

ADE CORP  
Form 10-K  
July 14, 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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(Mark One)

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

For the fiscal year ended April 30, 2004

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 0-26714

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**ADE CORPORATION**

(Exact Name of Registrant as Specified in its Charter)

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**Massachusetts**  
(State of Incorporation)

**04-2441829**  
(I.R.S. Employer Identification No.)

**80 Wilson Way**

**Westwood, Massachusetts**  
(Address of Principal Executive Offices)

**02090**  
(Zip Code)

**(781) 467-3500**

(Registrant's Telephone Number, Including Area Code)

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

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

**Common Stock, \$0.01 par value**

(Title of class)

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

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

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

As of October 31, 2003, there were outstanding 13,917,035 shares of common stock, \$.01 par value per share. The aggregate market value of shares of common stock held by non-affiliates of the registrant, based upon the last sale price for such stock on that date as reported by Nasdaq, was approximately \$235,335,000.

**DOCUMENTS INCORPORATED BY REFERENCE**

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Portions of the definitive Proxy Statement for the 2004 Annual Meeting of Stockholders are incorporated by reference into Part III.

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**PART I**

**CAUTIONARY STATEMENT REGARDING FORWARD LOOKING STATEMENTS**

*Except for historical information, this Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and federal securities laws that are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. These statements include, but are not limited to, those relating to expected demand for, and acceptance of, our new and existing products, our expectations for future financial performance and sources and uses of liquid assets, continued execution of our business strategy, the effects of economic trends on the semiconductor wafer, semiconductor device, magnetic data storage and optics manufacturing industries and the impact of new accounting pronouncements. Those statements that make reference to the Company's expectations, predictions, beliefs, assumptions and anticipations should be considered forward-looking statements. The sections entitled Management's Discussion and Analysis of Financial Condition and Results of Operations and Business, including, but not limited to, the sub-sections entitled Cyclicalities of Our Business, Competition, Customer and Industry Concentration, Dependence on Suppliers and Risks Associated with International Operations as well as other sections of this annual report contain a discussion of some of the factors that could contribute to these differences. Any forward-looking statements are made as of the date of this report and we assume no obligation to update any such forward-looking statements or to update the reasons why actual results could differ materially from those anticipated in such forward-looking statements.*

**ITEM 1. BUSINESS**

ADE Corporation, incorporated in 1967, is engaged in the design, manufacture, marketing and service of production metrology and inspection systems for the semiconductor wafer, semiconductor device, magnetic data storage and optics manufacturing industries. Our systems analyze and report product quality at critical manufacturing process steps, sort wafers and disks, and provide manufacturers with quality certification data upon which they rely to manage processes and accept incoming material. Semiconductor wafer, device and magnetic data storage manufacturers use our systems to improve yield and capital productivity. When we use the terms ADE, the Company, we, our or us in this annual report, we are referring to ADE Corporation and its consolidated subsidiaries taken as a whole, unless otherwise indicated.

ADE operates three major business segments, the Semiconductor Systems Group, ADE Phase Shift and ADE Technologies. The Semiconductor Systems Group manufactures multifunctional semiconductor metrology and automation systems and optical wafer defect inspection equipment used to detect particles and other defects on silicon wafer surfaces. ADE Phase Shift manufactures high performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics industries. ADE Technologies manufactures high precision magnetic characterization and non-contact dimensional metrology gauging systems for the magnetic data storage and semiconductor manufacturing industries. For segment financial information, see Note 14 in the accompanying consolidated financial statements.

ADE's strategy is to provide our customers with complete metrology solutions for optimization of their processes, workflow, and engineering. We accomplish these goals by offering a broad range of advanced metrology and inspection systems, a variety of factory automation and control options and software analysis packages. ADE designs focus on a modular approach, which targets the lowest cost of ownership for a system at any given process step.

**Products**

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Our products have evolved from single instruments used in off-line engineering analysis to full, 100% in-line, automated metrology solutions throughout the wafer, semiconductor device and magnetic data storage

manufacturing processes. Our systems are targeted to deliver the high throughput, reliability, information and analysis necessary to meet the demands of increasingly complex and time-sensitive manufacturing processes.

Our principal products in the semiconductor wafer, semiconductor device and magnetic data storage device industries are described below. All of our metrology and inspection systems have the capability to record, print and store measurement data locally, as well as distribute the data via a network for yield and process management and off-line analysis.

### *Semiconductor Industry Products*

#### *Wafer Dimensional Measurements*

**WaferSight System.** A wafer flatness and shape metrology tool for 300mm and advanced 200mm production, the WaferSight's measurement precision allows wafer and device manufacturers to meet ITRS metrology requirements down to the 45nm generation. Utilizing optical technologies, the WaferSight system extends ADE's market presence in wafer dimensional metrology, leveraging 30 years of industry leadership and our knowledge of process and market requirements.

**Advanced Flatness System (AFS).** The Advanced Flatness System has been the 300mm silicon wafer production standard. The wafer is handled only by the edges, thereby minimizing the possibility of any surface contamination or damage due to contact with the polished surfaces of the wafer. The two-sided capacitance-based AFS measurement is well-suited for high volume polished wafer, pre-polish, epi, SOI, strained silicon, patterned wafer and reclaim operations.

**UltraGage® Series.** The UltraGage series of automated benchtop metrology systems incorporate a single measurement module and robotic handler for several measurements, including wafer shape, flatness, thickness, conductivity type and stress on silicon, epi, SOI, or patterned wafers. The UltraGage series includes systems optimized to handle the ultra-thin processed wafers used in the manufacture of devices for smart cards and advanced electronic packages, bumped wafers and MEMS.

**UltraScan® Series.** The UltraScan series of products are high throughput, 150mm to 200mm in-line production systems for the measurement and sorting of wafers at various stages of the wafer manufacturing and device fabrication processes. UltraScan systems measure wafer thickness, flatness, shape, resistivity and other mission-critical dimensional properties and can be integrated with factory automation systems.

**NanoMapper® Series.** NanoMapper systems measure and analyze nanotopography, front surface non-planar topographic wafer features, on semiconductor wafers using proprietary noncontact optical interference techniques to detect a variety of process-induced defects and process control failures in silicon wafer and device manufacturing processes. Improved control of these defects can increase yields and reduce costs for 90nm and 65nm devices in CD control, shallow trench isolation (STI), and chemical mechanical planarization (CMP) results. The NanoMapper system was the winner of the prestigious R&D 100 award, presented by R&D Magazine in the year 2000.

#### *Surface Inspection Systems*

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***Film Inspection Tool™ (FIT)***. The Film Inspection Tool provides reliable inspection and defect detection on unpatterned films, ranging from dielectrics through metals, SOI, and strained silicon. The introduction of the films inspection tool marks ADE's strategic entry into the front-end device process metrology market. Using ADE's patented angular resolve scatter technology, FIT can detect and classify particles and defects over a wide range of applications. The FIT's superior performance is the result of successfully deploying our intellectual property onto existing hardware and software platforms to meet new metrology requirements.

***Advanced Wafer Inspection System™ (AWIS)***. The AWIS system is a fully automated inspection tool designed to handle the advanced surface inspection and defect detection requirements of 200mm and 300mm

polished and epitaxial wafer production. This system reduces the need for time consuming, off-line inspection of the wafers. The system meets the requirements for the 100nm design rules for high speed sorting applications.

### ***Film Mapping Systems***

***AcuMap™ Series.*** AcuMap systems are full-wafer film thickness monitoring tools for SOI, CMP and photolithography applications. AcuMap systems provide high-speed full wafer mapping with high data density on various thin films for production process development and control. The industry standard for high-speed SOI film mapping, AcuMap systems have shown excellent results in measuring leading edge ultra-thin SOI layers for fully depleted CMOS applications.

### ***Disk Industry Products***

### ***Proprietary ADE Magnetic Technology***

***Vibrating Sample Magnetometers (VSMs).*** The VSM is used to measure the magnetic properties of the broad-spectrum of magnetic materials. The VSM product line is comprised of several models, varying in maximum field strength and sensitivity. Systems can be configured to characterize anisotropy in magnetic materials, the understanding of which is rapidly becoming critical in the development of magnetic disks, recording heads, and MRAM. Specifically developed for this purpose is the Model 10, an advanced Vector VSM for research on directional properties of magnetic materials.

***X9 Magnetic Properties Analysis System (X9 MPAS).*** The X9 MPAS is a fully automated system designed to make an in-depth analysis of GMR style head coupons. Based upon the Model 10 VSM, the X9 automatically loads, measures and returns wafer coupons, repeatably measuring layer thicknesses to less than 0.2 NiFe equivalent Angstroms. In addition to layer thickness, the X9 measures all Hysteresis and transport properties in a single step and has replaced several pieces of equipment in the process control of advanced head production. The X9 system was the winner of the prestigious R&D 100 award, presented by R&D Magazine in the year 2002.

***S150 Wafer Mapping System (WMS).*** The WMS rapidly and automatically creates 3-dimensional maps of the magnetic properties of entire wafers or coupons used to fabricate advanced GMR and TMR heads for disk drives, as well as the tunnel junctions of MRAM wafers. The WMS provides feedback to the design and fabrication process of GMR and TMR heads and TMR-based MRAM wafers. The system, which can be configured as a fully automated metrology system with a wafer handler and pre-aligner, and an MR measurement option, allows customers to manage process uniformity in order to improve overall yield.

***V/S 300 Platform.*** The V/S 300 is the latest generation of Wafer Mapping Systems and is designed specifically to address the emerging MRAM market. A proprietary Quadrupole magnet design with active field control allows MRAM developers to simulate the action of the MRAM device early in the process control of the magnetic films, and characterize patterned MRAM arrays. Using a patented Vector Kerr capability, the user can measure easy axis distribution with unparalleled accuracy and determine the switching field distribution with greater accuracy. The V300 is suitable for the most advanced MRAM R&D and production, as well as in-depth studies of the uniformity of the TMR stacks at the sheet film level.



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***M2 DiskMapper™.*** The M2 DiskMapper system is an in-line fully automated noncontact measurement system that maps the variation of the most critical magnetic parameters over the surface of recording disks. The data provided by the tool is used to directly control the sputtering process. The M2 DiskMapper can be configured to handle multiple form factors.

***Polar Kerr Mapping System.*** With the advances in areal density of HDD media continuing at a rapid pace, the time when the current technology yields to the next generation of media is fast approaching. Leading edge media developers are now working on replacing longitudinal media with perpendicular in which the

magnetic bits are orthogonal to the plane of the disk. The Polar Kerr Mapping System is designed to characterize this new media segment in development and control the deposition process in production. It handles the new media directly from cassette and leverages ADE's years of Kerr experience.

#### ***Proprietary ADE Capacitance Technology***

***MicroSense® II.*** As the disk drive industry moves to ever-quieter fluid bearing motors there is an increasing requirement to measure non-repetitive run-out to achieve higher track densities. The MicroSense II product line has been widely adopted by disk drive motor manufacturers. It has also achieved success in specialized applications such as fast tool servo-control outside of the disk drive market.

***Passive Gauging.*** ADE's passive capacitive gauging systems make use of a design that is fundamentally different from the MicroSense II products. These passive capacitance gauges are incorporated in a number of ADE products that serve the hard disk, compact disk and semiconductor markets. ADE Passive Gauges are increasingly being used by other semiconductor capital equipment makers on an OEM basis to solve difficult servo-control problems where high precision and high stability are required.

***Motor Test Systems.*** Utilizing the recently introduced SpinCheck HR motor test system with ADE's noncontact dimensional gauging provides disk motor manufacturers with motor shaft runout measurements in both time and frequency domains. This software allows users to define sophisticated pass/fail criteria for production testing.

#### ***Proprietary ADE Interferometer Based Tools***

***MiniFIZ™ Series of Interferometers.*** MiniFIZ series is a family of laser-based Fizeau interferometers that test the surface flatness, curvature and other shape characteristics of polished precision components such as optical mirrors, lenses and computer disks. The MiniFIZ interferometers provide interactive 3D modeling, statistical reporting, and user-selectable production and research modes. The product can be combined with full robotic automation to meet the needs of disk media and substrate process control.

***MicroXAM™ Optical Profilers.*** These 3D optical profilers are interference microscopes which produce measurements of the shape, density and distribution of laser bumps in the laser-textured area of hard disks. The MicroXAM optical profiler is the industry standard for measuring the laser-textured area of hard disk media. Other configurations of MicroXAM products measure disk dub-off. Dub-off is the transition between the top (usable) surface of the disk, and the rough edge of the disk. MicroXAM systems, consequently, are used widely by disk media manufacturers and by hard drive manufacturers.

#### **Products in Development**

In order to maintain our technology leadership, we continue to introduce new products.

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**Series 4800, 5800, 6800 and SpinCheck HR.** Our entire line of gauging products undergoes continuous product improvement to keep pace with the rapid developments in the HDD and semiconductor equipment markets. Our new 6800 series capacitance gauging system meets the ever-increasing demands of disk drive motor manufacturers as they develop the next generation fluid dynamic bearing motors. The 4800 series gauge capabilities are being expanded to perform critical positioning of optics or targets in high vacuum applications to serve the needs of semiconductor capital equipment manufacturers. New data processing capabilities are being added to the SpinCheck HR as customers require additional insight into FDB motor performance and qualification.

### **Technology**

Our metrology and inspection products use our proprietary non-contact capacitive, optical, eddy-current, interferometric and magnetic technologies to measure the dimensional, electrical magnetic and surface characteristics of semiconductor wafers and devices and computer hard disks and disk drives.

#### *Dimensional Technology*

Our non-contact capacitive gauging technology, which is the subject of a series of patents, is used to measure the dimensional parameters (thickness, flatness, shape) of semiconductor wafers, computer hard disks and other objects. This technology is based on the measurement of the capacitance between a measurement probe and the surface of the object. The capacitance varies as a precise function of the distance between the probe and the object being measured. For example, in the measurement of a semiconductor wafer, two probes, one on each side of the wafer, map both wafer surfaces simultaneously. Electronic circuitry converts the probe capacitance signal into distance signals, which are translated by our software to produce information concerning the wafer's thickness, flatness and shape.

#### *Surface Inspection Technology*

We use patented optical technology to detect microscopic surface defects and non-uniformity. A finely focused laser beam is scanned over the surface of the wafer. Surface non-uniformities, particles or defects cause some of the beam's energy to deflect or scatter. Sensitive detectors quantify the scattering signals, which are translated by our software to produce information about particles, micro scratches, haze, nanotopography and other process-induced defects on the wafer surface. Although the principles of our optical technology are similar to those used by other manufacturers, we believe our theoretical modeling and patented optical engineering and proprietary software result in our products having a superior combination of high sensitivity and throughput.

#### *Interferometric Technology*

Optical interference is a technique used to produce surface images of alternating bright and dark images, called fringes, which correspond to variations in surface height. Using multiple reflection, optical interference can precisely measure variations in the height of a surface as small as a few atomic layers. Our software provides the ability to create and analyze these three-dimensional surface maps, comprised of millions of data points, which are used by our customers in advanced process development and in production control.

#### *Magnetics Characterization Technology*

Our products for characterizing magnetic materials use a variety of non-contact measurement technologies including lasers (the Kerr effect), vibrating sample and torque-effect inductive sensing techniques. We believe our world-class theoretical modeling and magnetics engineering enable us to offer automated products with superior sensitivity, speed, accuracy and reproducibility.

#### *Proprietary Software*

Our proprietary software analyzes and transforms the large amounts of data generated by our metrology and inspection systems to produce information about process-induced defects that supports real-time process management. The flexible design of this software permits recipe-driven reconfiguration of these products to serve new applications with a minimum of hardware or software redesign or development. Our software is designed to integrate our various metrology functions with one another while implementing industry standards for integrating our products with the manufacturing facility's information systems. We currently have applied for patent protection on unique features of our software.

**Service**

The Company's service business consists of installation, training, product maintenance and technical support services.

**Marketing, Sales and Customer Support**

We market and sell our semiconductor metrology and inspection products through our direct sales force, distributors and independent sales representatives. We market and sell our metrology and inspection products in

the United States through full-time salespersons located in Milpitas, California; Dallas, Texas; Portland, Oregon; Tucson, Arizona and Boston, Massachusetts. We market and sell our metrology and inspection products in Europe through full-time salespersons located in the United Kingdom and Germany. We market and sell our metrology and inspection products in Malaysia and Singapore through full-time salespersons located in Malaysia. During the past fiscal year, approximately 34% of our revenue was derived through our direct sales organization. Our direct sales force is supported by applications engineers in selected field offices and in each of our manufacturing locations.

Sales of wafer dimensional systems, capacitive probes, and disk industry products in Japan are supported by Japan ADE, Ltd. ( JAL ), a joint venture between ADE and Kanematsu Electronics, Ltd. Sales of surface inspection products are provided in Japan by a separate distributor. We also sell our semiconductor metrology and inspection products in Israel, South Korea, Singapore, Taiwan, and the People's Republic of China through independent sales representatives. We market and sell our non-contact capacitive, dimensional metrology and magnetic characterization data storage products in the United States through three full-time salespersons and internationally through distributors and sales representatives. We market and sell our interferometric based surface metrology products in the United States through two full-time salespersons and internationally through distributors and sales representatives.

The selling process for our products frequently involves participation by sales, marketing and customer support personnel. Customers and potential customers often evaluate our products by sending semiconductor and device wafers to us for measurement or by installing demonstration equipment at their facilities. We maintain demonstration equipment at our manufacturing sites and at some of our sales offices for this purpose. We plan to continue our investment in demonstration equipment to accelerate the introduction of products. Our marketing activities also include participation in international standards organizations, trade shows, the publication of articles in trade journals, industry forums and the distribution of sales literature.

We believe that our strong commitment to service is essential, based on the growing complexity of the equipment used in the semiconductor manufacturing process. This complexity makes it difficult for semiconductor wafer and device manufacturers to maintain an internal workforce sufficiently skilled and specialized to support the disparate equipment and technologies used in their processes. We have customer support centers in Boston, Massachusetts; Dallas, Texas; Milpitas, CA; Vancouver, Washington and Tucson, Arizona in the United States; Milton Keynes, England; Munich, Germany; and Kuala Lumpur, Malaysia. In addition, our distributors and independent sales representatives provide customer support. We also offer training programs and maintenance contracts for our customers. We typically offer warranties of twelve months covering the performance and reliability of our products.

## **Customers**

Our customers include the leading semiconductor wafer manufacturers and many of the leading semiconductor device, magnetic data storage and disk drive manufacturers throughout the world. Historically, a relatively limited number of customers, comprising a large share of the market, have accounted for a substantial portion of our revenue. In fiscal years 2004, 2003 and 2002, sales to our top five customers accounted for approximately 74%, 64% and 54% of our revenue, respectively. During fiscal year 2004, one of our customers, JAL, accounted for 36% of our revenue. During the past fiscal year, approximately 81% of our revenue was derived from sales made to wafer manufacturers, with the remainder derived from sales to manufacturers of semiconductor devices, magnetic data storage, disk drives and semiconductor equipment. Our principal customers, in alphabetical order, are as follows:

### **Semiconductor Wafer Manufacturers**

Canon Sales Company, Inc.

Japan ADE, Ltd.

