

LOGICVISION INC  
Form 10-K  
March 16, 2004  
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**UNITED STATES**  
**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

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**FORM 10-K**

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

For the fiscal year ended December 31, 2003

OR

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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File Number: 0-31773

**LOGICVISION, INC.**

(Exact name of registrant as specified in its charter)

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<b>Delaware</b> (State or other jurisdiction of incorporation or organization)	<b>94-3166964</b> (IRS Employer Identification No.)
<b>101 Metro Drive, Third Floor</b>	<b>(408) 453-0146</b>
<b>San Jose, California 95110</b> (Address of principal executive offices)	(Registrant's telephone number, including area code)

**Securities registered to Section 12(b) of the Act: None**

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

**Common Stock, par value \$0.0001 per share**

Indicate by check mark whether the registrant (1) has filed all reports required 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 (Section 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

The aggregate market value of Common Stock held by non-affiliates of the registrant (based upon the closing sale price on the NASDAQ National Market on June 30, 2003) was approximately \$30.6 million. Shares held by each executive officer, director and by each person who owns 10% or more of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 29, 2004, there were 15,965,088 shares of Common Stock, \$0.0001 per share par value, outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Items 10 (as to directors and Section 16(a) Beneficial Ownership Reporting Compliance), 11, 12 (as to Beneficial Ownership), 13 and 14 of Part III incorporate by reference information from the registrant's proxy statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for the registrant's 2004 Annual Meeting of Stockholders to be held on May 13, 2004.



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*When used in this Report, the words expects, anticipates, intends, estimates, plans, believes, and similar expressions are intended to identify forward-looking statements. These are statements that relate to future periods and include statements about the features, benefits and performance of our current and future products, services and technology, marketing and commercialization of our products under development, our expectations regarding future revenues, sources of revenues, cost of revenues and expenses, fluctuations in future operating results, our estimates regarding the adequacy of our capital resources, our capital requirements and our needs for additional financing, planned capital expenditures, use of our working capital, our critical accounting policies, the features and benefits of our products, plans for future products and services and for enhancements of existing products and services, our patent applications and licensed technology regarding our products and technology, the adequacy of our facilities, expectations regarding dividends, our efforts to enter into technology development contracts and develop relationships with industry partners, the expected benefits of those contracts and relationships, our ability to attract customers, establish license agreements and obtain orders, the impact of economic and industry conditions on our customers, customer demand, our growth strategy, our marketing efforts, our business development efforts, future acquisitions or investments, our focus on larger orders with major customers, our ability to attract and retain qualified personnel, our competitive position, our foreign currency risk strategy, and the impact of recent accounting pronouncements. Forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those projected. These risks and uncertainties include, but are not limited to, those risks discussed below, as well as the possibility that orders could be cancelled or not renewed, our ability to negotiate and obtain customer agreements and orders, lengthening sales cycles, the concentration of sales to large customers, dependence upon and trends in capital spending budgets in the semiconductor industry and fluctuations in general economic conditions, our ability to rapidly develop new technology and introduce new products, our ability to safeguard our intellectual property and the risks set forth below under Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations Factors That May Affect Future Operating Results. These forward-looking statements speak only as of the date hereof. The Company expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in the Company's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.*

*In the sections of this report entitled Business and Management's Discussion and Analysis of Financial Condition and Results of Operations Factors That May Affect Results, all references to LogicVision, we, us, our or the Company mean LogicVision, Inc. and its subsidiaries, except where it is made clear that the term means only the parent company.*

*LogicVision and the LogicVision logo are our registered trademarks. We also refer to trademarks of other corporations and organizations in this document.*

**Overview**

Our proprietary technologies for embedded test enable the more efficient design and manufacture of complex semiconductors by allowing integrated circuit designers to embed into a semiconductor design test functionality that addresses each key stage of a complex semiconductor's life cycle. We incorporated in July 1992 and engaged principally in research and development activities through 1994. We first generated meaningful commercial revenues from the license of our initial embedded test product in 1995. We believe our solution can reduce a customer's time-to-market, reduce manufacturing costs, improve manufacturing yields and reduce system software complexity. Our solution also allows testing of integrated circuits after they have been assembled onto boards and systems, which enables diagnostic test throughout the product's life cycle. Our embedded test solution has been successfully deployed in complex semiconductors for gigabit switches, voice and data routers, high performance servers and wireless products. Our proprietary technology enables semiconductor companies to embed self-testers into the chip

design.

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Our embedded test products generate proprietary circuit structures that are incorporated into an integrated circuit to test and diagnose the chip at full speed, without the signal delay or degradation experienced by external testers. Our proprietary circuits are designed to be modular and reusable, to enable more efficient design and to address time-to-market and manufacturing yield issues.

We were incorporated as LV Software, Inc. in California in July 1992. In June 1996, we changed our corporate name to LogicVision, Inc. We reincorporated in Delaware in September 2000.

## **Technology**

### *Embedded test*

We believe that embedded test technology provides significant benefits for the new and complex systems-on-a-chip semiconductor devices being designed and manufactured today. Conventional test is performed with external equipment, while embedded test is performed primarily using circuitry resident in the semiconductor design. By embedding test circuit structures on the semiconductor itself, our embedded test solution eliminates many of the key limitations associated with conventional external testing. Our embedded test design software automatically analyzes the structure of complex circuits to determine requirements for at-speed testing and diagnostics, and creates and integrates our proprietary embedded test circuits with the existing design functions to address these requirements. Our embedded test manufacturing software allows external test equipment to easily operate our proprietary embedded test circuits for pass-fail testing, chip debug or manufacturing datalogging. The LogicVision Validator, a desktop silicon debug solution, combines the embedded test manufacturing software with a low-cost rack of test equipment to create a self-contained test and debug environment. Our technology also enables board and system level diagnostics, system bring-up and in-field testing and diagnostics.

### *Design phase*

Our embedded test technology is incorporated into integrated circuits in the form of user-configurable circuit structures that provide four functions:

*access management* necessary scan chains, shared isolation collars, boundary scan and test points to enable access to any point within complex designs;

*timing management* proprietary functionality for clock skew management, multiple cycle paths and multiple frequencies;

*test data generation and analysis* proprietary functionality created for each design block to algorithmically generate and analyze circuit test data; and

*external control* standard IEEE 1149.1 compliant test access port for access and control of all embedded test circuits.

### *Manufacturing phase*

Because our embedded test circuits are incorporated in semiconductor designs, they are manufactured as part of the semiconductor devices. When the prototypes of a new integrated circuit return from fabrication for debug and characterization, our embedded test circuits and embedded test manufacturing software can be used to accelerate this process and allow lower cost equipment to be utilized, including the LogicVision Validator. Our embedded test circuit structures and embedded test manufacturing software also facilitate at-speed test during wafer probe and allow lower-cost test equipment to be used at wafer probe. Semiconductor devices that pass wafer probe test are then packaged, and our embedded testers and embedded test manufacturing software are used again for final test. Our embedded test circuits are designed to be activated with simple external test signals applied through the industry standard IEEE 1149.1 test access port.



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*Test Development Functions.* Using our technology, the bulk of the patterns applied to test the integrated circuit are created on-chip, with only minimal external control needed to achieve a pass-fail test. Our embedded test design and manufacturing software provides the engineer with the ability to easily create pass-fail test patterns, then optimize them for speed, execution time, accuracy, power and results.

*Debug and Diagnostic Functions.* Our embedded test provides a number of debug and diagnostic modes to facilitate debug, diagnosis and datalogging. These are leveraged using our embedded test manufacturing software.

### *Implementation technologies*

We have developed several technologies to facilitate the mainstream design and manufacturing use of embedded test technology. These include:

design automation algorithms and implementation for embedded test;

hierarchical isolation, access and assembly technologies;

embedded test design verification technologies;

high-performance circuit fault simulation algorithms and automation technologies;

capture-by-domain for multiple-clock timing;

at-speed, multi-frequency, multi-clock logic embedded test technology;

fault-insertion technology for system diagnostics;

at-speed, embedded and external memory test technologies;

at-speed interconnect test technology;

test and measurement technologies for embedded phase-locked-loops;

manufacturing automation for simplified access and control of embedded test circuits on test equipment;

signoff process and handoff database for robust transfer of embedded test information to manufacturing; and

parametric and input/output test technology to facilitate multi-site and reduced pin-count test, debug and datalogging.

## Products

We offer a portfolio of products for the automated development, integration, and deployment of embedded test technology:

### *Technology products*

*Embedded Circuit Structures.* Our embedded test technology enables our customers to design and manufacture our embedded test circuit structures for a specific design. For a typical design of 1 million gates and above, our embedded testers are less than a few thousand gates and represent only 1% to 2% of chip area. Our user-configurable embedded test circuit structures are designed to test memory, logic, input/outputs, phased-locked-loops, cores, hierarchical blocks and interconnect.

### *Design Software products*

We provide a suite of highly integrated embedded test design software products for embedded test implementation on application specific integrated circuits, or ASIC, and system-on-a-chip, or SOC, designs. We provide design software that automatically analyzes the structure of complex circuits to determine requirements

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for at-speed testing and diagnostics. Our software creates and integrates our proprietary circuits with the existing design circuits to address these requirements. It also assists with the timing analysis and simulation processes necessary for proper verification, by providing timing analysis scripts and simulation test benches.

### *Manufacturing Software products*

We provide embedded test manufacturing software for access and control of embedded test during chip and system test program development, debug, manufacturing test and datalogging. This enables user interaction with the embedded test circuits to evaluate and diagnose chip-level and board-level failures during manufacturing. This includes pass-fail testing, debug and basic failure diagnostics and datalogging. We support a wide set of third-party industry standard test equipment.

### *LogicVision Validator product*

We provide the LogicVision Validator product for use as a prototype chip debug and characterization platform for design engineers. The LogicVision Validator combines computers, power supplies and clock generators with the embedded test manufacturing software to create a complete solution for chip debug. The hardware portion of this product is manufactured and assembled by a third party for LogicVision.

### *Product offerings*

We currently offer our embedded test circuits, design software and manufacturing software in a variety of product bundles under the product family name LV2004™ with the product sub-families named icBIST™ and ETA™.

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The icBIST product sub-family consists of embedded test intellectual property and corresponding design automation software that provide embedded test solutions for different components of an ASIC or SOC design. The individual embedded test products within this sub-family and their underlying capabilities are described below.

<b>Products</b>	<b>Applications</b>
<b>IC Memory BIST</b>	<p>Provides intellectual property for flexible, area-optimized, at-speed, memory embedded test functionality.</p> <p>Supports single and multiport memory such as SRAMs, DRAMs and ROMs.</p> <p>Supports any size memory manufacturable in given technology.</p> <p>Provides manufacturing tools for integrated circuit and system test and diagnosis of embedded memories.</p>
<b>Logic BIST</b>	<p>Provides intellectual property for at-speed, multi-frequency logic self-test and scan test functionality.</p> <p>Includes intellectual property for direct test access and isolation of legacy cores.</p> <p>Automates analysis, generation, assembly and verification of logic test intellectual property.</p> <p>Supports high-speed multiple clock domains, including those in excess of 100 megahertz, pipelining and multi-cycle paths.</p>
<b>Embedded Logic Test</b>	<p>Embedded test intellectual property for hierarchical, at-speed, embedded logic core test functionality.</p> <p>Automates a complete, hierarchical methodology for system-on-a-chip design and test.</p> <p>Supports design partitioning and core reuse for concurrent engineering.</p> <p>Facilitates transportable embedded test for functional block re-use.</p>
<b>IC Memory BIST with BIRA (Built-In Repair Analysis)</b>	<p>Provides intellectual property for flexible, area-optimized, at-speed, memory embedded test functionality.</p> <p>Includes redundancy analysis for reparability of memories.</p> <p>Supports single and multiport SRAMs, DRAMs and ROMs.</p> <p>Supports any size memory manufacturable in given technology.</p> <p>Provides manufacturing tools for integrated circuit and system test and diagnosis of embedded memories.</p>
<b>PLL BIST</b>	<p>Embedded test intellectual property for accurate, specification-driven test of phase-locked-loop functionality.</p> <p>Automates generation, assembly and verification of embedded test circuitry for phase-locked-loops.</p> <p>Supports measurement-based tests of jitter, loop-gain and lock-range specifications.</p> <p>Measurement resolution to 0.125 of a gate delay.</p>
<b>Programmable IC Memory BIST</b>	<p>Provides intellectual property for runtime programmable, at-speed, memory embedded test functionality.</p> <p>Supports large, embedded DRAMs and high density, embedded SRAMs.</p> <p>Supports both standard and user-proprietary memory test algorithms.</p> <p>Usable during memory debug/characterization and go/no-go manufacturing test.</p>
<b>Programmable External Memory Test</b>	<p>Provides intellectual property for runtime programmable, high-speed, board-level memory module test functionality.</p> <p>Supports timing and algorithms for use with SRAMs, DRAMs, SDRAMs and others.</p> <p>Automates generation, assembly and verification of programmable external memory embedded test controller.</p>



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The ETA product sub-family consists of hardware and software products for use with third party test platforms that enable faster Time-to-Market and lower test costs through the support of interactive or test program controlled at-speed testing, datalogging, and debug of silicon incorporating LogicVision's embedded test IP. The individual products within this sub-family and their underlying capabilities are described below

<b>Products</b>	<b>Applications</b>
<b>ETA Comprehensive</b>	Provides intellectual property for facilitating interactive debug of integrated circuits by leveraging the embedded test capabilities that were added to the design.
	Supports interactive pass-fail testing and debug of the I/O, memory, logic and phase-locked loops, or PLLs, in the design.
	Automates the creation, modification and application of test and debug patterns on specified LogicVision-Ready automated test equipment.
	Provides manufacturing tools that reduce time-to-market for prototype integrated circuits.
<b>ETA Memory</b>	Provides intellectual property for facilitating interactive debug of integrated circuits by leveraging the embedded test capabilities that were added to the design.
	Supports interactive pass-fail testing and debug of only the memory in the design.
	Automates the creation, modification and application of test and debug patterns on specified LogicVision-Ready automated test equipment.
	Provides manufacturing tools that reduce time-to-market for prototype integrated circuits.
<b>ETA Assembly</b>	Provides intellectual property for facilitating interactive debug of boards and systems by leveraging the embedded test capabilities that were added to the chips within the boards or system.
	Supports interactive pass-fail testing and limited debug of boards and systems
	Automates the creation, modification and application of test and debug patterns on specified LVReady board level automated test equipment.
	Provides manufacturing tools that reduce time-to-market for prototype boards and systems.
<b>LogicVision Validator</b>	Bundles a rack of low-cost test equipment with the IC Debug product to facilitate the interactive debug of integrated circuits.
	Supports interactive test and debug of the I/O, memory, logic and PLLs in the design
	Automates the creation, modification and application of test and debug patterns.
	Integrates equipment for computing, power supplies and clock generation.
	Provides a complete debug platform that reduces time-to-market for prototype integrated circuits.

**Services**

*Maintenance.* We assist our customers with telephone support, bug fixes and upgrade privileges on a when and if available basis.

*Design Services.* We assist our customers with the design and manufacturing deployment of embedded test. Our design services help our customers analyze, generate, assemble and verify embedded test circuits. Our design services help our customers and partners rapidly adopt our technologies.

*Technology Development Contracts.* As a part of our strategy to make embedded test technology more applicable to custom designs, we enter into development contracts with industry leaders for specific projects. Our



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development contracts include developing new embedded test capabilities and appropriate modifications to our standard automation software. These contracts help our customers and partners to rapidly adopt our technologies.

**Customers**

We license our proprietary technologies and software products to companies in key markets within the diagnostics, semiconductor and systems industries. Our customers include application specific integrated circuit or system-on-a-chip designers in systems companies, fabless companies and integrated device manufacturers. Customers accounting for more than 10 percent of revenue are as follows:

	<b>Year Ended December 31,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
Customer A	15%	10%	5%
Customer B	11%	9%	6%
Customer C	5%	12%	

During the year ended December 31, 2001, no customer accounted for 10% or more of total revenue.

**Timing of Orders**

Our past operating results have been, and we expect that our future operating results will be, subject to fluctuations due to a number of factors, including unpredictability of the buying patterns of our customers, the concentration of sales to large customers, dependence upon capital spending budgets and fluctuations in general economic conditions.

**Research and Development**

Our ability to meet customer needs for improved technology, and maintain our technology leadership, depends largely on whether we can continue to rapidly develop and deploy new technology and introduce new products. We have made, and intend to continue to make, significant investments in research and development. In addition to an overall knowledge of test methodologies, embedded test requires an expertise in three diverse areas: integrated circuit design and verification, electronic design automation algorithms and software development, and software development for manufacturing test and test equipment. We have assembled a highly skilled and multi-disciplinary team for this purpose.

As of December 31, 2003 our engineering team comprised 35 employees, 16 of whom have advanced degrees, and most of whom have extensive industry experience in one or more of the aforementioned areas of expertise. Our engineering team is organized into three development groups, each focusing on one of these three areas of expertise, and each contributing the related portion to the bundled product offerings. The development groups are:



*Integrated Circuit Design* Our integrated circuit design team focuses on the overall embedded test intellectual property architecture and its implementation and verification.

*Design Software* Our design software team focuses on developing the software that analyzes, generates, assembles, and verifies an integrated circuit design with embedded test.

*Manufacturing Software* Our manufacturing software team focuses on developing software for enabling test and diagnostic in manufacturing.

In addition to the three development groups, we have product engineering teams focused on software builds and release, documentation and quality assurance.

Research and development expenses were \$5.0 million, \$5.4 million, and \$5.9 million during the years ended December 31, 2003, 2002 and 2001, respectively.

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### **Sales and Marketing**

The majority of our revenues are generated by our direct sales force. In the United States, we have sales and service offices in Boston, Massachusetts, Dallas, Texas and Los Angeles and San Jose, California. Internationally we have a sales and service office in Japan, while sales in other countries are handled by distributors or sales representatives in India, Israel, Korea and Taiwan. Information regarding geographic areas and operating segments are included in Note 11 to the Consolidated Financial Statements in Item 8. Sales personnel consist of sales representatives who are responsible for all business aspects of the customer relationship and application engineers who manage the technical pre-sales as well as the post-sales customer support issues. As of December 31, 2003, we had 40 employees involved in sales and marketing, customer service and operations.

The main goal of our sales force is to work with major systems, consumer electronics and semiconductor companies who have the expertise to implement our technology today. We focus on leading companies because they are influential in setting standards. We focus on developing customer relationships with companies in the areas of cellular, wireline and satellite communications, computer servers and graphics, and consumer electronics. Additionally, as systems companies use our technology, they often require their component suppliers to supply semiconductors with our embedded test technology already designed-in for their system use. In this way we are able to create both push and pull demand for our technology.

Our marketing efforts include product and technical marketing, public relations, corporate communications and business development functions. We strive to develop relationships with industry partners such as application specific integrated circuit suppliers, silicon foundries, electronic design automation tool suppliers, hardware tester manufacturers and intellectual property providers.

Sales and marketing expenses are allocated between cost of revenues and sales and marketing expenses. Application engineering efforts devoted to revenue-generating design and technology development projects and postcontract customer support activities are recorded as cost of revenues. Sales and marketing expenses incurred for general selling and marketing activities are recorded as sales and marketing expenses.

Sales and marketing expenses were \$9.6 million, \$10.8 million, and \$11.4 million during the years ended December 31, 2003, 2002 and 2001, respectively.

### **Intellectual Property**

We have a portfolio of intellectual property covering the areas of test and diagnosis of logic, memory and mixed-signal circuits with focus on embedded, at-speed and parametric aspects. Both design and manufacturing methods are covered. As of December 31, 2003, our intellectual property portfolio consisted of 27 issued U.S. patents, four allowed U.S. patent applications, 31 pending U.S. patent applications, eight issued Canadian patents, 13 pending Canadian patent applications and 21 pending Patent Cooperation Treaty, or PCT, patent applications filed with the World Intellectual Property Organization and which serve as the basis of national patent filings in countries of interest. In addition, we have two pending European patent applications and six pending Japanese patent applications. Generally, the term of patent protection is 20 years from the earliest effective filing date of the patent application. Our issued patents expire at various times between June 2016 and December 2023. Our portfolio also includes two patents for testing embedded memories and digital systems which are licensed from Nortel Networks and for which we completed royalty payments in October 2002. Nevertheless, our license agreement with Nortel may be terminated if we materially violate the terms of the agreement, if a competitor of Nortel acquires a significant percentage of our common stock without first obtaining Nortel's consent or if we bring patent infringement proceedings against Nortel under any patent embodied in, or acquired as a result of access to, the technology we license from Nortel. Our patents, and the Nortel patents we license, cover technology intended to address problems we consider fundamental

to embedded test, such as timing, power consumption and parametric testing.

