
Strategic Directions International, Inc.

INSTRUMENT BUSINESS OUTLOOK



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Food Safety Feeds Mass Spec Demand

The recent news of the presence of the industrial chemical melamine in US pet food and diethylene glycol in Central American toothpaste has heightened concern over the chemical contamination of imported products. Chinese toothpaste has been linked to the deaths of 51 people in Panama last year. Pet food made with melamine, contained in mislabeled wheat flour imported from China, has been tied to the deaths of 14 pets in the US and the recall of 5,300 products.

Growing international trade in food materials has only compounded the difficulties of tracing and testing food and food-related products and ensuring their safety for consumption. According to Dr. David Acheson, the FDA's assistant commissioner for Food Protection, in testi-

mony before the US Congress this month, "Currently, there are over 10 million entries of imported food annually and most are large volume commercial shipments. It is estimated approximately 15% of the US food supply is imported, but for some products such as fresh fruits, imports account for 50% to 60% of the supply."

Testing of food and food-related imports to the US, Europe and Japan has grown due to increasing global trade and new food safety legislation (see *IBO* 8/31/06). Chromatography and mass spectrometry are two of the analytical techniques for which demand has increased the most as a result of increased food safety concerns about organic chemi-

Please see Food Safety page 3

First Quarter Results: Off to a Strong Start

The calendar-year first quarter proved to be an outstanding quarter for major analytical instrumentation providers. Growth in key end-markets remained robust. Among end-users, industrial spending, especially in the petrochemical and commodities sectors, continued to fuel instrument demand. Steady spending by big pharmaceutical companies was also reported by providers. Regionally, China and India remained the focal point of Asian growth, while European demand stayed solid. Consumables and services also continued to drive growth.

Quarterly sales for the 11 companies profiled on pages 9-11 (excluding Mettler-Toledo) grew 12.0%. Double-digit sales growth was a predominate trend, with seven of the 11 companies reporting

growth of more than 10% in US dollars. Favorable currency effects for US companies also boosted sales growth, and acquisitions contributed favorably to Applied Biosystems, Bruker BioSciences and Waters's sales results. Dionex reported its best quarter ever, and the company, along with Waters and Varian, increased its fiscal year guidance.

Operating profit growth was even better. Seven companies reported double-digit growth for operating profits, with five companies reporting growth of more than 20% due to revenue growth, acquisitions, productivity improvements and favorable currency effects. In total, operating profits for the 11 companies

Please see Quarterly Review page 9

Executive Briefing

News & Views for Executives

Thermo Fisher Scientific Required to Sell GV Instruments

London, UK 5/30/07—The UK's Competition Commission (CC) has published its final decision that Thermo Fisher Scientific's purchase of GV Instruments (see *IBO* 7/31/06) "would lead to higher prices, or other adverse effects, for customers of some Isotope Ratio Mass Spectrometry (IRMS) instruments" (see *IBO* 3/15/07). The CC's findings specify that the acquisition of GV Instruments would significantly affect the markets for gas IRMS and thermal ionization mass spectrometry (TIMS) instruments. In accordance with the CC's decision, Thermo Fisher Scientific must sell the assets connected to the production of gas IRMS and TIMS instruments, or the entire GV Instruments business.

In its defense, Thermo Fisher Scientific claimed that GV Instruments was failing and that the company would have likely been immediately liquidated. The CC decided that GV Instruments was more likely to go into "administration," which is similar to the US' Chapter 11 bankruptcy. The CC also found that GV Instruments would most likely have been bought, in parts or completely, and that the purchasers would have been able to compete with Thermo Fisher Scientific in the IRMS market. According to the CC's report, the buyer of GV Instruments, or its gas IRMS and TIMS assets, must be able to "enable the divested business to develop as an effective competitor." This may be a challenge, as the IRMS market is small and only growing marginally. The CC cited Tesla Engineering and Glenrose as possible acquirers of the entire business, an option it prefers, and Mass Spec Solutions and Analytech as possible acquirers of the Gas IRMS product line. The purchaser must be approved by the CC, which will appoint a Monitoring Trustee.

Enzo to Purchase Axxora Life Sciences

New York, NY 5/30/07—Enzo Life Sciences, a subsidiary of Enzo Biochem, has signed an agreement to acquire Axxora Life Sciences for approximately \$16.3 million in cash. Axxora, based in San Diego, California, manufactures and markets life science reagents. Two of Axxora's divisions, ALEXIS Biochemicals and Apotech, are based in Switzerland, and manufacture a variety of reagents, including recombinant proteins, monoclonal antibodies and apoptosis reagents. In addition, Axxora markets more than 40 brands on its website. In 2006, Axxora had revenues of \$16 million and 60 employees worldwide. "We expect [the acquisition] to prove highly synergistic with regard to the activities of Enzo Life Sciences," stated Barry Weiner, president of Enzo. The deal is expected to close in early June.

This move strengthens Enzo's position in the European market, and provides the company with a substantial boost to its production and development capabilities. Axxora's senior management and the heads of its business divisions will stay in place.

STARLIMS Completes IPO, Raising \$25 Million

Hollywood, FL 5/23/07; Washington, DC 5/23/07—In a busy week for initial public offerings (IPOs) of laboratory product companies (see below), STARLIMS completed its IPO of common stock on the NASDAQ Global Market on May 23, raising an estimated \$25.5 million in net proceeds (see *IBO* 5/15/07). The offering consisted of 2.1 million ordinary shares priced at \$13.50 per share. Underwriters may purchase up to an additional 315,000 shares to cover over-allotments.

STARLIMS closed the month flat (see page 4). Apparently, reception to the IPO has been tepid. (For fiscal 2006 and first quarter fiscal 2007 results, see page 12.)

Helicos Lowers Price and Goes Public

Cambridge, MA 5/24/07; Washington, DC 5/24/07—Helicos Biosciences completed the initial public offering of its common stock on the NASDAQ Global Market on May 24 with a pricing of 5.4 million shares at \$9 per share (see *IBO* 2/28/07). The company had initially announced the offering at \$13–\$15 per share on May 7 and lowered it to \$10–\$11 per share on May 23. Helicos expects to raise \$43.2 million after expenses and underwriting discounts and commissions. Underwriters may purchase up to an additional 810,000 shares to cover over-allotments.

The stock closed down 6.3% for the month. The company plans to use \$20 million of the proceeds to fund R&D, \$10 million for sales and marketing, \$10 million for manufacturing, and the remainder for working capital and general corporate purposes. (For 2006 results, see page 12.)

Invitrogen and Clontech Settle Patent Suit

Carlsbad and Mountain View, CA 5/29/07—Invitrogen and Clontech Laboratories, a unit of Takara Bio, have announced the settlement of Invitrogen's patent infringement lawsuit against Clontech. The settlement comes one week after a jury decision in a federal district court in Maryland. According to the settlement, Clontech has agreed that Invitrogen's four patents for "Cloned Genes Encoding Reverse Transcriptase Lacking RNase H Activity"—US Patents Nos. 5,244,797, 5,668,005, 6,063,608 and 5,405,776—are valid and can be enforced. In addition, Clontech has stopped selling its products that use the technology described in the patents, including its PowerScript products. Other terms of the settlement were not announced.

*This settlement marks an end to a legal struggle that began on December 31, 1996 (see *IBO* 11/30/2006). The jury found that Clontech willfully infringed Invitrogen's '608 Patent and had dismissed Clontech's defenses of prior invention and obviousness, but the matter of compensation had not yet been decided. Each company will pay its own legal fees.*

cal contaminants. In combination, chromatography and MS are utilized for the detection, identification and quantitation of chemical contaminants in a variety of food and food-related substances, from raw ingredients to processed products. In fact, the growth in testing of food-related products for chemical contaminants have accompanied and, in many ways, driven advancements in sample preparation, chromatography and MS. The latest food scares and the rise in imported food products from developing nations can be expected to continue to make food safety a leading market for chromatography and MS for many years to come, benefiting providers of gas chromatography (GC), liquid chromatography (LC) and most types of MS systems.

The majority of testing for chemical contaminants is done by food exporters, either in-house or by contract laboratories. Government regulators test imported food-related products, but only a small percentage of imports are tested. In the US, responsibility for food safety is divided between the USDA, which regulates meat and poultry products, and the FDA, which regulates the remainder of food products, or approximately 80% of the food supply. The FDA inspected approximately 1% of the food imports for which it is responsible, while the USDA inspected 16% of the imported food it regulated in 2006.

