UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(MARK ONE)

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

For the quarterly period ended March 31, 2010

or

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

For the transition period from __________ to __________

Commission file 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)	*(I.R.S. Employer Identification No.)*
2 Tech Drive, Suite 201, Andover, Massachusetts	01810
(Address of principal executive offices)	*(Zip Code)*

Registrant's telephone number, including area code (978) 645-5500

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 o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes o No o

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

Large accelerated filer ☑	Accelerated filer o	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

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

As of April 30, 2010 the registrant had 50,096,683 shares of common stock outstanding.

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PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS.

MKS INSTRUMENTS, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)
(unaudited)

	March 31, 2010	December 31, 2009
ASSETS		
Current assets:		
Cash and cash equivalents	$ 128,305	$ 111,009
Short-term investments	156,894	160,786
Trade accounts receivable, net	134,614	94,215
Inventories	126,770	118,004
Income taxes receivable	6,064	14,476
Deferred income taxes	21,411	21,505
Other current assets	13,305	12,886
Total current assets	587,363	532,881
Property, plant and equipment, net	65,681	67,196
Goodwill	144,511	144,511
Acquired intangible assets, net	4,312	4,963
Other assets	16,535	24,518
Total assets	$ 818,402	$ 774,069
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Short-term borrowings	$ 9,701	$ 12,885
Accounts payable	36,829	26,292
Accrued compensation	16,756	10,658
Other current liabilities	24,474	21,465
Total current liabilities	87,760	71,300
Other liabilities	19,118	17,836
Commitments and contingencies (Note 15)		
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; 49,815,371 and 49,514,941 shares issued and outstanding at March 31, 2010 and December 31, 2009, respectively	113	113
Additional paid-in capital	644,564	645,411
Retained earnings	57,994	28,769
Accumulated other comprehensive income	8,853	10,640
Total stockholders' equity	711,524	684,933
Total liabilities and stockholders' equity	$ 818,402	$ 774,069

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

MKS INSTRUMENTS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)
(unaudited)

	Three Months Ended March 31, 2010	Three Months Ended March 31, 2009
Net revenues:		
Products	$ 176,397	$ 62,476
Services	21,672	14,243
Total net revenues	198,069	76,719
Cost of revenues:		
Cost of products	96,926	56,119
Cost of services	12,679	10,251
Total cost of revenues	109,605	66,370
Gross profit	88,464	10,349
Research and development	16,468	15,463
Selling, general and administrative	29,374	28,222
Amortization of acquired intangible assets	651	1,653
Gain on sale of asset	(682)	—
Restructuring	—	5,620
Income (loss) from operations	42,653	(40,609)
Interest income, net	325	1,009
Income (loss) before income taxes	42,978	(39,600)
Provision (benefit) for income taxes	13,753	(23,101)
Net income (loss)	$ 29,225	$ (16,499)
Net income (loss) per share:		
Basic	$ 0.59	$ (0.34)
Diluted	$ 0.58	$ (0.34)
Weighted average common shares outstanding:		
Basic	49,601	48,994
Diluted	50,600	48,994

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

MKS INSTRUMENTS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)
(unaudited)

	Three Months Ended March 31, 2010	2009
Cash flows from operating activities:		
Net income (loss)	$ 29,225	$ (16,499)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:		
Depreciation and amortization	3,830	5,350
Stock-based compensation	2,137	1,864
Provision for excess and obsolete inventory	1,925	14,373
Other	(371)	825
Changes in operating assets and liabilities:		
Trade accounts receivable	(40,850)	24,703
Inventories	(10,907)	(6,675)
Income taxes	10,570	(21,398)
Other current assets	(145)	(618)
Accrued expenses and other current liabilities	10,581	(10,771)
Accounts payable	10,722	(933)
Net cash provided by (used in) operating activities	16,717	(9,779)
Cash flows from investing activities:		
Purchases of short-term and long-term available-for-sale investments	(73,470)	(86,083)
Maturities, sales and settlements of short-term and long-term available-for-sale investments	81,808	85,647
Purchases of property, plant and equipment	(3,274)	(1,310)
Proceeds from sale of assets	2,113	84
Other	190	644
Net cash provided by (used in) investing activities	7,367	(1,018)
Cash flows from financing activities:		
Proceeds from short-term borrowings	39,454	45,594
Payments on short-term borrowings	(42,717)	(53,195)
Payment of tax withholding obligations related to net share settlement of restricted stock awards	(2,593)	(2,127)
Other	80	(306)
Net cash used in financing activities	(5,776)	(10,034)
Effect of exchange rate changes on cash and cash equivalents	(1,012)	(1,025)
Increase (decrease) in cash and cash equivalents	17,296	(21,856)
Cash and cash equivalents at beginning of period	111,009	119,261
Cash and cash equivalents at end of period	$ 128,305	$ 97,405

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

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS
(tables in thousands, except share and per share data)

1) Basis of Presentation

The terms "MKS" and the "Company" refer to MKS Instruments, Inc. and its subsidiaries. The interim financial data as of March 31, 2010 and for the three months ended March 31, 2010 and 2009 are unaudited; however, in the opinion of MKS, the interim data includes all adjustments, consisting only of normal recurring adjustments, necessary for a fair statement of the results for the interim periods. The consolidated balance sheet presented as of December 31, 2009 has been derived from the audited consolidated financial statements as of that date. The unaudited consolidated financial statements presented herein have been prepared in accordance with the instructions to Form 10-Q and do not include all of the information and note disclosures required by United States generally accepted accounting principles ("U.S. GAAP"). The consolidated financial statements should be read in conjunction with the audited consolidated financial statements and notes thereto included in the MKS Annual Report on Form 10-K for the year ended December 31, 2009 filed with the Securities and Exchange Commission on February 26, 2010.

The preparation of these consolidated 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 consolidated 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, 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.

For the quarterly periods in 2009, shown in the table below, the Company revised the amounts related to cash (used in) provided by operating activities and cash (used in) financing activities in its consolidated statements of cash flows to correct for immaterial errors. These corrections related to adjusting the excess tax benefit amounts associated with stock-based compensation.

	2009			
	Three Months Ended March 31,	Six Months Ended June 30,	Nine Months Ended September 30,	Year Ended December 31,
Net cash (used in) provided by operating activities:				
As reported	$ (5,753)	$ (2,104)	$ (1,147)	$ 7,368
As adjusted	(9,779)	(5,899)	(4,336)	4,903
Change	$ (4,026)	$ (3,795)	$ (3,189)	$(2,465)
Net cash (used in) financing activities:				
As reported	$(14,060)	$(13,135)	$(11,690)	$(8,021)
As adjusted	(10,034)	(9,340)	(8,501)	(5,556)
Change	$ 4,026	$ 3,795	$ 3,189	$ 2,465

2) Recently Issued Accounting Pronouncements

In January 2010, the Financial Accounting Standards Board ("FASB") issued updated guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. This update requires new disclosures on significant transfers of assets and liabilities in and out of Level 1 and Level 2 of the fair value hierarchy (including the reasons for these transfers) and also requires a reconciliation of recurring Level 3 measurements about purchases, sales, issuances and settlements on a gross basis. In addition to these new disclosure requirements, this update clarifies certain existing disclosure requirements. For example, this update clarifies that reporting entities are required to provide fair value measurement disclosures for each class of assets and liabilities rather than each major category of assets and liabilities. This update also clarifies the requirement for entities to disclose information about both the valuation techniques and inputs used in estimating Level 2 and Level 3 fair value measurements. This update is effective for companies with interim and annual reporting periods after December 15, 2009, except for the requirement to provide the Level 3 activity of purchases, sales, issuances, and settlements on a gross basis, which will become effective for interim and annual reporting periods beginning after December 15, 2010. The Company adopted the updated guidance in the first quarter of 2010 and the adoption did not have an impact on the Company's financial position, results of operations, or cash flows.