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We generally enter into confidentiality agreements with our employees, industry partners and customers, as well as generally control access to and distribution of our documentation and other proprietary information. Despite this protection, unauthorized parties may copy aspects of our current or future software products or obtain and use information that we regard as proprietary.

Our existing and future patents may be circumvented, blocked, licensed to others or challenged as to inventorship, ownership, scope, validity or enforceability. We may not receive competitive advantages from the rights granted under our patents. Furthermore, our current or future patent applications may not be issued with the scope of the claims sought by us, if at all. In addition, others may develop technologies that are similar or superior to our proprietary technologies, duplicate our proprietary technologies or design around the patents owned or licensed by us. If our products, patents or patent applications are found to conflict with any patents held by third parties, we could be prevented from selling our products, our patents may be declared invalid or our patent applications may not result in issued patents. In addition, in foreign countries, we may not receive effective patent and trademark protection. We cannot be sure that steps we take to protect our proprietary technologies will prevent misappropriation of our technologies.

Litigation may be necessary to enforce our intellectual property rights or to determine the validity or scope of the proprietary rights of others. As a result of any such litigation, we could lose our proprietary rights and incur substantial unexpected operating costs. We may need to take legal action to enforce our proprietary rights in the future. Any action we take to protect our intellectual property rights could be costly and could absorb significant management time and attention.

The semiconductor industry is characterized by vigorous protection and pursuit of intellectual property rights or positions. There are numerous patents in the semiconductor industry and new patents are being issued at a rapid rate. This often results in significant and often protracted and expensive litigation. From time to time third parties may notify us of intellectual property infringement claims. If it is necessary or desirable, we may seek licenses under these third party patents or intellectual property rights. However, we cannot be sure that third parties will offer licenses to us or that we will find acceptable the terms of any offered licenses.

If we fail to obtain a license from a third party for proprietary technologies that we use, we could incur substantial liabilities, or be compelled to suspend sales of our products or our use of processes requiring the technologies. Litigation could cause us to incur significant expenses, harm our sales of the challenged technologies or products and divert the efforts of our technical and management personnel, whether or not a court decides the litigation in our favor. In the event we receive an adverse result in any litigation, we could be required to pay substantial damages, stop selling of infringing products, expend significant resources to develop or acquire non-infringing technology and discontinue the use of processes requiring the infringing technology or obtain licenses to the infringing technology. We may not be successful in the development or acquisition of intellectual property, or the necessary licenses may not be available under reasonable terms, and any development, acquisition or license could require us to expend a substantial amount of time and other resources. Any of these developments would harm our business. To date, we have had no such litigation matters concerning intellectual property.

## **Competition**

The semiconductor and systems industries are highly competitive and characterized by rapidly changing technology. The market for embedded test is still evolving and we expect competition to continue to emerge and become more intense in the future.

## *Design*

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In the design phase of product development, we face competition from traditional broad line electronic design automation providers like Cadence Design Systems, Inc., Mentor Graphics Corporation and Synopsys, Inc. and from smaller test tool providers. These companies provide competing design-for-test technologies and

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some level of built-in self-test capability. We also face competition from methodologies developed internally at large integrated device manufacturers, systems companies and electronic design automation providers.

### *Manufacturing*

Because embedded test has the potential to impact the external test market, we believe traditional hardware tester manufacturers such as Advantest Corporation, Agilent Technologies, Inc., Credence Systems Corporation, LTX Corporation, NPTest, Inc. (recently announced as being acquired by Credence Systems Corporation), and Teradyne, Inc. all view embedded test and LogicVision as competition. Many of these companies are devoting significant resources to developing external solutions to testing complex integrated circuits, including working closely with some of our current and potential customers. Their efforts may result in the development of solutions that compete with our embedded test solution. In addition, all of the tester manufacturers above, except NPTest, Inc., participate in our LVReady partner program through which our embedded test access software is integrated into their test platform, which may provide them with additional insight into our business and technology.

Most of the companies with whom we compete are significantly larger than we are and have greater financial resources. As embedded test is more broadly adopted in the market, we face the potential of one or more larger companies appearing as direct competition. We believe that the principal competitive factors in our market include proven technology, effective intellectual property, deployment automation, comprehensive manufacturing control and customer service. We believe we compete favorably with respect to all these factors.

### **Employees**

As of December 31, 2003, we employed 89 full time employees worldwide of which 44 employees were located in the United States, 20 employees were located in Canada, 17 employees were located in India and 8 employees were located in Asia and Europe. This included 40 in sales and marketing, 35 in research and development, and 14 in finance and administration. Our employees are not covered by any collective bargaining agreements, and we consider our relations with our employees to be good.

### **Available Information**

Our Web site is <http://www.logicvision.com>. We make available free of charge, on or through our Web site, our annual, quarterly and current reports, and any amendments to those reports, as soon as reasonably practicable after electronically filing such reports with the Securities and Exchange Commission, or SEC. Information contained on our Web site is not part of this report.

### **Item 2. Properties**

Our principal executive offices are located in San Jose, California, where we lease approximately 18,000 square feet. We believe that these offices will be adequate to meet our requirements for the next 12 months. We have research and development offices in Montreal and Ottawa, Canada. We have domestic sales and service offices in Franklin, Massachusetts; and Irving, Texas. In addition, we have an international sales

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and service office in Tokyo, Japan, a customer service office in London, the United Kingdom, and an engineering and service office in Bangalore, India.

In January 2004, we amended the lease agreement with our existing landlord for our corporate headquarters. The lease agreement provides for us to relocate our facilities within the same office complex and enter into a new 6-year lease term beginning in April 2004.

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We are not currently a party to any material legal proceedings.

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

None.

**Executive Officers of the Registrant**

The following table sets forth information regarding our executive officers as of December 31, 2003:

<u>Name</u>	<u>Age</u>	<u>Position</u>
Vinod K. Agarwal	51	Chairman of the Board
James T. Healy	63	President, Chief Executive Officer and a director
Michael C. Howells	41	Vice President of Engineering
Bruce M. Jaffe	59	Vice President of Finance and Chief Financial Officer
Ronald H. Mabry	56	Vice President of Marketing and Business Development
Mukesh J. Mowji	45	Vice President of Sales

*Vinod K. Agarwal, PhD* founded LogicVision in 1992 and has served as our Chairman since December 2003. From 1992 to December 2003, Dr. Agarwal was our President and Chief Executive Officer. Prior to founding LogicVision, Dr. Agarwal was the Nortel/NSERC Industrial Research Chair Professor at McGill University in Montreal and served as a consultant to Nortel Networks Corporation, Hitachi, Ltd. and Eastman Kodak Company for developing their design-for-test/embedded test environment. In 1992, Dr. Agarwal was elected to be a Fellow of The Institute of Electrical and Electronics Engineers, Inc., or IEEE, for his contributions to built-in self-test and fault-tolerant computing. Dr. Agarwal is a co-inventor of several US patents on embedded test technology. He holds a BE in Electronics from Birla Institute of Technology and Science, Pilani, India, an M.S. in Electrical Engineering from University of Pittsburgh and a PhD in Electrical Engineering from Johns Hopkins University.

*James T. Healy* has served as our President and Chief Executive Officer since December 2003. From July 2002 to November 2003, Mr. Healy was President of Spirox USA and Executive Vice President of Business Development and Strategic Marketing, for Spirox Corporation, a provider of semiconductor manufacturing equipment and software. From April 2000 to June 2002, Mr. Healy was President of ASAT, Inc., a provider of semiconductor design, assembly and test services. From December 1999 to March 2000, Mr. Healy served as an independent consultant to software companies and from May 1998 to November 1999, Mr. Healy was Executive Vice President, Sales & Marketing at FormFactor, Inc., a manufacturer of advanced semiconductor wafer probe cards. He holds a B.S. in Business and a M.S. in Psychology from California State University, Hayward.



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*Bruce M. Jaffe* has served as our Vice President of Finance and Chief Financial Officer since April 2003. Since 1999 Mr. Jaffe has served as a director of Pemstar, Inc., Metron Technology N.V. and Southwall Technologies Inc. From 1997 to 1999, Mr. Jaffe was Senior Vice President and Chief Financial Officer of Bell Microproducts Inc., a distributor of computer products, storage devices and electronic components. From 1967 to 1996, Mr. Jaffe was employed by Bell Industries Inc., a distributor of electronic components, where he held several management positions, most recently as President, Chief Operating Officer and a member of the Board of Directors. Mr. Jaffe started his career as an accountant at PricewaterhouseCoopers LLP. Mr. Jaffe holds a B.S. in Business from the University of Southern California and is a certified public accountant. Mr. Jaffe currently serves on the Board of Advisors for the University of Southern California School of Business.

*Michael C. Howells* has served as our Vice President of Engineering since 1994 and joined us as our Director of Marketing in 1993. Prior to joining LogicVision, Mr. Howells was a Senior Product Marketing Engineer with Mitsubishi Electronics America in their application specific integrated circuit group. While at Mitsubishi, Mr. Howells was involved in marketing deep sub-micron application specific integrated circuits, as

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well as development of related design flows and electronic design automation tools, and was also responsible for Mitsubishi's Ottawa application specific integrated circuit design center. He holds a BEng and a MEng in Electrical Engineering from McGill University.

*Ronald H. Mabry* has served as our Vice President of Marketing and Business Development since July 2003. From 2002 to June 2003, Mr. Mabry was Vice President of Sales and Marketing of Pact XPP Technologies, Inc., a provider of intellectual property cores for integration into systems-on-chip and application specific systems-on-chip. From 2000 until 2001, Mr. Mabry served as Chief Marketing Officer of eChips, Inc., an internet distributor of semiconductor chips and provider of technical content, and from 1996 to February 2000, Mr. Mabry served as Senior Vice President of Bell Microproducts, Inc.

*Mukesh J. Mowji* has served as our Vice President of Sales since April 2002. From April 2002 to July 2003 he served as our Vice President of Sales and Marketing, and from January 2002 to March 2002, he served as our Vice President of Marketing. From August 2000 to January 2002, he served as our Vice President of Manufacturing Business and was responsible for business development and marketing in semiconductor manufacturing. From 1988 to 2000 Mr. Mowji held various senior positions in marketing, sales, and field operations at LTX Corporation, and, from 1979 to 1988, Mr. Mowji held various senior positions in engineering, operations and sales with the test equipment division of Schlumberger Limited's test equipment business. He holds a B.S. in Electrical Engineering from San Francisco State University.

*Recent executive officer appointment*

On March 1, 2004, the Company announced the appointment of George Swan as Vice President of Engineering. Mr. Swan previously held Vice President of Engineering positions at Barcelona Design, Inc. and Mobileum, Inc. (now Roamware, Inc.) as well as management positions at Synopsys, Inc. Mr. Swan has a B.Sc. and a Ph.D. in Electronic Engineering from Robert Gordon University in Aberdeen, UK. Mr. Howells remains a Vice President of the Company.

**Table of Contents****PART II****Item 5. Market for Registrant's Common Equity and Related Stockholder Matters**

Our common stock, par value \$0.0001 ( Common Stock ), is traded on the NASDAQ National Market ( Nasdaq ) under the symbol LGVN. The following table sets forth, for the periods indicated, the range of high and low sales prices for the Common Stock on Nasdaq, as reported in its consolidated transaction reporting system.

<u>2003</u>	<u>High</u>	<u>Low</u>
Fourth Quarter	\$ 4.80	\$ 3.25
Third Quarter	\$ 3.55	\$ 2.64
Second Quarter	\$ 3.12	\$ 1.60
First Quarter	\$ 2.20	\$ 1.35
<u>2002</u>		
Fourth Quarter	\$ 3.03	\$ 1.60
Third Quarter	\$ 5.38	\$ 1.98
Second Quarter	\$ 11.30	\$ 3.97
First Quarter	\$ 15.45	\$ 6.56

As of February 29, 2004, our Common Stock was held by 78 stockholders of record. Because many of the shares of our Common Stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of beneficial owners represented by these stockholders of record. We have never declared or paid dividends on our capital stock and do not currently intend to pay any cash dividends on our Common Stock in the foreseeable future. We expect to retain future earnings, if any, to fund the development and growth of our business. Our board of directors will determine the amount and timing of future dividends, if any. Our current bank loan agreement prohibits the payment of cash dividends without the approval of the bank.

**Securities Authorized for Issuance Under Equity Compensation Plans**

Information regarding the Securities Authorized for Issuance under our Equity Compensation Plans can be found under Item 12 of this Annual Report on Form 10-K.

**Table of Contents****Item 6. Selected Consolidated Financial Data**

The following selected consolidated financial data are qualified by reference to, and should be read in conjunction with, Management's Discussion and Analysis of Financial Condition and Results of Operations and the Consolidated Financial Statements and related Notes included in Item 8 of this Report. The selected consolidated balance sheet data as of December 31, 2003 and 2002 and selected consolidated statements of operations data for the years ended December 31, 2003, 2002 and 2001, are derived from our audited consolidated financial statements included elsewhere in this Report. The selected consolidated balance sheet data as of December 31, 2001, 2000 and 1999 and the selected consolidated statements of operations data for the years ended December 31, 2000 and 1999 were derived from audited consolidated financial statements not included in this Report. Our historical results are not necessarily indicative of our future results.

	Years Ended December 31,				
	2003	2002	2001	2000	1999
(in thousands, except per share data)					
<b>Consolidated statements of operations data</b>					
Revenues:					
License	\$ 4,740	\$ 10,247	\$ 12,079	\$ 5,597	\$ 4,096
Product	275				
Service	3,987	5,308	5,153	3,686	1,344
<b>Total revenues</b>	<b>9,002</b>	<b>15,555</b>	<b>17,232</b>	<b>9,283</b>	<b>5,440</b>
Cost of revenues:					
License	186	962	803	583	214
Product	100				
Service	2,480	3,452	2,256	2,026	1,087
<b>Total cost of revenues</b>	<b>2,766</b>	<b>4,414</b>	<b>3,059</b>	<b>2,609</b>	<b>1,301</b>
<b>Gross profit</b>	<b>6,236</b>	<b>11,141</b>	<b>14,173</b>	<b>6,674</b>	<b>4,139</b>
Operating expenses:					
Research and development	4,971	5,408	5,894	5,617	4,622
Sales and marketing	9,556	10,757	11,400	9,818	5,589
General and administrative	4,279	4,490	3,258	4,529	2,162
<b>Total operating expenses</b>	<b>18,806</b>	<b>20,655</b>	<b>20,552</b>	<b>19,964</b>	<b>12,373</b>
Loss from operations	(12,570)	(9,514)	(6,379)	(13,290)	(8,234)
Interest income	655	1,099	366	583	155
Other income (expense), net	(11)	24	(6)		(16)
<b>Loss before provision for income taxes</b>	<b>(11,926)</b>	<b>(8,391)</b>	<b>(6,019)</b>	<b>(12,707)</b>	<b>(8,095)</b>
Provision for income taxes	89	113	124	9	3
<b>Net loss</b>	<b>(12,015)</b>	<b>(8,504)</b>	<b>(6,143)</b>	<b>(12,716)</b>	<b>(8,098)</b>
Accretion of redeemable convertible preferred stock			130	173	173

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Net loss attributable to common stockholders	\$ (12,015)	\$ (8,504)	\$ (6,273)	\$ (12,889)	\$ (8,271)
Net loss per share, basic and diluted <sup>(1)</sup>	\$ (0.78)	\$ (0.57)	\$ (1.54)	\$ (7.79)	\$ (6.29)
Weighted average common shares, basic and diluted <sup>(1)</sup>	15,495	15,002	4,063	1,654	1,315

<sup>(1)</sup> The diluted net loss per share computation excludes potential shares of common stock (redeemable convertible preferred stock, options to purchase common stock and warrants to purchase common stock), as their effect would be antidilutive.

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	December 31,				
	2003	2002	2001	2000	1999
	(in thousands)				
<b>Consolidated balance sheet data</b>					
Cash, cash equivalents and short-term investments	\$ 19,257	\$ 23,171	\$ 34,496	\$ 9,708	\$ 3,170
Marketable securities	11,801	18,390	11,984		
Working capital	15,639	17,055	31,373	5,708	1,471
Total assets	36,495	46,525	52,732	15,170	7,510
Total redeemable convertible preferred stock				46,071	31,765
Total stockholders' equity (deficit)	27,151	37,795	44,240	(39,822)	(29,500)
Cash dividends declared per common stock					

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

The following discussion and analysis of the Company's financial condition and results of operations should be read in conjunction with Selected Consolidated Financial Data and the Consolidated Financial Statements and related Notes included elsewhere in this Report.

**Overview****General**

We provide proprietary technologies for embedded test that enable the more efficient design and manufacture of complex semiconductors. Our embedded test solutions allow integrated circuit designers to embed into a semiconductor design test functionality that can be used during semiconductor production and throughout the useful life of the chip. In addition, our solutions allow integrated circuits to be tested after they have been assembled onto boards and systems, which enables diagnostic tests throughout the product's life.

Our proprietary technology enables semiconductor companies to embed self-testers into the chip design. Our embedded test products generate proprietary circuit structures that are incorporated into an integrated circuit to test and diagnose the chip at full speed, without the signal delay or degradation experienced by external testers. Our proprietary circuits are designed to be modular and reusable, to enable more efficient design and to address time-to-market, reduction of manufacturing costs and improvement of manufacturing yield issues. Our LogicVision Validator is a hardware product used to debug silicon chips incorporating our embedded test technologies at the full operating speed of the silicon chip.

Our customers are large systems companies that use our technology in their application specific integrated circuits or systems-on-a-chip as part of systems development and diagnostics and semiconductor companies that use our technology for complex chip development and testing. We license our intellectual property and software through our direct sales force in the United States and Japan, and through our distributors or sales representatives in India, Korea, Taiwan and Israel.

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Beginning in the second quarter of 2002, adverse general economic conditions and conditions in the semiconductor industry resulted in a substantial decrease in revenues. These conditions in the general economy and in the semiconductor industry may continue to impact our existing and prospective customers' ability to purchase our products and services in the future. In addition, because of these economic conditions, we have elected to focus our sales and marketing efforts on larger customers with greater resources. However, such large customers generally do not adopt new design methodologies quickly. Also, we may have limited access to the key decision-makers of potential customers who can authorize the adoption of our technology. As a result, the period between our initial contact with a potential customer and the sale of our products to that customer, if any, is often lengthy and may include delays associated with our customers' budgeting and approval processes, as well as a substantial investment of our time and resources.

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We received new orders of \$20.1 million in 2003 compared to \$12.9 million in 2002. This increase in orders was primarily due to large multi-year orders received in 2003. We expect receipt of new orders to fluctuate due to the lengthening sales cycles and our dependence on large orders. Our backlog, including deferred revenues, was \$18.5 million at December 31, 2003. Backlog is comprised of deferred revenues (orders which have been billed but for which revenue has not yet been recognized) plus written purchase orders which have been accepted but have not yet been billed and for which no revenue has been recognized. Due to possible customer cancellations of orders, our backlog at any particular date is not necessarily indicative of actual revenues for any succeeding period.

## **Acquisitions**

In July 2002, we entered into a Business Transfer Agreement with our then distributor in Japan. Pursuant to this agreement, we acquired certain fixed assets, customer lists, transitional services and a covenant not to compete ( non-competition agreement ) for a period of one year. We accounted for the acquisition as a purchase. The aggregate purchase price of the transaction was \$1.9 million. The purchase price includes professional fees and other direct costs of the acquisition totaling \$58,000. Based on an independent third-party valuation analysis, we allocated \$620,000 to transitional services from July 18, 2002 to December 31, 2002 and \$1.3 million to the non-competition agreement over the period of benefit, which ended on July 17, 2003.

## **Critical Accounting Policies**

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 account for our revenue under the provisions of Statement of Position 97-2, Software Revenue Recognition, as amended by Statement of Position 98-9 Modification of SOP 97-2, Software Revenue Recognition, With Respect to Certain Transactions and Statement of Position 81-1 Accounting for Performance of Construction-Type and Certain Production-Type Contracts.