"The FDA is overwhelmed—they can't do all that testing—so they have to outsource some of that testing to private contract laboratories," said Zoe Grosser, PhD, segment marketing manager, Analytical Sciences for PerkinElmer. "For the food industry, definitely the trend is to be proactive, instead of reactive. . . . More and more, they are trying to get information upfront from the supplier and trying to run the test before getting the entire lot of materials," said Alessandro Baldi, PhD, marketing manager, Chromatography Systems for PerkinElmer. According to James Willis, PhD, senior director of Chemical Analysis for Waters, the primary customers for food safety testing applications are the exporting countries, with testing done "either by testing labs or by government labs." According to Dr. Willis and Dr. Baldi, the majority of food safety testing is done on finished goods as opposed to raw materials. However, for China, Dr. Baldi told *IBO*, "It's more oriented on raw material testing—that is what China is mainly exporting—than on the finished product for local usage."

Developments in LC and MS, specifically, have driven food testing regimes for organic chemical contaminants. Analysis of chemical contaminants in food and food-related products is being conducted using GC/MS and LC/MS/MS, enabling greater sensitivity, speed and even the detection of unknown contaminants. "What we see every day when we are dealing with the food industry and contract labs that are doing food analysis [is that] they are requiring more and more mass spectrometry" said Dr. Baldi. "The reason, of course, is that mass spectrometry provides information on the identity of the molecules that they are going to analyze. Also, they are requiring a multistream of data: in other words, they want to use one or more detector," he noted. "For gas chromatography, it's usually one or two, or sometimes three detectors (MS being one of the detectors) to

check all the different compounds." The increased analytical capabilities have also influenced legislation. "The regulations are influenced by the analytical capabilities," said Dr. Grosser. "We've seen that in environmental for years and I think that's just becoming more clear in the food area."

Three of the fastest growing applications for chromatography and MS analysis of organic chemical contaminants in food are testing for pesticide residues, mycotoxins and veterinary drug residues. According to Dr. Willis, pesticides are the fastest growing food safety application because of the increasing number of pesticides on the market. In a 2006 review article, Professor Yolanda Picó estimates that more than 20,000 analyses of pesticide residues in food are performed daily worldwide and states there are more than 800 types of pesticide. Multiresidue analyses are now common, in which hundred of pesticides can be screened simultaneously.

The analysis of food products uses chromatography in combination with either a single quadrupole, triple quadrupole, time-of-flight or ion trap MS system for both initial screening and subsequent confirmation. GC/MS using single quadrupole MS is most widely used for screening, while GC/MS using triple quadrupole MS is the primary confirmatory technique. GC-TOF enables screening for unknown compounds. However, LC/MS/MS techniques are the fastest growing segment of the market, according to Dr. Willis. "It used to be that most of the pesticide work was done with GC/MS, but the newer [pesticides] are more polar so they are more amenable to LC/MS/MS," explained Dr. Willis. "So a lot of the methods are shifting from the old GCPs (Good Clinical Practices) to LC/MS/MS, which has given rise to an awful lot of growth in that business." ➔

AOAC's New Community

Food safety is a pressing issue for international standard organizations. Late last year, the AOAC announced the creation of the Chemical Contaminants and Residues in Food Community, chaired by Jo Marie Cook of the Florida Department of Agriculture and Consumer Services, and Stephen Capar of the FDA. The issues the Community addresses include the validation of new methods and the development of more sensitive and selective methods. *IBO* spoke with Dr. Cook about the Community's activities.

Among the Community's first efforts has been the formation of a subgroup on antibiotics in seafood. "We, the AOAC and members of the analytical community, approached the seafood industry and asked them if they would like to discuss their analytical needs. The objective is to talk to all the stakeholders and determine what methods are really needed the most and what those methods need to accomplish," she said. "[The antibiotics in seafood subgroup of the AOAC's Chemical Contaminants and Residues in Food Community] proposed that we should develop a multiresidue antibiotics screen. We were looking at that from a high-tech viewpoint, from doing LC/MS/MS multiresidue for maybe 30 or 40 compounds in one

Please see *AOAC* page 6

Two IBO Stock Indexes Show Impressive Gains

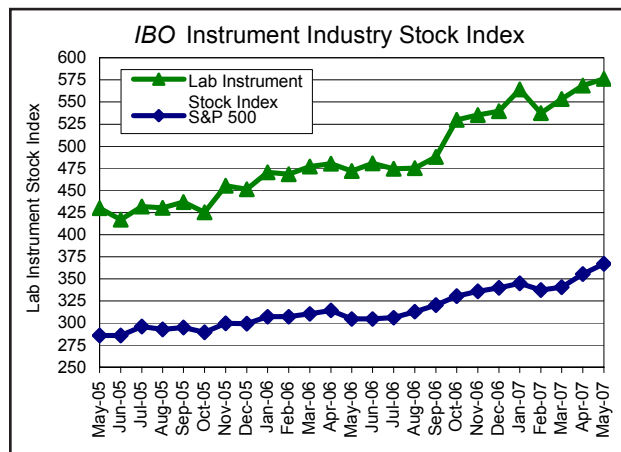
May started with upbeat earnings announcements and mergers and acquisitions news that helped sustain the strong April rally. On May 3, better than expected first quarter productivity data and lower than expected labor costs helped push the Dow Jones Index to another record close and the S&P 500 Index to cross the 1,500 mark for the first time since 2000. On May 9, the Federal Reserve announced that the target for the federal funds rate would remain at 5.25%. This reassurance helped push the Dow to a new record close of 13,362.87 and to boost the S&P, NASDAQ, and European and Asian markets as well. However, the next day, reports of weak April retail sales and guidance and a higher trade deficit led to a market pullback. The Dow, S&P and NASDAQ declined 1.1%, 1.4% and 1.65%, respectively. On May 15, the Dow regained some of its previous losses on news of soft inflationary and lower than expected Consumer Price Index data, but the rest of the market declined. Despite

favorable data on new home sales and durable goods orders, the market finished in the red on May 24. Ironically, on May 31, with news that US growth slowed to 0.6% in the first quarter, the slowest in five years, the markets edged slightly higher. Mergers and acquisitions and hope that sluggish economic growth would mitigate inflation concerns led the indexes to finish May at or near new highs. For the month, the Dow and S&P 500 climbed to record highs, up 4.3% and 3.3% to 13,627.64 and 1,530.62, respectively. The NASDAQ grew 3.1% to \$2,604.52. Year to date, the Dow is up 9.3%, the S&P 500 has risen 7.9% and NASDAQ has gained 7.8%.

Three of the four *IBO Stock Indexes* ended May in positive territory, while the *Process/Metrology/Motion Instrumentation Stock Index* slipped 0.1%. The *Diversified Instrumentation Stock Index* led the *Indexes*, gaining 5.5%. The *Lab Consumables/Equipment Stock Index* was up 4.0% and the *Process/Metrology/Motion Instrumentation Stock Index* gained 1.3%.

Laboratory Instrumentation Stock Index

In May, the *Laboratory Instrumentation Stock Index* climbed 1.3% to close at 576.11. Following its IPO, **STARLIMS** (see page 2) was added to the *Index*. Excluding **STARLIMS**, 11 companies climbed higher, 10 declined and one remained unchanged. **CombiMatrix** and **X-Rite** led the *Index*, gaining 28% and 20%, respectively, while **Bruker BioSciences** and **Caliper Life Sciences** lost the most ground, falling 26% and 19%, respectively. For the year, the



Index is up 6.8%, with **Transgenomic** leading the way, climbing 58%, while **Symyx Technologies** continues to show weakness, down 51%.

In acquisition news, on May 2, **Beckman Coulter** increased its offer for **Biosite** by \$5 per share to \$90 for a deal valued at \$1.67 billion, matching the offer by **Inverness Medical**. **Beckman's** stock declined 1.8%. The following day, **Beckman** announced a dividend payout of \$0.16 per share and was upgraded from "Sector Perform" to "Outperform" by RBC Capital Markets, sending shares up 2.3%. However, on May 21, **Biosite** agreed to be acquired by **Inverness** after **Beckman** refused to increase its offer, leading **Beckman** shares 1.1% higher. On May 16, **Bio-Rad Laboratories** agreed to buy a 77.7% stake in **DiaMed Holding AG** for \$390 million, with the remaining 12.7% to be purchased through a tender offer. **Bio-Rad** slipped 0.37%.

For some smaller companies, announcements had a noticeable impact. On May 7, **CombiMatrix** received

commitments to purchase \$5 million of its **Acacia Research-CombiMatrix** common stock and warrants in a registered direct offering, sending shares up 12.3%. After the market's close on May 7, **SEQUENOM** reported a 43% increase in quarterly sales (see page 12), but shares fell 3.9%. However, on May 11, **SEQUENOM** rebounded 8.1% after Rodman & Renshaw initiated coverage with a "Market Outperform." And, on May 31, the company climbed 3.8% on news that it would provide quantitative gene expression services to the **Immune Tolerance Network**. **Bruker BioSciences** declined 28.8% over the first four trading days of the month, after releasing first quarter earnings on April 30 (see page 10). In other news, **MOCON** increased its quarterly dividend on May 18 by 7% to \$0.08 per share, sending shares up 0.8%. On May 16, UBS reiterated its "Buy" rating on **Thermo Fisher Scientific** and raised the target price, sending shares up 0.8%.