In October 2009, the FASB issued guidance that establishes new accounting and reporting provisions for arrangements including multiple revenue-generating activities. This guidance provides amendments to the criteria for separating deliverables, measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this guidance also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. The Company is currently evaluating the potential impact of this new guidance on its consolidated financial statements.

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

In October 2009, the FASB issued guidance that changes the accounting model for revenue arrangements that include both tangible products and software elements that are “essential to the functionality,” and scopes these products out of current software revenue guidance. The new guidance will include factors to help companies determine what software elements are considered “essential to the functionality.” The amendments will now subject software-enabled products to other revenue guidance and disclosure requirements, such as guidance surrounding revenue arrangements with multiple-deliverables. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. The Company is currently evaluating the potential impact of this new guidance on its consolidated financial statements.

3) 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 appropriate classification of investments in securities is determined at the time of purchase. Debt and equity 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 (“OCI”) in consolidated stockholders’ equity.

The Company reviews its investment portfolio on a monthly basis to identify and evaluate individual investments that have indications of possible impairment. The factors considered in determining whether a loss is other-than-temporary include: the length of time and extent to which fair market value has been below the cost basis, the financial condition and near-term prospects of the issuer, credit quality, and the Company’s ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in fair value. The Company concluded there were no impaired investments as of March 31, 2010 and December 31, 2009, respectively.

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

	March 31, 2010	December 31, 2009
Money market funds and certificates of deposit	$ 6,748	$ 4,296
Equity mutual funds	458	449
U.S. agency obligations	136,579	150,648
Corporate obligations	13,109	5,393
	$ 156,894	$ 160,786

The fair value of long-term available-for-sale investments (included in Other assets) with maturities or estimated lives of more than one year consists of the following:

	March 31, 2010	December 31, 2009
U.S. agency obligations	$—	$4,853

The following table shows the gross unrealized gains and losses aggregated by investment category:

	Cost	Gross Unrealized Gains	Gross Unrealized (Losses)	Estimated Fair Value
As of March 31, 2010:				
Equity mutual funds	$ 649	$ —	$ (191)	$ 458
U.S. agency obligations	138,023	28	(89)	137,962
Corporate obligations	12,283	—	(10)	12,273
	$ 150,955	$ 28	$ (290)	$ 150,693
As of December 31, 2009:				
Equity mutual funds	$ 649	$ —	$ (200)	$ 449
U.S. agency obligations	147,354	75	(82)	147,347
Corporate obligations	1,493	1	—	1,494
	$ 149,496	$ 76	$ (282)	$ 149,290

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

Interest income is accrued as earned. Dividend income is recognized as income on the date the stock trades “ex-dividend.” The cost of marketable securities sold is determined by the specific identification method and realized gains or losses are reflected in income and were not material for either of the three months ended March 31, 2010 or 2009.

4) Fair Value Measurements

In accordance with the provisions of fair value accounting, a fair value measurement assumes that the transaction to sell an asset or transfer a liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability and defines fair value based upon an exit price model.

The fair value measurement guidance establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The guidance describes three levels of inputs that may be used to measure fair value:

Level 1 Quoted prices in active markets for identical assets or liabilities as of the reporting date. Active markets are those in which transactions for the asset or liability occur in sufficient frequency and volume to provide pricing information on an ongoing basis. Level 1 assets and liabilities include money market funds, debt and equity securities and derivative contracts that are traded in an active exchange market.

Level 2 Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. Level 2 assets and liabilities include debt securities with quoted prices that are traded less frequently than exchange-traded instruments and derivative contracts whose value is determined using a pricing model with inputs that are observable in the market or can be derived principally from or corroborated by observable market data. This category generally includes certain corporate obligations and non-exchange traded derivative contracts.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. Level 3 assets and liabilities include financial instruments whose value is determined using pricing models, discounted cash flow methodologies, or similar techniques, as well as instruments for which the determination of fair value requires significant management judgment or estimation.

Assets and liabilities of the Company measured at fair value on a recurring basis as of March 31, 2010, are summarized as follows:

		Fair Value Measurements at Reporting Date Using		
Description	March 31, 2010	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds and certificates of deposit	$ 47,134	$ 47,134	$ —	$ —
Available-for-sale equity securities:				
Equity mutual funds (1)	458	458	—	—
Available-for-sale debt securities:				
U.S. agency obligations	144,178	144,178	—	—
Corporate obligations	13,109	13,109	—	—
Derivatives — currency forward contracts	1,833	—	1,833	—
Total assets	$ 206,712	$ 204,879	$ 1,833	$ —
Liabilities:				
Supplemental retirement benefits (2)	$ 575	$ 575	$ —	$ —
Derivatives — currency forward contracts	408	—	408	—
Total liabilities	$ 983	$ 575	$ 408	$ —

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

Assets and liabilities of the Company measured at fair value on a recurring basis as of December 31, 2009, are summarized as follows:

		Fair Value Measurements at Reporting Date Using		
Description	December 31, 2009	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Money market funds and certificates of deposit	$ 8,071	$ 8,071	$ —	$ —
Available-for-sale equity securities:				
Equity mutual funds (1)	449	449	—	—
Available-for-sale debt securities:				
U.S. agency obligations	158,665	158,665	—	—
Corporate obligations	5,393	5,393	—	—
Derivatives — currency forward contracts	1,505	—	1,505	—
Total assets	$ 174,083	$ 172,578	$ 1,505	$ —
Liabilities:				
Supplemental retirement benefits (2)	$ 546	$ 546	$ —	$ —
Derivatives — currency forward contracts	423	—	423	—
Total liabilities	$ 969	$ 546	$ 423	$ —

(1) Relates to short-term investments associated with the Company's supplemental defined contribution retirement benefits.

(2) Relates to the Company's obligations to pay benefits under its supplemental defined contribution retirement benefits, which are included in Other liabilities.

Money Market Funds

As of March 31, 2010, this asset class consisted primarily of a money market portfolio that comprises Federal government and U.S. Treasury securities, classified within Level 1 of the fair value hierarchy because it's valued using quoted market prices in an active market for an identical asset. As of December 31, 2009, this asset class consisted primarily of certificates of deposit at financial institutions.

Available-For-Sale Equity Securities

As of March 31, 2010 and December 31, 2009, available-for-sale equity securities consisted of certain U.S. and international equity mutual funds, classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets.

Available-For-Sale Debt Securities

As of March 31, 2010, available-for-sale debt securities consisted of U.S. agency and corporate obligations classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets. As of December 31, 2009, this asset class consisted of U.S. agency and corporate obligations.

Supplemental retirement benefits

As of March 31, 2010 and December 31, 2009, supplemental defined contribution retirement benefit liabilities were fair-valued based on the market return of certain U.S. and international equity mutual funds, classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices in an active market for identical assets.

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

Derivatives

As a result of the Company's global operating activities, the Company is exposed to market risks from changes in foreign currency exchange rates, which may adversely affect its operating results and financial position. When deemed appropriate, the Company minimizes its risks from foreign currency exchange rate fluctuations through the use of derivative financial instruments. The principal market in which the Company executes its foreign currency contracts is the institutional market in an over-the-counter environment with a relatively high level of price transparency. The market participants usually are large commercial banks. The forward foreign currency exchange contracts are valued using broker quotations, or market transactions and are classified within Level 2 of the fair value hierarchy.