MEMC Electronic Materials

Shin-Etsu Handotai

Siltron

Siltronic

SUMCO

**Semiconductor Device Manufacturers**

Samsung

ST Microelectronics

**Data Storage and Disk Drive Manufacturers**

Komag

Maxtor

Seagate Technology

**Research and Development**

The market for semiconductor wafer and device, data storage and disk drive equipment is characterized by rapid technological advances and product innovations. Our research and development efforts are designed to enhance our current products and develop new products to keep pace with technological developments and constantly evolving customer requirements. We devote significant resources to programs directed towards developing new and enhanced products, as well as developing new applications for existing products.

In fiscal years 2004, 2003 and 2002, our research and development expenditures were \$15.1 million, \$17.0 million and \$22.8 million, respectively, representing 17%, 24% and 28% of revenue. Research and development expenditures consist primarily of salaries, project materials, consulting fees and other costs associated with our ongoing research and development efforts.

Industry standards organizations, such as Semiconductor Equipment and Materials International and American Standards for Testing and Materials are pivotal in defining the test methods, measurement parameters and specifications governing commercial transactions within the semiconductor industry. We maintain a significant presence on standards committees of these two organizations and other international standards organizations. We believe that our involvement with these organizations has helped to ensure that our new products conform to industry standards.

**Backlog**



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Backlog increased to approximately \$41.5 million at April 30, 2004 from approximately \$25.1 million at April 30, 2003. This increase in backlog is primarily attributable to an increase in demand for capital equipment in Japan and Southeast Asia as a result of capacity expansion in the semiconductor wafer and device manufacturing industries. We schedule production based on firm customer commitments and anticipated orders during the planning cycle. Backlog is comprised of written purchase orders accepted from customers to whom we expect to ship the related product or provide service within the following twelve months. Customers may cancel or delay orders with limited or no penalty. We do not believe that the level of backlog is an accurate indicator of our performance in future periods.

### **Manufacturing**

Our principal manufacturing activities take place at our ISO 9001-registered facility in Westwood, Massachusetts, where semiconductor dimensional metrology systems and semiconductor optical surface inspection equipment are manufactured. Our dimensional metrology gauging products and magnetic characterization products for the data storage industry are also manufactured in the Westwood, Massachusetts facility. Our interferometric based surface metrology products and our optical metrology products are

manufactured in Tucson, Arizona. Manufacturing activities consist primarily of assembling and testing components and subassemblies, which are supplied by third party vendors and then integrated into our finished products. Many of the components and subassemblies are standard products, although certain items are made to our specification. We manufacture many of our semiconductor metrology and inspection systems in a cleanroom environment.

### **Patents and Other Intellectual Property Rights**

We rely on a combination of patent, copyright, trademark and trade secret laws and license agreements to establish and protect our proprietary rights in our products. We believe that our success depends to a large extent upon innovation, technological expertise and distribution strength. We enter into standard confidentiality agreements with our employees and consultants and seek to control access to and distribution of our proprietary information. Despite these precautions, it may be possible for a third party to copy or otherwise obtain and use our products or technology without authorization or to develop similar technology independently. In addition, effective patent, copyright and trade secret protection may be unavailable or limited in certain foreign countries.

As of July 9, 2004, we hold 51 United States patents and 30 foreign patents covering existing and potential products and have applied for 19 additional patents in the United States and 65 additional foreign patents. We have licensed certain patents and other intellectual property to a number of companies.

### **Employees**

As of April 30, 2004, we employed a total of 403 persons. Management believes that our ongoing success depends on our continued ability to attract and retain highly skilled employees. There can be no assurance that we will be successful in attracting or retaining such personnel. None of our employees are represented by a labor union, and we have experienced no work stoppages. We consider our employee relations to be good.

### **EXECUTIVE OFFICERS OF THE REGISTRANT**

The names, ages and positions held by our executive officers are as follows:

Chris L. Koliopoulos	51	President and Chief Executive Officer
Brian C. James	53	Executive Vice President, Treasurer and Chief Financial Officer
David F. Basila	44	Corporate Vice President

All executive officers are elected by the Board of Directors to serve in their respective capacities until their successors are elected and qualified or until their earlier resignations or removal.

Chris L. Koliopoulos has served as President and Chief Executive Officer of ADE Corporation and President of ADE Phase Shift, Inc. since June 2002. From 1998 to 2002, Dr. Koliopoulos served as Vice President of ADE and President of ADE Phase Shift. Dr. Koliopoulos joined ADE in June 1998 through the merger with Phase Shift Technology, Inc., where he was President and co-founder. Dr. Koliopoulos has been a Director of ADE since September 1998. Dr. Koliopoulos received a BS from the University of Rochester and an MS and PhD from the

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University of Arizona.

Brian C. James joined ADE in August 2000 and serves as Executive Vice President, Treasurer and Chief Financial Officer. Mr. James served as Executive Vice President and Chief Financial Officer of CCT, Inc. and as Corporate Vice President and Chief Financial Officer of The Aerostructures Corporation, both privately held investor-backed companies, prior to joining ADE. Mr. James had previously served as Group Controller for Textron Inc.'s Aerospace-Technology sector and has held various operations and financial positions with Allied-Signal and Ford Motor Company. Mr. James received a BA from the University of Vermont and an MS in finance from the University of Massachusetts.

David F. Basila has served as Corporate Vice President of ADE Corporation since September 2002. Mr. Basila served as Vice President of ADE Phase Shift since joining ADE in June 1998 through the merger with Phase Shift Technology, Inc., where he was Vice President and co-founder. Mr. Basila received a BA from the University of Arizona.

### **Cyclicality of Our Business**

Our business depends in large part upon the capital expenditures of semiconductor wafer and device and data storage manufacturers, which in turn depend on the current and anticipated market demand for integrated circuits, products utilizing integrated circuits and systems requiring data storage, respectively. The semiconductor and data storage industries are cyclical and have historically experienced periodic downturns, which have had a severe effect on the demand for capital equipment. Prior semiconductor and data storage industry downturns and construction of excess capacity by the industries have adversely affected our revenue, gross margin and net income and have also adversely affected the market price of our common stock. In addition, the need for continued investment in research and development and extensive customer service and support capability worldwide will continue to limit our ability to reduce expenses during industry downturns.

### **Competition**

The semiconductor and data storage equipment industries are highly competitive. Competition in these industries is based primarily on technology, price and market penetration. We believe that we compete favorably in our markets for a Company of our size and resources. Companies with complementary technologies and greater financial resources may enter these industries and develop products that are superior to our products or achieve market acceptance. In the market for optical defect inspection equipment, we compete directly with Hitachi Electronics Engineering Co., Ltd., KLA-Tencor Corporation ( KLA ) and Topcon, some of which have significantly greater total assets and annual revenue than we do. In the metrology area of the device industry, we have encountered, and expect to encounter in the future, competition from companies offering similar and competing technologies, some of which have significantly greater total assets and annual revenue than we do or have an existing market presence in the device industry, or both. We also expect to encounter intense competition in the areas of metrology and inspection for the magnetic data storage industry. Our competitors can be expected to continue to improve the design and performance of their products and to introduce new products with competitive price/performance characteristics. Competitive pressures can necessitate price reductions or non-revenue generating shipments of new products to certain strategic customers for evaluation purposes, which can adversely affect our operating results. In order to remain competitive, we must maintain a high level of investment in research and development, sales, marketing and customer service. There can be no assurance that we will have sufficient resources to continue to make such investment or that we will be able to make the technological advances necessary to remain competitive.

We expect acquisitions and business combinations by our competitors and potential competitors in the metrology as well as in the defect inspection markets. The impact of this activity could:

Allow them to offer new products without the lengthy time delays typically associated with internal product development

Limit our access to commercially significant technologies and/or new or complementary products

Permit them to accelerate the development and commercialization of new competitive products and the marketing of existing competitive products to their larger installed bases.

Accordingly, such business combinations and acquisitions by these companies could have an adverse impact on both our market share and the pricing of our products, which could have a material adverse effect on our business.



### **Customer and Industry Concentration**

A relatively limited number of customers have historically accounted for a substantial portion of our revenue in each year. In fiscal years 2004, 2003 and 2002, sales to our top five customers in each period accounted for approximately 74%, 64% and 54% of our revenue, respectively. The loss of or any reduction in orders by any of these customers, including reductions due to market, economic or competitive conditions in the semiconductor industry or in other industries that manufacture products utilizing semiconductors, could adversely affect our business, financial condition and results of operations. In fiscal 2004, 2003 and 2002, we derived 81%, 75% and 69% of our revenue, respectively, from customers in the semiconductor wafer industry. While we are increasing our emphasis on expanding the level of our business in the device and magnetic data storage industries, there can be no assurance that our efforts will be successful. Our ability to maintain or increase our sales levels in the future will depend in part upon our ability to obtain orders from new customers as well as the financial condition and success of our existing customers and the general economy. There can be no assurance that we will be able to increase the level of our revenue in the future or that we will be able to retain existing customers or to attract new customers. In addition, given the limited number of customers, any delay in collecting, or inability to collect, accounts receivable could have a material adverse effect on our financial results. See Notes 2 and 14 of Notes to Consolidated Financial Statements for information regarding our accounting policies and our revenues by segment.

### **Dependence on Suppliers**

Certain components and subassemblies, including certain systems controllers and robotics components, incorporated in our current systems and those under development are obtained from a single source or a limited group of suppliers. In some instances, we have not qualified a second source for these products and the partial or complete loss of certain of these sources could have an adverse effect on our results of operations and damage customer relationships. Further, a significant increase in the price of one or more of these components or failure to perform up to specification could adversely affect our results of operations.

### **Risks Associated with International Operations**

International sales accounted for 86%, 83% and 77% of our revenue for fiscal years 2004, 2003 and 2002, respectively. See Note 14 of Notes to Consolidated Financial Statements for information regarding our revenues and long-lived assets outside the United States. We expect that international sales will continue to represent a significant percentage of revenue. Our international business may be affected by changes in demand resulting from:

Fluctuations in interest and currency exchange rates

The investment policies of foreign countries

Changes in trade policies and/or tariff regulations

Difficulties in obtaining U.S. export licenses.

Given that approximately 60%-70% of our revenue has historically come from Asia, financial instability in certain Asian countries could materially affect our competitive position and consequently, financial results.



**ITEM 2. PROPERTIES**

Information regarding our principal properties at April 30, 2004 is set forth below:

<u>Location</u>	<u>Principal Use</u>	<u>Business Segment</u>	<u>Sq. Footage</u>	<u>Ownership</u>
Westwood, MA(1)	Corporate Headquarters, Manufacturing, Engineering, Service, Sales and Marketing	Semiconductor Systems Group and ADE Technologies	118,000	Leased
Tucson, AZ	Manufacturing, Engineering, Service, Sales and Marketing	ADE Phase Shift	60,000	Owned
Newton, MA(2)	Manufacturing, Engineering, Service, Sales and Marketing	ADE Technologies	46,000	Owned
Vancouver, WA	Sales, Service and Engineering	Semiconductor Systems Group	12,800	Leased
Milpitas, CA	Sales and Service	Semiconductor Systems Group and ADE Technologies	9,300	Leased

We also lease space for sales and service support offices in various other domestic and overseas locations.

- (1) On July 29, 2003, the Company entered into an agreement to sell and lease back its headquarters site in Westwood, Massachusetts.
- (2) During the fourth quarter of the fiscal year ended April 30, 2003, the Company relocated the operations of its ADE Technologies business segment from Newton, Massachusetts into its Westwood, Massachusetts facility. On June 25, 2004, the Company entered into a purchase and sale agreement with a buyer for the Newton property. The Company expects that the transaction will close in the fall of 2004.

**ITEM 3. LEGAL PROCEEDINGS**

On October 12, 2000, the Company filed a patent infringement lawsuit against KLA, a competitor, in United States District Court in Delaware. In the suit, the Company seeks damages and a permanent injunction against further infringement of United States Patent Numbers 6,118,525 and 6,292,259, both entitled Wafer Inspection System for Distinguishing Pits and Particles. KLA responded by filing counterclaims alleging that the Company has infringed four patents owned by KLA. KLA seeks damages for the alleged patent infringement and a permanent injunction against future infringement. In addition, KLA seeks a declaration that United States Patent Numbers 6,118,525 and 6,292,259, owned by the Company, are invalid and not infringed by KLA. On March 13, 2003, the District Court issued a ruling upholding KLA's principal arguments with respect to ADE's claims of infringement. On August 15, 2003, the District Court issued rulings upholding ADE's principal arguments with respect to KLA's claims of infringement for two of KLA's asserted patents. On February 4, 2004, a jury in the United States District Court in Delaware returned a verdict in favor of ADE invalidating all the remaining claims asserted by KLA. A final judgment has now been issued by the court in ADE's favor on all of KLA's counterclaims. The Company has appealed some of the District Court's rulings to the United States Court of Appeals for the Federal Circuit. Accordingly, at this time, the Company cannot predict the outcome or the amount of gain or loss, if any, from this lawsuit.

In addition to the matter noted above, from time to time the Company is subject to legal proceedings and claims in the ordinary course of business. In the opinion of management, the amount of ultimate expense with respect to any other current legal proceedings and claims will not have a material adverse effect on the Company's financial position or results of operations.



**ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

There were no matters submitted to a vote of security holders during the fourth quarter of the fiscal year ended April 30, 2004.

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**PART II**
**ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED COMMON STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES****Market Price of Common Stock**

Our common stock trades on the Nasdaq National Market System under the symbol ADEX. The following table presents the high and low sale prices for each quarter for the common stock as reported for the periods indicated.

<b>Fiscal year ended April 30, 2004</b>	<b>High</b>	<b>Low</b>
First quarter	\$ 15.51	\$ 6.00
Second quarter	25.79	13.93
Third quarter	25.45	15.00
Fourth quarter	24.00	16.94
<b>Fiscal year ended April 30, 2003</b>	<b>High</b>	<b>Low</b>
First quarter	\$ 13.50	\$ 5.20
Second quarter	8.21	2.26
Third quarter	9.20	4.78
Fourth quarter	7.10	5.15

The last sale price of the common stock on July 9, 2004, as reported by Nasdaq, was \$20.14 per share. As of July 9, 2004, there were 96 holders of record of the common stock (approximately 3,500 beneficial holders).

We have never declared or paid any cash dividends on our common stock and currently expect to retain future earnings for use in our business.

**ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA**

The following table summarizes the financial data for our business and is derived from the Company's historical consolidated financial statements. You should read the selected financial data in conjunction with our historical consolidated financial statements and related notes and the section of this annual report entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Year ended April 30,				
	2004	2003	2002	2001	2000
	(in thousands, except per share data)				
<b>Statement of Operations Data:</b>					
Revenue	\$ 88,585	\$ 71,247	\$ 81,806	\$ 100,183	\$ 62,506
Cost of revenue	45,043	38,954	48,132	50,236	35,475
Gross profit	43,542	32,293	33,674	49,947	27,031
Operating expenses:					
Research and development	15,085	17,017	22,783	22,583	21,884
Marketing and sales	10,435	11,514	13,064	16,218	13,002
General and administrative	11,009	9,229	11,290	9,948	12,281
Restructuring charges	393	1,588			
Total operating expenses	36,922	39,348	47,137	48,749	47,167
Income (loss) from operations	6,620	(7,055)	(13,463)	1,198	(20,136)
Gain on sale of long-term investment	1,729				
Gain on sale of marketable securities	398				
Interest and other income (expense), net	24	(434)	256	1,130	1,280
Income (loss) before provision for income taxes, equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	8,771	(7,489)	(13,207)	2,328	(18,856)
Provision for income taxes	46	91	10,416	37	102
Income (loss) before equity in net earnings (loss) of affiliated companies and cumulative effect of change in accounting principle	8,725	(7,580)	(23,623)	2,291	(18,958)
Equity in net earnings (loss) of affiliated companies	48	175	498	2	(1,489)
Income (loss) before cumulative effect of change in accounting principle	8,773	(7,405)	(23,125)	2,293	(20,447)
Cumulative effect of change in accounting principle, net of \$0 tax				(1,785)	
Net income (loss)	\$ 8,773	\$ (7,405)	\$ (23,125)	\$ 508	\$ (20,447)
Net earnings (loss) per share:					
Basic					
Earnings (loss) before cumulative effect of change in accounting principle	\$ 0.63	\$ (0.54)	\$ (1.70)	\$ 0.17	\$ (1.53)
Cumulative effect of change in accounting principle				(0.13)	
Basic earnings (loss) per share	\$ 0.63	\$ (0.54)	\$ (1.70)	\$ 0.04	\$ (1.53)
Diluted					
Earnings (loss) before cumulative effect of change in accounting principle	\$ 0.62	\$ (0.54)	\$ (1.70)	\$ 0.17	\$ (1.53)
Cumulative effect of change in accounting principle				(0.13)	
Diluted earnings (loss) per share	\$ 0.62	\$ (0.54)	\$ (1.70)	\$ 0.04	\$ (1.53)

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Weighted average common shares outstanding					
Basic	13,887	13,710	13,615	13,507	13,353
Diluted	14,127	13,710	13,615	13,754	13,353

Pro forma amounts assuming retroactive effect of change in accounting principle related to revenue recognition: (1)

Net revenues				\$ 100,183	\$ 61,966
Net income (loss)				\$ 2,293	\$ (20,700)
Basic earnings (loss) per share				\$ 0.17	\$ (1.55)
Diluted earnings (loss) per share				\$ 0.17	\$ (1.55)

	April 30,				
	2004	2003	2002	2001	2000
(in thousands)					
<b>Balance Sheet Data:</b>					
Cash and cash equivalents	\$ 41,560	\$ 21,476	\$ 26,108	\$ 29,220	\$ 35,001
Working capital	72,972	50,079	53,669	71,958	65,710
Total assets	108,475	101,116	114,751	146,707	132,870
Long-term debt, less current portion	3,608	10,082	10,715	11,339	11,950
Total stockholders' equity	\$ 86,169	\$ 74,797	\$ 83,322	\$ 104,664	\$ 101,872

- (1) In fiscal year 2001, the Company recorded a non-cash charge of \$1.8 million, net of \$0 taxes, or \$0.13 per diluted share to reflect the cumulative effect of the accounting change as of May 1, 2000 related to the adoption of Staff Accounting Bulletin No. 101, Revenue Recognition in Financial Statements. The pro forma results for the periods presented prior to fiscal 2001 above were calculated assuming the accounting change was made retroactively to those periods.

## ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following discussion of our financial condition and results of operations should be read together with the description of business, financial statements and the related notes of ADE which appear elsewhere in this annual report. The following discussion contains forward-looking statements that reflect ADE's plans, estimates and beliefs. Our actual results could differ materially from those discussed below and in the forward-looking statements appearing elsewhere in this annual report.*

### Overview

ADE was incorporated in 1967 to develop and market certain advanced concepts and designs in capacitance and other measurement technologies suitable for industrial applications requiring precise, reliable, damage-free and repeatable measurements. Our products have evolved from single instruments used in off-line engineering analysis to multi-function systems for automated in-line monitoring of process-induced defects throughout the semiconductor wafer, device and magnetic data storage manufacturing processes. We operate three major business segments, the Semiconductor Systems Group (SSG), ADE Phase Shift (PST) and ADE Technologies (ATI). The Semiconductor Systems Group manufactures multifunctional semiconductor metrology and automation systems and optical wafer defect inspection equipment used to detect particles and other defects on silicon wafer surfaces. ADE Phase Shift manufactures high-performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics industries. ADE Technologies manufactures high precision magnetic characterization and non-contact dimensional metrology gauging systems primarily for the magnetic data storage and semiconductor manufacturing industries.