Process/Metrology/Motion Instrumentation Stock Index

The *Process/Metrology/Motion Instrumentation Stock Index* slipped 0.1% to 486.87 in May. Four companies declined and one traded flat, while two ended the month higher. **MTS Systems** recorded the only significant gain, up 3%, while **RAE Systems** led all decliners, dropping 8%. Year to date, the *Index* is up 16.2%, led by **FEI** and **Strategic Diagnostics**, up 41% and 29%, respectively. **Nanometrics** has led all decliners, falling 22%.

On May 24, AmTech/JSA Research initiated coverage on **Veeco Instruments** with a "Buy" recommendation, sending shares 0.9% higher. Near the end of the month, **Strategic Diagnostics** recorded a significant jump in trading volume with no news or announcements, leading investors to speculate on possible acquisition deals. The largest trading volume was recorded on May 25 when shares increased 4.7%.

Please see *Stock Indexes* page 8

Company: Exchange	Market Value (US \$000s)	52 Week Low High	Price 5/31/2007	Change 1 Month	Change YTD	P/E	EPS 12 Month	EPS FY	LTD/ Equity	FY ROE	R&D/ Sales
Laboratory Instrumentation											
Affymetrix: o	\$1,764,172	17.50 31.95	\$25.98	-1%	13%	N/A	-0.29	-0.20	25%	N/A	24%
Applied Biosystems: n	\$5,428,906	27.91 39.49	\$28.39	-9%	-23%	33	0.87	1.44	9%	19%	9%
Beckman Coulter: n	\$4,144,790	50.54 68.20	\$65.40	4%	9%	22	3.01	2.92	117%	16%	10%
Bio-Rad Laboratories: a	\$2,028,553	62.66 88.54	\$74.70	6%	-9%	20	3.66	3.83	55%	13%	10%
Bruker BioSciences: o	\$899,783	4.52 11.56	\$8.54	-26%	14%	45	0.19	0.18	23%	10%	11%
Caliper Life Sciences: o	\$216,103	3.95 6.43	\$4.60	-19%	-20%	N/A	-0.82	-0.75	11%	N/A	23%
Cepheid: o	\$643,640	6.50 13.14	\$11.70	3%	38%	N/A	-0.46	-0.50	2%	N/A	29%
CombiMatrix: o	\$35,711	0.50 1.93	\$0.68	28%	-14%	N/A	-0.33	-0.49	27%	N/A	165%
Dionex: o	\$1,386,166	45.76 73.70	\$70.90	3%	25%	36	1.98	1.74	3%	19%	8%
Harvard Bioscience: o	\$162,307	3.49 6.18	\$5.17	-7%	1%	N/A	-0.08	-0.08	7%	N/A	4%
Illumina: o	\$1,743,160	23.95 45.87	\$32.63	0%	-17%	N/A	-4.76	0.82	154%	16%	18%
Luminex: o	\$410,486	11.82 20.75	\$12.41	-10%	-2%	414	0.03	0.05	3%	3%	16%
MOCON: o	\$63,760	8.57 14.10	\$11.65	-10%	-8%	18	0.65	0.71	0%	18%	7%
O.I. Corp: o	\$35,489	9.53 15.46	\$12.40	-3%	9%	26	0.47	0.81	2%	10%	10%
PerkinElmer: n	\$3,267,702	16.31 26.60	\$26.51	10%	19%	30	0.89	0.95	35%	8%	24%
SEQUENOM: o	\$145,160	1.33 6.24	\$4.34	18%	-7%	N/A	-0.54	-0.71	18%	N/A	42%
STARLIMS: n	\$115,861	N/A N/A	\$13.48	N/A	N/A	19	0.72	0.58	1%	27%	9%
Symyx Technologies: o	\$348,580	9.86 27.37	\$10.49	-9%	-51%	66	0.16	0.24	0%	4%	52%
Thermo Fisher Scientific: n	\$24,084,060	33.85 53.90	\$54.60	5%	21%	63	0.87	0.84	36%	1%	4%
Transgenomic: o	\$34,925	0.31 0.89	\$0.71	-11%	58%	N/A	-0.08	-0.07	1%	N/A	10%
Varian Inc.: o	\$1,820,348	38.65 60.50	\$58.85	2%	31%	30	1.95	1.59	8%	9%	7%
Waters: n	\$6,222,839	38.65 60.50	\$60.30	1%	23%	27	2.25	2.13	171%	61%	6%
X-Rite: n	\$433,436	7.50 15.47	\$14.96	20%	22%	N/A	-1.01	-1.03	104%	N/A	15%
Process/Metrology/Motion Instrumentation											
FEI Company: o	\$1,680,890	18.78 39.25	\$37.10	0%	41%	63	0.59	0.53	86%	6%	12%
MTS Systems: o	\$813,916	30.86 44.40	\$43.91	3%	14%	20	2.16	2.04	14%	23%	5%
Nanometrics: o	\$109,303	5.74 11.41	\$6.19	-4%	-22%	N/A	-1.63	-1.47	2%	N/A	15%
RAE Systems: n	\$150,032	2.40 4.54	\$2.53	-8%	-21%	N/A	-0.05	-0.03	11%	N/A	9%
Strategic Diagnostics: o	\$99,157	2.37 5.40	\$4.88	1%	29%	108	0.05	0.03	1%	2%	10%
Veeco Instruments: o	\$566,812	16.91 25.00	\$18.12	-1%	-3%	36	0.50	0.48	54%	5%	14%
Zygo: o	\$282,048	11.95 17.65	\$15.12	-6%	-8%	18	0.86	0.79	2%	9%	9%
Lab Consumables/Equipment											
Invitrogen: o	\$3,499,359	54.70 73.77	\$72.44	11%	28%	N/A	-3.44	-3.72	82%	12%	9%
Kewaunee Scientific: o	\$27,897	7.38 11.90	\$11.19	2%	29%	37	0.30	0.08	19%	1%	0%
Millipore: n	\$4,092,461	59.58 77.75	\$74.77	1%	12%	46	1.64	1.79	141%	10%	7%
New Brunswick Scientific: o	\$72,981	7.00 9.49	\$7.85	-7%	-3%	22	0.36	0.41	2%	8%	6%
Pall: n	\$5,583,950	25.26 45.45	\$44.75	7%	30%	26	1.69	1.16	58%	12%	3%
QIAGEN: o	\$2,722,549	12.80 18.18	\$17.43	-2%	15%	37	0.47	0.46	90%	12%	9%
Sigma-Aldrich: o	\$5,799,520	33.38 43.82	\$43.28	3%	11%	20	2.12	2.05	29%	20%	3%
Stratagene: o	\$244,415	3.98 10.95	\$10.86	1%	46%	N/A	0.01	0.00	9%	0%	13%
TECHNE: o	\$2,360,322	45.27 61.97	\$59.69	1%	8%	29	2.05	1.85	N/A	22%	9%
Diversified Instrumentation											
Agilent Technologies: n	\$15,764,210	26.96 38.97	\$38.17	11%	10%	18	2.07	7.50	61%	91%	13%
AMETEK: n	\$4,033,689	26.39 38.15	\$37.74	4%	19%	21	1.81	1.71	69%	19%	5%
Danaher: n	\$24,104,325	59.72 75.97	\$73.50	3%	1%	20	3.59	3.48	56%	17%	5%
Mettler-Toledo Int'l: n	\$3,826,984	56.59 101.88	\$98.30	1%	25%	24	4.07	3.86	97%	25%	5%
Roper Industries: n	\$5,386,628	41.23 58.51	\$58.36	4%	16%	26	2.27	2.13	63%	13%	3%
Teledyne Technologies: n	\$1,649,664	29.10 48.09	\$46.08	4%	15%	20	2.32	2.26	91%	19%	4%
Laboratory Instrumentation Stock Index											
			576.11	1.3%	6.8%	69			40%	5%	11%
Process/Metrology/Motion Instrumentation Stock Index											
			496.87	-0.1%	16.2%	29			43%	7%	8%
Lab Consumables/Equipment Stock Index											
			450.53	4.0%	18.1%	85			66%	10%	3%
Diversified Instrumentation Stock Index											
			107.65	5.5%	7.7%	19			62%	37%	7%
Dow Jones Industrial Average			13627.64	4.3%	9.3%						
S&P 500			1530.62	3.3%	7.9%						
NASDAQ Composite			2604.52	3.1%	7.8%						
Region											
Company	Market Value (US \$000s)	Market Value (Local 000s)	Price 5/31/2007 (Local)	Change 1 Month	Change YTD	P/E	EPS 12 Month	EPS FY	LTD/ Equity	FY ROE	R&D/ Sales
Pacific Shares											
Hitachi High-Technologies: t	\$3,592,801	¥437,459,432	¥3180	4%	-11%	17	¥189.76	¥139.24	13%	10%	2%
Horiba: t	\$1,692,451	¥206,072,842	¥4870	12%	10%	23	¥207.30	¥153.43	16%	10%	6%
JEOL: t	\$535,430	¥65,193,965	¥822	2%	15%	32	¥25.38	¥15.06	79%	4%	6%
Shimadzu: t	\$2,963,340	¥360,816,220	¥1220	18%	16%	28	¥43.16	¥37.53	42%	9%	3%
Techcomp: si	\$41,452	SGD 63,450	SGD 0.47	19%	71%	9	\$0.03	\$0.03	5%	19%	1%
European Shares											
Genetix: l	\$89,436	£45,177	£0.63	-19%	15%	18	£0.04	£0.04	7%	7%	10%
Millbrook Scientific Instruments: l	\$3,094	£1,563	£0.03	24%	-25%	N/A	-£0.02	-£0.01	1%	0%	N/A
Oxford Instruments: l	\$275,051	£138,937	£2.88	9%	14%	N/A	-£0.09	-£0.07	128%	N/A	7%
Renishaw: l	\$1,072,101	£541,550	£7.44	1%	-1%	19	£0.40	£0.42	33%	21%	10%
Robotic Technology Systems: l	\$19,631	£9,916	£0.16	-3%	-11%	N/A	-£0.02	-£0.02	9%	N/A	N/A
Spectris: l	\$2,303,265	£1,163,448	£9.36	-4%	19%	19	£0.49	£0.49	51%	21%	7%
Whatman: l	\$746,098	£376,876	£2.84	-2%	7%	15	£0.19	£0.19	46%	37%	2%
Alpha MOS: c	\$13,386	€ 9,950	€ 3.80	-12%	-8%	N/A	-€ 0.14	-€ 0.14	11%	N/A	N/A
Analytik Jena: g	\$45,752	€ 34,009	€ 7.30	-1%	5%	27	€ 0.27	€ 0.27	38%	4%	6%
Biohit: h	\$48,212	€ 35,837	€ 2.77	9%	36%	N/A	-€ 0.06	-€ 0.06	55%	N/A	5%
Cybio AG: g	\$25,321	€ 18,822	€ 4.55	-5%	-3%	51	€ 0.09	€ 0.23	6%	9%	7%
Sartorius: g	\$940,727	€ 699,271	€ 41.02	-3%	7%	24	€ 1.70	€ 1.70	52%	11%	7%
Tecan: s	\$823,032	CHF 1,008,379	CHF 86.6	-4%	14%	25	CHF 3.52	CHF 3.52	38%	22%	10%
Biotech AB: st	\$115,098	SEK 796,377	SEK 11.9	-6%	-11%	N/A	-SEK 0.36	-SEK 0.36	27%	N/A	139%

