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## Emerging Economies Create Powerful Global Competitors

A new competitive force is emerging from the world's most rapidly developing countries: a large group of companies that are challenging the world's leading corporations. Until recently, there were only about a dozen or so companies from emerging markets that could be described as being global competitors. "Today there are hundreds, which is in line with the expectation that by 2050 China and India will be two of the world's three large superpowers," says David Michael, author of a new Boston Consulting Group report entitled "The New Global Challengers, How 100 Top Companies From Rapidly Developing Economies Are Changing The World."

In its analysis, BCG found that the top 100 companies from the emerging markets have \$715 billion in combined revenue and are growing at an annual rate of 24 percent. They earned \$145 billion in operating profits last year, equivalent to a 20 percent margin over sales. They currently generate 28 percent of their revenue from outside their home markets, but that should grow to 40 percent by 2010.

Their growing success can be attributed to lower costs, ambitious leaders, appealing products and modern facilities. They are making acquisitions "and will radically transform industries and markets around the world," says BCG. They are in every sector of industry. Forty-four are from China, 21 from India and 18 from Latin America.

The top 100 companies from emerging markets are growing 10 times faster than the U.S. GDP, 24 times faster than Japan's and 34 times faster than Germany's. From

BY RICHARD McCORMACK

January 2000 to March 2006, total shareholder return on the top 100 emerging companies increased more than 150 percent compared to a decline in total shareholder return

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## White House Puts MEP Advisory Board Out Of Business

The Advisory Board for the Commerce Department's Manufacturing Extension Partnership (MEP) program is currently defunct, due in large part to the Bush administration's longstanding desire to stop funding the program, according to former board members and those who have administered the MEP program. There is only one person left on the board, which has not met in more than two years. Its charter says it should have 11 members and meet three times per year.

MEP program officials at the National Institute of Standards and Technology (NIST) sought to reconstitute the board last year, but

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## AFL-CIO Seeks Formal Review Of China's Labor Practices

BY KEN JACOBSON

The AFL-CIO is calling on the Bush administration to open an investigation into labor practices in China, citing "the Chinese government's persistent denial of internationally recognized workers' rights" as an "unfair trade practice" under Section 301 of the Trade Act of 1974 and claiming it to be as damaging to the U.S. manufacturing sector as China's alleged currency manipulation.

In a petition delivered to the Office of the U.S. Trade Representative (USTR) on June 8, the AFL-CIO asserts that repression of labor rights gives goods produced in China a 43 percent cost advantage over those that are, were or could be U.S. made. This, in turn, "accounts for the

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# Manufacturing Continues To Shrink As A Percentage Of U.S. Economic Activity

BY RICHARD McCORMACK

Manufacturing's share of the U.S. economy continues its 50-year decline. Last year, manufacturing GDP fell to an all-time low of just 12 percent of the economy, according to a Manufacturers Alliance/MAPI analysis of recent data from the Commerce Department.

"Both major segments of manufacturing — durable and nondurable industries — declined," according to MAPI. Durable manufacturing accounted for 7 percent of the economy last year, down from 9.2 percent in 1995. Nondurable manufacturing fell to just 5 percent of the economy, from 6.7 percent in 1995.

In 1993, manufacturing as a percentage of the U.S. economy stood at 15.9 percent, down from its post World War II peak of 28.3 percent in 1953.

Other industries associated with manufacturing shrank over the last 10 years including retail and wholesale trade, transportation and warehousing, according to the analysis done by Daniel Meckstroth, MAPI's chief economist. The government's share of GDP fell by 1 percentage point to 12.4 percent, which is above the 12 percent GDP level for manufacturing.

The service sector now accounts for 80.6 percent of U.S. gross domestic product, an increase of 2.6 percentage points over the past 10 years. Finance and insurance were the largest gainers, growing by 1.5 percentage points, to reach 8.1 percent of GDP.

Professional, scientific and technical services increased its share of GDP by 1.1 percentage points to 6.9 percent. The largest contributor to GDP in 2005: real estate, rental and leasing, at 12.5 percent.

"Manufacturing experienced deflation in an inflationary economy" over the 10-year period, MAPI points out. "GDP is measured by multiplying the change in quantity by the change in price. The quantity of manufacturing value

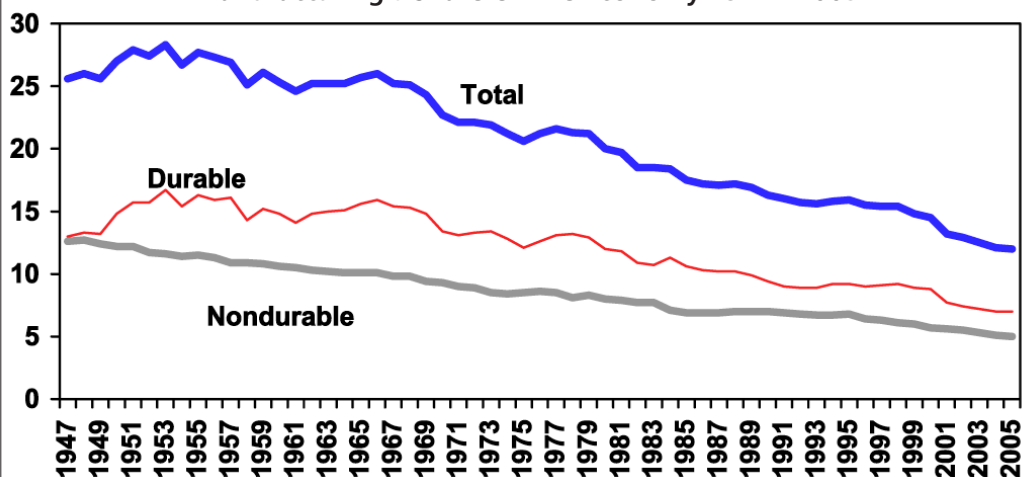
added increased 40 percent from 1995 to 2005 while manufacturing prices declined 9 percent. As a result, manufacturing GDP increased 27 percent. However, more than all the deflation in manufacturing came from one industry — computer and electronic products....When computer and electronic products are excluded from manufacturing, a more realistic breakdown of price and quality changes emerge...Value added in manufacturing, excluding computer and electronic products value added, increased at the slowest rate of any of the major industries except agriculture. Manufacturing prices, excluding computer and electronics products, increased 17 percent from 1995 to

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Value Added By Industry As A Percentage Of Gross Domestic Product

Industry	2005	1995-2005
		Percentage point change
Manufacturing	12.0	-3.9
Government	12.4	-1.0
Utilities	1.9	-0.6
Retail trade	6.6	-0.4
Agriculture, forestry, fishing, and hunting	1.0	-0.3
Wholesale trade	5.9	-0.3
Transportation and warehousing	2.9	-0.2
Other private sector services	2.4	0.0
Arts, entertainment, and recreation	0.9	0.1
Educational services	0.9	0.1
Management of companies and enterprises	1.8	0.1
Accommodation and food services	2.7	0.2
Information	4.6	0.4
Real estate and rental and leasing	12.5	0.4
Health care and social assistance	6.9	0.4
Administrative and waste management services	3.0	0.5
Mining	1.7	0.7
Construction	4.8	0.9
Professional, scientific, and technical services	6.9	1.1
Finance and insurance	8.1	1.5
<b>Total Gross Domestic Product*</b>	100.0	0.0
<b>Addendum: Manufacturing excluding computer and electronic products</b>	10.9	-3.2

Manufacturing's Share Of The Economy 1947 - 2005



(Source of Charts, Manufacturers Alliance/MAPI and Dept. of Commerce, Bureau of Economic Analysis)

# Duke Study Throws Doubt On Argument That U.S. Has Lost Its Lead In Engineers

Conventional wisdom holds that China and India are graduating hundreds of thousands more scientists and engineers than is the United States. But that notion, which is being used to rationalize a new round of hand-wringing about the nation's flagging competitiveness and the need for increased spending on R&D, is wrong, according to research conducted by Duke University's Master of Engineering Management Program.

