MKS INSTRUMENTS, INC.

EXPANDING OUR MARKETS • REACHING NEW HEIGHTS

2006 ANNUAL REPORT

MKS Instruments, Inc. (NASDAQ: MKSI) is a leading worldwide provider of instruments, components, subsystems, and process control solutions that measure, control, power, monitor, and analyze critical parameters of semiconductor and other advanced manufacturing processes.

FINANCIAL HIGHLIGHTS

SELECTED CONSOLIDATED FINANCIAL DATA

(in thousands, except per share data)

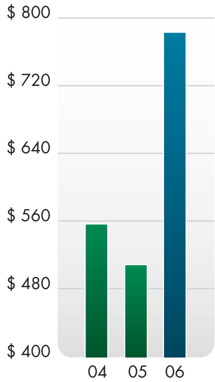
Year Ended December 31,	2002	2003	2004	2005	**2006**
Statement of Operations Data					
Net sales	$ 314,773	$ 337,291	$ 555,080	$ 509,294	**$ 782,801**
Gross profit	105,795	118,109	219,371	200,434	**338,122**
Net income (loss)	(39,537)	(16,385)	69,839	34,565	**94,235**
Net income (loss) per diluted share	(0.79)	(0.32)	1.28	0.63	**1.68**
Non-GAAP net earnings (loss)	(7,372)	(1,027)	62,909	39,495	**110,794**
Non-GAAP net earnings (loss) per diluted share	(0.15)	(0.02)	1.15	0.72	**1.98**
Balance Sheet Data					
Cash and cash equivalents	$ 88,820	$ 74,660	$ 138,389	$ 220,573	**$ 215,208**
Short-term investments	39,894	54,518	97,511	72,046	**74,749**
Working capital	192,008	210,468	347,700	410,060	**461,541**
Long-term investments	15,980	13,628	4,775	857	**2,816**
Total assets	685,623	692,032	828,677	863,740	**1,043,720**
Short-term obligations	18,472	20,196	24,509	18,886	**23,021**
Long-term obligations, less current portion	11,726	8,810	6,747	6,152	**6,113**
Stockholders' equity	610,690	608,310	726,634	762,843	**901,219**

The financial results that exclude certain charges and special items are not in accordance with accounting principles generally accepted in the United States of America (GAAP). See page 8 for a Reconciliation of GAAP to Non-GAAP Financial Results. MKS' management believes the presentation of non-GAAP financial measures — which exclude the costs associated with acquisitions, special items, and stock-based compensation — is useful to investors for comparing prior periods and analyzing ongoing business trends and operating results. See MKS' enclosed Annual Report on Form 10-K for the fiscal year ended December 31, 2006 for details regarding Selected Consolidated Financial Data.

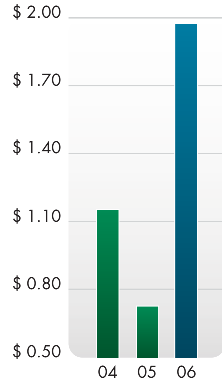
SAFE HARBOR STATEMENT – MKS' management believes that this Annual Report to Shareholders contains "forward-looking statements" within the meaning of the Private Securities Reform Act of 1995, Section 27A of the Securities Act, and Section 27E of the Securities Exchange Act. When used herein, "believe," "anticipate," "estimate," "expect," "intend," "may," "see," "will," "would," and similar expressions are intended to identify forward-looking statements. These forward-looking statements reflect management's current opinions and are subject to certain risks and uncertainties that could cause actual results to differ materially from those stated or implied. MKS Instruments, Inc. assumes no obligation to update this information. Risks and uncertainties include but are not limited to those discussed in the section entitled "Risk Factors."

EXPANDING OUR MARKETS & REACHING NEW HEIGHTS

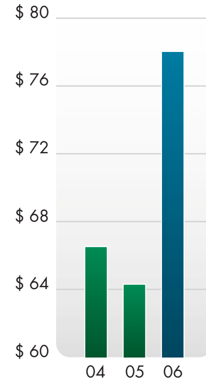
Annual Sales
(millions)



Non-GAAP
Earnings Per Share



Cash from Operations
(millions)



MKS is a leading worldwide provider of process control technologies for improving performance and productivity. We are focused on meeting demanding process requirements for customers in growing global markets.

In 2006 we delivered on our growth strategies and reached new heights of performance. We provided enabling technology for advanced semiconductor wafer fabrication processes. We also leveraged our technologies in non-semiconductor applications that require precise process control and monitoring. As a result, we delivered record-breaking levels of sales, earnings, and cash from operations.

Although we are pleased with these excellent results, we are even more excited about the opportunities ahead.

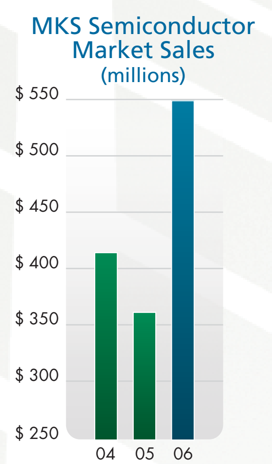
Leo Berlinghieri
Chief Executive Officer and President

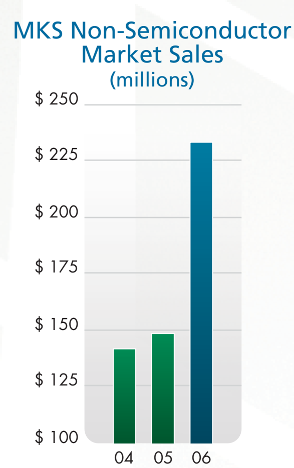
TO OUR SHAREHOLDERS

I am pleased to report that 2006 was an outstanding year for MKS. Our accomplishments – including record sales of $783 million – added up to one of the best years in our 45-year history.

We generated record levels of sales, earnings, and cash from operations in my first full year as Chief Executive Officer by delivering on key growth objectives:

- We exceeded the growth rate of our primary served market in semiconductor wafer fabrication equipment and achieved 51% growth year over year in sales to semiconductor OEMs.
- We delivered 61% growth in sales to semiconductor device manufacturers, as we added value with process control, monitoring, and analysis solutions.
- We leveraged our expanded technology portfolio and achieved 57% sales growth in non-semiconductor markets.





We also took important steps to enable MKS to continue to compete successfully in the future:

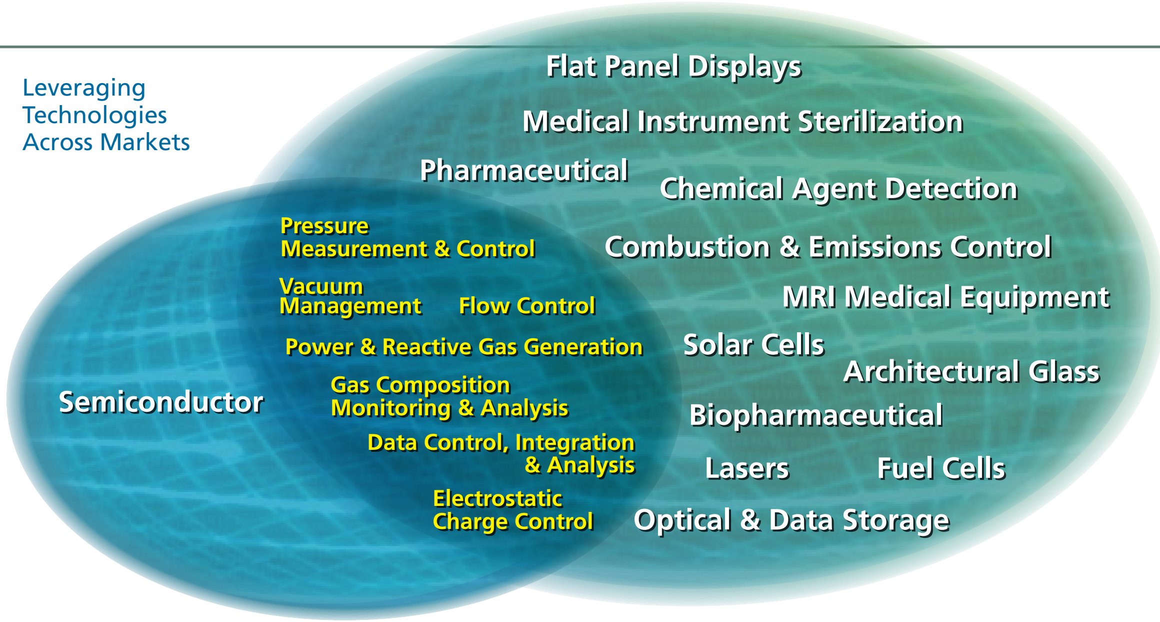
- We integrated three acquisitions that we expect will make a positive contribution to our future performance.
- We continued to make significant investments in developing innovative solutions, as our customers demand more from their processes.

These accomplishments demonstrate our success at meeting critical process requirements in diverse markets, and strengthen our foundation for sustainable long-term growth.

ACHIEVING RECORD PERFORMANCE

In 2006 we delivered 54% total sales growth year over year, and 45% organic growth, as sales increased to a

Leveraging Technologies Across Markets



record $782.8 million from $509.3 million in 2005. Sales to semiconductor OEMs and device manufacturers grew by 52% year over year and represented 70% of total sales.

Sales to thin film and other non-semiconductor markets grew even faster at a rate of 57% and represented 30% of total sales. Non-semiconductor sales provide the foundation to extend our market reach, while dampening the cyclicality of the semiconductor capital equipment market.

Net income increased by 173% to $94.2 million from $34.6 million. Net income per share more than doubled to $1.68 per diluted share from $0.63 per diluted share.

We measure our performance based on non-GAAP net earnings, which increased by 181% to $110.8 million from $39.5 million. Non-GAAP net earnings per share almost tripled to $1.98 per diluted share from $0.72 per diluted share.

Contributing to this earnings increase was an improvement in gross margin to 43.2% from 39.4%.

Operating expenses increased on a dollar basis, as we invested in our organization and infrastructure to scale up in size from a $500 million revenue run rate in 2005 to nearly $800 million, and to enhance our competitive strengths.

Our investments in R&D supported innovative new products across a range of market opportunities. Higher SG&A expense included increased costs to support a new global enterprise resource planning system.

Cash from operations grew to a record $78 million. For the third year in a row, we generated more than $60 million in cash from operations.

We entered 2007 with a strong balance sheet and the financial resources necessary to support continued investment in the growth of our business. At year end, our cash and investments totaled $293 million, or $264 million net of debt.

LEVERAGING OUR TECHNOLOGIES

MKS' process control solutions are designed to deliver value for customers across diverse markets, and we believe the breadth of our technology portfolio limits our risk with any one customer or in any one market.

In the semiconductor market, our technologies are used in advanced wafer fabrication processes such as depositing materials onto substrates, etching circuit patterns, and stripping photo resist from wafers and process chambers.

MKS' technologies and solutions increasingly find their way into exciting new markets and emerging applications, strengthening the foundation for achieving our growth objectives.

We leverage our technologies across a range of processes and markets:

- MKS has set the standard for excellence as a market leader in pressure measurement in semiconductor processes and leverages this technology in many other markets.
- Our flow control technology measures and controls the flow rate of gases into the semiconductor process chamber and also in diverse non-semiconductor processes.
- MKS' vacuum management technology is used downstream of the semiconductor process chamber and in key non-semiconductor applications such as biopharmaceutical manufacturing.
- Our power generation and reactive gas technologies generate plasma to deposit or remove layers of material or to clean process chambers for manufacturing semiconductors. Our power generation technology also amplifies power to provide high resolution images in magnetic resonance imaging (MRI) medical equipment.
- MKS' infrared technology monitors exhaust gases from the wafer fabrication process chamber, as well as emissions from automobile engines and smokestacks.
- Our control and information technology collects, controls, and analyzes process data in semiconductor manufacturing and in a range of other advanced processes – from pharmaceutical and consumable medical equipment manufacturing to oilfield exploration.
- MKS' ionization technology controls electrostatic discharge and reduces particulate contamination in semiconductor, flat panel display, data storage, and other advanced processes.

In 2006 we successfully acquired and integrated three companies with yield improvement technology. These acquisitions provided multivariate analysis technology to classify process faults and improve process consistency, as well as sensor and ionization technologies to provide closed-loop control of electrostatic management and reduce particle contamination. We expect an ongoing contribution to future growth from these technologies, as we integrate them more fully into our process productivity solutions.

Our technologies comprise the foundation for the instruments, components, subsystems, and process control solutions we provide for advanced processes in growing markets. We vigorously protect our intellectual property; at year end MKS held 308 U.S. patents and 225 international patents.

DELIVERING ON OUR GROWTH OBJECTIVES

MKS' technologies and solutions increasingly find their way into exciting new markets and emerging applications, strengthening the foundation for achieving our growth objectives.

Semiconductor OEMs

In 2006 we continued to provide semiconductor OEMs with innovative solutions for the latest generation of process tools and achieved 51% sales growth year over year. We also secured adoptions of our process-critical technologies on next-generation tools.

Many of our innovative solutions for semiconductor OEMs are integrated subsystems. We seek to gain competitive advantage by combining technologies and process expertise into subsystems with higher functionality in a smaller footprint at lower cost. We expect to achieve higher gross margins from these value-added products. Integrated subsystems represented 26% of total sales and 28% of organic sales in 2006. Our long-term goal is to further integrate our technologies and achieve 40% of sales from integrated subsystems.

A significant portion of our R&D investment is focused on new products that improve process performance and productivity for our customers. In 2006 we introduced Revolution®, an innovative remote plasma source that is designed to double reactive gas throughput for high performance on-wafer processing. The Revolution was quickly adopted by a key Asian semiconductor OEM for an advanced photo resist stripping process. Other OEMs are evaluating this new product, and we see opportunity ahead as OEMs begin to integrate value-added process steps with etching processes.

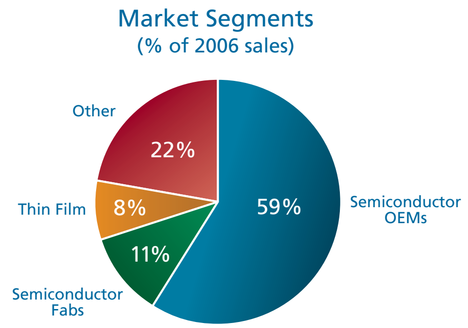
Semiconductor Fabs

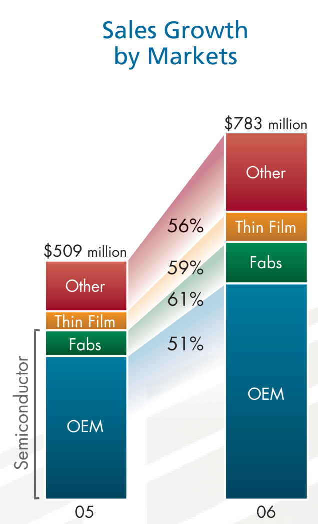
A second growth objective is to increase the value MKS delivers to semiconductor device manufacturers (fabs) as they focus on continuous yield improvement throughout the capital equipment spending cycle. We achieved this objective in 2006, growing our sales to semiconductor device manufacturers by 61% year over year as we provided a range of process control, monitoring, and analysis solutions.

Fabs are facing tougher manufacturing challenges as they transition to smaller geometries and new materials to increase device performance, reduce power, and stay competitive. Yield improvement is essential to meet production cost targets in the fab, and in 2006 we introduced several important new products that we believe enhance our fab customers' ability to improve their yields.

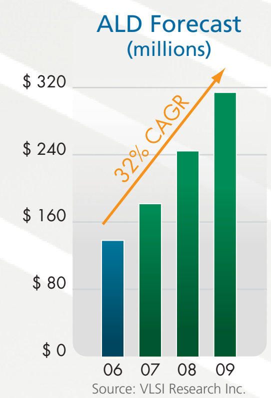
We gained share during the year at key 300mm fabs in Asia that are investing to expand capacity. They selected our next-generation residual gas analyzers to monitor process chamber gases, photo resist contamination, and leak integrity. Photo resist residue can damage wafers and reduce yield.

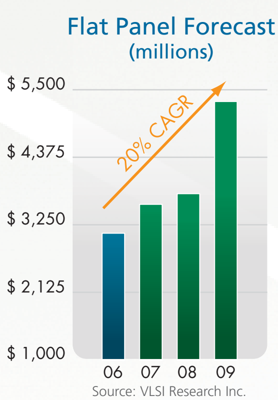
In addition, we expanded our penetration at memory device manufacturers in 2006 with our ozone systems for atomic layer deposition (ALD). Next-generation logic and memory devices require excellent film quality. ALD is a process in which very thin films are deposited uniformly on wafers, and ALD is moving into production at major memory device manufacturers. Ozone is a preferred precursor for ALD. Our ozone systems deliver ultra-high ozone concentrations for excellent film conformity, faster processing, and higher yields. ALD is forecast to grow at a

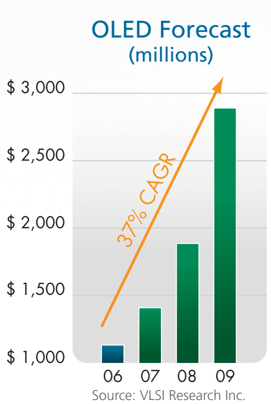




As we look forward in 2007, we are well positioned to capitalize on favorable global market trends, and we are confident that we can take advantage of the opportunities ahead of us.







32% compound annual growth rate through 2009, and we expect to continue to expand our penetration in this high-growth process.

Non-Semiconductor Markets

We delivered on our third growth objective in 2006, as we successfully leveraged our technologies in non-semiconductor markets that have growing requirements for process control, monitoring, and analysis. These markets include thin film applications such as flat panel display, data storage, and architectural glass, as well as other expanding markets such as medical equipment, high-purity manufacturing of pharmaceuticals and biopharmaceuticals, and energy generation and conservation.

By applying our technologies in advanced processes, we grew our sales to thin film markets by 59% year over year and to other non-semiconductor markets by 56%. For example, MKS liquid ozone systems were selected by a world-class Korean manufacturer for traditional flat panel display processes, as well as for emerging processes such as the organic light emitting diode (OLED) process used to manufacture small, thin, light-weight displays in automobiles, cell phones, digital cameras, and MP3 players. Flat panel display equipment is forecast to grow at a 20% compound annual growth rate through 2009, while OLED equipment is forecast to grow at a 37% compound annual growth rate for same period.

We also see attractive opportunities for MKS in energy generation and conservation-related market sectors such as solar cells, fuel cell research, and combustion and emissions control. For example, internal combustion engine manufacturers are investing to meet new emissions regulations in the United States and Europe through 2010. They need robust analytical equipment to analyze engine performance.

We gained share in the combustion market in 2006 with our new high-speed MultiGas® analyzer, which measures changes in multiple gases in real time. We believe our market share in gas analysis products alone could grow from a small base today to $12–$15 million over the next few years, as manufacturers design and test new engines to meet stricter pollution control requirements.

LOOKING AHEAD

Our results for 2006 represent a new performance milestone and demonstrate that we are executing our growth strategies. I want to thank the entire MKS team for this accomplishment. Our success results from the team's hard work and increasingly close involvement with our customers as their process needs evolve. We're committed to expanding those relationships and driving to new milestones as we look ahead. I also want to thank you, our shareholders, for your confidence in MKS.

At the end of 2006, John Bertucci retired from MKS as Executive Chairman and was elected Chairman of the Board. John's knowledge, leadership, and industry experience have been tremendous assets, and the core foundation of the company is the direct result of his hard work. MKS grew to become a three-quarters-of-a-billion-dollar company during John's 36 years of leadership. We are pleased that he will continue to lead the Board in our next phase of growth.

Our goal is to continue to outpace the growth rate of our primary served market. With our breadth of technology, we are excited about the opportunities ahead. The semiconductor industry continues to transition to smaller integrated circuit widths and new materials. We are well positioned at major semiconductor OEMs, where our critical subsystems have continued to be designed into advanced front-end processes.

As fabs focus intently on finding cost-effective solutions to improve yields, we see opportunities to provide greater value by applying our technologies to improve process performance and productivity. We see similar requirements to drive yield improvement in key non-semiconductor markets. We expect to leverage our process monitoring, analysis, and control technologies in markets with advanced processes where growth rates are strong.

As we look forward in 2007, we are well positioned to capitalize on favorable global market trends, and we are confident that we can take advantage of the opportunities ahead of us.

Leo Berlinghieri

Leo Berlinghieri
Chief Executive Officer and President

RECONCILIATION OF GAAP TO NON-GAAP FINANCIAL RESULTS

(in thousands, except per share data)

Year Ended December 31,	2002	2003	2004	2005	**2006**
Net income (loss)	$ (39,537)	$ (16,385)	$ 69,839	$ 34,565	**$ 94,235**
Adjustments (net of tax if applicable) [1]					
Amortization of acquired intangible assets	13,897	14,692	14,764	13,864	**17,376**
Stock-based compensation charges	-	-	-	-	**13,143**
Restructuring, asset impairment, and other charges	2,726	1,593	437	85	**-**
Loss (gain) from note related to disposition	4,121	-	(5,402)	-	**-**
Income from litigation settlement	(4,200)	-	-	(3,000)	**-**
Purchase of in-process technology	8,390	-	-	-	**800**
Other unusual items	-	(927)	-	-	**-**
Tax effect of adjustments	(6,147)	-	-	(4,118)	**(11,030)**
Special deferred tax charge (benefit)	13,378	-	(16,729)	(1,901)	**(3,730)**
Non-GAAP net earnings (loss) [1]	$ (7,372)	$ (1,027)	$ 62,909	$ 39,495	**$ 110,794**
Non-GAAP net earnings (loss) per share [1], [2]	$ (0.15)	$ (0.02)	$ 1.15	$ 0.72	**$ 1.98**
Weighted average shares outstanding [2]	50,000	51,581	54,656	54,633	**55,961**

(1) The non-GAAP net earnings (loss) and non-GAAP net earnings (loss) per share amounts exclude amortization of acquired intangible assets, acquisition and disposition related charges, stock-based compensation charges, and special items, net of applicable income taxes.

(2) Due to a non-GAAP net loss in the years ended December 31, 2003 and 2002, non-GAAP net loss per share is based upon the basic number of weighted average shares outstanding. For the years ended December 31, 2006, 2005, and 2004, MKS had non-GAAP net earnings; therefore, non-GAAP net earnings per share amounts are based upon the fully diluted number of weighted average shares outstanding.

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

Form 10-K
ANNUAL REPORT PURSUANT TO SECTIONS 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

(Mark One)

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

For the fiscal year ended December 31, 2006

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 0-23621

MKS Instruments, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Massachusetts	**04-2277512**
(State or other Jurisdiction of Incorporation or Organization)	*(IRS Employer Identification No.)*
90 Industrial Way, Wilmington, Massachusetts	**01887**
(Address of Principal Executive Offices)	*(Zip Code)*

Registrant's Telephone Number, including area code
(978) 284-4000

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

Title of Class	Name of Each Exchange on Which Registered
Common Stock, no par value	Nasdaq Global Market

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☑

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☑

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☑ Accelerated filer ☐ Non-accelerated filer ☐

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

Aggregate market value of the voting and non-voting common equity held by nonaffiliates of the registrant as of June 30, 2006 based on the closing price of the registrant's Common Stock on such date as reported by the Nasdaq Global Market: $834,878,092.

Number of shares outstanding of the issuer's Common Stock, no par value, as of February 16, 2007: 57,087,671.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for MKS' Annual Meeting of Stockholders to be held on May 7, 2007 are incorporated by reference into Part III of this Form 10-K.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

MKS' management believes that this Annual Report on Form 10-K contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act and Section 27E of the Securities Exchange Act. When used herein, the words "believe," "anticipate," "plan," "expect," "estimate," "intend," "may," "see," "will," "would" and similar expressions are intended to identify forward-looking statements. These forward-looking statements reflect management's current opinions and are subject to certain risks and uncertainties that could cause actual results to differ materially from those stated or implied. MKS assumes no obligation to update this information. Risks and uncertainties include, but are not limited to, those discussed in the section entitled "Risk Factors."

PART I

Item 1. *Business*

MKS Instruments, Inc. (the "Company" or "MKS") was founded in 1961 as a Massachusetts corporation. We are a leading worldwide provider of instruments, components, subsystems and process control solutions that measure, control, power and monitor critical parameters of semiconductor and other advanced manufacturing processes.

We are managed as one operating segment which is organized around three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas and thin-film composition analysis, electrostatic charge control, control and information management, power and reactive gas generation and vacuum technology.

Our products are used in diverse markets, applications and processes including:

- semiconductor devices for diverse electronics applications;
- flat panel displays for hand-held devices, laptop computers, desktop computer monitors and television sets;
- magnetic and optical storage media;
- optical filters and fiber optic cables for data and telecommunications;
- optical coatings for eyeglasses and architectural glass;
- magnetic resonance imaging (MRI) medical equipment; and
- energy generation and energy conservation processes.