Assets and liabilities of the Company measured at fair value on a non-recurring basis as of and for the three months ended March 31, 2010, are summarized as follows:

		Fair Value Measurements Using			
Description	March 31, 2010	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Losses
Assets					
Goodwill	$144,511	$—	$—	$144,511	$—
Definite-lived intangible assets	4,312	—	—	4,312	—
Total assets	$148,823	$—	$—	$148,823	$—

Assets and liabilities of the Company measured at fair value on a non-recurring basis as of and for the twelve months ended December 31, 2009, are summarized as follows:

		Fair Value Measurements Using			
Description	December 31, 2009	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total Losses
Assets					
Goodwill	$144,511	$—	$ —	$144,511	$193,254
Definite-lived intangible assets	4,963	—	—	4,963	11,699
Long-lived assets held and used	1,297	—	1,297	—	3,544
Total assets	$150,771	$—	$1,297	$149,474	$208,497

In accordance with the provisions of accounting for goodwill and other intangible assets, goodwill with a carrying amount of $337,765,000 was written down to its implied fair value of $144,511,000, resulting in an impairment charge of $193,254,000, which was included in earnings in the second quarter of 2009. In accordance with the provisions of accounting for the impairment of long-lived assets, definite-lived intangible assets with a carrying amount of $18,866,000, were written down to their fair value of $7,167,000, resulting in an impairment charge of $11,699,000, which was included in earnings in the second quarter of 2009. Refer to Note 7 for the information and description used to develop the inputs and the fair value determination of the Level 3 goodwill and other definite-lived intangible assets.

The long-lived asset held and used with a carrying amount of $4,841,000 was written down to its fair value of $1,297,000, resulting in a loss of $3,544,000, which was included in earnings in the second quarter of 2009. During the first quarter of 2010, the Company sold this long-lived asset for its net realizable value of approximately $1,297,000. In addition, the Company sold a vacated facility during the first quarter of 2010 and received net proceeds of $785,000 and recorded a net gain on the sale of $682,000.

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

5) Derivatives

The Company enters into derivative instruments for risk management purposes only, including derivatives designated as hedging instruments and those utilized as economic hedges. The Company operates internationally and, in the normal course of business, is exposed to fluctuations in interest rates and foreign exchange rates. These fluctuations can increase the costs of financing, investing and operating the business. The Company has used derivative instruments, such as forward contracts, to manage certain foreign currency exposure.

By nature, all financial instruments involve market and credit risks. The Company enters into derivative instruments with major investment grade financial institutions and no collateral is required. The Company has policies to monitor the credit risk of these counterparties. While there can be no assurance, the Company does not anticipate any material non-performance by any of these counterparties.

The Company hedges a portion of its forecasted foreign currency denominated intercompany sales of inventory, over a maximum period of eighteen months, using forward foreign exchange contracts accounted for as cash-flow hedges related to Japanese, South Korean, British and European currencies. To the extent these derivatives are effective in off-setting the variability of the hedged cash flows, and otherwise meet the hedge accounting criteria, changes in the derivatives' fair value are not included in current earnings but are included in OCI in stockholders' equity. These changes in fair value will subsequently be reclassified into earnings as a component of product cost, as applicable, when the forecasted transaction occurs. To the extent that a previously designated hedging transaction is no longer an effective hedge, any ineffectiveness measured in the hedging relationship is recorded currently in earnings in the period it occurs. The cash flows resulting from forward exchange contracts are classified in the consolidated statements of cash flows as part of cash flows from operating activities. The Company does not enter into derivative instruments for trading or speculative purposes.

To the extent the hedge accounting criteria is not met, the related foreign currency forward contracts are considered as economic hedges and changes in the fair value of these contracts are recorded immediately in earnings in the period in which they occur. These include hedges that are used to reduce exchange rate risks arising from the change in fair value of certain foreign currency denominated assets and liabilities (i.e., payables, receivables) and other economic hedges where the hedge accounting criteria were not met.

As of March 31, 2010 and December 31, 2009, the Company had outstanding forward foreign exchange contracts with gross notional values of $51,146,000 and $48,724,000, respectively. The following tables provide a summary of the primary net hedging positions and corresponding fair values held as of March 31, 2010 and December 31, 2009:

	March 31, 2010	
Currency Hedged (Buy/Sell)	Gross Notional Value	Fair Value (1)
U.S. Dollar/Japanese Yen	$28,970	$1,228
U.S. Dollar/South Korean Won	12,035	(385)
U.S. Dollar/Euro	7,075	470
U.S. Dollar/U.K. Pound Sterling	3,066	112
Total	$51,146	$1,425

	December 31, 2009	
Currency Hedged (Buy/Sell)	Gross Notional Value	Fair Value (1)
U.S. Dollar/Japanese Yen	$28,980	$1,220
U.S. Dollar/South Korean Won	8,477	(338)
U.S. Dollar/Euro	8,069	149
U.S. Dollar/U.K. Pound Sterling	3,198	51
Total	$48,724	$1,082

(1) Represents the net receivable (payable) amount included in the consolidated balance sheets.

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

The following table provides a summary of the fair value amounts of the Company's derivative instruments:

Derivatives Designated as Hedging Instruments	March 31, 2010	December 31, 2009
Derivative assets		
Forward exchange contracts	$1,833	$1,505
Derivative liabilities		
Forward exchange contracts	408	423
Total net derivative assets designated as hedging instruments (1)	$1,425	$1,082

(1) The derivative asset of $1,833,000 and derivative liability of $408,000 are classified in other current assets and other current liabilities, respectively, in the consolidated balance sheets as of March 31, 2010. The derivative asset of $1,505,000 and derivative liability of $423,000 are classified in other current assets and other current liabilities, respectively, in the consolidated balance sheets as of December 31, 2009.

The following table provides a summary of the gains (losses) on derivatives designated as hedging instruments:

Derivatives Designated as Cash Flow Hedging Relationships	Three Months Ended March 31, 2010	Three Months Ended March 31, 2009
Forward exchange contracts		
Net gain recognized in OCI (1)	$ 481	$1,689
Net (loss) gain reclassified from OCI into income (2)	(138)	557

(1) Net change in the fair value of the effective portion classified in OCI.

(2) Effective portion classified as cost of products.

6) Inventories

Inventories consist of the following:

	March 31, 2010	December 31, 2009
Raw material	$ 64,027	$ 56,083
Work in process	19,154	16,501
Finished goods	43,589	45,420
	$126,770	$118,004

During the three months ended March 31, 2009, the Company recorded charges of $14,373,000 for excess and obsolete inventory. The excess and obsolete inventory charge was primarily a result of a lower inventory consumption plan in the first quarter of 2009 that the Company implemented in response to the weakness in its markets during that period.

7) Goodwill and Intangible Assets

Goodwill

The Company tests goodwill for impairment on an annual basis, which has been determined to be as of October 31 of each fiscal year. The Company also tests goodwill between annual tests if an event occurs or circumstances change that indicate that the fair value of a reporting unit may be below its carrying value. Due to various factors, including market and economic conditions that contributed to a decline in the Company's forecasted business levels, and the excess of the Company's consolidated net assets over its market capitalization for a sustained period of time, the Company concluded an interim assessment for impairment should be conducted for its goodwill as of April 30, 2009.