Countless articles in the press and even citations in the recently issued influential National Academies' study "Rising Above The Gathering Storm," have quoted figures of 70,000 U.S. undergraduate engineering degrees being awarded each year, while China is awarding 600,000 and India 350,000.

"When cited by the popular media, these numbers were rarely documented or verified," says the Duke research paper entitled "Framing the Engineering Outsourcing Debate: Placing the United States on a Level Playing Field With China and India." But the U.S. numbers are too low and the foreign ones are inflated, according to Duke.

Duke found that in the United States 222,335 Bachelors degrees were awarded in engineering computer science and information sciences in 2004, as compared to 215,000 in India and 351,537 in China.

Duke researchers also found that the Chinese and Indian numbers include not only four-year degrees but three-year training programs and subbaccalaureate degrees. There were 84,898 of these types of degrees

awarded in the United States; 103,000 in India; and 292,569 in China.

The quality of graduates is also very different. The types of graduates receiving a Bachelor's degree in engineering, computer science and information technology from American universities can be described as being "dynamic" as opposed to "transitional." These engineers generally are highly skilled, work on high-level problems using scientific knowledge, "thrive in teams, work well across international borders, have strong interpersonal skills and are capable of translating technical engineering jargon into common diction," says Duke. These "dynamic" engineers graduate from the highest quality universities and lead in innovation.

The transitional engineers that constitute so many of the graduates in India and China have received an associate's degree or a technical diploma and tend to do rote and repetitive tasks, do not partake in research, group work, applied engineering or interdisciplinary thinking.

"When compared on a level playing field, the U.S. is producing a

very significant number of engineers, CS and IT specialists," notes the Duke study. "China has roughly four times the population of the U.S. and India is approximately three times as large. Per every one million citizens, the United States is producing roughly 750 technology specialists, compared with 500 in China and 200 in India."

When the Duke researchers spoke with China's Minister of Education at length about the Chinese data, they found that the statistics quoted above "are still misleading. There are questions about what qualifies as an engineering program," they state. "As a result, any Bachelor's or short-cycle degree (equivalent of an associates' degree in the United States] with 'engineering' in its title is included in these numbers, regardless of the degree's field or academic rigor associated with it. This means that the reported number of engineers produced in China is 2004 may very well include the equivalent of motor mechanics and industrial technicians. In all likelihood, this 644,106 number may not be comparable to the engineering production in the United States and India."

So is the United States losing its technological leadership, the Duke researchers ask rhetorically. "Today, almost one-third of the globe's science and engineering researchers are employed by the United States,"

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**Bachelor's And Subbaccalaureate Engineering, Computer Science And IT Degrees Awarded In The U.S., China And India, 2004**

Degree Field	United States	India	China
<b>Total Bachelors and Subbaccalaureate Engineering, Computer Science and Information Technology Degrees</b>	<b>222,335</b>	<b>215,000</b>	<b>644,106</b>
Number of Bachelors Degrees	137,437	112,000	351,537
in Engineering (Excluding CS and Electrical)	52,520	17000	---
in CS, Electrical and IT	84,917	95,000	---
Number of Subbaccalaureate Degrees	84,898	103,000	292,569
in Engineering	39,652	57000	---
in CS and IT	45,246	46,000	---

(Source: Duke University's Master of Engineering Management Program)

# The Rise Of New Global Competitors...*(Continued from page one)*

for the S&P 500 companies. They employ 4.6 million workers. They purchase \$200 billion a year in raw materials and energy, \$50 billion in parts and components and \$40 billion in services.

These companies are buoyed by their fast growing home markets and their ability to compete in those markets with limited resources, immature logistics systems and customers who can't afford expensive products.

"A company that has addressed these issues in its home market will have an advantage when seeking to grow in similar markets abroad," says BCG. "Such companies may also have developed the ability to innovate quickly and to make very rapid decisions — skills that are essential to capturing fast-moving opportunities."

Also making them more adroit is the fact that they are competing in their own markets against the biggest multinational companies in the world. Since their own markets are limited, they are being forced to look globally for growth, with many of them becoming leaders in their industrial categories. Eighty-percent of their growth is organic, but the largest firms are becoming more active in mergers and acquisitions. "They are growing next door and around the world," says BCG.

They generally have lower labor costs — on the scale of 10 to 20 times less expensive — resulting in savings of up to 40 percent in the cost of end products. Their manufacturing sites and equipment are 60 percent less expensive than comparable facilities in the West, says BCG. They have "huge economic muscle."

There are many implications for incumbents, BCG notes. "The first step seems obvious: you need to identify and understand the [emerging market] challengers in your industry." Companies must understand how these firms are changing the competitive landscape, where they reside in supply

chains and what threats and opportunities they represent. Many of these firms are not covered in the media and they are evolving rapidly. "So you need to make an extra effort simply to understand them," says the report.

Companies must also determine how to deal with them by competing head on, developing partnerships, creating subsidiaries in their markets "to capture the same kinds of advantages that [emerging market] challengers possess," and exiting some lines of businesses in which their adversaries have inherent advantages. Companies must also renew their efforts to improve their products, introduce new ones and get closer to their customers. "Find ways to ride the wave," says BCG. "Incumbents and challengers alike should also consider opportunities to create value by acquiring, investing in, or partnering with each other."

Among some of the newly emerging Goliaths:

- **BYD** of China is the world's largest manufacturer of nickel-cadmium batteries and holds 23 percent of the mobile-handset battery market.
- **Bharat Forge** of India is the world's second largest forging company.
- **Hisense** of China is the number-one seller of flat-panel TVs in France.
- **Embraer** of Brazil has surpassed Bombardier as the market leader in regional jets.
- **Chunlan Group** of China has 25 percent share of Italy's air conditioner market.
- **Johnson Electric** of China is the world's leading manufacturer of small electric motors.
- **Wipro** of India is the world's largest third-party engineering services company.
- **Pearl River Piano Group** of China the world's largest manufacturer of pianos.
- **Ranbaxy Pharmaceuticals** of India is in the top 10 in generic pharmaceuticals.