For over 45 years, we have focused on satisfying the needs of our customers by establishing long-term, collaborative relationships. We have a diverse base of customers that includes manufacturers of semiconductor capital equipment, semiconductor devices, capital equipment manufacturers of thin-film coatings used in flat panel displays, optical and magnetic data storage equipment, architectural glass, solar panels and electro-optical products, industrial and manufacturing companies, as well as medical equipment manufacturers, and university, government and industrial research laboratories. Our top 10 customers for the year ended December 31, 2006 were Applied Materials, Hitachi, Lam Research, Novellus Systems, Oviso Manufacturing, Phillips, PSK Tech, Samsung, Tokyo Electron and Ultra Clean Technology.

We file reports, proxy statements and other documents with the Securities and Exchange Commission. You may read and copy any document we file at the SEC Headquarters at Office of Investor Education and Assistance, 100 F Street, NE, Washington, D.C. 20549. You should call 1-800-SEC-0330 for more information on the public reference room. Our SEC filings are also available to you on the SEC's Internet site at http://www.sec.gov.

Our internet address is www.mksinstruments.com. We are not including the information contained in our website as part of, or incorporating it by reference into, this annual report on Form 10-K. We make available free of charge through our web site our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on

Form 8-K and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such materials with the Securities and Exchange Commission.

Markets and Applications

We are focused on improving process performance and productivity by controlling advanced manufacturing processes in semiconductor, thin-film and other non-semiconductor market sectors. We estimate that approximately 70%, 71% and 74% of our net sales for the years ended December 31, 2006, 2005 and 2004, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. Approximately 8%, 8% and 8% of our net sales in the years ended December 31, 2006, 2005 and 2004, respectively, were for thin-film processing equipment applications, including compact discs, digital video discs (DVDs) and other digital storage media; flat panel displays for computer and television screens; and thin-film coatings for architectural glass and optics. Approximately 22%, 21% and 18% of our net sales in the years ended December 31, 2006, 2005 and 2004, respectively, were for other non-semiconductor manufacturing applications. These include, but are not limited to, industrial manufacturing, magnetic resonance imaging (MRI) medical equipment, energy generation and conservation processes, and university, government and industrial research laboratories.

We estimate that approximately 34%, 37% and 34% of our net sales for the years ended December 31, 2006, 2005 and 2004, respectively, were to customers located in international markets. International sales include sales by our foreign subsidiaries, but exclude direct export sales. Please refer to Note 11 in the Notes to Consolidated Financial Statements for further information about geographical information.

Semiconductor Manufacturing Applications

The majority of our sales are derived from products sold to semiconductor capital equipment manufacturers and semiconductor device manufacturers. Our products are used in the major semiconductor processing steps such as depositing materials onto substrates and etching and cleaning circuit patterns.

Our products are also used for process facility applications such as gas distribution, pressure control and vacuum distribution, and electrostatic charge control in clean rooms where semiconductor manufacturing takes place. In addition, we provide specialized instruments that monitor the performance of manufacturing equipment and products that distribute, manage, and classify process control information. We anticipate that the semiconductor manufacturing market will continue to account for a substantial portion of our sales. While the semiconductor device manufacturing market is global, major semiconductor capital equipment manufacturers are concentrated in Europe, Japan and the United States.

Thin-Film Manufacturing Applications

Flat Panel Display Manufacturing.

Our products are used in the manufacture of flat panel displays, which require the same or similar fabrication processes as semiconductor manufacturing. Flat panel displays are used in electronic hand-held devices, laptop computers, desktop computer monitors, and television sets. Flat panel display technology is designed to replace bulkier cathode ray tube (CRT) technology in computer monitors and television sets. We sell products to flat panel display equipment manufacturers and to end-users in the flat panel display market. The major manufacturers of flat panel displays are concentrated in Japan, Korea and Taiwan, and the major manufacturers of flat panel display equipment are concentrated in Japan and the United States. The transition to larger panel sizes and higher display resolution is driving the need for improved process controls to reduce defects.

Magnetic and Optical Storage Media.

Our products are used to manufacture:

- magnetic storage media which store and read data magnetically;
- optical storage media which store and read data using laser technology;

- compact discs;
- hard disks;
- data storage devices; and
- digital video discs.

The transition to higher density storage capacity requires manufacturing processes incorporating tighter process controls. The major manufacturers of storage media are concentrated in Japan and the Asia Pacific region, and the major manufacturers of storage media capital equipment are concentrated in Europe, Japan and the United States.

Optical Filters, Optical Fibers and Other Coating Processes.

Our products are used in optical filter, optical fiber and other optical thin-film coating processes. Our products are sold both to coating equipment manufacturers and to manufacturers of products made using optical thin-film coating processes. Optical filters and fibers used for data transmission are manufactured using processes to deposit chemical vapors that are similar to those used in semiconductor manufacturing. The requirement for higher data transmission rates is driving the need for improved control of optical filters and fiber coating processes. Optical thin film coating for eyeglasses, solar panels and architectural glass are deposited using processes similar to those used in semiconductor manufacturing. Optical filter, optical fiber and other optical thin-film processing manufacturers are concentrated in Europe, Japan and the United States.

Other Non-Semiconductor Manufacturing Applications

Our products are used in energy generation and conservation processes such as nuclear fuel processing, combustion and emissions control, solar cells and fuel cell research. Other advanced applications include chemical agent detection, medical instrument sterilization, consumable medical supply manufacturing and vacuum freeze drying of pharmaceuticals, foods and beverages. Our power delivery products are also incorporated into other end-market products such as MRI medical equipment. In addition, our products are sold to government, university and industrial laboratories for vacuum applications involving research and development in materials science, physical chemistry and electronics materials. The major equipment and process providers and research laboratories are concentrated in Europe, Japan and the United States.

Acquisitions

We completed three acquisitions in 2006. On January 3, 2006, we completed our acquisition of Ion Systems, Inc. ("Ion"), a leading provider of electrostatic management solutions located in Alameda, California. Ion's ionization technology monitors electrostatic charges to reduce process contamination and improve yields, which complements our process monitoring and control technologies. Additionally, on January 3, 2006, we completed our acquisition of Umetrics, AB ("Umetrics"), a leader in multivariate data analysis and modeling software located in Umea, Sweden. Umetrics' multivariate data analysis and modeling software converts process data into useable information for yield improvement, when linked with our open and modular platform of process sensors and data collection, integration, data storage, and visualization capabilities. On October 11, 2006, we completed our acquisition of Novx Corp. ("Novx"), a provider of electrostatic charge monitoring technology for semiconductor, data storage, telecommunication, medical device and other markets. Novx's technology expands our capability to monitor, detect and control electrostatic charge in advanced process environments, such as semiconductor and hard disk drive manufacturing.

Product Groups

We group our products into three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Also, please refer to Note 11 in the Notes to Consolidated Financial Statements for further information.

1. *Instruments and Control Systems*

This product group includes pressure measurement and control products, materials delivery products, gas and thin film composition analysis products, electrostatic charge control products, and control and information technology products.

Pressure Measurement and Control Products. Each of our pressure measurement and control product lines consists of products that are designed for a variety of pressure ranges and accuracies.

Baratron Pressure Measurement Products. These products are typically used to measure the pressure of the gases being distributed upstream of the process chambers, to measure process chamber pressures and to measure pressures between process chambers, vacuum pumps and exhaust lines. We believe we offer the widest range of gas pressure measurement instruments in the semiconductor and advanced thin-film materials processing industries.

Automatic Pressure and Vacuum Control Products. These products enable precise control of process pressure by electronically actuating valves that control the flow of gases in and out of the process chamber to minimize the difference between desired and actual pressure in the chamber.

In most cases, Baratron pressure measurement instruments provide the pressure input to the automatic pressure control device. Together, these components create an integrated automatic pressure control subsystem. Our pressure control products can also accept inputs from other measurement instruments, enabling the automatic control of gas input or exhaust based on parameters other than pressure.

Materials Delivery Products. Each of our materials delivery product lines consists of products that are designed for a variety of flow ranges and accuracies.

Flow Measurement and Control Products. Flow measurement products include gas, vapor and liquid flow measurement products based upon thermal conductivity, pressure and direct liquid injection technologies. The flow control products combine the flow measurement device with valve control elements based upon solenoid, piezo-electric and piston pump technologies. These products measure and automatically control the mass flow rate of gases and vapors into the process chamber. Our thermal-based mass flow controllers control gas flow based on the molecular weight of gases and our pressure-based mass flow controllers, based on Baratron pressure instrument measurement and control technology, restrict flow in the gas line to transform pressure control into mass flow control.

Our flow measurement products also include a calibration system that independently measures mass flow and compares this measurement to that of the process chamber mass flow controller. The demand for our calibration system is driven by the increasingly stringent process control needs of the semiconductor industry and the need to reduce costly downtime resulting from stopping operations to address mass flow controller problems.

Gas and Thin-Film Composition Analysis Products. Gas and thin-film composition analysis instruments are sold to a variety of industries including the semiconductor industry.

Mass Spectrometry-Based Gas Composition Analysis Instruments. These products are based on quadruple mass spectrometer sensors that separate gases based on molecular weight. These sensors include built-in electronics and are provided with software that analyzes the composition of background and process gases in the process chamber. These instruments are provided both as portable laboratory systems and as process gas monitoring systems used in the diagnosis of semiconductor manufacturing process systems.

Fourier Transform Infra-Red (FTIR) Based Gas and Thin-Film Composition Analysis Products. FTIR-based products provide information about the composition of gases and thin-films by measuring the absorption of infra-red light as it passes through the sample being measured. Gas analysis applications include measuring the compositions of mixtures of reactant gases; measuring the purity of individual process gases; measuring the composition of process exhaust gas streams to determine process health; monitoring gases to ensure environmental health and safety; and monitoring combustion exhausts. These instruments are provided as portable laboratory systems and as process gas monitoring systems used in the diagnosis of manufacturing processes.

Mass spectrometry-based and FTIR-based gas monitoring systems can indicate out-of-bounds conditions, such as the presence of undesirable contaminant gases and water vapor or out-of-tolerance amounts of specific gases in the process, which alert operators to diagnose and repair faulty equipment.

Leak Detection Products. Helium leak detection is used in a variety of industries including semiconductor, HVAC, automotive and aerospace to ensure the leak integrity of both manufactured products and manufacturing equipment. We believe that our products are the smallest mass spectrometer-based helium leak detectors currently available.

Optical Monitoring Instruments. We manufacture a range of optical monitoring instruments that are sold primarily for thin-film coating applications such as the manufacture of optical filters. The optical monitors measure the thickness and optical properties of a film being deposited, allowing the user to better control the process.

Electrostatic Charge Control Products. Industries that rely on high technology manufacturing, such as the semiconductor, flat panel display, and data storage industries, are vulnerable to electrostatic charge-related contamination and yield problems. We design and manufacture products to control electrostatic attraction, electrostatic discharge, and electromagnetic interference.

Control and Information Technology Products. We design and manufacture a suite of products that allow semiconductor manufacturing customers to better control their processes through computer-controlled automation. These products include digital control network products, process chamber and system controllers, data analysis products and connectivity products. Digital control network products are used to connect sensors, actuators and subsystems to the chamber and system control computers. They support a variety of industry-standard connection methods including DeviceNet, Profibus, ethernet and conventional discrete digital and analog signals. Chamber and system control computers process these signals in real time and allow customers to precisely manage the process conditions. Connectivity products allow information to flow from the process sensors and subsystems and from the process tool control computer to the factory network. By enabling this information flow, we believe that we help customers optimize their processes through Advanced Process Control (APC), and diagnose equipment problems from a remote location (e-diagnostics).

2. ***Power and Reactive Gas Products***

This product group includes power delivery products and reactive gas generation products.

Power Delivery Products. Our power delivery products are used in the semiconductor, flat panel display, data storage and medical markets. In the semiconductor, flat panel and data storage markets, our microwave, RF and DC power supplies are used to provide energy to various etching, stripping and deposition processes. A range of impedance matching units transfer power from the power supplies to the customer's process. We also provide sensors to measure delivered voltage and current along with plasma impedance. This information is used both to better control the generator output and as a process chamber diagnostic. Our power amplifiers are also used in MRI medical equipment including the most advanced 3T (three Tesla) machines.

Reactive Gas Generation Products. Reactive gases are used to etch, strip and deposit films on wafers, to clean wafers during processing, and to clean process chambers to reduce particle contamination. A reactive gas is created when energy is added to a stable gas to break apart its molecules. The resulting dissociated gas produces rapid chemical reactions when it comes into contact with other matter. Our reactive gas products include ozone generators and subsystems used for deposition of insulators onto semiconductor devices, ozonated water delivery systems for advanced semiconductor wafer and flat panel display cleaning, atomic fluorine generators for process chamber cleaning, microwave plasma based products for photo resist removal and a new line of generators based on the fluorine cleaning architecture which provide reactive gases for a wide range of semiconductor, flat panel and thin film applications.

3. ***Vacuum Products***

This product group consists of vacuum technology products, including vacuum gauges, valves and components.

Vacuum Gauging Products. We offer a wide range of vacuum instruments consisting of vacuum measurement sensors and associated power supply and readout units. These vacuum gauges measure phenomena that are related to the level of pressure in the process chamber and downstream of the process chamber between the chamber and the pump. These gauges are used to measure vacuum at pressures lower than those measurable with a Baratron instrument or to measure vacuum in the Baratron instrument range where less accuracy is required. Our indirect pressure gauges use thermal conductivity and ionization gauge technologies to measure pressure from atmospheric pressure to one trillionth of atmospheric pressure.

Vacuum Valves and Components. Our vacuum valves are used on the gas lines between the process chamber and the pump downstream of the process chamber. Our vacuum components consist of flanges, fittings, traps and heated lines that are used downstream from the process chamber to provide leak free connections and to prevent condensable materials from depositing particles near or back into the chamber. The manufacture of devices with small circuit patterns cannot tolerate contamination from atmospheric leaks or particles. Our vacuum components are designed to minimize such contamination and thus increase yields and reduce downtime.

Application-Specific Integrated Subsystems

We also combine these products and technologies into application-specific integrated subsystems. Integrated subsystems are made by each product group, and typically provide higher functionality in a smaller footprint, depending upon the application.

For example, we have a line of integrated flow and pressure control subsystems that combine two or more of our products and technologies into products for specific process applications. We have developed a range of Back-Side Wafer Cooling Subsystems which are needed to control the flow and pressure of the helium used to effect the cooling of wafers in semiconductor manufacturing. By combining the functions of our Baratron pressure measurement instruments, flow measurement instruments, control electronics and valves into a range of compact subsystems, this product line addresses the need for smaller components that save valuable clean room space.

Sales for integrated subsystems were $206.4 million or approximately 26% of total net sales for the year ended December 31, 2006 compared to $139.2 million or approximately 27% of total net sales and to $140.2 million or 25% of total net sales for the years ended December 31, 2005 and 2004, respectively.

Customers

Our largest customers include leading semiconductor capital equipment manufacturers such as Applied Materials, Lam Research, Novellus Systems and Tokyo Electron. Sales to our top ten customers accounted for approximately 49%, 48% and 49% of net sales for the years ended December 31, 2006, 2005 and 2004, respectively. Applied Materials accounted for approximately 21%, 18% and 20% of our net sales for the years ended December 31, 2006, 2005 and 2004, respectively.

Sales, Marketing and Support

Our worldwide sales, marketing and support organization is critical to our strategy of maintaining close relationships with semiconductor capital equipment manufacturers and semiconductor device manufacturers. We sell our products primarily through our direct sales force. As of December 31, 2006, we had 208 sales employees worldwide, located in China, France, Germany, Japan, Korea, the Netherlands, Singapore, Sweden, Taiwan, the United Kingdom and the United States. We also maintain sales representatives and agents in a number of countries, which supplement this direct sales force. We maintain a marketing staff that identifies customer requirements, assists in product planning and specifications, and focuses on future trends in semiconductor and other markets.

As semiconductor device manufacturers have become increasingly sensitive to the significant costs of system downtime, they have required that suppliers offer comprehensive local repair service and close customer support. Manufacturers require close support to enable them to repair, modify, upgrade and retrofit their equipment to improve yields and adapt new materials or processes. To meet these market requirements, we maintain a worldwide sales and support organization in 14 countries. Technical support is provided by applications engineers located at offices in China, France, Germany, Japan, Korea, the Netherlands, Singapore, Taiwan, the United Kingdom and the

United States. Repair and calibration services are provided at 27 service depots located worldwide. We typically provide warranties from one to three years, depending upon the type of product.

Research and Development

Our products incorporate sophisticated technologies to power, measure, control and monitor increasingly complex gas-related semiconductor manufacturing processes, thereby enhancing uptime, yield and throughput for our semiconductor device manufacturing customers. Our products have continuously advanced as we strive to meet our customers' evolving needs. We have developed, and continue to develop, new products to address industry trends, such as the shrinking of integrated circuit critical dimensions from 90 nanometers to 65 nanometers and below. In addition, we have developed, and continue to develop, products that support the migration to new classes of materials and ultra-thin layers, such as copper for low resistance conductors, high-k dielectric materials for capacitors and gates and low-k dielectric materials for low loss insulators that are used in small geometry manufacturing. We have undertaken an initiative to involve our marketing, engineering, manufacturing and sales personnel in the concurrent development of new products in order to reduce the time to market for new products. Our employees also work closely with our customers' development personnel helping us to identify and define future technical needs on which to focus research and development efforts. We support research at academic institutions targeted at advances in materials science and semiconductor process development. At December 31, 2006, we had 456 research and development employees, primarily located in the United States. Our research and development expenses were $69.7 million, $55.9 million and $57.0 million for the years ended December 31, 2006, 2005 and 2004, respectively. Our research and development efforts include numerous projects, none of which are individually material, and generally have a duration of 12 to 30 months.

Manufacturing

Our manufacturing facilities are located in China, Germany, Israel, Japan, Mexico, the United Kingdom and the United States. Manufacturing activities include the assembly and testing of components and subassemblies, which are integrated into products. We outsource some of our subassembly work. We purchase a wide range of electronic, mechanical and electrical components, some of which are designed to our specifications. We consider our responsiveness to our customers' significantly fluctuating product demands, by using lean manufacturing techniques, to be a distinct competitive advantage.

Competition

The market for our products is highly competitive. Principal competitive factors include:

- historical customer relationships;
- product quality, performance and price;
- breadth of product line;
- manufacturing capabilities; and
- customer service and support.

Although we believe that we compete favorably with respect to these factors, there can be no assurance that we will continue to do so.

We encounter substantial competition in most of our product lines, although no single competitor competes with us across all product lines. Certain of our competitors may have greater financial and other resources than us. In some cases, competitors are smaller than we are, but well established in specific product niches. Celerity offers products that compete with our pressure and materials delivery products. Advanced Energy and Horiba each offer materials delivery products that compete with our product line of mass flow controllers. Nor-Cal Products, Inc. and VAT, Inc., each offer products that compete with our vacuum components. Inficon offers products that compete with our vacuum measurement and gas analysis products. Brooks Automation and Inficon each offer products that compete with our vacuum gauging products. Advanced Energy offers products that compete with our power delivery and reactive gas generator products.

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. As of December 31, 2006, we owned 308 U.S. patents, 225 foreign patents and had 110 pending U.S. patent applications. Foreign counterparts of certain of these applications have been filed or may be filed at the appropriate time.

We require each of our employees, including our executive officers, to enter into standard agreements pursuant to which the employee agrees to keep confidential all of our proprietary information and to assign to us all inventions while they are employed by us.

For a discussion of litigation relating to our intellectual property, see "Item 3. Legal Proceedings."

Employees

As of December 31, 2006, we employed 2,960 persons. We believe that our ongoing success depends upon our continued ability to attract and retain highly skilled employees for whom competition is intense. None of our employees are represented by a labor union or are party to a collective bargaining agreement. We believe that our employee relations are good.

Item 1A. *Risk Factors*

Our business depends substantially on capital spending in the semiconductor industry which is characterized by periodic fluctuations that may cause a reduction in demand for our products.

We estimate that approximately 70%, 71% and 74% of our net sales for the years ended December 31, 2006, 2005 and 2004, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers, and we expect that sales to such customers will continue to account for a substantial majority of our sales. Our business depends upon the capital expenditures of semiconductor device manufacturers, which in turn depend upon the demand for semiconductors. Periodic reductions in demand for the products manufactured by semiconductor capital equipment manufacturers and semiconductor device manufacturers may adversely affect our business, financial condition and results of operations.

Historically, the semiconductor market has been highly cyclical and has experienced periods of overcapacity, resulting in significantly reduced demand for capital equipment. For example, in 2001 through the first half of 2003, we experienced a significant reduction in demand from OEM customers, and lower gross margins due to reduced absorption of manufacturing overhead. In addition, many semiconductor manufacturers have operations and customers in Asia, a region that in past years has experienced serious economic problems including currency devaluations, debt defaults, lack of liquidity and recessions. We cannot be certain of the timing or magnitude of future semiconductor industry downturns. A decline in the level of orders as a result of any downturn or slowdown in the semiconductor capital equipment industry could have a material adverse effect on our business, financial condition and results of operations.

Our quarterly operating results have fluctuated, and are likely to continue to vary significantly, which may result in volatility in the market price of our common stock.

A substantial portion of our shipments occurs shortly after an order is received and therefore we operate with a low level of backlog. As a result, a decrease in demand for our products from one or more customers could occur with limited advance notice and could have a material adverse effect on our results of operations in any particular period. A significant percentage of our expenses is relatively fixed and based in part on expectations of future net sales. The inability to adjust spending quickly enough to compensate for any shortfall would magnify the adverse impact of a shortfall in net sales on our results of operations. Factors that could cause fluctuations in our net sales include:

- the timing of the receipt of orders from major customers;
- shipment delays;

- disruption in sources of supply;
- seasonal variations in capital spending by customers;
- production capacity constraints; and
- specific features requested by customers.

In addition, our quarterly operating results may be adversely affected due to charges incurred in a particular quarter, for example, relating to inventory obsolescence, warranty or asset impairments.

As a result of the factors discussed above, it is likely that we may in the future experience quarterly or annual fluctuations and that, in one or more future quarters, our operating results may fall below the expectations of public market analysts or investors. In any such event, the price of our common stock could decline significantly.

The loss of net sales to any one of our major customers would likely have a material adverse effect on us.

Our top ten customers accounted for approximately 49%, 48% and 49% of our net sales for the years ended December 31, 2006, 2005 and 2004, respectively. The loss of a major customer or any reduction in orders by these customers, including reductions due to market or competitive conditions, would likely have a material adverse effect on our business, financial condition and results of operations. During the years ended December 31, 2006, 2005 and 2004, one customer, Applied Materials, accounted for approximately 21%, 18% and 20%, respectively, of our net sales. None of our significant customers, including Applied Materials, has entered into an agreement requiring it to purchase any minimum quantity of our products. The demand for our products from our semiconductor capital equipment customers depends in part on orders received by them from their semiconductor device manufacturer customers.

Attempts to lessen the adverse effect of any loss or reduction of net sales through the rapid addition of new customers could be difficult because prospective customers typically require lengthy qualification periods prior to placing volume orders with a new supplier. Our future success will continue to depend upon:

- our ability to maintain relationships with existing key customers;
- our ability to attract new customers;
- our ability to introduce new products in a timely manner for existing and new customers; and
- the success of our customers in creating demand for their capital equipment products which incorporate our products.

As part of our business strategy, we have entered into and may enter into or seek to enter into business combinations and acquisitions that may be difficult and costly to integrate, may be disruptive to our business, may dilute stockholder value or may divert management attention.

We made several acquisitions in the years 2000 through 2002 and, more recently in 2006. As a part of our business strategy, we may enter into additional business combinations and acquisitions. Acquisitions are typically accompanied by a number of risks, including the difficulty of integrating the operations, technology and personnel of the acquired companies, the potential disruption of our ongoing business and distraction of management, possible internal control weaknesses of the acquired companies, expenses related to the acquisition and potential unknown liabilities associated with acquired businesses. If we are not successful in completing acquisitions that we may pursue in the future, we may be required to reevaluate our growth strategy, and we may incur substantial expenses and devote significant management time and resources in seeking to complete proposed acquisitions that will not generate benefits for us.

In addition, with future acquisitions, we could use substantial portions of our available cash as all or a portion of the purchase price. We could also issue additional securities as consideration for these acquisitions, which could cause significant stockholder dilution. Further, our prior acquisitions and any future acquisitions may not ultimately help us achieve our strategic goals and may pose other risks to us.

