03)	—
Basis and diluted net loss per share — as adjusted	\$ (0.61)	\$ (0.71)	\$ (3.45)

The changes in the carrying amount of the goodwill and intangible assets are as follows (in thousands):

	As of January 31, 2003			As of January 31, 2002		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Purchased technology	\$ 388,955	\$(157,080)	\$ 231,875	\$ 388,955	\$ (79,288)	\$ 309,667
Trade name	—	—	—	33,241	(3,388)	29,853
Assembled workforce	—	—	—	12,532	(2,128)	10,404
Total identified intangible assets	388,955	(157,080)	231,875	434,728	(84,804)	349,924
Goodwill	1,686,674	(347,906)	1,338,768	1,674,142	(343,326)	1,330,816
Total intangible assets	\$2,075,629	\$(504,986)	\$1,570,643	\$2,108,870	\$(428,130)	\$1,680,740

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Purchased technology is amortized on a straight-line basis over its estimated economic lives of five years. The aggregate amortization expense of identified intangible assets was \$83.4 million and \$83.2 million for the years ended January 31, 2003 and 2002, respectively. The estimated total annual amortization expenses of acquired intangible assets is \$77.8 million for both fiscal years 2004 and 2005, respectively and \$76.2 million for fiscal year 2006.

**Note 6 — Facilities Consolidation Charge:**

During fiscal 2003, the Company recorded a total of \$19.6 million of charges associated with costs of consolidation of its facilities. These charges included \$12.6 million in lease abandonment charges resulting from the consolidation of the Company's three facilities in the Silicon Valley into one location. The lease abandonment charge includes the remaining lease commitments of these facilities reduced by the estimated sublease income throughout the duration of the lease term. The facilities consolidation charge also includes \$6.0 million associated with the write-down of certain property and leasehold improvements related to the abandoned facilities. Additionally, the Company incurred charges of \$1.0 million during the quarter ended April 30, 2002 as a result of duplicate lease and other costs associated with the dual occupation of its current and abandoned facilities. The facilities consolidation charge is an estimate as of January 31, 2003 and may change as the Company obtains subleases for the abandoned facilities and sublease income is known. At January 31, 2003, cash payments of \$3.2 million had been made in connection with this charge. Approximately \$15.4 million is accrued for the facilities consolidation charge as of January 31, 2003 of which \$3.7 million is the current portion included in accrued liabilities while the long-term portion totaling \$11.7 million is payable through 2010.

A summary of the facilities consolidation charge is as follows (in thousands):

	Total Charge	Cash Payments	Non-Cash Charges	Remaining Liability at January 31, 2003
Accrued losses on abandoned leased facilities:				
Non-cancelable lease commitments	\$12,610	\$(2,279)	\$ —	\$10,331
Property and leasehold improvements	5,999	—	(960)	5,039
Duplicate facility lease costs and other	953	(871)	(82)	—
	<u>\$19,562</u>	<u>\$(3,150)</u>	<u>\$(1,042)</u>	<u>\$15,370</u>

**Note 7 — Warrants:**

During fiscal 1999, in connection with the Company's Loan and Security Agreement with a bank, the Company issued warrants to purchase 45,000 shares of Series D at \$4.33 per share which were exercisable on a net basis. The Company valued the warrants under the "Black-Scholes" formula at approximately \$66,000. The warrant value was recorded as interest expense. Upon the closing of the Company's initial public offering, these warrants converted into warrants to purchase 180,000 shares of common stock at \$1.0825 per share. These warrants were exercised on a net basis for 172,947 shares of common stock in fiscal 2001.

In July 1999, in connection with the Company's Loan and Security Agreement with a bank, the Company issued warrants to purchase 60,000 shares of common stock at \$1.50 per share which were exercisable on a net basis. The Company valued the warrants under the "Black-Scholes" formula at approximately \$23,000. The warrant value was recorded as interest expense. These warrants were exercised on a net basis for 56,742 shares of common stock in fiscal 2001.

## MARVELL TECHNOLOGY GROUP LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

**Note 8 — Shareholders' Equity:***Common and Preferred Stock*

As of January 31, 2003, the Company is authorized to issue 242,000,000 shares of \$0.002 par value common stock and 8,000,000 shares of \$0.002 par value preferred stock. The Company has the authority to issue undesignated preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption and liquidation preferences. As of January 31, 2003 and 2002, no shares of preferred stock were outstanding.

*1995 Stock Option Plan*

In April 1995, the Company adopted the 1995 Stock Option Plan (the "Option Plan"). The Option Plan, as amended, had 44,197,398 shares of common stock reserved for issuance thereunder as of January 31, 2003. The Option Plan allows for an annual increase in shares reserved for issuance equal to the lesser of (i) 10,000,000 shares, (ii) 5.0% of the outstanding shares of capital stock on such date, or (iii) an amount of shares determined by the Board of Directors. The Option Plan allows for the issuance of incentive and nonqualified stock options to employees and consultants of the Company.

Options granted under the Option Plan generally have a term of ten years and generally must be issued at prices not less than 100% and 85% for incentive and nonqualified stock options, respectively, of the fair market value of the stock on the date of grant. Incentive stock options granted to shareholders who own greater than 10% of the outstanding stock are for periods not to exceed five years and must be issued at prices not less than 110% of the fair market value of the stock on the date of grant. The options generally vest 20% one year after the vesting commencement date, and the remaining shares vest one-sixtieth per month over the remaining forty-eight months. Options granted under the Option Plan prior to March 1, 2000 may be exercised prior to vesting. The Company has the right to repurchase such shares at their original purchase price if the optionee is terminated from service prior to vesting. Such right expires as the options vest over a five-year period. Options granted under the Option Plan subsequent to March 1, 2000 may only be exercised upon or after vesting.

*1997 Directors' Stock Option Plan*

In August 1997, the Company adopted the 1997 Directors' Stock Option Plan (the "Directors' Plan"). The Directors' Plan has 900,000 shares of common stock reserved thereunder. Under the Directors' Plan, an outside director is granted 30,000 options upon appointment to the Board of Directors. These options vest 20% one year after the vesting commencement date and remaining shares vest one-sixtieth per month over the remaining forty-eight months. An outside director is also granted 6,000 options on the date of each annual meeting of the shareholders. These options vest one-twelfth per month over twelve months after the fourth anniversary of the vesting commencement date. Options granted under the Directors' Plan may be exercised prior to vesting. The Company has the right to repurchase such shares at their original purchase price if the director is terminated or resigns from the Board of Directors prior to vesting. Such right expires as the options vest over a five-year period.

*Other Stock Option Arrangements*

In October 1995, the Company granted to a director nonqualified stock options to purchase 1,500,000 shares of common stock at \$0.0333 per share. These options vested ratably over a five-year vesting period. The options were exercisable prior to vesting but would remain subject to repurchase until vested. These options were exercised in October 1995 and were fully vested as of January 31, 2002. In July 1996, the Company granted to the same director nonqualified stock options to purchase 1,500,000 shares of common stock at \$0.0367 per share. These options vested 20% one year after the date of grant, and the remaining shares vested



**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

one-sixtieth per month over the following forty-eight months. These options were fully vested and exercisable as of January 31, 2002.

In January 1998, the Company granted to a director nonqualified stock options to purchase 450,000 shares of common stock at \$0.25 per share. The options vest 20% one year after the vesting commencement date, and the remaining shares vest one-sixtieth per month over the remaining forty-eight months. The options may be exercised prior to vesting but will remain subject to repurchase until vested. The options were exercised in March 2000 and are fully vested as of January 31, 2003.

***Combined Option Plan Activity***

The following table summarizes the activity under the Option Plan, the Directors' Plan and other stock option arrangements:

	Shares Available	Options Outstanding	Weighted Average Exercise Price
		(In thousands)	
Balance at January 31, 2000.	5,083	12,385	\$ 0.86
Additional shares authorized	10,601	—	—
Options granted and assumed	(14,167)	14,167	\$19.17
Options canceled	842	(842)	\$ 7.33
Shares repurchased	1,156	—	\$ 0.32
Options exercised	—	(4,468)	\$ 0.85
	<hr/>	<hr/>	
Balance at January 31, 2001.	3,515	21,242	\$12.82
Additional shares authorized	5,000	—	—
Options granted	(4,961)	4,961	\$17.52
Options canceled	1,318	(1,940)	\$15.80
Options exercised	—	(3,159)	\$ 8.30
	<hr/>	<hr/>	
Balance at January 31, 2002.	4,872	21,104	\$14.33
Additional shares authorized	6,144	—	—
Options granted	(7,615)	7,615	\$21.98
Options canceled	1,253	(1,701)	\$18.69
Options exercised	—	(2,211)	\$ 6.29
	<hr/>	<hr/>	
Balance at January 31, 2003	4,654	24,807	\$17.09
	<hr/>	<hr/>	

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

The following table summarizes information relating to stock options outstanding and exercisable under the Option Plan, the Directors' Plan and other stock option arrangements at January 31, 2003:

	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Number Exercisable	Weighted Average Exercise Price
	(In thousands)			(In thousands)	
Range of exercise prices:					
\$ 0.00 - \$ 3.00	4,699	5.25	\$ 0.84	4,549	\$ 0.87
\$ 3.01 - \$13.87	6,690	7.93	\$10.47	2,580	\$ 8.35
\$13.88 - \$21.38	5,377	8.27	\$18.28	1,992	\$19.24
\$21.39 - \$30.69	5,705	8.66	\$28.17	1,086	\$25.43
\$30.70 - \$93.88	2,336	7.60	\$38.99	1,305	\$38.28
	<u>24,807</u>			<u>11,512</u>	

In connection with the acquisition of MSIL, the Company assumed MSIL's stock option plans. Upon acquisition, a total of 6,833,032 shares of the Company's common stock were reserved for issuance under the assumed plans, and the related options are included in the preceding tables. These options will continue to be governed by the terms and conditions of the original option agreements which generally included a four-year vesting schedule and an eight to ten year option term.

In June 2002, as a result of the Company's acquisition of SysKonnnect, the Company assumed stock options previously granted under stock options granted by SysKonnnect. As of January 31, 2003, 160,309 shares of common stock were reserved for issuance upon exercise of outstanding options assumed from the SysKonnnect acquisition. The related options are included in the preceding tables. The options vest over a 5-year vesting schedule and have 10-year option term.

At January 31, 2003, a total of 355,653 unvested shares remain subject to the Company's repurchase rights under the Option Plan and other stock option arrangements.