## The Rapidly Developing Economies' Emerging Global Challengers

**Aluminum Corp. of China** (China), Nonferrous metals  
**America Movil** (Mexico), Telecommunications services  
**Bajaj Auto** (India), Automotive equipment  
**Bharat Forge** (India), Automotive equipment  
**BOE Hydis Tech. Corp.** (China), computers, IT components  
**Braskem** (Brazil), Petrochemicals  
**BYD Co.** (China), Consumer electronics  
**Cemex** (Mexico), Building materials  
**Charoen Pokphand Foods** (Thailand), Food and beverages  
**China Aviation Group** (China), Aerospace  
**China FAW Group Corp.** (China), Automotive equipment  
**China HauNeng Group** (China), Fossil fuels  
**China Intl. Marine Containers Group Co.** (China), Shipping  
**China Minmetals Corp.** (China), Nonferrous metals  
**China Mobile Communications Corp.** (China), Telecom  
**China National Heavy Duty Truck Group Corp.** (China), Automotive equipment  
**China Netcom Group Corp.** (China) Telecom services  
**China Petroleum & Chemical Corp.** (China), Fossil fuels  
**China Shipping Group** (China), Shipping  
**Chunlan Group Corp.** (China) Home appliances

**Cipla** (India), Pharmaceuticals  
**CNOOC** (China), Fossil fuels  
**Companhia Vale do Rio Doce** (Brazil), Mining  
**COSCO Group** (China), Shipping  
**Coteminas** (Brazil), Textiles  
**Crompton Greaves** (India), Engineered products  
**Dongfeng Motor Co.** (China), Automotive equipment  
**Dr. Reddy's Laboratories** (India), Pharmaceuticals  
**Embrace** (Brazil), Engineered products  
**Embraer** (Brazil), Aerospace  
**Erdos Group** (China), Textiles  
**Femsa** (Mexico), Food and beverages  
**Founder Group** (China), Computers and IT components  
**Galanz Group Co.** (China), Home appliances  
**Gazprom** (Russia), Fossil fuels  
**Gerdau Steel** (Brazil), Steel  
**Gree Electric Appliances** (China), Home appliances  
**Grama** (Mexico), Food and beverages  
**Grupo Modelo** (Mexico), Food and beverages  
**Haier Co.** (China), Home appliances

*(Continued on next page)*



# India Expects Huge Increase In Manufacturing Jobs, And A Doubling Of Exports

The manufacturing sector in India should create 25 million new jobs by 2010, predicts the Associated Chambers of Commerce and Industry of India (ASSOCHAM). Manufacturing exports from India should also grow substantially during the next four years, from \$50 billion today to \$100 billion in 2010, according to ASSOCHAM.

Sectors that will experience "tremendous growth" include machine tools, automobile components, pharmaceuticals and the textile sector, which alone is expected to create between nine and 10 million new jobs over the next four years.

"It may be mentioned here that the textile sector as of now alone

provides direct employment to around 35 million people including manufacturers, suppliers, wholesalers and exporters of cotton textiles, handlooms and woolen textiles," says the Indian Chamber of Commerce. "The contribution of manufacturing sector as a whole to India's GDP today staggers around 17 percent, compared to China, Korea and Thailand, where it forms around one-third of their GDP."

In a new paper entitled "Manufacturing: India's Growth Locomotive," ASSOCHAM says manufacturing competitiveness "should become the focus area of the government...Lowering the cost of manufacturing in India

ought to be one of the prime focus areas in which there should be constant focus on innovations to take on global competition. The Chamber is of the view that infrastructure bottlenecks still continue to make Indian manufacturing highly uncompetitive, especially within the ASEAN region. Therefore, basic infrastructure needs for industries should be met to increase manufacturing in areas of telecommunications, pharmaceuticals, consumer electronics and IT-related services to help India diversify its export manufacturing. The removal of world textile quota restrictions from January 2005 could bring a huge increase in India's annual exports and make it a big winner in the global market, after China. This breakthrough will occur, however, only if the government accelerates the pace of reform and local manufacturers adopt measures to improve their competitiveness."

## Emerging Competitors... (From page four)

**Hindalco Industries** (India), Nonferrous metals  
**Hisense** (China), Consumer electronics  
**Huawei Technologies Co.** (China), Telecom equipment  
**Indofood Sukses Makmur** (Indonesia), Food and beverages  
**Infosys Technologies** (India), IT services outsourcing  
**Johnson Electric** (China, Hong Kong), Engineered products  
**Koc Holding** (Turkey), Home appliances  
**Konka Group Co.** (China), Consumer electronics  
**Larsen & Toubro** (India), Engineering services  
**Lenovo Group** (China), Computers and IT components  
**Li & Fung Group** (China, Hong Kong), Textiles  
**Lukoil** (Russia), Fossil fuels  
**Mahindra & Mahindra** (India), Automotive equipment  
**Malaysia International Shipping Co.** (Malaysia), Shipping  
**Midea Holding Co.** (China), Home appliances  
**MMC Norilsk Nickel Group** (Russia), Nonferrous metals  
**Mobile TeleSystems** (Russia), Telecommunications services  
**Nanjing Automobile Group Corp.** (China), Auto equipment  
**Natura** (Brazil), Cosmetics  
**Nemark** (Mexico), Automotive equipment  
**Oil and Natural Gas Corp.** (India), Fossil fuels  
**Orascom Telecom Holding** (Egypt), Telecom services  
**Pearl River Piano Group** (China), Musical instruments  
**Perdigao** (Brazil), Food and beverages  
**PetroChina Co.** (China), Fossil fuels  
**Petrobras** (Brazil), Fossil fuels  
**Petronas** (Malaysia), Fossil fuels  
**Ranbaxy Pharmaceuticals** (India), Pharmaceuticals  
**Reliance Group** (India), Chemicals

**Rusal** (Russia), Nonferrous metals  
**Sabancı Holding** (Turkey), Chemicals  
**Sadia** (Brazil), Food and beverages  
**Satyam Computer Services** (India), IT outsourcing  
**Severstal** (Russia), Steel  
**Shanghai Automotive Industry Corp. Group** (China), Automotive equipment  
**Shanghai Baosteel Group Corp.** (China), Steel  
**Shougang Group** (China), Steel  
**Sinochem Corp.** (China), Chemicals  
**Sisecam** (Turkey), Building materials  
**Sukhoi Co.** (Russia), Aerospace  
**SVA Group Co.** (China), Consumer electronics  
**Tata Consultancy Services** (India), IT outsourcing  
**Tata Motors** (India), Automotive equipment  
**Tata Steel** (India), Steel  
**Tata Tea** (India), Food and beverages  
**TCL Corp.** (China), Consumer electronics  
**Techtronic Industries Corp.** (Hong Kong), Engineered products  
**Thai Union Frozen Products** (Thailand), Food and beverages  
**Tsingtao Brewery** (China), Food and beverages  
**TVS Motor Co.** (India), Automotive equipment  
**UTStarcom** (China), Telecommunications equipment  
**Vestel Group** (Turkey), Consumer electronics  
**Videocon Industries** (India), Consumer electronics  
**Videsh Sanchar Nigam** (India), Telecommunications services  
**Votorantim Group** (Brazil), Process industries  
**Wanxiang Group Corp.** (China), Automotive equipment  
**WEB** (Brazil), Engineered products  
**Wipro** (India), IT services, business process outsourcing  
**ZTE Corp.** (China), Telecommunications equipment

(Source: Boston Consulting Group)

## AFL-CIO Case... (From page one)

loss of approximately 973,000 manufacturing jobs” in the United States.