The IBO composite stock indices are weighted by market capitalization. Index averages for the various financial ratios presented are also weighted statistically to reflect the relative sizes of the constituent companies. Lab Instrumentation Index: 12/31/91=100; Process/Metrology/Motion Instrumentation Index: 12/31/93=100; Lab Consumables/Equipment Index: 1/1/01=100; Diversified Instrumentation Index: 1/1/07=100. Exchanges: n=NYSE; a=AMEX; o=NASDAQ; t=Tokyo; si=Singapore; l=London; g=Germany; s=Switzerland; st=Sweden; c=Continuous Market; h=Finland.

Life Science Consumables

Company Announcements

- **GE Healthcare** will exclusively distribute under the ULTA brand a new range of microfiltration cartridges and disposable filters from **Parker domnick hunter** for biopharmaceutical manufacturing. The companies also entered into a joint technology development agreement.
- As part of an R&D collaboration, **Invitrogen** will contribute its PD Direct media and cell line development expertise and **Viropro** will contribute its protein production expertise, enabling third-party technologies to be prescreened against Invitrogen cell culture products.
- Under a multiyear joint R&D program, **VisEn Medical** will work with **Merck & Co.** to develop and apply a range of fluorescence imaging agents for real-time imaging of key disease biomarkers in vivo. The agreement expands the companies' current collaboration.
- **Matrix Innovation** appointed **Activotec** the European distributor for its resins and supported reagents.
- **Immunicon** and **Kreatech Biotechnology BV** entered into an exclusive cross licensing agreement that will allow Immunicon to sell Kreatech products in North America.
- **Promega** and the **Chinese Academy of Sciences' Guangzhou Institute of Biomedicine and Health** will co-develop compound profiling solutions for small molecules and traditional Chinese medicine drug screening.
- **ThromboGenics** exclusively licensed its technology for the production of stem cell culture medium to **Millipore**, whose Chemicon division has marketed it as RESGRO since 2005.
- **Transgenomic** appointed Frank R. Witney, PhD, to its Board in April. He is president and CEO of **Panomics**.
- **Sigma-Aldrich** will market and exclusively distribute **ChiroSolve's** ChiroSolv kits, which enable the rapid screening of chiral resolving agents and solvents for the classical resolution of enantiomers.
- **Assay Designs** named Dan Calvo president and CEO. He was previously president and CEO of **Cellomics**.
- **ChanTest** appointed **Cambridge BioScience** as its European distributor.
- **Techne** promoted Richard A. Krzyzek, PhD, to vice president of Research for its Biotechnology Division.

Product Introductions

- **Applied Biosystems** released the BigDye Xterminator Purification Kit to shorten the time and work required to perform purification prior to Sanger sequencing.
- **Luminex** launched the MagPlex microspheres, enabling automated xMAP-based assays.
- **PerkinElmer** introduced the Immuno-catch Kit, featuring immuno-capture technology, for MS detection.
- **Agilent** launched the Small RNA Kit for its 2100 Bio-analyzer microfluidics system.
- **Molecular Devices** introduced the live-cell Neurotransmitter Transporter Uptake Assay Kit.


AOAC continued from page 3

screen," explained Dr. Cook. "I think that the seafood industry itself, at the production level, would find that to be too expensive and time consuming a test. What we're now looking at is the need to develop both the fast screens—multiplex is really coming online now—and to pair up multiplex-type testing with the confirmatory testing," she noted. "Regulatory labs might use a mass spectrometer (MS) or a tandem MS confirmation. We hope to pair those methods up and work closely with the regulatory community to establish related guidelines for safe seafood practices in production," she noted.


Another pressing food safety issue is pesticides. "The pesticides are a very, big issue in other countries, but not quite so much in the US. Antibiotics are becoming more important," Dr. Cook told *IBO*. The Chemical Contaminants and Residues in Food Community will have subcommittees for pesticides, minerals, antibiotics and possibly radioactivity. Mycotoxins already have an AOAC community.

Asked about trends in food safety testing, Dr. Cook discussed the acceptance of multiple methods. "We've moved away from having a specific method to do a specific analysis in a lot of cases. There was a big discussion at the European Pesticide Residue Workshop about 'did they want to standardize on one method?' No one really wanted to do that," she explained. "I think what you're seeing is a move towards performance-based methods. Laboratories might analyze samples by specific methods, but they have to be able to show that the method can perform at a particular level." This is an issue that the Community hopes to address. "That is really where the AOAC methods can be very useful because they demonstrate performance for these laboratories," she emphasized. The change has also encouraged a more efficient approach to testing. "That is why you see this trend toward large multianalyte screens because then you can validate and show performance for a whole screen, [such as] 50 to 100 compounds in one method."

Screening for unknowns is also receiving more attention. "The newest concept with counterterrorism is looking at a sample that is a control and comparing it to your unknown and finding anything that shouldn't be there, that are different," Dr. Cook told *IBO*. "There's a lot of need in the analytical community for techniques that will allow you to simply do subtraction, that will allow you to look at your sample versus your control and find what is there that's different."

Dr. Cook also views the Community as vital for gathering input from different parties. "AOAC has become more than just a place where you're going to validate methods, where you're just going to go to find methods. What it is are doing now is brokering solutions." 

Correction

On page 7 of the May 15 issue of *IBO*, there were two errors in the table for Laboratory Instrumentation executive compensation. Under the heading "Long-Term Compensation," the second subheading should have read "Fair Value Option Award. '06." In addition, the value for Marijn E. Dekkers's options awarded in 2006 did not appear. The figure is \$12,373,650. 