As a result of our previous acquisitions, we have added several different decentralized operating and accounting systems, resulting in a complex reporting environment. We will need to continue to modify our accounting policies, internal controls, procedures and compliance programs to provide consistency across all our operations. In order to increase efficiency and operating effectiveness and improve corporate visibility into our decentralized operations, we are currently implementing a new worldwide Enterprise Resource Planning ("ERP") system. We completed our first site implementation in October 2005 and we expect to continue to implement the ERP system by converting our remaining operations in phases over the next few years. Although we have a plan to accomplish the ERP implementation, we may risk potential disruption of our operations during the conversion periods and the implementation could require significantly more management time and higher implementation costs than currently estimated.

An inability to convince semiconductor device manufacturers to specify the use of our products to our customers that are semiconductor capital equipment manufacturers would weaken our competitive position.

The markets for our products are highly competitive. Our competitive success often depends upon factors outside of our control. For example, in some cases, particularly with respect to mass flow controllers, semiconductor device manufacturers may direct semiconductor capital equipment manufacturers to use a specified supplier's product in their equipment. Accordingly, for such products, our success will depend in part on our ability to have semiconductor device manufacturers specify that our products be used at their semiconductor fabrication facilities. In addition, we may encounter difficulties in changing established relationships of competitors that already have a large installed base of products within such semiconductor fabrication facilities.

If our products are not designed into successive generations of our customers' products, we will lose significant net sales during the lifespan of those products.

New products designed by semiconductor capital equipment manufacturers typically have a lifespan of five to ten years. Our success depends on our products being designed into new generations of equipment for the semiconductor industry. We must develop products that are technologically advanced so that they are positioned to be chosen for use in each successive generation of semiconductor capital equipment. If customers do not choose our products, our net sales may be reduced during the lifespan of our customers' products. In addition, we must make a significant capital investment to develop products for our customers well before our products are introduced and before we can be sure that we will recover our capital investment through sales to the customers in significant volume. We are thus also at risk during the development phase that our products may fail to meet our customers' technical or cost requirements and may be replaced by a competitive product or alternative technology solution. If that happens, we may be unable to recover our development costs.

The semiconductor industry is subject to rapid demand shifts which are difficult to predict. As a result, our inability to expand our manufacturing capacity in response to these rapid shifts may cause a reduction in our market share.

Our ability to increase sales of certain products depends in part upon our ability to expand our manufacturing capacity for such products in a timely manner. If we are unable to expand our manufacturing capacity on a timely basis or to manage such expansion effectively, our customers could implement our competitors' products and, as a result, our market share could be reduced. Because the semiconductor industry is subject to rapid demand shifts which are difficult to foresee, we may not be able to increase capacity quickly enough to respond to a rapid increase in demand. Additionally, capacity expansion could increase our fixed operating expenses and if sales levels do not increase to offset the additional expense levels associated with any such expansion, our business, financial condition and results of operations could be materially adversely affected.

We operate in a highly competitive industry.

The market for our products is highly competitive. Principal competitive factors include:

- historical customer relationships;
- product quality, performance and price;

- breadth of product line;
- manufacturing capabilities; and
- customer service and support.

Although we believe that we compete favorably with respect to these factors, we may not be able to continue to do so. We encounter substantial competition in most of our product lines. Certain of our competitors may have greater financial and other resources than we have. In some cases, competitors are smaller than we are, but well established in specific product niches. We may encounter difficulties in changing established relationships of competitors with a large installed base of products at such customers' fabrication facilities. In addition, our competitors can be expected to continue to improve the design and performance of their products. Competitors may develop products that offer price or performance features superior to those of our products. If our competitors develop superior products, we may lose existing customer and market share.

Sales to foreign markets constitute a substantial portion of our net sales; therefore, our net sales and results of operations could be adversely affected by downturns in economic conditions in countries outside of the United States.

International sales include sales by our foreign subsidiaries, but exclude direct export sales. International sales accounted for approximately 34%, 37% and 34%, of net sales for the years ended December 31, 2006, 2005 and 2004, respectively, a significant portion of which were sales to Japan.

We anticipate that international sales will continue to account for a significant portion of our net sales. In addition, certain of our key domestic customers derive a significant portion of their revenues from sales in international markets. Therefore, our sales and results of operations could be adversely affected by economic slowdowns and other risks associated with international sales.

We have significant foreign operations, and outsource certain operations offshore, which pose significant risks.

We have significant international sales, service, engineering and manufacturing operations in Europe, Israel and Asia, and have outsourced a portion of our manufacturing to Mexico. We may expand the level of manufacturing and certain other operations that we do offshore in order to take advantage of cost efficiencies available to us in those countries. However, we may not achieve the significant cost savings or other benefits that we anticipate from this program. These foreign operations expose us to operational and political risks that may harm our business, including:

- political and economic instability;
- fluctuations in the value of currencies and high levels of inflation, particularly in Asia and Europe;
- changes in labor conditions and difficulties in staffing and managing foreign operations, including, but not limited to, labor unions;
- reduced or less certain protection for intellectual property rights;
- greater difficulty in collecting accounts receivable and longer payment cycles;
- burdens and costs of compliance with a variety of foreign laws;
- increases in duties and taxation;
- imposition of restrictions on currency conversion or the transfer of funds;
- changes in export duties and limitations on imports or exports;
- expropriation of private enterprises; and
- unexpected changes in foreign regulations.

If any of these risks materialize, our operating results may be adversely affected.

Unfavorable currency exchange rate fluctuations may lead to lower operating margins or may cause us to raise prices, which could result in reduced sales.

Currency exchange rate fluctuations could have an adverse effect on our net sales and results of operations and we could experience losses with respect to our hedging activities. Unfavorable currency fluctuations could require us to increase prices to foreign customers, which could result in lower net sales by us to such customers. Alternatively, if we do not adjust the prices for our products in response to unfavorable currency fluctuations, our results of operations could be adversely affected. In addition, most sales made by our foreign subsidiaries are denominated in the currency of the country in which these products are sold and the currency they receive in payment for such sales could be less valuable at the time of receipt as a result of exchange rate fluctuations. We enter into forward foreign exchange contracts and may enter into local currency purchased options to reduce currency exposure arising from intercompany sales of inventory. However, we cannot be certain that our efforts will be adequate to protect us against significant currency fluctuations or that such efforts will not expose us to additional exchange rate risks.

Key personnel may be difficult to attract and retain.

Our success depends to a large extent upon the efforts and abilities of a number of key employees and officers, particularly those with expertise in the semiconductor manufacturing and similar industrial manufacturing industries. The loss of key employees or officers could have a material adverse effect on our business, financial condition and results of operations. We believe that our future success will depend in part on our ability to attract and retain highly skilled technical, financial, managerial and marketing personnel. We cannot be certain that we will be successful in attracting and retaining such personnel.

Our proprietary technology is important to the continued success of our business. Our failure to protect this proprietary technology may significantly impair our competitive position.

As of December 31, 2006, we owned 308 U.S. patents, 225 foreign patents and had 110 pending U.S. patent applications. Although we seek to protect our intellectual property rights through patents, copyrights, trade secrets and other measures, we cannot be certain that:

- we will be able to protect our technology adequately;
- competitors will not be able to develop similar technology independently;
- any of our pending patent applications will be issued;
- domestic and international intellectual property laws will protect our intellectual property rights; or
- third parties will not assert that our products infringe patent, copyright or trade secrets of such parties.

Protection of our intellectual property rights may result in costly litigation.

Litigation may be necessary in order to enforce our patents, copyrights or other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the proprietary rights of others or to defend against claims of infringement. We are, from time to time, involved in lawsuits enforcing or defending our intellectual property rights and may be involved in such litigation in the future. Such litigation could result in substantial costs and diversion of resources and could have a material adverse effect on our business, financial condition and results of operations.

We may need to expend significant time and expense to protect our intellectual property regardless of the validity or successful outcome of such intellectual property claims. If we lose any litigation, we may be required to seek licenses from others or change, stop manufacturing or stop selling some of our products.

The market price of our common stock has fluctuated and may continue to fluctuate for reasons over which we have no control.

The stock market has from time to time experienced, and is likely to continue to experience, extreme price and volume fluctuations. Prices of securities of technology companies have been especially volatile and have often fluctuated for reasons that are unrelated to the operating performance of the companies. The market price of shares of our common stock has fluctuated greatly since our initial public offering and could continue to fluctuate due to a variety of factors. In the past, companies that have experienced volatility in the market price of their stock have been the objects of securities class action litigation. If we were the object of securities class action litigation, it could result in substantial costs and a diversion of our management's attention and resources.

Our dependence on sole, limited source suppliers, and international suppliers, could affect our ability to manufacture products and systems.

We rely on sole, limited source suppliers and international suppliers for a few of our components and subassemblies that are critical to the manufacturing of our products. This reliance involves several risks, including the following:

- the potential inability to obtain an adequate supply of required components;
- reduced control over pricing and timing of delivery of components; and
- the potential inability of our suppliers to develop technologically advanced products to support our growth and development of new systems.

We believe that in time we could obtain and qualify alternative sources for most sole, limited source and international supplier parts. Seeking alternative sources of the parts could require us to redesign our systems, resulting in increased costs and likely shipping delays. We may be unable to redesign our systems, which could result in further costs and shipping delays. These increased costs would decrease our profit margins if we could not pass the costs to our customers. Further, shipping delays could damage our relationships with current and potential customers and have a material adverse effect on our business and results of operations.

We are subject to governmental regulations. If we fail to comply with these regulations, our business could be harmed.

We are subject to federal, state, local and foreign regulations, including environmental regulations and regulations relating to the design and operation of our products. We must ensure that the affected products meet a variety of standards, many of which vary across the countries in which our systems are used. For example, the European Union has published directives specifically relating to power supplies. In addition, the European Union has issued directives relating to regulation of recycling and hazardous substances, which may be applicable to our products, or to which some customers may voluntarily elect to adhere to. In addition, China has adopted, and certain other Asian countries have indicated an intention to adopt, similar regulations. We must comply with any applicable regulation adopted in connection with these types of directives in order to ship affected products into countries that adopt these types of regulations. We believe we are in compliance with current applicable regulations, directives and standards and have obtained all necessary permits, approvals, and authorizations to conduct our business. However, compliance with future regulations, directives and standards, or customer demands beyond such requirements, could require us to modify or redesign certain systems, make capital expenditures or incur substantial costs. If we do not comply with current or future regulations, directives and standards:

- we could be subject to fines;
- our production could be suspended; or
- we could be prohibited from offering particular systems in specified markets.

Certain stockholders have a substantial interest in us and may be able to exert substantial influence over our actions.

As of December 31, 2006, John R. Bertucci, our Chairman, and certain members of his family, in the aggregate, beneficially owned approximately 11% of our outstanding common stock. As a result, these stockholders, acting together, may be able to exert substantial influence over our actions.

Some provisions of our restated articles of organization, as amended, our amended and restated by-laws and Massachusetts law could discourage potential acquisition proposals and could delay or prevent a change in control of us.

Anti-takeover provisions could diminish the opportunities for stockholders to participate in tender offers, including tender offers at a price above the then current market price of the common stock. Such provisions may also inhibit increases in the market price of the common stock that could result from takeover attempts. For example, while we have no present plans to issue any preferred stock, our board of directors, without further stockholder approval, may issue preferred stock that could have the effect of delaying, deterring or preventing a change in control of us. The issuance of preferred stock could adversely affect the voting power of the holders of our common stock, including the loss of voting control to others. In addition, our amended and restated by-laws provide for a classified board of directors consisting of three classes. The classified board could also have the effect of delaying, deterring or preventing a change in control of us.

Changes in financial accounting standards may adversely affect our reported results of operations.

A change in accounting standards or practices could have a significant effect on our reported results and may even affect our reporting of transactions completed before the change was effective. New accounting pronouncements and varying interpretations of existing accounting pronouncements have occurred and may occur in the future. Such changes may adversely affect our reported financial results or may impact our related business practice.

For example, Statement on Financial Accounting Standards No. 123R "Share-Based Payment" ("SFAS 123R"), which requires us to measure all employee stock-based compensation awards using a fair value method and record such expense in our consolidated financial statements, was adopted in the first quarter of 2006, and had a material adverse impact on our consolidated financial statements as reported under generally accepted accounting principles in the United States for the first quarter of 2006 and adversely impacted our consolidated financial statements for fiscal 2006.

Item 1B. *Unresolved Staff Comments*

None.

Item 2. *Properties*

The following table provides information concerning MKS' principal and certain other owned and leased facilities as of December 31, 2006:

Location	Sq. Ft.	Activity	Products Manufactured	Lease Expires
Alameda, CA	48,300	Manufacturing and Research & Development	Electrostatic Management Programs and Systems	March 31, 2011
Andover, Massachusetts	82,000	Manufacturing and Research & Development	Pressure Measurement and Control Products	(1)
Austin, Texas	20,880	Manufacturing, Sales, Customer Support, Service and Research & Development	Control & Information Management Products	May 31, 2012
Berlin, Germany	20,750	Manufacturing, Customer Support, Service and Research & Development	Reactive Gas Generation Products	March 31, 2009
Boulder, Colorado	124,000	Manufacturing, Customer Support, Service and Research & Development	Vacuum Products	(2)
Carmiel, Israel	7,000	Manufacturing and Research & Development	Control & Information Management Products	December 31, 2007
Cheshire, U.K.	13,000	Manufacturing, Sales, Customer Support and Service	Materials Delivery Products	(3)
Colorado Springs, Colorado	24,000	Manufacturing, Customer Support, Service and Research & Development	Power Delivery Products	(1)
Lawrence, Massachusetts	40,000	Manufacturing	Pressure Measurement and Control Products	(1)
Methuen, Massachusetts	85,000	Manufacturing, Customer Support, Service and Research & Development	Pressure Measurement and Control Products; Materials Delivery Products	(1)
Munich, Germany	14,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Pressure Measurement and Control Products; Materials Delivery Products	(1)
Nogales, Mexico	36,700	Manufacturing	Pressure Measurement and Control Products; Reactive Gas Generation Products	March 31, 2009
Richardson, Texas	8,800	Sales, Customer Support and Service	Not applicable	November 30, 2012
Rochester, New York	156,000	Manufacturing, Sales, Customer Support, Service and Research & Development	Power Delivery Products	(4)
San Jose, California	32,000	Sales, Customer Support and Service	Not applicable	April 30, 2009
Seoul, Korea	10,000	Sales, Customer Support and Service	Not applicable	May 31, 2008
Shenzhen, China	130,000	Manufacturing	Power Delivery Products	December 31, 2007
Shropshire, U.K.	25,000	Manufacturing	Vacuum Products	October 18, 2010
Taiwan	19,300	Sales, Customer Support and Service	Not applicable	August 25, 2007
Tokyo, Japan	31,600	Manufacturing, Sales, Customer Support, Service and Research & Development	Materials Delivery Products	(5)
Wilmington, Massachusetts	118,000	Headquarters, Manufacturing, Sales, Customer Support, Service and Research & Development	Reactive Gas Generation Products; Power Delivery Products	(1)

(1) This facility is owned by MKS.

(2) MKS leases two facilities, one has 39,000 square feet of space and the other has 38,000 square feet of space. Both leases expire on May 31, 2015. MKS also owns a third and fourth facility with 27,000 and 20,000 square feet of space, respectively.

(3) MKS leases two facilities, one has 2,000 square feet of space and a lease term which expires October 5, 2009 and the second has 11,000 square feet of space and a lease term which expires November 30, 2009.

(4) MKS owns this facility and has an Industrial Development Revenue Bond of $5.0 million, due in 2014, that is collateralized by the building.

(5) MKS leases two facilities, one has 14,500 square feet of space with a lease term that expires April 30, 2007 and the second has 10,500 square feet of space and a lease term that expires on September 30, 2011. MKS owns a third facility of 6,600 square feet.

In addition to manufacturing and other operations conducted at the foregoing leased or owned facilities, MKS provides worldwide sales, customer support and services from various other leased facilities throughout the world not listed in the table above. See “Business — Sales, Marketing and Support.”

Item 3. *Legal Proceedings*

On November 3, 1999, On-Line Technologies Inc. (“On-Line”), which we acquired in 2001, brought suit in federal district court in Connecticut against Perkin-Elmer Corp. (“Perkin-Elmer”) and certain other defendants for infringement of On-Line’s U.S. Patent No. 5,440,143 (the “143 patent”). The suit sought injunctive relief and damages for infringement. Perkin-Elmer filed a counterclaim seeking invalidity of the patent, costs and attorneys’ fees, and in June 2002, moved for summary judgment. In April 2003, the court granted the motion and dismissed the case. We appealed this decision to the Federal Circuit Court of Appeals, which, on October 13, 2004, reversed the lower court’s dismissal of our claim for patent infringement, and the case was remanded to the district court. On March 11, 2005, Perkin-Elmer stipulated that they do infringe a specified claim of the 143 patent. Perkin-Elmer filed a motion for summary judgment seeking to invalidate such claim, which motion was denied on March 23, 2006. The court established an October 2006 trial date. Perkin-Elmer then moved for the court to reconsider its decision and requested a stay of the trial. On September 15, 2006, the court reversed itself, granting Perkin-Elmer’s motion for reconsideration, and holding the specified claim invalid. Following a September 26, 2006 status conference, the court denied the defendants’ request to stay the trial of our remaining claims. The court continued the trial date and requested summary judgment briefing on the remaining claims following a court ordered 30-day delay for the parties to attempt to settle the case. In January 2007, the parties entered into a confidential settlement agreement, the terms of which do not have a material financial impact to us, and agreed to dismiss the case upon such terms. Accordingly, on January 22, 2007, the parties filed with the court a stipulation of dismissal, which the court granted on January 26, 2007.

We are subject to other legal proceedings and claims, which have arisen in the ordinary course of business.

In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on our results of operations, financial condition or cash flows.

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

No matters were submitted to a vote of security holders during the fourth quarter of 2006 through the solicitation of proxies or otherwise.

PART II

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

Price Range of Common Stock

Our common stock is traded on the Nasdaq Global Market under the symbol MKSI. On February 16, 2007, the closing price of our common stock, as reported on the Nasdaq Global Market, was $24.04 per share. The following table sets forth for the periods indicated the high and low bid prices per share of our common stock as reported by the Nasdaq Global Market.

	2006		2005	
Price Range of Common Stock	High	Low	High	Low
First Quarter	$23.75	$17.05	$19.00	$14.46
Second Quarter	24.97	18.66	18.10	13.96
Third Quarter	23.60	17.84	20.69	15.29
Fourth Quarter	23.36	19.54	19.72	17.02

On February 16, 2007, we had approximately 205 stockholders of record.

Dividend Policy

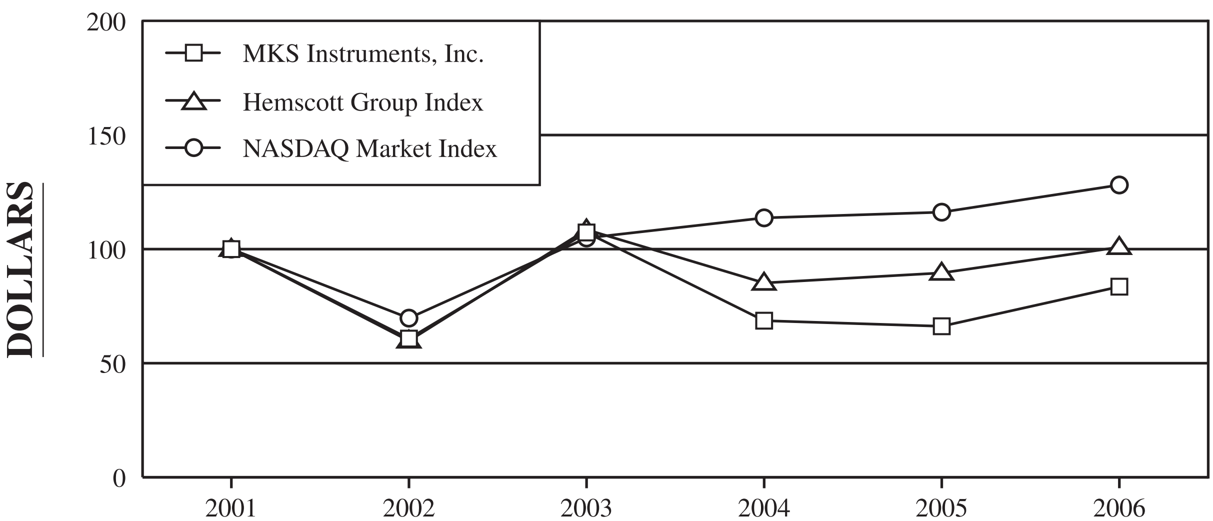
We have never declared or paid any cash dividends. We currently intend to retain earnings, if any, to support our growth strategy and do not anticipate paying cash dividends in the foreseeable future. Payment of future dividends, if any, will be at the discretion of our board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs, plans for expansion, and changes in tax and regulatory rulings.

Comparative Stock Performance

The following graph compares the cumulative total shareholder return (assuming reinvestment of dividends) from investing $100 on December 31, 2001, and plotted at the last trading day of each of the fiscal years ended December 31, 2002, 2003, 2004, 2005 and 2006, in each of (i) the Company's Common Stock; (ii) an industry group index of semiconductor equipment/material manufacturers (the "Hemscott Group Index"), compiled by Hemscott, Inc. ("Hemscott"); and (iii) the NASDAQ Market Index of companies (the "NASDAQ Market Index"). The graph was compiled by Hemscott. The stock price performance on the graph below is not necessarily indicative of future price performance. The Company's Common Stock is listed on the NASDAQ Global Market under the ticker symbol "MKSI."

Performance Graph

COMPARISON OF CUMULATIVE TOTAL RETURN OF ONE OR MORE COMPANIES, PEER GROUPS, INDUSTRY INDEXES AND/OR BROAD MARKETS



Assumes $100 invested on Dec. 31, 2001
Assumes dividend reinvested
Fiscal Year Ending Dec. 31, 2006

	2001	2002	2003	2004	2005	2006
MKS Instruments, Inc.	$100.00	$60.78	$107.29	$ 68.63	$ 66.19	$ 83.54
Hemscott Group Index	$100.00	$59.82	$108.54	$ 85.18	$ 89.57	$100.85
NASDAQ Market Index	$100.00	$69.75	$104.88	$113.70	$116.19	$128.12

Item 6. *Selected Financial Data*

Selected Consolidated Financial Data

	Year Ended December 31				
	2006	2005	2004	2003	2002
	(In thousands, except per share data)				
Statement of Operations Data					
Net sales	$ 782,801	$509,294	$555,080	$337,291	$314,773
Gross profit	338,122	200,434	219,371	118,109	105,795
Income (loss) from operations(1),(2)	122,541	40,548	59,913	(15,717)	(43,047)
Net income (loss)(3)	$ 94,235	$ 34,565	$ 69,839	$ (16,385)	$ (39,537)
Net income (loss) per share:					
Basic	$ 1.70	$ 0.64	$ 1.30	$ (0.32)	$ (0.79)
Diluted	$ 1.68	$ 0.63	$ 1.28	$ (0.32)	$ (0.79)
Balance Sheet Data					
Cash and cash equivalents	$ 215,208	$220,573	$138,389	$ 74,660	$ 88,820
Short-term investments	74,749	72,046	97,511	54,518	39,894
Working capital	461,541	410,060	347,700	210,468	192,008
Long-term investments	2,816	857	4,775	13,625	15,980
Total assets	1,043,720	863,740	828,677	692,032	685,623
Short-term obligations	23,021	18,886	24,509	20,196	18,472
Long-term obligations, less current portion	6,113	6,152	6,747	8,810	11,726
Stockholders' equity	901,219	762,843	726,634	608,310	610,690

(1) Loss from operations for the year ended December 31, 2002 includes restructuring and asset impairment charges of $2.7 million and purchase of in-process technology of $8.4 million.

(2) Income from operations for the year ended December 31, 2006 includes stock-based compensation of $13.1 million as a result of adopting SFAS 123R in 2006. Income from operations for the year ended December 31, 2005 includes income from a litigation settlement of $3.0 million.

(3) Net income for the year ended December 31, 2006 includes stock-based compensation of $8.7 million, net of tax. Net income for the year ended December 31, 2004 includes a gain from the collection of a note receivable of $5.0 million which had been written off in 2002. During the years ended December 31, 2002 and 2003, a valuation allowance against net deferred tax assets was maintained. Net loss for the years ended December 31, 2002 and 2003 include tax expense which is comprised primarily of state and foreign taxes. During 2004, the valuation allowance was reduced against the net deferred tax assets and net income for the year ended December 31, 2004 includes a deferred tax benefit of $10.2 million. See Note 9 of the Notes to the Consolidated Financial Statements.

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

Overview

We are a leading worldwide provider of instruments, components, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters of semiconductor and other advanced manufacturing processes.

We are managed as one operating segment which is organized around three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. Our products are derived from our core competencies in pressure measurement and control, materials delivery, gas and thin-film composition analysis, electrostatic charge control, control and information management, power and reactive gas generation and vacuum technology. Our products are used to manufacture semiconductors and thin film coatings for diverse markets such as flat panel displays, optical and magnetic storage media, architectural glass, solar panels and electro-optical products. We also provide technologies for other markets, including medical imaging equipment and the energy generation and conservation markets.