Calculated by the AFL-CIO using the method applied by the U.S. International Trade Commission in dumping cases, the cost advantage is on a level similar to that seen by some as accruing to China's U.S.-bound exports from the yuan-dollar exchange rate. The China Currency Coalition places the undervaluation of the yuan at around 40 percent.

While a similar AFL-CIO petition — the first ever to invoke the worker-rights provisions added to Section 301 under a 1984 amendment to the Trade Act — was publicly and emphatically dismissed by four members of President Bush's cabinet two years ago (*MTN*, May 4, 2004, p. 1), the current filing may have a better chance for success.

For one thing, rather than again going it alone, this time around the AFL-CIO has enlisted backing from both sides of the House aisle. Co-signing its petition are Rep. Christopher Smith of New Jersey, one of the leading human-rights advocates among Republicans in Congress, and Rep. Benjamin Cardin of Maryland, the top Democrat on the Trade subcommittee of House Ways and Means.

For another, the U.S. trade deficit with China has only worsened in the two years since administration officials, scoffing at the previous petition, asserted that labor practices in China would be more effectively influenced through diplomatic pressure — whether in the form of the “leveraged engagement” of then-U.S. Trade Representative Robert Zoellick, the “persistent engagement” of then-Treasury Secretary John Snow, the “economic engagement” of then-Commerce Secretary Donald Evans or the plain vanilla “engagement” of Labor Secretary Elaine Chao.

“We're telling them, ‘You said you had a better way, and you didn't do any of it,’ ” states Robert Baugh, executive director of the AFL-CIO's Industrial Union Council. “As far as the administration is concerned, it's: ‘Let's deal with property rights — no other rights, currency or anything else.’ ”

In contrast, the AFL-CIO takes what Baugh calls a “comprehensive” view of U.S.-China trade. “Obviously, intellectual property is an issue,” he says, as is “illegal subsidization. But I would argue that the two major cost items are worker-rights repression and currency.”

Congress's view of trade relations appears to have been comprehensive as well. The House report accompanying the 1984 legislation that extended Section 301 protections to labor rights, as cited in the AFL-CIO petition, recognizes that “the lack of basic rights for workers in many [less developed countries] is a powerful inducement for capital flight and overseas production by U.S. industries.”

At the same time, the report asserts, “promoting respect for internationally recognized rights of workers is an important means of ensuring that the broadest sectors of the population within [developing countries] benefit from [access to U.S. markets].... The denial of

internationally recognized worker rights in developing countries tends to perpetuate poverty [and] to limit the benefits of economic development and growth to narrow privileged elites.”

Given this expression of congressional intent, the AFL-CIO petition argues, “in evaluating the burden on United States commerce caused by the Chinese government's violation of workers' rights, the USTR should therefore focus on the impact of employment, wages, and associational rights of United States workers — not on the revenue and profit of U.S. multinational corporations, which may indeed benefit from the exploitation of overseas labor.”

Baugh, removing the conditional “may,” flatly brands U.S.-based multinationals as “complicit in the lack of enforcement of U.S. trade law with our own government” and charges: “The foreign direct investment we talk about going into China is about employing people to make things to ship back to our market.”

“The American automobile manufacturers want to go after Japan for currency and are silent on China currency. And why would that be? Well, guess who's manufacturing in China and shipping parts back here — and planning to do a lot more of it. It is American manufacturers that are the primary source of imports into the United States out of China as a group.”

Unlike the multinationals, firms that manufacture mainly or exclusively inside the U.S. are more likely to be hurt than helped by current Chinese labor practices. Still, Baugh admits, the AFL-CIO is having a hard time rallying them to its side, saying that is because they are “so ideologically rigid.”

While characterizing their attitude as, “We just don't like unions, and therefore we don't buy it,” he argues: “It's in their self-interest to buy into this one.” They hesitate to speak out, he believes, because “it's so alien for them to talk about worker rights, it's not in their nature to be supportive of something that talks about the right to organize and bargain collectively.”

USTR must decide within 45 days of the petition's filing whether to undertake the investigation it demands. The petition outlines a series of actions to be taken in the event that USTR investigates and its investigation finds Chinese labor practices to “burden or restrict” U.S. commerce:

- Pursuit of “all available WTO-consistent remedies against China,” to be adjusted according to whether the Chinese government “meets specific and verifiable benchmarks of enforcement of workers' rights”;
- Negotiation of a “binding, WTO-consistent agreement with the Chinese government” that stipulates its “cooperation with a program of compliance”; and
- “Requir[ing] U.S. corporations to disclose wages, hours, and working conditions of their affiliates and contractors in China.”

The petition can be accessed online at [http://www.aflcio.org/issues/jobseconomy/globaleconomy/upload/china\\_petition.pdf](http://www.aflcio.org/issues/jobseconomy/globaleconomy/upload/china_petition.pdf).

# India Expects Big Growth In Outsourced Service Sectors

India should be able to capture 6 percent of the global market for information technology services and software by 2010, up from its current level of 3 percent, according to the Associated Chambers of Commerce and Industry of India (ASSOCHAM). "India will occupy a leading position in providing services to developed economies by 2020 as by then it is estimated that India will have a surplus of 47 million professionals in services and IT who can be gainfully used by recipient countries," according to a study conducted for the Indian Chamber.

The only real competition India faces is from smaller countries like Pakistan, Bangladesh, Indonesia and Egypt. India should be able to "take on" these countries because it will be moving up the skills ladder by providing "knowledge-driven services like IT and R&D," says ASSOCHAM.

The current annual growth rate of India's offshore outsourcing services industry is 30 percent, and total exports of those services last year reached \$23 billion, up from \$17.2 billion in 2004, according to ASSOCHAM president Anil Agarwal. There is no reason for annual growth rates to exceed 40 percent, with exports of IT services reaching \$50 billion in the near future.

India's service sector now accounts for 54 percent of the country's GDP, up from 51 percent in 2004 and 38 percent in the 1980s.

There are ample opportunities for further growth in offshoring services beyond IT and software. Indian industry is diversifying into consulting, R&D services, healthcare and entertainment services, ship repair services, satellite mapping services, accounting and hospitality services.

"One area that looks very attractive from [the] Indian point of view is attracting health tourists," the trade group notes. India is

among five favorite destinations for health service tourists, the others being Malaysia, Singapore, Thailand and Jordan. "The potential for these services is well beyond the markets of EU, U.S. and Japan," says ASSOCHAM. "However, India needs to identify and remove the constraints on the opportunities in services trade. These bottlenecks include visa restrictions, economic needs tests, sector specific curbs and other barriers to services trade."

Helping drive the continued growth of India's high-tech service sector are global demographic trends. "By 2020, most of the developed countries will have

problems finding people in the working age group," says ASSOCHAM. "Between 2010 and 2030, at current immigration flows, the decline of the EU-25's working age population will entail a fall in the number of employed people of some 20 million. Such developments will have a huge impact on overall economic growth, the functioning of the internal market and the competitiveness of EU enterprises."