The Company's markets are cyclical. Beginning in fiscal year 2002, the Company experienced decreased demand for its products in all business segments as a result of the downturn in the semiconductor wafer and device manufacturing industries as well as the data storage industry. Consequently, the Company experienced reduced order levels and revenues during fiscal year 2002 and early fiscal 2003. In response to the industry downturn, the Company underwent cost reduction measures, including headcount reductions, and focused its research and development activities on projects to put the Company in the best possible position for the next wave of capital spending in the semiconductor wafer and device manufacturing industries as well as the magnetic data storage industry. Beginning in fiscal year 2003 and continuing through fiscal year 2004, the Company has experienced steady increases in quarterly orders, revenue and backlog. As a result, the Company has achieved profitability, on a quarterly basis, since the third quarter of fiscal year 2003. These results were due in part to increased order activity from Asia during fiscal year 2003 and 2004 as well as the aforementioned cost reduction measures. However, the Company makes no assurances that the order, revenue, backlog and profit levels can be sustained in future periods.

## Restructurings

During the first quarter of fiscal 2004, as a result of continued cost cutting initiatives, the Company recorded a restructuring charge of \$393,000, which consisted primarily of severance expenses for 20 terminated employees. The employees were terminated from various functional areas within the Company's Semiconductor Systems and ADE Technologies business segments. The majority of all the severance payments from the first quarter restructuring were made by the end of fiscal year 2004. In connection with the first quarter restructuring, the Company did not renew its lease at its Bethel, Connecticut facility, which expired in August 2003. Prior to the end of the first quarter, the operations of the Bethel facility were relocated to the Westwood, Massachusetts and Tucson, Arizona facilities.

During the first quarter of fiscal 2003, the Company implemented selective headcount reductions and closed three satellite offices in response to the prolonged downturn in the semiconductor wafer and device manufacturing and magnetic data storage industries. The Company recorded a restructuring charge of \$877,000, which consisted of \$679,000 in employee severance expenses for the 39 terminated employees spread across all functional areas of the Company and \$198,000 related to the closing of the satellite offices, which primarily represents future lease obligations on the vacated offices. When applicable, anticipated future sublease income relating to vacated offices was offset against the charge for the remaining lease payments.

During the second quarter of fiscal 2003, as a result of the continued downturn in the semiconductor wafer and device manufacturing and magnetic data storage industries, the Company recorded a restructuring charge of \$711,000, which consisted primarily of severance expenses for the 41 terminated employees across all segments and various functional areas of the Company.

On August 29, 2002, an agreement was entered into between the Company and its former Chief Executive Officer, Robert C. Abbe. Under the terms of the agreement, ADE agreed to pay a total of \$1.1 million over a three year period, beginning in September 2002, for severance and consulting services. The Company recorded a restructuring charge of \$307,000 for the severance portion of Mr. Abbe's agreement, which was paid through September 2003. This amount is included in the \$711,000 discussed above. The consulting portion of the agreement was expensed as incurred.

Below is a table summarizing the activity related to the restructuring accrual for the years ended April 30, 2004 and 2003:

	<u>Severance</u>	<u>Office Closures</u>	<u>Total</u>
	(in thousands)		
Restructuring accrual	\$ 1,380	\$ 208	\$ 1,588
Cash payments	(1,260)	(163)	(1,423)
	<u>120</u>	<u>45</u>	<u>165</u>
Balance at April 30, 2003	120	45	165
Restructuring accrual	393		393
Cash payments	(505)	(45)	(550)
	<u>8</u>	<u>8</u>	<u>8</u>
Balance at April 30, 2004	\$ 8	\$ 8	\$ 8

## Sale of Long-term Investment

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On July 24, 2003, the Company entered into an agreement to sell the majority of its 50% ownership in JAL to Kanematsu Electronics, Ltd., the other 50% owner of JAL. The Company received proceeds of \$4.0 million and realized a gain of \$1.7 million from this transaction. The Company retained a 9% ownership interest in JAL. Prior to the transaction, the Company accounted for its investment in JAL under the equity method. As a result of the decrease in both ownership and influence over the affairs of JAL, the Company accounts for its remaining 9% interest under the cost method.

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The \$1.7 million gain on the transaction was calculated as follows:

ADE shares held prior to sale	1,500	50%
KEL shares held prior to sale	1,500	50%
Total ownership shares	3,000	100%
Shares sold by ADE	1,230	41%
Shares retained by ADE	270	9%
	<b>(in thousands)</b>	
Book value of ADE investment at 4/30/03	\$ 3,722	
Less: Dividend received 7/10/03	(1,000)	
Add: Income from affiliate April-June	48	
Book value of ADE investment before sale	\$ 2,770	
Book value per share before sale	\$ 1.85	
Book value of shares sold	\$ 2,271	
Proceeds from sale	\$ 4,000	
Gain on sale of 41% ownership	\$ 1,729	

Prior to July 24, 2003, when the Company was accounting for its investment in JAL under the equity method, the revenue from sales to JAL, which had not in turn been sold by JAL to unrelated third parties, was eliminated and the related profit on such sales was recorded as deferred income on sales to affiliate. As a result of the reduction of the Company's 50% investment in JAL to 9% and the change in accounting method for the remaining investment to the cost method, the Company recognized approximately \$6.4 million of system and parts revenue in its statement of operations that otherwise may have been deferred revenue on the balance sheet as of July 31, 2003. Cost of revenue, systems and parts in the statement of operations increased by \$2.5 million during the quarter ended July 31, 2003 as a result of the sale of part of the Company's JAL investment. Therefore, gross profit in the statement of operations increased by \$3.9 million during the same period.

### Sale-leaseback

On July 29, 2003, the Company entered into an agreement to sell and leaseback its headquarters site in Westwood, Massachusetts, which resulted in a deferred gain of \$1.7 million. The Company used \$3.8 million of the approximately \$10.1 million in proceeds, less transaction costs, from the transaction to retire its 1996 Industrial Development Bond (the 1996 Bond) and terminated the related letter of credit. On July 31, 2003, the Company used approximately \$3.0 million of the proceeds to retire its 1997 Industrial Development Bond (the 1997 Bond), which resulted in \$2.7 million of restricted cash becoming available for general corporate purposes. As part of this transaction, the Company entered into a lease agreement with a 15 year term and annual rent payments increasing from approximately \$1.0 million at the beginning of the lease term to approximately \$1.3 million by the end of the lease term. The lease has been classified as an operating lease and the gain of \$1.7 million on the transaction has been deferred and is being amortized as a reduction of rent expense on a straight-line basis over the term of the lease. The total rent expense from the lease is being amortized on a straight-line basis. In addition, as required by the lease agreement, \$0.6 million of cash has been restricted as a security deposit on the building.

### Critical Accounting Policies, Significant Judgments and Estimates



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The discussion and analysis of the Company's financial condition and results of operations are based upon its 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 management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures at the date of and for the periods reflected in the Company's financial statements. On an on-

going basis, management evaluates its estimates and judgments, including those related to bad debts, inventories, intangible assets, income taxes, and warranty obligations. Management bases its estimates and judgments on historical experience and on various other factors 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. The Company considers certain accounting policies related to revenue recognition and allowance for doubtful accounts, inventory valuation, accounting for income taxes, valuation of goodwill and software and the accounting for leases to be critical policies due to the estimates and judgments involved in each.

#### *Revenue Recognition and Allowance for Doubtful Accounts*

The Company's revenue recognition policy complies with SEC Staff Accounting Bulletin No. 104 (SAB 104), Revenue Recognition in Financial Statements. The Company recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectibility is reasonably assured. The Company's standard customer arrangement includes a signed purchase order, in which it offers payment terms of 30 to 90 days, no right of return of delivered products and a twelve month warranty. The Company assesses whether the fee associated with its revenue transactions is fixed or determinable based on the payment terms associated with the transaction. If a significant portion of the fee is due after the Company's normal payment terms, 30 to 90 days, it determines that the fee is not fixed or determinable. In these cases, the Company recognizes revenue as the fees become due. The Company assesses collectibility based on the credit worthiness of the customer and past transaction history. The Company performs on-going credit evaluations of its customers and does not require collateral from its customers. For many of the Company's international customers, it requires that an irrevocable letter of credit be issued by the customer before the purchase order is accepted. If the Company determines that collection of a fee is not reasonably assured, it defers the fee and recognizes the revenue at the time that collection becomes reasonably assured, which is generally upon the receipt of cash.

For some of the Company's sales transactions, a portion, usually 10%, of the fee is not due until installation occurs and the customer accepts the product. The other 90% of the fee is normally due 30 to 90 days after shipment. If the Company has met defined customer acceptance experience levels with a specific type of product, these transactions are accounted for as multiple-element arrangements with the deferral of the portion of the fee not due until installation is complete and customer acceptance has occurred. Management of the Company must make a determination of what constitutes an appropriate experience level with a product. This determination is based on, but not limited to, the extent to which a product contains significantly new technology, the number of similarly configured products previously delivered and the Company's experience with a particular customer. For new products, the Company must obtain at least three acceptances before it will recognize the 90% portion of the fee upon shipment. All other sales with customer acceptance provisions are recognized as revenue upon customer acceptance. The portion of the fee related to the installation of the product and customer training is classified as service revenue.

The Company's transactions frequently involve the sales of systems and services under multiple element arrangements. Revenue under multiple element arrangements is allocated to all elements except systems based upon the fair value of those elements. The amounts allocated to training are based upon the price charged when this element is sold separately and unaccompanied by the other elements. The amount allocated to installation revenue is based upon hourly rates and the estimated time to complete the service. The amount allocated to system and parts is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered elements, based on their fair values, with the remainder being allocated to system revenue.

The Company accrues for anticipated warranty costs upon shipment. Service revenue is recognized as the services are performed provided collection of the related receivable is probable. Service contract revenue is recognized ratably over the contractual periods in which the services are provided. Revenue from software licenses is recognized when an agreement has been executed, software has been delivered, fees are fixed or determinable and collection of the related receivable is probable.

Revenue from systems sales to JAL, the Company's previously 50% owned affiliate and a distributor of the Company's products, by the SSG, ATI and PST segments was reflected in segment revenue during the period they were shipped by the respective segment, which could differ from the period the revenue was recognized for consolidated financial reporting purposes. Consolidated revenue on systems sales to JAL was recognized when the related product or software was shipped to and accepted by the end user of the product or software. As a result of the Company's decreased investment in JAL, beginning July 24, 2003, all sales to JAL are reflected in both segment and consolidated revenue in the same period.

The Company maintains an allowance for doubtful accounts based on a continuous review of customer accounts, payment patterns and specific collection issues. Where specific collection issues are identified, the Company records a specific allowance based on the amount that the Company believes will be collected. For accounts where specific collection issues are not identified, the Company will record a reserve based on the age of the receivable and historical collection patterns.

#### *Inventory Valuation*

Inventories are valued at the lower of cost or market, cost being determined on a first-in, first-out basis. Management evaluates the need to record adjustments for impairment of inventory on a monthly basis. The Company's policy is to assess the valuation of all inventories, including raw materials, work-in-process, finished goods and spare parts. Inventory that, in the judgment of management, is obsolete or in excess of the Company's estimated usage is written-down to its estimated market value, if less than its cost. Inherent in the estimates of market value are management's estimates related to current economic trends, future demand for the Company's products, and technological obsolescence. Significant management judgments must be made when establishing the reserve for obsolete and excess inventory. If the Company's judgments and estimates relating to obsolete and excess inventory prove to be inadequate, its financial results could be materially adversely affected in future periods. If the inventory value is written down to its net realizable value, and subsequently there is an increased demand for the inventory at a higher value, the increased value of the inventory is not realized until the inventory is sold.

#### *Accounting for Income Taxes*

The Company records income taxes using the asset and liability method. Deferred income tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective income tax bases, and operating loss and tax credit carryforwards. The Company's financial statements contain certain deferred tax assets, which have arisen primarily as a result of operating losses incurred in prior years, as well as other temporary differences between book and tax accounting. Statement of Financial Accounting Standards No. 109, Accounting for Income Taxes, requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. Significant management judgment is required in determining the Company's provision for income taxes, its deferred tax assets and liabilities and any valuation allowance recorded against its net deferred tax assets. The Company evaluates the weight of all available evidence to determine whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. As of April 30, 2004, the Company has a valuation allowance against the full amount of its deferred tax assets. The Company recorded a full valuation allowance during fiscal 2002 as described in Note 15. The decision to record the valuation allowance required significant judgment. Had the Company not recorded this allowance, it would have reported materially different results. If the realization of deferred tax assets in the future is considered more likely than not, an adjustment to the deferred tax assets would increase net income in the period such determination was made. The amount of the deferred tax asset considered realizable is based on significant estimates, and it is at least reasonably possible that changes in these estimates in the near term could materially affect the Company's financial condition and results of operations. If the Company continues to generate profits in fiscal 2005, it is possible that all, or a portion, of the valuation allowance will be released in fiscal 2005. The Company's effective tax rate may vary from period to period based on changes in estimated taxable income or loss, changes to the

valuation allowance, changes to federal, state or foreign tax laws, and deductibility of certain costs and expenses by jurisdiction.

*Valuation of Goodwill and Software*

Intangible assets consist of \$1.3 million of goodwill obtained through the acquisition of the Semiconductor Solutions Division of LPA Software, Inc. ( SSD ) in September 1997 as well as \$0.7 million of capitalized license fees, net of amortization, for software included in the Company's products. In July 2001, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 142 ( SFAS 142 ),

Goodwill and Other Intangible Assets, which was effective for the Company on May 1, 2002. SFAS 142 requires, among other things, the discontinuance of goodwill amortization and includes provisions for the reclassification of certain existing recognized intangibles as goodwill, reassessment of the useful lives of existing recognized intangibles, and reclassification of certain intangibles out of previously reported goodwill. In accordance with this statement, the Company discontinued the amortization of its net goodwill of \$1.3 million on May 1, 2002. In addition, the Company was required to perform a transitional impairment test for goodwill under SFAS 142. The impairment test under SFAS 142 uses a two-step process. The first step compares the fair value of the reporting unit with the unit's carrying value, including goodwill. If the carrying value of the reporting unit is greater than fair value, the unit's goodwill may be impaired, and the second step must be completed to measure the amount of the goodwill impairment charge, if any. In the second step, the implied fair value of the reporting unit's goodwill is compared with the carrying amount of the unit's goodwill. If the carrying amount is greater than the implied fair value, the carrying value of the goodwill must be written down to its implied fair value.

The Company is required to perform impairment tests under SFAS 142 annually and whenever events or changes in circumstances suggest that the goodwill may be impaired. Factors the Company considers important that could trigger the impairment review include:

significant underperformance relative to historical or projected future operating results

significant negative industry or economic trends

significant adverse change in legal factors or in the business climate

significant decline in the Company's stock price for a sustained period

significant decline in the Company's technological value as compared to the market

the Company's market capitalization relative to net book value

unanticipated competition.

During the fourth quarter in each of the fiscal years ended April 30, 2004 and 2003, the Company performed its annual impairment test in accordance with SFAS 142 and determined that the carrying value of its goodwill was not impaired.

Net capitalized license fees of \$0.7 million for software included in the Company's products are amortized at the greater of 1) the ratio that current gross revenue for the related products bears to the total current and anticipated future gross revenue for those products or 2) on a

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straight-line basis over its estimated useful life. At each quarter-end, the carrying value of the software is compared to net realizable value ( NRV ). NRV is the estimated future gross revenues from products that incorporate the software reduced by the estimated future costs of disposal. If NRV is less than the carrying value, the excess is written-off and NRV becomes the new carrying value of the software.

Significant management judgments and estimates must be made when establishing criteria for future cash flows, estimating reporting unit fair value and assessing impairment. If the Company's judgments and estimates relating to goodwill and software prove to be inadequate, an asset may be determined to be impaired and the Company's financial results could be materially adversely impacted. Likewise, if a future event or circumstance

indicates that an impairment assessment is required and, through the performance of that assessment, an asset is determined to be impaired, the Company's financial results could be materially and adversely impacted in future periods.

#### *Accounting for Leases*

On July 29, 2003, the Company entered into a lease agreement for its corporate headquarters in Westwood, Massachusetts. The classification of this lease as an operating lease involved a significant judgment by the Company's management with respect to the Company's incremental borrowing rate. At the date of lease inception, the incremental borrowing rate is a significant element of the calculation in one of the four tests that must be performed to determine if a lease should be classified as an operating lease or a capital lease. The Company's management determined the Company's incremental borrowing rate based on an analysis of its negotiations with various financial institutions, the implicit interest rate in the lease for the Westwood, Massachusetts building and an estimate of the current yield on debt financing of comparable companies in the public securities markets. Because the criteria necessary for classification as a capital lease were not met, the lease was accounted for as an operating lease and the leased building and related liability have not been recorded in the Company's consolidated balance sheet. If the Company's incremental borrowing rate was determined to be lower than what was determined by the Company's management, the lease could have met the criteria for classification as a capital lease, which would have resulted in an asset of approximately \$8.6 million and a liability of approximately \$8.6 million being recorded in the Company's consolidated balance sheet.

#### *Off-Balance Sheet Arrangements*

The Company has not created, and is not party to, any special-purpose or off-balance sheet entities for the purpose of raising capital, incurring debt or operating parts of its business that are not consolidated into its financial statements. The Company does not have any arrangements or relationships with entities that are not consolidated into its financial statements that are reasonably likely to materially affect its liquidity or the availability of capital resources, except as set forth below under *Liquidity and Capital Resources*.

### **Results of Operations**

The following table presents the percentage of total revenue for the respective line items in ADE's consolidated statements of operations.

	<b>Year ended April 30,</b>		
	<b>2004</b>	<b>2003</b>	<b>2002</b>
Revenue	100.0%	100.0%	100.0%
Cost of revenue	50.8%	54.7%	58.8%
Gross profit	49.2%	45.3%	41.2%
Operating expenses:			
Research and development	17.0%	23.9%	27.9%
Marketing and sales	11.8%	16.1%	16.0%
General and administrative	12.4%	13.0%	13.8%
Restructuring charges	0.0%	2.2%	0.0%
Income (loss) from operations	7.5%	(9.9)%	(16.5)%
Gain on sale of long-term investment	2.0%	0.0%	0.0%
Gain on sale of marketable securities	0.0%	0.0%	0.0%

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Interest and other income (expense), net	0.0%	(0.6)%	0.3%
Equity in net earnings of affiliated companies	0.0%	0.0%	0.6%
Provision for income taxes	0.0%	0.0%	12.7%
Net income (loss)	9.9%	(10.3)%	(28.3)%

### **Fiscal Year Ended April 30, 2004 Compared to Fiscal Year Ended April 30, 2003**

*Systems and parts revenue.* Systems and parts revenue increased 26% to \$78.7 million in fiscal 2004 from \$62.7 million in fiscal 2003. Revenue in the SSG segment increased 16% to \$51.2 million in fiscal 2004

compared to \$44.0 million in fiscal 2003. The increase in revenues from the Company's products in the SSG segment was due to increased demand for the Company's products, particularly in Japan and Asia, as semiconductor wafer manufacturers have increased capacity in their production of both 200mm and 300mm wafers. Revenue in the PST segment increased 50% to \$18.9 million in fiscal 2004 compared to \$12.6 million in fiscal 2003. The increase in revenue from the PST segment was due primarily to industry acceptance of and the resulting increase in demand for its semiconductor industry products.