**2000 Employee Stock Purchase Plan**

In June 2000, the Company adopted the 2000 Employee Stock Purchase Plan (the "Purchase Plan"). The Purchase Plan had 2,000,000 shares of common stock reserved for issuance thereunder as of January 31, 2003. The Purchase Plan allows for an annual increase in shares reserved for issuance equal to the lesser of (i) 500,000 shares, (ii) 0.75% of the outstanding shares of capital stock on such date, or (iii) an amount of shares determined by the Board of Directors. Under the Purchase Plan, employees are granted the right to purchase shares of common stock at a price per share that is 85% of the lesser of the fair market value of the shares at (i) the participant's entry date into the two-year offering period, or (ii) the end of each six-month purchase period within the offering period. Participants purchase stock using payroll deductions, which may not exceed 20% of their total cash compensation. Offering and purchase periods begin on December 1 and June 1 of each year, with the exception that the first offering period of the Purchase Plan began on June 26, 2001, the date of the Company's initial public offering. During fiscal 2003, a total of 455,654 shares were issued under the Purchase Plan at a weighted-average price of \$18.27 per share. During fiscal 2002, a total of 402,967 shares were issued under the Purchase Plan at a weighted-average price of \$15.18 per share, and during fiscal 2001, a total of 103,771 shares were issued under the Purchase Plan at a weighted-average price of \$12.75 per share. At January 31, 2003, 1,037,608 shares were available for future issuance under the Purchase Plan.

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**Note 9 — Benefit Plans:**

The Company sponsors a 401(k) savings and investment plan which allows all employees to participate by making pre-tax contributions to the 401(k) plan ranging from 1% to 20% of eligible earnings. The Company may make discretionary contributions to the 401(k) plan upon approval by the Board of Directors. No Company contributions have been made to the 401(k) plan since inception. As of January 31, 2003, the 401(k) plan offers a diverse selection of 16 investment alternatives, representing all asset classes. Employees may not invest in the Company's common stock through the 401(k) plan.

Under Israeli law, the Company is required to make severance payments to its retired or dismissed Israeli employees and Israeli employees leaving its employment in certain other circumstances. The Company's severance pay liability to its Israeli employees, which is calculated based on the salary of each employee multiplied by the years of such employee's employment, is reflected in the Company's balance sheet in other long-term liabilities on an accrual basis, and is partially funded by the purchase of insurance policies in the name of the employees. The surrender value of the insurance policies is recorded in other noncurrent assets. The severance pay expenses for the years ended January 31, 2003 and 2002 were \$1,232,000 and \$943,000, respectively. The severance pay detail is as follows (in thousands):

	Years Ended January 31,		
	2003	2002	2001
Accrued severance	\$5,063	\$3,831	\$2,888
Less amount funded	3,782	2,624	1,803
Unfunded portion, net accrued severance pay	\$1,281	\$1,207	\$1,085

**Note 10 — Income Taxes:**

The provision for income taxes consists of the following (in thousands):

	Years Ended January 31,		
	2003	2002	2001
Current income tax expense:			
Federal	\$ 1,606	\$ 820	\$ 2,085
State	2	333	734
Foreign	10,648	7,671	1,211
Total current income tax expense	12,256	8,824	4,030
Deferred income tax expense (benefit):			
Federal	(4,479)	(3,672)	(1,107)
State	46	(525)	(584)
Foreign	701	(1,328)	—
Total deferred income tax expense (benefit)	(3,732)	(5,525)	(1,691)
Total provision for income taxes	\$ 8,524	\$ 3,299	\$ 2,339

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Deferred tax assets (liabilities) consist of the following (in thousands):

	As of January 31,		
	2003	2002	2001
Deferred tax assets:			
Research and development credits	\$ 11,050	\$ 4,816	\$2,240
California investment credits	158	158	158
Reserves and accruals	8,916	6,971	1,320
Depreciation and facilities charges	3,945	52	44
Gross deferred tax assets	24,069	11,997	3,762
Valuation allowance	(11,050)	(2,710)	—
Net deferred tax assets	\$ 13,019	\$ 9,287	\$3,762

The non-current portion of the Deferred Tax Assets totaling \$4,841 is included with the Other Noncurrent Assets on the 2003 Consolidated Balance Sheet.

Reconciliation of the statutory federal income tax to the Company's effective tax:

	Years Ended January 31,		
	2003	2002	2001
Provision (benefit) at federal statutory rate	(34.0)%	(34.0)%	(34.0)%
Non-deductible in-process R&D	—	—	35.5
Non-deductible goodwill	57.5	34.4	—
Non-deductible stock-based compensation	4.0	1.3	1.2
Difference in U.S. and non-U.S. taxes	(13.1)	(2.1)	(2.1)
State taxes, net of federal benefit	0.1	(0.1)	(0.2)
General business credits	(1.2)	(0.1)	(0.5)
Other	0.1	1.4	1.1
Effective tax rate	13.4%	0.8%	1.0%

The U.S. and non-U.S. components of income (loss) before income taxes are (in thousands):

	Years Ended January 31,		
	2003	2002	2001
U.S. operations	\$(15,287)	\$ 4,100	\$ 2,743
Non-U.S. operations	(48,363)	(415,955)	(235,524)
	\$(63,650)	\$(411,855)	\$(232,781)

As of January 31, 2003, the Company had net operating loss carryforwards available to offset future taxable income of approximately \$3.8 million, \$14.0 million and \$8.5 million for non-U.S., U.S. Federal and State of California purposes, respectively. The Federal carryforwards will begin to expire in 2019, and the California carryforwards will begin to expire in 2008, if not utilized before these dates. The benefit of these net operating losses will most likely be an adjustment to goodwill and intangible assets when realized, as the losses relate to pre acquisition periods of businesses acquired by the Company. Additionally, the Company has Federal research tax credit carryforwards for U.S. Federal income tax return purposes of approximately \$5.2 million that expire through 2023. As of January 31, 2003, the Company has unused California research tax credits of approximately \$5.8 million that will carry forward indefinitely until utilized. A valuation

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

allowance has been provided for these tax credit carryovers at year ended January 31, 2003 as it is more likely than not they will not be realized.

The Company has an undertaking from the government of Bermuda that it will not be subject to tax on its income and capital gains in Bermuda until March 28, 2016; however, the Company is subject to United States federal income tax on income of its wholly-owned subsidiary, Marvell Semiconductor, Inc., and on any portion of its income which is considered effectively connected with the conduct of a trade or business within the United States.

Effective July 1, 1999, the Company's Singapore operations have been granted Pioneer Status, which reduces the amount of Singapore taxes the Company is required to pay on certain non-investment income. This tax holiday is conditional upon the Company complying with certain conditions for minimum levels of investment, headcount and the nature of its activities at its Singapore operation. This tax holiday is effective through June 30, 2004.

On January 21, 2001, the Company acquired Galileo Technology Ltd. Galileo's Israeli operations have been granted Approved Enterprise Status by the Israeli government under the Law for the Encouragement of Capital Investments, 1959 (the "Investment Law"). The Approved Enterprise Status provides a tax holiday on undistributed income derived from operations within certain "development regions" in Israel. This tax holiday is conditional upon the Company fulfilling the conditions stipulated by the Investment Law, regulations published thereunder and the instruments of approval for the specific investment in Approved Enterprises.

**Note 11 — Commitments and Contingencies**

***Lease Commitments***

The Company leases its facilities under noncancelable operating leases and leases certain property and equipment under capital leases. Future minimum lease payments under the operating and capital leases as of January 31, 2003 are presented in the following table (in thousands):

Fiscal Year:	Operating Leases	Capital Leases
2004	\$ 8,264	\$ 5,773
2005	9,279	6,736
2006	8,239	5,774
2007	2,647	2,004
2008	1,951	—
Thereafter	5,754	—
Total future minimum lease payments	\$36,134	20,287
Less: amount representing interest		(1,513)
Present value of future minimum lease payments		18,774
Less: current portion		(5,019)
Long-term lease obligations		\$13,755

Rent expense on the operating leases for the years ended January 31, 2003, 2002 and 2001 was approximately \$6.2 million, \$5.1 million and \$2.4 million, respectively.

In October 2001, the Company entered into a lease agreement for a building in California consisting of approximately 213,000 square feet. The lease began on January 1, 2002 and continues through March 16,

## MARVELL TECHNOLOGY GROUP LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

2006. During the first quarter of fiscal 2003, the Company consolidated its three existing facilities in California into this new building. The lease on one of the existing facilities expired in February 2002, but the Company has ongoing, non-cancelable leases for the two other facilities. As a result, the Company recorded a facilities consolidation charge (see Note 6). The future minimum lease payments for the two unoccupied facilities aggregated \$13.8 million and are included in the above lease commitment table.

***Purchase Commitments***

The Company's manufacturing relationships with its foundries allow for the cancellation of all outstanding purchase orders, but requires repayment of all expenses incurred through the date of cancellation. As of January 31, 2003, foundries had incurred approximately \$27.7 million of manufacturing expenses on the Company's outstanding purchase orders.

***Contingencies***

On July 31, 2001, a putative class action suit was filed against two investment banks that participated in the underwriting of the Company's initial public offering, or IPO, on June 29, 2000. That lawsuit, which did not name the Company or any of its officers or directors as defendants, was filed in the United States District Court for the Southern District of New York. Plaintiffs allege that the underwriters received "excessive" and undisclosed commissions and entered into unlawful "tie-in" agreements with certain of their clients in violation of Section 10(b) of the Securities Exchange Act of 1934. Thereafter, on September 5, 2001, a second putative class action was filed in the Southern District of New York relating to the Company's IPO. In this second action, plaintiffs named three underwriters as defendants and also named as defendants the Company and two of its officers, one of whom is also a director. Relying on many of the same allegations contained in the initial complaint in which the Company was not named as a defendant, plaintiffs allege that the defendants violated various provisions of the Securities Act of 1933 and the Securities Exchange Act of 1934. In both actions, plaintiffs seek, among other items, unspecified damages, pre-judgment interest and reimbursement of attorneys' and experts' fees. These two actions relating to the Company's IPO have been consolidated with hundreds of other lawsuits filed by plaintiffs against approximately 55 underwriters and approximately 300 issuers across the United States. A Consolidated Amended Class Action Complaint against the Company and its two officers was filed on April 19, 2002. Subsequently, defendants in the consolidated proceedings moved to dismiss the actions. In February 2003, the trial Court issued its ruling on the motions, granting the motions in part, and denying them in part. Thus, the cases may proceed against the underwriters and the Company as to alleged violations of section 11 of the Securities Act of 1933 and section 10(b) of the Securities Exchange Act of 1934. Claims against the individual officers have been voluntarily dismissed without prejudice by agreement with plaintiffs. The Company believes that the claims asserted are without merit and intends to defend these claims vigorously. Based on currently available information, the Company does not believe that the ultimate disposition of the lawsuit will have a material adverse impact on its business or financial condition.

On September 12, 2001, Jasmine Networks, Inc. ("Jasmine") filed a lawsuit in the Santa Clara County Superior Court asserting claims against Company personnel and the Company for improperly obtaining and using information and technologies during the course of the negotiations with Company personnel regarding the potential acquisition of Jasmine by the Company. The lawsuit claims that Company officers improperly obtained and used such information and technologies after the Company signed a non-disclosure agreement with Jasmine. The Company believes the claims asserted against its officers and it are without merit and intends to defend all claims vigorously. Based on currently available information, the Company does not believe that the ultimate disposition of this lawsuit will have a material adverse impact on its business or financial condition.