There will be plenty of skilled, English-speaking Indians to fill the void. They will either be able to stay in India and do the work that is outsourced from these countries, or migrate. ASSOCHAM predicts that "there is going to be a situation where the competing regions would offer rights to migrants better than their competitors."

## *India Raises Duties On Imported Computers And Equipment*

The decision by India's government to raise excise duties on imported computers and other capital intensive computer hardware products such as semiconductors and storage devices from 7 percent to 12 percent will provide the Indian high-tech manufacturing industry with a shot in the arm, says India's Manufacturers' Association for Information Technology (MAIT). The decision by the government "is indeed very timely and will usher in a new era of IT manufacturing in the country," says the New Delhi-based trade association. The new duty structure "will facilitate local sourcing of components such as monitors, motherboards and keyboards, thus promoting indigenous manufacturing," added MAIT executive director Vinnie Mehta. "It will also encourage manufacturing of high-end products such as notebooks and servers."

The introduction of the excise duty should not impact the price of computers, says Mehta. "The prices are expected to remain by and large stable, as the excise duty concession has now been extended to DVD drives, flash drives and combo drives. In cases where there could be marginal price increases, it would be eventually neutralized over a period of time. The rate of obsolescence in the industry is high and the prices will stabilize in due course."

Meanwhile, the desktop PC market in India is expected to increase by more than 35 percent this year 4.7 million units. "The smaller, lesser-known regional brands and unbranded systems witnessed declines in market share, accounting for 34 percent of the PC sales" during the first half of India's fiscal year, according to MAIT. "The share of the Indian brands grew to account for 31 percent of the market while the multinational corporate brands accounted for the rest at 35 percent. In absolute terms, the proportion of the Indian brands grew by 84 percent; and multinational corporate brands by 45 percent." PC sales in India's business segment increased by 55 percent and accounted for 78 percent of total PC consumption. Indian households reduced consumption of PCs by 5 percent. For more information, go to <http://ma.mait.com:5050/index.jsp/>.



# MEP Advisory Board Awaits Rebirth... (From page one)

the nominations that were made were rejected by the White House.

"It got to the point where we were going head-to-head with the administration and that wherever possible they tried to make it as inconvenient as possible for the program to progress," says Kevin Carr, former director of the MEP program who retired from the position last year. Everything about the MEP program, including the advisory board, "was looked at from a political perspective, with a complete absence of what you need to do to run the program right," he adds. "It was all politics."

MEP-nominated board members were rejected on political grounds, according to those associated with the program. "They got rid of the board because they were tired of hearing them bitch about 'Why is your budget request only \$35 million?'" according to one congressional aide with oversight of the MEP program. Adds one former board member: "They didn't want it because the board had been used effectively by MEP as a lobbying tool against the administration's position" to shut it down.

The board "started going down because we couldn't get any members approved on it," adds Carrie Hines, now executive director of the American Small Manufacturers Coalition and formerly with the MEP program office in Gaithersburg.

The board was created in 1996 under the Federal Advisory Committee Act (FACA), which requires a background check on members and approval by the White House. "I couldn't tell you what the criteria were for board members because they would not give that to us, either," says Hines.

NIST says that it is reviewing the advisory board's operations, charter, the number of members, their expertise and the frequency of meetings "in order to make the best possible use of this committee to ensure that the MEP is as effective as possible," according to a statement from NIST's office of public and business affairs. "Once that is accomplished, NIST will appoint additional members and organize the Board's next session."

"They've been saying that for the past year," scoffs the congressional aide.

In the July 29, 2005, Federal Register announcement seeking board nominations, NIST said that the board "will advise the director of NIST" and will consist of 11 individuals. It "will function solely as an advisory body..." according to the notice, signed by then acting director Hrach Semerjian.

But Semerjian has since been replaced by William Jeffrey, who worked in the White House Office of Science and Technology Policy. When Semerjian was overseeing the agency the idea was to get a policy-level type of board with prominent people in the manufacturing sector. But as advisory board members' terms expired and their replacement nominations were being rejected, others rescinded their nominations out of frustration with the process. Those who were nominated by the MEP program officials at the time,

such as Matthew Coffey, then president of the National Tooling and Machining Association, were viewed as being too partisan in their comments about the Bush administration and its lack of focus on the needs of U.S. small- and medium-sized manufacturers.

"Matt held a strong position in the manufacturing field," says Carr. "He was on the MEP NAPA [National Academy of Public Administration June 2004] study. He had a large constituency of small manufacturers, but he got screened out."

When asked how he was informed of a nominee's rejection, Carr said that it came simply in the form of a "no" made in a phone call. There was never a letter nor an e-mail nor any type of formal response. "Just no," he says. "There was a strategy there of death by a thousand cuts."

But the board had its own problems, according to others involved with the MEP program. The question was whether its role was to advise MEP program administrators at NIST or advocate for the program's continued survival. The program office needs advocacy, but that puts NIST director Jeffrey "in an incredible bind," says one source.

With the MEP program being reconstituted around technology transfer and innovation, MEP still needs a good advisory board to help it move into the next generation, say others involved in the program. It is looking to broaden the scope of the program to include the departments of Energy and Labor, and it would like to have people from those agencies on its board to provide input.

But every time NIST MEP approaches people from those agencies about getting involved, they face the rejoinder: Let's see if NIST MEP is going to survive another congressional battle for appropriations, given that the Bush administration continues to request paltry amounts of money that would disable the national network of assistance centers.

"Our greatest enemy is our own inability to say that we're going to be here next year," says one person associated with MEP.

The last remaining board member has been told that NIST intends to get the board "fired up with a much more active role than it has had in the past," says Teresa Helminger Ratcliff, director of North Carolina State University's Industrial Extension Service. "It has not been active since I've been on it," she explains. "They have not kept me in the loop on things."

But there seems to be more excitement now that MEP is putting together a new strategy. After the recently held MEP convention in Florida, there's a new sense of excitement about the program, says Helminger Ratcliff. "I'm delighted by the way the national organization has bounced back. They are fresher and have a higher sense of urgency and as a group I'm looking forward to working on the advisory board once they get it back together again. They have told me they have to take a different approach and that I was going to be able to serve the purpose of the new approach, but nobody has

(Continued on page 10)



# MEP Outlines A Future That Revolves Around Innovation And Technology Transfer

**The federal government's Manufacturing Extension Partnership (MEP) program has developed a new strategic plan aimed at enhancing its role in innovation and technology transfer to small-and medium-sized manufacturers. Having been in business for 17 years, MEP feels it must expand beyond helping companies implement lean manufacturing practices, productivity improvements and marketing strategies. "The MEP program has been following a simple strategy of improving the productivity of U.S.-based manufacturing," says the "Next Generation Strategic Plan — Think Globally, Act Locally and Innovate Together."**

But a lot has changed with the rise of globalization, the creation of widely dispersed supply chains, intense pricing pressures and accelerated product cycles. "The broader U.S. manufacturing community has become more interdependent and complex over the past 17 years as supply chains have become global and other countries have aggressively funded and implemented national industrial policies," says the five-page strategy document.