Industry Watch

R&D: According to a report by Marks & Clerk, a law firm specializing in intellectual property, advances in biotechnology are being driven by universities and public research institutes. The most biotech patent families—"groups of patents associated with a single invention"—filed in the period 2002–2006 was 1,022, by the Japan Science and Technology Agency, followed by the University of California and the US government (primarily the National Institutes of Health), with 543 and 443, respectively. US universities make a strong showing in the top 20 list of biotech patent family holders: the University of Texas is also in the top 10, and five other US universities are in the top 20. All of the most widely cited patents are held by universities. Companies are still having an impact, though. Genentech is fourth with 421 patents, Millennium Pharmaceuticals is sixth with 272 and Appera is eighth with 195. Europe has lagged behind the US and Japan, but Denmark was noted by the report as a bright spot for patenting development. Biotech patenting has become increasingly focused, in contrast to the early patenting of "speculative, sequence-based inventions." The hottest patenting areas are antibodies, gene therapy and stem cells.

Source: *Financial Times*

Environment: According to *Environmental Laboratory Washington Report's* yearly survey, most companies in the environmental testing business reported slightly higher earnings in 2006. However, general expectations for industry growth are not high: most respondents to the survey believe that the market, which generates an estimated \$1.7 billion in annual revenues, will be flat in coming years. In 2006, Severn Trent Laboratories was purchased by the private equity firm that owns TestAmerica (see *IBO* 9/30/06). This deal creates a company with \$355 million in revenues; its nearest competitor on the top 20 list for the industry, Pace Analytical Services, has annual revenues of \$63 million. The other companies in the top quarter of the list are Accutest Laboratories, EMSL Analytical and Columbia Analytical Services, with \$50.5 million, \$42 million and \$35.9 million in annual revenues, respectively.

Source: *Environmental Laboratory Washington Report*

Government: In March, the Health and Human Services (HHS) Secretary's Advisory Committee on Genetics, Health and Society prepared a draft report called "Realizing the Promise of Pharmacogenomics." The report recommends that the National Institutes of Health make greater allocations to basic research into the biochemistry and genetics involved in drug metabolism, action and effectiveness. In addition, the report pushes for a guidance document from the FDA on codeveloping pharmacogenomics (PGx) drugs and diagnostics products. Another recommendation of the report is for HHS to provide the private sector with incentives—such as a faster FDA approval process and increased intellectual property protection—to develop PGx products for smaller markets. The report places a high value on data sharing, both between companies and among research, regulatory and medical record databases.

Source: *US Department of Health and Human Services*

Region Watch

Russia: In April, President Vladimir Putin announced the Presidential Nanotechnology Initiative. At least RUB 28 billion (\$1.1 billion) in government funding will be allocated for the initiative through 2010; some funds will go to the purchasing new laboratory equipment. According to the Russian government, RUB 150 billion (\$5.8 billion) has already been invested in nanotechnology. Putin cited the excessive dependence of Russia's economy on oil and gas as a motivation for the new program. Businesses are being encouraged to take part in the initiative. The program will also transform the Kurchatov nuclear institute, which has a synchrotron radiation source to be used for nanotechnology R&D, into Russia's nanotechnology research hub.

Source: *The St. Petersburg Times*

India: The Indian prime minister's office has assigned responsibility for the Food Safety and Standards (FSS) Act, which will establish a central regulatory body for the food industry (see *IBO* 8/31/06), to the Union Ministry of Health and Family Welfare. The regulatory body will be created in August or September. According to the Indian government, INR 4 billion (\$98.9 million) has been earmarked for the creation of food laboratories. One of the goals of the FSS Act is establishing food regulation standards that are in line with the standards laid out in internationally recognized documents on food standards, such as the Codex Alimentarius.

Source: *Food & Beverage News*

Japan: The Japanese government has introduced two new programs to support research centers. The World Premier International Research Center Initiative (WPI) will provide yearly funding of ¥500 million–¥2 billion (\$4–\$17 million) for five top-level research centers for at least 10 years. For Japanese fiscal year (JFY) 2007 (April 2007–March 2008), WPI's budget is ¥3.5 billion (\$30 million), which will fund centers during their first six months, beginning October 2007. The Global Centers of Excellence Program (Global COE) will support roughly 60 new academic research centers in JFY 2007. Global COE has a JFY 2007 budget of ¥15.8 billion (\$133 million), and is expected to provide ¥50–¥500 million (\$0.4–\$4.2 million) per year per center, for up to five years. In JFY 2008, the government expects to fund an additional 60 Global COEs, and 10 new centers per year JFY 2009–JFY 2011.

Source: *National Science Foundation Tokyo Regional Office*

Asia: A new survey by PricewaterhouseCoopers indicates that Asia is likely to become the top market in the world for medicines, and a major center for research and manufacturing. Of the 185 executives from domestic and multinational companies (MNCs) in Asia who were surveyed, 58% believe that the pharmaceutical industry will shift its focus to Asia. About 33% of the MNCs intend to expand in Asia through acquisitions or establishing new sites in the region. China and India are the most popular locations, followed by Singapore and South Korea. Better patent protection is also a factor of Asia's rise, as 75% of respondents said intellectual property protection in Asia improved over the last five years.

Source: *Reuters*

Broad-Based Companies

Company Announcements

- In March, **Techcomp** announced exclusive distribution agreements in China and Asia Pacific markets with **Kurabo Industries**, **Implen GmbH**, **Corona** and **Astranet**.
- In March, the **Verder Group** and engineering firm **Samuel Hodge** acquired **Autoclude**, a manufacturer of peristaltic pumps for the OEM and laboratory markets.
- In April, **Mocon** opened a technical support office in Shanghai, China to support its permeation, headspace analysis and leak detection products in Asian markets.
- **Thermo Fisher Scientific** Chairman Paul Meister, former vice chairman of **Fisher Scientific**, retired in April. Jim Manzi, who served as Thermo Electron's chairman since 2003, was named chairman in May. He is chairman of **Stonegate Capital**.
- The *Albany Times Union* reports that **Thermo Fisher Scientific** will close the **Rupprecht & Patashnick** facility (see *IBO* 4/30/05) in East Greenbush, New York by October.
- Under a reciprocal supply agreement, **TC Tech**, a **Thermo Fisher Scientific** affiliate, will supply **Sartorius AG** with disposable process containers until the end of 2007 and with disposable process containers assembled with Sartorius filter capsules until 2012. Sartorius will supply TC Tech with filter units for a further five years.
- **Quintiles Transnational** and **Thermo Fisher Scientific** created **Cenduit**, a joint venture to provide integrated Interactive Response Technology (IRT) services for drug development. IRT integrates patient interaction systems to support clinical development programs.
- In April, **Agilent** opened the Open Lab & Solution Center and the Life Sciences & Chemical Analysis Center of Excellence in Beijing's Wang Jing Science Park. The Centers combine the Beijing-based R&D, sales, marketing, technical support and after-sale functions in one location.
- In May, **Bruker BioSciences** elected three new directors to its Board: Wolf-Dieter Emmerich, former general manager of **NETZSCH** Thermal Analysis; Brenda J. Furlong, former managing director and head of Fixed Income at **Columbia Management Group**; and Richard A. Packer, chairman and CEO of **ZOLL Medical**. Chris Canavan and Taylor Crouch stepped down from the Board.
- **PerkinElmer** opened a new headquarters and technology center in Waltham, Massachusetts, in April. The 115,000 sq. ft. campus includes an R&D facility for the drug discovery, cellular science and diagnostics businesses.

Product Introductions

- Consulting firm **Taratec** introduced Intelligent Solutions-LAB, a family of services designed to improve laboratory performance and productivity. It includes Operations Intelligence-LAB, Workflow Intelligence-LAB and Technology Intelligence-LAB.
- **Thermo Scientific** Asset Management Services appointed a specialized European team and launched a tailored service solutions with a focus on the UK, Germany, France, Spain, Italy, the Netherlands and Scandinavia.

Stock Index continued from page 4

Lab Consumables/Equipment Stock Index

The *Laboratory Consumables/Equipment Stock Index* grew 4.0% in May to 450.53. Seven companies ended up in positive territory while two companies decreased in price. **Invitrogen** gained the most, up 11%, while **New Brunswick Scientific** led decliners for the second straight month, down 7%. For the year, the *Index* has risen 18.1%, with seven companies up in double-digit figures and only **New Brunswick** in negative territory, down 3%. **Stratagene** and **Pall** lead the *Index*, up 46% and 30%, respectively.