## MARVELL TECHNOLOGY GROUP LTD.

## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)

The Company is also party to other claims and litigation proceedings arising in the normal course of business. Although the legal responsibility and financial impact with respect to such claims and litigation cannot currently be ascertained, the Company does not believe that these matters will result in the payment of monetary damages, net of any applicable insurance proceeds, that, in the aggregate, would be material in relation to the Company's consolidated financial position or results of operations. There can be no assurance that these matters will be resolved without costly litigation, in a manner that is not adverse to the Company's financial position, results of operations or cash flows, or without requiring royalty payments in the future which may adversely impact gross margins.

**Indemnities, Commitments and Guarantees**

During its normal course of business, the Company has made certain indemnities, commitments and guarantees under which it may be required to make payments in relation to certain transactions. These indemnities include intellectual property indemnities to the Company's customers in connection with the sales of its products, indemnities for liabilities associated with the infringement of other parties' technology based upon the Company's products, indemnities to various lessors in connection with facility leases for certain claims arising from such facility or lease, and indemnities to directors and officers of the Company to the maximum extent permitted under the laws of Bermuda. In addition, the Company has contractual commitments to various customers, which could require it to incur costs to repair an epidemic defect with respect to its products outside of the normal warranty period if such defect were to occur. The duration of these indemnities, commitments and guarantees varies, and in certain cases, is indefinite. The majority of these indemnities, commitments and guarantees do not provide for any limitation of the maximum potential future payments that the Company could be obligated to make. The Company has not recorded any liability for these indemnities, commitments and guarantees in the accompanying consolidated balance sheets. The Company does, however, accrue for losses for any known contingent liability, including those that may arise from indemnification provisions, when future payment is probable.

**Note 12 — Segment and Geographic Information:**

Based on its operating management and financial reporting structure, the Company has determined that it has one reportable business segment — the design, development and sale of integrated circuits.

The following tables present net revenue and long-lived asset information based on geographic region. Net revenue is based on the destination of the shipments and long-lived assets are based on the physical location of the assets (in thousands):

Net Revenue:	Years Ended January 31,		
	2003	2002	2001
China	\$ 26,478	\$ 2,471	\$ —
Japan	49,025	31,111	20,085
Korea	33,337	4,969	2,199
Malaysia	80,008	3,098	12
Philippines	79,029	45,230	9,778
Singapore	104,347	79,900	65,555
Taiwan	59,034	56,293	21,756
United States	45,859	37,519	11,486
Others	28,168	28,204	13,023
	<u>\$505,285</u>	<u>\$288,795</u>	<u>\$143,894</u>

**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

Long-lived Assets:	As of January 31,	
	2003	2002
Bermuda	\$1,366,267	\$1,299,226
Israel	252,537	401,339
United States	55,252	41,541
Others	10,304	1,307
	<u>\$1,684,360</u>	<u>\$1,743,413</u>

The following table presents net revenues for groups of similar products (in thousands):

Net Revenue:	Years Ended January 31,		
	2003	2002	2001
Storage products	\$284,809	\$163,968	\$122,850
Communications products	220,476	124,827	21,044
	<u>\$505,285</u>	<u>\$288,795</u>	<u>\$143,894</u>

**Note 13 — Related Party Transaction:**

In October 2001, the Company entered into a lease agreement with a privately-held design technology firm for certain computer-aided design software. One of the officers of the design technology firm is the brother of an officer and director of the Company and is also a shareholder of the Company. The design technology firm was acquired by Cadence Design Systems in December 2001 and the lease agreement was subsequently amended in June 2002. Total principal, interest and maintenance payments over the 3 1/2-year term of the lease will be \$20.7 million. The remaining lease payments as of January 31, 2003 are included in the capital lease commitment table in Note 11 to the Consolidated Financial Statements.

**Note 14 — Subsequent Event:**

On February 6, 2003, the Company entered into a definitive agreement to acquire RADLAN Computer Communications Ltd., a leading provider of embedded networking software. Under terms of the agreement, the Company will issue a combination of cash, shares, warrants and stock options to purchase our common stock for the remaining outstanding shares of RADLAN capital stock and employee stock options. It is estimated that this exchange and the closing of the merger transaction will occur early in the second quarter of fiscal 2004. Upon the closing, the Company will issue a total of 1.6 million shares of common stock and options to purchase common stock. In addition, the Company will also issue warrants to purchase 0.5 million shares of our common stock at an exercise price of \$18.41 per share. Subsequent to this exchange with the RADLAN shareholders and employees, the Company will also issue either an additional 1.2 million shares of common stock or \$22.5 million to RADLAN shareholders, depending upon the share price of Marvell's common stock upon a date as defined in the merger agreement. It is estimated that this second distribution will occur within 90 days of the closing of the merger transaction. Additionally, 1.0 million shares of the Company's common stock will be reserved for the future issuance to both RADLAN shareholders and employees upon the resolution of certain contingencies involving achievement of milestones as defined in the merger agreement.



**MARVELL TECHNOLOGY GROUP LTD.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS — (Continued)**

**Supplementary Data (Unaudited)**

The following table presents our unaudited consolidated statements of operations data for each of the eight quarters in the period ended January 31, 2003. In our opinion, this information has been presented on the same basis as the audited consolidated financial statements included in a separate section of this report, and all necessary adjustments, consisting only of normal recurring adjustments, have been included in the amounts below to present fairly the unaudited quarterly results when read in conjunction with the audited consolidated financial statements and related notes. The operating results for any quarter should not be relied upon as necessarily indicative of results for any future period. We expect our quarterly operating results to fluctuate in future periods due to a variety of reasons, including those discussed in “Additional Factors That May Affect Future Results”.

Fiscal 2003				
	First Quarter(2)	Second Quarter	Third Quarter(2)	Fourth Quarter(3)
	(In thousands, except per share amounts)			
Net revenue	\$ 98,800	\$119,694	\$135,944	\$150,847
Gross profit	55,020	63,661	73,019	80,546
Net loss(1)	(30,934)	(9,326)	(7,680)	(24,234)
Net loss per share:				
Basic and diluted	\$ (0.26)	\$ (0.08)	\$ (0.06)	\$ (0.20)

  

Fiscal 2002				
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share amounts)			
Net revenue	\$ 64,230	\$ 68,649	\$ 73,100	\$ 82,816
Gross profit	34,069	37,230	39,609	47,080
Net loss(1)	(104,966)	(105,197)	(105,121)	(99,870)
Net loss per share:				
Basic and diluted	\$ (0.93)	\$ (0.93)	\$ (0.92)	\$ (0.86)

- (1) In connection with the acquisition of Galileo Technology Ltd. in fiscal 2001, the Company recorded goodwill and intangible assets of \$2.1 billion, which prior to adoption of SFAS 142 in February 2002, were all being amortized over their estimated economic lives by charges to the statement of operations.
- (2) During the first and third quarter of fiscal 2003, the Company recorded facilities consolidation charges of \$17.8 million and \$1.8 million, respectively. Refer to Note 6 of the consolidated financial statements.
- (3) During the fourth quarter of fiscal 2003, the Company wrote-off the remaining \$22.4 million of Galileo trade name. Refer to Note 5 of the consolidated financial statements.

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

Not applicable.

**PART III**

**Item 10.           *Directors and Executive Officers of the Registrant***

Certain of the information required by this Item with respect to our executive officers is set forth under the caption “Management” in Part I. The remaining information required by Items 401 and 405 of Regulation S-K is set forth in our Definitive Proxy Statement in connection with our 2003 Annual General Meeting of Shareholders which will be filed with the Securities and Exchange Commission no later than 120 days after February 1, 2003. Our 2003 Proxy Statement, exclusive of the information set forth under the captions “Joint Report of the Compensation and Stock Option Committees,” “Report of the Audit Committee” and “Stock Price Performance Graph,” is incorporated herein by this reference.

**Item 11.           *Executive Compensation***

The information required by Item 402 of Regulation S-K is set forth in our 2003 Proxy Statement. Our 2003 Proxy Statement, exclusive of the information set forth under the captions “Joint Report of the Compensation and Stock Option Committees,” “Report of the Audit Committee” and “Stock Price Performance Graph,” is incorporated herein by this reference.

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

The information required by Item 201(d) and Item 403 of Regulation S-K is set forth in our 2003 Proxy Statement. Our 2003 Proxy Statement, exclusive of the information set forth under the captions “Joint Report of the Compensation and Stock Option Committees,” “Report of the Audit Committee” and “Stock Price Performance Graph,” is incorporated herein by this reference.

**Equity Compensation Plan Information**

The following information provides certain information with respect to all of our equity compensation plans in effect as of January 31, 2003.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants, and Rights (b)	Number of Securities Remaining Available for Future Issuance (Excluding Securities Reflected in Column (a) (c)
Equity compensation plans approved by security holders(1)	24,646,939	\$17.20	5,691,676(2)
Equity compensation plans not approved by security holders(3)	160,309	24.22	—
Total	24,807,248	\$17.26	5,691,676

(1) Includes the 1995 Stock Option Plan, the 1997 Directors’ Stock Option Plan, the 2000 Employee Stock Purchase Plan and shares of Common Stock reserved for issuance under option plans we assumed in connection with our acquisition of Galileo Technology Ltd. No further options will be awarded under the Galileo option plans.

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- (2) The number of shares reserved for grant under the 1995 Stock Option Plan (the “1995 Plan”) is subject to an annual increase in shares reserved for issuance equal to the lesser of (a) 10,000,000 shares, (b) 5.0% of the outstanding shares of capital stock on such date, or (c) an amount of shares determined by our board of directors. The number of shares reserved for issuance under the 2000 Employee Stock Purchase Plan (the “Purchase Plan”) includes an annual increase in shares reserved for issuance equal to the lesser of (a) 500,000 shares, (b) 0.75% of the outstanding shares of capital stock of the Company on such date or (c) an amount of shares determined by our board of directors.
- (3) Consists of shares of Common Stock reserved for issuance under options granted by the Company to former option holders of SysKconnect GmbH in connection with our acquisition of SysKconnect GmbH.

### **Item 13. Certain Relationships and Related Transactions**

The information required by Item 404 of Regulation S-K is set forth in our 2003 Proxy Statement. Our 2003 Proxy Statement, exclusive of the information set forth under the captions “Joint Report of the Compensation and Stock Option Committees,” “Report of the Audit Committee” and “Stock Price Performance Graph,” is incorporated herein by this reference.

### **Item 14. Controls and Procedures**

We maintain disclosure controls and procedures that are designed to ensure that the information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the SEC’s rules and forms, and that such information is accumulated and communicated to the our management, including our chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure based closely on the definition of “disclosure controls and procedures” in Rule 13a-14(c). In designing and evaluating the disclosure controls and procedures, our management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures in reaching that level of reasonable assurance.

Within 90 days prior to the date of the report, we carried out an evaluation, under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on the foregoing, our chief executive officer and chief financial officer concluded that our disclosure controls and procedures were effective.

There have been no significant changes in our internal controls or in other factors that could significantly affect the internal controls subsequent to the date that we completed our evaluation.