The magnetic data storage industry has experienced extreme pricing pressure over the years, consolidation and excess supply in many data storage market segments, which has resulted in reduced production and capital equipment purchases. More recently, the magnetic data storage industry has shown increased interest in the Company's magnetic data storage industry products. Consequently, revenue from the products that are marketed to the data storage industry by the Company's ATI segment increased 24% to \$8.9 million in fiscal 2004 compared to \$7.2 million in fiscal 2003.

As a result of the Company's sale of the majority of its 50% ownership in JAL on July 24, 2003, the Company recorded revenue (systems and parts revenue) in its statement of operations during the first quarter ended July 31, 2003 of approximately \$6.4 million that may otherwise have been deferred revenue on the balance sheet as of July 31, 2003. Cost of revenue, systems and parts in the statement of operations increased by \$2.5 million as a result of the JAL sale. Therefore, gross profit in the statement of operations increased by \$3.9 million during the first quarter of fiscal 2004 due to the margin from systems and parts sales recognized as a result of the sale of part of the Company's JAL investment. Prior to the transaction, the Company accounted for its investment in JAL under the equity method. As a result of the decrease in both ownership and influence over the affairs of JAL, the Company will account for its remaining 9% interest under the cost method. Because JAL was an equity method investee prior to the sale on July 24, 2003, revenue from sales to JAL, which had not in turn been sold by JAL to unrelated third parties, was eliminated and the related profit on such sales was recorded to deferred income on sales to affiliate. The change from the equity method to the cost method of accounting for the JAL investment resulted in the recognition of all deferred revenue and profit from sales to JAL as of the date of the sale of the majority of ADE's interest in JAL.

A breakdown of the Company's total revenues by industry is as follows:

	<b>Year Ended April 30,</b>	
	<b>2004</b>	<b>2003</b>
Wafer	81%	75%
Device / OEM	8%	12%
Magnetic Data Storage	11%	13%
<b>Total</b>	<b>100%</b>	<b>100%</b>

The Company's total revenues by region are distributed as follows:

	<b>Year ended April 30,</b>	
	<b>2004</b>	<b>2003</b>
United States	14%	17%
Japan	50%	35%



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Asia	22%	32%
Europe	14%	16%
	<u>        </u>	<u>        </u>
Total	100%	100%
	<u>        </u>	<u>        </u>

For the first quarter of fiscal 2005, the Company expects consolidated revenue to increase by a range of 6-12% from fourth quarter revenue. However, the Company can make no assurances that the expected increase in revenue will occur or, if it does, that it can be sustained for the remainder of fiscal 2005.

*Service revenue.* Service revenue increased 15% to \$9.9 million in fiscal 2004 from \$8.5 million in fiscal 2003. The Company's service revenue consists of fees for installation, training, product maintenance and technical support services. The majority of the Company's service revenue is derived from the SSG segment. The increase is primarily due to service calls to customers bringing equipment back on-line to increase capacity.

*Gross profit systems and parts.* Gross profit increased to 57% in fiscal 2004 from 52% in fiscal 2003. The increase in gross profit was due to increased gross profit in the SSG segment as a result of increased volume combined with factory overhead cost reductions undertaken over the past fiscal year. Also contributing to the increase in gross profit was an increase in the gross profit of the ATI segment due to increased volume as described in the discussion of system and parts revenue combined with cost reduction measures taken over the past fiscal year. The increase in gross profit was slightly offset by a slight decrease in the gross profit of the PST segment as a result of increased overhead expenses necessary to meet increased production levels.

*Gross profit service.* Gross profit decreased to (13%) in fiscal 2004 from (6%) in fiscal 2003. The decreased gross profit was the result of increased payroll expenses in the Company's service organization as well as increased material costs during fiscal 2004.

*Research and Development.* Research and development expense in fiscal 2004 decreased 11% to \$15.1 million from \$17.0 million in fiscal 2003 and decreased as a percentage of revenue to 17% in fiscal 2004 from 24% in fiscal 2003. The decrease in expense resulted primarily from a decrease in payroll of \$2.2 million and a decrease in consulting expense of \$0.1 million as previous cost reduction measures taken by the Company take effect. The decrease in payroll and consulting expenses was partially offset by an increase of \$0.4 million of project material expenses. The Company continues to invest in its semiconductor wafer and device industry products as well as new products for the magnetic storage industry, including those that measure the magnetic properties of materials used in manufacturing disk drives. The decrease in expense as a percentage of revenues reflects the cost reduction measures mentioned above as well as the increase in revenues. The Company expects research and development expense over the short term to be at or near current levels on a dollar basis in order to capitalize on the next wave of worldwide capital spending, which is focused on 300mm wafer production.

*Marketing and Sales.* Marketing and sales expense decreased 9% to \$10.4 million in fiscal 2004 from \$11.5 million in fiscal 2003, and decreased as a percentage of revenue to 12% in fiscal 2004 and from 16% in fiscal 2003. The decreased expense resulted from a decrease in commissions expense of \$0.7 million on sales made through internal and external sales representatives. Also contributing to the decrease in expense was decreased payroll expense of \$0.3 million and decreased travel expenses of \$0.2 million in all segments of the Company. The mix of sales channels through which the Company's products are sold may have a significant impact on the Company's marketing and sales expense and the results in any period may not be indicative of marketing and sales expense for future periods.

*General and Administrative.* General and administrative expenses increased 19% to \$11.0 million in fiscal 2004 from \$9.2 million in fiscal 2003 and decreased as a percentage of revenue to 12% in fiscal 2004 from 13% in fiscal 2003. Expense increased primarily as a result of an increased payroll related expenses of \$1.0 million and an increase in legal expenses of \$0.8 million associated with the patent infringement lawsuit with KLA, which went to trial at the end of January 2004.

*Interest and Other Income.* Interest and other income was \$0.5 million in fiscal 2004 compared to \$0.4 million in fiscal 2003. The increase in interest and other income was due primarily to an increase in other income from bad debt recoveries during fiscal 2004.

*Interest Expense.* Interest expense was \$0.4 million in fiscal 2004 compared to \$0.8 million in fiscal 2003. The decrease in interest expense was primarily due to the Company's retirement of its 1996 and 1997 Industrial Development Bonds in the first quarter of fiscal 2004, which resulted in a decrease of interest expense for fiscal 2004 of \$0.4 million compared to fiscal 2003.



*Provision for Income Taxes.* The provision for income taxes was \$46,000 in fiscal 2004 compared to \$91,000 in fiscal 2003. The provision for income taxes in fiscal 2004 consists of federal and state alternative minimum taxes and foreign income taxes, which were mostly offset by a federal income tax refund of \$367,000 for the years 1996 through 2000. As described in Note 15 to the consolidated financial statements, the Company has a full valuation allowance on its deferred tax assets at April 30, 2004. Significant management judgment is required in determining the Company's provision for income taxes, its deferred tax assets and liabilities and any valuation allowance recorded against its net deferred tax assets. The Company evaluates the weight of all available evidence to determine whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. If the realization of deferred tax assets in the future is considered more likely than not, an adjustment to the deferred tax assets would increase net income in the period such determination was made. The amount of the deferred tax asset considered realizable is based on significant estimates, and it is at least reasonably possible that changes in these estimates in the near term could materially affect the Company's financial condition and results of operations. If the Company continues to generate profits in fiscal 2005, it is possible that all, or a portion, of the valuation allowance will be released in fiscal 2005.

### **Fiscal Year Ended April 30, 2003 Compared to Fiscal Year Ended April 30, 2002**

*Systems and parts revenue.* Systems and parts revenue decreased 14% to \$62.7 million in fiscal 2003 from \$73.3 million in fiscal 2002. Revenue in the SSG segment decreased 20% to \$44.0 million in fiscal 2003 compared to \$55.3 million in fiscal 2002. Decreased sales of the Company's products in the SSG segment reflected a decrease in demand for capital equipment in the semiconductor wafer and device industries as a result of the current severe down cycle. Revenue in the PST segment increased 20% to \$12.6 million in fiscal 2003 compared to \$10.5 million in fiscal 2002. The increase in revenue from the PST segment was due primarily to industry acceptance and demand for its semiconductor industry products.

Wafer manufacturers' capital equipment purchases have been focused on advanced industry requirements rather than on capacity expansion, which has resulted in technology purchases of the Company's next generation of products. However, wafer manufacturers have been slowly adding capacity and the Company has experienced an increase in shipments of legacy products as a result of these capacity related purchases. The Company sells its semiconductor products to both wafer and device manufacturers. Historically, the Company's semiconductor revenue has been derived more from wafer manufacturers than device manufacturers. An increase in short-term chip demand or increases in semiconductor market capital expenditures is expected to impact device manufacturers prior to wafer manufacturers as wafer manufacturers are further down on the overall semiconductor industry supply chain.

The data storage industry has experienced extreme pricing pressure, consolidation and excess supply in many data storage market segments, which has resulted in reduced production and capital equipment purchases. Consequently, revenue from the products that are marketed to the data storage industry by the Company's ATI segment decreased 20% to \$7.2 million in fiscal 2003 compared to \$8.9 million in fiscal 2002. The decrease in revenue is due primarily to decreased shipments of the Company's magnetic storage products during fiscal 2003.

A breakdown of the Company's total revenues by industry is as follows:

	<u>Year Ended April 30,</u>	
	<u>2003</u>	<u>2002</u>
Wafer	75%	69%
Device / OEM	12%	15%
Magnetic Data Storage	13%	16%
	<u>      </u>	<u>      </u>
Total	100%	100%



The Company's total revenues by region are distributed as follows:

	Year ended April 30,	
	2003	2002
United States	17%	23%
Japan	35%	35%
Asia	32%	25%
Europe	16%	17%
<b>Total</b>	<b>100%</b>	<b>100%</b>

*Service revenue.* Service revenue was \$8.5 million in both fiscal 2003 and fiscal 2002. The Company's service revenue consists of fees for installation, training, product maintenance and technical support services. The majority of the Company's service revenue is derived from the SSG segment.

*Gross profit systems and parts.* Gross profit increased to 52% in fiscal 2003 from 48% in fiscal 2002. The increase in gross profit was due to increased gross profit in the SSG segment as a result of factory overhead cost reductions undertaken over the past fiscal year. Also contributing to the increase in gross profit was an increase in the gross profit of the PST segment due to increased volume and product mix as described in the discussion of system and parts revenue.

*Gross profit service.* Gross profit improved to (6%) in fiscal 2003 from (14%) in fiscal 2002. The improved gross profit was due to overhead cost reductions undertaken over the past fiscal year.

*Research and Development.* Research and development expense in fiscal 2003 decreased 25% to \$17.0 million from \$22.8 million in fiscal 2002 and decreased as a percentage of revenue to 24% from 28%. The decrease in expense resulted primarily from a decrease in payroll, consulting and project material expenses in all segments, which were part of the overall cost reduction measures taken by the Company over the past fiscal year. The Company continues to invest in its semiconductor wafer and device industry products as well as new products for the magnetic storage industry, including those that measure the magnetic properties of materials used in manufacturing disk drives. The decrease in expense as a percentage of revenues reflects the cost reduction measures mentioned above. The Company expects research and development expense over the short term to be at or near current levels as a percentage of revenues in order to capitalize on the next wave of worldwide capital spending, which is expected to be focused on 300mm wafer production.

*Marketing and Sales.* Marketing and sales expense decreased 12% to \$11.5 million in fiscal 2003 from \$13.1 million in fiscal 2002, and remained consistent as a percentage of revenue at 16% in both fiscal 2003 and fiscal 2002. The decreased expense resulted from a decrease in commissions expense on sales made through internal and external sales representatives due to the decrease in sales during fiscal 2003. Also contributing to the decrease in expense was decreased payroll expense and discretionary spending including travel and advertising in all segments of the Company. The mix of sales channels through which the Company's products are sold may have a significant impact on the Company's marketing and sales expense and the results in any period may not be indicative of marketing and sales expense for future periods.

*General and Administrative.* General and administrative expenses decreased 18% to \$9.2 million in fiscal 2003 from \$11.3 million in fiscal 2002 and decreased as a percentage of revenue to 13% in fiscal 2003 from 14% in fiscal 2002. Expense decreased primarily due to decreased

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payroll and benefits related expenses as a result of cost cutting measures taken over the past year. This decrease in payroll related expenses was slightly offset by an increase in legal and patent expense of \$0.4 million primarily as a result of the ongoing litigation with KLA. Also included in fiscal 2003 expenses was an impairment charge of \$0.2 million related to the Company's Newton, Massachusetts property, which has been classified as held for sale in the Company's consolidated balance sheet. The impairment charge was based on the Company's best estimate of the current value of the property less selling costs. It is possible that the Company could record further impairment on this property if market conditions in the real estate market were to deteriorate.

*Interest and Other Income.* Interest and other income was \$0.4 million in fiscal 2003 compared to \$1.1 million in fiscal 2002. The decrease in interest and other income was due primarily to a decrease in invested cash balances as well as a decrease in interest rates during fiscal 2003 compared to fiscal 2002.

*Interest Expense.* Interest expense was \$0.8 million in both fiscal 2003 and fiscal 2002. The Company's interest expense is primarily associated with the Industrial Development Bonds used to finance the acquisition and renovation of our corporate headquarters and SSG manufacturing facility in Westwood, Massachusetts, the headquarters and manufacturing facility of ATI in Newton, Massachusetts and the construction of the PST headquarters and manufacturing facility in Tucson, Arizona. The interest rates on these bonds are fixed.

*Provision for Income Taxes.* The provision for income taxes was \$0.1 million in fiscal 2003 compared to \$10.4 million in fiscal 2002. The provision for income taxes in fiscal 2003 consists of state and foreign income taxes. The decrease in income taxes in fiscal 2003 compared to fiscal 2002 was due to an increase of \$10.6 million in the valuation allowance against the Company's deferred tax assets during fiscal 2002. The Company has deferred tax assets, which have arisen primarily as a result of operating losses incurred in prior years, as well as other temporary differences between book and tax accounting. Statement of Financial Accounting Standards No. 109, Accounting for Income Taxes, requires the establishment of a valuation allowance to reflect the likelihood of the realization of deferred tax assets. During the second quarter of fiscal 2002, as a result of that year's operating losses to date, anticipated additional operating losses for the third quarter of 2002, an expected operating loss for fiscal year 2002, and uncertainty as to the extent and timing of profitability in future periods, the Company recorded an additional valuation allowance to reserve the remaining deferred tax assets, resulting in income tax expense of \$10.6 million. The Company has a full valuation allowance for the full amount of its net deferred taxes. As of April 30, 2004, the Company has available unused operating loss carryforwards, which may be applied against future taxable income. Net operating loss carryforwards generated in fiscal 2000 and 2002 begin to expire in fiscal 2005 for state purposes and 2020 for federal purposes. The fiscal 2002 provision for income taxes was partially offset by a \$200,000 refund due to certain tax law changes.

### **Selected Consolidated Quarterly Operating Results**

The following table presents consolidated statement of operations data for each of the eight quarters in the period beginning May 1, 2002 and ending April 30, 2004. This information has been derived from ADE's unaudited consolidated financial statements. The unaudited financial statements have been prepared on the same basis as the audited financial statements and include all normal recurring adjustments considered necessary to present fairly this information when read in conjunction with ADE's annual audited financial statements and related notes appearing elsewhere in this annual report. Our quarterly revenue typically is derived from a relatively small number of customer orders. These customer orders may consist of multiple systems, each of which is priced between approximately \$100,000 and \$1,500,000. As a result, the timing of significant orders or a reduction in the number of systems shipped in a quarter could have a material effect on our revenue and results of operations for that quarter. The results for a particular quarter may also vary due to a number of other factors, including:

Economic conditions in the semiconductor and magnetic data storage industries

Product mix of our sales for the period

The sales distribution channel of our sales for the period

Competitive pricing pressures

Our ability to design, introduce and manufacture new products on a cost effective and timely basis



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Customer cancellations or rescheduled shipments

Production difficulties or the inability to obtain critical components resulting in delayed shipments

Seasonal factors such as customers' capital budget approval cycles.

These factors could have a material adverse effect on our results of operations. Significant levels of our expenses are fixed in advance and based in part on our expectations as to future revenue. As a consequence, any material shortfall in revenue in a given quarter could have a material adverse effect on our earnings.

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Quarter ended

	July 31, 2002	Oct. 31, 2002	Jan. 31, 2003	April 30, 2003	July 31, 2003	Oct. 31, 2003	Jan. 31, 2004	April 30, 2004
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(in thousands, except per share data, unaudited)

**Statement of Operations**

<b>Data:</b>								
Revenue	\$ 14,740	\$ 18,055	\$ 18,465	\$ 19,986	\$ 19,066	\$ 20,206	\$ 23,129	\$ 26,184
Cost of revenue	8,942	10,007	9,492	10,513	10,532	10,223	11,430	12,858
Gross profit	5,798	8,048	8,973	9,473	8,534	9,983	11,699	13,326
Operating expenses:								
Research and development	4,844	4,349	3,637	4,187	3,697	3,704	3,688	3,995
Marketing and sales	2,800	2,909	2,584	3,221	2,005	2,409	3,006	3,015
General and administrative	2,853	2,441	2,094	1,840	2,165	2,496	3,432	2,915
Restructuring charges	877	711			393			
Total operating expenses	11,374	10,410	8,315	9,248	8,260	8,609	10,126	9,925
Income (loss) from operations	(5,576)	(2,362)	658	225	274	1,374	1,573	3,401
Gain on sale of long-term investment					1,729			
Gain on sale of marketable securities							398	
Interest and other income (expense), net	(119)	(88)	(160)	(67)	(162)	58	61	66
Income (loss) before provision for (benefit from) income taxes and equity in net earnings (loss) of affiliated companies	(5,695)	(2,450)	498	158	1,841	1,432	2,032	3,467
Provision for (benefit from) income taxes	22	14	36	20	88	(273)	11	220
Income (loss) before equity in net earnings (loss) of affiliated companies	(5,717)	(2,464)	462	138	1,753	1,705	2,021	3,247
Equity in net earnings (loss) of affiliated companies	(64)	34	132	73	48			
Net Income (loss)	\$ (5,781)	\$ (2,430)	\$ 594	\$ 211	\$ 1,801	\$ 1,705	\$ 2,021	\$ 3,247
Basic earnings (loss) per share	\$ (0.42)	\$ (0.18)	\$ 0.04	\$ 0.02	\$ 0.13	\$ 0.12	\$ 0.15	\$ 0.23
Diluted earnings (loss) per share	\$ (0.42)	\$ (0.18)	\$ 0.04	\$ 0.02	\$ 0.13	\$ 0.12	\$ 0.14	\$ 0.23
Weighted average shares outstanding basic	13,679	13,695	13,721	13,747	13,768	13,875	13,934	13,972
Weighted average shares outstanding diluted	13,679	13,695	13,742	13,748	13,827	14,196	14,250	14,288

Quarter ended

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	<u>July 31,</u> <u>2002</u>	<u>Oct. 31,</u> <u>2002</u>	<u>Jan. 31,</u> <u>2003</u>	<u>April 30,</u> <u>2003</u>	<u>July 31,</u> <u>2003</u>	<u>Oct. 31,</u> <u>2003</u>	<u>Jan. 31,</u> <u>2004</u>	<u>April 30,</u> <u>2004</u>
<b>Percentage of Revenue:</b>								
Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of revenue	60.7%	55.4%	51.4%	52.6%	55.2%	50.6%	49.4%	49.1%
Gross profit	39.3%	44.6%	48.6%	47.4%	44.8%	49.4%	50.6%	50.9%
Operating expenses:								
Research and development	32.9%	24.1%	19.7%	20.9%	19.4%	18.3%	15.9%	15.3%
Marketing and sales	19.0%	16.1%	14.0%	16.1%	10.5%	11.9%	13.0%	11.5%
General and administrative	19.4%	13.5%	11.3%	9.2%	11.4%	12.4%	14.8%	11.1%
Income (loss) from operations	(37.8)%	(13.1)%	3.6%	1.1%	1.4%	6.8%	6.8%	13.0%

Our quarterly operating results can vary significantly due to a number of factors, including economic conditions in the semiconductor and magnetic data storage industries, the timing of shipments of orders to major customers, the mix of products sold and competitive pricing. Customers may cancel or reschedule shipments. Product shipments could be delayed by production difficulties or critical component inventory shortages. These factors could have a material adverse effect on our results of operations. As cost of revenue includes manufacturing overhead, which is relatively constant from quarter to quarter, gross margin can vary significantly from quarter to quarter due to varying levels of production and revenue. Marketing and sales expenses can vary from quarter to quarter based on a number of factors, including mix of sales channels, geographic mix and the timing of marketing events. There can be no assurance that we will be profitable in any future period.