After the market's close on May 1, **Invitrogen** reported strong first quarter earnings, sending shares up 4.8% to close the next trading day at a 52-week high of \$69. The same day, analysts from Bear Stearns, Lehman Brothers and Bank of America increased their 2007 earnings per share estimates to \$3.51 from \$3.40 and raised their price targets. ThinkEquity Partners increased its price target and maintained its "Accumulate" rating. To enhance its SAFC Pharm business, **Sigma-Aldrich** announced the purchase of **Molecular BioServices** for an undisclosed amount on May 9. Shares reacted favorably, climbing 1.4%.

Diversified Instrumentation Stock Index

The *Diversified Instrumentation Stock Index* increased 5.5% for the month to 107.65, with all six companies improving and **Agilent** leading the *Index*, gaining 11%. For the year, the *Index* is up 7.7%, with all companies in positive territory.

On May 1, Goldman Sachs upgraded **Danaher** from "Neutral" to "Buy," citing accelerated organic revenue growth. Goldman raised its 12-month price target on the stock to \$81 from \$76, leading shares to climb 2.3% over the following two days. On May 24, **Danaher** agreed to acquire **ChemTreat** for \$435 million in cash and, after the market's close, increased its dividend by 50% to \$0.03 a share. The following day, shares climbed 3.2%. Standard & Poor's Rating Services raised its rating on **Roper Industries** to an investment-grade designation from a noninvestment-grade designation on May 18, sending shares up 1.2%. After the market's close on May 14, **Agilent** reported second quarter revenues of \$1.32 billion (see page 9), in line with analysts' expectations, but earnings per share fell \$0.01 short of expectations of \$0.44. Both Goldman and Credit Suisse increased their price target, leading shares 5.2% higher.

International

This month, all Pacific Region companies were in positive territory. **Techcomp**, **Shimadzu** and **Horiba** rose 19%, 18%, and 12%, respectively. For the year, four of the five Pacific Region companies have improved in double digits, with only **Hitachi** declining, down 11%.

In May, 10 European companies in the stock table lost ground and four improved. Leading the growth, **Millbrook** rebounded 24% after a poor April. **Genetix** and **Alpha MOS** lost the most ground, falling 19% and 12%, respectively. For the year, eight European companies have positive returns and six show negative returns. **Biohit** and **Spectris** lead the way, up 36% and 19%, respectively, while **Millbrook** has continued to show the largest loss, down 25%. ↻

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increased 20.7%.

Among the companies benefiting from growth in both industrial and environmental markets were Dionex, Thermo Fisher Scientific, Varian and Waters. Agilent, Dionex and Waters benefited from the ongoing rebound in pharmaceutical spending. The sour note for some companies was academic and government spending, particularly in the US. Bio-Rad Laboratories and Applied Biosystems both commented on the trend.

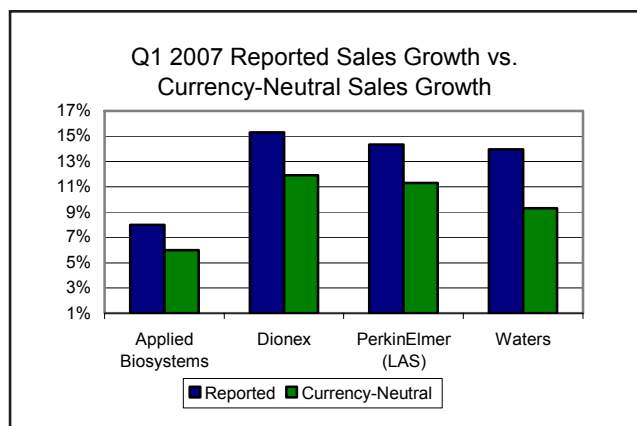
Another disappointing market was Japan. Applied Biosystems, Bio-Rad and Mettler-Toledo each noted the market's difficulties. The US showed a slight rebound, which Dionex and Waters attributed to pharmaceutical spending, but Varian noted that the movement of manufacturing overseas continued to hurt the US market's prospects.

HPLC sales remained robust, according to Agilent, Dionex and Waters. And Mass spectrometry sales growth, led by food and environmental testing applications, were once again a highlight for Agilent, Applied Biosystems, Thermo Fisher Scientific and Varian. Bruker BioSciences' Bruker AXS unit and Waters's TA Instruments division also reported strong demand.

For Affymetrix and Bio-Rad, the quarter was more

challenging. Affymetrix attributed its slower growth to the decreased pricing of certain products, while Bio-Rad noted a tough Asian academic market and an unexpectedly weak US academic market. Germany-based Analytik Jena AG reported flat quarterly sales as domestic sales posted a decline.

The summary of financial results presented here is based on companies' financial reports, conference calls and SEC filings.



Affymetrix's first quarter revenues slipped 6.9% to \$80.4 million. Product revenue declined 12.4% to \$57.8 million primarily due to lower pricing of probe array products. Revenue for probe arrays declined 17% to \$35.7 million; \$6.5 million of the decline was attributed to pricing pressure on its two-chip 500K genotyping product. Similarly, Instrument revenue dropped 31.0% to \$8.5 million. Of this decline, \$1.6 million was a result of lower selling prices of its GeneChip Scanner 3000 and \$1.5 million was due to falling unit sales. Conversely, Reagent revenue climbed 30.0% to \$13.6 million primarily due to increased unit sales. The company reported a consumables mix of 65% RNA products and 35% DNA products. Product-related revenue improved 2.2% to \$13.5 million despite a significant drop in subscription fees. Royalties and revenue from Perlegen Sciences helped offset lower product sales, gaining 29.1% and 26.0% to \$2.4 million and \$6.7 million, respectively. The company reported that 65% of sales were to academic customers and 35% were to industrial markets. Excluding restructuring costs of \$5.4 million, operating loss widened to \$3.3 million from a loss of \$3.0 million a year ago. For 2007, revenues are estimated to be \$365–\$385 million with gross margins in the mid-60% range.

Fiscal second quarter revenues for **Agilent Technologies'** Bio-Analytical Measurement (BAM) segment grew 15.1% to \$428 million to account for 32.4% of total company revenues. This marked the fourth consecutive quarter of double-digit sales growth for BAM. Orders climbed 14.0% to \$457 million. Operating profit jumped 48.9% to \$67 million, and gross margins improved three percentage points to 53%. Sales in the Americas, Europe and Asia grew 11%, 19% and 16%, respectively. Revenue for Chemical Analysis rose 11% to \$234 million led by 30% growth for the forensics market and 14% for the environmental market.

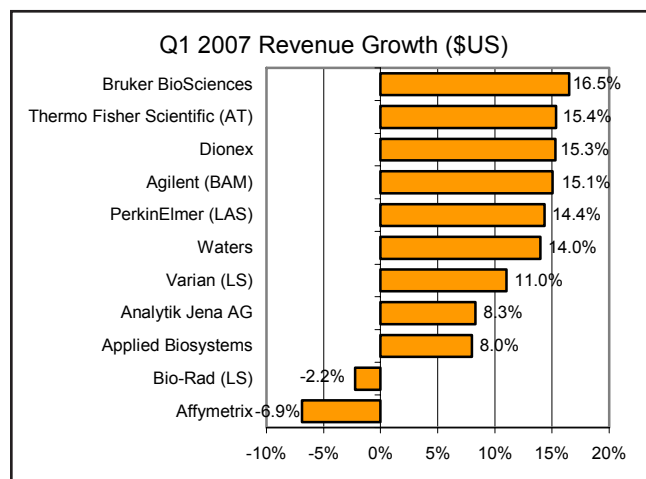
Revenue in the food safety market grew 7% and petrochemical testing orders remained strong at 16%, but sales were limited to 3% growth due to the transition to new GC and GC/MS products. Chemical Analysis consumables and services revenues grew at double-digit rates. Life Sciences reported revenue of \$194 million, up 20%, as a result of strong demand for the new LC and LC/MS portfolio. Microarray revenues increased more than 50%, benefiting from comparative genomic hybridization applications. Pharmaceutical and biotechnology markets improved 20%. Additionally, growth of contract research organizations and R&D spending by generic pharmaceutical companies and government organizations helped spur sales.