We have a diverse base of customers that include semiconductor capital equipment manufacturers, semiconductor device manufacturers, capital equipment manufacturers of thin-film coatings used in flat panel displays, optical and magnetic data storage media, architectural glass, solar panels and electro-optical products, industrial and manufacturing companies, medical equipment manufacturers and university, government and industrial research laboratories. During the years ended December 31, 2006, 2005 and 2004, we estimate that approximately 70%, 71% and 74% of our net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers. We expect that sales to semiconductor capital equipment manufacturers and semiconductor device manufacturers will continue to account for a substantial majority of our sales.

During the fourth quarter of 2005 and continuing through the third quarter of 2006, we experienced significant increases in customer orders, which caused our sales for all quarters of 2006 to increase significantly from 2005 quarterly levels. We currently expect that our first quarter 2007 net sales could be approximately the same as our fourth quarter 2006 net sales. However, the semiconductor capital equipment industry is subject to rapid demand shifts, which are difficult to predict, and we are uncertain how long these sales levels may be maintained or the timing or extent of any future downturn or upturn in the semiconductor capital equipment industry.

A significant portion of our net sales is to operations in international markets. International net sales include sales by our foreign subsidiaries, but exclude direct export sales. International net sales accounted for approximately 34%, 37% and 34% of net sales for the years ended December 31, 2006, 2005 and 2004, respectively, a significant portion of which were sales in Japan. We expect that international net sales will continue to represent a significant percentage of our total net sales.

Recent Acquisitions

On January 3, 2006, we completed our acquisition of Ion Systems, Inc. ("Ion"), a leading provider of electrostatic management solutions located in Alameda, California, pursuant to an Agreement and Plan of Merger dated November 25, 2005. Ion's ionization technology monitors electrostatic charges to reduce process contamination and improve yields, which complements our process monitoring and control technologies. The aggregate purchase price consisted of $68.1 million in cash, net of $5.1 million in cash acquired, and $0.8 million in acquisition related costs.

Additionally, on January 3, 2006, we completed our acquisition of Umetrics, AB ("Umetrics"), a leader in multivariate data analysis and modeling software located in Umea, Sweden, pursuant to a Sale and Purchase Agreement dated December 15, 2005. Umetrics' multivariate data analysis and modeling software converts process data into useable information for yield improvement, when linked with our open and modular platform of process sensors and data collection, integration, data storage, and visualization capabilities. The purchase price consisted of $27.4 million in cash, net of $2.6 million in cash acquired, and $0.4 million in acquisition related costs.

On October 11, 2006, we completed our acquisition of Novx Corp. ("Novx"), a provider of electrostatic charge monitoring technology for semiconductor, data storage, telecommunication, medical device and other markets.

Novx's technology expands our capability to monitor, detect and control electrostatic charge in advanced process environments, such as semiconductor and hard disk drive manufacturing. The total purchase price was $2.6 million.

Critical Accounting Policies and Estimates

Management's Discussion and Analysis of Financial Condition and Results of Operations discusses our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, we evaluate our estimates and judgments, including those related to revenue recognition, inventory, warranty costs, stock-based compensation expense, intangible assets, goodwill and other long-lived assets, in-process research and development and income taxes. We base our 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.

We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements:

Revenue recognition and Accounts Receivable Allowances. Revenue from product sales is recorded upon transfer of title and risk of loss to the customer provided that there is evidence of an arrangement, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. In most transactions, we have no obligations to our customers after the date products are shipped other than pursuant to warranty obligations. In some instances, we provide installation, training, support and services to customers after the product has been shipped. We defer the fair value of any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. Shipping and handling fees billed to customers, if any, are recognized as revenue. The related shipping and handling costs are recognized in cost of sales.

We monitor and track the amount of product returns, provide for accounts receivable allowances and reduce revenue at the time of shipment for the estimated amount of such future returns, based on historical experience. While product returns have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same return rates that we have in the past. Any significant increase in product return rates could have a material adverse impact on our operating results for the period or periods in which such returns materialize. While we maintain a credit approval process, significant judgments are made by management in connection with assessing our customers' ability to pay at the time of shipment. Despite this assessment, from time to time, our customers are unable to meet their payment obligations. We continuously monitor our customers' credit worthiness, and use our judgment in establishing a provision for estimated credit losses based upon our historical experience and any specific customer collection issues that we have identified. While such credit losses have historically been within our expectations and the provisions established, there is no assurance that we will continue to experience the same credit loss rates that we have in the past. A significant change in the liquidity or financial position of our customers could have a material adverse impact on the collectability of accounts receivable and our future operating results.

Inventory. We value our inventory at the lower of cost (first-in, first-out method) or market. We regularly review inventory quantities on hand and record a provision to write down excess and obsolete inventory to our estimated net realizable value, if less than cost, based primarily on our estimated forecast of product demand. Demand for our products can fluctuate significantly. A significant increase in the demand for our products could result in a short-term increase in the cost of inventory purchases as a result of supply shortages or a decrease in the cost of inventory purchases as a result of volume discounts, while a significant decrease in demand could result in an increase in the charges for excess inventory quantities on hand. In addition, our industry is subject to technological change, new product development and product technological obsolescence that could result in an increase in the amount of obsolete inventory quantities on hand. Therefore, any significant unanticipated changes in demand or technological developments could have a significant impact on the value of our inventory and our reported operating results.

Warranty costs. We provide for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. We provide warranty coverage for our products ranging from 12 to 36 months, with the majority of our products ranging from 12 to 24 months. We estimate the anticipated costs of repairing our products under such warranties based on the historical costs of the repairs and any known specific product issues. The assumptions we use to estimate warranty accruals are reevaluated periodically in light of actual experience and, when appropriate, the accruals are adjusted. Our determination of the appropriate level of warranty accrual is based upon estimates. Should product failure rates differ from our estimates, actual costs could vary significantly from our expectations.

Stock-Based Compensation Expense. Effective January 1, 2006, we adopted the fair value recognition provisions of SFAS 123R, using the modified prospective transition method, and therefore have not restated prior periods' results. Under this method we recognize compensation expense for all equity-based awards granted after January 1, 2006 as well as awards granted prior to but not yet vested as of January 1, 2006, in accordance with SFAS 123R. Under the fair value recognition provisions of SFAS 123R, we recognize stock-based compensation net of an estimated forfeiture rate and only recognize compensation cost for those shares expected to vest on a straight-line basis over the requisite service period of the award. The adoption of this standard reduced our net income by $8.7 million, for the year ended December 31, 2006. Prior to SFAS 123R adoption, we accounted for share-based payments under Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees" ("APB 25") and accordingly, generally recognized compensation expense only when we granted options with a discounted exercise price.

Determining the appropriate fair value model and calculating the fair value of share-based payment awards require the input of highly subjective assumptions, including the expected life of the share-based payment awards and stock price volatility. Management determined that blended volatility, a combination of historical and implied volatility, is more reflective of market conditions and a better indicator of expected volatility than historical or implied volatility. Therefore, expected volatility for the year ended December 31, 2006 was based on a blended volatility. The assumptions used in calculating the fair value of share-based payment awards represent management's best estimates, but these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and we use different assumptions, our stock-based compensation expense could be materially different in the future. In addition, we are required to estimate the expected forfeiture rate and only recognize expense for those shares expected to vest. If our actual forfeiture rate is materially different from our estimate, the stock-based compensation expense could be significantly different from what we have recorded in the current period. See Note 2 to the consolidated financial statements for a further discussion on stock-based compensation.

Intangible assets, goodwill and other long-lived assets. We review intangible assets and other long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. Factors we consider important, which could indicate an impairment, include significant under performance relative to expected historical or projected future operating results, significant changes in the manner of our use of the asset or the strategy for our overall business and significant and negative industry or economic trends. When we determine that the carrying value of the asset may not be recoverable based upon the existence of one or more of the above indicators of impairment, we compare the undiscounted cash flows to the carrying value of the asset. If an impairment is possible and indicated, the asset is written down to its estimated fair value. Intangible assets, such as purchased technology, are generally recorded in connection with a business acquisition. The fair value initially assigned to intangible assets is determined based on estimates and judgment regarding expectations for the success and life cycle of products and technology acquired. If actual product acceptance differs significantly from the estimates, we may be required to record an impairment charge to write down the asset to its estimated fair value.

We assess goodwill for impairment at least annually, or more frequently when events and circumstances occur indicating that the recorded goodwill at the reporting unit level may be impaired. Reporting units are defined as operating segments or one level below an operating segment, referred to as a component. We have determined that our reporting units are components of our one operating segment. We allocate goodwill to reporting units at the time of acquisition and base that allocation on which reporting units will benefit from the acquired assets and liabilities. If the book value of a reporting unit exceeds its fair value, the implied fair value of goodwill is compared with the carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value, an impairment loss is recorded in an amount equal to that excess. The fair value of a reporting unit is estimated using the discounted cash flow approach, and is dependent on estimates and judgments related to future cash flows and discount rates. If actual cash flows differ significantly from the estimates used by management, we may be required to record an impairment charge to write down the goodwill to its estimated fair value.

In-process research and development. We value tangible and intangible assets acquired through our business acquisitions, including in-process research and development ("IPR&D"), at fair value. We determine IPR&D through established valuation techniques for various projects for the development of new products and technologies and expense IPR&D when technical feasibility is not reached. The value of IPR&D is determined using the income approach, which discounts expected future cash flows from projects under development to their net present value. Each project is analyzed and estimates and judgments are made to determine the technological innovations included, the utilization of core technology, the complexity, cost and time to complete development, any alternative future use or current technological feasibility and the stage of completion. If we acquire other companies with IPR&D in the future, we will value the IPR&D through established valuation techniques and will incur future IPR&D charges if those products under development have not reached technical feasibility.

Income taxes. We evaluate the realizability of our net deferred tax assets and assess the need for a valuation allowance on a quarterly basis. The future benefit to be derived from our deferred tax assets is dependent upon our ability to generate sufficient future taxable income to realize the assets. We record a valuation allowance to reduce our net deferred tax assets to the amount that may be more likely than not to be realized. To the extent we established a valuation allowance, an expense is recorded within the provision for income taxes line in the statement of operations. During the year ended December 31, 2002, we established a full valuation allowance for our net deferred tax assets. During the fourth quarter of 2004, after examining a number of factors, including historical results and near term earnings projections, we determined that it was more likely than not that we would realize all of our net deferred tax assets, except for those relating to certain state tax credits. An adjustment to the valuation allowance was recorded as a reduction to income tax expense. During the fourth quarter of 2006, the Company determined that it would begin utilizing the aforementioned state tax credits and reduced the valuation allowance to reflect the amount of the near term state tax credits to be utilized. The remaining valuation allowance at December 31, 2006 is $0.3 million, relating to the remaining state tax credits acquired with the purchase of Ion. In future periods, if we were to determine that it was more likely than not that we would not be able to realize the recorded amount of our remaining net deferred tax assets, an adjustment to the valuation allowance would be recorded as an increase to income tax expense in the period such determination was made.

Results of Operations

The following table sets forth, for the periods indicated, the percentage of total net sales of certain line items included in our consolidated statement of operations data:

	Year Ended December 31		
	2006	2005	2004
Net sales	100.0%	100.0%	100.0%
Cost of sales	56.8	60.6	60.5
Gross profit	43.2	39.4	39.5
Research and development	8.9	11.0	10.3
Selling, general and administrative	16.3	18.3	15.7
Amortization of acquired intangible assets	2.2	2.7	2.6
Purchase of in-process technology	0.1	—	—
Restructuring and asset impairment charges	—	0.0	0.1
Income from litigation settlement	—	0.6	—
Income from operations	15.7	8.0	10.8
Interest income, net	1.0	1.2	0.3
Other income, net	—	—	1.0
Income before income taxes	16.7	9.2	12.1
Provision (benefit) for income taxes	4.7	2.4	(0.5)
Net income	12.0%	6.8%	12.6%

Year Ended 2006 Compared to 2005 and 2004

Net Sales

	Year Ended December 31,			% Change in 2006	% Change in 2005
	2006	2005	2004		
Net sales	$782.8	$509.3	$555.1	53.7	(8.2)

Net sales increased $273.5 million during the year ended December 31, 2006 mainly due to an increase in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers, which increased $188.6 million or 52.3% compared to the same period for the prior year. Additionally, net sales for thin-film and other non-semiconductor manufacturing applications increased $84.9 million or 57.1% compared to the same period for the prior year. During 2006, we acquired three companies. These acquisitions increased our total net sales by approximately $38.5 million for the year ended December 31, 2006 compared to the same period for the prior year. International net sales were $266.9 million for the year ended December 31, 2006 or 34.1% of net sales compared to $188.5 million for the same period of 2005 or 37.0% of net sales.

Net sales decreased $45.8 million during the year ended December 31, 2005 mainly due to a decrease in worldwide demand from our semiconductor capital equipment manufacturer customers, which decreased $58.8 million or 16.1% compared to the same period for the prior year. Primarily offsetting this decrease was a net sales increase of $9.4 million or 9.5% for other non-semiconductor manufacturing applications and a net sales increase of $6.3 million or 12.9% for semiconductor device manufacturer customers compared to the same period for the prior year. International net sales were approximately $188.5 million for the year ended December 31, 2005 or 37.0% of net sales compared to $187.8 million for the same period of 2004 or 33.8% of net sales.

Gross Profit

	Year Ended December 31, 2006	2005	2004	% Points Change in 2006	% Points Change in 2005
Gross profit as a percentage of sales	43.2%	39.4%	39.5%	3.8	(0.1)

Gross profit increased during year ended December 31, 2006 mainly due to higher production volumes which reduced overhead costs as a percentage of sales by 3.0 percentage points. In addition, the positive impact of gross profit margins from our three acquisitions in 2006, favorable product mix and other reduced manufacturing costs increased our overall margin by approximately 0.8 percentage points during the year ended December 31, 2006.

Gross profit as a percentage of net sales decreased slightly during the year ended December 31, 2005 compared to the same period in 2004 mainly due to overhead costs representing a higher percentage of lower sales, partially offset by lower material and labor costs as a percentage of sales, which reflected the net effect of a gradual transition to lower cost material and manufacturing sources.

Research and Development

	Year Ended December 31, 2006	2005	2004	% Change in 2006	% Change in 2005
Research and development expenses	$69.7	$55.9	$57.0	24.7	(1.9)

Our research and development is primarily focused on developing and improving our instruments, components, subsystems and process control solutions to improve process performance and productivity.

We have hundreds of products and our research and development efforts primarily consist of a large number of projects related to these products, none of which is individually material to us. Current projects typically have a duration of 12 to 30 months depending upon whether the product is an enhancement of existing technology or a new product. Our current initiatives include projects to enhance the performance characteristics of older products, to develop new products and to integrate various technologies into subsystems. These projects support in large part the transition in the semiconductor industry to larger wafer sizes and smaller integrated circuit geometries, which require more advanced process control technology. Research and development expenses consist primarily of salaries and related expenses for personnel engaged in research and development, fees paid to consultants, material costs for prototypes and other expenses related to the design, development, testing and enhancement of our products.

Research and development expense increased $13.8 million during the year ended December 31, 2006 mainly due to expenses of $5.4 million from the companies acquired in 2006, $4.9 million in increased compensation, resulting from increased incentive compensation, headcount and salaries, and $3.3 million in stock-based compensation expenses recorded during the current year.

Research and development expenses decreased $1.1 million for the year ended December 31, 2005 compared to the same period for 2004 primarily due to lower project material and other related costs. Staffing levels during 2005 were consistent with staffing levels during 2004.

We believe that the continued investment in research and development and ongoing development of new products are essential to the expansion of our markets, and expect to continue to make significant investment in research and development activities. We are subject to risks if products are not developed in a timely manner, due to rapidly changing customer requirements and competitive threats from other companies and technologies. Our success primarily depends on our products being designed into new generations of equipment for the semiconductor industry. We develop products that are technologically advanced so that they are positioned to be chosen for use in each successive generation of semiconductor capital equipment. If our products are not chosen to be designed into our customers' products, our net sales may be reduced during the lifespan of those products.

Selling, General and Administrative

	Year Ended December 31, 2006	2005	2004	% Change in 2006	% Change in 2005
Selling, general and administrative expenses	$127.7	$93.0	$87.3	37.3	6.6

Selling, general and administrative expenses increased $34.7 million during the year ended December 31, 2006 primarily due to expenses of $15.8 million from the companies acquired in 2006, $11.3 million in increased compensation, resulting from increased incentive compensation, headcount and salaries, $7.6 million in stock-based compensation expenses recorded during the current year and higher costs of $2.1 million for our ERP implementation, offset by $2.6 million in foreign currency exchange gains as compared to the same period in the prior year.

Selling, general and administrative expenses increased $5.7 million during the year ended December 31, 2005 compared to the same period for the prior year mainly due to higher costs of $3.9 million primarily for IT related services and for our ERP implementation, increased foreign currency losses of $1.5 million, higher professional fees of $2.2 million principally related to higher audit costs and fees for compliance with the Sarbanes Oxley Act of 2002 ("Sarbanes Oxley"), partially offset by decreased legal fees of $2.6 million mainly related to litigation which had been subsequently resolved.

Amortization of Acquired Intangible Assets

	Year Ended December 31, 2006	2005	2004	% Change in 2006	% Change in 2005
Amortization of acquired intangible assets	$17.4	$13.9	$14.8	25.3	(6.1)

Amortization expense for the year ended December 31, 2006 increased $3.5 million primarily due to the amortization related to $33.6 million in acquired intangible assets from the acquisitions in 2006, which included a $1.0 million order backlog intangible asset, which was amortized over 3 months during the first quarter of 2006.

Amortization expense for the years ended December 31, 2005 and 2004, respectively, represents amortization of identifiable intangible assets resulting from our completed acquisitions. The decrease during the year ended December 31, 2005 compared to the same period for the prior year was due to certain identifiable intangible assets becoming fully amortized during 2005. We did not acquire any material identifiable intangible assets in 2005 or 2004.

Purchase of in-process technology

	Year Ended December 31, 2006	2005	2004
Purchase of in-process technology	$0.8	—	—

In-process research and development of $0.8 million for the year ended December 31, 2006 arose from the acquisitions of Ion and Umetrics, which we made during 2006. The purchase price of these acquisitions was allocated to the assets acquired, including intangible assets, based on estimated fair values. The intangible assets included approximately $0.8 million for acquired in-process technology for projects, generally expected to have durations of 12 months, which did not have alternative future uses. Accordingly, these costs were expensed during 2006.

Income from Litigation Settlement

During the fourth quarter of 2005, we executed a settlement agreement with Advanced Energy Industries, Inc. ("Advanced Energy") in connection with the patent infringement suit we had brought against Advanced Energy in federal district court in Delaware. Pursuant to the settlement agreement, Advanced Energy paid us $3.0 million in cash in October 2005.

Interest Income, Net

	Year Ended December 31, 2006	2005	2004	% Change in 2006	% Change in 2005
Interest income, net	$8.4	$6.5	$1.9	30.1	237.6

Net interest income increased $1.9 million during the year ended December 31, 2006 mainly related to higher interest rates in 2006.

Net interest income increased $4.5 million during the year ended December 31, 2005 compared to the same period for the prior year, mainly related to higher interest rates on higher average investment balances in those periods.

Other Income, Net

	Year Ended December 31, 2006	2005	2004
Other income, net	—	—	$5.4

During 2001, we sold certain assets for proceeds of approximately $9.0 million, including a note receivable of approximately $3.9 million and warrants of $0.2 million. During 2002, due to the downturn in the semiconductor industry and its result on the acquirer's operations, and the acquirer's inability to raise financing, we considered the value of the note and warrants to be impaired. Accordingly, during 2002, we recorded a charge of $4.1 million to other expense for our estimate of the impairment on the note receivable and warrants. During the second quarter of 2004, we received $5.0 million and recorded a gain to other income related to the collection of the note receivable and accrued interest and the cancellation of the warrants.

Provision (Benefit) for Income Taxes

	Year Ended December 31, 2006	2005	2004
Provision (benefit) for income taxes	$36.7	$12.4	$(2.6)

We recorded a provision for income taxes of $36.7 million for the year ended December 31, 2006 and $12.4 million for the year ended December 31, 2005, as compared to a tax benefit of $2.6 million for the year ended December 31, 2004. The provision for income taxes in 2006 and 2005 are comprised of federal, state and foreign income taxes. The benefit for income taxes in 2004 is comprised of tax expense from foreign operations and state taxes, offset by a deferred tax benefit of approximately $10.2 million.

As a result of incurring significant operating losses since 2001, during 2002 we determined that it was more likely than not that our deferred tax assets may not have been realizable, and since the fourth quarter of 2002 had established a full valuation allowance for our net deferred tax assets. During the fourth quarter of 2004, after examining a number of factors, including historical results and near term earnings projections, we determined that it was more likely than not that we would realize all of our net deferred tax assets, except for those related to certain state tax credits. An adjustment was made to reduce the valuation allowance to reflect the amount of the realizable net deferred tax assets at December 31, 2004. During the fourth quarter of 2006 the Company determined that it would begin utilizing the aforementioned state tax credits and reduced the valuation allowance to reflect the amount of the near term state tax credits to be utilized. The remaining valuation allowance at December 31, 2006 is $0.3 million, relating to the state tax credits acquired with the purchase of Ion.

Our effective tax rate for the years ended December 31, 2006, 2005 and 2004 was 28.0%, 26.5% and (3.9)%, respectively. The effective tax rate for 2006 is less than the statutory tax rate primarily due to certain discrete tax matters related to our international operations, the benefit from the federal research and development credits, the reduction in the valuation allowance for state tax credits and the profits of our international subsidiaries being taxed at rates lower than the U.S. statutory tax rate.

The effective tax rate in 2005 is less than the statutory tax rate primarily due to a tax benefit recorded as the result of the completion of the Internal Revenue Service ("IRS") examination (see below), the benefit from U.S. research and development credits and the profits of our international subsidiaries being taxed at rates lower than the U.S. statutory tax rate.

During 2005, the IRS completed its examination of our federal tax returns for the tax years 1999 through 2002. As a result of this examination, during the year ended December 31, 2005, we recorded a benefit to income tax expense of $1.9 million and a $0.6 million reduction of goodwill related to a previous acquisition.

In the normal course of business, the Company and our subsidiaries are examined by various tax authorities, including the IRS. Any such examination could result in an unfavorable settlement of any particular issue and may require the use of cash. Unfavorable or favorable resolution of any such examination could result in an increase or a reduction, respectively, to our effective tax rate in the quarter of resolution. Although the Company believes that its tax positions are consistent with applicable U.S. federal and state and international laws, certain tax reserves are maintained at December 31, 2006 should these positions be challenged by the applicable tax authority and additional tax assessed on audit.

During the year ended December 31, 2006, we received a notification letter from the Israeli Ministry of Industry Trade and Labor ("MITL") indicating that our Israeli operations were in compliance with requirements relating to the tax holiday granted to our manufacturing operations in Israel in 2001. This tax holiday is anticipated to expire in 2011 and is subject to meeting continued investment, employment and other requirements under the guidelines of the MITL. Additionally, we recorded the impact of both a change in German tax rules allowing interest deductions on certain loans and an adjustment relating to transfer pricing. As a result of these items we recorded a net benefit to income tax expense of $1.6 million for the year ended December 31, 2006.

Liquidity and Capital Resources

Cash, cash equivalents and short-term marketable securities totaled $290.0 million at December 31, 2006 compared to $292.6 million at December 31, 2005. This increase is mainly due to an increase of $78.2 million of cash generated from operations and $30.5 million of cash provided by financing activities primarily offset by $98.7 million of cash used for the acquisitions of business in 2006. The primary driver in our current and anticipated future cash flows is and will continue to be cash generated from operations, consisting mainly of our net income and changes in operating assets and liabilities. In periods when our sales are growing, higher sales to customers will result in increased trade receivables, and inventories will generally increase as we build products for future sales. This may result in lower cash generated from operations. Conversely, in periods when our sales are declining, our trade accounts receivable and inventory balances will generally decrease, resulting in increased cash from operations.