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

Goodwill impairment is determined using a two-step process. The first step involves a comparison of the estimated fair value of a reporting unit to its carrying amount, including goodwill. In performing the first step, the Company determines the fair value of a reporting unit using a discounted cash flow ("DCF") analysis. Determining fair value requires the exercise of significant judgment, including judgments about appropriate discount rates, perpetual growth rates, and the amount and timing of expected future cash flows. Discount rates are based on a weighted average cost of capital ("WACC"), which represents the average rate a business must pay its providers of debt and equity. The WACC used to test goodwill was derived from a group of comparable companies. The cash flows employed in the DCF analysis were derived from internal earnings and forecasts and external market forecasts. If the estimated fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired and the second step of the impairment test is not necessary. If the carrying amount of a reporting unit exceeds its estimated fair value, then the second step of the goodwill impairment test must be performed.

The second step of the goodwill impairment test compares the implied fair value of the reporting unit's goodwill with its carrying amount of goodwill to measure the amount of impairment loss, if any. The implied fair value of goodwill is determined in the same manner as the amount of goodwill recognized in a business combination, whereby the estimated fair value of the reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the purchase price paid. If the carrying amount of the reporting unit's goodwill exceeds the implied fair value of that goodwill, an impairment loss is recognized in an amount equal to that excess.

In the interim assessment, the Company determined that for certain reporting units, the carrying amount of their net assets exceeded their respective fair values, indicating that a potential impairment existed. After completing the second step of the goodwill impairment test, the Company recorded a goodwill impairment charge in the second quarter of 2009 of $193,254,000. The Company completed its annual impairment test as of October 31, 2009 and concluded that no additional impairment of goodwill existed.

The changes in the carrying amount of goodwill and accumulated impairment losses during the three months ended March 31, 2010 and twelve months ended December 31, 2009 were as follows:

	2010			2009		
	Gross Carrying Amount	Accumulated Impairment Loss	Net	Gross Carrying Amount	Accumulated Impairment Loss	Net
Beginning balance at January 1	$337,765	$(193,254)	$144,511	$337,765	$ —	$ 337,765
Impairment losses	—	—	—	—	(193,254)	(193,254)
Ending balance at March 31, 2010 and December 31, 2009	$337,765	$(193,254)	$144,511	$337,765	$(193,254)	$ 144,511

Intangible Assets

The Company is required to test certain long-lived assets when indicators of impairment are present. For the purposes of the impairment test, long-lived assets are grouped with other assets and liabilities at the lowest level for which identifiable cash flows are largely independent of the cash flows of other assets and liabilities. Due to various factors, including market and economic conditions that contributed to a decline in the Company's forecasted business levels, and the excess of the Company's consolidated net assets over market capitalization for a sustained period of time, the Company concluded an interim assessment for impairment should be conducted for its intangible assets as of April 30, 2009. The Company tested the long-lived assets in question for recoverability by comparing the sum of the undiscounted cash flows attributable to each respective asset group to their carrying amounts, and determined that the carrying amounts were not recoverable. Management then evaluated the fair values of each long-lived asset of the potentially impaired long-lived asset group to determine the amount of the impairment, if any. The fair value of each intangible asset was based primarily on an income approach, which is a present value technique used to measure the fair value of future cash flows produced by the asset. The Company estimated future cash flows over the remaining useful life of each intangible asset. As a result of this analysis, the Company determined that certain of its intangible assets related to completed technology, customer relationships, and patents and trademarks had carrying values that exceeded their estimated fair values. As a result, an impairment charge of $11,699,000 was recorded in the second quarter of 2009.

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

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

For the three months ended March 31, 2010:

	Gross	Impairment Charges	Accumulated Amortization	Net
Completed technology	$ 85,043	$—	$ (83,085)	$1,958
Customer relationships	14,766	—	(13,442)	1,324
Patents, trademarks, trade names and other	28,898	—	(27,868)	1,030
	$128,707	$—	$(124,395)	$4,312

For the year ended December 31, 2009:

	Gross	Impairment Charges	Accumulated Amortization	Net
Completed technology	$ 88,855	$ (3,812)	$ (82,705)	$2,338
Customer relationships	21,879	(7,113)	(13,326)	1,440
Patents, trademarks, trade names and other	29,672	(774)	(27,713)	1,185
	$140,406	$(11,699)	$(123,744)	$4,963

Aggregate amortization expense related to acquired intangibles for the three months ended March 31, 2010 and 2009 were $651,000 and $1,653,000, respectively. Estimated amortization expense for each of the four remaining fiscal years is as follows:

Year	Amount
2010 (remaining)	$1,357
2011	1,714
2012	634
2013	607

8) Debt

On January 31, 2010, the Company entered into an amendment to the Optional Advance Demand Grid Note dated August 3, 2004 to extend its maturity date to July 31, 2010. The unsecured short-term LIBOR based loan agreement with HSBC Bank USA is utilized primarily by the Company's Japanese subsidiary for short-term liquidity purposes and has a maximum borrowing amount of $5,000,000. The Company had outstanding borrowings under this line of credit of $1,077,000 at March 31, 2010 at an interest rate of 2.0%. The Company did not have outstanding borrowings under this line of credit at December 31, 2009.

Additionally, the Company's Japanese subsidiary has lines of credit and short-term borrowing arrangements with two financial institutions which provide for aggregate borrowings as of March 31, 2010 of up to an equivalent of $26,934,000, which generally expire and are renewed at three month intervals. At March 31, 2010 and December 31, 2009, total borrowings outstanding under these arrangements were $8,619,000 and $12,885,000, respectively, at interest rates ranging from 0.71% to 1.47% at March 31, 2010 and at interest rates ranging from 0.76% to 1.48% at December 31, 2009.

9) 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 shipment volume, 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 activities were as follows:

	Three Months Ended March 31,	
	2010	2009
Balance at January 1	$6,560	$8,334
Provision for product warranties	1,628	115
Direct charges to warranty liability	(967)	(774)
Balance at March 31	$7,221	$7,675

10) Restructuring

In the first quarter of 2009, the Company initiated a restructuring plan due to the global financial crisis and its impact on the Company's semiconductor equipment OEM customers and the other markets it serves. The plan included a reduction in the Company's worldwide headcount of approximately 630 people, which represented approximately 24% of its global workforce.

In the first quarter of 2009, the Company recorded restructuring charges of $5,620,000 primarily for severance and other charges associated with the reductions in workforce. As of March 31, 2010 and 2009, the accrued restructuring costs totaled zero and $2,032,000, respectively and were included in accrued compensation in the consolidated balance sheets.

The activity related to the Company's restructuring accrual is shown below:

	Three Months Ended March 31,	
	2010	2009
Beginning balance	$ 220	$ —
Charged to expense	—	5,620
Payments	(220)	(3,588)
Ending balance	$ —	$ 2,032

11) Income Taxes

The Company's effective tax rate for the three months ended March 31, 2010 and 2009 was 32% and (58.3)%, respectively. The first quarter 2010 effective tax rate, and related income tax provision, was lower than the U.S. statutory tax rate primarily due to geographic mix of income and profits earned by the Company's international subsidiaries being taxed at rates lower than the U.S. statutory rate. The first quarter 2009 effective tax rate, and related tax benefit, was higher than the U.S. statutory tax rate primarily due to a $6,437,000 release of tax reserves related to closure of a U.S. federal tax audit for tax years 2005 and 2006.

The total amount of gross unrecognized tax benefits at March 31, 2010 was approximately $9,157,000. The net increase from December 31, 2009 was primarily attributable to an increase in reserves for existing uncertain tax positions. At December 31, 2009, the total amount of gross unrecognized tax benefits, which excludes interest and penalties, was approximately $9,085,000. If these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of $6,500,000, excluding interest and penalties, would impact the Company's effective tax rate. The Company accrues interest expense and, if applicable, penalties for any uncertain tax positions. Interest and penalties are classified as a component of income tax expense. At March 31, 2010 and December 31, 2009, the Company had accrued interest on unrecognized tax benefits of approximately $781,000 and $651,000, respectively.