State economic development programs are concentrating on creating new industries and funding technology incubators, commercialization programs and entrepreneurial activities. "MEP, through its partnerships and connection with state technology development organizations, federal labs and university researchers, is uniquely positioned to serve as a resource in bringing together technological advances to meet the process improvement and product development needs of small manufacturers," says MEP. "The future of U.S.-based manufacturing depends upon the skillful adoption and successful implementation of innovative technology and market driven knowledge. The Next Generation MEP leverages the knowledge and experience gained from the delivery of shop floor solutions to providing strategic services focused on transforming and growing manufacturers."

MEP believes it is in a position to

help develop the methodologies needed for companies to deploy technologies and to provide a nationwide system that "systematically assesses manufacturers' needs, identifies potential technologies, evaluates alternatives for technical and commercial potential and transitions technologies into practical solutions." MEP can also help companies and communities develop the workforce necessary to drive change and spur the renewal of American manufacturing.

MEP says its needs to help U.S.

manufacturers become successful global competitors. Doing so requires "new services and support from MEP," says the succinctly written strategic plan. With the rise of global supply chains competing against each other "the MEP system has to move its focus on the manufacturers from the shop floor to the entire enterprise and its position in the marketplace," says the document. "Also, in addition to the needs of individual manufacturers, the Next Generation MEP must focus on industry/supply chain requirements as well as overall economic development trends. With this broadening customer base, the MEP system now has three interdependent, yet distinct customer sets; supply chains and industry sectors (industries); manufacturers (high-performance firms); and government, academic and industrial organizations supporting manufacturing (manufacturing advocates). To meet the needs of these unique customers, MEP will need additional resources, processes and services."

## Three-Year Strategic Goals For The MEP System

1. Shift significant capacity to the delivery of projects focused on supporting manufacturer business growth and transformation.
2. Build strategic partnership connections to technology and workforce development providers with capacity to support manufacturers.
3. Establish strategic alliances with Federal agencies to provide significant and complementary capacity to support and strengthen manufacturers' competitiveness.
4. Embed local MEP strategy and activities in the respective State's economic development strategy to insure capacity and connectivity.
5. Improve the quality and stability of State and Federal funding.

## Six-Year Strategic Goals For The MEP System

1. Establish and deliver complete set of products and services to support manufacturer innovation.
2. Establish a nationwide technology deployment system through State and Federal initiatives.
3. Establish MEP as the primary program used by Federal agencies for technology deployment to manufacturers.
4. Conduct local MEP strategy development jointly with State and partner programs.
5. Increase system capacity through State, Federal and industrial initiatives.

## Advisory Board...*(From page eight)*

ever explained it to me."

The NIST MEP Advisory Board Web site still lists Carl Banks, president of Production Technologies in Tracy, Calif., as being on the MEP board, but he says his term has expired. "Here's a program that helps small manufacturers and, if you want to speak out against [the administration's desire to shut it down] then you can't be approved as an advisory board member," he comments. "That's my frustration. The problem was the program was under assault by the OMB and so our focus was to keep the program alive. We couldn't do a lot of strategic things looking forward because we were just trying to survive."

Banks has told NIST that he is willing to serve another term, and should be able to be cleared since he's already been on the board. "I'm a small business owner so I fly under the radar on these political issues," he says. "So it's probably strategic for them to keep me there because they haven't objected to me. I'm waiting for them to let me know, but I haven't heard anything."

— RICHARD McCORMACK

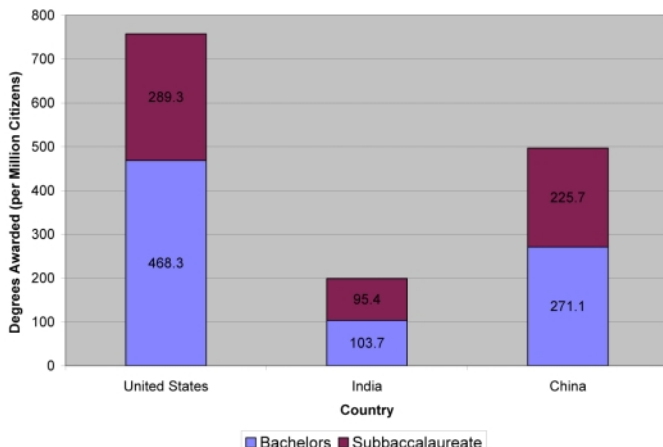
## Engineer Study...*(From page three)*

they respond. Thirty-five percent of science and engineering articles are published in the United States, and the U.S. accounts for 40 percent of the globe's research and development expenditure. "It is clear that the U.S. is not in the desperate state that is routinely portrayed," says the paper. "The country needs to maintain its focus on improving the quality of education and maintain its momentum, but there is no imminent crisis."

There is outsourcing of the "transitional" engineering jobs to India and China from the United States, but not high-level engineering graduates. Moreover, the engineers in China and India do not have the language proficiency to compete for many of the technical jobs still being done in the United States.

The paper is located at [http://memp.pratt.duke.edu/downloads/duke\\_outsourcing\\_2005.pdf](http://memp.pratt.duke.edu/downloads/duke_outsourcing_2005.pdf).

**The Number of Bachelor's And Subbaccalaureate Degrees In Engineering, CS and IT Awarded Annually Per Million Citizens**



(Source: Duke University's Master of Engineering Management Program)

## PEOPLE

The Information Technology Association of America (ITAA) has selected Phillip Bond to be its next president and CEO. Bond, vice president of government relations for Monster and former Under Secretary of Commerce for Technology from 2001 to 2005, replaces Harris Miller, who left ITAA in January to run as a Democrat against U.S. Sen. George Allen (R-Va.). Miller lost in the June 13 primary election to former Navy Secretary James Webb.

The Aerospace Industries Association has named Cord Sterling to be its new vice president of legislative affairs. Sterling joins AIA from the Capitol Hill office of Sen. John Warner (R-Va.), chairman of the Senate Armed Service Committee. Sterling has served as Warner's military legislative assistant for the past three years and spent seven years as a professional staff member on the committee. Prior to working for Warner, Sterling was business development and government relations manager for EMC Corp., and worked as an evaluator for the Government Accountability Office. He earned his bachelor's degree in economics and political science and his master's in national security studies from California State University, San Bernardino. He served in the U.S. Marine Corps.

## Mfg. GDP...*(From page two)*

2005, while the quantity of manufactured goods increased 11 percent...substantially underperforming growth in the general economy. Manufacturing value added, excluding computer and electronic products, thus increased 30 percent over the last 10 years. The average annual growth rate from 1997 to 2005 for manufacturing excluding computer and electronic products is only 1.2 percent. Average annual growth for manufacturing including computers and electronic products is 3.0 percent; and overall inflation adjusted GDP is 3.1 percent per year."

Industries with some of the largest increases in GDP over the last 10 years made the gains primarily due to price increases. "Mining value added increased 188 percent from 1995 to 2005 as a result of a 250 percent increase in prices and an 18 percent decline in quantity," notes MAPI. Construction prices increased by 75 percent while output increased by only 18 percent; and education prices were up 73 percent while output was up 17 percent.