Net cash provided by operating activities of $78.2 million for the year ended December 31, 2006, resulted mainly from net income of $94.2 million, a $27.7 million increase in operating liabilities and non-cash charges of $31.3 million for depreciation and amortization and $13.1 million for stock-based compensation, offset by an increase in net operating assets of $77.4 million and a deferred tax benefit of $11.5 million. The $27.7 million net increase in operating liabilities is mainly caused by an increase of $15.4 million in accrued expenses and other current liabilities primarily as a result of higher accrued compensation and warranty costs, an increase of $6.5 million in taxes payable as a result of higher net income and an increase of $5.7 million in accounts payable primarily as a result of inventory procurement activities. The $13.1 million for stock-based compensation resulted from the adoption of FAS 123R as of January 1, 2006. The $77.4 million increase in operating assets consisted primarily of a $33.6 million increase in accounts receivable as a result of higher revenue and a $46.0 million increase in inventory as a result of increased product demand. Net cash provided by operating activities of $64.2 million for the year ended December 31, 2005, resulted mainly from net income of $34.6 million, non-cash charges of $26.2 million for depreciation and amortization and an increase in operating liabilities of $7.7 million, offset by an increase in operating assets of $6.2 million. The increase in operating liabilities is primarily the result of a $6.4 million increase in accounts payable and a $1.4 million increase in taxes payable. The increase in operating assets is primarily the result of a $4.7 million increase in accounts receivable and a $1.8 million increase in inventories as a result of increased production volumes in late 2005 to support higher revenues expected in the first quarter of 2006.

Net cash used in investing activities of $114.3 million for the year ended December 31, 2006, resulted primarily from the purchase of three technology companies for $98.7 million, purchases of property, plant and equipment of $10.7 million and net purchases of $4.6 million of available for sale investments. Net cash provided by investing activities of $20.0 million for the year ended December 31, 2005 resulted primarily from the net maturities and sales of $29.2 million of available for sale investments offset by the purchase of property, plant and equipment of $10.3 million for investments in manufacturing equipment and for the consolidation of our IT infrastructure.

Net cash provided by financing activities of $30.5 million for the year ended December 31, 2006, consisted primarily of $23.3 million in proceeds from the exercise of stock options and purchases under our employee stock purchase plan and $5.2 million in net proceeds from short-term borrowings. Net cash provided by financing activities of $0.9 million for the year ended December 31, 2005 consisted primarily of $6.1 million in proceeds from the exercise of stock options and purchases under our employee stock purchase plan, partially offset by $2.0 million in principal payments on long-term debt and net payments of $2.7 million on short-term borrowings.

On August 1, 2006, we renewed an unsecured short-term LIBOR based loan agreement with a bank to be utilized primarily by our Japanese subsidiary for short-term liquidity purposes. The credit line, which expires on July 31, 2007, provides for us to borrow in multiple currencies of up to an equivalent of $35.0 million U.S. dollars. At December 31, 2006, we had outstanding borrowings of $16.8 million U.S. dollars, payable on demand, at an interest rate of 1.45%, with $18.2 million available for future borrowings.

Our Japanese subsidiary also has credit lines and short-term borrowing arrangements with a financial institution, which provide for aggregate borrowings as of December 31, 2006 of up to $12.6 million, which generally expire and are renewed in three month intervals. At December 31, 2006, total borrowings outstanding under these arrangements was $5.0 million, at an interest rate of 1.5%, with $7.6 million available for future borrowings.

We have provided financial guarantees for certain unsecured borrowings and have standby letters of credit, some of which do not have fixed expiration dates. At December 31, 2006, our maximum exposure as a result of these standby letters of credit and performance bonds was approximately $0.9 million.

Future payments due under debt, lease and purchase commitment obligations as of December 31, 2006 (in thousands) are as follows:

	Payment Due by Period				
Contractual Obligations	**Total**	**Less than 1 Year**	**1-3 Years**	**3-5 Years**	**After 5 Years**
Debt Obligations	$ 26,845	$ 21,845	$ —	$ —	$ 5,000
Interest on Debt	1,943	410	438	438	657
Operating Lease Obligations	31,322	7,405	10,404	6,436	7,077
Purchase Obligations(1)	130,150	113,600	12,539	4,011	—
Capital Leases	2,289	1,176	1,113	—	—
Interest in Capital Leases	323	256	67	—	—
Other Long-Term Liabilities Reflected on the Registrant's Balance Sheet under GAAP	4,956	—	227	63	4,666
Total	$197,828	$144,692	$24,788	$10,948	$17,400

(1) The majority of the outstanding inventory purchase commitments of approximately $98.2 million at December 31, 2006 are to be purchased within the next 12 months. Additionally, approximately $22.7 million represents a commitment, as of December 31, 2006, to a third party engaged to provide certain computer equipment, IT network services and IT support. This contract is for a period of approximately six years that began in September 2004 and has a significant penalty for early termination. The actual timing of payments and

amounts may vary based on equipment deployment dates. However, the amount noted represents our expected obligation based on anticipated deployment.

We believe that our working capital, together with the cash anticipated to be generated from operations, will be sufficient to satisfy our estimated working capital and planned capital expenditure requirements through at least the next 12 months.

On February 12, 2007, our Board of Directors approved a share repurchase program (the "Program") for the repurchase of up to $300 million of our outstanding stock over the next two years. The repurchases may be made from time to time on the open market or through privately negotiated transactions. The timing and amount of any shares repurchased under the Program will depend on a variety of factors, including price, corporate and regulatory requirements, capital availability, and other market conditions. The Program may be discontinued at any time at our discretion and the discretion of our Board of Directors.

To the extent permitted by Massachusetts law, our Restated Articles of Organization, as amended, require us to indemnify any of our current or former officers or directors or any person who has served or is serving in any capacity with respect to any of our employee benefit plans. Because no claim for indemnification has been pursued by any person covered by the relevant provisions of our Restated Articles of Organization, we believe that the estimated exposure for these indemnification obligations is currently minimal. Accordingly, we have no liabilities recorded for these requirements as of December 31, 2006.

We also enter into agreements in the ordinary course of business which include indemnification provisions. Pursuant to these agreements, we indemnify, hold harmless and agree to reimburse the indemnified party, generally our customers, for losses suffered or incurred by the indemnified party in connection with certain patent or other intellectual property infringement claims, and, in some instances, other claims, by any third party with respect to our products. The terms of these indemnification obligations are generally perpetual after execution of the agreements. The maximum potential amount of future payments we could be required to make under these indemnification agreements is, in some instances, not contractually limited. We have never incurred costs to defend lawsuits or settle claims related to these indemnification obligations. As a result, we believe the estimated fair value of these obligations is minimal. Accordingly, we have no liabilities recorded for these obligations as of December 31, 2006.

When, as part of an acquisition, we acquire all of the stock or all of the assets and liabilities of another company, we assume liability for certain events or occurrences that took place prior to the date of acquisition. The maximum potential amount of future payments we could be required to make for such obligations is undeterminable at this time. Other than obligations recorded as liabilities at the time of the acquisitions, historically we have not made significant payments for these indemnifications. Accordingly, no liabilities have been recorded for these obligations.

In conjunction with certain asset sales, we may provide routine indemnifications whose terms range in duration and often are not explicitly defined. Where appropriate, an obligation for such indemnifications is recorded as a liability. Because the amounts of liability under these types of indemnifications are not explicitly stated, the overall maximum amount of the obligation under such indemnifications cannot be reasonably estimated. Other than obligations recorded as liabilities at the time of the asset sale, historically we have not made significant payments for these indemnifications.

Derivatives

We conduct our operations globally. Consequently, the results of our operations are exposed to movements in foreign currency exchange rates. We hedge a portion of our forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of 15 months, using forward foreign exchange contracts ("forward exchange contracts") primarily related to Japanese and European currencies. These derivatives are designated as cash-flow hedges, and changes in their fair value are carried in accumulated other comprehensive income in our consolidated statements of stockholder's equity until the hedged transaction affects earnings. When the hedged transaction affects earnings, the appropriate gain or loss from the derivative designated as a hedge of the transaction is reclassified from accumulated other comprehensive income to cost of sales in the consolidated statements of operations. As of December 31, 2006, the amount that will be reclassified from accumulated other comprehensive income to cost of sales over the next twelve months is an unrealized gain of $0.6 million, net of taxes. The ineffective portions of the derivatives are recorded in cost of sales and were $0 in 2006, 2005 and 2004, respectively.

We also hedge certain intercompany and other payables with forward exchange contracts. Typically, as these derivatives hedge existing amounts that are denominated in foreign currencies, the derivatives do not qualify for hedge accounting. The foreign exchange gain or loss on these derivatives was immaterial in 2006, 2005 and 2004.

Realized and unrealized gains and losses on forward exchange contracts that do not qualify for hedge accounting are recognized immediately in earnings. The cash flows resulting from forward exchange contracts that qualify for hedge accounting are classified in our consolidated statements of cash flows as part of cash flows from operating activities. Cash flows resulting from forward exchange contracts that do not qualify for hedge accounting are classified in our statements of cash flows as investing activities. We do not hold or issue derivative financial instruments for trading purposes.

We had forward exchange contracts with notional amounts totaling $20.3 million outstanding at December 31, 2006, of which, $14.6 million were outstanding to exchange Japanese yen for U.S. dollars. We had forward exchange contracts with notional amounts totaling $35.3 million outstanding at December 31, 2005, of which, $28.5 million were outstanding to exchange Japanese yen for U.S. dollars. We had forward exchange contracts with notional amounts totaling $26.3 million outstanding at December 31, 2004 of which $21.6 million were outstanding to exchange Japanese yen for U.S. dollars.

Gains and losses on forward exchange contracts that qualify for hedge accounting are classified in cost of goods sold and totaled a gain of $1.9 million and $0.8 million for the years ended December 31, 2006 and 2005, respectively, and a loss of $1.7 million and for the year ended December 31, 2004.

Off-Balance Sheet Arrangements

We do not have any financial partnerships with unconsolidated entities, such as entities often referred to as structured finance, special purpose entities or variable interest entities which are often established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. Accordingly, we are not exposed to any financing, liquidity, market or credit risk that could arise if we had such relationships.

Recently Issued Accounting Pronouncements

In June 2006, the Financial Accounting Standards Board issued Interpretation No. 48, Accounting for Uncertainty in Income Taxes, an interpretation of FAS 109, Accounting for Income Taxes (FIN 48), to create a single model to address uncertainty in tax positions. FIN 48 clarifies the accounting for income taxes by prescribing a minimum recognition threshold a tax position is required to meet before being recognized for financial statements. FIN 48 also provides guidance on derecognition, measurement, classification, interest and penalties, accounting for interim periods, disclosure and transition. FIN 48 is effective for fiscal years beginning after December 15, 2006. We will adopt FIN 48 as of January 1, 2007 as required. The cumulative effect, if any, of adopting FIN 48 will be recorded in retained earnings. Although our assessment of the impact of FIN 48 is not yet complete, we expect that its adoption will not have a material impact on our financial statements.

In September 2006, the SEC issued Staff Accounting Bulletin No. 108, “Considering the Effects of Prior Year Misstatements when quantifying Misstatements in Current Year Financial Statements” (“SAB 108”). SAB 108 requires companies to evaluate the materiality of identified unadjusted errors on each financial statement and related financial statement disclosure using both the rollover approach and the iron curtain approach. The rollover approach quantifies misstatements based on the amount of the error in the current year financial statement whereas the iron curtain approach quantifies misstatements based on the effects of correcting the misstatement existing in the balance sheet at the end of the current year, irrespective of the misstatement’s year(s) of origin. Financial statements would require adjustment when either approach results in quantifying a misstatement that is material. Correcting prior year financial statements for immaterial errors would not require previously filed reports to be amended. SAB 108 is effective for interim periods of the first fiscal year ending after November 15, 2006. The adoption of SAB 108, in the fourth quarter of 2006, did not have a material impact on our financial statements.

In September 2006, the FASB issued SFAS No. 157, “Fair Value Measurements” (“SFAS 157”). SFAS 157 clarifies the principle that fair value should be based on the assumptions market participants would use when pricing an asset or liability and establishes a fair value hierarchy that prioritizes the information used to develop those assumptions. Under the standard, fair value measurements would be separately disclosed by level within the fair value hierarchy. SFAS 157 is effective for fiscal year beginning after November 15, 2007, with early adoption permitted. We are in the process of evaluating any potential impact of SFAS 157.

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

Market Risk and Sensitivity Analysis

Our primary exposures to market risks include fluctuations in interest rates on our investment portfolio, short and long term debt as well as fluctuations in foreign currency exchange rates.

Foreign Exchange Rate Risk

We enter into forward exchange contracts to reduce currency exposure arising from intercompany sales of inventory.

There were forward exchange contracts with notional amounts totaling $20.3 million and $35.3 million outstanding at December 31, 2006 and 2005, respectively. Of such forward exchange contracts, $14.6 million and $28.5 million, respectively, were outstanding to exchange Japanese yen for U.S. dollars with the remaining amounts relating to contracts to exchange the British pound and Euro for U.S. dollars. The potential fair value loss for a hypothetical 10% adverse change in the forward currency exchange rate on our forward exchange contracts at December 31, 2006 and 2005 would be $2.0 million and $3.4 million, respectively. The potential losses in 2006 and 2005 were estimated by calculating the fair value of the forward exchange contracts at December 31, 2006 and 2005 and comparing that with those calculated using the hypothetical forward currency exchange rates.

At December 31, 2006 and 2005 we had $11.7 million and $59.4 million, respectively, in loans outstanding between subsidiaries that were subject to foreign exchange exposure. At December 31, 2006 and 2005 a hypothetical 10% adverse change in foreign exchange rates would result in a net transaction loss of $1.3 million and $6.6 million, respectively, which would be recorded in current earnings.

At December 31, 2006 and 2005, we had $21.8 million and $17.0 million, respectively, related to short-term borrowings and current portion of long-term debt denominated in Japanese yen. The carrying value of these short-term borrowings approximates fair value due to their short period to maturity. Assuming a hypothetical 10% adverse change in the Japanese yen to U.S. dollar year end exchange rate, the fair value of these short-term borrowings would increase by $2.4 million and $1.9 million, respectively. The potential increase in fair value was estimated by calculating the fair value of the short-term borrowings at December 31, 2006 and 2005, respectively, and comparing that with the fair value using the hypothetical year end exchange rate.

Interest Rate Risk

Due to its short-term duration, the fair value of our cash and investment portfolio at December 31, 2006 and 2005 approximated its carrying value. Interest rate risk was estimated as the potential decrease in fair value resulting from a hypothetical 10% increase in interest rates for securities contained in the investment portfolio. The resulting hypothetical fair value was not materially different from the year-end carrying values.

Our total long-term debt outstanding, including the current portion, at December 31, 2006 and 2005, was $5.0 million and $6.7 million, respectively, and consisted mainly of a mortgage note and industrial development revenue bond. The interest rate on these debt instruments was 3.95% at December 31, 2006 and ranged between 3.0% to 5.6% at December 31, 2005. Due to the immaterial amounts of the outstanding debt, a hypothetical change of 10% in interest rates would not have a material effect on our near-term financial condition or results of operations.

From time to time, MKS has outstanding short-term borrowings with variable interest rates, primarily denominated in Japanese yen. At December 31, 2006 and 2005, we had $21.8 million and $17.0 million, respectively, outstanding related to these short-term borrowings at interest rates ranging from 1.45% to 1.50% and 1.21% to 1.31%, respectively. Due to the short-term nature and amount of this short-term debt, a hypothetical change of 10% in interest rates would not have a material effect on our near-term financial condition or results of operations.

Item 8. *Financial Statements and Supplementary Data*

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of
MKS Instruments, Inc.:

We have completed integrated audits of MKS Instruments, Inc.'s consolidated financial statements and of its internal control over financial reporting as of December 31, 2006 in accordance with the standards of the Public Company Accounting Oversight Board (United States). Our opinions, based on our audits, are presented below.

Consolidated financial statements and financial statement schedule

In our opinion, the consolidated financial statements listed in the index appearing under Item 15.(a)1. present fairly, in all material respects, the financial position of MKS Instruments, Inc. and its subsidiaries at December 31, 2006 and 2005, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2006 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. 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 of financial statements 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, the Company changed the manner in which it accounts for share-based compensation in fiscal 2006.

Internal control over financial reporting

Also, in our opinion, management's assessment, included in Management's Annual Report on Internal Control over Financial Reporting appearing under item 9A, that the Company maintained effective internal control over financial reporting as of December 31, 2006 based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), is fairly stated, in all material respects, based on those criteria. Furthermore, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2006, based on criteria established in Internal Control — Integrated Framework issued by the COSO. The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting. Our responsibility is to express opinions on management's assessment and on the effectiveness of the Company's internal control over financial reporting based on our audit. We conducted our audit of internal control over financial reporting 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 effective internal control over financial reporting was maintained in all material respects. An audit of internal control over financial reporting includes obtaining an understanding of internal control over financial reporting, evaluating management's assessment, testing and evaluating the design and operating effectiveness of internal control, and performing such other procedures as we consider necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

As described in Management's Annual Report on Internal Control over Financial Reporting, management has excluded Ion Systems Inc. ("Ion"), Umetrics, AB. ("Umetrics") and Novx Corp. ("Novx") from its assessment of internal control over financial reporting as of December 31, 2006 because they were acquired by the Company in a purchase business combination during 2006. We have also excluded Ion, Umetrics and Novx from our audit of internal control over financial reporting. Ion, Umetrics and Novx are wholly-owned subsidiaries whose total assets and total revenues represent 12% and 5%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2006.

PricewaterhouseCoopers LLP

Boston, Massachusetts
February 28, 2007

MKS INSTRUMENTS, INC.

CONSOLIDATED BALANCE SHEETS

	December 31 2006	December 31 2005
	(In thousands, except share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 215,208	$220,573
Short-term investments	74,749	72,046
Trade accounts receivable, net of allowances of $4,533 and $3,178 at December 31, 2006 and 2005, respectively	123,658	82,610
Inventories	149,820	98,242
Deferred income taxes	16,787	15,165
Other current assets	11,216	10,511
Total current assets	591,438	499,147
Property, plant and equipment, net	79,463	78,726
Long-term investments	2,816	857
Goodwill, net	323,973	255,243
Acquired intangible assets, net	43,104	27,422
Other assets	2,926	2,345
Total assets	$1,043,720	$863,740
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ 21,845	$ 16,966
Current portion of long-term debt	—	1,429
Current portion of capital lease obligations	1,176	491
Accounts payable	38,541	27,955
Accrued compensation	26,685	13,583
Income taxes payable	16,619	9,564
Other accrued expenses	25,031	19,099
Total current liabilities	129,897	89,087
Long-term debt	5,000	5,238
Long-term portion of capital lease obligations	1,113	914
Deferred income taxes	1,535	2,153
Other liabilities	4,956	3,505
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred Stock, $0.01 par value, 2,000,000 shares authorized; none issued and outstanding	—	—
Common Stock, no par value, 200,000,000 shares authorized; 56,671,625 and 54,397,267 shares issued and outstanding at December 31, 2006 and 2005, respectively	113	113
Additional paid-in capital	680,164	639,152
Retained earnings	210,877	116,642
Accumulated other comprehensive income	10,065	6,936
Total stockholders' equity	901,219	762,843
Total liabilities and stockholders' equity	$1,043,720	$863,740

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31		
	2006	2005	2004
	(In thousands, except per share data)		
Net sales	$782,801	$509,294	$555,080
Cost of sales	444,679	308,860	335,709
Gross profit	338,122	200,434	219,371
Research and development	69,702	55,916	56,973
Selling, general and administrative	127,703	93,021	87,284
Amortization of acquired intangible assets	17,376	13,864	14,764
Purchase of in-process technology	800	—	—
Restructuring and asset impairment charges	—	85	437
Income from litigation settlement	—	3,000	—
Income from operations	122,541	40,548	59,913
Interest expense	974	810	510
Interest income	9,374	7,269	2,423
Other income, net	—	—	5,402
Income before income taxes	130,941	47,007	67,228
Provision (benefit) for income taxes	36,706	12,442	(2,611)
Net income	$ 94,235	$ 34,565	$ 69,839
Net income per share:			
Basic	$ 1.70	$ 0.64	$ 1.30
Diluted	$ 1.68	$ 0.63	$ 1.28
Weighted average common shares outstanding:			
Basic	55,395	54,067	53,519
Diluted	55,961	54,633	54,656

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	For the Year Ended December 31, 2006, 2005 and 2004						
	Common Stock		Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount					
	(In thousands, except share data)						
Balance at December 31, 2003	52,040,019	$113	$587,910	$ 12,238	$ 8,049		$608,310
Net issuance under stock-based plans	484,793		6,030				6,030
Issuance of common stock through public offering, net of issuance costs of $399	1,314,286		32,549				32,549
Tax benefit from stock-based plans			5,271				5,271
Comprehensive income (net of tax):							
Net income				69,839		$69,839	69,839
Other comprehensive income:							
Changes in value of financial instruments designated as cash flow hedges and unrealized gain (loss) on investments					973	973	973
Foreign currency translation adjustment					3,662	3,662	3,662
Comprehensive income						$74,474	
Balance at December 31, 2004	53,839,098	113	631,760	82,077	12,684		726,634
Net issuance under stock-based plans	558,169		6,058				6,058
Tax benefit from stock-based plans			1,102				1,102
Other			232				232
Comprehensive income (net of tax):							
Net income				34,565		34,565	34,565
Other comprehensive income:							
Changes in value of financial instruments designated as cash flow hedges and unrealized gain (loss) on investments					1,663	1,663	1,663
Foreign currency translation adjustment					(7,411)	(7,411)	(7,411)
Comprehensive income						$28,817	
Balance at December 31, 2005	54,397,267	113	639,152	116,642	6,936		762,843
Net issuance under stock-based plans	2,274,358		23,255				23,255
Tax benefit from stock-based plans			4,614				4,614
Stock-based compensation			13,143				13,143
Comprehensive income (net of tax):							
Net income				94,235		94,235	94,235
Other comprehensive income:							
Changes in value of financial instruments designated as cash flow hedges and unrealized gain (loss) on investments					(43)	(43)	(43)
Foreign currency translation adjustment					3,172	3,172	3,172
Comprehensive income						$97,364	
Balance at December 31, 2006	56,671,625	$113	$680,164	$210,877	$10,065		$901,219

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

MKS INSTRUMENTS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31		
	2006	2005	2004
		(In thousands)	
Cash flows from operating activities:			
Net income	$ 94,235	$ 34,565	$ 69,839
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	31,348	26,215	27,838
Stock-based compensation	13,143	—	—
Tax benefit from stock-based compensation	4,614	1,102	5,271
Excess tax benefit from stock-based compensation	(4,469)	—	—
Deferred taxes	(11,518)	303	(10,229)
Gain on collection of note receivable	—	—	(5,042)
Other	562	467	(426)
Changes in operating assets and liabilities, net of effects of businesses acquired:			
Trade accounts receivable	(33,555)	(4,702)	(15,197)
Inventories	(46,013)	(1,829)	(15,919)
Other current assets	2,213	307	(1,244)
Accrued expenses	15,437	(2)	10,790
Accounts payable	5,731	6,362	(3,632)
Income taxes payable	6,483	1,372	4,350
Net cash provided by operating activities	78,211	64,160	66,399
Cash flows from investing activities:			
Acquisitions of businesses, net of cash acquired	(98,671)	—	—
Purchases of short-term and long-term available-for-sale investments	(108,944)	(215,551)	(218,478)
Maturities and sales of short-term and long-term available-for-sale investments	104,302	244,736	184,422
Purchases of property, plant and equipment	(10,690)	(10,281)	(18,270)
Proceeds from sale of assets	578	241	1,619
Proceeds from collection of note receivable	—	—	5,042
Other	(827)	901	1,422
Net cash provided by (used in) investing activities	(114,252)	20,046	(44,243)
Cash flows from financing activities:			
Proceeds from short-term borrowings	89,547	79,005	67,844
Payments on short-term borrowings	(84,381)	(81,729)	(64,127)
Payments on long-term debt	(1,667)	(2,036)	(2,539)
Principal payments on capital lease obligations	(754)	(377)	(39)
Proceeds from exercise of stock options and employee stock purchase plan	23,255	6,058	6,030
Excess tax benefit from stock-based compensation	4,469	—	—
Proceeds from the sale of common stock, net	—	—	32,549
Net cash provided by financing activities	30,469	921	39,718
Effect of exchange rate changes on cash and cash equivalents	207	(2,943)	1,855
Increase (decrease) in cash and cash equivalents	(5,365)	82,184	63,729
Cash and cash equivalents at beginning of period	220,573	138,389	74,660
Cash and cash equivalents at end of period	$ 215,208	$ 220,573	$ 138,389
Supplemental disclosure of cash flow information:			
Cash paid during the period for:			
Interest	$ 880	$ 784	$ 447
Income taxes	$ 35,922	$ 10,213	$ 4,923
Non-cash financing activities:			
Equipment capital leases	$ 1,638	$ 1,666	$ —

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

(Tables in thousands, except share and per share data)

1) Description of Business

MKS Instruments, Inc. was founded in 1961 and is a leading worldwide provider of instruments, components, subsystems and process control solutions that measure, control, power and monitor critical parameters of semiconductor and other advanced manufacturing processes. MKS is managed as one operating segment which is organized around three product groups: Instruments and Control Systems, Power and Reactive Gas Products and Vacuum Products. MKS' products are derived from its core competencies in pressure measurement and control, materials delivery, gas and thin-film composition analysis, electrostatic change control, control and information management, power and reactive gas generation and vacuum technology.

2) Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements include the accounts of MKS Instruments, Inc. and its wholly owned subsidiaries (collectively, the "Company"). All significant intercompany accounts and transactions have been eliminated in consolidation.

Net Income Per Share

Basic earnings per share is based on the weighted average number of common shares outstanding, and diluted earnings per share is based on the weighted average number of common shares outstanding and all dilutive potential common equivalent shares outstanding. The dilutive effect of options is determined under the treasury stock method using the average market price for the period. Common equivalent shares are included in the per share calculations when the effect of their inclusion would be dilutive.

The following is a reconciliation of basic to diluted net income per share:

	For the Year Ended December 31,		
	2006	2005	2004
Net income	$ 94,235	$ 34,565	$ 69,839
Shares used in net income per common share — basic	55,395,000	54,067,000	53,519,000
Effect of dilutive securities:			
Stock options, restricted stock and employee stock purchase plan	566,000	566,000	1,137,000
Shares used in net income per common share — diluted	55,961,000	54,633,000	54,656,000
Net income per common share — basic	$ 1.70	$ 0.64	$ 1.30
Net income per common share — diluted	$ 1.68	$ 0.63	$ 1.28

Options and restricted stock outstanding of 4,789,894, 5,957,682 and 5,513,054 during the years ended December 31, 2006, 2005 and 2004, respectively, are excluded from the calculation of diluted net income per common share because their inclusion would be anti-dilutive.

Stock-Based Compensation

Effect of Adoption of SFAS 123R, Share-Based Payment

Prior to January 1, 2006, the Company accounted for stock-based awards to employees using the intrinsic value method as prescribed by Accounting Principles Board Opinion No. 25, "Accounting for Stock Issued to Employees," and related interpretations ("APB 25"). Accordingly, no compensation expense was recorded for options issued to employees in fixed amounts with fixed exercise prices at least equal to the fair market value of the

(Tables in thousands, except share and per share data)

Company's common stock at the date of grant. The Company had adopted the disclosure-only provisions of Statement of Financial Accounting Standards ("SFAS") No. 123, "Accounting for Stock-Based Compensation," as amended by SFAS No. 148, "Accounting for Stock-Based Compensation-Transition and Disclosure," ("SFAS 123").

On January 7, 2005, the Company accelerated the vesting of outstanding stock options granted to employees and officers with an exercise price of $23.00 per share or greater. As a result of this action, options to purchase approximately 1,600,000 shares of the Company's common stock became exercisable on January 7, 2005. No compensation expense was recorded related to this action as these options had no intrinsic value on January 7, 2005. For purposes of the SFAS 123 proforma calculation below, the expense related to the options that were accelerated was $16,886,000, net of tax, for the year ended December 31, 2005. The reason that the Company accelerated the vesting of the identified stock options was to reduce the Company's compensation expense in periods subsequent to the adoption of SFAS 123R, "Share-Based Payment" ("SFAS 123R").

As of January 1, 2006, the Company adopted SFAS 123R using the modified prospective method. SFAS 123R requires companies to recognize compensation cost for all stock-based awards based upon the grant-date fair value of those awards and to recognize the expense over the requisite service period for awards expected to vest. Using the modified prospective method of adopting SFAS 123R, MKS began recognizing compensation expense for equity-based awards granted after January 1, 2006 plus unvested awards granted prior to January 1, 2006. Under this method of implementation, prior periods were not restated. The Company has elected to adopt the alternative transition method for calculating the tax effects of equity-based compensation. The alternative transition method includes simplified methods to establish the beginning balance of the additional paid-in capital pool (APIC pool) related to the tax effects of employee stock-based compensation, and to determine the subsequent impact on the APIC pool and consolidated statement of cash flows of the tax effects of employee equity-based compensation awards that are outstanding upon the implementation of SFAS 123R. Subsequent to the initial adoption of FAS 123R, the Company calculates potential windfall or shortfall tax benefits under the treasury stock method by excluding the impact of pro forma deferred tax assets.

The Company recognized the full impact of its share-based payment plans in the consolidated statements of operations for the year ended December 31, 2006 under SFAS 123R and did not capitalize any such costs on the consolidated balance sheets, as such costs that qualified for capitalization were not material. The following table reflects the effect of recording stock-based compensation for the year ended December 31, 2006 in accordance with SFAS 123R:

	Year Ended December 31, 2006
Stock-based compensation expense by type of award:	
Employee stock options	$ 8,521
Restricted stock	3,862
Employee stock purchase plan	760
Total stock-based compensation	13,143
Tax effect on stock-based compensation	(4,469)
Net effect on net income	$ 8,674
Effect on earnings per share:	
Basic	$ 0.16
Diluted	$ 0.16

(Tables in thousands, except share and per share data)

Prior to the adoption of SFAS 123R

The following table illustrates the effect on net income and net income per share, for the years ended December 31, 2005 and 2004, if the Company had applied the fair value recognition provisions of SFAS 123 to stock-based employee awards.

	2005	2004
Net income as reported	$ 34,565	$ 69,839
Add: Stock-based employee compensation expense included in reported net income, net of tax	—	—
Deduct: Total stock-based employee compensation expense determined under the fair-value-based method for all awards, net of tax	(24,321)	(15,933)
Pro forma net income	$ 10,244	$ 53,906
Basic and diluted net income per share:		
Basic — as reported	$ 0.64	$ 1.30
Basic — Pro forma	$ 0.19	$ 1.01
Diluted — as reported	$ 0.63	$ 1.28
Diluted — Pro forma	$ 0.19	$ 0.99

Valuation Assumptions

In connection with the adoption of SFAS 123R, the Company reassessed its valuation technique and related assumptions. The Company determines the fair value of restricted stock based on the number of shares granted and the closing market price of the Company's common stock on the date of the award, and estimates the fair value of stock options and employee stock purchase rights using the Black-Scholes valuation model, which is consistent with our valuation techniques previously utilized for options in footnote disclosures required under SFAS 123. Such values are recognized as expense on a straight-line basis over the requisite service periods, net of estimated forfeitures. The estimation of stock-based awards that will ultimately vest requires significant judgment. We consider many factors when estimating expected forfeitures, including types of awards and historical experience. Actual results, and future changes in estimates, may differ substantially from our current estimates.

The weighted average grant date fair value of options granted during the year ended December 31, 2006, as determined under SFAS 123R, and during the years December 31, 2005 and 2004, as determined under SFAS 123, was $12.00, $8.27 and $11.24 per share, respectively. The total intrinsic value of options exercised during the years ended December 31, 2006, 2005 and 2004 was approximately $14,252,000, $2,858,000 and $4,415,000, respectively. The fair values of options at the date of grant were estimated using the Black-Scholes option-pricing model with the following weighted average assumptions:

	2006	2005	2004
Stock option plans:			
Expected life (years)	5.0	5.0	5.0
Risk-free interest rate	4.9%	4.0%	3.6%
Expected Volatility	52.0%	51.0%	74.0%
Dividend yield	0.0%	0.0%	0.0%

(Tables in thousands, except share and per share data)

The weighted average fair value of employee stock purchase rights granted in 2006, 2005 and 2004 was $5.18, $4.18 and $7.05, respectively. The fair value of the employees' purchase rights was estimated using the Black-Scholes option-pricing model with the following weighted average assumptions:

	2006	2005	2004
Employee stock purchase rights:			
Expected life (years)	0.5	0.5	0.5
Risk-free interest rate	4.8%	2.7%	1.3%
Expected volatility	34.6%	34.0%	73.0%
Dividend yield	0.0%	0.0%	0.0%

Expected volatilities for 2006 and 2005 are based on a combination of implied and historical volatilities of our common stock and based on historical volatilities for 2004; the expected life represents the weighted average period of time that options granted are expected to be outstanding giving consideration to vesting schedules and our historical exercise patterns; and the risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected life of the option.

The fair value of stock options and restricted stock awards that vested during the year ended December 31, 2006, 2005 and 2004 was approximately $8,111,000, $10,097,000 and $5,661,000, respectively. As of December 31, 2006, the unrecognized compensation cost related to non-vested stock options and the unrecognized compensation cost related to restricted stock was approximately $7,367,000 and $11,286,000, respectively, and will be recognized over an estimated weighted average amortization period of 1.7 years and 2.2 years, respectively.

Foreign Exchange

The functional currency of the majority of the Company's foreign subsidiaries is the applicable local currency. For those subsidiaries, assets and liabilities are translated to U.S. dollars at year-end exchange rates. Income and expense accounts are translated at the average exchange rates prevailing during the year. The resulting translation adjustments are included in accumulated other comprehensive income in consolidated stockholders' equity. Foreign exchange transaction gains and losses, which arise from transaction activity and are reflected in operations, were immaterial in 2006, 2005 and 2004.

Revenue Recognition and Accounts Receivable Allowances

Revenue from product sales is recorded upon transfer of title and risk of loss to the customer provided that there is evidence of an arrangement, the sales price is fixed or determinable, and collection of the related receivable is reasonably assured. In most transactions, the Company has no obligations to customers after the date products are shipped other than pursuant to warranty obligations. In some instances, the Company provides installation, training, support and services to customers after the product has been shipped. For revenue arrangements with multiple deliverables, the Company defers the fair value related to any undelivered elements until the undelivered element is delivered. Fair value is the price charged when the element is sold separately. The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. Shipping and handling fees, if any, billed to customers are recognized as revenue. The related shipping and handling costs are recognized in cost of sales. Accounts receivable allowances include sales returns and bad debt allowances. The Company monitors and tracks the amount of product returns and reduces revenue at the time of shipment for the estimated amount of such future returns, based on historical experience. The Company makes estimates evaluating its allowance for doubtful accounts. The Company continuously monitors collections and payments from its customers and maintains a provision for estimated credit losses based upon its historical experience and any specific customer collection issues that it has identified.

(Tables in thousands, except share and per share data)

Cash and Cash Equivalents and Investments

All highly liquid investments with a maturity date of three months or less at the date of purchase are considered to be cash equivalents.

The fair value of short-term available-for-sale investments with maturities or estimated lives of less than one year consists of the following:

	December 31, 2006	December 31, 2005
Federal Government and Government Agency Obligations	$ 2,092	$15,336
Commercial Paper and Corporate Obligations	72,657	56,710
	$74,749	$72,046

The fair value of long-term available-for-sale investments with maturities or estimated lives of one to five years consists of the following:

	December 31, 2006	December 31, 2005
Commercial Paper and Corporate Obligations	$2,816	$857

The appropriate classification of investments in securities is determined at the time of purchase. Debt securities that the Company does not have the intent and ability to hold to maturity are classified as "available-for-sale" and are carried at fair value. Unrealized gains and losses on securities classified as available-for-sale are included in accumulated other comprehensive income in consolidated stockholders' equity. Gross unrealized gains and gross unrealized losses on available-for-sale investments were not material at December 31, 2006 and 2005. At December 31, 2006, the fair value of available-for-sale investments with gross unrealized losses was $13,540,618. Realized gains (losses) on securities were immaterial in 2006, 2005 and 2004. The cost of securities sold is based on the specific identification method.

Inventories

The Company values its inventory at the lower of cost (first-in, first-out method) or market. The Company regularly reviews inventory quantities on hand and records a provision to write down excess and obsolete inventory to its estimated net realizable value, if less than cost, based primarily on its estimated forecast of product demand.

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Equipment acquired under capital leases is recorded at the present value of the minimum lease payments required during the lease period. Expenditures for major renewals and betterments that extend the useful lives of property, plant and equipment are capitalized. Expenditures for maintenance and repairs are charged to expense as incurred. When assets are sold or otherwise disposed of, the cost and related accumulated depreciation are eliminated from the accounts and any resulting gain or loss is recognized in earnings.

Depreciation is provided on the straight-line method over the estimated useful lives of twenty to thirty-one and one-half years for buildings and three to seven years for machinery and equipment and furniture and fixtures and office equipment, which includes ERP software. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life of the leased asset.

Intangible Assets

Intangible assets resulting from the acquisitions of entities accounted for using the purchase method of accounting are estimated by management based on the fair value of assets acquired. These include acquired customer lists, technology, patents, trade name and covenants not to compete. Intangible assets are amortized from three to eight years on a straight-line basis which represents the estimated periods of benefit.

Goodwill

Goodwill is the amount by which the cost of acquired net assets exceeded the fair value of those net assets on the date of acquisition. The Company assesses goodwill for impairment on an annual basis during the fourth quarter of each fiscal year, or more frequently when events and circumstances occur indicating that the recorded goodwill may be impaired. If the book value of a reporting unit exceeds its fair value, the implied fair value of goodwill is compared with the carrying amount of goodwill. If the carrying amount of goodwill exceeds the implied fair value, an impairment loss is recorded equal to that excess.

Impairment of Long-Lived Assets

The Company evaluates the recoverability of its long-lived assets, in accordance with Statement of Financial Accounting Standards No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" ("SFAS 144"). SFAS 144 requires recognition of impairment of long-lived assets in the event the net book value of such assets exceeds the future undiscounted cash flows attributable to such assets. If an impairment is possible and indicated, the assets are written down to their estimated fair value.

Research and Development

Research and development costs are expensed as incurred and consist mainly of compensation related expenses and project materials. The Company's research and development efforts include numerous projects which generally have a duration of 12 to 30 months.

In-Process Research and Development

The Company values tangible and intangible assets acquired through its business acquisitions at fair value including in-process research and development ("IPR&D"). The Company determines IPR&D through established valuation techniques for various projects for the development of new products and technologies and expenses IPR&D when technical feasibility is not reached.

Advertising Costs

Advertising costs are expensed as incurred. Advertising costs were immaterial in 2006, 2005 and 2004.

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 evaluates the realizability of its net deferred tax assets and assesses the need for a valuation allowance on a quarterly basis. The future benefit to be derived from its deferred tax assets is dependent upon its ability to generate sufficient future taxable income to realize the assets. The Company records a valuation allowance to reduce its net deferred tax assets to the amount that is more likely than not to be realized. To the extent the Company establishes a valuation allowance, an expense will be recorded within the provision for income taxes line on the statement of operations. During the year ended December 31, 2002 the Company established a full valuation allowance for its net deferred tax assets. In periods subsequent to establishing a valuation allowance, if the Company were to determine that it would be able to realize its net deferred tax assets in excess of their net recorded amount, an adjustment to the valuation allowance would be recorded as a reduction to income tax expense in the period such determination was made. During the fourth quarter of 2004, after examining a number of factors, including historical results and near term earnings projections, the Company determined that it was more likely than not that it would realize all of its net deferred tax assets, except for those related to certain state tax credits and adjusted the valuation allowance at December 31, 2004. During the fourth quarter of 2006, the Company determined that it would realize the aforementioned state tax credits and reduced the valuation allowance. The remaining valuation allowance at December 31, 2006 was $317,000, relating to state tax credits acquired with the purchase of Ion.

New Accounting Pronouncements

In June 2006, the Financial Accounting Standards Board issued Interpretation No. 48, Accounting for Uncertainty in Income Taxes, an interpretation of FAS 109, Accounting for Income Taxes (FIN 48), to create a single model to address uncertainty in tax positions. FIN 48 clarifies the accounting for income taxes by prescribing a minimum recognition threshold a tax position is required to meet before being recognized for financial statements. FIN 48 also provides guidance on derecognition, measurement, classification, interest and penalties, accounting for interim periods, disclosure and transition. FIN 48 is effective for fiscal years beginning after December 15, 2006. The Company will adopt FIN 48 as of January 1, 2007 as required. The cumulative effect of adopting FIN 48, if any, will be recorded in retained earnings. Although the Company's assessment of the impact of FIN 48 is not yet complete, MKS expects that the adoption of FIN 48 will not have a material impact on the Company's financial statements.

In September 2006, the SEC issued Staff Accounting Bulletin No. 108, "Considering the Effects of Prior Year Misstatements when quantifying Misstatements in Current Year Financial Statements" ("SAB 108"). SAB 108 requires companies to evaluate the materiality of identified unadjusted errors on each financial statement and related financial statement disclosure using both the rollover approach and the iron curtain approach. The rollover approach quantifies misstatements based on the amount of the error in the current year financial statement whereas the iron curtain approach quantifies misstatements based on the effects of correcting the misstatement existing in the balance sheet at the end of the current year, irrespective of the misstatement's year(s) of origin. Financial statements would require adjustment when either approach results in quantifying a misstatement that is material. Correcting prior year financial statements for immaterial errors would not require previously filed reports to be amended. SAB 108 is effective for interim periods of the first fiscal year ending after November 15, 2006. The adoption of SAB 108, in the fourth quarter of 2006, did not have a material impact on the Company's financial statements.

In September 2006, the FASB issued SFAS No. 157, "Fair Value Measurements" ("SFAS 157"). SFAS 157 clarifies the principle that fair value should be based on the assumptions market participants would use when pricing an asset or liability and establishes a fair value hierarchy that prioritizes the information used to develop those assumptions. Under the standard, fair value measurements would be separately disclosed by level within the fair value hierarchy. SFAS 157 is effective for fiscal year beginning after November 15, 2007, with early adoption permitted. The Company is in the process of evaluating any potential impact of SFAS 157.

Use of Estimates

The consolidated financial statements 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 assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an on-going basis, management evaluates its estimates and judgments, including those related to revenue recognition, stock-based compensation, inventory, intangible assets, goodwill, and other long-lived assets, in-process research and development, merger expenses, income taxes and investments. 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.

Reclassifications

Certain prior year amounts have been reclassified to be consistent with the current year classifications.

3) Financial Instruments and Risk Management

Foreign Exchange Risk Management

The Company hedges a portion of its forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of fifteen months, using forward exchange contracts primarily related to Japanese and European currencies. These derivatives are designated as cash-flow hedges, and changes in their fair value are carried in accumulated other comprehensive income until the hedged transaction affects earnings. When the hedged transaction affects earnings, the appropriate gain or loss from the derivative designated as a hedge of the transaction is reclassified from accumulated other comprehensive income to cost of sales. As of December 31, 2006, the amount that will be reclassified from accumulated other comprehensive income to cost of sales over the next twelve months is an unrealized gain of $624,000, net of taxes. The ineffective portion of the derivatives is recorded in cost of sales and was $0 in 2006, 2005 and 2004.

The Company hedges certain intercompany and other payables with forward foreign exchange contracts. Since these derivatives hedge existing amounts that are denominated in foreign currencies, the derivatives do not qualify for hedge accounting under SFAS No. 133. The foreign exchange gain or loss on these derivatives was immaterial in 2006, 2005 and 2004.

Realized and unrealized gains and losses on forward exchange contracts that do not qualify for hedge accounting are recognized immediately in earnings. The cash flows resulting from forward exchange contracts that qualify for hedge accounting are classified in the consolidated statement of cash flows as part of cash flows from operating activities. Cash flows resulting from forward exchange contracts that do not qualify for hedge accounting are classified in the consolidated statement of cash flows as investing activities. The Company does not hold or issue derivative financial instruments for trading purposes.

There were forward exchange contracts with notional amounts totaling $20,324,000 outstanding at December 31, 2006 of which $14,619,000 were outstanding to exchange Japanese yen for U.S. dollars. There were forward exchange contracts with notional amounts totaling $35,299,000 outstanding at December 31, 2005. Of such forward exchange contracts, $28,461,000 were outstanding to exchange Japanese yen for US dollars. There were forward exchange contracts with notional amounts totaling $26,301,000 outstanding at December 31, 2004. Of such forward exchange contracts, $21,550,000 were outstanding to exchange Japanese yen for US dollars.

Gains and losses on forward exchange contracts that qualify for hedge accounting are classified in cost of goods sold and totaled a gain of $1,932,000 and $812,000 for the years ended December 31, 2006 and 2005, respectively, and a loss of $1,666,000 for the year ended December 31, 2004.

The fair values of forward exchange contracts at December 31, 2006 and 2005, determined by applying period end currency exchange rates to the notional contract amounts, amounted to an unrealized gain of $998,000 and $1,237,000 for the years ended December 31, 2006 and 2005, respectively.

(Tables in thousands, except share and per share data)

Concentrations of Credit Risk

The Company's significant concentrations of credit risk consist principally of cash and cash equivalents, investments, forward exchange contracts and trade accounts receivable. The Company maintains cash and cash equivalents with financial institutions including some banks with which it has borrowings. The Company maintains investments primarily in U.S. Treasury and government agency securities and corporate debt securities, rated AA or higher. The Company enters into forward currency contracts with high credit-quality financial institutions in order to minimize credit risk exposure. The Company's customers are primarily concentrated in the semiconductor industry, and a limited number of customers account for a significant portion of the Company's revenues. The Company regularly monitors the creditworthiness of its customers and believes it has adequately provided for potential credit loss exposures. Credit is extended for all customers based primarily on financial condition and collateral is not required.

Fair Value of Financial Instruments

The fair value of the term loans, including the current portion, approximates its carrying value given its variable rate interest provisions. The fair value of marketable securities is based on quoted market prices. The fair value of mortgage notes is based on borrowing rates for similar instruments and, therefore, approximates its carrying value. For all other balance sheet financial instruments, the carrying amount approximates fair value because of the short period to maturity of these instruments.

4) Inventories

Inventories consist of the following:

	December 31, 2006	December 31, 2005
Raw material	$ 82,007	$48,235
Work in process	26,943	18,283
Finished goods	40,870	31,724
	$149,820	$98,242

5) Property, Plant and Equipment

Property, plant and equipment consist of the following:

	December 31, 2006	December 31, 2005
Land	$ 11,310	$ 11,291
Buildings	63,932	62,963
Machinery and equipment	87,136	79,839
Furniture and fixtures and office equipment	38,244	36,692
Leasehold improvements	8,082	6,966
Construction in progress	2,846	1,681
	211,550	199,432
Less: accumulated depreciation and amortization	132,087	120,706
	$ 79,463	$ 78,726

(Tables in thousands, except share and per share data)

Depreciation and amortization of property, plant and equipment totaled $13,972,000, $12,351,000 and $13,074,000 for the years ended December 31, 2006, 2005 and 2004, respectively.

6) Debt

Credit Agreements and Short-Term Borrowings

On August 1, 2006, the Company renewed an unsecured short-term LIBOR based loan agreement with a bank to be utilized primarily by its Japanese subsidiary for short-term liquidity purposes. The credit line, which expires on July 31, 2007, provides for the Company to borrow in multiple currencies of up to an equivalent of $35,000,000 U.S. dollars. At December 31, 2006, the Company had outstanding borrowings of $16,804,000 U.S. dollars, payable on demand, at an interest rate of 1.45%.

Additionally, the Company's Japanese subsidiary has lines of credit and short-term borrowing arrangements with one financial institution which provide for aggregate borrowings as of December 31, 2006 of up to $12,603,000, which generally expire and are renewed at three month intervals. At December 31, 2006 and 2005, total borrowings outstanding under these arrangements were $5,041,000 and $5,938,000, respectively, at an interest rate of 1.50% at December 31, 2006 and at interest rates ranging from 1.21% to 1.24% at December 31, 2005.

Long-Term Debt

Long-term debt consists of the following:

	December 31,	
	2006	2005
Mortgage notes	$5,000	$6,667
Less: current portion	—	1,429
Long-term debt less current portion	$5,000	$5,238

In connection with an acquisition in 2002, the Company assumed a long-term debt agreement with the County of Monroe Industrial Development Agency (COMIDA) for a manufacturing facility located in Rochester, New York. The terms are the same as that of the underlying Industrial Development Revenue Bond which calls for payments of interest only through July 1, 2014, at which time the Bond is repayable in a lump sum of $5,000,000. Interest is reset annually based on bond remarketing, with an option by the Company to elect a fixed rate, subject to a maximum rate of 13% per annum. At December 31, 2006 the interest rate was 3.95%. The bond is collateralized by the building. The remaining principal balance outstanding at December 31, 2006 was $5,000,000. The net book value of the building at December 31, 2006 was approximately $9,848,000.