## **PART IV**

### **Item 15. Exhibits, Financial Statement Schedules, and Reports on Form 8-K**

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

#### **1. Financial Statements:**

	<b>Page Reference</b>
Consolidated Balance Sheets as of January 31, 2003 and 2002.	59
Consolidated Statements of Operations for the years ended January 31, 2003, 2002 and 2001	60
Consolidated Statements of Shareholders’ Equity for the years ended January 31, 2003, 2002 and 2001	61
Consolidated Statements of Cash Flows for the years ended January 31, 2003, 2002 and 2001	62
Notes to Consolidated Financial Statements	63

## 2. Financial Statement Schedules:

Schedules not listed above have been omitted because they are not applicable or required, or the information required to be set forth therein is included in the Consolidated Financial Statements or Notes thereto.

## 3. Exhibits.

See Item 15(c) below.

### (b) Reports on Form 8-K

On November 22, 2002, we filed a current report on Form 8-K in connection with the issuance of a press release dated November 21, 2002 announcing our financial results for the third quarter of fiscal 2003.

### (c) Index to Exhibits

Exhibit No.	Description
3.1	Memorandum of Association of the registrant, incorporated by reference to Exhibit 3.1 of the registrant's registration statement on Form S-1 (file no. 333-33086), as filed on March 23, 2000
3.2	Second Amended and Restated Bye-laws of the registrant, incorporated by reference to Appendix A of the registrant's Definitive Proxy Statement, as filed on May 21, 2001
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10.10*	Master Development, Purchasing and License Agreement between Intel Corporation and Marvell Semiconductor, Inc., incorporated by reference to Exhibit 10.8 of the registrant's registration statement on Form S-1/ A (file no. 333-33086), as filed on June 23, 2000
10.11	Lease Agreement dated June 1, 2000 by and between Marvell Semiconductor, Inc. and 525 Almanor LLC, incorporated by reference to Exhibit 10.9 of the registrant's quarterly report on Form 10-Q for the period ended July 29, 2000 as filed on September 12, 2000

[Table of Contents](#)

Exhibit No.	Description
10.12	Lease Agreement dated June 30, 2000 by and between Galileo Technology Ltd. and Zanker Development Co., incorporated by reference to Exhibit 10.12 of the registrant's annual report on Form 10-K for the year ended January 27, 2001 as filed on April 27, 2001
10.13*	Technology License Agreement dated April 23, 2001 by and between Marvel International Limited and ARM Limited, incorporated by reference to Exhibit 10.13 of the registrant's quarterly report on Form 10-Q for the period ended April 28, 2001 as filed on June 12, 2001
10.14*	Amendment Number 2 to Master Development, Purchasing and License Agreement dated July 17, 2001 between Intel Corporation and Marvell Semiconductor, Inc., incorporated by reference to Exhibit 10.14 of the registrant's quarterly report on Form 10-Q for the period ended July 28, 2001 as filed on September 12, 2001
10.15	Lease Agreement dated October 19, 2001 by and between Marvell Semiconductor, Inc. and Yahoo! Inc., incorporated by reference to Exhibit 10.15 of the registrant's quarterly report on Form 10-Q for the period ended October 27, 2001 as filed on December 7, 2001
10.16*	Supply Agreement for the Fabrication and Purchase of Semiconductor Products dated June 13, 2002 by and between Marvell Semiconductor, Inc., Marvell Asia Pte Ltd. and Western Digital Technologies, Inc., incorporated by reference to Exhibit 10.16 of the registrant's quarterly report on Form 10-Q for the period ended August 3, 2002 as filed on September 17, 2002
10.17*	Amendment Number 3 to Master Development, Purchasing and License Agreement dated October 10, 2002 by and between Intel Corporation and Marvell Semiconductor, Inc., incorporated by reference to Exhibit 10.17 of the registrant's quarterly report on Form 10-Q for the period ended November 2, 2002 as filed on December 17, 2002
10.18*	Volume Supply Requirements Agreement dated as of December 2, 2002, by and among Marvell Asia Ptd Ltd. and Seagate Technology LLC
21.1	Subsidiaries of the registrant
23.1	Consent of PricewaterhouseCoopers LLP, Independent Accountants
99.1	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of Dr. Sehat Sutardja Ph.D., Chief Executive Officer
99.2	Certification Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 of George A. Hervey, Chief Financial Officer

# Denotes an executive or director compensation plan or arrangement.

\* Certain portions of this exhibit have been omitted pursuant to request for confidential treatment granted by the Securities and Exchange Commission.

(d) Financial Statements Required by Regulation S-X which are excluded from the annual report to Shareholders by Rule 14a-3(b).

Not applicable.

**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, in the City of Sunnyvale, California, on May 1, 2003.

MARVELL TECHNOLOGY GROUP LTD.

By: /s/ DR. SEHAT SUTARDJA

Dr. Sehat Sutardja  
*President and Chief Executive Officer*

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

Name and Signature	Title	Date
/s/ SEHAT SUTARDJA	Co-Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)	May 1, 2003
Dr. Sehat Sutardja		
/s/ GEORGE HERVEY	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	May 1, 2003
George Hervey		
/s/ WEILI DAI	Executive Vice President, Secretary and Director	May 1, 2003
Weili Dai		
/s/ PANTAS SUTARDJA	Vice President and Director	May 1, 2003
Dr. Pantas Sutardja		
/s/ DIOSDADO P. BANATAO	Co-Chairman of the Board	May 1, 2003
Diosdado P. Banatao		
/s/ MANUEL ALBA	Director	May 1, 2003
Manuel Alba		
/s/ HERBERT CHANG	Director	May 1, 2003
Herbert Chang		
/s/ JOHN M. CIOFFI	Director	May 1, 2003
John M. Cioffi		
/s/ PAUL R. GRAY	Director	May 1, 2003
Paul R. Gray		
/s/ RON VERDOORN	Director	May 1, 2003
Ron Verdoorn		

## CERTIFICATIONS

I, Dr. Sehat Sutardja, Ph.D., certify that:

1. I have reviewed this annual report on Form 10-K of Marvell Technology Group Ltd.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report.
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
  - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
  - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal control; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

By:

/s/ SEHAT SUTARDJA

---

Dr. Sehat Sutardja, Ph.D.  
*Co-Chairman of the Board,*  
*President and Chief Executive Officer*

Date: May 1, 2003

I, George A. Hervey, certify that:

1. I have reviewed this annual report on Form 10-K of Marvell Technology Group Ltd.;
2. Based on my knowledge, this annual report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this annual report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this annual report.
4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-14 and 15d-14) for the registrant and have:
  - a) designed such disclosure controls and procedures to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this annual report is being prepared;
  - b) evaluated the effectiveness of the registrant's disclosure controls and procedures as of a date within 90 days prior to the filing date of this annual report (the "Evaluation Date"); and
  - c) presented in this annual report our conclusions about the effectiveness of the disclosure controls and procedures based on our evaluation as of the Evaluation Date;
5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent function):
  - a) all significant deficiencies in the design or operation of internal controls which could adversely affect the registrant's ability to record, process, summarize and report financial data and have identified for the registrant's auditors any material weaknesses in internal control; and
  - b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal controls; and
6. The registrant's other certifying officers and I have indicated in this annual report whether there were significant changes in internal controls or in other factors that could significantly affect internal controls subsequent to the date of our most recent evaluation, including any corrective actions with regard to significant deficiencies and material weaknesses.

By:

/s/ GEORGE A. HERVEY

---

George A. Hervey  
*Vice President and Chief Financial Officer*

Date: May 1, 2003



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# Denotes an executive or director compensation plan or arrangement.

\* Certain portions of this exhibit have been omitted pursuant to request for confidential treatment granted by the Securities and Exchange Commission.

CONFIDENTIAL TREATMENT REQUESTED. CONFIDENTIAL PORTIONS OF THIS DOCUMENT HAVE  
BEEN REDACTED AND HAVE BEEN FILED SEPARATELY WITH THE COMMISSION.

VOLUME SUPPLY REQUIREMENTS AGREEMENT

BETWEEN

SEAGATE TECHNOLOGY LLC

AND

MARVELL ASIA PTE LTD

AGREEMENT NUMBER: \*\*\*

\*\*\* Confidential material redacted and filed separately with the Commission.

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ATTACHMENTS

EXHIBIT A: Products \*\*\*

\*\*\* \*\*\*

\*\*\* Confidential material redacted and filed separately with the Commission.

## VOLUME SUPPLY REQUIREMENTS AGREEMENT

This Volume Supply Requirements Agreement (this "Agreement") is made effective as of December 2, 2002 (the "Effective Date") by and between SEAGATE TECHNOLOGY LLC, a Delaware limited liability company ("Seagate"), with offices located at 920 Disc Drive, Scotts Valley, California 95066, and MARVELL ASIA PTE LTD, a Singapore corporation ("Supplier"), with offices located at 151 Lorong Chuan #02-05 New Tech Park, Singapore 556741. Seagate and Supplier are each individually a "party" and collectively are the "parties."

### 1. DEFINITIONS

As used in this Agreement:

1.1 "Product" means the products or components identified in Exhibit A.

1.2 "Specification" means the written functions, capabilities, features and specifications of the Product produced by Supplier pursuant to sub-Section 6.1(a) of this Agreement.

1.3 "Affiliate" means an entity that, directly or indirectly, controls, is controlled by, or is under common control with a party.

### 2. TERM

2.1 Term. The term of this Agreement shall commence on the Effective Date and shall continue thereafter through the close of business on December 31, 2005 or until the end of the life of the program or programs into which the Product is being supplied, whichever is longer, unless sooner terminated in accordance with this Agreement. Notwithstanding the fact that the term of this Agreement may extend beyond the close of business on December 31, 2005, Seagate's supply requirements obligations provided for in Section 4.1(a) herein shall expire on the close of business on December 31, 2005.

2.2 Renewal. The Agreement may be renewed only by a written amendment to this Agreement executed by Seagate and Supplier's General Manager. Except for any cancellation liability or any payment for past deliveries of Product orders Seagate may owe to Supplier, each party acknowledges that it neither expects nor shall be entitled to recover any compensation from the other party after or on account of the expiration of this Agreement in accordance with its terms. Each party waives the benefit of any law or regulation providing for compensation to such party arising from the failure to renew this Agreement.

### 3. SUPPLIER'S PRODUCTION

3.1 Capability. Except as may be otherwise provided in this Agreement, Supplier is solely responsible for manufacturing the Product according to the Specification, including without limitation procuring and maintaining all necessary equipment, personnel, facilities and materials. Supplier will immediately notify Seagate if it is considering discontinuing the Product manufacturing in general. Nothing in this Section 3.1 is intended to prevent Supplier from contracting with Supplier's Affiliates or other third-party sub-contractors to complete the fabrication and transport of the Product.

3.2 Supplier Changes. Supplier may not change the form, fit or function of the Product without Seagate's prior written approval. Supplier may not change or alter the materials, process or location of manufacturing of the Product without Seagate's prior written approval.

3.3 Seagate Changes. Seagate may request changes to the Product. Supplier will use commercially reasonable efforts to incorporate Seagate's requested changes into the Product. If the changes would increase Supplier's costs to produce the Product, Supplier will notify Seagate within 15 days after Seagate's request for the changes, or as otherwise mutually agreed to in writing, and will provide satisfactory evidence to Seagate to document the price increase. The parties will then negotiate in good faith for a price change. If the parties are unable to negotiate a mutually agreeable price change, Seagate's requested changes will not be incorporated.