We derive our revenues from three primary sources: license revenues, comprised of fees associated with the licensing of software; product revenues, from the sale of hardware products; and service revenues, from maintenance and consulting and training services. Revenue is recognized when persuasive evidence of an arrangement exists, all obligations have been performed pursuant to the terms of such an arrangement, the product has been delivered, the fee is fixed or determinable and the collection of the resulting receivable is reasonably assured. If any of these criteria are not met, we defer revenue recognition until such time as all criteria are met. Payments received in advance of revenues being recognized are presented as deferred revenue.

*License revenues.* We have three license types:



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Subscription licenses subscription licenses include software licenses and maintenance for a specific time period, generally three years or less. Maintenance is bundled into the license agreement for the term of the license and is not charged separately. Since vendor-specific objective evidence, or VSOE, of fair value does not exist for each element of the arrangement, revenues from subscription licenses are recognized ratably over the license term commencing upon the effective date of the license, if delivery and other revenue recognition criteria are met.

Term licenses term licenses include software licenses for a specific time period, generally three to five years. Revenues associated with term licenses are recognized on the effective date of the license, if delivery and other revenue recognition criteria are met. Maintenance agreements for term licenses are sold separately for a specified period and may continue to be renewed for the balance of the license term.

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Perpetual licenses perpetual licenses consist of software licensed on a perpetual basis. Revenues associated with perpetual licenses are recognized on the effective date of the license, if delivery has occurred and other revenue recognition criteria are met. We no longer offer this type of license.

The timing of revenue recognition for licenses will differ depending on the license type and on the individual terms and conditions associated with each particular license agreement. We use VSOE of fair value to allocate the total fee among all delivered and undelivered elements in those arrangements which contain multiple elements. If the arrangement includes the future delivery of a specified product or upgrade, all revenues under the arrangement are deferred until the specified product or upgrade has been delivered. If VSOE does not exist for one or more delivered elements, we apply the residual method of accounting to the delivered elements. Under the residual method, we defer the VSOE of the fair value of the undelivered elements and recognize revenue on the remaining portion of the arrangement. VSOE for maintenance is generally based upon the customer's annual renewal rates as set forth in the license agreement. When VSOE for maintenance cannot be established, we recognize all related revenues ratably over the term of our maintenance obligation. VSOE for services is generally based on the price charged when the services are sold separately. The timing of revenue recognition for both delivered and undelivered elements is in accordance with the relevant provisions of SOP 97-2.

On occasion we offer extended payment terms beyond our normal business practice of between 30 and 60 days to certain customers. We do not have sufficient experience collecting under these extended payment term arrangements. As a result, when payment terms are extended, the fee is not considered fixed or determinable and we recognize revenue when the payment is due.

*Product revenues.* The terms of our hardware product sales include annual maintenance. Product revenues are recognized ratably over the term of our maintenance obligation as we do not have a history of selling maintenance for this product separately. Once we have established VSOE for the maintenance of this product, we will recognize revenues upon delivery of the product if other revenue recognition criteria are met.

*Service revenues.* We recognize maintenance revenue ratably over the maintenance period. Customers generally renew maintenance agreements for term and perpetual licenses annually. A portion of the subscription license revenues is allocated to maintenance revenue.

We generally recognize consulting service revenues on a percentage of completion basis as the services are performed. Training revenues are recognized when the training is performed.

*Deferred revenues.* Deferred revenues consist primarily of maintenance and support services under maintenance contracts and unearned license revenues. Deferred revenues represent the excess of amounts invoiced or received over the revenue recognized. Deferred revenues fluctuate at each period end in accordance with the mix of contracts.

### *Use of Estimates*

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, we evaluate our estimates, including those related to revenue recognition, allowance for doubtful accounts, investments, income taxes, long-term service contracts, and contingencies. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making

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judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

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### *Allowance for Doubtful Accounts*

We maintain allowances for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required.

### *Valuation of Investments*

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 that may not be reflected in an investment's current carrying value, thereby possibly requiring an impairment charge in the future.

### *Accounting for Income Taxes*

We record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. While we have considered future taxable income and ongoing prudent and feasible tax planning strategies in assessing the need for the valuation allowance, in the event we were to determine that we would be able to realize our deferred tax assets in the future in excess of our net recorded amount, an adjustment to the deferred tax asset would increase net income in the period such determination was made.

## **Results of Operations**

### *Cost of Revenues*

Cost of license revenues consist of shipping, product packaging, software license and maintenance costs, materials and labor costs, and royalties paid to third party vendors. Cost of service revenue consists of compensation and related costs and third party consultant costs associated with providing postcontract customer support and consulting services.

### *Operating Expenses*

Research and development expenses consist primarily of compensation and related costs for personnel. All research and development costs are expensed as incurred.

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Sales and marketing expenses consist primarily of compensation and related costs for sales and marketing personnel, marketing programs, public relations, promotional materials, amortization of non-competition agreement, travel and related trade show expenses.

General and administrative expenses consist primarily of compensation and related costs for general management, information technology, finance and accounting personnel, insurance, professional services and related fees and expenses.

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The following table sets forth, for the periods indicated, certain financial data as a percentage of revenues:

	Years Ended December 31,		
	2003	2002	2001
<b>Consolidated statements of operations data</b>			
Revenues:			
License	53%	66%	70%
Product	3		
Service	44	34	30
<b>Total revenues</b>	<b>100</b>	<b>100</b>	<b>100</b>
Cost of revenues:			
License	2	6	5
Product	1		
Service	28	22	13
<b>Total cost of revenues</b>	<b>31</b>	<b>28</b>	<b>18</b>
<b>Gross profit</b>	<b>69</b>	<b>72</b>	<b>82</b>
Operating expenses:			
Research and development	55	35	34
Sales and marketing	106	69	66
General and administrative	48	29	19
<b>Total operating expenses</b>	<b>209</b>	<b>133</b>	<b>119</b>
<b>Loss from operations</b>	<b>(140)</b>	<b>(61)</b>	<b>(37)</b>
Interest and other income	7	7	2
<b>Loss before provision for income taxes</b>	<b>(133)</b>	<b>(54)</b>	<b>(35)</b>
Provision for income taxes	1	1	1
<b>Net loss</b>	<b>(134)%</b>	<b>(55)%</b>	<b>(36)%</b>

**Comparison of 2003 and 2002***Total revenues*

Total revenues in 2003 were \$9.0 million compared to \$15.6 million in 2002, a decrease of \$6.6 million or 42%. The decrease in total revenues was primarily attributable to a decrease in license revenues of \$5.5 million and service revenues of \$1.3 million, partly offset by an increase in product revenues of \$275,000 due to sales of our Validator product which was introduced in June 2002. The decrease in license revenues was

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primarily due to our customers' increasing preference for our subscription licenses as well as decreased demand from customers due to the current downturn in the semiconductor industry.

### *Total cost of revenues*

Total cost of revenues in 2003 decreased \$1.6 million to \$2.8 million or 31% of revenues, from \$4.4 million or 28% of revenues in 2002. The decrease was primarily due to a decrease in the use of outside services of \$916,000 resulting from the absence of services associated with our acquisition of the distributor business in Japan in 2002 and a decrease in royalty expense of \$677,000 due to the elimination of our royalty obligation to Nortel Networks. Total cost of revenues as a percentage of total revenues increased primarily due to a decrease in revenues coupled with higher service costs resulting from establishing a wholly-owned subsidiary in Japan, and higher support costs for customers.

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### *Research and development*

Research and development expenses decreased \$400,000 to \$5.0 million or 55% of revenues in 2003 from \$5.4 million or 35% of revenues in 2002. The decrease was primarily due to a decrease in stock based compensation expense of \$280,000 and a decrease in consulting expense of \$140,000 primarily due to decreased use of consultants in India as we established a direct organization in India.

### *Sales and marketing*

Sales and marketing expenses decreased \$1.2 million to \$9.6 million or 106% of revenues in 2003, compared to \$10.8 million or 69% of revenues in 2002. Sales and marketing expenses decreased primarily due to a decrease in stock based compensation expense of \$590,000, a decrease in trade show and public relations expenses of \$450,000, a decrease in compensation of \$300,000 resulting from lower headcount, a decrease in travel expenses of \$200,000 and a decrease in consulting expenses of \$130,000 related to the establishment of our Japan office in 2002. These decreases were partially offset by increased depreciation of \$360,000 on software and computer equipment, and amortization expenses of \$100,000 resulting from the acquisition of the distributor business in Japan.

### *General and administrative*

General and administrative expenses decreased \$0.2 million to \$4.3 million or 48% of revenues in 2003 compared to \$4.5 million or 29% of revenues in 2002. The decrease was primarily due to a decrease in stock based compensation expense of \$190,000 and a decrease in professional legal and accounting fees of \$490,000 primarily resulting from professional fees in connection with a proposed acquisition in 2002 as well as other reductions in legal and accounting fees, partially offset by increases in compensation of \$270,000, due to increased headcount, and consulting fees of \$150,000.

### *Interest income*

Interest income decreased \$0.4 million to \$0.7 million in 2003 from \$1.1 million in 2002. The decrease was due to reduced interest income resulting from lower investment balances and declining yields on our investments.

### *Income taxes*

Our net operating losses are generated domestically, and amounts attributed to our foreign operations have been insignificant for all periods presented. In 2003 and 2002, we recorded income tax provisions of \$89,000 and \$113,000 primarily related to state and foreign taxes. No benefit for income taxes has been recorded due to the uncertainty of the realization of deferred tax assets. From inception through December 31, 2003, we incurred net losses for federal and state tax purposes. As of December 31, 2003, we had federal and California net operating loss carryforwards of approximately \$53.5 million and \$22.0 million available to reduce future federal and California taxable income, respectively. These federal and California carryforwards begin to expire in 2006 and 2004, respectively, if not utilized. The extent to which these carryforwards can be used to offset future taxable income may be limited under Section 382 of the Internal Revenue Code and applicable state



tax law.

**Comparison of 2002 and 2001**

*Total revenues*

Total revenues were \$15.6 million in 2002 compared to \$17.2 million in 2001, a decrease of \$1.6 million or 9%. The decrease in total revenues was primarily attributable to a decrease in license revenues of \$1.9 million, partly offset by an increase in service revenues of \$160,000. The decrease in license revenues was primarily due to decreased demand from fabless semiconductor and systems companies primarily due to the current downturn in the semiconductor industry.

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### *Total cost of revenues*

Total cost of revenues increased by \$1.3 million to \$4.4 million or 28% of revenues in 2002, from \$3.1 million or 18% of revenues in 2001. The increase was primarily due to an increase in personnel related expenses of \$770,000 caused by an increase in the time spent by our engineers on service activities, an increase in the amortization of the transitional services of \$450,000 associated with the acquisition of the distributor business in Japan, and an increase in outside services of \$70,000, partially offset by a decrease in stock based compensation expense of \$80,000. Total cost of revenues as a percentage of total revenues increased primarily due to the adverse conditions in the semiconductor industry which resulted in a decrease in revenues while higher service costs resulted from establishing a wholly-owned subsidiary in Japan, and higher support costs for customers.

### *Research and development*

Research and development expenses decreased by \$0.5 million to \$5.4 million or 35% of revenues in 2002 from \$5.9 million or 30% of revenues in 2001. The decrease was primarily due to a decrease in stock based compensation expense of \$400,000.

### *Sales and marketing*

Sales and marketing expenses decreased \$0.6 million to \$10.8 million or 69% of revenues in 2002, compared to \$11.4 million or 66% of revenues in 2001. The decrease was primarily due to a decrease in the overall commission rate and a decrease in total revenues resulting in lower commissions of \$1.5 million and a decrease in stock based compensation expense of \$600,000, partly offset by higher payroll and related expenses of \$960,000 associated with hiring of five additional employees, and an increase in amortization expenses of \$580,000 resulting from the acquisition of the distributor business in Japan.

### *General and administrative*

General and administrative expenses increased \$1.2 million to \$4.5 million or 29% of revenues in 2002 compared to \$3.3 million or 19% of revenues in 2001. The increase was primarily due to an increase of \$1.1 million in insurance expenses and professional fees associated with being a public company and \$200,000 of professional fees in connection with a proposed acquisition, which was terminated in October 2002, partially offset by a decrease in stock based compensation expense of \$150,000.

### *Interest income*

Interest income increased \$0.7 million to \$1.1 million in 2002 from \$0.4 million in 2001. The increase was due to increased interest income resulting from higher investment balances as a result of our initial public offering in November 2001.

*Income taxes*

In 2002 and 2001, we recorded income tax provisions of \$113,000 and \$124,000 primarily related to state and foreign taxes. No benefit for income taxes has been recorded due to the uncertainty of the realization of deferred tax assets.

**Liquidity and Capital Resources**

At December 31, 2003, we had cash and cash equivalents, short-term investments and marketable securities of \$31.1 million, working capital of \$15.6 million, and \$5.0 million available under our line of credit.

Net cash used in operating activities was \$8.4 million in 2003, \$5.2 million in 2002, and \$2.9 million in 2001. Net cash used in operating activities for 2003 was primarily due to a net loss of \$12.0 million, an increase

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in accounts receivable of \$1.6 million resulting from increased customer billings and a decrease in accounts payable of \$594,000 due to reduced purchases in December 2003. This was partly offset by non-cash charges relating to depreciation and amortization and amortization of stock-based compensation of \$1.7 million and \$532,000, respectively, and an increase in deferred revenue of \$3.8 million resulting from customer billings in advance of revenue recognition. Net cash used in operating activities for 2002 was primarily due to a net loss of \$8.5 million, a decrease in deferred revenues of \$2.6 million resulting from a decrease in customer orders, a decrease in accrued liabilities of \$427,000, and an increase in prepaid expenses and other current assets of \$308,000. This was partly offset by non-cash charges relating to depreciation and amortization and amortization of stock-based compensation of \$2.4 million and \$1.6 million, respectively, a decrease in accounts receivable of \$2.0 million and an increase in accounts payable of \$728,000. Net cash used in operating activities for 2001 was primarily due to a net loss of \$6.1 million, an increase in prepaid and other current assets of \$576,000, a decrease in royalties payable of \$1.2 million and a decrease in accrued liabilities of \$267,000, partly offset by non-cash charges relating to depreciation and amortization and amortization of deferred stock-based compensation of \$1.1 million and \$2.9 million, respectively, a decrease in accounts receivable of \$198,000, a decrease in unbilled receivable of \$233,000, an increase in accounts payable of \$264,000 and an increase in deferred revenues of \$749,000 resulting from an increase in postcontract customer support contracts.

Net cash provided by investing activities was \$9.3 million in 2003. Net cash used in investing activities was \$16.1 million in 2002 and \$13.6 million in 2001. Net cash provided by investing activities for 2003 was primarily due to proceeds from the sales of marketable securities and short-term investments of \$17.2 million, partly offset by cash used to purchase marketable securities and short-term investments of \$7.4 million and to purchase property and equipment of \$450,000. Net cash used in investing activities for 2002 was primarily due to the purchase of marketable securities and short-term investments of \$31.4 million, the purchase of property and equipment of \$809,000, and the payments related to the acquisition of the distributor business in Japan of \$1.9 million, partly offset by the proceeds from the sales of marketable securities and short-term investments of \$18.0 million. Net cash used in investing activities for 2001 was primarily due to the purchase of long-term, interest bearing marketable securities of \$12.0 million, the payments of \$850,000 relating to the amendment of our technology license agreement with Nortel Networks, the purchase and implementation of customer support software for \$320,000 and purchases of computer hardware and other equipment for \$465,000.

Net cash used in financing activities was \$1.7 million in 2003. Net cash provided by financing activities was \$2.9 million in 2002 and \$41.3 million in 2001. Net cash used in financing activities for 2003 was due to repayment of our line of credit of \$2.5 million, partially offset by proceeds of \$796,000 received from employee stock purchase plan purchases and the issuance of common stock pursuant to exercise of employee stock options. Net cash provided by financing activities for 2002 was primarily due to the net proceeds of \$372,000 received from the employee stock purchase plan purchases and issuance of common stock pursuant to exercise of employee stock options, and proceeds of \$2.5 million borrowed under our line of credit. Net cash provided by financing activities for 2001 was primarily due to sale of common stock in our initial public offering.

We have a loan agreement with a bank under which we may borrow, on a revolving basis, up to \$5.0 million at an interest rate equal to prime rate, which was equal to an annual rate of 4.0% at December 31, 2003. Under the agreement, we must comply with certain operating and reporting covenants and are not permitted to pay dividends, or make material investments or dispositions without the prior written consent of the bank. If we fail to comply with its covenants under the agreement, the bank can declare any outstanding amounts immediately due and payable and cease advancing money or extending credit to or for us. No amount was outstanding under this agreement at December 31, 2003, and the agreement expires on January 31, 2005.

We intend to continue to invest in the development of new products and enhancements to our existing products. Our future liquidity and capital requirements will depend upon numerous factors, including the costs and timing of product development efforts and the success of these development efforts, the costs and timing of sales and marketing activities, the extent to which our existing and new products gain market acceptance, competing technological and market developments, the costs involved in maintaining and enforcing patent claims

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and other intellectual property rights, the level and timing of license and service revenues, available borrowings under line of credit arrangements and other factors. In addition, we may utilize cash resources to fund acquisitions of, or investments in, complementary businesses, technologies or product lines. From time to time, we may be required to raise additional funds through public or private financing, strategic relationships or other arrangements. There can be no assurance that such funding, if needed, will be available on terms attractive to us, or at all. Furthermore, any additional equity financing may be dilutive to stockholders, and debt financing, if available, may involve restrictive covenants. Strategic arrangements, if necessary to raise additional funds, may require us to relinquish our rights to certain of our technologies or products. Our failure to raise capital when needed could have a material adverse effect on our business, operating results and financial condition.

We expect to finance our future commitments using existing cash resources. We currently anticipate that our available cash resources will be sufficient to meet our anticipated operating, capital requirements and business acquisitions for at least the next 12 months.

*Contractual Obligations and Other Commercial Commitments*

At December 31, 2003, our obligations under contractual obligations and commercial commitments, primarily leasing arrangements, were as follows (in thousands):

<b>Year ending December 31,</b>	<b>Operating Leases</b>
2004	\$ 1,111
2005	377
2006	97
	<hr/>
	\$ 1,585

We rent office facilities under non-cancelable operating leases which expire through January 2007. We are responsible for certain maintenance costs, taxes and insurance under the respective leases. Total future minimum payments under such operating leases at December 31, 2003 were \$1.6 million. In January 2004, we amended the lease agreement with our existing landlord for our corporate headquarters. The lease agreement provides for us to relocate our facilities within the same office complex and enter into a new 6-year term beginning April 2004. The amended agreement provides for a reduction from the current rent of \$570,000 per annum to \$250,000 per annum, plus common area expenses. The lease contains annual rent increases of 3 percent and an option to renew the lease for an additional 3 years. The table above does not reflect the terms of the amended lease agreement signed in January 2004.

*Off-balance Sheet Arrangements*

The Company's off-balance sheet arrangements consist solely of operating leases as described above.

*Indemnification Obligations*

We enter into standard license agreements in the ordinary course of business. Pursuant to these agreements, we agree to indemnify our customers for losses suffered or incurred by them as a result of any patent, copyright, or other intellectual property infringement claim by any third party with respect to our products. These indemnification obligations have perpetual terms. Our normal business practice is to limit the maximum amount of indemnification to the amount received from the customer. On occasion, the maximum amount of indemnification we may be required to make may exceed our normal business practices. We estimate the fair value of our indemnification obligations as insignificant, based upon our historical experience concerning product and patent infringement claims. Accordingly, we have not recorded any liabilities for indemnification under these agreements as of December 31, 2003.

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We have agreements whereby our officers and directors are indemnified for certain events or occurrences while the officer or director is, or was, serving at our request in such capacity. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited; however, we have a directors and officers insurance policy that reduces our exposure and enables us to recover a portion of future amounts paid. As a result of our insurance policy coverage, we believe the estimated fair value of these indemnification agreements is minimal. Accordingly, we have no liabilities recorded for these agreements as of December 31, 2003.

### *Warranties*

We offer our customers a warranty that our products will conform to the documentation provided with the products. To date, there have been no payments or material costs incurred related to fulfilling these warranty obligations. Accordingly, we have no liabilities recorded for these warranties as of December 31, 2003. We assess the need for a warranty reserve on a quarterly basis, and there can be no guarantee that a warranty reserve will not become necessary in the future.