The Company and its subsidiaries are subject to examination by federal, state and foreign tax authorities. The statute of limitations for the Company's tax filings varies by tax jurisdiction and is generally open for fiscal years 2001 through present.

While the Company believes it has adequately provided for all tax positions, amounts asserted by taxing authorities could materially differ from the Company's accrued positions as a result of uncertain and complex application of tax regulations. Additionally, the recognition and measurement of certain tax benefits include estimates and judgment by management and inherently includes subjectivity. Accordingly, the Company could record additional provisions to U.S. federal, state, and foreign tax-related matters in the future as it revises estimates or settles or otherwise resolves the underlying matters.

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

12) Net Income (Loss) Per Share

The following table sets forth the computation of basic and diluted net income (loss) per share:

	Three Months Ended March 31,	
	2010	2009
Numerator:		
Net income (loss)	$29,225	$(16,499)
Denominator:		
Shares used in net income (loss) per common share – basic	49,601	48,994
Effect of dilutive securities:		
Stock options, restricted stock and employee stock purchase plan	999	—
Shares used in net income (loss) per common share – diluted	50,600	48,994
Net income (loss) per common share:		
Basic	$ 0.59	$ (0.34)
Diluted	$ 0.58	$ (0.34)

Basic earnings per share (“EPS”) is computed by dividing income available to common stockholders by the weighted-average number of common shares outstanding during the period. The computation of diluted EPS is similar to the computation of basic EPS except that the denominator is increased to include the number of additional common shares that would have been outstanding (using the treasury stock method), if securities containing potentially dilutive common shares (stock options and restricted stock units) had been converted to such common shares, and if such assumed conversion is dilutive.

As of March 31, 2010, stock options and restricted stock units relating to an aggregate of approximately 3,737,781 shares were outstanding. For the three months ended March 31, 2010, 1,388,643 shares were not included in the computation of diluted EPS because the exercise price of the option exceeded the average price per share during the period.

As of March 31, 2009, stock options and restricted stock units relating to an aggregate of approximately 5,724,178 shares were outstanding. For the three months ended March 31, 2009, 4,616,962 shares were not included in the computation of diluted EPS as the effect of including such securities in the computation would be anti-dilutive due to the Company’s net loss for the period.

13) Stockholders’ Equity

Comprehensive Income (Loss)

Components of comprehensive income (loss) were as follows:

	Three Months Ended March 31,	
	2010	2009
Net income (loss)	$29,225	$(16,499)
Other comprehensive income (loss):		
Changes in value of financial instruments designated as cash flow hedges, net of tax	216	992
Foreign currency translation adjustment	(1,968)	(5,445)
Unrealized loss on investments, net of tax	(35)	(285)
Other comprehensive loss	(1,787)	(4,738)
Total comprehensive income (loss)	$27,438	$(21,237)

MKS INSTRUMENTS, INC.
NOTES TO UNAUDITED CONSOLIDATED FINANCIAL STATEMENTS – (continued)
(tables in thousands, except share and per share data)

14) Geographic, Product and Significant Customer Information

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 revenues 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 revenues.

	Three Months Ended March 31, 2010	Three Months Ended March 31, 2009
Geographic net revenues:		
United States	$115,769	$38,487
Japan	31,217	11,396
Europe	21,110	16,049
Asia (excluding Japan)	29,973	10,787
	$198,069	$76,719

	March 31, 2010	December 31, 2009
Long-lived assets:		
United States	$51,696	$52,143
Japan	4,259	5,886
Europe	4,203	3,621
Asia (excluding Japan)	7,643	7,838
	$67,801	$69,488

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

	Three Months Ended March 31, 2010	Three Months Ended March 31, 2009
Instruments and Control Systems	$ 94,999	$41,437
Power and Reactive Gas Products	85,771	27,974
Vacuum Products	17,299	7,308
	$198,069	$76,719

The Company had one customer comprising 16% of net revenues for the three months ended March 31, 2010. There were no customers comprising greater than 10% of net revenues for the three months ended March 31, 2009.

15) Commitments and Contingencies

The Company is subject to various 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 reviewed its contractual obligations and commercial commitments as of March 31, 2010 and determined that there were no significant changes from the ones set forth in the notes to the consolidated financial statements included in the Company's Annual Report on Form 10-K for the year ended December 31, 2009.

MKS INSTRUMENTS, INC.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

We believe that this Quarterly Report on Form 10-Q contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act and Section 21E of the Securities Exchange Act. When used herein, the words "believes," "anticipates," "plans," "expects," "estimates," "would," "will," "intends" 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 results to differ materially from those stated or implied. While we may elect to update forward looking statements at some point in the future, we specifically disclaim any obligation to do so even if our estimates or expectations change. Risks and uncertainties include, but are not limited to those discussed in our Annual Report on Form 10-K for the year ended December 31, 2009 in the section entitled "Risk Factors" as referenced in Part II, Item 1A "Risk Factors" of this Quarterly Report on Form 10-Q.

Overview

We are a leading worldwide provider of instruments, subsystems and process control solutions that measure, control, power, monitor and analyze critical parameters to improve process performance and productivity of advanced manufacturing processes.

We are managed as one operating segment. We group our products into 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 composition analysis, electrostatic charge management, control and information technology, power and reactive gas generation and vacuum technology. Our products are used in diverse markets, applications and processes. Our primary served markets are manufacturers of capital equipment for semiconductor devices, and for other thin film applications including flat panel displays, light-emitting diodes ("LEDs"), solar cells, data storage media and other advanced coatings. We also leverage our technology in other markets with advanced manufacturing applications including medical equipment, biopharm manufacturing, energy generation and environmental monitoring.

We have a diverse base of customers that includes manufacturers of semiconductor capital equipment and semiconductor devices, thin film capital equipment used in the manufacture of flat panel displays, LEDs, solar cells, data storage media, and other coating applications; and other industrial, medical, energy generation, environmental monitoring and manufacturing companies; and university, government and industrial research laboratories. For the three months ended March 31, 2010 and the full year ended December 31, 2009, we estimate that approximately 62% and 52% 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 portion of our sales.

We have seen continued recovery in the global economy which has contributed to an increase in our business, financial condition and results of operations for the three months ended March 31, 2010. As a result of this continued recovery, our shipments to semiconductor capital equipment manufacturers and semiconductor device manufacturers have increased sequentially over the past twelve months. Product revenues increased 363% for the three months ended March 31, 2010 compared to the same period for the prior year for these customers. Although our business levels have increased rapidly, the semiconductor capital equipment industry is subject to rapid demand shifts, which are difficult to predict, and we are uncertain as to the timing or extent of further increased demand or any future weakness in the semiconductor capital equipment industry.

Beginning in the third quarter of 2009, we began to see signs of recovery in the other markets we serve. Our product revenues sold to other markets, which exclude semiconductor capital equipment and semiconductor device product applications, increased 74% for the three months ended March 31, 2010 compared to the same period for the prior year. These advanced and growing markets include LED, medical, biopharm, environmental, thin films, solar and other markets.

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. For the three months ended March 31, 2010 and full year ended December 31, 2009, international net sales accounted for approximately 42% and 46% of our net sales, respectively. A significant portion of our international net sales were sales in Japan. We expect that international net sales will continue to represent a significant percentage of our total net sales.

Critical Accounting Policies and Estimates

The preparation of our consolidated financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires management to make judgments, assumptions and estimates that affect the amounts reported. There have been no material changes in our critical accounting policies since December 31, 2009. For further information, please see the discussion of critical accounting policies in our Annual Report on Form 10-K for the year ended December 31, 2009 in the section captioned "Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies and Estimates."