Excluding favorable exchange rates, **Analytik Jena AG's** sales for the fiscal second quarter edged 0.8% lower to €16.1 million (\$21.1 million = €0.76 = \$1) from €16.2 million (\$19.5 million = €0.83 = \$1) (see page 12). Operating profit climbed 38.1% to €0.8 million (\$1.0 million = €0.76 = \$1) from €0.6 million (\$0.7 million = €0.83 = \$1) on a currency-neutral basis. Analytical Solutions sales slowed 4.6% to €7.9 million (\$10.4 million) after a strong fiscal first quarter, but still accounted for half of instrument sales. A substantial increase in orders for the Optical Solutions business, particularly during the International Trade Fair for Hunting and Sporting Arms, drove sales up 33.8% to €1.6 million (\$2.1 million) to represent 10.0% of total sales. Project Solutions and Biosolutions revenues declined 2.4% and 1.2% to €5.9 million (\$7.7 million) and €0.7 million (\$0.9 million), making up 36% and 4.0% of total sales, respectively. Sales in Germany accounted for 21.0% of revenues and declined 11.0% to €3.4 million (\$4.4 million), while sales outside Germany improved 2.3% to €12.7 million

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(\$16.7 million). Over the last two quarters, sales to the US improved 50.1% to €1.5 million (\$2.0 million). While sales momentum is expected to continue, fiscal third quarter results may slow in comparison to the previous quarters. However, the company anticipates improved earnings in all business units.



Applied Biosystems announced fiscal third quarter revenue growth of 8.0% to \$529.9 million, or 6.0% growth on a currency-neutral basis. The acquisition of Ambion (see *IBO* 12/31/05) contributed 2.6% to revenue growth. Instrument sales grew 4.1% to \$215.6 million, Consumables sales climbed 15.6% to \$221.0 million (including \$18.5 million from Ambion) and all other revenue edged 0.9% higher to \$93.3 million. Instrument and Consumables revenues both benefited from increased sales in the Mass Spectrometry and Real-Time PCR/Applied Genomics product categories. The Instrument segment reported strong growth in quality and safety testing applications, especially for food and environmental testing. Real-Time PCR/Applied Genomics sales jumped 13.0% (or 10.0% excluding Ambion), DNA Sequencing sales improved 3.1%, Mass Spectrometry revenue gained 11.8%, Core PCR & DNA Synthesis sales declined 9.3%, due to lower PCR royalty revenue, and sales from all Other Product Lines improved 20.0% (see table). The Global Services Division grew 14% across all of the product categories, benefiting from new service plans and specialized services. Adjusted operating income climbed 7.8% to \$94.0 million, and gross margin improved 20 basis points to 56.4%. US sales rose 4.3% to \$227.4 million, European sales jumped 16.4% (or 9% on a currency-neutral basis) to \$182.8 million, Japanese sales declined 6.0% to \$57.9 million, including an unfavorable impact from foreign currency of approximately 1%, and sales to other Asian Pacific countries rose 13.0% to \$39.7 million, including a favorable foreign currency impact of approximately 2%.

Life Sciences (LS) sales for **Bio-Rad Laboratories** slipped 2.2% or, on a currency-neutral basis, declined 5.7% to \$141.6 million to account for 43.9% of company sales. The continued weakness in US and Asian academic

markets negatively impacted LS sales. Revenue was also affected by lower sales of the gene expression product line and BSE tests. Excluding the decline in BSE revenues, LS sales increased 2.5% on a currency-neutral basis. The only significant area of growth came from products for protein expression analysis. LS segment profits dropped significantly to \$5.5 million, down 61.0%. Weaker profitability was attributed to lower gross margins, a cost of goods resolution payment of \$1.8 million and increased R&D efforts related to the CIPHERGEN acquisition (see *IBO* 8/15/06). Competition in the BSE test market drove profit margins lower and continued to negatively impact the LS segment. The company expects mid-single-digit top-line growth for 2007.

Bruker BioSciences' revenues grew 16.5% to \$110.5 million, or 10.6% on a currency-neutral basis. Excluding acquisition charges, operating income jumped 28.4% to \$7.8 million and gross profit margin improved 150 basis points to 47.6% of total revenues. Product revenue rose 13.7% to \$95.4 million and Service revenue soared 44.5% to \$15.0 million, while Other revenue slipped 76% to \$0.2 million. Bruker AXS sales rose 37.2%, or 30.6% on a currency-neutral basis, to \$51.9 million. Acquisitions accounted for 12.0% of AXS revenue growth. X-Ray System sales grew 42.3% to make up 67.3% of AXS revenue, Aftermarket sales improved 8.7% to account for 23.9% and Other Systems revenue gained 145.3% to represent 8.8%. Bruker Daltonics sales grew 4.1% to \$39.1 million, but declined 1.5% on a currency-neutral basis as a result of reduced OEM sales for certain life science systems and reduced grant revenue. Life Science Systems and Grant revenues dropped 7.1% and 76.4% to account for 69.1% and 0.4% of Daltonics sales, respectively. CBRN Detection and Aftermarket sales improved 155.7% and 29.7% to represent 9.0% and 21.9% of Daltonics sales, respectively. Bruker Optics sales edged 2.1% higher to \$21.7 million but, excluding the effect of the foreign exchange benefit, revenue declined by 2.7% due to production delays and lower Other System sales. Sales of Molecular Spectroscopy systems improved 0.3% to account for 71% of Optics sales, Aftermarket revenue jumped 37.9% to represent 21.3% and Other Systems revenue decreased

Segment Revenue for Applied Biosystems	Sales (Millions)	% of Total Rev.
DNA Sequencing	\$140.7	27%
Real-Time PCR/Applied Genomics	\$183.3	34%
Mass Spectrometry	\$127.3	24%
Core PCR & DNA Synthesis	\$46.9	9%
Other Product Lines	\$31.7	6%

34.3% to make up 7.7%. During the quarter, Bruker BioSciences acquired Keca Metal Products, which provides specialized machining services, mainly to Bruker Optics.

Revenues for **Dionex's** fiscal third quarter improved 15.3%, or 11.9% on a currency-neutral basis, to \$84.9 million. Environmental sales grew in the high single digits,

Life Science sales improved around 15% and Industrial sales increased approximately 12%–13%. Operating income climbed 19.2% to \$18.0 million, while gross profit margin slipped 30 basis points to 65.6% of total sales. Revenue growth was spurred by strong demand for the HPLC, ASE and consumables product lines. Consumables and instrument revenues both improved around 12%, while Ion Chromatography sales climbed 14% and HPLC sales improved 21%. North American sales climbed 13%, European sales grew 19% (or 11% in local currency) and Asian/Pacific sales rose 12%. The company anticipates net revenue for the fourth quarter of \$79–\$83 million. For the full year, sales guidance was increased from a February guidance of \$312–\$320 million to \$320–\$324 million and diluted earnings per share are estimated to be \$2.24–\$2.28.

Sales of **Mettler-Toledo International's** Laboratory products increased 5% in local currencies for the first quarter to account for 44% of total company revenues of \$387.8 million. Process analysis, laboratory balances and analytical instruments, led by strong sales of titrators and pH meters, all reported high to mid-single-digit growth. Pipettes sales were in the low single digits with modest US growth, but positive international sales, while AutoChem sales were flat.

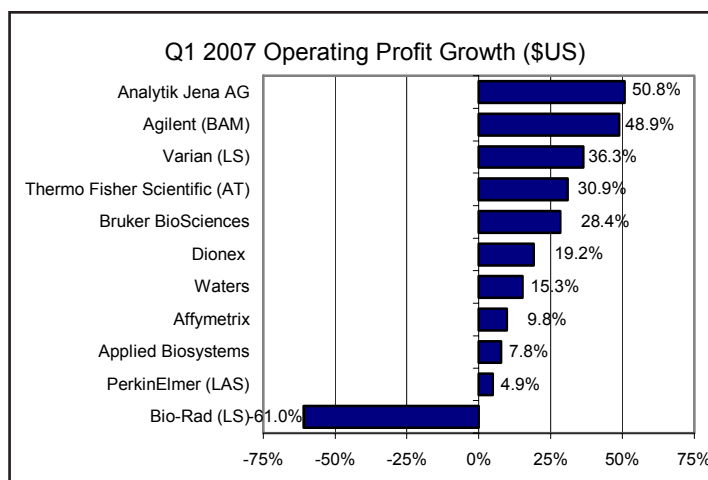
In the first quarter, revenues for **PerkinElmer's** Life and Analytical Sciences unit (LAS) grew 14.4% to \$299.5 million, accounting for 74.3% of total company sales. Acquisitions contributed 5.3% growth to LAS sales, while favorable currency transactions added 3.1% growth. Genetic Screening, Service and Environmental/Chemical revenues each grew in double digits to account for 14%, 25% and 26% of LAS revenues, respectively. Biopharmaceutical sales grew in the mid single digits to make up 36% of LAS revenues. LAS operating profits declined 37.4% to \$14.9 million as a result of increased amortization expenses and purchase accounting adjustments, along with lower gross margins and higher investment costs. The company anticipates total second quarter sales growth in the low double digits, including acquisitions and current currency exchange rates.