### **Recent Accounting Pronouncements**

In November 2002, the Emerging Issues Task Force, or EITF, reached a consensus on issue No. 00-21 Accounting for Revenue Arrangements with Multiple Deliverables, or EITF 00-21, on a model to be used to determine when a revenue arrangement with multiple deliverables should be divided into separate units of accounting and, if separation is appropriate, how the arrangement consideration should be allocated to the identified accounting units. The EITF also reached a consensus that this guidance should be effective for all revenue arrangements entered into in fiscal periods beginning after June 15, 2003. The adoption of EITF 00-21 did not have a material effect on our results of operations or financial position.

In November 2002, the Financial Accounting Standards Board, or FASB, issued Interpretation No. 45, or FIN 45, Guarantor's Accounting and Disclosure requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others. FIN 45 elaborates on the existing disclosure requirements for most guarantees, including loan guarantees. It also clarifies that at the time a company issues a guarantee, the company must recognize an initial liability for the fair value, or market value, of the obligations it assumes under that guarantee. However, the provisions related to recognizing a liability at inception of the guarantee for the fair value of the guarantor's obligations does not apply to product warranties or to guarantees accounted for as derivatives. The initial recognition and initial measurement provisions apply on a prospective basis to guarantees issued or modified after December 31, 2002. The disclosure requirements of FIN 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. The adoption of FIN 45 did not have a material effect on our results of operations or financial position.

In December 2002, the FASB issued Statement of Financial Accounting Standards, or SFAS, No. 148, Accounting for Stock-Based Compensation Transition and Disclosure an amendment of FASB Statement No. 123. SFAS 148 amends SFAS 123, Accounting for Stock-Based Compensation, to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS 148 amends the disclosure requirements of SFAS 123 to require prominent disclosures in both annual and interim financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results. We have included additional disclosures in accordance with SFAS 148.

In January 2003, the FASB issued FASB Interpretation No. 46, or FIN 46, Consolidation of Variable Interest Entities. This interpretation of Accounting Research Bulletin No. 51, Consolidated Financial Statements, addresses consolidation by business enterprises of variable interest entities that possess certain characteristics. FIN 46 requires that if a business enterprise has a controlling financial interest in a variable interest

entity, the assets, liabilities, and results of the activities of the variable interest entity must be included in



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the consolidated financial statements with those of the business enterprise. FIN 46 applies immediately to variable interest entities created after January 31, 2003 and to variable interest entities in which an enterprise obtains an interest after that date. At its meeting on October 8, 2003, the FASB deferred the latest date by which all public entities must apply FIN 46 to the first reporting period ending after December 15, 2003. This deferral applies to all variable interest entities, or VIEs, and potential VIEs, both financial and non-financial in nature. We do not have any ownership in any variable interest entities as of December 31, 2003. We will apply the consolidation requirements of FIN 46 in future periods should interest in a variable interest entity be acquired.

In April 2003, the FASB issued SFAS No. 149, or SFAS 149, Amendment of Statement 133 on Derivative Instruments and Hedging Activities. SFAS 149 amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS 133, Accounting for Derivative Instruments and Hedging Activities. SFAS 149 is generally effective for contracts entered into or modified after June 30, 2003, and for hedging relationships designated after June 30, 2003. The adoption of SFAS 149 did not have a significant impact on our financial position or results of operations.

In May 2003, the FASB issued SFAS 150 Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity. SFAS 150 establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity and is effective for financial instruments entered into or modified after May 31, 2003. We have adopted this statement. The adoption of SFAS 150 did not have a material effect on our financial position or results of operations.

On December 17, 2003, the Staff of the SEC issued Staff Accounting Bulletin No. 104, or SAB 104, Revenue Recognition, which supersedes SAB 101, Revenue Recognition in Financial Statements. SAB 104's primary purpose is to rescind the accounting guidance contained in SAB 101 related to multiple-element revenue arrangements that was superseded as a result of the issuance of EITF 00-21, Accounting for Revenue Arrangements with Multiple Deliverables. Additionally, SAB 104 rescinds the SEC's related Revenue Recognition in Financial Statements Frequently Asked Questions and Answers issued with SAB 101 that had been codified in SEC Topic 13, Revenue Recognition. While the wording of SAB 104 has changed to reflect the issuance of EITF 00-21, the revenue recognition principles of SAB 101 remain largely unchanged by the issuance of SAB 104, which was effective upon issuance. Our adoption of SAB 104 did not have a material effect on our financial position or results of operations.

## **FACTORS THAT MAY AFFECT FUTURE OPERATING RESULTS**

**If the semiconductor industry does not adopt embedded test technology on a widespread basis, our revenues could decline and our stock price could fall.**

To date, the semiconductor industry has not adopted embedded test technology as an alternative to current testing methods on a widespread basis. If the semiconductor industry does not adopt embedded test technology widely and in the near future, our growth will be limited, our revenues could decline, and our stock price could fall. We cannot assure you that integrated circuit designers and design companies' customers will accept embedded test technology as an alternative to current testing methods in the time frame we anticipate, or at all. The industry may fail to adopt embedded test technology for many reasons, including the following:

potential customers may determine that existing solutions adequately address their testing needs, or the industry may develop alternative technologies to address their testing needs;

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our existing and potential customers may react to declines in demand for semiconductors by curtailing or delaying new initiatives for new complex semiconductors or by extending the approval process for new projects, thereby lengthening our sales cycles;

potential customers may not be willing to accept the perceived delays in the early design stages associated with implementing embedded test technology in order to achieve potential time and cost savings at later stages of silicon debugging and production testing;

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potential customers may have concerns over the reliability of embedded testing methods relative to existing test methods;

our current and potential customers may not accept or embrace our recently announced LV2004<sup>TM</sup> integrated family of products; and

designers may be reluctant to take on the added responsibility of incorporating embedded test technology as part of their design process, or to learn how to implement embedded test technology.

### **If the industries into which we sell our products experience recession or other cyclical effects impacting our customers' research and development budgets, our operating results could be negatively impacted.**

Our sales are dependent upon capital spending trends and new design projects, and a substantial portion of our costs is fixed in the near term. The demand from our customers is uncertain and difficult to predict. Slower growth in the semiconductor and systems markets such as postponed or canceled capital expenditures for previously planned expansions or new fabrication facility construction projects, a reduced number of design starts, reduction of design and test budgets or continued consolidation among our customers would harm our business and financial condition.

The primary customers for semiconductors that incorporate our embedded test technology are companies in the communications, networking, server and high-end consumer products industries. Any significant downturn in these particular markets or in general economic conditions which result in the cutback of research and development budgets or capital expenditures would likely result in a reduction in demand for our products and services and could harm our business. If the economy declines as a result of economic, political or social turmoil, existing and prospective customers may further reduce their design budgets or delay implementation of our products, which could harm our business and operating results.

In addition, the markets for semiconductor products are cyclical. In recent years, most countries have experienced significant economic difficulties. These difficulties triggered a significant downturn in the semiconductor market, resulting in reduced budgets for chip design tools. In addition, the electronics industry has historically been subject to seasonal and cyclical fluctuations in demand for its products, and this trend may continue in the future. These industry downturns have been, and may continue to be, characterized by diminished product demand, excess manufacturing capacity and subsequent erosion of average selling prices. As a result, our future operating results may reflect substantial fluctuations from period to period as a consequence of these industry patterns, general economic conditions affecting the timing of orders from customers and other factors. Any negative factors affecting the semiconductor industry, including the downturns described here, could significantly harm our business, financial condition and results of operations.

### **We have a history of losses and an accumulated deficit of approximately \$70.6 million as of December 31, 2003. If we do not generate sufficient net revenue in the future to achieve or sustain profitability, our stock price could decline.**

We have incurred significant net losses since our inception, including losses of \$12.0 million for the year ended December 31, 2003, \$8.5 million for the year ended December 31, 2002 and \$6.3 million for the year ended December 31, 2001. At December 31, 2003, we had an accumulated deficit of approximately \$70.6 million. We expect our future revenues to be impacted by our long sales cycle and our revenue recognition policies, and we expect to continue to invest in our research and development projects as well as service operations required to support our business development activities. Because we expect to continue to invest in business development, our expenditures could continue to outpace growth in our revenues, if any, thus preventing us from achieving and maintaining profitability. To achieve and maintain profitability, we will need to generate and sustain substantially higher revenues while maintaining reasonable cost and expense levels. If we fail to achieve profitability within the time frame expected by securities analysts or investors and our cash balances continue to decline, the market price of our

common stock will likely decline. We may not achieve

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profitability if our revenues do not increase or if they increase more slowly than we expect. In addition, our operating expenses are largely fixed, and any shortfall in anticipated revenues in any given period could harm our operating results.

**The sales and implementation cycles for our products are typically long and unpredictable, taking from six months to two years for sales and an additional six to twelve months for implementation. As a result, we may have difficulty predicting future revenues and our revenues and operating results may fluctuate significantly, which could cause our stock price to fluctuate.**

Our sales cycle has ranged from six months to two years and our customers' implementation cycle has been approximately an additional six to twelve months. We believe that convincing a potential customer to integrate our technology into an integrated circuit at the design stage, which we refer to as a design win, is critical to retaining existing customers and to obtaining new customers. However, acceptance of our embedded test technology generally involves a significant commitment of resources by prospective customers and a fundamental change in their method of designing and testing integrated circuits. Many of our potential customers are large enterprises that generally do not adopt new design methodologies quickly. Also, we may have limited access to the key decision-makers of potential customers who can authorize the adoption of our technology. As a result, the period between our initial contact with a potential customer and the sale of our products to that customer, if any, is often lengthy and may include delays associated with our customers' budgeting and approval processes, as well as a substantial investment of our time and resources. We have incurred high customer engagement and support costs, including sales commissions, and the failure to manage these costs could harm our operating results.

If we fail to achieve a design win with a potential customer early in a given product cycle, it is unlikely that the potential customer will become a customer before its next product cycle, if at all. Because of the length of our sales cycle, our failure to achieve design wins could have a material and prolonged adverse effect on our sales and revenue growth. Our revenue streams may fluctuate significantly due to the length of our sales cycle, which may make our future revenues difficult to project and may cause our stock price to fluctuate.

**Fluctuations in our revenues and operating results could cause the market price of our common stock to decline.**

Our revenues and operating results have fluctuated significantly from quarter to quarter in the past and may do so in the future, which could cause the market price of our common stock to decline. Accordingly, quarter-to-quarter comparisons of our results of operations may not be an indication of our future performance. In future periods, our revenues and results of operations may be below the estimates of public market analysts and investors. This discrepancy could cause the market price of our common stock to decline.

Fluctuations in our revenues and operating results may be caused by:

timing, terms and conditions of customer agreements;

timing and completion of milestones under customer agreements;

the mix of our license and services revenues;

timing and acceptance of new technologies, product releases or enhancements by us, our competitors or our customers;

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changes in our and our customers' development schedules and levels of expenditures on research and development;

customers placing orders at the end of the quarter;

timing of sales commission expenses and the recognition of license revenues from related customer agreements;

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industry patterns and changes or cyclical and seasonal fluctuations in the markets we target; and

market and general economic conditions.

Delays or deferrals in purchasing decisions by our customers may increase as we develop new or enhanced products. Our current dependence on a small number of customers increases the revenue impact of each customer's actions relative to these factors. Our expense levels are based, in large part, on our expectations regarding future revenues, and as a result net income for any quarterly period in which material customer agreements are delayed could vary significantly from our budget projections.

### **The accounting rules regarding revenue recognition may cause fluctuations in our revenues independent of our order position.**

The accounting rules we are required to follow require us to recognize revenues only when certain criteria are met. As a result, for a given quarter it is possible for us to fall short in our revenues and/or earnings estimates even though total orders are according to our plan or, conversely, to meet our revenue and/or earnings estimates even though total orders fall short of our plan, due to revenues produced by deferred revenues. Orders for software support and consulting services yield revenues over multiple quarters, often rather than at the time of sale. The specific terms agreed to with a customer and/or any changes to the rules interpreting such terms may have the effect of requiring deferral of product revenues in whole or in part or, alternatively, of requiring us to accelerate the recognition of such revenues for products to be used over multiple years.

### **Intense competition in the semiconductor and systems industries, particularly in the design and test of semiconductors, could prevent us from increasing or sustaining our revenues and prevent us from achieving or sustaining profitability.**

The semiconductor and systems industries are extremely competitive and characterized by rapidly changing technology. The market for embedded test solutions is still evolving, and we expect competition to become more intense in the future. Our current principal competitors in the design phase of product development include:

electronic design automation providers such as Cadence Design Systems, Inc., Mentor Graphics Corporation and Synopsys, Inc., all of which offer basic built-in self-test capability;

smaller test tool providers;

potential customers that develop test solutions internally; and

integrated device manufacturers, such as International Business Machines Corporation, that use their own test solutions in chips manufactured for and sold to others.

Our embedded test technology also has the potential to impact the automated test equipment market, which may place us in competition with traditional hardware tester manufacturers such as Advantest Corporation, Agilent Technologies, Inc., Credence Systems Corporation, LTX Corporation, NPTest, Inc (recently announced as being acquired by Credence Systems Corporation), and Teradyne, Inc. As embedded test becomes adopted more widely in the market, any of these automated test equipment companies, or others, may offer their own embedded test

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solutions. Some of our competitors in electronic design automation and external test equipment businesses are significantly larger than we are and have greater financial resources, greater name recognition and longer operating histories than we have. Some of our competitors offer a more comprehensive range of products covering the entire design flow and complete external test flow, and they may be able to respond more quickly or adjust prices more effectively to take advantage of new opportunities or customer requirements. In addition, all of the tester manufacturers above, except NPTest, Inc., participate in our LVReady partner program through which our embedded test access software is integrated into their test platform, which may provide them with additional insight into our business and technology. Increased competition in the semiconductor industry could result in pricing pressures, reduced sales, reduced margins or failure to achieve or maintain widespread market acceptance, any of which could prevent us from increasing or sustaining our revenues and achieving or sustaining profitability.



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**Our target markets are comprised of a limited number of customers. If we fail to obtain or retain customer relationships, our revenues could decline.**

We derive a significant portion of our revenues from a relatively small number of customers. Five customers accounted for approximately 39% of total revenues in 2003, of which two customers accounted for 15% and 11%, respectively. Eleven customers accounted for approximately 54% of total revenues in 2002, of which two customers accounted for approximately 12% and 10% of total revenues, respectively. Our sales and marketing efforts are focused on larger customers; as a result, we anticipate that we will continue to rely on a limited number of customers for a substantial portion of our future revenues and we must obtain additional large orders from customers on an ongoing basis to increase our revenues and grow our business. In addition, the loss of any significant or well-known customer could harm our operating results or our reputation. In particular, a loss of a significant customer could cause fluctuations in our results of operations because our expenses are fixed in the short term, it takes us a long time to replace customers and, because of required methods of revenue recognition, any offsetting license revenues may need to be recognized over a period of time.

**Our products incorporate technology licensed from third parties, including Nortel Networks. If any of these licenses are terminated, our ability to develop and license our products could be delayed or reduced.**

We use technology, including software, which we license from third parties. In particular, we license technology from Nortel Networks under two patents for testing embedded memories and digital systems, and we use the Nortel technology in our embedded test technology. Our license agreement with Nortel may be terminated if we materially violate the terms of the agreement, if a competitor of Nortel acquires a significant percentage of our common stock without first obtaining Nortel's consent or if we bring patent infringement proceedings against Nortel under any patent embodied in, or acquired as a result of access to, the technology we license from Nortel. If we do not maintain our existing third party technology licenses or enter into licenses for alternative technologies, we could be required to cease or delay product shipments while we seek to develop alternative technologies.

**We depend on third parties to provide electronic design automation software that is compatible with our solution. If these third parties do not continue to provide compatible design products, we would need to develop alternatives, which could delay product introductions and cause our revenues and operating results to decline.**

Our customers depend on electronic design automation software to design their products using our solution. We depend on the same software to develop our products. Although we have established relationships with a variety of electronic design automation vendors to gain access to this software and to assure compatibility, these relationships may be terminated with limited notice. If any of these relationships were terminated and we were unable to obtain alternative software in a timely manner, our customers could be unable to use our solution. In addition, we could experience a significant increase in development costs, our development process could take longer, product introductions could be delayed and our revenues and operating results could decline.

**If automated test equipment companies are unwilling to work with us to make our technology compatible with theirs, we may need to pursue alternatives, which could increase the time it takes us to bring our solution to market and decrease customer acceptance of our technology.**

Although we are presently working with a number of automated test equipment companies to achieve optimal compatibility of our technologies, these companies may elect not to work with us in the future. If automated test equipment companies are unwilling to incorporate modifications into their equipment and operating systems to allow them to work with our technology, we may need to seek alternatives. These alternatives

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might not provide optimal levels of test function, and pursuing these alternatives could increase the time and expense it takes us to bring our technology to market, either of which could decrease customer acceptance of our technology and cause our revenues and margins to decline.

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**If we are unable to successfully manage the manufacturing process and service support for our hardware product, our reputation and our operating results could be harmed.**

The LogicVision Validator is our first hardware product. We rely on an independent subcontractor to manufacture this product for us. Because our other products are delivered in the form of software, we do not have experience in managing the manufacturing and service support for hardware products. If we are unable to accurately predict market demand for the LogicVision Validator, manage lead times in the procurement process and develop and maintain appropriate inventory controls, we may experience shortages or excess inventory. Shortages could result in lost sales opportunities and customers, and excess inventory could become obsolete, resulting in inventory write-offs which would negatively affect our financial results. In addition, we may need to customize our product to meet specifications of our customers outside of the United States.

We obtain several of the components used in this product from single or limited sources. If component manufacturers do not allocate a sufficient supply of components to meet our needs or if current suppliers do not provide components of adequate quality or compatibility, we may have to obtain these components from distributors or on the spot market at a higher cost. We do not have guaranteed supply arrangements with our suppliers, and suppliers may not be able to meet our current or future component requirements. If we are forced to use alternative suppliers of components, we may have to alter our product design to accommodate these components. Alteration of our product design to use alternative components could cause significant delays and reduce our production. In addition, we do not have specific volume purchase agreements with our subcontractor, and the subcontractor could cease supplying the product at any time with limited or no penalty. If we need to replace the subcontractor, we could incur significant manufacturing set-up costs and delays, which in turn could affect inventory levels.

Because this is our first hardware product, our customer support service personnel may experience difficulties in responding to customer needs, and we may be required to obtain third-party assistance, either directly or in the form of further training for our existing support personnel. Delays in customer service could result in rejection of our product and loss of customer confidence. Third-party assistance could be costly and divert attention of our personnel from primary support of our other products. Loss of sales, damaged reputation or increased costs could harm our revenues and profitability.

**Our future success will depend on our ability to keep pace with rapid technological advancements in the semiconductor industry. If we fail to develop and introduce new products and enhancements on a timely basis, our ability to attract and retain customers could be impaired, which would cause our operating results to decline.**

The semiconductor industry is characterized by rapidly changing technology, evolving industry standards, rapid changes in customer requirements, frequent product introductions and ongoing demands for greater speed and functionality. We must continually design, develop and introduce new products with improved features to be competitive. Our products may not achieve market acceptance or adequately address the changing needs of the marketplace, and we may not be successful in developing and marketing new products or enhancements to our existing products on a timely basis. The introduction of products embodying new technologies, the emergence of new industry standards or changes in customer requirements could render our existing products obsolete and unmarketable. We may not have the financial resources necessary to fund future innovations. If we are unable, for technical, legal, financial or other reasons, to respond in a timely manner to changing market conditions or customer requirements, our business and operating results could be seriously harmed.

**Future changes in financial accounting standards, including pronouncements and interpretations of accounting pronouncements on software revenue recognition, may cause adverse unexpected revenue fluctuations and affect our reported results of operations.**

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A change in accounting policies can have a significant effect on our reported results and may even affect our reporting of transactions completed before a change is announced. In particular, new pronouncements and

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varying interpretations of pronouncements on software revenue recognition have occurred with frequency, may occur in the future and could impact our revenues. Required changes in our methods of revenue recognition could result in deferral of revenues recognized in current periods to subsequent periods or accelerated recognition of deferred revenues to current periods, each of which could cause shortfalls in meeting the expectations of investors and securities analysts. Our stock price could decline as a result of any shortfall.

Accounting policies affecting many other aspects of our business, including rules relating to revenue recognition, purchase accounting for business combinations and employee stock option grants have recently been revised or are under review. Changes to those rules or the questioning of current practices may adversely affect our reported financial results or the way we conduct our business.