### **Liquidity and Capital Resources**

At April 30, 2004, the Company had \$41.6 million in cash and cash equivalents and \$73.0 million in working capital compared with \$21.5 million and \$50.1 million, respectively, at April 30, 2003. In addition, the Company had \$0.6 million in restricted cash used as a security deposit for the Company's lease of its Westwood, Massachusetts headquarters.

Cash provided by operating activities for the year ended April 30, 2004 was \$8.6 million. This amount resulted from net income of \$8.8 million, adjusted for net non-cash charges of \$2.1 million and a \$2.3 million net increase in working capital accounts. Non-cash items primarily consisted of \$3.0 million of depreciation and amortization, \$1.7 million gain from the sale of long-term investments, \$0.4 million gain from the sale of marketable securities and \$0.4 million for a long-lived asset impairment charge related to the Company's Newton, Massachusetts property. One other adjustment to reconcile net income to net cash provided by operating activities was a \$1.0 million dividend received from the Company's affiliate, JAL.

The net increase in working capital of \$2.3 million was comprised of increases in accounts receivable of \$0.2 million, inventory of \$3.4 million, accounts payable of \$1.8 million and accrued expenses of \$1.8 million, as well as a decrease of \$2.3 million in deferred income on sales to affiliate.

The increase in accounts receivable resulted from the increased billings during fiscal 2004 compared to fiscal 2003. The increase in inventory was due to increased production in response to the increase in customer orders and backlog. The increase in accounts payable was primarily due to increased purchases of inventory. The increase in accrued expenses and other current liabilities was primarily due to an increase in accrued payroll, other accrued expenses and deferred revenue. The decrease in deferred income on sales to affiliate is due to the decrease in the Company's investment in JAL and the associated recognition of previously deferred revenue and profit on sales to JAL.

Cash provided by investing activities was \$16.0 million, and consisted primarily of a \$2.5 million decrease in restricted cash, net proceeds of \$9.8 million from the sale of the Company's headquarters building, \$4.0 million in proceeds from the sale of the majority of the Company's investment in JAL and \$0.5 million from the sale of marketable securities. The decrease in restricted cash of \$2.5 million was due to the retirement of the Company's 1997 Bond, which resulted in \$2.7 million of previously restricted cash being allowed for use for general corporate purposes and the release of \$0.4 million in restricted cash as a result of achieving certain profitability measures as stipulated in the covenants for the Company's 1999 Industrial Development Bond. These decreases in restricted cash were offset by \$0.6 million of restricted cash as a security deposit for the lease on the Company's headquarters building.

Cash used in financing activities was \$4.6 million which consisted of \$7.0 million in repayments of long-term debt, which were offset by \$2.4 million of aggregate proceeds from the issuance of common stock from the exercise of stock options and stock purchased through the Company's employee stock purchase plan. The repayments of debt primarily consisted of the retirement of the Company's 1996 and 1997 Bonds.

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Under Generally Accepted Accounting Principles ( GAAP ) in the United States, certain obligations and commitments are not required to be included in the consolidated balance sheet. These obligations and

commitments, while entered into in the normal course of business, may have a material impact on liquidity. The Company does not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As such, the Company is not exposed to any financing, liquidity, market or credit risk that could arise if the Company had engaged in such relationships. The following table discloses the Company's contractual payment obligations as of April 30, 2004. The operating lease and consulting agreement obligations are not included in the consolidated financial statements included in this annual report. The principal portion of the long-term debt is included in the consolidated financial statements. The long-term debt payments in the table below include both principal and interest. The unconditional purchase order obligations primarily represent open purchase orders for inventory, a significant portion of which is necessary to produce and ship orders from the Company's backlog.

The following table reflects future cash payments, including interest, due under current contractual obligations as of April 30, 2004:

	Payments due by period				Total
	(in thousands)				
	Less than 1 year	1-3 years	3-5 years	More than 5 years	
Long term debt obligations	\$ 372	\$ 744	\$ 3,568	\$	\$ 4,684
Operating lease obligations	1,654	3,036	2,263	11,561	18,514
Unconditional purchase obligations	8,544	878	31		9,453
Consulting agreement	214	89			303
<b>Total</b>	<b>\$ 10,784</b>	<b>\$ 4,747</b>	<b>\$ 5,862</b>	<b>\$ 11,561</b>	<b>\$ 32,954</b>

In April 1999, the Company issued a tax exempt Industrial Development Bond through the Industrial Development Authority of the County of Pima, Arizona. The face value of the 1999 bond (the 1999 bond) is \$4,500,000. The 1999 bond bears interest at a rate of 5.52% and provides for 50% of the principal to be paid over ten years from the date of issuance with the remaining 50% due in March 2009. Monthly payments of principal and accrued interest for the 1999 bond are approximately \$31,000. The proceeds of the 1999 bond were used to fund the construction of a new manufacturing facility in Tucson, Arizona. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of credit bears a fee of 1.5% of the outstanding bond balance. The agreement under which the letter of credit was issued is collateralized by a mortgage on the building and land. Under the terms of the letter of credit, the Company is required to comply with certain financial covenants. As of April 30, 2004, the Company was in compliance with these covenants.

The Company also issued tax exempt Industrial Development Bonds through the Massachusetts Industrial Finance Agency in December 1997 and June 1996. The face values of the 1997 Bond and the 1996 Bond were \$4,000,000 and \$5,500,000, respectively. The proceeds of the 1997 Bond were used to fund the acquisition and renovation of a manufacturing facility. The proceeds of the 1996 Bond were used to fund the acquisition and renovation of the manufacturing facility in the Company's headquarters site. In July 2003, the Company retired the 1997 Bond and the 1996 Bond with part of the proceeds from the sale and leaseback of the Company's corporate headquarters in Westwood, Massachusetts as discussed below.

On July 29, 2003, the Company entered into an agreement to sell and lease back its headquarters site in Westwood, Massachusetts. The Company used \$3.8 million of the \$9.8 million in net proceeds to retire the 1996 Bond. On July 31, 2003, the Company used \$3.0 million of the proceeds to retire the 1997 Bond.

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On June 25, 2004, the Company entered into a purchase and sale agreement with a buyer for the Newton property. The Company expects that the transaction will close in the fall of 2004. The selling price for the property, less selling costs, is approximately equal to the net book value of the property. The Company anticipates that the proceeds from this sale will be used for general corporate purposes.

The Company expects to meet its near-term working capital needs and capital expenditures primarily through available cash and cash equivalents, which will primarily be generated from sales to both existing and new customers. However, the Company can provide no assurance that it will be able to maintain its current customer base or acquire new customers.

### **Inflation**

To date, inflation has not had a significant impact on our operations.

### **ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

At April 30, 2004, the Company's exposure to market risk relates primarily to changes in interest rates on its investment portfolio. The Company's cash equivalents consist primarily of fixed income securities. The Company invests only with high credit quality issuers and does not use derivative financial instruments in its investment portfolio. We do not believe that a sharp increase or decrease in interest rates would have a material adverse impact on the fair value of our investment portfolio. The Company's long-term borrowings are at fixed interest rates.

In addition, a portion of the Company's business is conducted outside the United States through its foreign subsidiaries and an affiliate. The Company generally transacts business in international markets in United States currency, but pays its employees in local currencies. Accordingly, the Company is subject to exposure from adverse movements in foreign currency exchange rates.

### **ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

The information required by Item 8 is contained on pages F-1 through F-24 of this report.

### **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**

The term "disclosure controls and procedures" is defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These rules refer to the controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. As of the end of the period covered by this Form 10-K (the "Evaluation Date"), the Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's chief executive officer and chief financial officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures. Based upon that evaluation, the chief executive officer and chief financial officer have concluded that, as of



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the Evaluation Date, such disclosure controls and procedures were effective.

### (b) Changes in Internal Controls

The Company maintains a system of internal accounting controls that are designed to provide reasonable assurance that the Company's transactions are properly recorded, that the Company's assets are safeguarded against unauthorized or improper use and that the Company's transactions are properly recorded and reported. As part of the evaluation of the Company's disclosure controls and procedures, the Company evaluated its internal control over financial reporting. There have been no changes to the Company's internal control over financial reporting during the fourth fiscal quarter of 2004 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

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**PART III**
**ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT**

The information regarding directors required by this Item is included in the definitive Proxy Statement for the Company's 2004 Annual Meeting of Stockholders (the 2004 Proxy Statement), to be filed with the Commission on or about August 13, 2004 under Election of Directors and is incorporated herein by reference. The information regarding executive officers required by this Item is included in Part I of this Form 10-K.

**ITEM 11. EXECUTIVE COMPENSATION**

The information required by this Item is included in the 2004 Proxy Statement under Executive Compensation and is incorporated herein by reference (excluding, however, the Report on Executive Compensation and the Performance Graph contained in the 2004 Proxy Statement, which shall not be deemed incorporated herein).

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS**

Information regarding the security ownership of certain beneficial owners and management is included in the 2004 Proxy Statement under Security Ownership of Certain Beneficial Owners and Management and is incorporated herein by reference.

The following table sets forth certain information as of April 30, 2004 with respect to compensation plans under which our equity securities are authorized for issuance:

	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders (1):	952,018	\$ 13.73	1,187,170(2)
Equity compensation plans not approved by security holders	None	None	None
<b>Total</b>	<b>952,018</b>	<b>\$ 13.73</b>	<b>1,187,170</b>

(1) Please see Note 12 of our Notes to Consolidated Financial Statements for description of the Company's equity compensation plans.

(2) Includes 645,757 shares that remain available for purchase under the ADE Corporation Employee Stock Purchase Plan.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS**

Not applicable.

**ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES**

Information regarding principal accountant fees and services is included in the 2004 Proxy Statement under **Audit Fees** and is incorporated herein by reference.

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**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K**

**Page Number in  
this Form 10-K**

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(a)(1) Financial Statements. The Financial Statements required to be filed by Item 8 of Form 10-K, and filed herewith, are as follows:

<u>Report of Independent Registered Public Accounting Firm</u>	F-1
<u>Consolidated Balance Sheets as of April 30, 2004 and 2003</u>	F-2
<u>Consolidated Statements of Operations for the three years ended April 30, 2004</u>	F-3
<u>Consolidated Statements of Stockholders' Equity for the three years ended April 30, 2004</u>	F-4
<u>Consolidated Statements of Cash Flows for the three years ended April 30, 2004</u>	F-5
<u>Notes to Consolidated Financial Statements</u>	F-6
(a)(2) Financial Statement Schedule:	
<u>II. Valuation and Qualifying Accounts and Reserves for the three years ended April 30, 2004</u>	S-1

All other schedules are omitted because they are either not applicable or the required information is included in the consolidated financial statements or related notes.

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(a)(3) Exhibits.

**Exhibit**

**Number**

**Description**

Number	Description
3.1	Restated Articles of Organization (filed as Exhibit 3.1 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).
3.2	By-laws (as amended) (filed as Exhibit 3.2 to the Company's Form 10-K for the fiscal year ended April 30, 2002 and incorporated herein by reference).
4.1	Registration Rights Agreement dated as of May 31, 1998 by and among ADE Corporation, Chris Koliopoulos and David Basila (filed as Exhibit 4.6 to the Company's Form 8-K dated June 25, 1998 and incorporated herein by reference).
10.1	Form of Employee Confidentiality Agreement (filed as Exhibit 10.1 to the Company's Registration Statement on Form S-1 (333-96408) or amendments thereto and incorporated herein by reference).
10.2	2000 Employee Stock Option Plan (as amended) (filed as Exhibit 10.1 to the Company's Form 10-Q for the fiscal quarter ended January 31, 2003 and incorporated herein by reference).*
10.3	1997 Employee Stock Option Plan (filed as Exhibit 4.3 to the Company's Registration Statement on Form S-8 (333-46505) or amendments thereto and incorporated herein by reference). *
10.4	Amendment to 1997 Employee Stock Option Plan dated April 7, 1999 (filed as Exhibit 10.3 to the Company's Form 10-K for the fiscal year ended April 30, 1999 and incorporated herein by reference). *
10.5	1995 Stock Option Plan (filed as Exhibit 10.4 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).*
10.6	1992 Stock Option Plan (filed as Exhibit 10.5 to the Company's Registration Statement on Form S-1 (33-96408) or amendments thereto and incorporated herein by reference).*
10.7	Amendment to 1992 Stock Option Plan dated April 7, 1999 (filed as Exhibit 10.6 to the Company's Form 10-K for the fiscal year ended April 30, 1999 and incorporated herein by reference). *
10.8	Employee Stock Purchase Plan (as amended) (filed as Exhibit 10.8 to the Company's Form 10-K for the fiscal year ended April 30, 2002 and incorporated herein by reference).*
10.9	Amendments to Employee Stock Purchase Plan (filed as Exhibit 10.1 to the Company's Form 10-Q for the fiscal quarter ended July 31, 2003 and incorporated herein by reference).*
10.10	Certificate as to Nonarbitrage and Tax Compliance, dated as of June 7, 1996, from the Company to Massachusetts Industrial Finance Agency (filed as Exhibit 10.10 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.11	Letter of Credit Agreement, dated June 7, 1996, between Citizens Bank of Massachusetts and the Company (filed as Exhibit 10.11 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.12	Mortgage, Security Agreement, and Assignment, dated June 7, 1996, from the Company to Citizens Bank of Massachusetts (filed as Exhibit 10.13 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.13	Pledge Agreement, dated June 7, 1996, from the Company to Citizens Bank of Massachusetts (filed as Exhibit 10.14 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.14	Oil and Hazardous Materials Indemnification Agreement, dated June 7, 1996, between the Company and Citizens Bank of Massachusetts (filed as Exhibit 10.15 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).

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Exhibit	
Number	Description
10.15	Indemnification Agreement, dated as of February 28, 1996, among MetPath of New England, Inc., Corning Life Sciences, Inc. and the Company (filed as Exhibit 10.16 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.16	Letter Agreement regarding collateral assignment of Indemnification from the Company to Citizens Bank of Massachusetts, with attachment (filed as Exhibit 10.17 to the Company's Form 10-K for the fiscal year ended April 30, 1996 and incorporated herein by reference).
10.17	Noncompetition Agreement dated as of May 31, 1998, by and between ADE Corporation and Chris Koliopoulos (filed as Exhibit 10.21 to the Company's Form 10-K for the fiscal year ended April 30, 1998, and incorporated herein by reference).*
10.18	Employment and Non-Competition Agreement dated as of May 1, 2002, by and between ADE Corporation and Brian James (filed as Exhibit 10.18 to the Company's Form 10-K for the fiscal year ended April 30, 2002 and incorporated herein by reference).*
10.19	Separation Agreement dated as of August 29, 2002, by and between Robert C. Abbe and ADE Corporation (filed as Exhibit 10.1 to the Company's Form 10-Q for the fiscal quarter ended July 31, 2002 and incorporated herein by reference). *
10.20	Letter Agreement regarding sale of certain shares of Japan ADE, Ltd. held by the Company to Kanematsu Electronics, Ltd. (filed as Exhibit 10.20 to the Company's Form 10-K for the fiscal year ended April 30, 2003 and incorporated herein by reference).
10.21	Purchase and Sale Agreement dated as of July 29, 2003, between the Company, as Seller, and New Boston Fund, Inc., as Buyer, regarding sale and leaseback of Westwood, Massachusetts facility (filed as Exhibit 10.21 to the Company's Form 10-K for the fiscal year ended April 30, 2003 and incorporated herein by reference).
10.22	Lease Agreement dated July 29, 2003, between the Company, as tenant, and Westwood Nominee Trust, as landlord, for the premises at 80-82 Wilson Way, Westwood, Massachusetts (filed as Exhibit 10.2 to the Company's Form 10-Q for the fiscal quarter ended July 31, 2003 and incorporated herein by reference).
14.1	ADE Corporation Code of Ethics (filed herewith).
21.1	Subsidiaries of the Company (filed as Exhibit 21.1 to the Company's Form 10-Q for the fiscal quarter ended January 31, 2003 and incorporated herein by reference).
23.1	Consent of PricewaterhouseCoopers LLP (filed herewith).
24.1	Power of Attorney (filed herewith as part of the signature page hereto).
31.1	Certification of Chief Executive Officer required by Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith).
31.2	Certification of Chief Financial Officer required by Rule 13a-14(a)/15d-14(a) of the Securities Exchange Act of 1934, as amended (filed herewith).
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (furnished herewith).

\* Compensatory plan or agreement applicable to management and/or employees.

(b) Reports on Form 8-K

There were no reports on Form 8-K filed by the Company during the fourth quarter of fiscal year 2004.