3.4 Information. Subject to confidentiality obligations owed to third parties, Supplier will provide the following information to Seagate upon Seagate's advance, written request: (a) a bill of materials, including all materials used in the manufacturing and assembly process; (b) a list of all sub-suppliers; (c) a complete flow chart for the Product with lead-time identified for key process steps; and (d) a list of the equipment used in the fabrication of the Product. Such information will be treated as Supplier's "Confidential Information," as defined in Section 10 of this Agreement, and Seagate's treatment thereof shall be subject to the provisions of Section 10 of this Agreement.

3.5 Disclaimers. Supplier acknowledges that no past pattern or practice of forecasting, ordering, or purchasing by Seagate will constitute a representation, commitment, or warranty by Seagate as to future orders or purchases, all of which are governed only by the express terms of this Agreement.

#### 4. SEAGATE'S ORDERING

##### 4.1 Orders.

- (a) Seagate will purchase \*\*\*% of its total read channel supply requirements for Enterprise Hard Disk Drives from Supplier during the term of this Agreement. \*\*\* For the avoidance of doubt, Seagate's read channel supply requirements include read channel supply requirements for system-on-chip products. Without derogating from its supply requirements purchase obligations provided for in this Agreement, Seagate may continue to procure samples and evaluate read channel devices from alternate sources, and may ship limited volumes of Enterprise Hard Disk Drives that do not incorporate the Product for customer sample purposes for production shipments that will occur after the term of this Agreement.
- (b) In connection with its rights set forth in sub-section (a) of this Section 4.1, Supplier shall have the right, upon reasonable advance written notice delivered to Seagate, during Seagate's normal business hours, and not more than once every twelve (12) months during the term of this Agreement to

\*\*\* Confidential material redacted and filed separately with the Commission.

appoint a nationally recognized certified public accountant reasonably acceptable to Seagate who agrees to be bound to confidentiality protections set forth in sub-Section 10.2 of this Agreement to examine Seagate's relevant books, records and accounts, to verify Seagate's compliance with the provisions of Section 4.1(a). The auditor shall be instructed to report only as to whether Seagate has failed to comply with its obligations under Section 4.1(a) of this Agreement and, if so, the amount of the discrepancy. The parties acknowledge that it is impracticable and extremely difficult to determine the actual damages or lost revenues that may proximately result from any failure by Seagate to comply with its obligations under Section 4.1(a) of this Agreement. As a result, in the event any audit examination discloses a discrepancy, then as of the date of the date of Seagate's acceptance of any underlying order for each Enterprise Hard Disk Drive that will not incorporate the Product during the term of this Agreement, Seagate will be required to pay Supplier a sum equal to \$\*\*\* multiplied times the total unit volume of Enterprise Hard Disk Drives that did not conform to the requirements of sub-Section 4.1(a). In the event Seagate does not comply with the provisions of Section 4.1(a), Seagate will also reimburse Supplier for the reasonable costs and expenses of the audit.

- (c) Seagate will provide a weekly 9-month forecast of its anticipated Product supply requirements to Supplier. The first 3 months of each forecast will be broken down into weekly increments. The remaining 6 months of the forecast will be broken down into monthly increments. \*\*\* Seagate may cancel orders for the Product during Supplier's lead-time, subject to the cancellation liability provisions in Section 4.2 of this Agreement. \*\*\* After the Effective Date, the lead-time will be specified and mutually agreed to quarterly and will be subject to review and negotiation at quarterly business reviews. \*\*\*

4.2 Cancellations. Seagate may, on advance written notice, cancel Product orders within Supplier's lead-time, subject to the following cancellation liability:

STAGE OF COMPLETION AT TIME OF CANCELLATION NOTICE - - - - -	CANCELLATION CHARGE* - - - - -
***	***
***	***
***	***
***	***
***	***

\*\*\* Confidential material redacted and filed separately with the Commission.

\*\*\*

\*\*\*

The parties agree that the \*\*\* if subject material actually exists, no other application or salvage value can be identified, and \*\*\* Seagate may inspect Supplier's processes, inventories, and records to verify any of the foregoing cancellation charges, in a commercially reasonable manner. Upon payment by Seagate of \*\*\* of the Product are the property of Seagate and will be delivered to Seagate at Seagate's request.

\*\*\*

4.3 Electronic Transactions. Supplier will undertake commercially reasonable efforts to convert to and comply with Seagate's designated electronic system of communications and ordering as soon as feasible. Each party will bear its own conversion and usage costs. Neither party will contest the validity, enforceability or legal sufficiency of electronically transmitted documents under the statute of frauds or similar laws requiring that contracts be in a signed writing. Neither party will be liable for the results of a malfunction or defect in the network system or for any other cause beyond the parties' reasonable control.

4.4 Other Purchasers. Seagate's Affiliates and (for the purpose of performing for Seagate) Seagate's contract manufacturers may purchase the Product directly from Supplier at the price and on the other terms of this Agreement.

4.5 Precedence. If the terms of this Agreement and the terms of any forecast, purchase order or order acknowledgement conflict, the terms of this Agreement will govern.

## 5. DELIVERY

5.1 Deliveries. All unit deliveries of the Product will be \*\*\* to the following Seagate designated ship-to locations or other locations to be subsequently agreed to by the parties in writing:

\*\*\*

\*\*\* Confidential material redacted and filed separately with the Commission.



\*\*\*

5.2 \*\*\* Supplier will maintain Product at the \*\*\* at a level mutually agreed to by the parties, but in no event less than Seagate's average weekly requirements or more than two times Seagate's average weekly requirements, based on the most recent four week period. Seagate or the third party will be responsible for maintaining security over the \*\*\* and Seagate will not be responsible for loss or damage to Supplier's Product except to the extent due to the negligence or fault of Seagate. Upon termination of this Agreement, Supplier will promptly remove all unsold quantities of the Product from the \*\*\*

5.3 Packing. Supplier will package, mark and otherwise make Product units ready for shipment as reasonably designated in writing by Seagate in accordance with standard commercial practice, acceptable to common carriers for the lowest shipping rate available. Shipping containers must display the date of shipment, Seagate's order number, part number, revision level, lot number and quantity contained in the container. A packing list showing the order number must be included in each container.

\*\*\*

6.1 \*\*\* After completing Supplier's qualification, \*\*\*

\*\*\* Confidential material redacted and filed separately with the Commission.

- a) the Product \*\*\* and any other \*\*\* provided by Supplier (collectively, the \*\*\*
- b) the Product will be of \*\*\* and,
- c) the Product must meet \*\*\* as follows:
  - i) Seagate will \*\*\* of Supplier's Product;
  - ii) Supplier \*\*\* of Supplier's Product;
  - iii) If \*\*\* of Supplier's Product;
  - iv) If a \*\*\* and Supplier has notified Seagate in writing of its ability and intent to incorporate the change in the \*\*\* and the Product \*\*\* for in \*\*\* and if Seagate has \*\*\* for the Product that \*\*\* then Seagate may \*\*\* did not meet the \*\*\* even if the Product actually \*\*\*
  - v) If Supplier has notified Seagate in writing of its inability, either technically or otherwise, \*\*\* uses the Product for a use outside that contemplated by the agreed \*\*\* based on this section.

6.2 Corrective Action. If the Product fails to meet the \*\*\* then Supplier will implement a containment plan \*\*\* promptly as is reasonably possible under the circumstances. Seagate will have the right to approve the corrective action plan, and Seagate will not unreasonably withhold its approval. Supplier will implement reasonable quality assurance measures to achieve compliance with the Quality Standards and will report these measures to Seagate upon written request from Seagate. \*\*\* the parties are unable to achieve the \*\*\* for a Product (each, a

\*\*\* Confidential material redacted and filed separately with the Commission.

\*\*\* for a specifically identified \*\*\* then Seagate will be allowed to purchase read channel devices to replace the \*\*\* for the Program from other parties, and will not be subject to Sections 4.1(a) and 4.1(b) with respect to such Program. In the event Seagate purchases read channels \*\*\* of this Section 6.2, Seagate acknowledges and agrees that the prices set forth on Exhibit A attached hereto for any \*\*\* that includes a \*\*\* shall only be valid if the \*\*\* is a Product within such \*\*\* that functions at the highest data rates set forth on Exhibit A for such Product Family. For purposes of this Section 6.2, a \*\*\* comprises Product types of \*\*\* and are limited to the \*\*\* In the event the \*\*\* does not so function at such highest data rate, then Seagate agrees that \*\*\* for such \*\*\* shall be subject \*\*\* by the parties.

6.3 Title. Supplier warrants that title to all unit quantity shipments of the Product are and will be, on delivery to Seagate by Supplier, free and clear of any liens, encumbrances, security interests or other claims.

6.4 \*\*\* Seagate may from time to time on reasonable advance, written notice to \*\*\* location, \*\*\* during normal business hours to \*\*\* Section 6. Supplier will \*\*\* Supplier will provide Seagate with reasonable \*\*\* upon advance written request from Seagate.

6.5 Acceptance and Rejection. All delivered Product units will be subject to inspection and acceptance by Seagate. In the event Seagate believes a Product to be defective, Seagate may request Supplier in writing to provide a return material authorization (RMA) and Seagate may send a sample, including detailed failure analysis, of the defective Product(s) with its request. Supplier will perform a failure \*\*\* will give notice to Seagate whether it has accepted or intends to reject Seagate's request for RMA. If Supplier accepts the RMA, Seagate may return all defective Product(s) covered by the request. In the event that Supplier cannot validate the defect(s), the parties will jointly determine if the defect(s) is valid. If the parties determine the defect is valid, \*\*\*

6.6 Exclusivity of Supplier's Warranties. EXCEPT AS SET FORTH IN THIS AGREEMENT, SUPPLIER MAKES NO OTHER WARRANTIES, EITHER EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT. EXCEPT AS SET FORTH IN THIS AGREEMENT, SUPPLIER SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

\*\*\* Confidential material redacted and filed separately with the Commission.

7. \*\*\*

7.1 Prices. Subject to the following subsection, Seagate will pay Supplier the prices set forth in Exhibit A for Products purchased under this Agreement. \*\*\*

7.2 Payment. Supplier may invoice Seagate with each delivery, but not more frequently than weekly. Payment will \*\*\* from the date of invoicing. Payment does not constitute final acceptance of the Products.

7.3 \*\*\*

## 8. TERMINATION AND REMEDIES

8.1 Termination for Breach. Either party may terminate this Agreement if the other party breaches a material provision. The breaching party must be given written notice of the breach and 30 days to cure the breach before the termination will be effective.

8.2 Termination for Insolvency. Either party may terminate this Agreement if the other party becomes insolvent or makes an assignment for the benefit of creditors, has a receiver appointed for it or its assets, or files or has filed against it a petition for bankruptcy.

9. \*\*\*

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\*\*\* Confidential material redacted and filed separately with the Commission.

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10.