### **Recently enacted and proposed regulatory changes may cause us to incur increased costs.**

Recently enacted and proposed changes in the laws and regulations affecting public companies, including the provisions of the Sarbanes-Oxley Act of 2002 and rules adopted and proposed by the SEC and NASDAQ could cause us to incur increased costs as we evaluate the implications of new rules and respond to new requirements. The new rules could make it more difficult for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these events could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors, or as executive officers. We are presently evaluating and monitoring developments with respect to these new and proposed rules, and we cannot predict or estimate the amount of additional costs we may incur or the timing of such costs.

### **Our embedded test products may have errors or defects that users identify after deployment, which could harm our reputation and our business.**

Our products may contain undetected errors when first introduced or when new versions or enhancements are released. We have from time to time found errors in versions of our embedded test products, and we may find errors in our products in the future. The occurrence of errors could cause sales of our products to decline, divert the attention of management and engineering personnel from our product development efforts and cause significant customer relations problems. Customer relations problems could damage our reputation, hinder market acceptance of our products and result in loss of future revenues.

### **We must continually attract and retain engineering personnel, or we will be unable to execute our business strategy.**

We have experienced difficulty in hiring and retaining highly skilled engineers with appropriate qualifications to support our business. In particular, our strategy for encouraging the adoption of our technology requires that we employ highly skilled applications engineers to work with our customers. As a result, our future success depends in part on our ability to identify, attract, retain and motivate qualified engineering personnel. Competition for qualified engineers is intense, especially in the Silicon Valley where our headquarters are located. If we lose the services of a significant number of our engineers and we cannot hire and integrate additional engineers, it could disrupt our ability to develop our products and implement our business strategy.

### **We may be unable to replace the technical, sales, marketing and managerial contributions of key individuals.**

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We depend on our senior executives, and our research and development, sales and marketing personnel, who are critical to our business. We do not have long-term employment agreements with our key employees, and we only maintain a key person life insurance policy on our Chairman. If we lose the services of any of these key executives, our product development processes and sales efforts could be slowed. We may also incur increased operating expenses and be required to divert the attention of other senior executives to search for their replacements. The integration of our new executives or any new personnel could disrupt our ongoing operations.

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### **If we fail to protect our intellectual property rights, competitors may be able to use our technologies, which could weaken our competitive position, reduce our revenues or increase our costs.**

Our success and ability to compete depend largely upon the protection of our proprietary technology. We rely on a combination of patent, copyright, trademark and trade secret laws, confidentiality procedures and licensing arrangements to establish and protect our proprietary rights. Our pending patent applications may not result in issued patents, and our existing and future patents may not be sufficiently broad to protect our proprietary technologies. Policing unauthorized use of our products is difficult and we cannot be certain that the steps we have taken will prevent the misappropriation or unauthorized use of our technologies, particularly in foreign countries where the laws may not protect our proprietary rights as fully as U.S. laws. Any patents we obtain or license may not be adequate to protect our proprietary rights. Our competitors may independently develop similar technology, duplicate our products or design around any patents issued to us or our other intellectual property rights.

Litigation may be necessary to enforce our intellectual property rights or to determine the validity or scope of the proprietary rights of others. As a result of any such litigation, we could lose our proprietary rights and incur substantial unexpected operating costs. We may need to take legal action to enforce our proprietary rights in the future. Any action we take to protect our intellectual property rights could be costly and could absorb significant management time and attention. In addition, failure to adequately protect our trademark rights could impair our brand identity and our ability to compete effectively.

### **Any dispute involving our patents or other intellectual property could include our industry partners and customers, which could trigger our indemnification obligations to them and result in substantial expense to us.**

In any dispute involving our patents or other intellectual property, our licensees could also become the target of litigation. This could trigger technical support and indemnification obligations in some of our license agreements which could result in substantial expenses. In addition to the time and expense required for us to support or indemnify our licensees, any such litigation could severely disrupt or shut down the business of our licensees, which in turn could hurt our relations with our customers and cause our revenues to decrease.

### **Failure to obtain export licenses could harm our business.**

We must comply with U.S. Department of Commerce regulations in shipping our software and hardware products and other technologies outside the United States. Although we have not had any significant difficulty complying with these regulations to date, any significant future difficulty in complying could harm our business, operating results and financial condition.

### **We have limited control over third-party representatives who market, sell and support our products in foreign markets. Loss of these relationships could decrease our revenues and harm our business.**

We sell our products and services through distributors and sales representatives in India, Israel, Korea and Taiwan. We anticipate that sales in these markets will account for a portion of our total revenues in future periods. During 2003, we appointed a new distributor and Taiwan and a new sales representative in Korea. Our third-party representatives are not obligated to continue selling our products, and they may terminate their arrangements with us at any time with limited prior notice. Growing our relationship with these new distributors or establishing alternative distribution channels in these markets could consume substantial management time and resources, decrease our revenues and increase our

expenses.



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**We face business, political and economic risks because a portion of our revenues and operations are outside of the United States.**

International revenues accounted for 19% of our total revenues for the year ended December 31, 2003 and 21% of our total revenues for the year ended December 31, 2002. In addition to our international sales, we have operations in Canada, Japan and India. Our success depends upon continued expansion of our international operations, and we expect that international revenues will continue to be an important component of our total future revenues. Our international business involves a number of risks, including:

our ability to adapt our products to foreign design methods and practices;

cultural differences in the conduct of business;

difficulty in attracting qualified personnel;

managing foreign branch offices and subsidiaries;

longer payment cycles for and greater difficulty collecting accounts receivable;

the uncertainty of international orders due to typically lengthy international selling cycles;

unexpected changes in regulatory requirements, royalties and withholding taxes that restrict the repatriation of earnings;

tariffs and other trade barriers;

the burden of complying with a wide variety of foreign laws; and

political, economic, health or military conditions associated with worldwide conflicts and events.

As we increase our direct selling activities in Japan, a portion of our international revenues may be denominated in Japanese yen, which is subject to exposure from movements in foreign currency exchange rates. In addition, some of our international revenues are denominated in U.S. dollars, creating a risk that fluctuation in currency exchange rates will make our prices uncompetitive. To the extent that profit is generated or losses are incurred in foreign countries, our effective income tax rate may be significantly affected. Any of these factors could significantly harm our future international sales and, consequently, our revenues and overall results of operations and business and financial condition.

**Our historical growth has placed a significant strain on our management systems and resources, and if we fail to manage this growth and are unable to effectively control our costs and implement our business strategies, our business will be harmed.**

Our ability to license and sell our products and manage our business successfully in an evolving market requires an effective planning and management process. Our historical growth, international expansion in Japan and India and acquisition of certain assets and customer contracts

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from our Japanese distributor have placed, and are expected to continue to place, a significant strain on our resources and increased demands on our management information and reporting systems, financial and management controls and personnel. To manage our growth, we must implement and improve additional and existing administrative, financial and operations systems, procedures and controls. We may not be able to develop the internal capabilities or collaborative relationships required to manage future growth and expansion or to support future operations. If we are unable to manage growth effectively, our revenues could decline.

**We may be unable to consummate future potential acquisitions or investments or successfully integrate acquired businesses or investments or foreign operations with our business, which may disrupt our business, divert management's attention and slow our ability to expand the range of our proprietary technologies and products.**

Our establishment of wholly owned subsidiaries in India and Japan requires significant management attention, which could distract our management from day to day operations and could disrupt our business.

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In December 2002, we completed the transfer of all designated customer contracts from our then Japanese distributor to our Japanese subsidiary, and since that time we have transitioned our customer relationships to our Japanese subsidiary. To realize the benefits of this transaction, we must successfully integrate our Japanese subsidiary into our existing operations despite differences in culture, language and legal environments. In addition, because we do not have the same experience and relationships as our former distributor in Japan, we may not succeed in our efforts to develop a direct sales presence in Japan, and the cost of these efforts may be significant. If our customers are uncertain about our ability to operate on a combined basis or about developing a more direct relationship with us, they could delay or cancel orders for our products.

We established a wholly owned subsidiary in Bangalore, India to provide engineering and customer support services to our customers worldwide. We do not have any prior operating experience in India, and our expansion in India presents a number of risks including increased difficulty in coordinating our engineering and customer support efforts, increased costs associated with establishing our remote office, obtaining required equipment and tools and training new personnel, increased communications and travel costs, and potential delays in our engineering and customer support efforts.

We intend to continue to expand the range of our proprietary technologies and products, and we may acquire or make investments in additional complementary businesses, technologies or products, if appropriate opportunities arise. We may be unable to identify suitable acquisition or investment candidates at reasonable prices or on reasonable terms, or consummate future acquisitions or investments, each of which could slow our growth strategy. If we do acquire additional companies or make other types of acquisitions, we may have difficulty integrating the acquired products, personnel or technologies. We may not be able to retain key management, technical or sales personnel after an acquisition. These difficulties could disrupt our ongoing business, distract our management and employees and increase our expenses.

**Intellectual property litigation, which is common in our industry, could be costly, harm our reputation, limit our ability to license or sell our proprietary technologies or products and divert the attention of management and technical personnel.**

The semiconductor industry is characterized by frequent litigation regarding patent and other intellectual property rights. While we have not received formal notice of any infringement of the rights of any third party, questions of infringement in the semiconductor field involve highly technical and subjective analyses. Litigation may be necessary in the future to enforce any patents we may receive and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others, or to defend against claims of infringement or invalidity, and we may not prevail in any future litigation. Any such litigation, whether or not determined in our favor or settled, could be costly, could harm our reputation and could divert the efforts and attention of our management and technical personnel from normal business operations. Adverse determinations in litigation could result in the loss of our proprietary rights, subject us to significant liabilities, require us to seek licenses from third parties or prevent us from licensing our technology or selling our products, any of which could harm our business.

**Our stock price may decline significantly because of stock market fluctuations that affect the prices of technology stocks. A decline in our stock price could result in securities class action litigation against us that could divert management's attention and harm our business.**

The stock market has experienced significant price and trading volume fluctuations that have adversely affected the market prices of common stock of technology companies. These broad market fluctuations may reduce the market price of our common stock. In the past, securities class action litigation has often been brought against a company after periods of volatility in the market price of securities. In the future, we may be a target of similar litigation. Securities litigation could result in substantial costs and divert our management's attention and resources, which in turn could harm our ability to execute our business plan.



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**Our ability to raise capital in the future may be limited and our failure to raise capital when needed could prevent us from growing.**

We believe that our existing cash resources and available debt financing will be sufficient to meet our anticipated cash needs for at least the next 12 months. However, the timing and amount of our working capital and capital expenditure requirements may vary significantly depending on numerous factors, including:

the level and timing of license and service revenues;

the extent to which our existing and new products gain market acceptance;

competing technological and marketing developments;

the costs and timing of expansion of product development efforts and the success of these development efforts;

the costs and timing of expansion of sales and marketing activities;

the extent of international operations;

the need to adapt to changing technologies and technical requirements;

the costs involved in maintaining and enforcing patent claims and other intellectual property rights;

the existence of opportunities for expansion and for acquisitions of, investments in, complementary businesses, technologies or product lines; and

access to and availability of sufficient management, technical, marketing and financial personnel.

If our capital resources are insufficient to satisfy our liquidity requirements, we may seek to sell additional equity securities or debt securities or obtain debt financing. The sale of additional equity securities or debt securities would result in additional dilution to our stockholders. Additional debt would result in increased expenses and could result in covenants that would restrict our operations. If adequate funds are not available or are not available on acceptable terms, this would significantly limit our ability to hire, train or retain employees, support our expansion, take advantage of unanticipated opportunities such as acquisitions of businesses or technologies, develop or enhance products, or respond to competitive pressures.

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

### **Foreign Currency Fluctuations**

In the normal course of business, we are exposed to market risk from the effect of foreign exchange rate fluctuations on the U.S. dollar value from our foreign operations. A significant portion of our revenues has been denominated in U.S. dollars; however, as we increase our direct sales activities in Japan, an increasing portion of our revenues may be denominated in the Japanese yen. In addition, the operating expenses incurred by our foreign subsidiaries are denominated in local currencies. Accordingly, we are subject to exposure from movements in foreign currency exchange rates. To date, the effect of changes in foreign currency exchange rates on our financial position and operating results has not been material. We currently do not use financial instruments to hedge foreign currency risks. We intend to assess the use of financial instruments to hedge currency exposures on an ongoing basis.

#### **Interest Rate Risk**

Our exposure to market risk for changes in interest rates relate primarily to our investment portfolio. We have not used derivative financial instruments in our investment portfolio. We invest our excess cash in high-quality corporate issuers and in debt instruments of the U.S. Government and, by policy, limit the amount of credit exposure to any one issuer. As stated in our policy, we are averse to principal loss and seek to preserve our invested funds by limiting default risk, market risk and reinvestment risk. We mitigate default risk by investing

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in high credit quality securities and by positioning our portfolio to respond appropriately to a significant reduction in a credit rating of any investment issuer or guarantor. The portfolio includes only marketable securities with active secondary or resale markets to ensure portfolio liquidity.

Investments in both fixed and floating rate interest-earning instruments carry a degree of interest rate risk. Fixed rate securities may have their fair market value adversely impacted due to rising interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectations due to changes in interest rates or we may suffer losses in principal if forced to sell securities which have declined in market value due to changes in interest rates.

Short-term investments and long-term investments are classified as held-to-maturity and the cost of securities sold is based on the specific identification method. At December 31, 2003, we had short-term U.S. government securities and long-term U.S. government securities of \$3.8 million and \$11.8 million, respectively.

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**Item 8. Financial Statements and Supplementary Data**

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Financial statement schedules not listed above are either omitted because they are not applicable or the required information is shown in the Consolidated Financial Statements or in the Notes thereto.



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**Report of Independent Auditors**

To the Board of Directors and Stockholders of LogicVision, Inc.:

In our opinion, the consolidated financial statements listed in the accompanying index present fairly, in all material respects, the financial position of LogicVision, Inc. and its subsidiaries at December 31, 2003 and 2002, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2003 in conformity with accounting principles generally accepted in the United States of America. In addition, in our opinion, the financial statement schedule listed in the accompanying index presents fairly, in all material respects, the information set forth therein when read in conjunction with the related consolidated financial statements. These financial statements and the financial statement schedule are the responsibility of the Company's management; our responsibility is to express an opinion on these financial statements and financial statement schedule 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.

/s/ PricewaterhouseCoopers LLP

San Jose, California

January 23, 2004

**Table of Contents****LOGICVISION, INC.****CONSOLIDATED BALANCE SHEETS**

(in thousands, except share data)

	December 31,	
	2003	2002
<b>ASSETS</b>		
Current Assets:		
Cash and cash equivalents	\$ 15,475	\$ 16,179
Short-term investments	3,782	6,992
Accounts receivable, net of allowance for doubtful accounts of \$28 and \$12	2,756	1,170
Prepaid expenses and other current assets	1,251	1,174
	<hr/>	<hr/>
Total current assets	23,264	25,515
Property and equipment, net	922	1,486
Marketable securities	11,801	18,390
Notes receivable, related parties	60	93
Other long-term assets, net	448	1,041
	<hr/>	<hr/>
Total assets	\$ 36,495	\$ 46,525
	<hr/>	<hr/>
<b>LIABILITIES AND STOCKHOLDERS EQUITY</b>		
Current Liabilities:		
Short-term debt	\$	\$ 2,500
Accounts payable	874	1,468
Accrued liabilities	1,269	1,339
Deferred revenue, current portion	5,482	3,153
	<hr/>	<hr/>
Total current liabilities	7,625	8,460
Deferred revenue	1,719	270
	<hr/>	<hr/>
Total liabilities	9,344	8,730
Commitments and contingencies (See Note 5)		
Stockholders' Equity:		
Preferred stock, \$0.0001 par value:		
Authorized: 5,000,000 shares;		
Issued and outstanding: no shares issued and outstanding		
Common stock, \$0.0001 par value:		
Authorized: 125,000,000 shares;		
Issued and outstanding: 15,775,779 shares at December 31, 2003 and 15,245,503 shares at December 31, 2002	2	2
Additional paid-in capital	97,759	97,341
Deferred stock-based compensation	(132)	(1,042)
Accumulated other comprehensive income	135	92
Accumulated deficit	(70,613)	(58,598)

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Total stockholders' equity	<u>27,151</u>	<u>37,795</u>
Total liabilities and stockholders' equity	<u>\$ 36,495</u>	<u>\$ 46,525</u>

The accompanying notes are an integral part of these consolidated financial statements.

**Table of Contents****LOGICVISION, INC.****CONSOLIDATED STATEMENTS OF OPERATIONS****(in thousands, except per share data)**

	<b>Years Ended December 31,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
<b>Revenues:</b>			
License	\$ 4,740	\$ 10,247	\$ 12,079
Product	275		
Service	3,987	5,308	5,153
<b>Total revenues</b>	<b>9,002</b>	<b>15,555</b>	<b>17,232</b>
<b>Cost of revenues:</b>			
License	186	962	803
Product	100		
Service	2,480	3,452	2,256
<b>Total cost of revenues</b>	<b>2,766</b>	<b>4,414</b>	<b>3,059</b>
<b>Gross profit</b>	<b>6,236</b>	<b>11,141</b>	<b>14,173</b>
<b>Operating expenses:</b>			
Research and development	4,971	5,408	5,894
Sales and marketing	9,556	10,757	11,400
General and administrative	4,279	4,490	3,258
<b>Total operating expenses</b>	<b>18,806</b>	<b>20,655</b>	<b>20,552</b>
<b>Loss from operations</b>	<b>(12,570)</b>	<b>(9,514)</b>	<b>(6,379)</b>
Interest income	655	1,099	366
Other income (expense), net	(11)	24	(6)
<b>Loss before provision for income taxes</b>	<b>(11,926)</b>	<b>(8,391)</b>	<b>(6,019)</b>
Provision for income taxes	89	113	124
<b>Net loss</b>	<b>(12,015)</b>	<b>(8,504)</b>	<b>(6,143)</b>
Accretion of redeemable convertible preferred stock			130
<b>Net loss attributable to common stockholders</b>	<b>\$ (12,015)</b>	<b>\$ (8,504)</b>	<b>\$ (6,273)</b>
<b>Net loss per common share, basic and diluted</b>	<b>\$ (0.78)</b>	<b>\$ (0.57)</b>	<b>\$ (1.54)</b>
<b>Weighted average number of shares outstanding, basic and diluted</b>	<b>15,495</b>	<b>15,002</b>	<b>4,063</b>



The accompanying notes are an integral part of these consolidated financial statements.

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## LOGICVISION, INC.

**CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY  
AND COMPREHENSIVE INCOME (LOSS)**

**For the Years Ended December 31, 2003, 2002 and 2001**

(in thousands)

	<u>Common stock</u>		<u>Additional paid-in capital</u>	<u>Deferred stock-based compensation</u>	<u>Accumulated other comprehensive income (loss)</u>	<u>Accumulated deficit</u>	<u>Total stockholders Equity (deficit)</u>
	<u>Shares</u>	<u>Amount</u>					
<b>Balances, December 31, 2000</b>	1,896		8,172	(4,039)	(4)	(43,951)	(39,822)
Stock options exercised	65		110				110
Stock options cancelled			(132)	132			
Common stock issued in connection with initial public offering	5,085	1	41,143				41,144
Conversion of preferred stock	7,666		46,201				46,201
Exercise of preferred stock warrants	161						
Deferred stock-based compensation			1,815	(1,815)			
Amortization of deferred stock-based compensation				2,859			2,859
Accretion of redeemable preferred stock			(130)				(130)
Net loss						(6,143)	(6,143)
Foreign currency translation adjustment					21		21
<b>Comprehensive loss</b>							<b>(6,122)</b>
<b>Balances, December 31, 2001</b>	14,873	1	97,179	(2,863)	17	(50,094)	44,240
Stock options exercised	192	1	363				364
Stock options cancelled			(248)	248			
Deferred stock-based compensation			39	(39)			
Stock issuance costs in connection with initial public offering			(44)				(44)
Exercise of preferred stock warrants	161						
Common stock issued under employee stock purchase plan	20		52				52
Amortization of deferred stock-based compensation				1,612			1,612
Net loss						(8,504)	(8,504)
Foreign currency translation adjustment					75		75

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Comprehensive loss							(8,429)
<b>Balances, December 31, 2002</b>	<u>15,246</u>	<u>2</u>	<u>97,341</u>	<u>(1,042)</u>	<u>92</u>	<u>(58,598)</u>	<u>37,795</u>
Stock options exercised	377		545				545
Stock options cancelled			(410)	410			
Deferred stock-based compensation			32	(32)			
Common stock issued under employee stock purchase plan	153		251				251
Amortization of deferred stock-based compensation				532			532
Net loss						(12,015)	(12,015)
Foreign currency translation adjustment					43		43
Comprehensive loss							<u>(11,972)</u>
<b>Balances, December 31, 2003</b>	<u>15,776</u>	<u>\$ 2</u>	<u>\$ 97,759</u>	<u>\$ (132)</u>	<u>\$ 135</u>	<u>\$ (70,613)</u>	<u>\$ 27,151</u>

The accompanying notes are an integral part of these consolidated financial statements.