## SIGNATURES

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

ADE CORPORATION

July 14, 2004

By:                                  /s/ CHRIS L. KOLIPOULOS

**Chris L. Koliopoulos**  
President and Chief Executive Officer

Each person whose signature appears below constitutes and appoints Chris L. Koliopoulos, Brian C. James, William A. Levine, and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them, for him and in his name, place, and stead, and in any and all capacities, to sign this annual report on Form 10-K of ADE Corporation and any amendments thereto, and to file the same, with all exhibits thereto and any other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises, as fully and to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully 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>Signature</u>	<u>Title</u>	<u>Date</u>
/s/ CHRIS L. KOLIPOULOS <hr/> <b>Chris L. Koliopoulos</b>	President, Chief Executive Officer of ADE Corporation, President of ADE Phase Shift and Director (Principal Executive Officer)	July 14, 2004
/s/ BRIAN C. JAMES <hr/> <b>Brian C. James</b>	Executive Vice President, Treasurer and Chief Financial Officer (Principal Financial Officer)	July 14, 2004
/s/ JOSEPH E. ROVATTI <hr/> <b>Joseph E. Rovatti</b>	Controller (Principal Accounting Officer)	July 14, 2004
/s/ LONDON T. CLAY <hr/> <b>Landon T. Clay</b>	Chairman of the Board	July 14, 2004
/s/ H. KIMBALL FAULKNER <hr/> <b>H. Kimball Faulkner</b>	Director	July 14, 2004
/s/ KENDALL WRIGHT	Director	July 14, 2004

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**Kendall Wright**

/s/ HARRIS CLAY

Director

July 14, 2004

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**Harris Clay**



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**REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

To the Board of Directors and Stockholders

of ADE Corporation:

In our opinion, the accompanying consolidated financial statements listed in the index appearing under Item 15 (a)(1) on page 31 present fairly, in all material respects, the financial position of ADE Corporation and its subsidiaries at April 30, 2004 and 2003, and the results of their operations and their cash flows for each of the three years in the period ended April 30, 2004 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 index appearing under Item 15 (a)(2) on page 31 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 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 the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

As discussed in Note 2 to the consolidated financial statements, during the year ended April 30, 2003, the Company changed its method of accounting for goodwill.

/s/ PRICEWATERHOUSECOOPERS LLP

Boston, Massachusetts

June 25, 2004

## ADE CORPORATION

## CONSOLIDATED BALANCE SHEETS

(In thousands, except share data)

	April 30, 2004	April 30, 2003
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 41,560	\$ 21,476
Marketable securities	1,084	1,060
Accounts receivable:		
Trade, less allowance for doubtful accounts of \$458 and \$612, respectively	13,604	10,860
Affiliate		2,525
Inventories	32,745	29,349
Prepaid expenses and other current assets	1,068	1,046
<b>Total current assets</b>	<b>90,061</b>	<b>66,316</b>
Fixed assets, net	10,829	20,923
Investments	499	3,724
Assets held for sale	4,323	4,709
Intangible assets, net	683	833
Goodwill	1,318	1,318
Restricted cash	637	3,157
Other assets	125	136
<b>Total assets</b>	<b>\$ 108,475</b>	<b>\$ 101,116</b>
<b>Liabilities and Stockholders Equity</b>		
Current liabilities:		
Current portion of long-term debt	\$ 168	\$ 672
Accounts payable	6,364	4,527
Accrued expenses and other current liabilities	10,557	8,779
Deferred income on sales to affiliate		2,259
<b>Total current liabilities</b>	<b>17,089</b>	<b>16,237</b>
Deferred gain on sale-leaseback	1,609	
Long-term debt, net of current portion	3,608	10,082
<b>Total liabilities</b>	<b>22,306</b>	<b>26,319</b>
Commitments and contingencies (Note 17)		
<b>Stockholders equity:</b>		
Preferred stock, \$1.00 par value; 1,000,000 shares authorized; none issued or outstanding		
Common stock, \$.01 par value; 25,000,000 shares authorized; 13,997,310 and 13,760,282 issued and outstanding at April 30, 2004 and 2003, respectively	141	138
Capital in excess of par value	106,399	103,943
Accumulated deficit	(21,071)	(29,844)
Accumulated other comprehensive income	700	560

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Total stockholders' equity	86,169	74,797
Total liabilities and stockholders' equity	\$ 108,475	\$ 101,116

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

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## ADE CORPORATION

## CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)

	Year ended April 30,		
	2004	2003	2002
Net Revenue:			
System and parts	\$ 70,738	\$ 44,996	\$ 50,185
System and parts affiliate	7,997	17,708	23,113
Service	9,850	8,543	8,508
Total revenue	88,585	71,247	81,806
Cost of revenue:			
System and parts	30,923	21,855	27,191
System and parts affiliate	3,017	8,040	11,282
Service	11,103	9,059	9,659
Total cost of revenue	45,043	38,954	48,132
Gross profit	43,542	32,293	33,674
Operating expenses:			
Research and development	15,085	17,017	22,783
Marketing and sales	10,435	11,514	13,064
General and administrative	11,009	9,229	11,290
Restructuring charges	393	1,588	
Total operating expenses	36,922	39,348	47,137
Income (loss) from operations	6,620	(7,055)	(13,463)
Other income (expense):			
Gain on sale of long-term investment	1,729		
Gain on sale of marketable securities	398		
Interest and other income	467	381	1,066
Interest expense	(443)	(815)	(810)
Income (loss) before provision for income taxes and equity in net earnings of affiliated companies	8,771	(7,489)	(13,207)
Provision for income taxes	46	91	10,416
Income (loss) before equity in net earnings of affiliated companies	8,725	(7,580)	(23,623)
Equity in net earnings of affiliated companies	48	175	498
Net income (loss)	\$ 8,773	\$ (7,405)	\$ (23,125)
Basic earnings (loss) per share	\$ 0.63	\$ (0.54)	\$ (1.70)

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Diluted earnings (loss) per share	\$ 0.62	\$ (0.54)	\$ (1.70)
Weighted average shares outstanding basic	13,887	13,710	13,615
Weighted average shares outstanding diluted	14,127	13,710	13,615

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

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## ADE CORPORATION

## CONSOLIDATED STATEMENTS OF STOCKHOLDERS EQUITY

(In thousands, except share data)

	Common Stock			Retained	Accumulated	Total
	Number	Par	Capital	earnings	other	
	of shares	value	in excess	(accumulated	comprehensive	stockholders
			of par	deficit)	income	equity
Balance at April 30, 2001	13,552,966	\$ 136	\$ 102,429	\$ 686	\$ 1,413	\$ 104,664
Exercise of common stock options	74,172	1	681			682
Sale of common stock pursuant to the Employee Stock Purchase Plan	48,590		428			428
Common stock issued in lieu of Board of Directors fees	950		15			15
Net loss				(23,125)		(23,125)
Unrealized gain on marketable securities					658	658
Comprehensive loss						(22,467)
Balance at April 30, 2002	13,676,678	137	103,553	(22,439)	2,071	83,322
Exercise of common stock options	1,500		15			15
Sale of common stock pursuant to the Employee Stock Purchase Plan	80,518	1	359			360
Common stock issued in lieu of Board of Directors fees	1,586		16			16
Net loss				(7,405)		(7,405)
Unrealized loss on marketable securities					(1,511)	(1,511)
Comprehensive loss						(8,916)
Balance at April 30, 2003	13,760,282	138	103,943	(29,844)	560	74,797
Exercise of common stock options	181,217	2	1,948			1,950
Sale of common stock pursuant to the Employee Stock Purchase Plan	51,107	1	471			472
Common stock issued in lieu of Board of Directors fees	4,704		37			37
Net income				8,773		8,773
Unrealized gain on marketable securities					140	140
Comprehensive income						8,913
Balance at April 30, 2004	13,997,310	\$ 141	\$ 106,399	\$ (21,071)	\$ 700	\$ 86,169

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

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## ADE CORPORATION

## CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year ended April 30,		
	2004	2003	2002
<b>Cash flows from operating activities:</b>			
Net income (loss)	\$ 8,773	\$ (7,405)	\$ (23,125)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	2,953	4,693	5,280
Long-lived asset impairment	378	243	
Equity in net earnings of affiliated companies, net of dividends received	952	(114)	(389)
Deferred income taxes			10,590
Shares issued in lieu of directors' fees	37	16	15
Gain on sale of long-term investment	(1,729)		
Gain on sale of marketable securities	(398)		
Amortization of gain from sale-leaseback	(84)		
Changes in assets and liabilities, net of acquisition:			
Accounts receivable, trade	(2,744)	(980)	11,018
Accounts receivable, affiliate	2,525	(680)	1,681
Inventories	(3,396)	3,352	6,324
Prepaid expenses and other current assets	(22)	232	288
Accounts payable	1,837	(2,067)	(239)
Accrued expenses and other current liabilities	1,778	(3,225)	(9,130)
Deferred income on sales to affiliate	(2,259)	789	(646)
Net cash provided by (used in) operating activities	8,601	(5,146)	1,667
<b>Cash flows from investing activities:</b>			
(Purchases) sales of fixed assets, net	(760)	540	(5,684)
Change in restricted cash	2,520	195	173
Proceeds from sale of building, net	9,753		
Proceeds from sale of long-term investment	4,000		
Proceeds from sale of marketable securities	515		
Decrease in other assets	11	11	221
Net cash provided by (used in) investing activities	16,039	746	(5,290)
<b>Cash flows from financing activities:</b>			
Repayment of long-term debt	(6,978)	(607)	(599)
Proceeds from issuance of common stock	2,422	375	1,110
Net cash provided by (used in) financing activities	(4,556)	(232)	511
Net increase (decrease) in cash and cash equivalents	20,084	(4,632)	(3,112)
Cash and cash equivalents, beginning of year	21,476	26,108	29,220
Cash and cash equivalents, end of year	\$ 41,560	\$ 21,476	\$ 26,108





See supplemental disclosures of cash flow information (Note 18)

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

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**ADE CORPORATION**

**NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**

**1. Nature of Business**

ADE Corporation (the Company) designs, manufactures, markets and services highly precise, automated measurement, defect detection and handling equipment with current applications in the production of semiconductor wafers, integrated circuits, magnetic data storage and optics industries. The predominant markets for the Company consist of semiconductor wafer and device manufacturing concerns as well as magnetic data storage device and disk drive manufacturers located in the United States, Japan, Europe and the Far East.

**2. Summary of Significant Accounting Policies**

*Principles of Consolidation*

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All significant intercompany transactions and balances have been eliminated.

Investments in 50% or less owned companies over which the Company has the ability to exercise significant influence are accounted for using the equity method. Investments in 20% or less owned companies are accounted for using the cost method (Note 5).

*Revenue Recognition*

The Company's revenue recognition policy complies with SEC Staff Accounting Bulletin No. 104 (SAB 104), Revenue Recognition in Financial Statements. The Company recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectibility is reasonably assured. The Company's standard customer arrangement includes a signed purchase order, in which it offers payment terms of 30 to 90 days, no right of return of delivered products and a twelve month warranty. The Company assesses whether the fee associated with its revenue transactions is fixed or determinable based on the payment terms associated with the transaction. If a significant portion of the fee is due after the Company's normal payment terms, 30 to 90 days, it determines that the fee is not fixed or determinable. In these cases, the Company recognizes revenue as the fees become due. The Company assesses collectibility based on the credit worthiness of the customer and past transaction history. The Company performs on-going credit evaluations of its customers and does not require collateral from its customers. For many of the Company's international customers, it requires that an irrevocable letter of credit be issued by the customer before the purchase order is accepted. If the Company determines that collection of a fee is not reasonably assured, it defers the fee and recognizes the revenue at the time that collection becomes reasonably assured, which is generally upon the receipt of cash.

For some of the Company's sales transactions, a portion, usually 10%, of the fee is not due until installation occurs and the customer accepts the product. The other 90% of the fee is normally due 30 to 90 days after shipment. If the Company has met defined customer acceptance experience

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levels with a specific type of product, these transactions are accounted for as multiple-element arrangements with the deferral of the portion of the fee not due until installation is complete and customer acceptance has occurred. Management of the Company must make a determination of what constitutes an appropriate experience level with a product. This determination is based on, but not limited to, the extent to which a product contains significantly new technology, the number of similarly configured products previously delivered and the Company's experience with a particular customer. For new products, the Company must obtain at least three acceptances before it will recognize the 90% portion of the fee upon shipment. All other sales with customer acceptance provisions are recognized as revenue upon customer acceptance. The portion of the fee related to the installation of the product and customer training is classified as service revenue.

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ADE CORPORATION

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

**2. Summary of Significant Accounting Policies (Continued)**

The Company's transactions frequently involve the sales of systems and services under multiple element arrangements. Revenue under multiple element arrangements is allocated to all elements except systems based upon the fair value of those elements. The amounts allocated to training are based upon the price charged when this element is sold separately and unaccompanied by the other elements. The amount allocated to installation revenue is based upon hourly rates and the estimated time to complete the service. The amount allocated to system and parts is done on a residual method basis. Under this method, the total arrangement value is allocated first to undelivered elements, based on their fair values, with the remainder being allocated to system revenue.

Revenue from the sale of parts is recognized upon shipment. Service revenue is recognized as the services are performed provided collection of the related receivable is probable. Service contract revenue is recognized ratably over the contractual periods in which the services are provided. Revenue from software licenses is recognized when an agreement has been executed, software has been delivered, fees are fixed or determinable and collection of the related receivable is probable. The Company does not provide a right of return on its products. The Company accrues for anticipated warranty costs upon shipment.

Prior to July 24, 2003, revenue from systems sales to JAL, the Company's previously 50% owned affiliate and a distributor of the Company's products was recognized when the related product or software was shipped to and accepted by the end user of the product or software. As a result of the Company's decreased investment in JAL, beginning July 24, 2003, all sales to JAL are recognized in accordance with the policy above.

*Cash and Cash Equivalents*

The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents. The Company invests its excess cash in money market accounts. These investments are subject to minimal credit and market risks. At April 30, 2004 and 2003, the Company has classified its cash equivalent investments totaling approximately \$36,938,000 and \$18,167,000, respectively, as available-for-sale. The carrying amount of these investments approximates fair market value.

*Marketable Securities*

The Company classifies its marketable securities as available-for-sale in accordance with the provisions of Statement of Financial Accounting Standard (SFAS) No. 115, Accounting for Certain Investments in Debt and Equity Securities. Securities classified as available-for-sale are reported at fair market value with the related unrealized gains and losses included, net of tax, in accumulated other comprehensive income (loss). Gross unrealized gains (losses) on securities for the years ended April 30, 2004, 2003 and 2002, the cost of which is based upon the specific identification method, were \$538,000, \$(1,511,000) and \$658,000, respectively.

*Inventories*

Inventories are stated at the lower of cost or market, cost being determined on a first-in, first-out basis.

*Fixed Assets*

Fixed assets are stated at cost. Additions and betterments, unless of a relatively minor amount, are capitalized. Expenditures for normal maintenance and repairs are charged to expense as incurred. Depreciation is provided by use of the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized over the shorter of their useful life or the remaining life of the lease.

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. Summary of Significant Accounting Policies (Continued)

*Goodwill and Intangible Assets*

In July 2001, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 142 ( SFAS 142 ), Goodwill and Other Intangible Assets, which was effective for the Company on May 1, 2002. SFAS 142 requires, among other things, the discontinuance of goodwill amortization and includes provisions for the reclassification of certain existing recognized intangibles as goodwill, reassessment of the useful lives of existing recognized intangibles, and reclassification of certain intangibles out of previously reported goodwill. In accordance with this statement, the Company discontinued the amortization of its net goodwill of \$1.3 million. In addition, the Company completed the transitional impairment test of its goodwill as of May 1, 2002 and determined that the carrying value was not impaired. The Company is required to perform impairment tests under SFAS 142 annually and whenever events or changes in circumstances suggest that the goodwill may be impaired. During the fourth quarter of fiscal years ended April 30, 2004 and 2003 respectively, the Company performed its annual impairment test in accordance with SFAS 142 and determined that the carrying value of its goodwill was not impaired. Had SFAS 142 been in effect during the fiscal year ended April 31, 2002, the Company's net income (loss) and earnings (loss) per share would have been as follows:

	Year ended April 30,		
	2004	2003	2002
	(in thousands, except		
	per share data, unaudited)		
Reported net income (loss)	\$ 8,773	\$ (7,405)	\$ (23,125)
Add back of goodwill amortization			236
Adjusted net income (loss)	\$ 8,773	\$ (7,405)	\$ (22,889)
Reported basic earnings (loss) per share	\$ 0.63	\$ (0.54)	\$ (1.70)
Add back of goodwill amortization			0.02
Adjusted basic earnings (loss) per share	\$ 0.63	\$ (0.54)	\$ (1.68)
Reported diluted earnings (loss) per share	\$ 0.62	\$ (0.54)	\$ (1.70)
Add back of goodwill amortization			0.02
Adjusted diluted earnings (loss) per share	\$ 0.62	\$ (0.54)	\$ (1.68)

The Company has \$2.9 million in capitalized license fees for software included in the Company's products, which has accumulated amortization of \$2.2 million and \$2.1 million at April 30, 2004 and 2003, respectively. These license fees are amortized at the greater of 1) the ratio that current gross revenue for the related products bear to the total current and anticipated future gross revenue for those products or 2) on a straight-line basis over the estimated useful life of the related products. For the years ended April 30, 2004, 2003 and 2002, the Company

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amortized \$150,000, \$450,000 and \$686,000, respectively, of the license fees to the cost of revenue. Estimated future amortization is \$234,000, \$318,000 and \$134,000 for the fiscal years ending April 30, 2005, 2006 and 2007, respectively.

### *Concentrations*

### *Credit Risk*

Financial instruments that potentially expose the Company to concentration of credit risk include cash, cash equivalents, marketable securities and trade accounts receivable. A significant amount of the Company's cash

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**ADE CORPORATION**

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

**2. Summary of Significant Accounting Policies (Continued)**

and cash equivalents are held by three financial institutions. Accounts at each institution are insured by the Federal Deposit Insurance Corporation up to \$100,000. Uninsured cash balances totaled approximately \$4,034,000 and \$2,718,000 at April 30, 2004 and 2003, respectively. The Company does not believe that such deposits are subject to any unusual credit risk associated with operating its business.

The Company's customer base primarily consists of semiconductor wafer, semiconductor device and data storage manufacturers. Accounts receivable from two customers accounted for approximately 30% and 39% of total accounts receivable at April 30, 2004 and 2003, respectively. The Company performs ongoing credit evaluations of its customers' financial condition and has used letters of credit from financial institutions to secure payments, although it generally does not require collateral. The Company maintains reserves for potential credit losses.

*Suppliers*

Certain components and subassemblies incorporated into the Company's systems are obtained from a single source or a limited group of suppliers. The Company seeks to reduce the impact from its dependence on those sole and limited source suppliers by considering alternate sources of supply, alternate designs for its products and by maintaining an adequate supply of the components and subassemblies. However, the loss of one or more of the sole or limited suppliers could cause a delay in manufacturing and a potential loss of sales, which could affect operating results adversely.

*Financial Instruments*

The carrying amount of the Company's financial instruments, which include cash, cash equivalents, marketable securities, accounts receivable, accounts payable, accrued expenses, and long-term debt, approximate their fair value at the balance sheet dates.

*Comprehensive Income*

SFAS No. 130, Reporting Comprehensive Income requires that changes in comprehensive income be shown in a financial statement that is displayed with the same prominence as other financial statements. The Company has presented other comprehensive income in the Consolidated Statements of Stockholders' Equity. Other comprehensive income consists primarily of unrealized gains on marketable securities.

*Advertising Expense*



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The Company recognizes advertising expense as incurred. Advertising expense was \$54,000, \$96,000 and \$227,000 for the years ended April 30, 2004, 2003 and 2002, respectively.