Results of Operations

The following table sets forth, for the periods indicated, the percentage of total net revenues of certain line items included in MKS' consolidated statements of operations data.

	Three Months Ended March 31,	
	2010	2009
Net revenues:		
Product	89.1%	81.4%
Services	10.9	18.6
Total net revenues	100.0	100.0
Cost of revenues:		
Cost of product revenues	48.9	73.1
Cost of service revenues	6.4	13.4
Total cost of revenues	55.3	86.5
Gross profit	44.7	13.5
Research and development	8.3	20.2
Selling, general and administrative	14.9	36.8
Amortization of acquired intangible assets	0.3	2.1
Gain on sale of asset	(0.3)	—
Restructuring	—	7.3
Income (loss) from operations	21.5	(52.9)
Interest income, net	0.2	1.3
Income (loss) before income taxes	21.7	(51.6)
Provision (benefit) for income taxes	6.9	(30.1)
Net income (loss)	14.8%	(21.5)%

Net Revenues (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Net Revenues:			
Product	$176.4	$62.5	182.3%
Service	21.7	14.2	52.2
Total net revenues	$198.1	$76.7	158.2%

Product revenues increased $113.9 million during the three months ended March 31, 2010, compared to the same period for the prior year. We have seen continued recovery in the global economy which has contributed to an increase in demand for our products in all of the markets we serve. Our increase in overall product revenues is primarily due to the increase in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers. The product revenues to these customers increased $84.9 million or 362.6% compared to the same period for the prior year. The product revenues related to other markets increased by $29.1 million or 74.4% during the three months ended March 31, 2010, compared to the same period for the prior year. The increase in demand in our other markets include the LED, medical, biopharm, environmental, thin films, solar and other markets.

Service revenues consist mainly of fees for services relating to the maintenance and repair of our products, software maintenance, installation services and training. Service revenues increased $7.5 million during the three months ended March 31, 2010, compared to the same period for the prior year, as a result of the continued recovery in the global economy.

Total international net revenues, including product and service, were $82.3 million for the three months ended March 31, 2010, or 41.6% of net revenues, respectively, compared to $38.2 million for the three months ended March 31, 2009, or 49.8% of net revenues, respectively. The increases are mainly due to an increase in worldwide demand from our semiconductor capital equipment manufacturer and semiconductor device manufacturer customers. The international net revenues related to other markets also increased compared to the same period for the prior year.

Gross Profit

	Three Months Ended March 31,		
	2010	2009	% Points Change
Gross profit as percentage of net revenues			
Product	45.1%	10.6%	34.5%
Service	41.5	28.0	13.5
Total gross profit percentage	44.7%	13.8%	30.9%

Gross profit on product revenues increased 34.5 percentage points for the three months ended March 31, 2010, compared to the same period for the prior year. The increase is mainly due to an increase in product revenue volumes which accounted for 28.6 percentage points of the overall increase since a portion of our overhead costs are fixed. In the first quarter of 2009, we recorded $12.9 million of special charges for excess, obsolete and committed inventory purchases primarily due to a lower future production plan during the first quarter of 2009 in response to the continued weakness in the markets we serve. The lower excess and obsolete inventory related charges for the three months ended March 31, 2010, compared to the same period for the prior year, resulted in an increase of 9.0 percentage points in the overall gross profit on product revenues. These increases were partially offset by a decrease of 3.0 percentage points from increased warranty costs, unfavorable foreign currency fluctuations and higher overhead spending.

Cost of service revenues consist primarily of costs of providing services for repair and training which includes salaries and related expenses and other fixed costs. Service gross profit increased by 13.5 percentage points for the three months ended March 31, 2010, compared to the same period for the prior year. The increase is primarily as a result of higher volumes since a portion of our overhead costs are fixed, as well as lower compensation expense. The lower compensation expense is mainly due to workforce reductions that took place in the first quarter of 2009.

Research and Development (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Research and development expenses	$16.5	$15.5	6.5%

Research and development expense increased $1.0 million during the three months ended March 31, 2010, compared to the same period for the prior year. The increase includes $0.9 million in incentive compensation costs due to the restoration of employee benefit plans, a $0.7 million increase in spending on project materials, a $0.5 million increase in patent and other legal-related costs and a $0.3 million increase in consulting costs partially offset by a $1.5 million reduction in salaries and related fringe benefit costs. The decrease in salaries and related fringe benefit costs is mainly due to a reduction in the number of research and development employees since the first quarter of 2009.

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 smaller integrated circuit geometries and in the flat panel display and solar markets to larger substrate sizes, 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 as well as legal costs associated with maintaining and defending our intellectual property.

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 revenues may be reduced during the lifespan of those products.

Selling, General and Administrative (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Selling, general and administrative expenses	$29.4	$28.2	4.1%

Selling, general and administrative expenses increased $1.2 million for the three months ended March 31, 2010, compared to the same period for the prior year. The increase includes a $3.3 million increase in compensation expense partially offset by decreases of $1.1 million in the provision for uncollectable accounts, a decrease of $0.3 million in facility and depreciation expenses and a decrease of $0.3 million in consulting, professional and other fees. The net increase in compensation expense is due to the restoration of employee benefit plans.

Amortization of Acquired Intangible Assets (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Amortization of acquired intangible assets	$0.7	$1.7	(60.6)%

Amortization expense for the three months ended March 31, 2010 decreased $1.0 million, compared to the same period for the prior year, as certain acquired intangibles became fully amortized during 2009, and as a result of the write-down of certain intangibles of $11.7 million recorded in the second quarter of 2009.

Gain on Sale of Asset (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Gain on sale of asset	$0.7	$—	100.0%

During the first quarter of 2010, we sold a vacated facility for proceeds of $0.8 million and recorded a $0.7 million net gain on the sale.

Restructuring (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Restructuring	$—	$5.6	(100.0)%

In the first quarter of 2009 we initiated a restructuring plan as a result of the global financial crisis and its impact on our semiconductor equipment OEM customers and the other markets we serve. The plan included a reduction in our worldwide headcount of approximately 630 people, which represented approximately 24% of our global workforce. The restructuring charges of $5.6 million were primarily for severance and other charges associated with the reductions in workforce.

Interest Income, Net (dollars in millions)

	Three Months Ended March 31,		
	2010	2009	% Change
Interest income, net	$0.3	$1.0	(67.8)%

Interest income, net decreased $0.7 million during the three months ended March 31, 2010, compared to the same period for the prior year, mainly related to lower interest rates compared to the same period for the prior year.

Provision (Benefit) for Income Taxes (dollars in millions)

	Three Months Ended March 31,	
	2010	2009
Provision (benefit) for income taxes	$13.8	$(23.1)

Our effective tax rate for the three months ended March 31, 2010 and 2009 was 32% and (58.3)%, respectively. The first quarter 2010 effective tax rate, and related income tax provision, was lower than the U.S. statutory tax rate primarily due to geographic mix of income and profits earned by our international subsidiaries being taxed at rates lower than the U.S. statutory rate. The first quarter 2009 effective tax rate, and related tax benefit, was higher than the U.S. statutory tax rate primarily due to a $6.4 million release of tax reserves related to closure of a U.S. federal tax audit for tax years 2005 and 2006.