**Table of Contents****LOGICVISION, INC.****CONSOLIDATED STATEMENTS OF CASH FLOWS****(in thousands)**

	<b>Years Ended December 31,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
<b>Cash flows from operating activities:</b>			
Net loss	\$ (12,015)	\$ (8,504)	\$ (6,143)
<b>Adjustments to reconcile net loss to net cash used in operating activities:</b>			
Depreciation and amortization	1,722	2,376	1,099
Amortization of deferred stock-based compensation	532	1,612	2,859
Provision for allowance for doubtful accounts	16	(9)	(83)
<b>Changes in operating assets and liabilities:</b>			
Accounts receivable	(1,602)	2,023	198
Unbilled receivable			233
Prepaid expenses and other current assets	(77)	(308)	(576)
Notes receivable, related parties	33	7	(25)
Other long-term assets	(86)	(114)	
Accounts payable	(594)	728	264
Deferred revenue	3,778	(2,563)	749
Accrued liabilities	(70)	(427)	(1,442)
<b>Net cash used in operating activities</b>	<b>(8,363)</b>	<b>(5,179)</b>	<b>(2,867)</b>
<b>Cash flows from investing activities:</b>			
Purchase of marketable securities	(5,101)	(22,395)	(11,984)
Purchase of short-term investments	(2,304)	(8,993)	
Purchase of property and equipment	(450)	(809)	(785)
Purchase of technology license			(850)
Proceeds from sales of marketable securities	11,690	15,989	
Proceeds from sales of short-term investments	5,514	2,001	
Cash paid for acquisitions		(1,878)	
<b>Net cash provided by (used in) investing activities</b>	<b>9,349</b>	<b>(16,085)</b>	<b>(13,619)</b>
<b>Cash flows from financing activities:</b>			
Proceeds from initial public offerings, net			41,143
Proceeds from issuance of common stock, net	796	372	110
Proceeds from short-term debt		2,500	
Repayment of short-term debt	(2,500)		
<b>Net cash provided by (used in) financing activities</b>	<b>(1,704)</b>	<b>2,872</b>	<b>41,253</b>
Effect of exchange rate on cash	14	75	21
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(704)</b>	<b>(18,317)</b>	<b>24,788</b>



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Cash and cash equivalents, beginning of year	16,179	34,496	9,708
	<u>          </u>	<u>          </u>	<u>          </u>
Cash and cash equivalents, end of year	\$ 15,475	\$ 16,179	\$ 34,496
	<u>          </u>	<u>          </u>	<u>          </u>
Supplemental disclosure of noncash activities:			
Cash paid for interest	\$ 64	\$ 11	\$
	<u>          </u>	<u>          </u>	<u>          </u>
Cash paid for income taxes	\$ 158	\$ 47	\$ 124
	<u>          </u>	<u>          </u>	<u>          </u>

The accompanying notes are an integral part of these consolidated financial statements.

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**LOGICVISION, INC.**

**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**

**1. THE COMPANY**

**Nature of Business**

LogicVision, Inc. (the Company) was incorporated on July 23, 1992 and was reincorporated in the State of Delaware on September 15, 2000. The Company provides proprietary technologies for embedded test that enable the more efficient design and manufacture of complex semiconductors. The embedded test solution allows integrated circuit designers to embed, into a semiconductor design, test functionality that can be used during semiconductor production and throughout the useful life of the chip. The technology also allows integrated circuits to be tested after they have been assembled onto boards and systems.

**2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

**Basis of Presentation**

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. The Company's fiscal year end is December 31.

**Reclassifications**

Certain items previously presented in specific financial statement captions have been reclassified to conform with the 2003 presentation.

**Use of Estimates**

The preparation of financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an on-going basis, the Company evaluates its estimates, including those related to revenue recognition, allowance for doubtful accounts, investments, income taxes, long-term service contracts and contingencies. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.



**Table of Contents****Cash and Cash Equivalents, Short-term Investments and Marketable Securities**

The Company considers all highly liquid investment instruments purchased with original maturities of three months or less at the acquisition date to be cash equivalents. Investment instruments purchased with original maturities of more than three months, which mature in less than twelve months, are considered to be short-term investments. All short-term investments and marketable securities are classified as held-to-maturity. Interest and realized gains and losses are included in interest income. Realized gains and losses are recognized based on the specific identification method. Cash and cash equivalents, short-term investments and marketable securities consist of the following (in thousands):

	<b>December 31,</b>	
	<b>2003</b>	<b>2002</b>
	<u>          </u>	<u>          </u>
<b>Cash and cash equivalents:</b>		
Cash	\$ 1,942	\$ 1,873
Money market funds	203	11,006
U.S. government agency notes	13,330	3,300
	<u>          </u>	<u>          </u>
<b>Total cash and cash equivalents</b>	<b>\$ 15,475</b>	<b>\$ 16,179</b>
	<u>          </u>	<u>          </u>
<b>Short-term investments:</b>		
U.S. government agency notes	\$ 3,782	\$ 6,992
	<u>          </u>	<u>          </u>
<b>Total short-term investments</b>	<b>\$ 3,782</b>	<b>\$ 6,992</b>
	<u>          </u>	<u>          </u>
<b>Marketable securities:</b>		
U.S. government agency notes	\$ 11,801	\$ 18,390
	<u>          </u>	<u>          </u>
<b>Total marketable securities</b>	<b>\$ 11,801</b>	<b>\$ 18,390</b>
	<u>          </u>	<u>          </u>

**Property and Equipment**

Property and equipment are stated at cost and are depreciated on a straight-line basis over their estimated useful lives of three to five years. Leasehold improvements are amortized on a straight-line basis over the estimated useful life of the asset or the lease term, if shorter. Maintenance and repairs are charged to operations as incurred.

**Long-Lived Assets**

The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. The Company uses an estimate of the future undiscounted net cash flow of the related asset or asset grouping over the remaining life in measuring whether these assets are recoverable. During the years ended December 31, 2003, 2002 and 2001, the

Company did not record any impairment to its long-lived assets.

### **Stock-Based Compensation**

The Company accounts for stock-based employee compensation arrangements in accordance with provisions of APB Opinion No. 25,

Accounting for Stock Issued to Employees, as interpreted by FASB Interpretation No. 44 ( FIN 44 ), Accounting for Certain Transactions Involving Stock Compensation an Interpretation of APB 25 and Emerging Issues Task Force No. 00-23 ( EITF 00-23 ), Issues related to the Accounting for Stock Compensation under APB 25 and FIN 44, and Financial Accounting Standards Board Interpretation ( FIN ) No. 28,

Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans, and complies with the disclosure provisions of SFAS No. 148, Accounting for Stock-Based Compensation Transition and Disclosure an amendment of SFAS 123. Under APB Opinion No. 25, compensation expense is based on the difference, if any, on the date of the grant, between the fair value of the

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Company's stock and the exercise price. SFAS No. 123 as amended by SFAS No. 148 requires a fair value based method of accounting for an employee stock option or similar equity instrument. Had compensation cost for the Company's stock-based compensation plan been determined based on the minimum value at the grant date for awards for 2003, 2002 and 2001 consistent with the provisions of SFAS No. 123, the Company's net loss would have been increased to the pro forma amounts indicated below (in thousands):

	Year Ended December 31,		
	2003	2002	2001
Net loss, as reported	\$ (12,015)	\$ (8,504)	\$ (6,143)
Add: Stock-based compensation expense included in reported net income	532	1,612	2,859
Deduct: Total stock-based compensation expense determined under fair value based method for all awards granted	(2,298)	(4,923)	(3,474)
<b>Pro forma net loss</b>	<b>\$ (13,781)</b>	<b>\$ (11,815)</b>	<b>\$ (6,758)</b>
<b>Loss per share:</b>			
Basic and diluted as reported	\$ (0.78)	\$ (0.57)	\$ (1.54)
<b>Basic and diluted pro forma</b>	<b>\$ (0.89)</b>	<b>\$ (0.79)</b>	<b>\$ (1.66)</b>

The Company accounts for equity instruments issued to non-employees in accordance with the provisions of SFAS No. 123 and Emerging Issues Task Force ( EITF ) No. 96-18, Accounting for Equity Instruments That Are Issued to Other Than Employees for Acquiring, or in Conjunction with Selling Goods or Services. The Company believes that the fair value of the stock options is more reliably measured than the fair value of the services received. 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.

**Revenue Recognition**

The Company accounts for its revenue under the provisions of Statement of Position 97-2, Software Revenue Recognition, as amended by Statement of Position 98-9 Modification of SOP 97-2, Software Revenue Recognition, With Respect to Certain Transactions and Statement of Position 81-1 Accounting for Performance of Construction Type and Certain Production Type Contracts.

The Company's revenues are derived from three primary sources: license revenues, comprised of fees associated with the licensing of software; product revenues, from the sale of hardware products; and service revenues, from maintenance and consulting and training services. Revenue is recognized when persuasive evidence of an arrangement exists, all obligations have been performed pursuant to the terms of such an arrangement, the product has been delivered, the fee is fixed or determinable and the collection of the resulting receivable is reasonably assured. If any of these criteria are not met, revenue recognition is deferred until such time as all criteria are met. Payments received in advance of revenues being recognized are presented as deferred revenue in the accompanying balance sheets.

*License revenues*

The Company has three license types:

Subscription licenses subscription licenses include software licenses and maintenance for a specific time period, generally three years or less. Maintenance is bundled into the license agreement for the term of the license and is not charged separately. Since vendor-specific objective evidence ( VSOE ) of fair value does not exist for each element of the arrangement, revenues from subscription licenses are recognized ratably over the license term commencing upon the effective date of the license, if delivery and other revenue recognition criteria are met.

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**Term licenses** term licenses include software licenses for a specific time period, generally three to five years. Revenues associated with term licenses are recognized on the effective date of the license, if delivery and other revenue recognition criteria are met. Maintenance agreements for term licenses are sold separately for a specified period and may continue to be renewed for the balance of the license term.

**Perpetual licenses** perpetual licenses consist of software licensed on a perpetual basis. Revenues associated with perpetual licenses are recognized on the effective date of the license, if delivery has occurred and other revenue recognition criteria are met. The Company no longer offers this type of license.

The timing of revenue recognition for licenses will differ depending on the license type and on the individual terms and conditions associated with each particular license agreement. The Company uses VSOE of fair value to allocate the total fee among all delivered and undelivered elements in those arrangements which contain multiple elements. If the arrangement includes the future delivery of a specified product or upgrade, all revenues under the arrangement are deferred until the specified product or upgrade has been delivered. If VSOE does not exist for one or more delivered elements, the residual method of accounting is applied to the delivered elements. Under the residual method, the VSOE of the fair value of the undelivered elements is deferred, and the remaining portion of the arrangement is recognized as revenue. VSOE for maintenance is generally based upon the customer's annual renewal rates as set forth in the license agreement. When VSOE for maintenance cannot be established, all related revenues are recognized ratably over the term of our maintenance obligation. VSOE for services is generally based on the price charged when the services are sold separately.

The Company, on occasion, offers extended payment terms beyond its normal business practice of between 30 and 60 days to certain customers. The Company does not have sufficient experience collecting under these extended payment term arrangements. As a result, when payment terms are extended, the fee is not considered fixed or determinable and the Company recognizes revenue when the payment is due.

### *Product revenues*

The terms of the Company's hardware product sales include annual maintenance. Product revenues are recognized ratably over the term of the Company's maintenance obligation as the Company does not have a history of selling maintenance for this product separately. Once the Company has established VSOE for the maintenance of this product, revenues will be recognized upon delivery of the product if other revenue recognition criteria are met.

### *Service revenues*

Maintenance revenue is recognized ratably over the maintenance period. For term and perpetual licenses, customers generally renew maintenance agreements annually. For subscription licenses, a portion of revenue is allocated to maintenance revenue.

Consulting service revenues are generally recognized on a percentage of completion basis as the services are performed. Training revenues are recognized when the training is performed.



**Research and Development**

Research and development costs are charged to operations as incurred.

**Software Development Costs and Capitalized Technology License**

Software development costs incurred in the research and development of new products and enhancements to existing products are charged to expense as incurred. Software development costs are capitalized after technological feasibility has been established. The period between achievement of technological feasibility,

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which the Company defines as the establishment of a working model, until the general availability of such software to customers has been short and software development costs qualifying for capitalization have been insignificant. During the year ended December 31, 2001, the Company amended its license agreement with Nortel Networks. Pursuant to this amendment, the Company agreed to pay \$850,000 in seven quarterly installments of \$121,000 beginning March 31, 2001. This amount was included in other long-term assets and was amortized over the period of the technology license payment obligation which ended on September 30, 2002.

**Certain Risks and Concentrations**

The Company's cash and cash equivalents, short-term investments and marketable securities are maintained at seven financial institutions, three in the United States, one in Canada, one in Japan, one in India and one in the United Kingdom. Deposits in these institutions may exceed the amount of insurance provided on such deposits.

For accounts receivable, management of the Company performs ongoing credit evaluations of its customers' financial condition and, generally, requires no collateral from its customers. Based on the expected collectibility of the accounts receivable balance, the Company maintains an allowance for doubtful accounts. At December 31, 2003, two customers accounted for approximately 64% and 24% of net accounts receivable, respectively. At December 31, 2002, two customers accounted for approximately 19% and 17% of net accounts receivable, respectively.

Customers accounting for more than 10 percent of revenue are as follows:

	<b>Year Ended December 31,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
Customer A	15%	10%	5%
Customer B	11%	9%	6%
Customer C	5%	12%	

For the fiscal years 2003, 2002 and 2001, substantially all of the Company's long-lived assets were located in the United States, Canada and India.

There can be no assurance that the market will accept the Company's technology as an alternative to current design test development methods. If the market does not accept the Company's technology at all or in the time frame anticipated in the Company's projections, the Company's revenues and results of operations would be materially affected.

The Company's products include components subject to rapid technological change. Significant technological change could adversely affect the Company's future operating results. While the Company has ongoing programs to minimize the adverse effect of such changes and considers technological change in estimating its allowances, such estimates could change in the future.

**Income Taxes**

The Company accounts for income taxes using the liability method under which deferred tax assets and liabilities are determined based on the difference between the financial statement and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Valuation allowances are established when necessary to reduce deferred tax assets to the amounts expected to be realized.

**Foreign Currency Translation**

The Company has foreign subsidiaries whose financial statements are denominated in the local currency. Foreign exchange gains and losses, which result from the process of remeasuring foreign currency financial statements into U.S. dollars, have been included on the balance sheet as a cumulative foreign currency translation adjustment included in accumulated other comprehensive income.

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### **Fair Value of Financial Instruments**

The carrying amounts of the Company's financial instruments including cash and cash equivalents, accounts receivable, short-term debt, accounts payable and other accrued liabilities approximate fair value due to their short maturities.

### **Net Loss Per Share**

Basic net loss per share is computed by dividing the net loss attributable to common stockholders for the period by the weighted average number of the common shares outstanding during the period. Diluted net loss per share does not differ from basic net loss per share since potential common shares from conversion of preferred stock, stock options and warrants and outstanding shares of common stock subject to repurchase are anti-dilutive for all periods presented.

### **Comprehensive Income (Loss)**

The Company adopted Statement of Financial Accounting Standards No. 130, Reporting Comprehensive Income. This statement requires companies to classify items of other comprehensive income by their nature in the financial statements and display the accumulated balance of other comprehensive income separately from retained earnings and additional paid-in-capital in the equity section of the balance sheet. For all periods presented, the primary differences between the Company's net income (loss) and comprehensive income (loss) arise from foreign currency translation adjustments.

### **Recent Accounting Pronouncements**

In November 2002, the EITF reached a consensus on issue No. 00-21 Accounting for Revenue Arrangements with Multiple Deliverables, ( EITF 00-21 ), on a model to be used to determine when a revenue arrangement with multiple deliverables should be divided into separate units of accounting and, if separation is appropriate, how the arrangement consideration should be allocated to the identified accounting units. The EITF also reached a consensus that this guidance should be effective for all revenue arrangements entered into in fiscal periods beginning after June 15, 2003. The adoption of EITF 00-21 did not have a material effect on the Company's results of operations or financial position.

In November 2002, the FASB issued Interpretation No. 45, ( FIN 45 ), Guarantor's Accounting and Disclosure requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others. FIN 45 elaborates on the existing disclosure requirements for most guarantees, including loan guarantees. It also clarifies that at the time a company issues a guarantee, the company must recognize an initial liability for the fair value, or market value, of the obligations it assumes under that guarantee. However, the provisions related to recognizing a liability at inception of the guarantee for the fair value of the guarantor's obligations does not apply to product warranties or to guarantees accounted for as derivatives. The initial recognition and initial measurement provisions apply on a prospective basis to guarantees issued or modified after December 31, 2002. The disclosure requirements of FIN 45 are effective for financial statements of interim or annual periods ending after December 15, 2002. The adoption of FIN 45 did not have a material effect on the Company's results of operations or financial position.

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In December 2002, the FASB issued Statement of Financial Accounting Standard ( SFAS ) No. 148, Accounting for Stock-Based Compensation Transition and Disclosure an amendment of FASB Statement No. 123. SFAS 148 amends SFAS 123, Accounting for Stock-Based Compensation, to provide alternative methods of transition for a voluntary change to the fair value based method of accounting for stock-based employee compensation. In addition, SFAS 148 amends the disclosure requirements of SFAS 123 to require prominent disclosures in both annual and interim financial statements about the method of accounting for stock-based employee compensation and the effect of the method used on reported results. The Company has included additional disclosures in accordance with SFAS 148 earlier in this Note.

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In January 2003, the FASB issued FASB Interpretation No. 46 ( FIN 46 ), Consolidation of Variable Interest Entities. This interpretation of Accounting Research Bulletin No. 51, Consolidated Financial Statements, addresses consolidation by business enterprises of variable interest entities that possess certain characteristics. FIN 46 requires that if a business enterprise has a controlling financial interest in a variable interest entity, the assets, liabilities, and results of the activities of the variable interest entity must be included in the consolidated financial statements with those of the business enterprise. FIN 46 applies immediately to variable interest entities created after January 31, 2003 and to variable interest entities in which an enterprise obtains an interest after that date. At its meeting on October 8, 2003, the FASB deferred the latest date by which all public entities must apply FIN 46 to the first reporting period ending after December 15, 2003. This deferral applies to all variable interest entities ( VIEs ) and potential VIEs, both financial and non-financial in nature. The Company does not have any ownership in any variable interest entities as of December 31, 2003. The Company will apply the consolidation requirements of FIN 46 in future periods should interest in a variable interest entity be acquired.

In April 2003, the FASB issued SFAS 149, Amendment of Statement 133 on Derivative Instruments and Hedging Activities. SFAS 149 amends and clarifies financial accounting and reporting for derivative instruments, including certain derivative instruments embedded in other contracts, and for hedging activities under SFAS 133, Accounting for Derivative Instruments and Hedging Activities. SFAS 149 is generally effective for contracts entered into or modified after June 30, 2003, and for hedging relationships designated after June 30, 2003. The adoption of SFAS 149 did not have a significant impact on the Company's financial position or results of operations.

In May 2003, the FASB issued SFAS 150 Accounting for Certain Financial Instruments with Characteristics of both Liabilities and Equity. SFAS 150 establishes standards for how an issuer classifies and measures certain financial instruments with characteristics of both liabilities and equity and is effective for financial instruments entered into or modified after May 31, 2003. The Company has adopted this statement. The adoption of SFAS 150 did not have a material effect on the Company's financial position or results of operations.