\*\*\*

#### 10.1 Intellectual Property.

- (a) No Rights Acquired. Except as expressly provided in this Agreement, neither party acquires any right to the other party's trademarks, service marks, trade names, commercial symbols, patents, copyrights, good will or other form of intellectual or commercial property (collectively, the "Intellectual Property"), and neither party may copy, modify, reverse engineer, decompile, enhance, or make derivative works of the other party's Intellectual Property. Any unauthorized modifications, derivative works, and enhancements will belong to the party owning the underlying work, and all rights in them (including moral rights) are hereby assigned to the owner of the underlying work.
- (b) Future Joint Development. In the event of a future joint development based on a combination of both party's Intellectual Property, the parties will negotiate in good faith concerning the ownership and/or licensing of the resulting Intellectual Property.

#### 10.2 Confidential Information.

- (a) Definition. "Confidential Information" means all information concerning the parties or any Affiliate to which the other party is provided access by virtue of this Agreement, including without limitation, technical data, product design and development, sales information, quantity and kind of products sold, prices and methods of pricing, marketing techniques and plans, product returns, unannounced products, product and process information, and any other information which, if disclosed to others, might be competitively detrimental to the disclosing party.

\*\*\* Confidential material redacted and filed separately with the Commission.

- (b) Markings. All Confidential Information which is subject to the terms and conditions of this Agreement shall be clearly marked in writing by the disclosing party as "CONFIDENTIAL," "SECRET" or with a comparable legend, which is the standard used by the disclosing party to protect its own confidential information. No party shall have any responsibility under this Agreement for any information that is not so marked in writing at the time of disclosure. Nor shall any party have any responsibility under this Agreement for any oral or visual disclosures, except (i) as to information designated as confidential at the time of oral or visual disclosure and (ii) confirmed in a writing delivered within twenty (20) days to the Recipient which provides clear notice of the claim of confidentiality and describes the specific information disclosed.
- (c) Standard of Care. The receiving party will (i) protect the Confidential Information against unauthorized disclosure using the same degree of care, but no less than a reasonable care as the receiving party uses to protect its own information of a like kind, (ii) will not divulge, directly or indirectly, to any other person, firm, corporation, association, or entity, for any purpose whatsoever, such Confidential Information and (iii) will not make use of such Confidential Information without the prior written consent of the disclosing party. The Confidential Information may be disclosed to employees, affiliates or consultants of the receiving party who reasonably require access to such information for the purpose of which it was disclosed and who have secrecy obligations to the receiving party.
- (d) Upon request of the disclosing party, any written information subject to this Agreement shall be returned to the disclosing party. The obligations of this Section 10 will survive the return or destruction of the confidential information during the confidentiality period of two years from the date of disclosure. Except as provided herein, no right or license whatsoever, either express or implied, is granted to either party pursuant to this Agreement under any patent, patent application, copyright, trademark, mask work, trade secret, or other proprietary right now or hereafter owned or controlled by the other party.

11. \*\*\*

11.1 \*\*\* Each party will \*\*\* the other party and its Affiliates, directors, officers, and employees \*\*\* arising from the \*\*\*.

\*\*\* Supplier, \*\*\* Seagate and its Affiliates, directors, officers and \*\*\*

\*\*\* Confidential material redacted and filed separately with the Commission.

\*\*\*

\*\*\*

11.4 LIMIT. THE FOREGOING STATES THE ENTIRE LIABILITY AND OBLIGATION \*\*\*

12. \*\*\*

\*\*\* NEITHER PARTY WILL BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, INDIRECT, PUNITIVE OR SPECIAL DAMAGES, INCLUDING LOST PROFITS, EVEN IF THE OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF THEM.

13. MISCELLANEOUS

13.1 Publicity. Neither party may publicize or disclose the existence or terms of this Agreement to any third party without the prior written consent of the other except as required by law or as necessary to comply with other obligations stated in this Agreement. No press releases will be made without the mutual written consent of each party.

13.2 No Joint Venture. Nothing in this Agreement will be construed as creating a joint venture, partnership or employment relationship between the parties, nor will either party have the right, power or authority to create any obligation or duty, express or implied, on behalf of the other.

13.3 Compliance with Laws. In performing under this Agreement, each party will comply with all applicable laws.

13.4 Notices. All notices required under this Agreement will be in writing and will be sent to the addresses set out below, or such other address as each party may designate by notice.

\*\*\* Confidential material redacted and filed separately with the Commission.

Any such notice may be delivered by hand, by overnight courier, by first class pre-paid letter or by facsimile transmission, and will be deemed to have been received:

- (a) by hand delivery - at the time of delivery;
- (b) by overnight courier - 24 hours after the date of delivery to courier;
- (c) by first class mail - 48 hours after the date of mailing; and
- (d) by facsimile - immediately upon confirmation of transmission provided a confirmatory copy is sent by first class pre-paid mail, by overnight courier or by hand by the end of the next business day.

For the purposes of this Section the address of each Party will be:

Seagate:	Seagate Technology LLC	Supplier:	Marvell Asia Pte Ltd
ATTN:	Keith Kramer, M/S SHK203	ATTN:	Dr. Hoo Kuong
Phone:	952-402-2247	Phone:	(65) 756-1600
Fax:	952-402-2044	Fax:	(65) 756 7600
Address:	Seagate Technology LLC	Address:	151 Lorong Chuan #02-05
	1280 Disc Drive		New Tech Park
	Shakopee, MN 55379		Singapore 556741

With a copy to:

ATTN:	Corporate Contracts, M/S SV15A2	ATTN:	Legal Department, MS-509
Phone:	831-439-7646	Phone:	(408) 222-2500
Fax:	831-438-7132	Fax:	(408) 752-9034
Address:	Seagate Technology LLC	Address:	Marvell Semiconductor, Inc.
	920 Disc Drive		700 First Avenue, MS-509
	Scotts Valley, CA 95066		Sunnyvale, CA 94089

13.5 Waivers. Any waiver by a party of a breach under this Agreement must be in writing, will be effective only to the extent set forth in the writing and will not operate or be construed as a waiver of any later breach. Any delay or omission by a party in exercising any right, power or remedy after a breach by the other party will not impair any right or remedy which either party may have with respect to a future breach.

13.6 Force Majeure. Except for payment obligations due a party, neither party will be liable to the other for its failure to perform any of its obligations under this Agreement during any period in which its performance is delayed by force majeure conditions outside of that party's reasonable control. In the event that a force majeure condition prevents Supplier's performance for more than 60 days, Seagate may elect to terminate this Agreement or cancel (without any cancellation charges or other liability) all or any portion of any unfulfilled but accepted orders for Products.



\*\*\*

13.8 Governing Law. This Agreement will be governed and construed, and all arbitrations under this Agreement will be determined, in accordance with the laws of Singapore.

13.9 Dispute Resolution.

- (a) The parties acknowledge that performance under this Agreement will be enhanced by the timely resolution of any disputes between them. Accordingly, the parties will attempt, in good faith, to resolve any controversy or claim arising out of or relating to this Agreement first by informal efforts for 10 days before filing any legal claim. Thereafter any controversy or claim will be submitted to Judicial Arbitration and Mediation Services ("JAMS") for mediation before a mediator or mediator(s) appointed in accordance with the JAMS rules and procedures. Mediation will be conducted at the JAMS' facilities in San Jose, California, to whose jurisdiction the parties consent. This clause will survive the termination of this Agreement. The parties will bear their own costs in the mediation. Any result of a mediation between the parties under this section will not be binding on either party unless it is in writing and signed by Seagate's authorized representative and Supplier's General Manager.
- (b) All offers, promises, conduct and statements, whether oral or written, made in the course of the mediation by any of the parties, their agents, employees, experts and attorneys, and by the mediator and any JAMS employees, are confidential, privileged and inadmissible for any purpose, including impeachment, in any litigation or other proceeding involving the parties, but evidence that is otherwise admissible or discoverable will not be rendered inadmissible or non-discoverable as a result of its use in the mediation. Either party may seek equitable relief pending the completion of the mediation process. Except for such an action to obtain equitable relief, neither party may commence a civil action with respect to the matters submitted to mediation until after the completion of the initial mediation session. The provisions of this Section 12.9 may be enforced by any Court of competent jurisdiction, and the party seeking enforcement will be entitled to an award of all costs, fees and expenses, including attorneys' fees, to be paid by the party against whom enforcement is ordered. Notwithstanding anything to the contrary herein, in the event the mediation is not completed within 3 months from the date of commencement thereof, then either party shall be free to commence a civil action with respect to the matters submitted to mediation.

\*\*\* Confidential material redacted and filed separately with the Commission.

13.10 Entire Agreement. This Agreement supersedes all prior discussions and agreements between the parties relating to the sale of the Products by Supplier to Seagate. This Agreement can only be modified by a written amendment duly signed by persons authorized to sign agreements on behalf of Seagate and Supplier's General Manager, and will not be supplemented or modified by any course of dealing or trade usage.

13.11 Survival. Any obligations and duties that by their terms or nature extend beyond the expiration or earlier termination of this Agreement will survive any such expiration or termination until performed. This Agreement will remain in full force and effect with regard to any order issued by Seagate during the term until all obligations under such orders are fulfilled.

13.12 Counterparts. This Agreement may be executed in one or more counterparts and by facsimile, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

13.13 Severability. If any provision of this Agreement is held to be invalid or unenforceable, the validity and enforceability of the remainder of this Agreement will not be affected.

13.14 Product Stewardship. Seagate is committed to environmental protection and, therefor, has adopted a Supplier Product Stewardship Program (attached as Exhibit B and incorporated herein), which requires that any supplier to Seagate provide only components, which conform, to that Program. Any use of restricted materials or chemicals in excess of the Program's maximum levels constitutes a breach of this Agreement.

Seagate and Supplier's General Manager have executed this Agreement to be effective as of the Effective Date.

SEAGATE TECHNOLOGY LLC	MARVELL ASIA PTE LTD
By: /s/ LEVEND AKKAN	By: /s/ HOO KUONG
Name: Levend Akkan	Name: Dr. Hoo Kuong, General Manager
Title: Vice President, ECS	

EXHIBIT A

PRODUCTS AND PRICE LIST

This Exhibit is effective during the term of the Agreement, unless modified by the written, mutual consent of Supplier's General Manager and Seagate's authorized agent. Additional product types may be added to this Exhibit A upon the mutual written consent of both parties, and such approval will not be unreasonably withheld.

SUPPLIER'S PART NUMBER	DESCRIPTION	BID PRICE (US\$)
-----	-----	-----
***	***	***

1) The prices as quoted above are \*\*\* for each Product type identified by the part numbers \*\*\* the purchase from and \*\*\* The parties agree that \*\*\* Form, which such form will \*\*\* terms hereof.

\*\*\* Confidential material redacted and filed separately with the Commission.

EXHIBIT A

PRODUCTS AND PRICE LIST . . .

2) Referenced pricing \*\*\* will be \*\*\* at \*\*\* per unit for \*\*\* to support units shipped after \*\*\*.

\*\*\* Confidential material redacted and filed separately with the Commission.

EXHIBIT B  
PRODUCT STEWARDSHIP PROGRAM

REVISION RECORD					
REV	ECO	DESCRIPTION	DRAWN	DATE	APPROVAL
---	---	-----	-----	-----	-----
A	ec0003790	Initial release.	S. Tyrell	7/23/01	D. McGavis

## 1.0 SCOPE

Seagate-specified and outsourced materials, products or packaging that are used in the design and manufacturing of products must meet all the requirements of this specification.