Pro forma sales for **Thermo Fisher Scientific's** Analytical Technologies (AT) segment grew 15%, or 7% organically, in the first quarter to \$1.01 billion to make up 43.0% of total company revenues. AT operating income grew 31% to \$189.8 million, and operating margin improved 260 basis points to 13.1% of sales on a pro forma basis. Both industrial and life science sales were strong, with particular strength in biotech and environmental markets, as well as in specialty diagnostics. R&D for AT accounts for 5.1% of revenues and makes up roughly 80% of the company's total R&D spending.

Varian's Scientific Instruments division (SI) revenue grew 11.0% to \$190.3 million to make up 82.8% of total sales. Growth was primarily attributed to higher analytical instrument sales and strong demand for industrial applications. Sales for Life Science applications were flat to slightly down for the quarter. Aftermarket sales accounted for 33% of total company sales, 15% of which consists of

consumables. Bioconsumables sustained strong momentum outside North America, in particular the Pacific Rim and Latin America. Sales in Europe and Latin America both improved over 20%, and Asian/Pacific sales climbed in the mid-teens, while US sales continued to show slow growth. SI adjusted operating profit increased 36.3% to \$24.8 million, and adjusted gross margins gained 240 basis points to 13.0%. Company revenues are expected to grow 8%–9% this fiscal year, and adjusted operating margin is anticipated to be 12.5%–13.0% of sales.

Waters's first quarter revenues improved 14.0%, or 9.3% on a currency-neutral basis, to \$330.8 million. Acquisitions contributed 2.0% to revenue growth, while newly introduced instrument systems and consumable products helped drive quarterly sales higher. US sales jumped 21%, European sales improved 14% and Asian sales (including



Japan) grew 12%. Product sales climbed 14.6% to \$239.0 million. Sales of Liquid Chromatography (LC) and Mass Spectrometry (MS) instrument systems improved 9.1% to \$162.2 million, while Chemistry sales increased 24.7% to \$54.2 million. TA Instruments' sales grew 37.7% to \$22.6 million, of which 2% growth was attributed to favorable currency translation and 6% growth was related to acquisitions. Service revenue climbed 12.4% to \$91.8 million, as LC and MS service revenue improved 10.9% to \$82.4 million, and TA service revenue grew 27.8% to \$9.4 million. Adjusted operating income improved 15.2% to \$74.9 million. Sales to pharmaceutical customers grew 15%, sales to industrial and food safety customers grew 19%, and sales to government and academic customers improved 11%. Gross margins declined 170 basis points to 56.7% as a result of higher manufacturing costs for new products and unfavorable foreign currency transactions related to MS products manufactured in the UK. Despite overall concerns for a weaker domestic market, Waters anticipates sustained growth from pharmaceutical customers and from the industrial markets in the US. Thus, the company raised its full-year revenue growth forecast to 12%, or 9% organically, compared to the January forecast of 7%–9% organic growth. For the second quarter, sales are anticipated to grow 14%. ➔

Market Profile: Lab-on-a-Chip

Reducing reagent consumption and laborious lab protocols are attributes that labs look for in analytical instrumentation in order to improve their efficiency and productivity. Lab-on-a-chip, or microfluidics, technology is one of the many avenues instrument manufacturers are exploring to provide turnkey solutions that require only microliters of reagents.

One of the most successful commercial applications of microfluidic technologies is electrophoresis. These systems have become a common analytical tool for molecular chemists and biochemists and have replaced slab gel electrophoresis for many applications, including the measurement of RNA and DNA sample quality, DNA fragment analysis and SDS-PAGE analysis of proteins.

The lab-on-a-chip market is primarily driven by basic research applications. Academic facilities and government research programs account for the majority of demand. However, the pharmaceutical and biotechnology industries have also adopted lab-on-a-chip technology.

Caliper Life Sciences pioneered the lab-on-a-chip technology and offers several products under the LabChip brand name. The LabChip

90 is a floor standing system that automates gel electrophoresis onto a microfluidic chip. Caliper also offers the LabChip 3000 drug discovery system, which is used for enzymatic and cell-based screening, including kinase profiling. In September 2006, Caliper launched the Desktop Profiler for kinase analysis. Using sipper chips, the

Lab-on-a-Chip at a Glance:

Leading Suppliers

- Caliper Life Sciences
- Agilent
- Bio-Rad Laboratories

Largest Markets

- Academia
- Government
- Pharmaceuticals

Instrument Cost

- \$25,000–\$150,000

Desktop Profiler allows automated sampling from microplates and employs a combination of pressure and voltage to move the sample in the microfluidic chip.

While Caliper has had success in the market, its partnership with Agilent and the introduction of the

2100 Bioanalyzer is what moved lab-on-a-chip technology into the mainstream. Using Caliper's LabChip technology, Agilent's 2100 Bioanalyzer analyzes up to 12 samples in about half an hour. The Agilent 2100 bioanalyzer includes support for on-chip flow cytometry, 21CFR part 11 compliance and electrophoresis assays. Agilent also offers the entry-level 2100 Electrophoresis Bioanalyzer system. Agilent recently introduced the Series II kits that improve various aspects of kit usage including sizing range and performance specifications.

Bio-Rad offers the Experion automated electrophoresis system. The Experion marries Bio-Rad's leadership in electrophoresis and Caliper's LabChip technology to provide rapid, and reproducible separation and analysis of protein and nucleic acid samples.

The total market for lab-on-a-chip systems and related consumables is expected to surpass \$50 million this year and post double-digit growth over the next few years. While nucleic acid analysis accounts for a large segment of the demand, other applications such as protein and cell research, and kinase analysis in drug discovery and will fuel future growth. ↷

The Bottom Line

Data from recent industry financial reports. Dollar amounts in millions.

Company	Period	Ended	Sales	Chg.	Op. Prof.	Chg.	Net Prof.	Chg.
Analytik Jena AG	6 Mo	31-Mar	\$44.2	14.6%	\$2.7	29.4%	\$1.5	44.1%
Analytik Jena AG (Analy. Solutions)	6 Mo	31-Mar	\$21.8	17.2%	N/A	N/A	N/A	N/A
Analytik Jena AG (Project)	6 Mo	31-Mar	\$16.0	6.9%	N/A	N/A	N/A	N/A
Agilent (Bio-Analytical Msmt.)	2Q	30-Apr	\$428.0	15.1%	\$67.0	48.9%	N/A	N/A
Cepheid	1Q	31-Mar	\$25.5	26.7%	(\$7.2)	NM	(\$6.2)	NM
Corning (Life Sciences)	1Q	31-Mar	\$76.0	5.6%	N/A	N/A	N/A	N/A
Diploma (Life Sciences)	6 Mo	31-Mar	\$41.4	15.6%	\$6.2	18.1%	N/A	N/A
Eppendorf AG	FYE	31-Dec	\$393.1	-2.0%	\$91.5	45.2%	\$56.9	45.9%
Helicos Biosciences	1Q	31-Mar	\$0.1	N/A	(\$8.5)	NM	(\$26.5)	NM
MOCON	1Q	31-Mar	\$6.9	5.5%	\$1.2	-18.6%	\$0.8	-26.6%
SEQUENOM	1Q	31-Mar	\$9.9	43.1%	(\$4.1)	NM	(\$3.7)	NM
Sigma-Aldrich	1Q	31-Mar	\$495.9	11.9%	\$113.4	9.8%	\$74.9	12.6%
Stratagene	1Q	31-Mar	\$24.4	0.7%	\$2.0	21.5%	\$1.4	25.2%
TECHNE	3Q	31-Mar	\$60.2	9.8%	\$35.4	15.8%	\$23.9	17.4%
TECHNE (Biotechnology)	3Q	31-Mar	\$39.1	6.8%	N/A	N/A	N/A	N/A
TECHNE (R&D Systems Europe)	3Q	31-Mar	\$17.4	20.0%	N/A	N/A	N/A	N/A
Starlims	1Q	31-Mar	\$5.4	62.9%	\$1.2	504.7%	\$1.1	510.4%
Starlims	FYE	31-Dec	\$19.8	21.9%	\$4.9	-7.3%	\$3.8	4.4%
VWR Int'l	1Q	31-Mar	\$843.1	5.9%	\$56.5	22.6%	\$12.9	17.3%
VWR Int'l (North Am. Lab)	1Q	31-Mar	\$501.4	1.9%	\$32.6	10.9%	N/A	N/A
VWR Int'l (European Lab)	1Q	31-Mar	\$313.6	14.9%	\$22.9	60.1%	N/A	N/A
VWR Int'l (Science Educ.)	1Q	31-Mar	\$28.1	-8.5%	\$1.0	-58.3%	N/A	N/A
X-Rite	1Q	31-Mar	\$57.7	112.5%	\$5.0	NM	\$0.2	NM

N/A=not available NM=not meaningful

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