On December 17, 2003, the Staff of the Securities and Exchange Commission issued Staff Accounting Bulletin No. 104 ( SAB 104 ), Revenue Recognition , which supersedes SAB 101, Revenue Recognition in Financial Statements. SAB 104's primary purpose is to rescind the accounting guidance contained in SAB 101 related to multiple-element revenue arrangements that was superseded as a result of the issuance of EITF 00-21, Accounting for Revenue Arrangements with Multiple Deliverables. Additionally, SAB 104 rescinds the SEC's related Revenue Recognition in Financial Statements Frequently Asked Questions and Answers issued with SAB 101 that had been codified in SEC Topic 13, Revenue Recognition. While the wording of SAB 104 has changed to reflect the issuance of EITF 00-21, the revenue recognition principles of SAB 101 remain largely unchanged by the issuance of SAB 104, which was effective upon issuance. The Company's adoption of SAB 104 did not have a material effect on its financial position or results of operations.

**3. BALANCE SHEET COMPONENTS**

Property and equipment were comprised of the following (in thousands):

	<b>December 31,</b>	
	<b>2003</b>	<b>2002</b>
Computer equipment and software	\$ 3,592	\$ 4,162
Office equipment and leasehold improvements	452	385
	<b>4,044</b>	<b>4,547</b>

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Less: Accumulated depreciation	(3,122)	(3,061)
	<u>922</u>	<u>1,486</u>

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Accrued liabilities were comprised of the following (in thousands):

	December 31,	
	2003	2002
Accrued compensation and benefits	\$ 789	\$ 861
Accrued professional fees	221	248
Other accrued liabilities	259	230
	<u>\$ 1,269</u>	<u>\$ 1,339</u>

**4. LOAN AGREEMENT**

The Company has a Loan Agreement ( Agreement ) with a bank under which it may borrow, on a revolving basis, up to \$5.0 million at an interest rate equal to prime rate, which was equal to an annual rate of 4.0% at December 31, 2003. Under the Agreement, the Company must comply with certain operating and reporting covenants and is not permitted to pay dividends, or make material investments or dispositions without the prior written consent of the bank. If the Company fails to comply with its covenants under the Agreement, the bank can declare any outstanding amounts immediately due and payable and cease advancing money or extending credit to or for the Company. The Agreement expires on January 31, 2005. At December 31, 2003, there were no amounts outstanding under this agreement.

**5. COMMITMENTS AND CONTINGENCIES****Lease Obligations**

The Company and its subsidiaries in Canada, India and Japan rent office facilities under noncancelable operating leases which expire through July 2006. The Company and its subsidiaries are responsible for certain maintenance costs, taxes and insurance under the respective leases.

At December 31, 2003, total future minimum payments under noncancelable operating leases were as follows (in thousands):

2004	\$ 1,111
2005	377
2006	97
	<u>\$ 1,585</u>



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Rent expense for the years ended December 31, 2003, 2002 and 2001 was \$1,182,000, \$1,068,000 and \$1,095,000, respectively.

On January 23, 2004, the Company amended the lease agreement with its existing landlord for its corporate headquarters. The amended lease agreement provides for the Company to relocate its facilities within the same office complex and enter into a new 6-year lease term beginning April 2004. The agreement provides for the Company to pay initial rent of \$250,000 per annum, plus common area expenses. The lease contains annual rent increases of 3 percent and an option to renew the lease for an additional 3 years. The table above does not reflect the terms of the amended lease agreement signed in January 2004.

### **Indemnification Obligations**

The Company enters into standard license agreements in the ordinary course of business. Pursuant to these agreements, the Company agrees to indemnify its customers for losses suffered or incurred by them as a result of any patent, copyright, or other intellectual property infringement claim by any third party with respect to the

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Company's products. These indemnification obligations have perpetual terms. The Company's normal business practice is to limit the maximum amount of indemnification to the amount received from the customer. On occasion, the maximum amount of indemnification the Company may be required to make may exceed its normal business practices. The Company estimates the fair value of its indemnification obligations as insignificant, based upon its historical experience concerning product and patent infringement claims. Accordingly, the Company has no liabilities recorded for indemnification under these agreements as of December 31, 2003.

The Company has agreements whereby its officers and directors are indemnified for certain events or occurrences while the officer or director is, or was, serving at the Company's request in such capacity. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company has a directors and officers insurance policy that reduces its exposure and enables the Company to recover a portion of future amounts paid. As a result of the Company's insurance policy coverage, the Company believes the estimated fair value of these indemnification agreements is minimal. Accordingly, no liabilities have been recorded for these agreements as of December 31, 2003.

**Warranties**

The Company offers its customers a warranty that its products will conform to the documentation provided with the products. To date, there have been no payments or material costs incurred related to fulfilling these warranty obligations. Accordingly, the Company has no liabilities recorded for these warranties as of December 31, 2003. The Company assesses the need for a warranty reserve on a quarterly basis, and there can be no guarantee that a warranty reserve will not become necessary in the future.

**6. ACQUISITION**

In July 2002, the Company entered into a Business Transfer Agreement (the Agreement) with the Company's then distributor in Japan. Pursuant to this Agreement, the Company acquired certain fixed assets, customer lists, transitional services and a covenant not to compete (non-competition agreement) for a period of one year. The Company accounted for the acquisition as a purchase. The aggregate purchase price of the transaction was \$1.9 million. The purchase price included professional fees and other direct costs of the acquisition totaling \$58,000.

The Company allocated the purchase price follows (in thousands):

Transitional services	\$ 620
Non-competition agreement	1,258
	<hr/>
Total purchase price	\$ 1,878
	<hr/>

The \$620,000 allocated to transitional services was amortized on a straight-line basis over the period of contracted services which ended on December 31, 2002. The amount allocated to the non-competition agreement was amortized on a straight-line basis over the period of benefit which ended on July 17, 2003. Amortization expense of the non-competition agreement was \$679,000 and \$579,000 for the years ended December 31, 2003 and 2002, respectively.

**7. PREFERRED STOCK**

At December 31, 2003, the Company had authorized 5,000,000 shares of undesignated preferred stock, \$0.0001 par value, none of which were issued or outstanding. The board of directors has the authority, without further action by the stockholders, to issue from time to time the preferred stock in one or more series and to fix

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the number of shares, designations, preferences, powers, and other rights of those shares. The preferences, powers, rights and restrictions of different series of preferred stock may differ with respect to dividend rates, amounts payable on liquidation, voting rights, conversion rights, redemption provisions, sinking fund provisions, and purchase funds and other matters.

**8. STOCK OPTION PLANS AND WARRANTS**

On August 3, 2000, the Board of Directors authorized the establishment of the 2000 Stock Incentive Plan (the 2000 Plan) with 1,000,000 shares reserved for grant under the Plan. The Plan was approved by the Company's stockholders in November 2000 and was effective upon the Company's October 2001 initial public offering. The 2000 Plan is intended to serve as a successor to the 1994 Flexible Stock Option Plan (the 1994 Plan) and all remaining shares available for grant under the 1994 Plan were authorized for issuance under the 2000 Plan. The number of shares reserved for issuance under the 2000 Plan will be increased on the first day of each of the Company's fiscal years from 2002 to 2010 by the lesser of 750,000 shares, 3.5% of the outstanding shares of the Company's common stock on that date or a lesser amount determined by the Board of Directors. On January 23, 2003, the Board of Directors approved an increase of 400,000 shares to a total of 4,714,404 shares reserved for issuance under the 2000 Plan. As of December 31, 2003, options to purchase a total of 3,819,777 shares of common stock were outstanding.

Under the 2000 Plan, the Board of Directors has the authority to determine the type of option and the number of shares subject to each option. The exercise price is generally equal to fair value of the underlining stock at the date of grant. Options generally become exercisable over a four-year period and, if not exercised, expire ten years from the date of grant.

Under the 2000 Plan, the Board of Directors has the discretion to grant options to nonemployee directors. Each nonemployee director will be granted an option to purchase 20,000 shares when they first join the Board. In addition, each nonemployee director will be granted an option to purchase 10,000 shares on the day following the Company's annual meeting of stockholders.

The following table summarizes option activities from December 31, 2000 through December 31, 2003:

	Shares available for grant	Number of options outstandings	Exercise price per share	Aggregate price	Weighted average exercise price per share
		(in thousands, except per share amounts)			
<b>Balances, January 1, 2001</b>	413	2,515	\$ 0.20-\$5.00	\$ 5,471	\$ 2.51
Options authorized	1,500				
Options granted	(405)	405	\$ 5.00-\$6.00	2,171	\$ 5.36
Options exercised		(65)	\$ 0.50-\$5.00	(109)	\$ 1.69
Options cancelled	108	(108)	\$ 0.20-\$5.00	(308)	\$ 2.69
<b>Balances, December 31, 2001</b>	1,616	2,747	\$ 0.20-\$5.00	\$ 7,225	\$ 3.02
Options authorized	520				
Options granted	(913)	913	\$ 2.08-\$10.00	6,755	\$ 7.40
Options exercised		(192)	\$ 0.20-\$5.00	(364)	\$ 1.89
Options cancelled	255	(255)	\$ 1.00-\$10.00	(1,432)	\$ 5.62

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<b>Balances, December 31, 2002</b>	1,478	3,213	\$ 0.20-\$10.00	\$ 12,184	\$ 3.79
Options authorized	400				
Options granted	(1,610)	1,610	\$ 1.50-\$4.70	4,143	\$ 2.57
Options exercised		(377)	\$ 0.20-\$3.60	(545)	\$ 1.45
Options cancelled	626	(626)	\$ 1.50-\$10.00	(3,032)	\$ 4.84
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
<b>Balances, December 31, 2003</b>	894	3,820	\$ 0.20-\$10.00	\$ 12,750	\$ 3.34
	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>

At December 31, 2003, 2002 and 2001, options to purchase approximately 1,963,000, 1,964,000 and 1,556,000 shares of common stock, respectively, were exercisable.

**Table of Contents****Deferred Stock-Based Compensation**

In connection with certain stock option grants and common stock purchases from the employee stock purchase plan during 2002 and 2001, the Company recorded deferred stock-based compensation totaling \$39,000 and \$1,815,000, respectively, representing the difference between the deemed fair market value of the Company's common stock and the exercise price of the options on the date of grant. The Company recorded a compensation charge equal to the difference between the exercise price of the stock and the deemed fair value of the Company's stock at the date of grant. Amortization expense associated with deferred stock-based compensation totaled \$535,000, \$1,612,000 and \$2,859,000 in 2003, 2002 and 2001, respectively.

The value of the option grants has been calculated on the date of grant using the Black-Scholes options pricing model with the following weighted-average assumptions:

	<u>2003</u>	<u>2002</u>	<u>2001</u>
Expected average life of option	4 years	4 years	4 years
Risk-free interest rate	2.90%	3.90%	5.17%
Expected dividends			
Expected volatility	2.07	2.05	0.70

The weighted average fair value of options granted were \$2.53, \$7.69 and \$9.89 for the years ended December 31, 2003, 2002 and 2001, respectively.

The options outstanding and currently exercisable by exercise price at December 31, 2003 were as follows (options in thousands):

<u>Exercise price</u>	<u>Options outstanding</u>	<u>Weighted average remaining contractual life (years)</u>	<u>Weighted average exercise price</u>	<u>Options exercisable</u>	<u>Weighted average exercise price</u>
\$0.20 \$1.50	1,077	4.4	\$ 0.87	787	\$ 0.64
\$1.72 \$3.00	983	8.2	\$ 2.04	337	\$ 2.10
\$3.25 \$4.70	778	8.8	\$ 3.94	208	\$ 3.60
\$5.00 \$10.00	982	7.4	\$ 6.87	632	\$ 6.56
	<u>3,820</u>	<u>7.0</u>	<u>\$ 3.34</u>	<u>1,964</u>	<u>\$ 3.11</u>

**Warrants**

At December 31, 2003, the Company had warrants to purchase common stock outstanding as follows:

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<u>Warrants type</u>	<u>Warrants</u>		<u>Exercise</u>
	<u>outstanding</u>	<u>Expiration date</u>	<u>price</u>
Warrants issued for Series G financing	78,234	December 2009	\$ 1.00
Warrants issued for Series H financing	271,309	May 2004	\$ 4.86
Warrants issued for Series I financing	22,847	January 2005	\$ 8.50
	<u>372,390</u>		

The fair value of these warrants was determined using the Black-Scholes model assuming volatility factors of 0.60, contractual lives between 4 and 10 years, and risk-free rates of return between 5.3% and 5.6%.

No warrants were exercised in 2003. Warrants to purchase 349,038 shares and 287,505 shares of common stock were exercised on a net issuance basis for a total of 161,000 shares and 161,167 shares of common stock in

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accordance with the warrant agreements issued in connection with the issuance of Series F and Series G preferred stock for the years ended December 31, 2002 and 2001, respectively. The exercise prices of these warrants ranged from \$0.00 to \$7.53.

**9. STOCK PURCHASE PLAN**

On September 25, 2000, the Board of Directors approved the 2000 Employee Stock Purchase Plan ( Purchase Plan ). The stockholders approved the Purchase Plan in November 2000. The Purchase Plan was effective upon the Company s October 2001 initial public offering and a total of 250,000 shares of common stock had been reserved for issuance under the Purchase Plan. The number of shares reserved for issuance under the Purchase Plan will be increased on the first day of each fiscal year, commencing in 2002, by the lesser of 125,000 shares, 1% of the outstanding shares on that date or a lesser amount as determined by the Board

of Directors. On January 23, 2003, the Board of Directors approved an increase of 125,000 shares to a total of 500,000 shares reserved for future issuance under the Purchase Plan. The Purchase Plan, which is intended to qualify under Section 423 of the Internal Revenue Code of 1986, as amended, is administered by the compensation committee of the Company s Board of Directors. During the years ended December 31, 2003 and 2002, 152,796 and 19,911 shares were issued under the Purchase Plan at average prices of \$1.64 and \$2.68 per share, respectively.

The estimated fair value of purchase rights under the Company s Purchase Plan is determined using the Black-Scholes pricing model with the following assumptions for the year ended December 31, 2003:

	<u>2003</u>
Expected average life of option	0.5 year
Risk-free interest rate	1.14%
Expected dividends	
Expected volatility	2.06

The weighted average per share fair value of purchase rights under the Purchase Plan was \$1.80 and \$2.17 for the years ended December 31, 2003 and 2002, respectively.

**10. INCOME TAXES**

The components of the provision for income taxes were as follows (in thousands):

	<u>December 31,</u>		
	<u>2003</u>	<u>2002</u>	<u>2001</u>
Current			
Federal	\$	\$	\$



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State and foreign	89	113	124
	89	113	124
Deferred			
Federal			
State and foreign			
Total provision for income taxes	\$ 89	\$ 113	\$ 124

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Significant components of our deferred tax assets and liabilities were as follows (in thousands):

	December 31,	
	2003	2002
Deferred tax assets:		
Net operating losses	\$ 18,911	\$ 16,470
Reserves and accruals	378	208
Credits	2,491	2,466
Deferred revenue	1,992	108
	<u>23,772</u>	<u>19,252</u>
Deferred tax liability:		
Depreciation and amortization	(1,624)	(1,415)
Valuation allowance	(22,148)	(17,837)
	<u></u>	<u></u>
Net deferred tax assets	<u>\$</u>	<u>\$</u>

The Company has established a full valuation allowance against its deferred tax assets due to the uncertainty surrounding the realization of such assets. Management evaluates, on an annual basis, the recoverability of the deferred tax assets and the level of the valuation allowance.

As of December 31, 2003, the Company had federal and California net operating loss carryforwards of approximately \$53.5 million and \$22 million available to reduce future federal and California taxable income, respectively. These federal and California carryforwards begin to expire in 2006 and 2004, respectively, if not utilized. The extent to which these carryforwards can be used to offset future taxable income may be limited under Section 382 of the Internal Revenue Code and applicable state tax law.

As of December 31, 2003, the Company had federal and California research and experimentation tax credit carryforwards of approximately \$1.2 million and \$1.1 million respectively. These federal tax credit carryforwards begin to expire in 2007, if not utilized; the California tax credit carryforwards do not expire. The extent to which these tax credit carryforwards can be used to offset future taxes may be limited under Section 383 of the Internal Revenue Code and applicable state law.

For financial reporting purposes the tax effect of the net operating loss and tax credit carryforwards have been recorded as deferred tax assets.

The effective tax rate differs from the statutory federal income tax rate as follows:

December 31,		
2003	2002	2001

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Statutory federal income tax rate	(34.0)%	(34.0)%	(34.0)%
State income taxes, net of federal benefit	(4.2)%	(5.9)%	(2.6)%
Stock-based compensation	1.5%	6.4%	16.2%
Credits	(1.1)%	(1.6)%	(3.1)%
Change in valuation allowance	39.1%	41.7%	26.8%
Foreign taxes	(0.6)%	(2.2)%	(3.5)%
Other		(3.2)%	2.3%
Effective tax rate	0.7%	1.3%	2.1%

**Table of Contents****11. SEGMENT REPORTING**

The Company has adopted SFAS No. 131, Disclosure about Segments of an Enterprise and Related Information. Although the Company offers various design and manufacturing embedded test software products and services to its customers, the Company does not manage its operations by these products and services, but instead views the Company as one operating segment when making business decisions. The Company does not manage its operations on a geographical basis. Revenues attributed to the United States and to all foreign countries are based on the geographical location of the customers. The Company uses one measurement of profitability for its business.

The following is a summary of the Company's revenues by geographic operations (in thousands):

	<b>Years Ended December 31,</b>		
	<b>2003</b>	<b>2002</b>	<b>2001</b>
United States	\$ 7,178	\$ 12,093	\$ 11,220
Japan	1,260	2,909	3,544
Others	564	553	2,468
	<b>\$ 9,002</b>	<b>\$ 15,555</b>	<b>\$ 17,232</b>

**12. BENEFIT PLAN**

The Company has a defined contribution savings plan (the 401(k) Plan) to provide retirement income to all qualified employees of the Company. The 401(k) Plan is intended to be qualified under Section 401(k) of the Internal Revenue Code of 1986, as amended. The 401(k) Plan is funded by voluntary pre-tax contributions from employees. Contributions are invested, as directed by the participant, in investment funds available under the 401(k) Plan. The Company is not required to make, and has not made, any contributions to the Plan.

**13. RELATED PARTY TRANSACTIONS**

The Company has a loan outstanding to an officer of the Company. The loan is collateralized by the Company's common stock owned by the officer. The interest rate on this loan is 8%, and the loan is due in varying annual installments through June 2011. As of December 31, 2003, the total outstanding balance on this loan was \$60,000.

**Table of Contents****SELECTED QUARTERLY CONSOLIDATED FINANCIAL DATA (Unaudited)**

The following table presents selected unaudited consolidated financial results for each of the eight quarters in the two-year period ended December 31, 2003. In the Company's opinion, this unaudited information has been prepared on the same basis as the audited information and includes all adjustments (consisting of only normal recurring adjustments) necessary for a fair statement of the financial information for the period presented.