## Letters To The Editor

Regarding "Are 800 Million Chinese Peasants On The Threshold Of Opportunity Or Oblivion?" (MTN May 15, 2006 page 1) I agree with Joshua Muldavin, professor of Asian studies at Sarah Lawrence College. While the remaining manufacturing companies in the U.S. are held to rigid environmental and OSHA regulations the big corporations are getting around all of them by using subcontractors in China. It's like the three monkeys: Hear no evil, see not evil, speak no evil. It takes someone like Albert Keidel, senior associate at the Carnegie Endowment for International Peace, not to see that. Who's payroll is he on? I have been there and saw it. He should go and look for himself.

— Robert Fidrych

In regards to the article, "Are 800 Million Chinese Peasants On The Threshold Of Opportunity Or Oblivion," China is so geographically large and diverse that it is equally a mischaracterization to claim that the nation is headed for a social collapse as to claim that the government has social stability under control. For instance, whereas illicit drug abuse and AIDS remain serious problems along the Burma border in Yunnan province, it is simply not an issue in the major metro regions of Beijing or Shanghai. It is simply incorrect to make certain assumptions about one province, and to apply those particular stereotypes to the entire Chinese nation.

From my personal experience, although Xinjiang or Tibet province may remain 20 years behind Guangzhou in economic development, I see no evidence of a potential nationwide social explosion across China. I invite you to visit the Web sites of privately funded NGO charity groups operating across rural and urban China. The Zigen Fund website (<http://www.zigen.org>) has extensive onsite reporting about rural poverty issues, migrant worker labor and rural environmental problems. Other privately funded NGO groups operating in China include the Half Sky Foundation, which provides funding for orphanages, and the Soar Foundation that provides higher-education funding for rural children across China.

— Dave Chiang

## Europe Moves One Step Closer To Creating A Technology Institute

The proposed European Institute of Technology still has a way to go before it becomes reality, according to the latest draft plan for the organization from the European Commission. The latest iteration of the proposed institute has embraced the creation of a system of "Knowledge Communities" involving universities, research institutes and industry aimed at conducting research and education in strategic technical areas. But issues regarding intellectual property rights, finance, degrees and participation still must be worked out.

"Early proposals for the EIT met with criticism from universities, and the latest communication takes on board many of the comments received during the consultation, clarifying the structure and functioning of the Institute," according to the EC.

One objective of the EIT "is to be attractive to students and researchers worldwide," says the latest planning document from the EC. "Only by establishing a global reputation will it attract students and researchers from across Europe and act as a flagship for change."

But determining the EIT's relationship with existing universities and research institutes in Europe will take work. The planning document says the EIT will be "complimentary to other actions aimed at creating a favorable environment for research, education and innovation."

The commission is developing an impact assessment, an assessment of its name, which might change, and draft legal documents necessary to create the organization.

"One of the key elements of the proposal is to ensure that the EIT should be an autonomous institution which will be free to determine, in line with its broad objective, to be a force for excellent education, research and innovation, in its own way of working," states the planning document. Further clarification of the major elements of the organization will be presented this fall.

The communication from the Commission to the European Council entitled "The European Institute of Technology: Further Steps Towards its Creation," is available online at [http://ec.europa.eu/education/policies/educ/eit/comm\\_8\\_6\\_06\\_en.pdf](http://ec.europa.eu/education/policies/educ/eit/comm_8_6_06_en.pdf). Other information on EIT is located at [http://ec.europa.eu/education/policies/educ/eit/index\\_en.html](http://ec.europa.eu/education/policies/educ/eit/index_en.html).

## Quotable:

"Our nation's strong economic position in IT today is due largely to the fact that starting in the late 1950's we have been making critical investments in fundamental research. Let's look at a case in point: Google. In less than a decade...Google has become a corporate powerhouse. On March 31, 2006, Google reported revenues of \$2.25 billion for the quarter ended March 31, 2006, an astounding increase of 79 percent compared to the first quarter of 2005. Google's co-founders, Larry Page and Sergey Brin, while supported by an NSF-funded project on digital libraries at Stanford University, developed a new approach to online searching that quickly spread to information seekers around the globe. Google is now widely recognized as the world's largest search engine. Who would have predicted that an investment totaling just thousands of federal research dollars would create a multi-billion dollar a year market and a service that has revolutionized the management of digital technology."

— Peter Freeman, Assistant Director of the National Science Foundation's Computer and Information Science and Engineering (CISE) Directorate, May 5, 2006, before the Austin, Texas, field hearing of the House Science Committee.



# Valve Maker Provides Good Opportunity For Investors

Circor International, the Burlington, Mass.-based manufacturer of industrial valves, is positioned to experience a steady and profitable period of growth, according to Cliff Ransom, an independent institutional analyst who specializes in companies in traditional industries that adopt the lean manufacturing philosophy. Circor "is being transformed by the coincidence of two major trends, a long-term cyclical upswing in key end markets and a self imposed drive to institute lean manufacturing processes," Ransom writes in a recent research report on the company. Two years ago, Ransom first noted that a primary market for Circor's products in oil and gas exploration, production, distribution and refining was on a major upswing. This type of cyclical trend goes "farther and longer, both up and down, than most of us ever suspect and it is too early to bail," Ransom notes. "My counsel would be to not wait for the release of [Circor's] second quarter results to initiate or add to positions."

Helping buoy Ransom's bullishness on the company, which describes itself as being "inconspicuous" and "indispensable," was Circor's decision 18 months ago to hire consulting firm TBM to spread the lean philosophy throughout its 30 or so separate divisions. Circor, with sales last year of \$450 million, up 18 percent from \$382 million in 2005, experienced a "minor swoon in that lean journey," which is typical of a lean implementation, writes Ransom. "Operating metrics did not advance as well as had been hoped." Net income for 2005 was \$20.4 million or \$1.27 per diluted share as compared to \$11.8 million or \$0.74 per diluted share in 2004.

But things should get better. The company has hired an experienced manufacturing executive from Allied Signal to serve as chief operating officer. And it has created and filled its first full time professional human resources executive, "another area that is critical, but often over-looked in any lean transformation process," Ransom writes.

Ransom has spent time with Circor's new operations managers hired away from Honda and General Electric and liked what he heard. "I am always impressed when both senior and line managers use words like 'next,' 'still,' 'not yet' and 'soon' to temper descriptions of what has been accomplished versus what will be accomplished," Ransom writes. "This sort of nuance is simply not what I hear often enough, even given my very intense business travel schedule to visit operating facilities of many companies around the world."

Circor has fallen under the investment radar screen because its financials (EBITDA and net income) have not been overly stellar. Its cash generation and inventory turns haven't been great. But the ratio to working capital to sales, "which, at over 20 percent currently, should move to at least the high teens in the immediate future," Ransom writes. "Operating margins should lift as hard work pays off with attention to both cost of goods sold and SG&A. I stress that these metrics will likely improve

steadily, if not dramatically, in the short term (that's just the nature of lean transformation), but the trends are clearly moving in the right direction."

Circor's share price (at about \$27) has been rising slowly but

steadily over the past two years, with a 52-week trading range of between \$22.70 and \$32.00. Sales are up. The company booked \$203 million in new business during its most recent quarter, up 82 percent over the same period the previous year. Its backlog is up 69 percent to a record \$241 million. This will "satisfy production planning throughout this year and well into 2007," says Ransom.