7) Commitments and Contingencies

On November 3, 1999, On-Line Technologies Inc. ("On-Line"), which MKS acquired in 2001, brought suit in federal district court in Connecticut against Perkin-Elmer Corp. ("Perkin-Elmer") and certain other defendants for infringement of On-Line's U.S. Patent No. 5,440,143 (the "143 patent"). The suit sought injunctive relief and damages for infringement. Perkin-Elmer filed a counterclaim seeking invalidity of the patent, costs and attorneys' fees, and in June 2002, moved for summary judgment. In April 2003, the court granted the motion and dismissed the case. MKS appealed this decision to the Federal Circuit Court of Appeals, which, on October 13, 2004, reversed the lower court's dismissal of MKS' claim for patent infringement, and the case was remanded to the district court. On March 11, 2005, Perkin-Elmer stipulated that they do infringe a specified claim of the 143 patent. Perkin-Elmer filed a motion for summary judgment seeking to invalidate such claim, which motion was denied on March 23, 2006. The court established an October 2006 trial date. Perkin-Elmer then moved for the court to reconsider its decision and requested a stay of the trial. On September 15, 2006, the court reversed itself, granting Perkin-Elmer's motion for reconsideration, and holding the specified claim invalid. Following a September 26, 2006 status conference, the court denied the defendants' request to stay the trial of MKS' remaining claims. The court continued the trial date and requested summary judgment briefing on the remaining claims following a court ordered 30-day delay for the parties to attempt to settle the case. In January 2007, the parties entered into a confidential settlement agreement, the terms of which do not have a material financial impact to MKS, and agreed to dismiss the case upon such terms. Accordingly, on January 22, 2007, the parties filed with the court a stipulation of dismissal, which the court granted on January 26, 2007.

(Tables in thousands, except share and per share data)

On October 3, 2005, MKS entered into a settlement agreement with Advanced Energy Industries, Inc. ("Advanced Energy"), pursuant to which Advanced Energy paid MKS $3,000,000 in cash in October 2005. The settlement agreement was entered into in connection with a patent infringement litigation suit filed by MKS' subsidiary, Applied Science and Technology, Inc. ("ASTeX"), in Delaware district court in May 2003 against Advanced Energy. The settlement agreement also provided that Advanced Energy would not make, use, sell or offer to sell its Rapid, Rapid FE, Rapid OE and Xstream products (or related products) in the United States or any other country in which we held a relevant patent or had pending a patent application on the date of the settlement agreement, during the life of any such patent (or resulting patent, in the case of patent applications). On October 6, 2005, the federal district court in Delaware issued a final judgment of infringement and an injunction prohibiting Advanced Energy from making, using, selling, offering to sell, or importing into the United States such products.

The Company is subject to other legal proceedings and claims, which have arisen in the ordinary course of business. In the opinion of management, the ultimate disposition of these matters will not have a material adverse effect on the Company's results of operations, financial condition or cash flows.

The Company leases certain of its facilities and machinery and equipment under capital and operating leases expiring in various years through 2010 and thereafter. Generally, the facility leases require the Company to pay maintenance, insurance and real estate taxes. Rental expense under operating leases totaled $7,443,000, $7,439,000 and $8,344,000, for the years ended December 31, 2006, 2005 and 2004, respectively.

Minimum lease payments under operating and capital leases are as follows:

	Operating Leases	Capital Leases
Year ending December 31,		
2007	$ 7,405	$1,432
2008	5,920	891
2009	4,484	289
2010	3,647	—
2011	2,789	—
Thereafter	7,077	—
Total minimum lease payments	$31,322	2,612
Less: amounts representing interest		323
Present value of minimum lease payments		2,289
Less: current portion		1,176
Long-term portion		$1,113

As of December 31, 2006 the Company has entered into non-cancelable purchase commitments for certain inventory components and other equipment and services used in its normal operations. The majority of these purchase commitments covered by these arrangements are for periods of less than one year and aggregate to approximately $98,209,000. Additionally, the Company has engaged a third party to provide certain computer equipment, IT network services and IT support. This contract is for a period of approximately six years beginning in September 2004 and has a significant penalty for early termination. The obligation at December 31, 2006 of approximately $22,660,000, excluding capital lease and interest payments of $2,612,000, will be paid over the term of the arrangement. Average annual payments are expected to be approximately $5,700,000.

To the extent permitted by Massachusetts law, the Company's Restated Articles of Organization, as amended, require the Company to indemnify any of its current or former officers or directors or any person who has served or is serving in any capacity with respect to any of the Company's employee benefit plans. Because no claim for indemnification has been pursued by any person covered by the relevant provisions of the Company's Restated Articles of Organization, the Company believes that the estimated exposure for these indemnification obligations is currently minimal. Accordingly, the Company has no liabilities recorded for these requirements as of December 31, 2006.

The Company also enters into agreements in the ordinary course of business which include indemnification provisions. Pursuant to these agreements, the Company indemnifies, holds harmless and agrees to reimburse the indemnified party, generally its customers, for losses suffered or incurred by the indemnified party in connection with certain patent or other intellectual property infringement claims, and, in some instances, other claims, by any third party with respect to the Company's products. The term of these indemnification obligations is generally perpetual after execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is, in some instances, not contractually limited. The Company has never incurred costs to defend lawsuits or settle claims related to these indemnification obligations. As a result, the Company believes the estimated fair value of these obligations is minimal. Accordingly, the Company has no liabilities recorded for these obligations as of December 31, 2006.

When, as part of an acquisition, the Company acquires all of the stock or all of the assets and liabilities of another company, the Company assumes liability for certain events or occurrences that took place prior to the date of acquisition. The maximum potential amount of future payments the Company could be required to make for such obligations is undeterminable at this time. Other than obligations recorded as liabilities at the time of the acquisitions, historically the Company has not made significant payments for these indemnifications. Accordingly, no liabilities have been recorded for these obligations.

In conjunction with certain asset sales, the Company may provide routine indemnifications whose terms range in duration and often are not explicitly defined. Where appropriate, an obligation for such indemnifications is recorded as a liability. Because the amounts of liability under these types of indemnifications are not explicitly stated, the overall maximum amount of the obligation under such indemnifications cannot be reasonably estimated. Other than obligations recorded as liabilities at the time of the asset sale, historically the Company has not made significant payments for these indemnifications.

8) Stockholders' Equity

Issuance of Common Stock

On January 21, 2004, the Company issued 1,142,857 shares of its common stock at $26.25 per share through a public offering. Proceeds of the offering, net of underwriters discount and offering expenses, were $28,251,000. On January 23, 2004, the underwriters exercised their over-allotment option and therefore, the Company issued an additional 171,429 shares of its common stock, which generated net proceeds of $4,298,000.

Stock Purchase Plans

The Company's Third Amended and Restated 1999 Employee Stock Purchase Plan (the "Purchase Plan") authorizes the issuance of up to an aggregate of 1,250,000 shares of Common Stock to participating employees.

Offerings under the Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the Nasdaq Global Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2006 and 2005, the Company issued 120,515 and 113,525 shares, respectively, of Common Stock to employees who participated in the Purchase Plan at exercise prices of $16.59 and $17.65 in 2006 and $14.19 and $14.27 in 2005. As of December 31, 2006, there were 471,572 shares reserved for future issuance under the Purchase Plan.

The Company's Second Amended and Restated International Employee Stock Purchase Plan (the "Foreign Purchase Plan") authorizes the issuance of up to an aggregate of 250,000 shares of Common Stock to participating employees. Offerings under the Foreign Purchase Plan commence on June 1 and December 1 and terminate, respectively, on November 30 and May 31. Under the Foreign Purchase Plan, eligible employees may purchase shares of Common Stock through payroll deductions of up to 10% of their compensation. The price at which an employee's option is exercised is the lower of (1) 85% of the closing price of the Common Stock on the Nasdaq Global Market on the day that each offering commences or (2) 85% of the closing price on the day that each offering terminates. During 2006 and 2005, the Company issued 23,236 and 24,933 shares, respectively, of Common Stock to employees who participated in the Foreign Purchase Plan at exercise prices of $16.59 and $17.65 and $14.19 and $14.27 per share, respectively. As of December 31, 2006, there were 115,220 shares reserved for future issuance under the Foreign Purchase Plan.

Equity Incentive Plans

The Company's equity incentive plans (the "Plans") are intended to attract and retain employees and to provide an incentive for them to assist the Company to achieve long-range performance goals and to enable them to participate in the long-term growth of the Company. Employees may be granted restricted stock and restricted stock units (collectively, "restricted stock"), options to purchase shares of the Company's stock and other equity incentives under the Plans.

The Company's 2004 Stock Incentive Plan (the "2004 Plan") was adopted by the board of directors on March 4, 2004 and approved by the stockholders on May 13, 2004. As of December 31, 2006 there were 5,411,818 shares authorized for issuance under the 2004 Plan, which amount shall increase each year by an amount equal to 5% of the total outstanding shares of the Company's common stock outstanding on January 1 of such year, provided that the maximum aggregate number of shares of common stock which may be issued under the 2004 Plan is 15,000,000 shares (subject to adjustment for certain changes in MKS' capitalization). The Company may grant options, restricted stock awards, stock appreciation rights and other stock-based awards to employees, officers, directors, consultants and advisors under the 2004 Plan. As of December 31, 2006 there were 4,632,943 shares available for future grant under the 2004 Plan.

The Company's Second Restated 1995 Stock Incentive Plan (the "1995 Plan") expired in November 2005 and no further awards may be granted under the 1995 Plan, although there are still outstanding options available for exercise under this plan.

The Company's 1997 Director Stock Plan (the "1997 Director Plan") provides for (i) the initial grant of options to purchase 20,000 shares of common stock to each person who first becomes an outside director and (ii) annual grants of options to purchase 12,000 shares of common stock on the date of the annual meeting of stockholders. In December 2004, the board of directors amended the 1997 Director Plan to allow for all options granted on or after May 17, 2000 to be exercisable within the three year period from the date of the director's termination as director. On March 4, 2004, the board of directors approved, and on May 13, 2004, the stockholders approved, an increase in the number of shares available for issuance under the 1997 Director Plan from 300,000 shares to 750,000 shares. As of December 31, 2006 there were 323,500 shares available for future grant under the 1997 Director Plan.

(Tables in thousands, except share and per share data)

On January 7, 2005, the Company accelerated the vesting of outstanding options with an exercise price of $23.00 or greater. As a result of this action, options to purchase approximately 1,600,000 shares became exercisable on January 7, 2005. No compensation expense was recorded in 2005 related to this action as these options had no intrinsic value on January 7, 2005. The reason that the Company accelerated the vesting of the identified stock options was to reduce the Company's compensation charges in future years.

The Company has granted options to employees under the 2004 Plan, 1995 Plan and the 1993 Stock Option Plan and to directors under the 1997 Director Plan and the 1996 Director Stock Option Plan (collectively, the "Plans"). The Plans are administered by the compensation committee of the Company's board of directors.

At December 31, 2006, 4,956,443 shares of the Company's common stock were available for future grants under the Plans. Stock options are granted at an exercise price equal to 100% of the fair value of the Company's common stock. Generally, stock options granted to employees under the Plans between 2001 and 2005 vest 25% after one year and 6.25% per quarter thereafter and expire 10 years after the grant date. Generally, stock options granted under the Plans prior to 2000 vest 20% after one year and 5% per quarter thereafter, and expire 10 years after the grant date. Options granted to directors generally vest at the earliest of (1) the next annual meeting, (2) 13 months from date of grant, or (3) the effective date of an acquisition. Restricted stock awards generally vest three years from the date of grant.

The following table presents the activity for options under the Plans:

	Year Ended December 31,					
	2006		2005		2004	
	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price	Options	Weighted Average Exercise Price
Outstanding — beginning of period	9,459,271	$20.36	10,023,717	$20.25	8,897,899	$20.69
Granted	102,000	$22.94	316,500	$16.93	2,227,830	$17.87
Exercised	(1,563,706)	$13.33	(382,211)	$10.70	(362,140)	$10.66
Forfeited or Expired	(382,910)	$24.64	(498,735)	$23.34	(739,872)	$23.30
Outstanding — end of period	7,614,655	$21.62	9,459,271	$20.36	10,023,717	$20.25
Exercisable at end of period	6,720,395	$22.36	7,750,739	$21.45	5,763,521	$20.42

The following table presents the activity for restricted stock under the Plans:

	Year Ended December 31, 2006	
	Non-Vested Restricted Stock	Weighted Average Grant Date Fair Value
Non-vested restricted stock — beginning of period	—	$ —
Granted	741,090	22.01
Vested	(1,250)	22.43
Forfeited or Expired	(25,715)	22.27
Non-vested restricted stock — end of period	714,125	$22.00

The following table summarizes information with respect to options outstanding and exercisable under the Plans at December 31, 2006:

	Options Outstanding				Options Exercisable		
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life(In Years)	Aggregate Intrinsic Value (In Thousands)	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (In Thousands)
$ 4.43 - $ 8.92 . . .	163,269	$ 6.79	1.77	$ 2,577	163,269	$ 6.79	$ 2,577
$10.86 - $19.00 . . .	3,071,976	$15.88	6.27	20,582	2,283,835	$16.15	14,683
$19.18 - $29.50 . . .	3,540,370	$24.77	5.60	451	3,434,251	$24.83	382
$29.93 - $61.50 . . .	839,040	$32.18	5.11	—	839,040	$32.18	—
	7,614,655	$21.62	5.73	$23,610	6,720,395	$22.36	$17,642

The weighted average remaining contractual life of options exercisable was 5.4 years at December 31, 2006.

The aggregate intrinsic value in the table above represents the total pretax intrinsic value, based on the Company's closing stock price of $22.58 as of December 31, 2006, which would have been received by the option holders had all option holders exercised their options as of that date. The total number of in-the-money options exercisable as of December 31, 2006 was 2,612,470.

The total cash received from employees as a result of employee stock option exercises during the years ended December 31, 2006 and 2005 was approximately $20,838,000 and $4,091,000, respectively. In connection with these exercises, the net tax benefits realized by the Company for the years ended December 31, 2006 and 2005 were approximately $4,614,000 and $1,103,000, respectively.

The Company settles employee stock option exercises with newly issued common shares.

Accumulated Other Comprehensive Income

The balance of accumulated other comprehensive income (loss) was comprised of the following:

	Cumulative Translation Adjustments	Financial Instruments Designated as Cash Flow Hedges	Unrealized Gain (Loss) on Investments	Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2004	$13,705	$(1,103)	$ 82	$12,684
Foreign currency translation adjustment, net of taxes of $0	(7,411)	—	—	(7,411)
Changes in value of financial instruments designated as cash flow hedges, net of taxes of $1,019	—	1,697	—	1,697
Change in unrealized gain (loss) on investments, net of tax benefit of $21 . .	—	—	(34)	(34)
Balance at December 31, 2005	6,294	594	48	6,936
Foreign currency translation adjustment, net of taxes of $0	3,172	—	—	3,172
Changes in value of financial instruments designated as cash flow hedges, net of tax benefit of $90	—	(149)	—	(149)
Change in unrealized gain (loss) on investments, net of taxes of $64	—	—	106	106
Balance at December 31, 2006	$ 9,466	$ 445	$154	$10,065

(Tables in thousands, except share and per share data)

9) Income Taxes

A reconciliation of the Company's 2006, 2005 and 2004 effective tax rate to the U.S. federal statutory rate follows:

	2006	2005	2004
U.S. Federal income tax statutory rate	35.0%	35.0%	35.0%
Federal and state tax credits	(1.7)	(4.7)	(3.5)
State income taxes, net of federal benefit	2.3	1.7	0.7
Effect of foreign operations taxed at various rates	(7.1)	(5.3)	(6.9)
Extraterritorial income and qualified production activity tax benefit	(0.9)	(2.0)	(0.5)
Deferred tax asset valuation allowance	(2.1)	1.3	(30.7)
Other	2.5	0.5	2.0
	28.0%	26.5%	(3.9)%

The components of income before income taxes and the related provision (benefit) for income taxes consist of the following:

	Year Ended December 31,		
	2006	2005	2004
Income before income taxes:			
United States	$ 72,276	$14,872	$ 37,098
Foreign	58,665	32,135	30,130
	$130,941	$47,007	$ 67,228
Current taxes:			
United States Federal	$ 36,056	$ 1,958	$ 841
State	3,252	1,259	716
Foreign	8,916	8,922	6,061
	48,224	12,139	7,618
Deferred taxes:			
United States Federal	(9,219)	856	(9,141)
State and Foreign	(2,299)	(553)	(1,088)
	(11,518)	303	(10,229)
Provision (benefit) for income taxes	$ 36,706	$12,442	$ (2,611)

(Tables in thousands, except share and per share data)

At December 31, 2006 and 2005, the significant components of the deferred tax assets and deferred tax liabilities were as follows:

	2006	2005
Deferred tax assets:		
Net operating losses and credits	$ 2,751	$ 5,709
Inventory and warranty reserves	13,863	12,447
Accounts receivable and other accruals	5,320	3,938
Depreciation and amortization	5,988	5,665
Stock-based compensation	4,447	—
Other	2,316	2,077
Total deferred tax assets	34,685	29,836
Deferred tax liabilities:		
Acquired intangible assets	(18,618)	(13,192)
Other	(498)	(135)
Total deferred tax liabilities	(19,116)	(13,327)
Valuation allowance	(317)	(3,497)
Net deferred tax assets	$ 15,252	$ 13,012

At December 31, 2006, as a result of the acquisition of Ion Systems, Inc ("Ion"), the Company had a federal net operating loss carryforward of $1,216,080 and a federal general business credit carryforward of $71,246. The Company's intention is to carryback both these tax attributes to previous Ion tax years and recover $497,000 of previously paid taxes.

Although the Company believes that its tax positions are consistent with applicable U.S. federal and state and international laws, certain tax reserves are maintained at December 31, 2006 should these positions be challenged by the applicable tax authority and additional tax assessed on audit. During the year ended December 31, 2006, we received a notification letter from the Israeli Ministry of Industry Trade and Labor ("MITL") indicating that our Israeli operations were in compliance with requirements relating to the tax holiday granted to our manufacturing operations in Israel in 2001. This tax holiday is anticipated to expire in 2011 and is subject to meeting continued investment, employment and other requirements under the guidelines of the MITL. This tax holiday resulted in income tax savings of $5,125,000, $1,190,000 and $2,547,000 for the years ended December 31, 2006, 2005 and 2004, respectively. Additionally, we recorded the impact of both a change in German tax rules allowing interest deductions on certain loans and adjustments relating to transfer pricing. As a result of these items we recorded additional income tax benefits of $1,565,000 for the year ended December 31, 2006.

During 2005, the Internal Revenue Service ("IRS") completed its examination of the Company's tax returns for the tax years 1999 through 2002. As a result of this examination, during the year ended December 31, 2005, the Company recorded a reduction in income taxes payable of $1,621,000, a benefit to income tax expense of $1,901,000 and a $576,000 reduction of goodwill related to a previous acquisition.

The net reduction in the valuation allowance for the year ended December 31, 2006 resulted from the utilization of state tax credit carryovers of $2,706,000 and the expiration of credits of $474,000 on a merged subsidiary.

During the year ended December 31, 2004, after examining a number of factors, including historical results and near term earnings projections, the Company determined that it was more likely than not that it would realize all of its net deferred tax assets, except for those related to certain state tax credits. As a result of this analysis the Company reduced its valuation allowance by $20,063,000 at December 31, 2004 resulting in a net deferred tax asset of $14,313,000. Of the total tax benefit from the reversal of the valuation allowance, $3,850,000 was recorded as a reduction of goodwill and $5,271,000 was recorded to additional paid-in capital for the tax benefit from the exercise of stock options during both the current and prior years.

On October 22, 2004, the American Jobs Creation Act of 2004 (the "Act") was signed into law. The Act contains a provision allowing U.S. multinational companies a one-time incentive to repatriate foreign earnings at an effective tax rate of 5.25%. During 2005, the Company conducted an extensive study of the new provision and concluded that no opportunities existed from which the Company could benefit from repatriation of its undistributed foreign earnings. Through December 31, 2006, the Company has not provided deferred income taxes on the undistributed earnings of its foreign subsidiaries because such earnings were intended to be permanently reinvested outside the U.S. Determination of the potential deferred income tax liability on these undistributed earnings is not practicable because such liability, if any, is dependent on circumstances existing if and when remittance occurs. At December 31, 2006, the Company had $140,345,000 of undistributed earnings in its foreign subsidiaries.

10) Employee Benefit Plans

The Company has a 401(k) profit-sharing plan for U.S. employees meeting certain requirements in which eligible employees may contribute between 1% and 20% of their annual compensation to this plan, and, with respect to employees who are age 50 and older, certain specified additional amounts, limited by an annual maximum amount determined by the Internal Revenue Service. The Company, at its discretion, may provide a matching contribution which will generally match up to the first 2% of each participant's compensation, plus 25% of the next 4% of compensation. At the discretion of the board of directors, the Company may also make additional contributions for the benefit of all eligible employees. The Company's contributions were $2,385,000, $1,894,000 and $1,773,000 for 2006, 2005 and 2004, respectively.

The Company maintains a bonus plan which provides cash awards to key employees, at the discretion of the compensation committee of the board of directors, based upon operating results and employee performance. The bonus expense was $10,300,000 in 2006, $2,402,000 in 2005 and was $4,617,000 in 2004.

The Company provides supplemental retirement benefits for certain of its officers and executive officers. This obligation was not material at December 31, 2006 and at December 31, 2005.

11) Segment and Geographical Information and Significant Customer

The Company operates in one segment for the development, manufacturing, sales and servicing of products that measure, control, power and monitor critical parameters of advanced manufacturing processes. The Company's chief decision-maker reviews consolidated operating results to make decisions about allocating resources and assessing performance for the entire Company.

Information about the Company's operations in different geographic regions is presented in the tables below. Net sales to unaffiliated customers are based on the location in which the sale originated. Transfers between geographic areas are at negotiated transfer prices and have been eliminated from consolidated net sales.

(Tables in thousands, except share and per share data)

	Year Ended December 31,		
	2006	2005	2004
Geographic net sales			
United States	$515,896	$320,816	$367,233
Japan	96,936	79,820	85,571
Europe	70,648	52,687	46,868
Asia	99,321	55,971	55,408
	$782,801	$509,294	$555,080

	December 31,	
	2006	2005
Long — lived assets		
United States	$68,393	$66,588
Japan	5,479	5,679
Europe	4,908	4,311
Asia	3,609	4,493
	$82,389	$81,071

The Company groups its products into three product groups. Net sales for these product groups are as follows:

	December 31,		
	2006	2005	2004
Instruments and Control Systems	$371,919	$233,279	$253,422
Power and Reactive Gas Products	328,810	215,858	234,230
Vacuum Products	82,072	60,157	67,428
	$782,801	$509,294	$555,080

The Company had one customer comprising 21%, 18% and 20% of net sales for the years ended December 31, 2006, 2005 and 2004, respectively. During the years ended December 31, 2006, 2005 and 2004, the Company estimates that approximately 70%, 71% and 74% of its net sales, respectively, were to semiconductor capital equipment manufacturers and semiconductor device manufacturers.

12) Acquisitions

On January 3, 2006, the Company completed its acquisition of Ion Systems, Inc. ("Ion"), a leading provider of electrostatic management solutions located in Alameda, California, pursuant to an Agreement and Plan of Merger dated November 25, 2005. Ion's ionization technology monitors electrostatic charge to reduce process contamination and improve yields, which complements the Company's process monitoring and control technologies. The aggregate purchase price consisted of $68,073,000 in cash, net of $5,056,000 in cash acquired, and $807,000 in acquisition related costs.

(Tables in thousands, except share and per share data)

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of the acquisition:

Current assets	$ 17,310
Intangible assets	25,947
Other assets	3,066
Goodwill	45,017
Total assets acquired	91,340
Current liabilities	(7,245)
Deferred tax liabilities	(10,159)
Total liabilities assumed	(17,404)
Total purchase price including acquisition costs	$ 73,936

The goodwill and other intangible assets associated with the acquisition are not deductible for tax purposes. Of the $25,947,000 of acquired intangible assets, the following table reflects the allocation of the acquired intangible assets and related estimates of useful lives:

Customer relationships	$11,992	8-year useful life
Completed technology	10,255	6-year useful life
Tradenames	2,300	8-year useful life
Order backlog	1,000	3 months
In-process research and development	400	
	$25,947	

This transaction resulted in an amount of purchase price that exceeded the estimated fair values of tangible and intangible assets, which was allocated to goodwill. The Company believes that the amount of goodwill relative to identifiable intangible assets relates to several factors including: (1) potential buyer-specific synergies related to market opportunities for a combined product offering and (2) potential to leverage the Company's sales force and intellectual property to attract new customers and revenue.

On January 3, 2006, the Company completed its acquisition of Umetrics, AB ("Umetrics"), a leader in multivariate data analysis and modeling software located in Umea, Sweden, pursuant to a Sale and Purchase Agreement dated December 15, 2005. Umetrics' multivariate data analysis and modeling software converts process data into useable information for yield improvement when linked with the Company's open and modular platform of process sensors and data collection, integration, data storage, and visualization capabilities. The purchase price consisted of $27,400,000 in cash, net of $2,602,000 in cash acquired, and $392,000 in acquisition related costs.