	Three Months Ended							
	Dec. 31,	Sept. 30,	June 30,	March 31,	Dec. 31,	Sept. 30,	June 30,	March 31,
	2003	2003	2003	2003	2002	2002	2002	2002
	(In thousands, except per share data)							
<b>Revenues:</b>								
License	\$ 2,695	\$ 466	\$ 405	\$ 1,174	\$ 838	\$ 2,814	\$ 2,519	\$ 4,076
Product	145	65	39	26				
Service	872	950	956	1,209	1,193	1,168	1,173	1,774
<b>Total revenues</b>	<b>3,712</b>	<b>1,481</b>	<b>1,400</b>	<b>2,409</b>	<b>2,031</b>	<b>3,982</b>	<b>3,692</b>	<b>5,850</b>
<b>Cost of Revenues:</b>								
License	42	58	54	32	152	273	230	306
Product	47	32	21					
Service	467	524	697	792	923	957	735	838
<b>Total cost of revenues</b>	<b>556</b>	<b>614</b>	<b>772</b>	<b>824</b>	<b>1,075</b>	<b>1,230</b>	<b>965</b>	<b>1,144</b>
<b>Gross profit</b>	<b>3,156</b>	<b>867</b>	<b>628</b>	<b>1,585</b>	<b>956</b>	<b>2,752</b>	<b>2,727</b>	<b>4,706</b>
<b>Operating expenses:</b>								
Research and development	1,445	1,089	1,238	1,199	1,389	1,248	1,376	1,395
Sales and marketing	2,438	2,149	2,445	2,524	2,930	2,901	2,411	2,515
General and administrative	1,112	1,082	1,072	1,013	1,021	1,314	1,107	1,048
<b>Total operating expenses</b>	<b>4,995</b>	<b>4,320</b>	<b>4,755</b>	<b>4,736</b>	<b>5,340</b>	<b>5,463</b>	<b>4,894</b>	<b>4,958</b>
<b>Loss from operations</b>	<b>(1,839)</b>	<b>(3,453)</b>	<b>(4,127)</b>	<b>(3,151)</b>	<b>(4,384)</b>	<b>(2,711)</b>	<b>(2,167)</b>	<b>(252)</b>
Interest and other income	121	152	175	196	266	273	296	288
<b>Loss (income) before provision for income taxes</b>	<b>(1,718)</b>	<b>(3,301)</b>	<b>(3,952)</b>	<b>(2,955)</b>	<b>(4,118)</b>	<b>(2,438)</b>	<b>(1,871)</b>	<b>36</b>
Provision for income taxes	(34)	41	71	11	61	17	18	17
<b>Net (loss) income</b>	<b>\$ (1,684)</b>	<b>\$ (3,342)</b>	<b>\$ (4,023)</b>	<b>\$ (2,966)</b>	<b>\$ (4,179)</b>	<b>\$ (2,455)</b>	<b>\$ (1,889)</b>	<b>\$ 19</b>
<b>Net loss per share, basic and diluted</b>	<b>\$ (0.11)</b>	<b>\$ (0.21)</b>	<b>\$ (0.26)</b>	<b>\$ (0.19)</b>	<b>\$ (0.28)</b>	<b>\$ (0.16)</b>	<b>\$ (0.13)</b>	<b>\$</b>

**Table of Contents****LOGICVISION, INC.****SCHEDULE II VALUATION AND QUALIFYING ACCOUNTS****For the Years Ended December 31, 2003, 2002 and 2001****(in thousands)**

<u>Description</u>	<u>Balance at beginning of period</u>	<u>Addition/ charged to costs expenses</u>	<u>Recoveries</u>	<u>Balance at end of period</u>
Allowance for doubtful accounts:				
Year ended December 31, 2001	\$ 104	\$ 268	\$ (351)	\$ 21
Year ended December 31, 2002	\$ 21	\$ 121	\$ (130)	\$ 12
Year ended December 31, 2003	\$ 12	\$ 50	\$ (34)	\$ 28

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

None.

**Item 9A. Controls and Procedures**

(a) **Evaluation of disclosure controls and procedures.** We maintain disclosure controls and procedures, as such term is defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the Exchange Act), that are designed to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in Securities and Exchange Commission rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, management recognized that disclosure controls and procedures, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the disclosure controls and procedures are met. Our disclosure controls and procedures have been designed to meet, and management believes that they meet, reasonable assurance standards. Additionally, in designing disclosure controls and procedures, our management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible disclosure controls and procedures. The design of any disclosure controls and procedures also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions.

Based on their evaluation as of the end of the period covered by this Annual Report on Form 10-K, our Chief Executive Officer and Chief Financial Officer have concluded that, subject to the limitations noted above, our disclosure controls and procedures were effective to ensure that material information relating to us, including our consolidated subsidiaries, is made known to them by others within those entities, particularly during the period in which this Annual Report on Form 10-K was being prepared.

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(b) **Changes in internal controls.** There was no change in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) identified in connection with the evaluation described in Item 9A(a) above that occurred during our last fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

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**PART III**

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

The information required by this item (with respect to Directors) is incorporated by reference from the information under the caption "Election of Directors" contained in the Company's Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for the Company's 2004 Annual Meeting of Stockholders to be held on May 13, 2004 (the "Proxy Statement"). Certain information required by this item concerning executive officers is set forth in Part I of this Report under the caption "Executive Officers of the Registrant."

Item 405 of Regulation S-K calls for disclosure of any known late filing or failure by an insider to file a report required by Section 16(a) of the Exchange Act. This information is contained in the section called "Other Information - Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement and is incorporated herein by reference.

The Company has a separately designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Securities Exchange Act of 1934. The members of the Audit Committee are Richard C. Yonker (Chairperson), Richard C. Black and D. James Guzy. All of such members meet the independence standards established by The Nasdaq Stock Market for serving on an audit committee. SEC regulations require the Company to disclose whether a director qualifying as an "audit committee financial expert" serves on the Company's Audit Committee. The Company's Board of Directors has determined that Mr. Yonker qualifies as an "audit committee financial expert" within the meaning of such regulations.

The Company's Board of Directors adopted a Code of Business Conduct for all of its directors, officers and employees on January 22, 2004. The Company's Code of Business Conduct is available on the Company's website at [www.logicvision.com/lv\\_corporate-governance.htm](http://www.logicvision.com/lv_corporate-governance.htm). To date, there have been no waivers under the Company's Code of Business Conduct. The Company will post any waivers, if and when granted, under its Code of Business Conduct on the Company's website at [www.logicvision.com/lv\\_corporate-governance.htm](http://www.logicvision.com/lv_corporate-governance.htm).

**Item 11. Executive Compensation**

The information required by this item is incorporated by reference from the information under the captions "Election of Directors - Compensation of Directors," "Executive Compensation," and "Election of Directors - Compensation Committee Interlocks and Insider Participation" contained in the Proxy Statement.

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

The information required by this item with respect to security ownership of certain beneficial owners and management is incorporated by reference from the information under the caption "Security Ownership of Certain Beneficial Owners and Management" contained in the Proxy Statement.





**Table of Contents****Equity Compensation Plan Information**

The following table sets forth certain information regarding the Company's equity compensation plans as of December 31, 2003:

Plan category	Number of securities	Weighted-average	Number of securities
	to be issued upon	exercise price	remaining available
	exercise of	of	for future issuance
	outstanding	outstanding	under equity
	options, warrants	options,	compensation plans
	and rights	warrants and	(excluding securities
		rights	reflected in
	(a)	(b)	column (a)
			(c)
Equity compensation plans approved by security holders	3,367,277(1)	\$ 3.70	1,244,937(2)
Equity compensation plans not approved by security holders	452,500(3)	\$ 0.65	
<b>Total</b>	<b>3,819,777</b>	<b>\$ 3.83</b>	<b>1,244,937(4)</b>

- (1) Includes warrants to purchase 22,847 shares of common stock, which warrants were issued to the Company's financial adviser in connection with the issuance of the Company's Series I preferred stock.
- (2) Includes the number of shares reserved for issuance under the Company's 2000 Stock Incentive Plan. The number of shares reserved for issuance under the Company's 2000 Stock Incentive Plan will be increased on the first day of each of the Company's fiscal years from 2002 to 2010 by the lesser of 750,000 shares, 3.5% of the outstanding shares of the Company's common stock on that date or a lesser amount determined by the Company's Board of Directors.
- (3) Consists of non-qualified options granted outside of the Company's 1994 Flexible Stock Incentive Plan in 1995 and 2000.
- (4) Includes 327,293 shares available for sale pursuant to the Company's 2000 Employee Stock Purchase Plan. Shares of common stock will be purchased at a price equal to 85% of the fair market value per share of common stock on either the first day preceding the offering period or the last date of the offering period, whichever is less. The number of shares reserved for issuance will be increased on the first day of each fiscal year, commencing in 2002, by the lesser of 125,000 shares, 1% of the outstanding common stock on that date, or such lesser number of shares as is determined by the Board of Directors.

The material features of the outstanding options which were granted outside of the 1994 Plan are as follows:

**1995 Non-plan Option Grant.** An option to purchase 437,500 shares of common stock was granted to Vinod K. Agarwal, the Company's Chairman, at an exercise price of \$0.50 per share, which price was not less than the per share fair market value on the date of grant as determined by the Board of Directors. The option vested at a rate of 4.17% per month and has vested in full. The option expires in July 2005,

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subject to earlier termination, and includes provisions to adjust for any change in the Company's common stock through merger, recapitalization, stock split or other change in the capital structure of the Company to preserve but not increase the benefits to the optionee.

**2000 Non-plan Option Grants.** In August 2000, options to purchase 7,500 shares of common stock each were granted to two of the members of the Company's Board of Directors, Richard C. Black and Navindra Jain, at an exercise price of \$5.00 per share, which price was not less than the per share fair market value on the date of grant as determined by the Board of Directors. The options were partially vested on the date of grant and have since vested in full. Each option has a ten year term, subject to earlier termination, and includes provisions to adjust for any change in the Company's common stock through merger, recapitalization, stock split or other change in the capital structure of the Company to preserve but not increase the benefits to the optionee.

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

The information required by this item is incorporated by reference from the information contained under the caption Certain Relationships and Related Party Transactions contained in the Proxy Statement.

**Item 14. Principal Accountant Fees and Services**

The information required by this item is incorporated by reference from the information contained under the caption Ratification of Independent Accountants Principal Accountant Fees and Services and Ratification of Independent Accountants Pre-Approval Policies and Procedures contained in the Proxy Statement.

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**PART IV**

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

**(a) Documents filed as part of this report:**

- (1) Financial Statements

See Index under Item 8.

- (2) Financial Statement Schedule

See Index under Item 8.

- (3) Exhibits

See Item 15(c) below. Each compensatory plan required to be filed has been identified.

**(b) Reports on Form 8-K.**

On October 28, 2003, the Company filed a Current Report on Form 8-K furnishing under item 12 the Company's press release relating to its financial results for the quarter ended September 30, 2003.

On December 1, 2003, the Company filed a Current Report on Form 8-K reporting under item 5 the appointment of Mr. Healy as the Company's President and Chief Executive Officer and furnishing under item 9 the Company's press release announcing Mr. Healy's appointment.

**(c) Exhibits.**

**Exhibit**

**Number**

**Description of Document**

---

- 3(i) Restated Certificate of Incorporation (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2001).

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- 3(ii) Bylaws of the Company, amended as of October 16, 2003.
- 4.1 Form of Common Stock Certificate (incorporated by reference to the exhibit of the same number to Amendment No. 8 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 4.2 Form of Warrant to Purchase Shares of Common Stock (incorporated by reference to Exhibit 4.4 to Amendment No. 5 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 4.3 Form of Extinguishing Warrant to Purchase Shares of Common Stock (incorporated by reference to Exhibit 4.5 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 4.4 Warrant to Purchase Series I Preferred Stock (incorporated by reference to Exhibit 4.7 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 4.5# Stock Option Agreement between the Company and Vinod K. Agarwal (incorporated by reference to Exhibit 4.8.1 to Amendment No. 6 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 4.6# Form of Stock Option Agreement (incorporated by reference to Exhibit 4.8.2 to Amendment No. 6 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
- 10.1.1# Form of agreements under the 1994 Flexible Stock Incentive Plan (incorporated by reference to the exhibit of the same number to the Company's Registration Statement on Form S-1 (File No. 333-43654)).

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**Exhibit**

**Number      Description of Document**

10.1.2#	1994 Flexible Stock Incentive Plan, as amended (incorporated by reference to Exhibit 99.2 to the Company's Registration Statement on Form S-8 (File No. 333-74336)).
10.2.1#	Amended and Restated 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.2.2#	Amendments Nos. 1 and 2 and Addendum to Amended and Restated 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.2.3#	Form of agreement under the 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.3#	Form of Indemnification Agreement between the Registrant and its officers and directors (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2001).
10.4	Sixth Amended and Restated Registration Rights Agreement dated as of January 28, 2000 (incorporated by reference to the exhibit of the same number to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.5	Lease, dated as of August 13, 1998, by and between Spieker Properties, L.P. and the Company (incorporated by reference to the exhibit of the same number to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.6.1	Extension Agreement, dated as of January 17, 2000, by and between Spieker Properties, L.P. and the Company (incorporated by reference to Exhibit 10.6 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.6.2	Second Amendment, dated as of January 23, 2004, to Lease Agreement dated August 13, 1998 by and between CA-Metro Plaza, as successor in interest to Spieker Properties, L.P., and the Company.
10.7.1	Agreement, dated as of September 14, 1992, between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.7.2	Amendment, dated as of October 1, 1993, to the Agreement between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.7.3	Amendment, dated as of January 11, 1994, to the Agreement between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.7.4	Amendment, dated as of March 20, 2001, to the Agreement between Nortel Networks Limited (formerly Northern Telecom Limited) and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.8.1#	Amended and Restated 2000 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2002).
10.8.2#	Amendment No. 1 to the Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.9.1#	Loan Letter Agreement dated June 19, 1996 between the Company and Michael Howells (incorporated by reference to the exhibit of the same number to Amendment No. 7 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).

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**Exhibit**

<b>Number</b>	<b>Description of Document</b>
10.9.2#	Letter Agreement dated July 18, 2001, between the Company and Michael Howells (incorporated by reference to the exhibit of the same number to Amendment No. 8 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.10.1	Amended and Restated Loan Agreement, dated as of February 11, 2003, by and between Comerica Bank California and the Company (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.10.2	Amendment, dated August 26, 2003, to Loan Agreement between Comerica Bank California and the Company (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2003).
10.10.3	Amended and Restated Loan Agreement, dated as of February 11, 2004, by and between Comerica Bank California and the Company.
10.11	Employment Agreement between the Company and John H. Barnet (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2002).
21.1	Subsidiaries of the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 30, 2002).
23.1	Consent of PricewaterhouseCoopers LLP, Independent Accountants.
24.1	Power of Attorney (see page 67 of this Form 10-K).
31.1	Rule 13a-14(a) Certification of Chief Executive Officer.
31.2	Rule 13a-14(a) Certification of Chief Financial Officer.
32.1**	Statement of Chief Executive Officer under Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. §1350).
32.2**	Statement of Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. §1350).

# Indicates management contract or compensatory plan or arrangement.

\*\* In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release Nos. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Form 10-K and will not be deemed filed for purpose of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.

**(d) Financial Statement Schedules.**

See Index Under Item 8.



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**SIGNATURES**

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

LOGICVISION, INC.

Date: March 15, 2004

By:                     /s/ JAMES T. HEALY                    

**James T. Healy.**

**President and Chief Executive Officer**

**POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints James T. Healy and Bruce M. Jaffe, and each of them, his true and lawful attorneys-in-fact, each with full power of substitution, for him or her in any and all capacities, to sign any amendments to this report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact or their substitute or substitutes may do or cause to be done by virtue hereof.

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

<u>Name</u>	<u>Title</u>	<u>Date</u>
<p><u>                    /s/ VINOD K. AGARWAL                    </u></p> <p><b>Vinod K. Agarwal, Ph.D.</b></p>	<p>Chairman of the Board of Directors</p>	<p>March 15, 2004</p>
<p><u>                    /s/ JAMES T. HEALY                    </u></p> <p><b>James T. Healy</b></p>	<p>President and Chief Executive Officer (Principal Executive Officer) and Director</p>	<p>March 15, 2004</p>
<p><u>                    /s/ BRUCE M. JAFFE                    </u></p> <p><b>Bruce M. Jaffe</b></p>	<p>Vice President of Finance and Chief Financial Officer (Principal Financial and Accounting Officer)</p>	<p>March 15, 2004</p>

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<u>/s/ NAVINDRA JAIN</u>	Director	March 15, 2004
<b>Navindra Jain</b>		
<u>/s/ RICHARD C. BLACK</u>	Director	March 15, 2004
<b>Richard C. Black</b>		
<u>/s/ D. JAMES GUZY</u>	Director	March 15, 2004
<b>D. James Guzy</b>		
<u>/s/ RICHARD C. YONKER</u>	Director	March 15, 2004
<b>Richard C. Yonker</b>		

**Table of Contents****EXHIBIT INDEX****Exhibit**

<b>Number</b>	<b>Description of Document</b>
3(i)	Restated Certificate of Incorporation (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2001).
3(ii)	Bylaws of the Company, amended as of October 16, 2003.
4.1	Form of Common Stock Certificate (incorporated by reference to the exhibit of the same number to Amendment No. 8 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
4.2	Form of Warrant to Purchase Shares of Common Stock (incorporated by reference to Exhibit 4.4 to Amendment No. 5 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
4.3	Form of Extinguishing Warrant to Purchase Shares of Common Stock (incorporated by reference Exhibit 4.5 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
4.4	Warrant to Purchase Series I Preferred Stock (incorporated by reference to Exhibit 4.7 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
4.5#	Stock Option Agreement between the Company and Vinod K. Agarwal (incorporated by reference to Exhibit 4.8.1 to Amendment No. 6 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
4.6#	Form of Stock Option Agreement (incorporated by reference to Exhibit 4.8.2 to Amendment No. 6 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.1.1#	Form of agreements under the 1994 Flexible Stock Incentive Plan (incorporated by reference to the exhibit of the same number to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.1.2#	1994 Flexible Stock Incentive Plan, as amended (incorporated by reference to Exhibit 99.2 to the Company's Registration Statement on Form S-8 (File No. 333-74336)).
10.2.1#	Amended and Restated 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.2.2#	Amendments Nos. 1 and 2 and Addendum to Amended and Restated 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.2.3#	Form of agreement under the 2000 Stock Incentive Plan (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.3#	Form of Indemnification Agreement between the Registrant and its officers and directors (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2001).
10.4	Sixth Amended and Restated Registration Rights Agreement dated as of January 28, 2000 (incorporated by reference to the exhibit of the same number to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.5	Lease, dated as of August 13, 1998, by and between Spieker Properties, L.P. and the Company (incorporated by reference to the exhibit of the same number to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.6.1	Extension Agreement, dated as of January 17, 2000, by and between Spieker Properties, L.P. and the Company (incorporated by reference to Exhibit 10.6 to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).

**Table of Contents****Exhibit**

<b>Number</b>	<b>Description of Document</b>
10.6.2	Second Amendment, dated as of January 23, 2004, to Lease Agreement dated August 13, 1998 by and between CA-Metro Plaza, as successor in interest to Spieker Properties, L.P., and the Company.
10.7.1	Agreement, dated as of September 14, 1992, between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.7.2	Amendment, dated as of October 1, 1993, to the Agreement between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.7.3	Amendment, dated as of January 11, 1994, to the Agreement between Northern Telecom Limited and the Company (incorporated by reference to the exhibit of the same number to Amendment No. 1 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.7.4	Amendment, dated as of March 20, 2001, to the Agreement between Nortel Networks Limited (formerly Northern Telecom Limited) and the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.8.1#	Amended and Restated 2000 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2002).
10.8.2#	Amendment No. 1 to the Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended June 30, 2003).
10.9.1#	Loan Letter Agreement dated June 19, 1996 between the Company and Michael Howells (incorporated by reference to the exhibit of the same number to Amendment No. 7 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.9.2#	Letter Agreement dated July 18, 2001, between the Company and Michael Howells (incorporated by reference to the exhibit of the same number to Amendment No. 8 to the Company's Registration Statement on Form S-1 (File No. 333-43654)).
10.10.1	Amended and Restated Loan Agreement, dated as of February 11, 2003, by and between Comerica Bank California and the Company (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the year ended December 31, 2002).
10.10.2	Amendment, dated August 26, 2003, to Loan Agreement between Comerica Bank California and the Company (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2003).
10.10.3	Amended and Restated Loan Agreement, dated as of February 11, 2004, by and between Comerica Bank California and the Company.
10.11	Employment Agreement between the Company and John H. Barnet (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2002).
21.1	Subsidiaries of the Company (incorporated by reference to the exhibit of the same number to the Company's Annual Report on Form 10-K for the year ended December 30, 2002).
23.1	Consent of PricewaterhouseCoopers LLP, Independent Accountants.
24.1	Power of Attorney (see page 67 of this Form 10-K).
31.1	Rule 13a-14(a) Certification of Chief Executive Officer.
31.2	Rule 13a-14(a) Certification of Chief Financial Officer.

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**Exhibit**

<b>Number</b>	<b>Description of Document</b>
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32.1**	Statement of Chief Executive Officer under Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. §1350).
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32.2**	Statement of Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. §1350).
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# Indicates management contract or compensatory plan or arrangement.

\*\* In accordance with Item 601(b)(32)(ii) of Regulation S-K and SEC Release Nos. 33-8238 and 34-47986, Final Rule: Management's Reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports, the certifications furnished in Exhibits 32.1 and 32.2 hereto are deemed to accompany this Form 10-K and will not be deemed filed for purpose of Section 18 of the Exchange Act. Such certifications will not be deemed to be incorporated by reference into any filing under the Securities Act or the Exchange Act, except to the extent that the registrant specifically incorporates it by reference.