This specification applies to all relevant supplier's functional organizations involved in the design, manufacturing, or procurement of Seagate products and components.

## 2.0 REFERENCE DOCUMENTS

This specification is based on Seagate's internal Environmental Health & Safety (EH&S) Product Stewardship Standard Operating Procedure, (SOP112), which was developed from global legal, regulatory and customer requirements.

## 3.0 PURPOSE

The purpose of this specification is to ensure that the related customer and regulatory requirements are reflected in product, process, and packaging designs. Seagate products need to meet:

- requirements of legislation in countries where Seagate hardware, media, or other products are sold or made, and
- requirements of customers regarding products, packaging, user documentation, and manufacturing processes.

## 4.0 DEFINITIONS

- 4.1 **PRODUCT:** All parts, components, materials, and subsystems unless otherwise specified in Table 1 in brackets. For example, a restriction in Table 1 on brominated flame retardants in the application "Product (plastic parts >25g)" would only apply to plastic parts of weight greater than 25 grams found in the product.
- 4.2 **PACKAGING:** Any container, tray, box, etc. used to transport components, parts, etc. from one location to another. This includes incoming, site-to-site, and finished drive packaging.
- 4.3 **LIMIT BY PRODUCT OR PACKAGING WEIGHT:** % by weight of finished hard disc drive or other Seagate products as a unit, not including the weight of packaging materials. % by weight of finished packaging as a unit, not including the weight of the disc drive product.
- 4.4 **ZERO:** For the purposes of certifying compliance with this specification, zero shall be defined as 0.000001% or  $(1 \times 10^{-6})\%$  of the compound as a portion of the weight of the entire product, part, packaging, or material supplied to Seagate.
- 4.5 **ABBREVIATIONS:**

CAS - Chemical Abstracts Service Registry Number

- 4.6 DESIGN: Functions or groups that are involved in the early stages of product or technology invention.
- 4.7 MANUFACTURING: Functions or groups that are involved in the fabrication of a product.
- 4.8 PROCUREMENT: Functions or groups that are involved in the purchase of products, parts, packaging, or materials.
- 4.9 DOCUMENT CONTROL:

Function or group responsible for maintaining records of documents used in the creation of product. This includes document creation, review, approval, and archival using corporate standards.

## 5.0 RESTRICTED MATERIALS AND SUBSTANCE

TABLE 1: RESTRICTED MATERIALS / SUBSTANCES

CHEMICAL COMPOUNDS / ISSUE	CAS REFERENCE NO. (IF APPLICABLE)	PRODUCT, PACKAGING, OR PROCESS APPLICATION(S)	LIMIT BY PRODUCT OR PACKAGING WT %	PRESENCE OF COMPOUNDQTY
1,3-Dichloro-2-propanol	96-23-1	Product	Zero	
2-Naphthylamine	91-59-8	Product	0.10%	
4-Aminodiphenyl	92-67-1	Product	Zero	
4-Nitrobiphenyl	92-93-3	Product	Zero	
Aliphatic CHCs	See Table 2	Product and process; solvent, cleanser, pesticide.	0.10%	
Ammonium hydrogen sulfide	12124-99-1	Product	Zero	
Ammonium poly sulfide	12259-92-6	Product	Zero	
Ammonium sulfide	12135-76-1	Product	Zero	
Anthracene oil	90640-80-5	Product	Zero	
Asbestos	77536-66-4; 12172-73-5; 12001-29-5; 12001-28-4; 1332-21-4; 77536-68-6	Product; thermal/electric insulation.	Zero	
Barium	7440-39-3	Product	0.10%	
Benzidine	92-87-51	Product; Azo dye, rubber medicine.	0.10%	
Beryllium	7440-41-7	Product	Zero	
Brominated and chlorinated flame retardants(1)	See Table 3	Product; plastic housing parts >25g.	Zero	
Butyl bromoacetate	5292-43-3	Product	Zero	
Cadmium	7440-43-9	Product; plating, coating, plastic stabilizer, photosensor, colorants, inks,pigments for plastics, paints and enamels, protective surface coating.	Zero	
		Product; batteries	0.0005%	
		Packaging; inks, dyes, pigments, adhesives and stabilizers.	0.01% in sum for all heavy metals	
Carbon tetrachloride	56-23-5	Product, process, & packaging; plastics, ink.	Zero	
Chlorinated paraffins	Many	Product, packaging	Zero of chain length C10-13, chlorine content >50%.	
Chlorinated solvents	Many	Process	Zero	
Chloroethene, vinyl chloride	75-01-4	Product	Zero	
Chromium (VI) (hexavalent)	18540-29-9	Packaging; inks, dyes, pigments, adhesives and	0.01% in sum for all heavy	

stabilizers.

metals



CHEMICAL COMPOUNDS / ISSUE	CAS REFERENCE NO. (IF APPLICABLE)	PRODUCT, PACKAGING, OR PROCESS APPLICATION(S)	LIMIT BY PRODUCT OR PACKAGING WT %	PRESENCE OF COMPOUNDQTY
Dibutyltin hydrogen borate (DBB)	75113-37-0	Product	0.01%	
Dioxins/Furans	See Table 4	Product; May be contained as impurities of chlorinated or brominated flame retardants.	Zero	
Ethyl bromoacetate	105-36-2	Product	Zero	
Halogenated aromatic compounds	Many	Product	Zero	
Halogenated compounds/polymers	Many	Product, packaging; system casing/housing.	Zero. Exception allowed for fluoroorganic additives <0.5%	
Lead and compounds	7439-92-1	Packaging; inks, dyes, pigments, adhesives and stabilizers (e.g. PVC).	0.01% in sum for all heavy metals	
Lead (including lead carbonates, hydrocarbonates and lead sulfates)	7439-92-1 (598-63-0, 1319-46-6, 7446-14-2)	Product; plastics, paints.	Zero	
Mercury and compounds	7439-97-6	Packaging; inks, dyes, pigments, adhesives and stabilizers.	0.01% in sum for all heavy metals	
		Product; batteries	0.0005%	
		Product; switches, relays, electrical contacts.	Zero	
Methyl bromoacetate	96-32-2	Product	Zero	
o-Nitrobenzaldehyde (2-nitrobenzaldehyde)	552-89-6	Product	Zero	
Organostannic compounds	Many	Product; pesticide, PVC stabilizer, flame retardant.	Zero	
Ozone depleting substances	See Table 5	Product, packaging, and process; coolant, cleaner, expanding agent for thermal insulating plastics, Halon for fire extinguishers.	Zero	
Polychlorinated biphenyls (PCB)	27323-18-8, 106-43-4	Product; PCT: herbicide, PCB: insulator.	Zero	
Polychlorinated terphenyls (PCT)				
Pentachlorophenol (PCP) and its salts and compounds	87-86-5 and others	Product; pesticide, . wood treatment	0.0005% total	
Polybrominated biphenyls, their ethers and oxides (PBB, PBBE, PBB0)	67774-32-7 and others	Product	Zero	
Polybrominated diphenyl ethers and oxides (PBDE, PBDO)	17064-47-0	Product	Zero	
Polychlorinated phenols	Many	Product	Zero	
Propyl bromoacetate	105-66-8	Product	Zero	
Polyvinyl Chloride (PVC)	9002-86-2	Product, packaging; plastic parts except wiring insulation.	Zero	
Tar acids and tar oils (including creosote)	8007-45-2, 8001-58-9, 65996-85-2	Product	Zero	
Tellurium	13494-80-9	Product	0.00%	
Tetrachloroethylene (perchloroethylene)	127-18-4	Process	Zero	
Trichlorethylene	79-01-6	Product	Zero	
Ugilec and DBBT (PCB substitutes)	99688-47-8	Product	Zero	
	n/a			



(1) TBBPA (Tetra Bromobisphenol A) is a brominated flame retardant used in printed circuit board laminates. TBBPA will remain in use until a UL-certified alternative has been identified. No Deviation Authorizations are currently required for the use of TBBPA in products.

6.0 ALIPHATIC CHCS

TABLE 2: ALIPHATIC CHCS

COMPOUND - - - - -	CAS REFERENCE NUMBER - - - - -
1,1,1,2 Tetrachloroethane	630-20-6
1,1,1-Trichlorethane	71-55-6
1,1,2,2 Tetrachloroethane	79-34-5
1,1,2-Trichloroethane	79-00-5
1,1-Dichloroethylene (vinylidene chloride)	75-35-4
Pentachloroethane	76-01-7
Tetrachloromethane	56-23-5
Trichloromethane (Chloroform)	67-66-3

7.0 BROMINATED AND CHLORINATED FIRE RETARDANTS

TABLE 3: BROMINATED / CHLORINATED FIRE RETARDANTS

COMPOUND - - - - -	CAS REFERENCE NUMBER - - - - -
ADDITIVE BROMINATED FLAME RETARDANTS	
Tetrabromoethene	79-28-7
1,1,2,2, -Tetrabromoethane	79-27-6
Pentabromoethane	75-95-6
1,2,3,4-Tetrabromobutane	1529-68-6
Octabromohexadecane	30262-03-4
Hexabromocyclohexane/1,2,3,4,5,6-hexabromocyclohexane	30105-40-0/1837-91-8
Tetrabromocyclodecane	30178-92-8
Hexabromocyclododecane/1,2,5,6,9,10-hexabromocyclododecane	25637-99-4/3194-55-6
Hexabromobenzene	87-82-1
Pentabromobenzene	608-90-2
Pentabromoethylbenzene	85-22-3
Pentabromoethoxybenzene	9278-85-1
Octabromodiphenyl ether	32536-52-0
Pentabromodiphenyl ether	32534-81-9
Pentabromodphenyl ether	1163-19-5
1,2,4,5-Tetrabromo-3,6-bis-benzene (pentabromophenoxybenzene)	58965-66-5
REACTIVE BROMINATED FLAME RETARDANTS	
Tribromomethane (bromoform)	75-25-2
Bromoethene (vinylbromide)	593-60-2
2-Bromoethanol	540-51-2
Dibromo-1,5-pentanediol	36511-36-1
Tribromophenol	25376-38-9
Pentabromophenol	608-71-9
Dibromostyrene	31780-26-4
Tetrabromophtalic anydride	632-79-1

Tetrabromobisphenol A	79-94-7
CHLORINATED PARAFFINS AND WAXES	
Chlorinated paraffin	61788-76-9
Chlorinated paraffin oils	85422-92-0
Chlorinated paraffins (C>10)	97553-43-0
Chlorinated paraffins (C10-13)	85535-84-8
Chlorinated paraffins (C14-17)	85535-85-9
Chlorinated paraffins (C18-28)	85535-86-0
Chlorinated paraffin waxes and hydrocarbon waxes	63449-39-8