### *Stock-Based Compensation*

Stock-based compensation awards to employees under the Company's stock plans are accounted for using the intrinsic value method prescribed in Accounting Principles Board Opinion ( APB ) No. 25, Accounting for Stock Issued to Employees, and related interpretations. The Company provides the disclosures required by SFAS No. 123, Accounting for Stock-Based Compensation and SFAS No. 148, Accounting for Stock-Based Compensation. Had compensation cost for the stock-based compensation been determined based on the fair

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 2. Summary of Significant Accounting Policies (Continued)

value at the grant dates of awards consistent with the provisions of SFAS 123, the Company's net income (loss) and earnings (loss) per share would have been reduced to the pro forma amounts as follows:

	(In thousands, except per share data)		
	Year ended April 30,		
	2004	2003	2002
Net income (loss), as reported	\$ 8,773	\$ (7,405)	\$ (23,125)
Add back: Stock-based compensation included in net income (loss), as reported	37	16	15
Deduct: Total stock-based employee compensation expense determined under fair value based method, net of related income taxes	1,417	1,870	2,254
Pro forma net income (loss)	\$ 7,393	\$ (9,259)	\$ (25,364)
Net earnings (loss) per share:			
Basic as reported	\$ 0.63	\$ (0.54)	\$ (1.70)
Basic pro forma	\$ 0.53	\$ (0.68)	\$ (1.86)
Diluted as reported	\$ 0.62	\$ (0.54)	\$ (1.70)
Diluted pro forma	\$ 0.52	\$ (0.68)	\$ (1.86)

The fair value of each stock option and stock purchase right grant was estimated on the grant date using the Black-Scholes option-pricing model with the following assumptions for fiscal years 2004, 2003 and 2002: no dividend yield; risk free interest rates of 3.4%, 3.2% and 4.7%, respectively; expected option terms of 7 years, 8 years and 6 years, respectively, and expected purchase right terms of three months; volatility of 63% for options and purchase rights granted in fiscal 2004, 83% for options and purchase rights granted in fiscal year 2003 and 54% for options and purchase rights granted in fiscal 2002. The weighted average fair value per option for options granted with option exercise prices equal to the fair value of the underlying common stock in fiscal years 2004, 2003 and 2002 was \$11.12, \$5.46 and \$6.35, respectively. The weighted average fair value per stock purchase right granted in fiscal years 2004, 2003 and 2002 was \$3.42, \$3.95 and \$5.48, respectively.

Because options vest over several years and additional option and purchase right grants are expected to be made in subsequent years, the pro forma impact on fiscal years 2004, 2003 and 2002 is not necessarily representative of the pro forma effects of reported net income and earnings per share for future years.

*Earnings (Loss) Per Share*

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Earnings (loss) per share are presented in accordance with SFAS No. 128, Earnings Per Share ( SFAS 128 ), which requires the presentation of basic earnings per share and diluted earnings per share. Basic earnings (loss) per share is computed by dividing net income (loss) available to common stockholders by the weighted average number of common shares outstanding for the period. Diluted earnings per share is computed using the weighted average number of common shares outstanding and gives effect to all dilutive potential common shares outstanding during the period. Potential common shares include shares issuable upon the assumed exercise of dilutive stock options. For the years ended April 30, 2004, 2003 and 2002, respectively,

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

**2. Summary of Significant Accounting Policies (Continued)**

613,339, 1,080,966 and 522,921 common shares issuable upon the exercise of stock options were antidilutive and were excluded from the computation of diluted earnings (loss) per share.

The following is a reconciliation of the shares used in calculating basic and diluted earnings (loss) per share:

	Year ended April 30,		
	2004	2003	2002
	(in thousands)		
<b>Shares used in computation:</b>			
Weighted average common stock outstanding used in computation of basic earnings (loss) per share	13,887	13,710	13,615
Dilutive effect of stock options	240		
<b>Shares used in computation of diluted earnings (loss) per share</b>	<b>14,127</b>	<b>13,710</b>	<b>13,615</b>

*Use of Estimates*

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingencies at April 30, 2004 and 2003, and the reported amounts of revenue and expenses during the three year period ended April 30, 2004. Areas particularly subject to estimation include the allowance for doubtful accounts, the valuation for potential excess and obsolete inventory, the carrying value of the Company's intangible assets and the valuation allowance on deferred tax assets. Actual results could differ from those estimates.

**3. Restructurings**

During the first quarter of fiscal 2004, as a result of continued cost cutting initiatives, the Company recorded a restructuring charge of \$393,000, which consisted primarily of severance expenses for 20 terminated employees. The employees were terminated from various functional areas within the Company's Semiconductor Systems and ADE Technologies business segments. The majority of all the severance payments from the first quarter restructuring were made by the end of fiscal year 2004. In connection with the first quarter restructuring, the Company did not renew its lease at its Bethel, Connecticut facility, which expired in August 2003. Prior to the end of the first quarter, the operations of the Bethel facility were relocated to the Westwood, Massachusetts and Tucson, Arizona facilities.

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During the first quarter of fiscal 2003, the Company implemented selective headcount reductions and closed three satellite offices in response to the prolonged downturn in the semiconductor wafer and device manufacturing and magnetic data storage industries. The Company recorded a restructuring charge of \$877,000, which consisted of \$679,000 in employee severance expenses for the 39 terminated employees spread across all functional areas of the Company and \$198,000 related to the closing of the satellite offices, which primarily represented future lease obligations on the vacated offices. When applicable, anticipated future sublease income relating to vacated offices was offset against the charge for the remaining lease payments.

During the second quarter of fiscal 2003, as a result of the continued downturn in the semiconductor wafer and device manufacturing and magnetic data storage industries, the Company recorded a restructuring charge of

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 3. Restructurings (Continued)

\$711,000, which consisted primarily of severance expenses for the 41 terminated employees across all segments and various functional areas of the Company.

On August 29, 2002, an agreement was entered into between the Company and its former Chief Executive Officer, Robert C. Abbe. Under the terms of the agreement, ADE agreed to pay a total of \$1.1 million over a three year period, beginning in September 2002, for severance and consulting services. The Company recorded a restructuring charge of \$307,000 for the severance portion of Mr. Abbe's agreement, which was paid through September 2003. This amount is included in the \$711,000 discussed above. The consulting portion of the agreement was expensed as incurred.

Below is a table summarizing the activity related to the restructuring accrual for the years ended April 30, 2004 and 2003:

	Severance	Office Closures	Total
	<u>          </u>	<u>          </u>	<u>          </u>
	(in thousands)		
Restructuring accrual	\$ 1,380	\$ 208	\$ 1,588
Cash payments	(1,260)	(163)	(1,423)
	<u>          </u>	<u>          </u>	<u>          </u>
Balance at April 30, 2003	120	45	165
Restructuring accrual	393		393
Cash payments	(505)	(45)	(550)
	<u>          </u>	<u>          </u>	<u>          </u>
Balance at April 30, 2004	\$ 8	\$	\$ 8
	<u>          </u>	<u>          </u>	<u>          </u>

## 4. Sale-leaseback

On July 29, 2003, the Company entered into an agreement to sell and leaseback its headquarters site in Westwood, Massachusetts, which resulted in a deferred gain of \$1.7 million. The Company used \$3.8 million of the approximately \$10.1 million in proceeds, less transaction costs, from the transaction to retire its 1996 Industrial Development Bond (the "1996 Bond") and terminated the related letter of credit. On July 31, 2003, the Company used approximately \$3.0 million of the proceeds to retire its 1997 Industrial Development Bond (the "1997 Bond"), which resulted in \$2.7 million of restricted cash becoming available for general corporate purposes. As part of this transaction, the Company entered into a lease agreement with a 15 year term and annual rent payments increasing from approximately \$1.0 million at the beginning of the lease term to approximately \$1.3 million by the end of the lease term. The lease has been classified as an operating lease and the gain of \$1.7 million on the transaction has been deferred and is being amortized as a reduction of rent expense on a straight-line basis over the term of the lease. The total rent expense from the lease is being amortized on a straight-line basis. In addition, as required by the lease agreement, \$0.6 million of cash

has been restricted as a security deposit on the building.

## **5. Investments**

On July 10, 2003, the Company received a \$1.0 million dividend payment from JAL, which had been the exclusive distributor of ADE dimensional products in Japan since 1986. On July 24, 2003, the Company entered into an agreement to sell the majority of its 50% ownership in JAL to Kanematsu Electronics, Ltd., the other 50% owner of JAL. The Company received proceeds of \$4.0 million and realized a gain of \$1.7 million from this transaction. The Company retained a 9% ownership interest in JAL. Prior to the transaction, the Company accounted for its investment in JAL under the equity method. As a result of the decrease in both ownership and influence over the affairs of JAL, subsequent to July 24, 2003, the Company accounts for its remaining 9% interest under the cost method.

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 5. Investments (Continued)

The \$1.7 million gain on the transaction was calculated as follows:

ADE shares held prior to sale	1,500	50%
KEL shares held prior to sale	1,500	50%
	<u>          </u>	
Total ownership shares	3,000	100%
	<u>          </u>	
Shares sold by ADE	1,230	41%
Shares retained by ADE	270	9%
		(in thousands)
Book value of ADE investment at 4/30/03	\$	3,722
Less: Dividend received 7/10/03		(1,000)
Add: Income from affiliate April-June		48
		<u>          </u>
Book value of ADE investment before sale	\$	2,770
		<u>          </u>
Book value per share before sale	\$	1.85
Book value of shares sold	\$	2,271
Proceeds from sale	\$	4,000
		<u>          </u>
Gain on sale of 41% ownership	\$	1,729
		<u>          </u>

Prior to July 24, 2003, when the Company was accounting for its investment in JAL under the equity method, the revenue from sales to JAL, which had not in turn been sold by JAL to unrelated third parties, was eliminated and the related profit on such sales was recorded as deferred income on sales to affiliate. As a result of the reduction of the Company's 50% investment in JAL to 9% and the change in accounting method for the remaining investment to the cost method, the Company recognized approximately \$6.4 million of system and parts revenue in its statement of operations that otherwise may have been deferred revenue on the balance sheet as of July 31, 2003. Cost of revenue, system and parts in the statement of operations increased by \$2.5 million during the quarter ended July 31, 2003 as a result of the sale of part of the company's JAL investment. Therefore, gross profit in the statement of operations increased by \$3.9 million during the same period.

The financial position and results of operations of JAL was significant compared to those of the Company for the years ended April 30, 2004 and 2003. The financial position and results of operations of JAL was not significant compared to those of the Company as of and for the year ended April 30, 2002. Below is the summarized unaudited financial information for JAL for the fiscal year ended April 30, 2003:



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	<b>Year ended April 30,</b>	
	<b>2004</b>	<b>2003</b>
	<b>(in thousands)</b>	
Revenue	\$ 40,788	\$ 29,681
Gross profit	10,686	8,021
Net income	826	340
	<b>April 30,</b>	
	<b>2004</b>	<b>2003</b>
Current assets	\$ 23,752	\$ 21,422
Noncurrent assets	3,160	2,953
Current liabilities	19,942	16,937
Noncurrent liabilities		

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

**6. Assets Held for Sale**

In February 2003, the Company's Board of Directors approved a plan to sell the Company's Newton, Massachusetts property, which housed the Company's ATI subsidiary. The operations of ATI were relocated into the Company's Westwood, Massachusetts facility during the fourth quarter of fiscal 2003. The Company has listed the property for sale and has been actively looking for a buyer. In accordance with SFAS 144,

Accounting for the Impairment or Disposal of Long-Lived Assets, the Company has classified the assets associated with the Newton property as Available for Sale and has ceased depreciation on the assets. As required by SFAS 144, in order to classify this property as Available for Sale, it must be probable that it will be sold within one year unless certain criteria are met. Since the Newton property was listed for sale, the real estate market for industrial properties in the Boston area has been sluggish. The Company has responded to these market conditions by decreasing the asking price of the property and has recorded charges of \$378,000 and \$243,000 to general and administrative expenses during the years ended April 30, 2004 and 2003, respectively, to reduce the net carrying value of the assets to the fair value less the cost to sell the property. The fair value of the property was determined by the Company's best estimate of the current market value of the property as a result of negotiations with potential buyers since the property was listed for sale. On June 25, 2004, the Company entered into a purchase and sale agreement with a buyer for the Newton property. The Company expects that the transaction will close in the fall of 2004. The selling price for the property, less selling costs, is approximately equal to the net book value of the property.

**7. Sale of Marketable Securities**

On January 6, 2004, the Company sold 17,213 shares of its investment in the common stock of MKS Instruments Inc. The Company received proceeds of \$515,000 from the sale. The Company's cost basis in the shares sold was \$117,000. Therefore, a gain of \$398,000 was recognized in the Company's consolidated statement of operations for the year ended April 30, 2004.

**8. Inventories**

Inventories consist of the following:

	April 30,	
	2004	2003
	(in thousands)	
Raw materials and purchased parts	\$ 18,168	\$ 14,149
Work-in-process	13,357	12,618
Finished goods	1,220	2,582
	<u>\$ 32,745</u>	<u>\$ 29,349</u>



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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 9. Fixed Assets

Fixed assets consist of the following:

	Useful life  in years	April 30,	
		2004	2003
		(in thousands)	
Land		\$ 505	\$ 1,567
Building and improvements	15-25	5,247	17,307
Machinery and equipment	3-10	18,544	17,577
Office equipment	3-10	5,608	5,730
Leasehold improvements	5	658	653
Construction-in-progress		599	1,531
		31,161	44,365
Less accumulated depreciation		20,332	23,442
		\$ 10,829	\$ 20,923

Depreciation expense for the years ended April 30, 2004, 2003 and 2002 was \$2,803,000, \$4,243,000, \$4,594,000, respectively. For the year ended April 30, 2004, the Company sold some demonstration units to customers. These units were transferred to inventory prior to the sale. The total cost of the demonstration units was \$284,000 and accumulated depreciation was \$195,000.

## 10. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following:

	April 30,	
	2004	2003
	(in thousands)	
Accrued salaries, wages, vacation pay and bonuses	\$ 2,144	\$ 1,716
Accrued commissions	1,271	1,146

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Accrued warranty costs	1,257	1,041
Accrued restructuring	8	165
Deferred revenue	2,367	1,947
Other	3,510	2,764
	<u>          </u>	<u>          </u>
	\$ 10,557	\$ 8,779
	<u>          </u>	<u>          </u>

**11. Borrowings**

*Long-term Debt*

In April 1999, the Company issued a tax exempt Industrial Development Bond through the Industrial Development Authority of the County of Pima, Arizona (the 1999 Bond ). The face value of the 1999 Bond is \$4,500,000. The 1999 Bond bears interest at a rate of 5.52% and provides for 50% of the principal to be paid over ten years from the date of issuance with the remaining 50% due in March 2009. Monthly payments of principal and accrued interest for the 1999 Bond are approximately \$31,000. The proceeds of the 1999 Bond were used to fund the construction of a new manufacturing facility in Tucson, Arizona. The Company collateralized the issuance of this bond with a standby letter of credit from a financial institution. The standby letter of credit bears a fee of 1.5% of the outstanding bond balance. The agreement under which the letter of credit was issued is collateralized by a mortgage on the building and land. Under the terms of the letter of credit, the Company is required to comply with certain financial covenants. As of April 30, 2004, the Company was in compliance with these covenants.

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 11. Borrowings (Continued)

The Company also issued tax exempt Industrial Development Bonds through the Massachusetts Industrial Finance Agency in December 1997 and June 1996. The face values of the 1997 Bond and the 1996 Bond were \$4,000,000 and \$5,500,000, respectively. The proceeds of the 1997 Bond were used to fund the acquisition and renovation of a manufacturing facility. The proceeds of the 1996 Bond were used to fund the acquisition and renovation of the manufacturing facility in the Company's headquarters site. In July 2003, the Company retired the 1997 Bond and the 1996 Bond with part of the proceeds from the sale and leaseback of the Company's corporate headquarters in Westwood, Massachusetts (Note 4).

Future maturities of principal of the Company's 1999 bond as of April 30, 2004 were as follows:

Year ending April 30,	(in thousands)
2005	168
2006	177
2007	187
2008	198
2009	3,046
Thereafter	
	\$ 3,776

## 12. Employee Compensation Plans

In April 1992, the Company adopted the 1992 Stock Option Plan (the 1992 Plan). The 1992 Plan provides for the issuance to employees of options to purchase 479,000 shares of common stock plus any expired or canceled options granted pursuant to the Company's expired 1982 Stock Option Plan. In August 1995, the Company adopted the 1995 Stock Option Plan (the 1995 Plan). The 1995 Plan provides for the issuance to employees of stock options or stock awards to purchase 400,000 shares of common stock. In October 1997, the Company adopted the 1997 Employee Stock Option Plan (the 1997 Plan). The 1997 Plan provides for the issuance to employees of stock options or stock awards to purchase 500,000 shares plus the number of shares reserved under the 1995 Plan that have not been issued or have been issued and subsequently cancelled.

Options are granted under the 1992, 1995 and 1997 Plans as either incentive stock options or non-qualified stock options and at exercise prices not less than the fair value of the stock on the date of grant or less than 110% of the fair value in the case of optionees holding more than 10% of the total combined voting power of all classes of stock of the Company. The terms of the options generally may not exceed ten years or five years in the case of optionees holding more than 10% of the total combined voting power of all classes of stock of the Company. The options are exercisable over periods determined by the compensation committee of the Board of Directors, generally at the rate of 20% per year, on a cumulative basis, beginning with the first anniversary of the date of grant.

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During calendar year 2000, the Board of Directors adopted the Company's 2000 Employee Stock Option Plan (the 2000 Plan). Under the 2000 Plan, stock rights may be granted which are either (i) options intended to qualify as incentive stock options under Section 422(b) of the Internal Revenue Code of 1986, as amended, (ii) non-qualified stock options or (iii) awards of shares of common stock or the opportunity to make a direct purchase of shares of common stock. The 2000 Plan authorizes the issuance of up to 900,000 shares of the Company's common stock plus the number of shares of common stock previously reserved for granting of options under the 1995 Plan or the 1997 Plan which are not granted under either of these plans or which are not

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 12. Employee Compensation Plans (Continued)

exercised and cease to be outstanding by reason of cancellation or otherwise. The options are exercisable over periods determined by the compensation committee of the Board of Directors, generally at the rate of 5% per quarter, on a cumulative basis, beginning with the first anniversary of the date of grant. At April 30, 2004, 541,413 shares were available for future grants under the Company's stock option plans. All of the Company's Employee Stock Option Plans have been approved by the Company's shareholders.

In October 1996, the Board of Directors adopted the Employee Stock Purchase Plan (the Purchase Plan), effective as of October 1, 1996. The Purchase Plan provides full-time employees, nearly all of whom are eligible to participate, the opportunity to purchase common shares, on a quarterly basis, at 85% of the fair market value of the shares on either the first or last day of the applicable quarter, whichever is lower. The original term of the Purchase Plan was for five years, and the Company has authorized 1,000,000 shares of the Company's common stock for issuance under the Purchase Plan. In October 2001, the Board of Directors adopted an amendment to the Purchase Plan to extend the term of the Plan by five years. Under the Purchase Plan, the Company sold 51,107, 80,518 and 48,590 shares to employees in fiscal years 2004, 2003 and 2002, respectively. At April 30, 2004, the Company has reserved 645,757 shares of common stock for issuance to employees under the Purchase Plan. The Company's Employee Stock Purchase Plan has been approved by the Company's shareholders.