(Tables in thousands, except share and per share data)

The following table summarizes the estimated fair value of the assets acquired and liabilities assumed at the date of the acquisition:

Current assets	$ 4,243
Intangible assets	7,650
Other assets	400
Goodwill	22,060
Total assets acquired	34,353
Current liabilities	(1,929)
Deferred tax liabilities	(2,030)
Total liabilities assumed	(3,959)
Total purchase price including acquisition costs	$30,394

The goodwill and other intangible assets associated with the acquisition are not deductible for tax purposes. Of the $7,650,000 of acquired intangible assets, the following table reflects the allocation of the acquired intangible assets and related estimates of useful lives:

Customer relationships	$2,300	8-year useful life
Completed technology	4,150	4-6-year useful life
Tradenames	800	8-year useful life
In-process research and development	400	
	$7,650	

This transaction resulted in an amount of purchase price that exceeded the estimated fair values of tangible and intangible assets, which was allocated to goodwill. The Company believes that the amount of goodwill relative to identifiable intangible assets relates to several factors including: (1) being a provider of multivariate software technology which will be increasingly important to solution providers for semiconductor and other industrial customers and (2) enhanced ability to combine Umetrics' software products with MKS' traditional hardware products.

Ion's ionization technology and Umetrics' multivariate data analysis technology both complement our process control and monitoring technologies and will support the Company's mission to improve process performance and productivity.

On October 11, 2006, we completed our acquisition of Novx Corp. ("Novx"), a provider of electrostatic charge monitoring technology for semiconductor, data storage, telecommunication, medical device and other markets. Novx's technology expands our capability to monitor, detect and control electrostatic charge in advanced process environments, such as semiconductor and hard disk drive manufacturing. The total purchase price for Novx was $2,552,000.

The results of these acquisitions were included in the Company's consolidated operations beginning on the date of acquisition. The pro forma consolidated statements reflecting the operating results of Ion, Umetrics and Novx, had they been acquired as of January 1, 2005, would not differ materially from the operating results of the Company as reported for the twelve months ended December 31, 2005.

13) Sale of Assets

In August 2001, the Company sold certain assets for proceeds of approximately $9,000,000, consisting of approximately $4,700,000 in cash, $3,900,000 in a note receivable and $200,000 of warrants. The note receivable had an annual interest rate of 9.0% and was scheduled to mature on August 7, 2004. The loss on the transaction was $1,246,000 before taxes. During 2002, due to the downturn in the semiconductor industry and its result on the acquirer's operations, and the acquirer's inability to raise financing, the Company considered the value of the note and warrants to be impaired. Accordingly, during 2002, MKS recorded a charge of $4,121,000 to other expense for the Company's estimate of the impairment on the note receivable and warrants. During 2004, the Company received $5,042,000 related to the collection of the note receivable and accrued interest and the cancellation of the warrants. This amount was recorded as a gain and included in other income.

(Tables in thousands, except share and per share data)

14) Restructuring and Asset Impairment Charges

As a result of the Company's various acquisitions from 2000 through 2002 and the downturn in the semiconductor capital equipment market which began in 2000, the Company had redundant activities and excess manufacturing capacity and office space. Therefore in 2002, and continuing through the first quarter of 2004, the Company implemented restructuring activities to rationalize manufacturing operations and reduce operating expenses. As a result of these actions, the Company recorded restructuring and asset impairment charges of $4,319,000 between 2002 and 2003.

During 2004, the Company completed its enacted restructuring activities related to the consolidation of operations from acquired companies when it exited an additional leased facility and recorded a restructuring charge of $437,000.

During 2005, the Company initiated a restructuring plan related to its Berlin, Germany location. This consolidation of activities included the reduction of 16 employees. The total restructuring charge related to this consolidation was $454,000, which consisted of $251,000 related to the repayment of a government grant and $203,000 in severance costs.

Also during 2005, the Company terminated a lease related to a facility previously exited. Prior to the lease being terminated, the Company had an accrual of approximately $784,000 related to this facility. After making the lease settlement payment and payments for other contractual obligations, the remaining balance of approximately $278,000 was reversed as there was no remaining obligation.

The following table sets forth the components of the restructuring activities initiated during 2006, 2005 and 2004, and the related accruals remaining at December 31, 2006:

	Workforce Reductions	Other	Facility Consolidations	Total
Reserve balance as of December 31, 2003	$ 199	$ —	$1,831	$ 2,030
Restructuring provision in 2004	—	—	437	437
Charges utilized in 2004	(110)	—	(736)	(846)
Reserve balance as of December 31, 2004	89	—	1,532	1,621
Restructuring provision in 2005	199	251	(365)	85
Charges utilized in 2005	(204)	—	(852)	(1,056)
Reserve balance as of December 31, 2005	84	251	315	650
Restructuring provision in 2006	—	—	—	—
Charges utilized in 2006	(84)	(251)	(207)	(542)
Reserve balance as of December 31, 2006	$ —	$ —	$ 108	$ 108

The remaining facilities consolidation charges will be paid over the remaining lease term, which ends in 2007.

(Tables in thousands, except share and per share data)

15) Goodwill and Intangible Assets

The Company is required to perform an annual impairment test of its goodwill under the provisions of SFAS 142. SFAS 142 requires that companies identify and assess goodwill at the reporting unit level. Reporting units are defined as operating segments or one level below an operating segment, referred to as a component. The Company has determined that its reporting units are components of its operating segment. The Company allocates goodwill to reporting units at the time of acquisition and bases that allocation on which reporting units will benefit from the acquired assets and liabilities. The fair value of each reporting unit with goodwill is compared to its recorded book value. An excess of book value over fair value indicates that an impairment of goodwill exists. Fair value is based on a discounted cash flow analysis of expectations of future earnings for each of the reporting units with goodwill. The Company completed its annual impairment test for 2006 and 2005 and concluded that no impairment of goodwill existed as of October 31, 2006 or October 31, 2005, the annual goodwill measurement date.

The changes in the carrying amount of goodwill during the years ended December 31, 2006 and 2005 were as follows:

	Year Ended	
	December 31, 2006	December 31, 2005
Balance, beginning of year	$255,243	$255,740
Goodwill acquired during the year	68,606	—
IRS settlement adjustment and foreign currency translation	124	(497)
Balance, end of year	$323,973	$255,243

Components of the Company's acquired intangible assets are comprised of the following:

	December 31, 2006		December 31, 2005	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Completed technology	$ 87,087	$(63,570)	$72,421	$(51,520)
Customer relationships	20,932	(7,139)	6,640	(4,481)
Patents, trademarks, tradenames and other	16,494	(10,700)	12,395	(8,032)
	$124,513	$(81,409)	$91,456	$(64,033)

Aggregate amortization expense related to acquired intangibles for the years ended December 31, 2006, 2005 and 2004 were $17,376,000, $13,864,000 and $14,764,000, respectively. Estimated amortization expense related to acquired intangibles for each of the five succeeding years is as follows:

Year	Amount
2007	$15,769
2008	8,096
2009	5,835
2010	4,742
2011	4,327

16) Product Warranties

The Company provides for the estimated costs to fulfill customer warranty obligations upon the recognition of the related revenue. While the Company engages in extensive product quality programs and processes, including actively monitoring and evaluating the quality of its component suppliers, the Company's warranty obligation is affected by product failure rates, utilization levels, material usage, and supplier warranties on parts delivered to the Company. Should actual product failure rates, utilization levels, material usage, or supplier warranties on parts differ from the Company's estimates, revisions to the estimated warranty liability would be required.

(Tables in thousands, except share and per share data)

Product warranty activity for the years ended December 31, were as follows:

	2006	2005
Balance at beginning of year	$ 7,766	$ 7,601
Warranty assumed through acquisitions	612	—
Provisions for product warranties	13,006	8,392
Direct charges to the warranty liability	(9,835)	(8,227)
Balance at end of year	$11,549	$ 7,766

17) Other Accrued Expenses

Other accrued expenses consist of:

	December 31	
	2006	2005
Product warranties	$11,549	$ 7,766
Other	13,482	11,333
	$25,031	$19,099

18) Related Party Transactions

The Vice President and General Manager of the Company's Vacuum Products Group is the general partner of two real estate entities (the "Aspen Entities"). The Company leases from the Aspen Entities certain facilities occupied by the Company's Vacuum Products Group in Boulder, Colorado. The Company paid Aspen $751,000, $835,000 and $1,111,000 in 2006, 2005 and 2004, respectively, to lease such facilities.

Emerson Electric Co. ("Emerson") was the beneficial owner of approximately 5% of the outstanding shares of the Company's common stock at December 31, 2006. During 2006, 2005 and 2004, the Company purchased materials and administrative services from Emerson and its subsidiaries totaling approximately $1,430,000, $800,000 and $1,854,000, respectively. In addition, in accordance with the terms of a Shareholder's Agreement between the Company and Emerson, the Company paid the expenses of Emerson relating to the registration of shares in connection with a public offering of Common Stock that closed in January 2004. Such expenses were $176,000.

19) Subsequent Event — Share Repurchase Program

On February 12, 2007, the Company's Board of Directors approved a share repurchase program (the "Program") for the repurchase of up to $300 million of the Company's outstanding stock over the next two years. The repurchases may be made from time to time on the open market or through privately negotiated transactions. The timing and amount of any shares repurchased under the Program will depend on a variety of factors, including price, corporate and regulatory requirements, capital availability, and other market conditions. The Program may be discontinued at any time at the discretion of the Company and its Board of Directors.

MKS INSTRUMENTS, INC.

SUPPLEMENTAL FINANCIAL DATA

	Quarter Ended			
	March 31	June 30	Sept. 30	Dec. 31
	(Table in thousands, except per share data) (Unaudited)			
2006				
Statement of Operations Data				
Net sales	$179,061	$198,351	$205,494	$199,895
Gross profit	73,745	86,501	90,619	87,257
Income from operations (1)	21,869	34,452	35,622	30,598
Net income (1,2)	$ 15,435	$ 24,374	$ 27,933	$ 26,493
Net income per share:				
Basic	$ 0.28	$ 0.44	$ 0.50	$ 0.47
Diluted	$ 0.28	$ 0.44	$ 0.50	$ 0.47
2005				
Statement of Operations Data				
Net sales	$127,407	$130,193	$122,520	$129,174
Gross profit	49,362	51,786	47,657	51,629
Income from operations (3)	6,820	10,364	8,528	14,836
Net income (3,4)	5,458	9,778	7,224	12,105
Net income per share:				
Basic	$ 0.10	$ 0.18	$ 0.13	$ 0.22
Diluted	$ 0.10	$ 0.18	$ 0.13	$ 0.22

(1) Income from operations and Net income for the quarters ended March 31, June 30, September 30 and December 31, 2006 include stock-based compensation, excluding tax benefits, of $2.7 million, $3.3 million, $3.9 million and $3.3 million, respectively, as a result of adopting SFAS 123R.

(2) Net income for the quarter ended September 30, 2006 includes a net tax benefit of $1.6 million primarily attributable to certain discrete tax matters related to our international operations. Net income for the quarter ended December 31, 2006 includes a net tax benefit of $3.1 million attributable to the impact on prior quarters of the retroactive extension of the R&D tax credit from January 1, 2006 through December 31, 2006 and to a reduction of the valuation allowance on state tax credits.

(3) Income from operations and Net income for the quarter ended December 31, 2005, include income from a litigation settlement of $3.0 million and $1.9 million, net of tax, respectively.

(4) Net income for the quarter ended June 30, 2005 includes a benefit of $1.9 million in connection with closing an IRS audit.

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

None.

Item 9A. ***Controls and Procedures***

Effectiveness of Disclosure Controls and Procedures

MKS' management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2006. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by the company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2006, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control over Financial Reporting

The management of MKS is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, the company's principal executive and principal financial officers and effected by the Company's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the Company; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2006. In making this assessment, MKS' management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework.

Based on our assessment, management concluded that, as of December 31, 2006, our internal control over financial reporting was effective based on those criteria.

Management has excluded the operations of Ion Systems Inc. ("Ion"), Umetrics, AB ("Umetrics") and Novx Corp. ("Novx") from its assessment of internal control over financial reporting as of December 31, 2006 because those entities were acquired by the Company in purchase business combinations during fiscal 2006. The total assets and total revenues of the acquired businesses of Ion, Umetrics and Novx represent 12% and 5%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2006.

Our management's assessment of the effectiveness of our internal control over financial reporting as of December 31, 2006 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears on page 34.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2006 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. *Other Information*

None.

PART III

Item 10. *Directors, Executive Officers and Corporate Governance*

The information required by this item is set forth under the captions "Election of Directors," "Executive Officers," "Code of Ethics," "Directors — Audit Committee Financial Expert" and "Corporate Governance" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders, and is incorporated herein by reference.

We are also required under Item 405 of Regulation S-K to provide information concerning delinquent filers of reports under Section 16 of the Securities and Exchange Act of 1934, as amended. This information is listed under the caption "Section 16(a) Beneficial Ownership Reporting Compliance" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

Item 11. *Executive Compensation*

The information required by this item is set forth under the captions "Executive Officers — Executive Compensation" and "Executive Officers — Compensation Discussion and Analysis" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

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

The information required by Item 403 of Regulation S-K is set forth under the caption "Security Ownership of Certain Beneficial Owners and Management" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

The information required by Item 201(d) of Regulation S-K is set forth under the caption "Executive Officers — Equity Compensation Plan Information" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

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

The information required by this item is set forth under the caption "Executive Officers — Certain Relationships and Related Transactions" and "Corporate Governance" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

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

The information required by this item is set forth under the caption "Independent Registered Public Accounting Firm" in our definitive proxy statement for the 2007 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission no later than 120 days after the end of our fiscal year. This information is incorporated herein by reference.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) The following documents are filed as a part of this Report:

1. *Financial Statements.* The following Consolidated Financial Statements are included under Item 8 on this Annual Report on Form 10-K.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Financial Statements:

2. *Financial Statement Schedules*

The following consolidated financial statement schedule is included in this Annual Report on Form 10-K of Item 15(d):

Schedule II — Valuation and Qualifying Accounts

Schedules other than those listed above have been omitted since they are either not required or information is otherwise included.

3. *Exhibits.* The following exhibits are filed as part of this Annual Report on Form 10-K pursuant to Item 15(c).

Exhibit No.	Title
+3.1 (1)	Restated Articles of Organization
+3.2 (2)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 18, 2001
+3.3 (3)	Articles of Amendment, as filed with the Secretary of State of Massachusetts on May 16, 2002
+3.4 (4)	Amended and Restated By-Laws
+4.1 (4)	Specimen certificate representing the common stock
+10.1(5)*	Applied Science and Technology, Inc. 1993 Stock Option Plan, as amended

Exhibit No.	Title
+10.2(6)*	Applied Science and Technology, Inc. 1994 Formula Stock Option Plan, as amended
+10.3(4)*	1996 Amended and Restated Director Stock Option Plan
+10.4(7)*	Second Amended and Restated 1997 Director Stock Option Plan, and forms of option agreements thereto
+10.5(8)*	2004 Stock Incentive Plan, as amended (the “2004 Plan”)
+10.6(9)*	Form of Nonstatutory Stock Option Agreement to be granted under the 2004 Plan
+10.7(10)*	Form of Performance Stock Award under the 2004 Plan
+10.8(11)*	Form of Restricted Stock Award under the 2004 Plan
+10.9(12)*	Form of Restricted Stock Unit Agreement (cliff vesting) under the 2004 Plan
10.10*	Form of Restricted Stock Unit Agreement for Initial Grant to Non-Employee Directors under the 2004 Plan
10.11*	Form of Restricted Stock Unit Agreement for Annual Grant to Non-Employee Directors under the 2004 Plan
10.12*	Form of Performance-Based Restricted Stock Unit Agreement under the 2004 Plan
10.13*	Form of Time-Based Restricted Stock Unit Agreement under the 2004 Plan
+10.14(13)*	Second Restated 1995 Stock Incentive Plan (the “1995 Plan”)
+10.15(14)*	Form of Nonstatutory Stock Option Agreement under the 1995 Plan
+10.16(10)*	Form of Performance Stock Award under Registrant’s 1995 Plan
+10.17(14)*	Third Restated 1999 Employee Stock Purchase Plan
+10.18(14)*	Second Restated International Employee Stock Purchase Plan
+10.19(15)*	2007 Management Incentive Bonus Program
+10.20(16)*	Employment Agreement dated as of July 1, 2005 between John Bertucci and the Registrant
+10.21(16)*	Employment Agreement dated July 1, 2005 between Leo Berlinghieri and the Registrant
+10.22(16)*	Employment Agreement dated as of July 1, 2005 between Ronald C. Weigner and the Registrant
+10.23(16)*	Amended and Restated Employment Agreement dated as of July 1, 2005 between William D. Stewart and the Registrant
+10.24(14)*	Employment Agreement dated as of July 30, 2004 between Robert Klimm and the Registrant
+10.25(14)*	Employment Agreement dated as of July 30, 2004 between John Smith and the Registrant
+10.26(17)*	Employment Agreement dated as of January 25, 2005 between Ron Hadar and the Registrant
+10.27(18)*	Employment Agreement dated as of April 25, 2005 between Gerald Colella and the Registrant
+10.28(19)*	Employment Agreement dated as of November 25, 2005 between Frank Schneider and the Registrant
10.29*	Summary of 2007 Compensatory Arrangements with Executive Officers
+10.30(20)*	Summary of Compensatory Arrangements with Non-Employee Directors
+10.31(21)*	Lease Agreement dated as of June 25, 2005 by and between 5330 Sterling Drive LLC and the Registrant
+10.32(21)*	Lease Agreement dated as of June 25, 2005 by and between Aspen Industrial Park Partnership LLLP and the Registrant
+10.33(21)	Optional Advanced Demand Grid Note dated August 3, 2004 in favor of HSBC Bank USA (“HSBC Note”), and Amendment thereto dated as of July 29, 2005
+10.34(22)	Second Amendment, dated July 31, 2007, to HSBC Note
+10.35(23)	Loan Agreement between ASTeX Realty Corp. and Citizens Bank of Massachusetts, dated March 6, 2000, along with Exhibit A thereto

Exhibit No.	Title
+10.36(24)	Shareholder Agreement dated as of January 31, 2002 among the Registrant and Emerson Electric Co.
+10.37(25)	Global Supply Agreement dated April 12, 2005 by and between the Registrant and Applied Materials, Inc.
+10.38(26)	Settlement Agreement dated as of October 3, 2005 by and between the Registrant, Applied Science and Technology, Inc. and Advanced Energy, Inc.
+10.39(27)	Agreement and Plan of Merger dated as of November 25, 2005 among Ion Systems, Inc., the Registrant and TWCP, L.P.
21.1	Subsidiaries of the Registrant
23.1	Consent of PricewaterhouseCoopers LLP
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

+ Previously filed

* Management contract or compensatory plan arrangement filed as an Exhibit to this Form 10-K pursuant to Item 15(b) of this report.

(1) Incorporated by reference to the Registration Statement on Form S-4 (File No. 333-49738) filed with the Securities and Exchange Commission on November 13, 2000.

(2) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2001.

(3) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2002.

(4) Incorporated by reference to the Registration Statement on Form S-1 filed with the Securities and Exchange Commission on January 28, 1999, as amended.

(5) Incorporated by reference to the Registration Statement on Form S-8 filed with the Securities and Exchange Commission on January 29, 2001.

(6) Incorporated by reference to the Registration Statement on Form S-8 filed with the Securities and Exchange Commission on January 29, 2001.

(7) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2004.

(8) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2006.

(9) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004.

(10) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2005.

(11) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 17, 2006.

(12) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended March 31, 2006.

(13) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended September 30, 2002.

(14) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q for the quarter ended June 30, 2004.

(15) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on February 26, 2007. Confidential treatment requested as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission.

(16) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on July 5, 2005.

(17) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on March 24, 2005.

(18) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on April 27, 2005.

(19) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on January 9, 2006.

(20) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on October 31, 2006.

(21) Incorporated by reference to the Registrant's Annual Report on Form 10-K for the year ended December 31, 2005.

(22) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on August 3, 2006.

(23) Incorporated by reference to Applied Science and Technology, Inc.'s Quarterly Report on Form 10-Q for the quarter ended March 25, 2000.

(24) Incorporated by reference to the Registrant's Report on Form 8-K filed with the Securities and Exchange Commission on February 12, 2002.

(25) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on April 27, 2005.

(26) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on October 7, 2005.

(27) Incorporated by reference to the Registrant's Current Report on Form 8-K filed with the Securities and Exchange Commission on December 1, 2005.

(b) Exhibits

MKS hereby files as exhibits to our Annual Report on Form 10-K those exhibits listed in Item 15 above.

(c) Financial Statement Schedules

MKS INSTRUMENTS, INC.

SCHEDULE II — VALUATION AND QUALIFYING ACCOUNTS

Description	Balance at Beginning of Year	Additions: Charged to Costs and Expenses	Additions: Charged to Other Accounts	Deductions & Write-offs	Balance at End of Year
	(Dollars in thousands)				
Accounts receivable allowance					
Year ended December 31,					
2006	$3,178	$5,607	$—	$4,252	$4,533
2005	$3,238	$4,101	$—	$4,161	$3,178
2004	$2,415	$3,905	$—	$3,082	$3,238

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.

MKS Instruments, Inc.

By: /s/ Leo Berlinghieri

Leo Berlinghieri
Chief Executive Officer, President and Director
(Principal Executive Officer)

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 date indicated.

Signatures	Title	Date
/s/ John R. Bertucci John R. Bertucci	Chairman of the Board of Directors	February 23, 2007
/s/ Leo Berlinghieri Leo Berlinghieri	Chief Executive Officer, President and Director (Principal Executive Officer)	February 27, 2007
/s/ Ronald C. Weigner Ronald C. Weigner	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 28, 2007
/s/ Robert R. Anderson Robert R. Anderson	Director	February 25, 2007
/s/ Gregory R. Beecher Gregory R. Beecher	Director	February 27, 2007
/s/ James G. Berges James G. Berges	Director	February 23, 2007
/s/ Richard S. Chute Richard S. Chute	Director	February 21, 2007
/s/ Hans-Jochen Kahl Hans-Jochen Kahl	Director	February 22, 2007
/s/ Owen W. Robbins Owen W. Robbins	Director	February 27, 2007
/s/ Louis P. Valente Louis P. Valente	Director	February 26, 2007

CORPORATE INFORMATION

BOARD OF DIRECTORS

John R. Bertucci
Chairman
MKS Instruments, Inc.

Robert R. Anderson
Chairman and
Chief Executive Officer (retired)
Yield Dynamics, Inc.

Gregory R. Beecher
Vice President and
Chief Financial Officer
Teradyne, Inc.

James G. Berges
Partner
Clayton, Dubilier & Rice, Inc.

Leo Berlinghieri
Chief Executive Officer and President
MKS Instruments, Inc.

Richard S. Chute, Esq.

Hans-Jochen Kahl
Managing Director (retired)
Leybold AG

Owen W. Robbins
Executive Vice President (retired)
Teradyne, Inc.

Louis P. Valente
Chairman
Palomar Medical Technologies, Inc.

MANAGEMENT

Executive Officers

Leo Berlinghieri
Chief Executive Officer and President

Gerald G. Colella
Vice President and Chief Business Officer

Ron Hadar
Vice President and General Manager
CIT Products

Robert L. Klimm
Vice President and General Manager
Power and Reactive Gas Products Group

Frank W. Schneider
Vice President and General Manager
Ion Systems

John A. Smith
Vice President and
Chief Technology Officer

William D. Stewart
Vice President and General Manager
Vacuum Products Group

Ronald C. Weigner
Vice President and
Chief Financial Officer

Corporate Officers

Seth H. Bagshaw
Vice President and
Corporate Controller

Kathleen F. Burke
General Counsel and
Assistant Secretary

Richard S. Chute, Esq.
Secretary

Joseph M. Tocci
Treasurer

Philip F. Zucchi
Vice President,
Global Human Resources

SHAREHOLDER INFORMATION

Corporate Headquarters
MKS Instruments, Inc.
90 Industrial Way
Wilmington, MA 01887
Telephone: 978-284-4000

Outside Counsel
Wilmer Cutler Pickering Hale and Dorr LLP
Boston, MA

Independent Auditors
PricewaterhouseCoopers LLP
Boston, MA

Stock Listing
NASDAQ Global Select Market
Symbol: MKSI

Transfer Agent
American Stock Transfer &
Trust Company
59 Maiden Lane
New York, NY 10038
Telephone: 800-937-5449
Fax: 718-236-2641
www.amstock.com

Shareholders may also direct inquiries to:
Ronald C. Weigner
Vice President and
Chief Financial Officer
MKS Instruments, Inc.
90 Industrial Way
Wilmington, MA 01887
Telephone: 978-284-4000
www.mksinstruments.com

Annual Meeting of Shareholders
May 7, 2007
10:00 a.m.
MKS Instruments, Inc.
90 Industrial Way
Wilmington, MA 01887

mks
Technology for Productivity

MKS Instruments, Inc.

90 Industrial Way
Wilmington, MA 01887

Telephone: 978-284-4000
www.mksinstruments.com