8.0 HALOGENATED DIOXINS AND FURANS

TABLE 4: HALOGENATED DIOXINS AND FURANS

COMPOUND	CAS REFERENCE NUMBER
-----	-----
2,3,7,8-Tetra-CDD	1746-01-6
1,2,3,7,8-Penta-CDD	40321-76-4
2,3,7,8-Tetra-CDF	51207-31-9
2,3,4,7,8-Penta-CDF	57117-31-4
1,2,3,4,7,8-Hexa-CDD	39227-28-6
1,2,3,7,8,9-Hexa-CDD	19408-74-3
1,2,3,6,7,8-Hexa-CDD	57653-85-7
1,2,3,7,8-Penta-CDF	57117-41-6
1,2,3,4,7,8-Hexa-CDF	70648-26-9
1,2,3,7,8,9-Hexa-CDF	72918-21-9
1,2,3,6,7,8-Hexa-CDF	57117-44-9
2,3,4,6,7,8-Hexa-CDF	60851-34-5
1,2,3,4,6,7,8-Hepta-CDD	35822-46-9
1,2,3,4,6,7,8,9-Octa-CDD	3268-87-9
1,2,3,4,6,7,8-Hepta-CDF	67562-39-4
1,2,3,4,7,8,9-Hepta-CDF	55673-89-7
1,2,3,4,6,7,8,9-Octa-CDF	39001-02-0
2,3,7,8-Tetra-BDD	50585-81-6
1,2,3,7,8-Penta-BDD	109333-34-8
2,3,7,8-Tetra-BDF	67733-57-7
2,3,4,7,8-Penta-BDF	131166-92-2
1,2,3,4,7,8-Hexa-BDD	110999-44-5
1,2,3,7,8,9-Hexa-BDD	110999-46-7
1,2,3,6,7,8-Hexa-BDD	110999-45-6
1,2,3,7,8-Penta-BDF	109333-34-8

CHEMICAL FORMULA	SUBSTANCE	CAS REFERENCE NO.
CFC13	CFC-11	75-69-4
CF2C12	CFC-12	75-71-8
C2F3C13	CFC-113	76-13-1
C2F4C12	CFC-114	76-14-2
C2F5C1	CFC-115	76-15-3
CF2BrC1	Halon-1211	353-59-3
CF3Br	Halon-1301	75-63-8
C2F4Br2	Halon-2402	124-73-2
CF3C1	CFC-13	75-72-9
C2FC15	CFC-111	76-12-0
C2F2C14	CFC-112	76-13-1
C3FC17	CFC-211	422-78-6
C3F2C16	CFC-212	3182-26-1
C3F3C15	CFC-213	6/5/54
C3F4C14	CFC-214	29255-31-0
C3F5C13	CFC-215	1599-41-3
C3F6C12	CFC-216	661-97-2
C3F7C1	CFC-217	422-86-6
CCl4	Carbon tetrachloride	56-23-5
C2H3C13*	1,1,1-Trichloroethane*, methyl chloroform	71-55-6
CHFC12	HCFC-21	75-43-4
CHF2C12	HCFC-22	75-45-6
CH2FC1	HCFC-31	n/a
C2HFC14	HCFC-121	134237-32-4
C2HF2C13	HCFC-122	41834-16-6
C2HF3C12	HCFC-123	306-83-2
CHCl2CF3	HCFC-123	n/a
C2HF4C1	HCFC-124	2837-89-0
CHFC1CF3	HCFC-124	n/a
C2H2FC13	HCFC-131	n/a
C2H2F2C12	n/a	n/a

CHEMICAL FORMULA	SUBSTANCE	CAS REFERENCE NO.
C2HFC14	HCFC-121	n/a
C2HF2C13	HCFC-122	n/a
C2HF3C12	HC-123	n/a
CHCl2CF3	HCFC-123	n/a
C2HF4C1	HCFC-124	n/a
CHFC1CF3	HCFC-124	n/a
C2H2FC13	HCFC-131	134237-34-6
C2H2F2C12	HCFC-132	25915-78-0
C2H2F3C1	HCFC-133	
C2H3FC12	HCFC-141	25167-88-8

CH3CFC12	HCFC-141b	1717-00-6
C2H3F2C1	HCFC-142	431-06-1
CH3CF2C1	HCFC-142b	75-68-3
C2H4FC1	HCFC-151	n/a
C3HFC16	HCFC-221	134237-35-7
C3HF2C15	HCFC-222	134237-36-8
C3HF3C14	HCFC-223	134237-37-9
C3HF4C13	HCFC-224	134237-38-0
C3HF5C12	HCFC-225	n/a
CF3CF2CHC12	HCFC-225ca	n/a
CF2C1CF2CHC1F	HCFC-225cb	n/a
C3HF6C1	HCFC-226	134308-72-8
C3H2FC15	HCFC-231	134190-48-0
C3H2F2C14	HCFC-232	134237-39-1
C3H2F3C13	HCFC-233	134237-40-4
C3H2F4C12	HCFC-234	127564-83-4
C3H2F5C1	HCFC-235	134237-41-5
C3H3FC14	HCFC-241	134190-49-1
C3H3F2C13	HCFC-242	134237-42-6
C3H3F3C12	HCFC-243	134237-43-7
C3H3F4C1	HCFC-244	134190-50-4
C3H4FC13	HCFC-251	134190-51-5
C3H4F2C12	HCFC-252	134190-52-6
C3H4F3C1	HCFC-253	134237-44-8
C3H5FC12	HCFC-261	134237-45-9
C3H5F2C1	HCFC-262	134190-53-7

CHEMICAL FORMULA	SUBSTANCE	CAS REFERENCE NO.
- - - - -	- - - - -	- - - - -
C3H6FC1	HCFC-271	134190-54-8
CHF2Br	HBFC-22B1	n/a
CH2FBr	n/a	n/a
C2HFBBr4	n/a	n/a
C2HF2Br3	n/a	n/a
C2HF3Br2	n/a	n/a
C2HF4Br	n/a	n/a
C2H2FBr3	n/a	n/a
C2H2F2Br2	n/a	n/a
C2H2F3Br	n/a	n/a
C2H3FBr2	n/a	n/a
C2H3F2Br	n/a	n/a
C2H4FBr	n/a	n/a
C3HFBBr6	n/a	n/a
C3HF2Br5	n/a	n/a
C3HF3Br4	n/a	n/a
C3HF4Br3	n/a	n/a
C3HF5Br2	n/a	n/a
C3HF6Br	n/a	n/a
C3H2FBr5	n/a	n/a
C3H2F2Br4	n/a	n/a
C3H2F3Br3	n/a	n/a
C3H2F4Br2	n/a	n/a

C3H2F5Br	n/a	n/a
C3H3FBr4	n/a	n/a
C3H3F2Br3	n/a	n/a
C3H3F3Br2	n/a	n/a
C3H3F4Br	n/a	n/a
C3H4FBr3	n/a	n/a
C3H4F2Br2	n/a	n/a
C3H4F3Br	n/a	n/a
C3H5FBr2	n/a	n/a
C3H5F2Br	n/a	n/a
C3H6FBr	n/a	n/a
CH3Br	Methyl bromide	74-83-9

\* This formula does not refer to 1, 1, 2-trichloroethane.

SUPPLIER PRODUCT STEWARDSHIP CERTIFICATE

INSTRUCTIONS

1. Complete the product identification section
2. Complete the final column of the tables in section C
3. Complete, sign and date the reviewer certification in section B
4. Submit this certificate to Seagate upon completion
5. Maintain a copy of this Certificate for your files.

SECTION A: IDENTIFICATION AND CERTIFICATION

PRODUCT/PART/MATERIAL NAME:

PRODUCT/PART/MATERIAL NUMBER:

SECTION B: RECORD OF DOCUMENTATION OF COMPLIANCE:

The above product, part, or material design has been reviewed against the requirements of Seagate's supplier environmental specifications. The compliance status of this product is described in Section C of this certificate.

TABLE 6: SUPPLIER PRODUCT STEWARDSHIP CERTIFICATE

SUPPLIER COMPANY NAME	ADDRESS (CITY, STATE, STREET)	COUNTRY
- - - - -	- - - - -	- - - - -
SUPPLIER REPRESENTATIVE'S NAME		DATE OF REVIEW (DD/MM/YYYY)
POSITION/TITLE		
SIGNATURE		
DEPARTMENT		

SECTION C: RESTRICTED MATERIAL DECLARATION

For each product, part, or material developed, the known presence of the listed compounds at any amount EXCEEDING the threshold indicated must be reported. For compounds which are not present in the application at an amount exceeding the indicated threshold, this must also be documented in the table by indicating either "None" or, for example, "<0.01%" if the indicated threshold is 0.01%.

Note: Any deviation from the restrictions indicated in this materials list or the product or packaging design requirements requires special approval from Seagate.



SUBSIDIARIES OF MARVELL

Subsidiary - - - - -	Jurisdiction of Organization -----
Galileo Inventory Control, Inc.	California, United States
Galileo Technology Europe Ltd.	United Kingdom
Marvell Asia Pte Ltd	Singapore
Marvell Europe B.V.	Netherlands
Marvell GmbH	Germany
Marvell Hong Kong Limited	Hong Kong
Marvell International Ltd.	Bermuda
Marvell Japan K.K.	Japan
Marvell Semiconductor, Inc.	California, United States
Marvell Semiconductor Israel Ltd.	Israel
Marvell Semiconductor Korea, Ltd.	Korea
Marvell T.I. Israel Ltd.	Israel
Marvell Taiwan Ltd.	Taiwan
Marvell Technology, Inc.	Delaware, United States
Marvell World Trade Ltd.	Barbados
Schneider & Koch Training and Consulting GmbH	Germany
SysKonnnect Inc.	California, United States
SysKonnnect GmbH	Germany

CONSENT OF INDEPENDENT ACCOUNTANTS

We hereby consent to the incorporation by reference, in the Registration Statements on Form S-8 (Nos. 333-56322, 333-55974, 333-54188, 333-40154, 333-40152, 333-87322 and 333-91124) of Marvell Technology Group Ltd., of our report dated February 26, 2003, relating to the financial statements, which appears in this Form 10-K.

/s/ PRICEWATERHOUSECOOPERS LLP

PricewaterhouseCoopers LLP  
San Jose, California  
May 1, 2003

CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002(1)

In connection with the Annual Report of Marvell Technology Group Ltd. (the "Company") on Form 10-K for the year ending January 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Dr. Sehat Sutardja, Ph.D., Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ SEHAT SUTARDJA

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Dr. Sehat Sutardja, Ph.D.  
Co-Chairman of the Board,  
President and Chief Executive Officer  
May 1, 2003

A signed original of this written statement required by 18.U.S.C. Section 1350 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission (SEC) or its staff upon request.

- 
- (1) The material contained in this Exhibit 99.1 is not deemed "filed" with the SEC and is not to be incorporated by reference into any filing of the Company under the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filing.

CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002(1)

In connection with the Annual Report of Marvell Technology Group Ltd. (the "Company") on Form 10-K for the year ending January 31, 2003 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, George A. Hervey, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ GEORGE A. HERVEY

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George A. Hervey  
Vice President and Chief Financial Officer  
May 1, 2003

A signed original of this written statement required by 18.U.S.C. Section 1350 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission (SEC) or its staff upon request.

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- (1) The material contained in this Exhibit 99.2 is not deemed "filed" with the SEC and is not to be incorporated by reference into any filing of the Company under the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filing.