Stock option activity is summarized as follows:

	Number of shares	Weighted average exercise price
	<u>          </u>	<u>          </u>
Options outstanding at April 30, 2001	1,099,645	\$ 14.46
Granted	293,500	10.39
Exercised	(74,235)	9.19
Canceled	(153,169)	14.21
	<u>          </u>	
Options outstanding at April 30, 2002	1,165,741	13.81
Granted	138,000	6.88
Exercised	(1,500)	9.80
Canceled	(181,646)	14.10
	<u>          </u>	
Options outstanding at April 30, 2003	1,120,595	12.91
Granted	147,100	17.54
Exercised	(181,217)	10.76
Canceled	(134,460)	15.08
	<u>          </u>	
Options outstanding at April 30, 2004	952,018	\$ 13.73



The number and weighted average exercise price of options exercisable at April 30, 2004, 2003 and 2002 was 530,408 and \$13.45; 564,150 and \$13.02; and 414,824 and \$13.06, respectively.

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 12. Employee Compensation Plans (Continued)

The following table summarizes information about stock options outstanding at April 30, 2004:

Range of exercise prices	Options Outstanding			Options Exercisable	
	Number Outstanding	Weighted average remaining contractual life (years)	Weighted average exercise price	Number exercisable	Weighted average exercise price
\$4.43 - \$9.94	412,920	6.4	\$ 8.18	243,920	\$ 8.25
\$12.42 - \$15.77	158,838	6.9	14.05	74,448	13.19
\$17.06 - \$19.28	122,700	7.3	17.83	56,625	17.09
\$20.09 - \$21.58	257,560	6.8	20.48	155,415	20.40
	<u>952,018</u>	<u>6.7</u>	<u>\$13.73</u>	<u>530,408</u>	<u>\$13.45</u>

## 13. Stockholders Equity

*Reserved Shares*

At April 30, 2004, the Company has reserved 2,139,188 shares of common stock for issuance upon the grant and exercise of available common stock options and for issuance to employees under the Purchase Plan.

*Preferred Stock*

The Company has 1,000,000 shares of \$1.00 par value preferred stock authorized. Shares of preferred stock may be issued at the discretion of the Board of Directors of the Company with such designation, rights and preferences as the Board may determine from time to time. The preferred stock may have voting rights, preferences as to dividends and liquidation, conversion and redemption rights and sinking fund provisions, which are more expansive than those of the holders of the common stock.

**14. Segment, Geographic and Significant Customer Information**

The Company has three reportable segments: ADE Semiconductor Systems Group ( SSG ), ADE Phase Shift ( PST ) and ADE Technologies ( ATI ). SSG manufactures and markets metrology and inspection systems to the semiconductor wafer and device manufacturing industries that are used to improve yield and capital productivity. PST manufactures and markets high performance, non-contact surface metrology equipment using advanced interferometric technology that provides enhanced yield management to the data storage, semiconductor and optics industries. ATI manufactures and markets high precision magnetic characterization and non-contact dimensional metrology gauging systems primarily to the magnetic data storage and semiconductor manufacturing industries. Sales of the Company's stand-alone software products and software consulting services are included in the SSG segment.

The Company's reportable segments are determined based upon the nature of the products, the external customers and customer industries and the sales and distribution methods used to market the products. The accounting policies of the segments are the same as those described in the summary of significant accounting policies. The Company evaluates performance based upon profit or loss from operations. The Company does not measure the assets allocated to the segments. Management fees representing certain services provided by corporate offices have been allocated to each of the reportable segments based upon the usage of those services by each segment. Additionally, other income (loss), the provision for (benefit from) income taxes and the equity in net earnings (losses) of affiliated companies are not included in segment profitability.

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. Segment, Geographic and Significant Customer Information (Continued)

Some sales to JAL were reflected in segment revenue during the period they were shipped by the respective segment, which could differ from the period the revenue was recognized for consolidated financial reporting purposes. As a result of the transaction discussed in Note 5, as of July 24, 2003, all subsequent sales to JAL are reflected in both segment and consolidated revenue in the same period as they are no longer an equity method investee. For the reportable segments, intersegment sales are recorded at cost plus 20% and are eliminated in consolidation.

	SSG	PST	ATI	Total
	(in thousands)			
<b>For the year ended April 30, 2004</b>				
Revenue from external customers	\$ 60,043	\$ 19,393	\$ 8,950	\$ 88,386
Intersegment revenue	48		378	426
Income (loss) from operations	3,395	3,721	(528)	6,588
Depreciation and amortization expense	2,329	523	101	2,953
Long-lived asset impairment	378			378
Capital expenditures	676	63	21	760
<b>For the year ended April 30, 2003</b>				
Revenue from external customers	\$ 51,546	\$ 12,600	\$ 6,914	\$ 71,060
Intersegment revenue	254	8	1,004	1,266
Income (loss) from operations	(7,018)	1,129	(1,315)	(7,204)
Depreciation and amortization expense	4,108	407	178	4,693
Long-lived asset impairment	243			243
Capital expenditures	(206)	(159)	(6)	(371)
<b>For the year ended April 30, 2002</b>				
Revenue from external customers	\$ 61,369	\$ 8,623	\$ 8,519	\$ 78,511
Intersegment revenue	596	1,897	1,003	3,496
Loss from operations	(13,702)	(760)	(801)	(15,263)
Depreciation and amortization expense	4,636	422	222	5,280
Capital expenditures	5,320	217	146	5,683

The following is a reconciliation for the above items where aggregate reportable segment amounts differ from amounts contained in the Company's consolidated financial statements.

	Year ended April 30,		
	2004	2003	2002
	(in thousands)		
Total external revenue for reportable segments	\$ 88,386	\$ 71,060	\$ 78,511
Net impact of revenue recognition on sales to affiliate	199	187	3,295

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Total consolidated revenue	\$ 88,585	\$ 71,247	\$ 81,806
Total operating profit (loss) for reportable segments	\$ 6,588	\$ (7,204)	\$ (15,263)
Net impact of intercompany gross profit eliminations and deferred profit on sales to affiliate	32	149	1,800
Total consolidated operating profit (loss)	\$ 6,620	\$ (7,055)	\$ (13,463)

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 14. Segment, Geographic and Significant Customer Information (Continued)

Revenue by geographic area is summarized as follows:

	Year ended April 30,		
	2004	2003	2002
	(in thousands)		
United States	\$ 12,611	\$ 12,179	\$ 18,499
Japan	43,911	24,560	28,367
Taiwan	4,490	2,787	5,386
Europe	12,478	11,606	14,020
Asia	15,095	20,115	15,534
	<u>\$ 88,585</u>	<u>\$ 71,247</u>	<u>\$ 81,806</u>

Revenue from JAL in fiscal years 2004, 2003 and 2002 totaled \$31,737,000 (36%), \$17,708,000 (25%), and \$23,113,000 (28%), respectively. Revenue from another customer in fiscal years 2004, 2003 and 2002 totaled \$13,533,000 (15%), \$6,178,000 (9%), and \$4,695,000 (6%), respectively. Revenue from a third customer in fiscal 2004, 2003 and 2002 totaled \$10,189,000 (12%), \$6,928,000 (10%), and \$9,622,000 (12%), respectively. As of April 30, 2004, 2003 and 2002, all of the Company's long-lived assets are located in the United States except for \$626,000, \$609,000, and \$583,000, respectively.

## 15. Income Taxes

The provision for (benefit from) income taxes consists of:

	Year ended April 30,		
	2004	2003	2002
	(in thousands)		
Current tax expense (benefit):			
Federal	\$ (237)	\$	\$ (200)
Foreign	222	65	
State	61	26	26

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	46	91	(174)
	<u>          </u>	<u>          </u>	<u>          </u>
Deferred tax expense:			
Federal			9,754
State			836
	<u>          </u>	<u>          </u>	<u>          </u>
			10,590
	<u>          </u>	<u>          </u>	<u>          </u>
	\$ 46	\$ 91	\$ 10,416
	<u>          </u>	<u>          </u>	<u>          </u>

For financial reporting purposes, income (loss) before income taxes includes the following components:

	<u>Year ended April 30,</u>		
	<u>2004</u>	<u>2003</u>	<u>2002</u>
United States	\$ 6,903	\$ (7,634)	\$ (13,350)
Foreign	1,868	145	143
	<u>          </u>	<u>          </u>	<u>          </u>
Total	\$ 8,771	\$ (7,489)	\$ (13,207)
	<u>          </u>	<u>          </u>	<u>          </u>

## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 15. Income Taxes (Continued)

The significant components of deferred tax assets and liabilities consist of the following:

	2004	2003
	<u>          </u>	<u>          </u>
Deferred tax assets:		
Inventories, due to reserves and additional costs inventoried for tax purposes	\$ 4,759	\$ 5,361
Acquired in-process research and development and intangibles	1,697	1,952
Accrued expenses	1,533	1,267
Deferred revenue	995	1,431
Deferred profit on sales to affiliates	895	883
Net operating loss and other carryforwards	15,590	17,826
Bad debt reserve	174	230
Depreciation	495	342
Other	424	414
	<u>          </u>	<u>          </u>
Gross deferred tax assets	26,562	29,706
Deferred tax valuation allowance	(26,562)	(29,706)
	<u>          </u>	<u>          </u>
Total net deferred tax assets	\$	\$
	<u>          </u>	<u>          </u>

Deferred income taxes reflect the tax impact of temporary differences between the amount of assets and liabilities for financial reporting purposes and such amounts as measured by tax laws and regulations. Under Statement of Financial Accounting Standards No. 109, Accounting for Income Taxes, the benefit associated with future deductible temporary differences is recognized if it is more likely than not that the benefit will be realized. The measurement of deferred tax assets is reduced by a valuation allowance if, based upon the weight of available evidence, it is more likely than not that some or all of the deferred tax assets will not be realized. The Company currently has a valuation allowance against the full amount of its deferred tax assets. Significant management judgment is required in determining the Company's provision for income taxes, its deferred tax assets and liabilities and any valuation allowance recorded against its net deferred tax assets. The Company evaluates the weight of all available evidence to determine whether it is more likely than not that some portion or all of the deferred income tax assets will not be realized. If the realization of deferred tax assets in the future is considered more likely than not, an adjustment to the deferred tax assets would increase net income in the period such determination was made. The amount of the deferred tax asset considered realizable is based on significant estimates, and it is at least reasonably possible that changes in these estimates in the near term could materially affect the Company's financial condition and results of operations. If the Company continues to generate profits in fiscal 2005, it is possible that all, or a portion, of the valuation allowance will be released in fiscal 2005.

During the second quarter of the year ended April 30, 2002, as a result of current year operating losses to date, anticipated additional operating losses for the third quarter of 2002, an expected operating loss for fiscal 2002, and uncertainty as to the extent and timing of profitability in future periods, the Company recorded an additional valuation allowance to reserve the remaining deferred tax assets, resulting in income tax expense of \$10.6 million.



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As of April 30, 2004, the Company has available unused operating loss carryforwards, which may be applied against future taxable income. Net operating loss carryforwards generated in fiscal 2000 and 2002 begin to expire in fiscal 2005 for state purposes and in fiscal 2020 for federal purposes.

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 15. Income Taxes (Continued)

At April 30, 2004 and 2003, the Company has a valuation allowance of \$336,000, to reflect net operating loss carryforwards, which will expire before they can be used due to ownership change limitations. These carryforwards began to expire in the year 2000. Net operating loss carryforwards remaining at April 30, 2004 and 2003, not limited in their use due to ownership changes, totaled \$29,690,000 and \$36,207,000, respectively. Included in the net operating loss carryforwards for April 30, 2004 and 2003 are \$23,835,000 and \$24,052,000, respectively, of state net operating losses that are only available to offset taxable state income.

The Company does not provide for taxes which would be payable if undistributed earnings of its foreign affiliates were remitted because the Company either considers these earnings to be invested for an indefinite period or anticipates that if such earnings were distributed, the U.S. income taxes payable would be substantially offset by foreign tax credits.

The following is a reconciliation between the amount of reported income tax expense (benefit) and the amount computed using the U.S. Federal Statutory rate of 35% for fiscal 2004, 2003 and 2002:

	Year ended April 30,		
	2004	2003	2002
		(in thousands)	
Statutory federal rate	\$ 3,087	\$ (2,560)	\$ (4,351)
State taxes, net of federal benefit	41	17	17
Valuation allowance	(3,144)	2,594	14,474
Other	62	40	276
	\$ 46	\$ 91	\$ 10,416

## 16. Incentive Savings and Profit Sharing Plan

The Company has an incentive savings and profit sharing plan covering substantially all employees who wish to participate and meet minimum age and service requirements. Annual Company contributions are determined by the Board of Directors and are limited to the maximum amount deductible under the Internal Revenue Code. Company contributions for fiscal 2004, 2003 and 2002 were \$198,000, \$21,000 and \$547,000, respectively.

## 17. Commitments and Contingencies

*Lease Obligations*

The Company leases land and certain buildings, machinery and equipment under operating leases, which expire through 2018. Under the terms of the leases, the Company is responsible for normal maintenance, utility expenses and taxes and pays a monthly property management fee on certain leases.

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 17. Commitments and Contingencies (Continued)

Future minimum lease payments under operating leases, including management fees, as of April 30, 2004 were as follows:

Year ending April 30,	(in thousands)
2005	1,654
2006	1,608
2007	1,428
2008	1,111
2009	1,152
Thereafter	11,561
	\$ 18,514

Total rent expense under non-cancelable operating leases was \$1,486,000, \$698,000 and \$768,000 for the years ended April 30, 2004, 2003 and 2002, respectively.

*Pending Litigation*

On October 12, 2000, the Company filed a patent infringement lawsuit against KLA-Tencor Corporation ( KLA ), a competitor, in United States District Court in Delaware. In the suit, the Company seeks damages and a permanent injunction against further infringement of United States Patent Numbers 6,118,525 and 6,292,259, both entitled Wafer Inspection System for Distinguishing Pits and Particles. KLA responded by filing counterclaims alleging that the Company has infringed four patents owned by KLA. KLA seeks damages for the alleged patent infringement and a permanent injunction against future infringement. In addition, KLA seeks a declaration that United States Patent Numbers 6,118,525 and 6,292,259, owned by the Company, are invalid and not infringed by KLA. On March 13, 2003, the District Court issued a ruling upholding KLA's principal arguments with respect to ADE's claims of infringement. On August 15, 2003, the District Court issued rulings upholding ADE's principal arguments with respect to KLA's claims of infringement for two of KLA's asserted patents. On February 4, 2004, a jury in the United States District Court in Delaware returned a verdict in favor of ADE invalidating all the remaining claims asserted by KLA. A final judgment has now been issued by the court in ADE's favor on all of KLA's counterclaims. The Company has appealed some of the District Court's rulings to the United States Court of Appeals for the Federal Circuit. Accordingly, at this time, the Company cannot predict the outcome or the amount of gain or loss, if any, from this lawsuit.

On October 18, 2002, a former employee of the Company filed a civil action against the Company in Massachusetts Superior Court, Suffolk County, alleging that the Company breached his employment contract with the Company and seeking damages of approximately \$500,000. The Company has filed an answer to the former employee's complaint denying his allegations, and believes that the former employee's claim lacks merit. The Company has also filed counterclaims against the employee. On July 15, 2003, the former employee amended his complaint to add related allegations and to add Dr. Koliopoulos and Mr. James as individual defendants. The Company and the individual defendants plan to

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defend the civil action charges vigorously. Since the matters are at a preliminary stage, the Company is unable to predict the outcome or amount of the related expense, or loss, if any, associated with this litigation. However, the Company believes that certain related expenses or losses will be covered under the Company's insurance policies.

In addition to the matters noted above, from time to time the Company is subject to legal proceedings and claims in the ordinary course of business. In the opinion of management, the amount of ultimate expense with respect to any other current legal proceedings and claims will not have a material adverse effect on the Company's financial position or results of operations.

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## ADE CORPORATION

## NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS (Continued)

## 17. Commitments and Contingencies (Continued)

*Guarantor agreements*

The Company has an agreement with a vendor whereby it guarantees the business related expenses incurred by certain of the Company's employees. The term of the agreement is from execution until cancellation and payment of any outstanding amounts. The Company would be required to pay any unsettled employee expenses upon notification from the vendor. The maximum potential amount of future payments the Company could be required to make under this agreement is not significant. As a result, the Company believes the estimated fair value of these agreements is minimal. Accordingly, no liabilities have been recorded for this guaranty as of April 30, 2004.

Pursuant to one of the provisions in the Company's standard terms and conditions of sale, the Company agrees, subject to certain limitations and conditions, to defend any suit or proceeding brought against a customer based on a claim that the Company's equipment, standing alone, infringes a United States patent or copyright or misappropriates a trade secret protected under United States law. Actions arising under such provision may only be brought by customers within two years after the cause of action arises. The maximum potential amount of payments the Company may be required to make under such provision is limited to the total purchase price of the Company's equipment sold under the particular contract. The Company has never incurred costs to defend lawsuits or settle claims related to these customer contract provisions. As a result, the Company believes the estimated fair value of these provisions is minimal. Accordingly, the Company has no liabilities recorded for these provisions as of April 30, 2004.

The Company warrants that its products will perform in all material respects in accordance with its standard published specifications. The term of the Company's standard warranty is 12 months. The Company accrues 2% or 3% of product revenues to provide for estimated warranty costs, based on which business unit made the sale. The following is a reconciliation of the activity in the Company's warranty liability for the years ended April 30, 2004 and 2003.

	Year ended April 30,	
	2004	2003
	(in thousands)	
Accrued warranty, beginning of year	\$ 1,041	\$ 1,146
Accruals for warranties issued	1,113	1,298
Warranty settlements made	(897)	(1,403)
Accrued warranty, end of year	\$ 1,257	\$ 1,041

## 18. Supplemental Disclosures of Cash Flow Information

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	Year ended April 30,		
	2004	2003	2002
	<u>          </u>	<u>          </u>	<u>          </u>
Cash paid during the year:			
Interest	\$ 358	\$ 624	\$ 660
Income taxes paid (refunds received), net	\$ (511)	\$ 58	\$ (39)
Transfers of demonstration units to inventory from fixed assets	\$ 89	\$ 911	\$

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## FINANCIAL STATEMENT SCHEDULE

(In thousands)

## Schedule II Valuation and Qualifying Accounts and Reserves

Description	Balance at May 1, 2001	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2002
Allowance for doubtful accounts	\$ 917	\$	\$	\$ (218)	\$ 699
Inventory obsolescence	8,149	400			8,549
Deferred tax asset valuation allowance	12,638	14,474			27,112

  

Description	Balance at May 1, 2002	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2003
Allowance for doubtful accounts	\$ 699	\$	\$	\$ (87)	\$ 612
Inventory obsolescence	8,549	1,061		(99)	9,511
Deferred tax asset valuation allowance	27,112	2,594			29,706

  

Description	Balance at May 1, 2003	Charged to costs and expenses	Charged to other accounts	Deductions and write-offs	Balance at April 30, 2004
Allowance for doubtful accounts	\$ 612	\$	\$	\$ (154)	\$ 458
Inventory obsolescence	9,511	910		(2,101)	8,320
Deferred tax asset valuation allowance	29,706	(3,144)			26,562

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