The total amount of gross unrecognized tax benefits at March 31, 2010 was approximately $9.2 million. The net increase from December 31, 2009 was primarily attributable to an increase in reserves for existing uncertain tax positions. At December 31, 2009, the total amount of gross unrecognized tax benefits, which excludes interest and penalties, was approximately $9.1 million. If these benefits were recognized in a future period, the timing of which is not estimable, the net unrecognized tax benefit of $6.5 million, excluding interest and penalties, would impact our effective tax rate. We accrue interest expense and, if applicable, penalties for any uncertain tax positions. Interest and penalties are classified as a component of income tax expense. At March 31, 2010 and December 31, 2009, we had accrued interest on unrecognized tax benefits of approximately $0.8 million and $0.7 million, respectively.

We and our subsidiaries are subject to examination by federal, state and foreign tax authorities. The statute of limitations for our tax filings varies by tax jurisdiction and is generally open for fiscal years 2001 through present.

Our future effective income tax rate depends on various factors, such as tax legislation and the geographic composition of our pre-tax income. We carefully monitor these factors and timely adjust our effective tax rate accordingly. Additionally, the effective tax rate could be adversely affected by changes in the valuation of deferred tax assets and liabilities. In particular, the carrying value of deferred tax assets, which are predominantly in the United States, is dependent on our ability to generate sufficient future taxable income in the United States.

While we believe it has adequately provided for all tax positions, amounts asserted by taxing authorities could materially differ from our accrued positions as a result of uncertain and complex application of tax regulations. Additionally, the recognition and measurement of certain tax benefits include estimates and judgment by management and inherently includes subjectivity. Accordingly, we could record additional provisions to U.S. federal, state, and foreign tax-related matters in the future as we revise estimates or settle or otherwise resolve the underlying matters.

Liquidity and Capital Resources

Cash, cash equivalents and short-term investments totaled $285.2 million at March 31, 2010 compared to $271.8 million at December 31, 2009. This increase was mainly attributable to our net income and net cash provided by investing activities for maturities, sales and settlements of short-term and long-term available-for-sale investments.

Net cash provided by operating activities of $16.7 million for the three months ended March 31, 2010, resulted mainly from net income of $29.2 million, a $31.9 million increase in operating liabilities, non-cash charges of $3.8 million for depreciation and amortization and $2.1 million for stock-based compensation, partially offset by a $51.9 million increase in net operating assets. The net increase in operating liabilities is caused by an increase of $10.7 million in accounts payable related to inventory purchases to support our increased business levels, an increase of $7.0 million in accrued compensation and an increase of $10.6 million in income taxes payable. The increase in accrued compensation is related to increases in accrued incentive compensation and accrued salaries and benefits. The $51.9 million increase in operating assets consisted primarily of a $40.9 million increase in trade accounts receivable and an increase of $10.9 million of inventory. The increases in accounts receivable trade and inventory are a result of our increased business levels.

Net cash used in operating activities of $9.8 million for the three months ended March 31, 2009, resulted mainly from a net loss of $16.5 million, a $33.1 million decrease in operating liabilities partially offset by a $17.4 million decrease in net operating assets, a $14.4 million provision for excess or obsolete inventory, non-cash charges of $5.4 million for depreciation and amortization and $1.9 million for stock-based compensation. The net decrease in operating liabilities is mainly caused by a decrease of $27.4 million in income taxes payable as we expect to receive an income tax refund due to operating losses, and a decrease of $2.9 million in accrued compensation. The decrease in accrued compensation is primarily as a result of the workforce reduction and mandatory time-off which was implemented as part of our 2009 cost-control measures. The $17.4 million decrease in operating assets consisted primarily of a $24.7 million decrease in accounts receivable as a result of lower revenue, offset by a $6.7 million increase in inventory.

Net cash provided by investing activities of $7.4 million for the three months ended March 31, 2010, resulted from the net sales of $8.3 million of available-for-sale investments and proceeds of $2.1 million from the sale of two vacated facilities, partially offset by $3.3 million in purchases of production-related equipment. Net cash used in investing activities of $1.0 million for the three months ended March 31, 2009, resulted primarily from purchases of $1.3 million of property, plant and equipment.

Net cash used in financing activities was $5.8 million for the three months ended March 31, 2010 and consisted primarily of $3.3 million in net payments on short-term borrowings and $2.6 million related to stock-based compensation. Net cash used in financing activities was $10.0 million for the three months ended March 31, 2009 and consisted primarily of $7.6 million in net payments on short-term borrowings and $2.1 million related to stock-based compensation.

On January 31, 2010, we entered into an amendment to the Optional Advance Demand Grid Note dated August 3, 2004 to extend its maturity date to July 31, 2010. The unsecured short-term LIBOR based loan agreement with HSBC Bank USA is utilized primarily by the

Company's Japanese subsidiary for short-term liquidity purposes and has a maximum borrowing amount of $5.0 million. We had outstanding borrowings under this line of credit of $1.1 million at March 31, 2010 at an interest rate of 2.0% and we did not have outstanding borrowings under this line of credit at December 31, 2009.

Additionally, our Japanese subsidiary has lines of credit and short-term borrowing arrangements with two financial institutions which provide for aggregate borrowings as of March 31, 2010 of up to an equivalent of $26.9 million, which generally expire and are renewed at three month intervals. At March 31, 2010 and December 31, 2009, total borrowings outstanding under these arrangements were $8.6 million and $12.9 million, respectively, at interest rates ranging from 0.71% to 1.47% at March 31, 2010 and at interest rates ranging from 0.76% to 1.48% at December 31, 2009.

We believe that our current cash position and available borrowings will be sufficient to satisfy our estimated working capital and planned capital expenditure requirements through at least the next 12 months.

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 for other contractually narrow or limited purposes. Accordingly, we have no off-balance sheet arrangements that have or are reasonably expected to have a current or future effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources that are material to investors.

Recently Issued Accounting Pronouncements

In January 2010, the Financial Accounting Standards Board ("FASB") issued updated guidance to amend the disclosure requirements related to recurring and nonrecurring fair value measurements. This update requires new disclosures on significant transfers of assets and liabilities in and out of Level 1 and Level 2 of the fair value hierarchy (including the reasons for these transfers) and also requires a reconciliation of recurring Level 3 measurements about purchases, sales, issuances and settlements on a gross basis. In addition to these new disclosure requirements, this update clarifies certain existing disclosure requirements. For example, this update clarifies that reporting entities are required to provide fair value measurement disclosures for each class of assets and liabilities rather than each major category of assets and liabilities. This update also clarifies the requirement for entities to disclose information about both the valuation techniques and inputs used in estimating Level 2 and Level 3 fair value measurements. This update is effective for companies with interim and annual reporting periods after December 15, 2009, except for the requirement to provide the Level 3 activity of purchases, sales, issuances, and settlements on a gross basis, which will become effective for interim and annual reporting periods beginning after December 15, 2010. We adopted the updated guidance in the first quarter of 2010 and the adoption did not have an impact on our financial position, results of operations, or cash flows.

In October 2009, the FASB issued guidance that establishes the accounting and reporting provisions for arrangements including multiple revenue-generating activities. This guidance provides amendments to the criteria for separating deliverables, measuring and allocating arrangement consideration to one or more units of accounting. The amendments in this guidance also establish a selling price hierarchy for determining the selling price of a deliverable. Significantly enhanced disclosures are also required to provide information about a vendor's multiple-deliverable revenue arrangements, including information about the nature and terms, significant deliverables, and its performance within arrangements. The amendments also require providing information about the significant judgments made and changes to those judgments and about how the application of the relative selling-price method affects the timing or amount of revenue recognition. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. We are currently evaluating the potential impact of this new guidance on our consolidated financial statements.

In October 2009, the FASB issued guidance that changes the accounting model for revenue arrangements that include both tangible products and software elements that are "essential to the functionality," and scopes these products out of current software revenue guidance. The new guidance will include factors to help companies determine what software elements are considered "essential to the functionality." The amendments will now subject software-enabled products to other revenue guidance and disclosure requirements, such as guidance surrounding revenue arrangements with multiple-deliverables. The amendments in this guidance are effective prospectively for revenue arrangements entered into or materially modified in the fiscal years beginning on or after June 15, 2010. Early adoption is permitted. We are currently evaluating the potential impact of this new guidance on our consolidated financial statements.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Information concerning market risk is contained in the section entitled "Quantitative and Qualitative Disclosures About Market Risk" contained in our Annual Report on Form 10-K for the year ended December 31, 2009 filed with the Securities and Exchange Commission on February 26, 2009. There were no material changes in our exposure to market risk from December 31, 2009.

ITEM 4. CONTROLS AND PROCEDURES.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2010. 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 an issuer that are designed to ensure that information required to be disclosed by the issuer 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 an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer'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 March 31, 2010, 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 to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer as appropriate to allow timely decisions regarding required disclosure.

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) during the quarter ended March 31, 2010 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS.

We are subject to various 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 1A. RISK FACTORS.

Information regarding risk factors affecting the Company's business are discussed in the Company's Annual Report on Form 10-K for the year ended December 31, 2009 in the section entitled "Risk Factors." There have been no material changes from the risks disclosed therein.

ITEM 6. EXHIBITS.

Exhibit No.	Exhibit Description
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
10.1*	Form of 2010 Management Incentive Bonus Plan for Named Executive Officers
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

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(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.

* Confidential treatment requested as to certain portions, which portions have been filed separately with the Securities and Exchange Commission

SIGNATURE

Pursuant to the requirements 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.

May 10, 2010

By: /s/ Seth H. Bagshaw
Seth H. Bagshaw
Vice President and Chief Financial Officer
(Principal Financial Officer)

Summary of MKS Instruments, Inc.'s
2010 Management Incentive Bonus

The 2010 Management Incentive Bonus Plan is based on 2010 corporate pro-forma pre-tax operating income targets. In 2010, the plan will have two parts — an annual component and a 6-month component.

Annual Component

The annual bonus plan formula is calculated as follows:

Base Salary x Individual Incentive Target x Annual Corporate Performance Multiplier

The "Annual Corporate Performance Multiplier" ranges from 0% to 200%, depending upon achievement of the specified corporate goal. Accordingly, the maximum payout possible for each of the participants is 200% of his respective Individual Incentive Target set forth below and the minimum payout is zero, with incremental payouts for performance between these levels.

The following chart summarizes the Individual Incentive Targets for each of the Company's "named executive officers" under the rules of the Securities and Exchange Commission, plus Seth Bagshaw, who became our Chief Financial Officer on January 1, 2010.

Participant	Individual Incentive Target (% of annual base earnings)
Leo Berlinghieri	100%
Seth Bagshaw	50%
Jerry Colella	70%
John Lee	55%
John Smith	50%
Ron Weigner	50%

Six-Month Component

In 2010, the Company will also have a six-month bonus plan, which relates to the Company's achievement in the first six months of 2010. The six-month bonus plan formula is calculated as follows:

Base Salary x Individual Incentive Target x Six-Month Corporate Performance Multiplier

The "Six-Month Corporate Performance Multiplier" ranges from 0% to 30%, depending upon achievement of the specified corporate goal. Accordingly, the maximum payout possible for each of the participants is 30% of his respective Individual Incentive

Target set forth above and the minimum payout is zero, with incremental payouts for performance between these levels.

The MKS 2010 Management Incentive Bonus Plan is set forth as follows:

PERSONAL & CONFIDENTIAL
MKS MEMORANDUM
[FORM OF]
2010 Annual Corporate Bonus Plan
Based on Adjusted Operating Income
(January 1 — December 31)

The payout of your corporate bonus will be achieved according to the schedule shown in the chart below. For example, you will receive 70% of your target corporate bonus if our Adjusted Operating Income reaches $ million and 100% of your target bonus if Adjusted Operating Income reaches $** million. At an Adjusted Operating Income of $** million of more, you will receive 200% of your target corporate bonus.**

ANNUAL BONUS

Adjusted Operating Income	% of Target Bonus Earned
$**	70%
$**	80%
$**	90%
$**	100%
$**	110%
$**	120%
$**	130%
$**	140%
$**	150%
$**	160%
$**	170%
$**	180%
$**	190%
>=$**	200%

This information is extremely confidential and should be treated as such. Please do not share this information with anyone inside or outside of MKS Instruments, Inc.

PERSONAL & CONFIDENTIAL
MKS MEMORANDUM
[FORM OF]
2010 Special Mid-Year Bonus Plan
Based on Adjusted Operating Income
(January 1 — June 30)

In 2010 MKS will offer a one-time special mid-year bonus plan. The payout of this bonus will be achieved according to the schedule shown in the chart below. For example, you will receive 15% of your target corporate bonus if our Adjusted Operating Income reaches $ million and a maximum of 30% of your target bonus if Adjusted Operating Income reaches $** million.**

MID-YEAR BONUS

Operating Income	% of Target Bonus Earned
< $**	5%
$**	10%
$**	15%
$**	20%
$**	25%
>=$**	30%

This information is extremely confidential and should be treated as such. Please do not share this information with anyone inside or outside of MKS Instruments, Inc.

2010 MKS Bonus Plans

The MKS Annual Bonus Plan (The Plan) is based on fiscal year performance (January through December). The special MKS Mid-Year Bonus Plan is based on performance from January through June. Performance measurements are set at the beginning of the fiscal year.

Plan participants have 100% of their bonus tied to achievement of corporate goals.

Participation/Approval:
Participation in the Plan requires the approval of the most senior individual in each organization as well as Human Resources and the Chief Executive Officer and President. Participation in the plan is reviewed on an annual basis.

Target:
Bonus target guidelines are established for positions as a percentage of pay.

Payout:
The bonus payout amount is a percentage of eligible W-2 earnings <u>received</u> during the plan period, i.e.“base salary” including regular, holiday, vacation, sick, and retro pay. Bonus payments attributable to the prior year or paid mid-year in 2010 are excluded from this calculation.

Administration:
Bonus payout is made as soon as possible after the end of the fiscal year and the performance assessment has been completed, but in no event later than March 15 of the subsequent year. Bonus payout for the mid-year bonus plan will be made as soon as possible, but in no event later than August 15th.

Note: In order to receive either bonus payment the plan participant must be actively employed as of the payout dates of The Plan.

MKS reserves the right to change the plan at any time, subject to senior management discretion. In no way does this plan create a contract of employment.

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Leo Berlinghieri, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of MKS Instruments, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

    c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control and financial reporting.

Date: May 10, 2010

/s/ Leo Berlinghieri
Leo Berlinghieri
Chief Executive Officer and President
(Principal Executive Officer)

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934, AS AMENDED

I, Seth H. Bagshaw, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of MKS Instruments, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control and financial reporting.

Date: May 10, 2010

/s/ Seth H. Bagshaw
Seth H. Bagshaw
Vice President and Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 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

In connection with the Quarterly Report on Form 10-Q of MKS Instruments, Inc. (the “Company”) for the period ended March 31, 2010, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Leo Berlinghieri, Chief Executive Officer and President of the Company, and Seth H. Bagshaw, Vice President and Chief Financial Officer of the Company, each hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, based on his knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 10, 2010

/s/ Leo Berlinghieri
Leo Berlinghieri
Chief Executive Officer and President

Dated: May 10, 2010

/s/ Seth H. Bagshaw
Seth H. Bagshaw
Vice President and Chief Financial Officer