The company is well positioned in other markets as well including aerospace, petrochemicals, power-generation, scientific instrumentation and industrial manufacturing. It is good at buying companies, and its Chinese production operations have been expanded to take advantage of lower costs.

There are risks, however. "The pattern of orders and deliveries at Circor can be quite 'lumpy,'" Ransom explains. The market for its highly engineered products is demanding and price sensitive. Backlogs are ephemeral. The company still seems to have too many manufacturing plants. The company will have to expense options and amortize its restricted stock units this year, which will penalize earnings. Further drags will be increased interest costs associated with borrowing for recent acquisitions, and a paltry commitment to R&D.

"With a current market cap of \$440 million, the shares have applicability for a variety of different investment styles," writes Ransom. "Circor sells today at only 16 times the consensus estimate of \$1.73 per share for 2006, but it should be noted that the company is not well followed, with Baseline showing no analysts, even though the company Web site lists five followers of the stock. Given the incremental margin on incremental revenues and the push to institute lean manufacturing techniques, I suspect that earnings power for Circor is likely to be greater than currently envisioned by the Street (or admitted by management). I was right in suggesting a similar rising pattern for 2005 and 2006 estimates, and I suspect that I will be equally right for 2007 forecasts as well, which today sit at only \$2.11 per share, for a forward valuation of only 13 times."

Working against the valuation of Circor is the perception that the industrial growth cycle is soon to be over. But once Circor's market cap hits the \$500-million mark, a broader group of investors will start paying attention to the company.

"As hard as I look for examples, the numbers of management teams that elect to transform themselves with lean processes are few and far between," Ransom concludes. "Furthermore, examples of companies that move to lean in vibrant and healthy times are as scarce as hens' teeth; crisis is the usual motivator. Even Toyota and Danaher, my two paramount role models, started on their respective lean journeys at times of at least divisional turmoil. In contrast, Circor has the advantage of initiating its transformation during a time of uplift. It is still very early to declare that Circor has 'won,' but I am impressed with what I have seen so far."

# *In Annual Budget Process, Some S&T Programs Fare Well, While Others Fare Less Well*

The House Appropriations Committee this week sent to the House floor a version of the Science, State, Justice & Commerce (SSJC) Appropriations bill that would set 2007 funding for the Manufacturing Extension Partnership (MEP) at \$92 million, double the administration's request of \$46.3 million but still 12 percent short of the program's current-year appropriation of \$104.6 million.

The bill, reported out on June 20, fell into line with the American Competitiveness Initiative (ACI) by fully funding White House requests for the National Institute of Standards and Technology (NIST) and the National Science Foundation (NSF). The House has already approved the third plank in the ACI platform, a 15 percent jump for the Energy Department's Office of Science (MTN, June 7, p. 5).

In line with White House wishes — and to no one's great surprise — the Commerce Department's Advanced Technology Program was zeroed out. The department's Technology Administration (TA) stumbles on, however: The bill would provide it \$2 million for 2007, an amount above the administration's request of \$1.5 million but still only one-third of TA's current budget of \$5.9 million.

TA, which lost five employees to a

buyout last year, has been slimming down further in anticipation of the dropoff. A handful of TA personnel have accepted the bureau's latest early retirement/buyout package, which would leave around a dozen full-time-equivalent (FTE) employees on TA's staff, provided there are no more takers before the offer closes at the end of this month.

Under the SSJC bill, the eleventh and last of the appropriations measures to be sent to the House floor, aeronautics research at NASA would get \$824.4 million, \$100 million above the administration's 2007 request but still well below this year's \$912.3 million. In justification, the report accompanying the bill called "imperative" that the U.S. "not forget the importance of aeronautics research to our domestic economy."

"While the United States is reducing its Federal investment in aeronautics research," the committee added, "our competitors are increasing their aeronautics research and development budgets and making competitiveness their number one priority."

NIST's core accounts — those covering its labs, construction of research facilities, and the Baldrige National Quality Program — would receive \$535 million under the bill, according to the institute's

calculations. That amounts to a 24 percent improvement over its nominal \$568.4 million for this year because the latter sum includes \$137.3 million in earmarks.

NIST labs would get \$459.4 million in 2007, up from \$387.5 million this year; since the latter figure includes \$11.9 million in earmarks, the effective increase in the labs' resources would come to 22.3 percent. The amount would include "new investments" of \$72 million under ACI for which the Appropriations Committee's report recommends three uses:

1) \$30 million for "enhancing NIST's national research facilities," specifically "including support for the Center for Nanoscale Science and Technology and the Center for Neutron Research";

2) \$28 million for "furthering the work of NIST's laboratories and technical programs," with five areas highlighted: "support for developing a robust hydrogen economy; creating manufacturing innovation through supply-chain integration; building the infrastructure for innovation through quantum information science developments; furthering structural safety from hurricanes, fires and earthquakes; and developing next-generation materials"; and

3) \$14 million for "opening markets for American workers and exporters through development of international standards and innovation," to include "support for developments in measurement science and enhancements in bioimaging, cybersecurity and biometric identification technologies."

*(Continued on page 14)*

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## Private Sector Leads Growth In Pollution Cleanup Market

The U.S. market for cleaning up hazardous waste sites and polluted properties grew by 6 percent during 2005, according to Environmental Business International Inc. Growth in the industry was fueled by projects involving brownfield sites, due to a vibrant real estate market and the increased value of land associated with old factories.

"What we once called privately instigated cleanups accounted for 10 percent of revenues in 1990," says EBI president Grant Ferrier. "What we now call 'redevelopment cleanups' will account for one-third of more than \$7 billion in remediation revenues in 2006, and fueled growth of almost 6 percent in 2005, the highest growth rate for the segment since 1992."

Excavation and off-site treatment and disposal is the leading soil cleanup remedy, accounting for 37 percent of active projects. Capping and containment techniques that were popular during the early half of this decade have fallen from 24 percent of reported projects in 2004 to 13.5 percent in 2006. For groundwater treatment, air stripping (27 percent) and carbon adsorption (22 percent) were the cleanup approaches of choice during 2004, but air "sparging" is vying for a leading role in groundwater cleanup this year.

For information on EBI's \$195 market analysis entitled "Remediation & Redevelopment 2006," contact Moe Wittenborn at 619-296-7685 ext. 10.

## Budget... (Continued from page 13)

While NIST's construction account appears on the surface to drop from \$173.7 million this year to \$68 million in 2007, it would in fact rise \$19.7 million after correcting for the \$125.4 million in earmarks bloating the 2006 number.

At NSF, a \$439 million increase in the overall agency budget, to a shade above \$6 billion, would include an increase for research that the committee calculates at \$334.5 million. The \$832.4 million it would provide for science education exceeds the administration's request by \$16.2 million.

According to the committee's report, the SSJC bill includes "approximately \$387 million for Member projects" — that is, earmarks. That figure is "\$1.3 billion less than the [2006] level and less than 1 percent of the total funding" of \$59.84 billion in the bill, a level marginally above the \$59.70 billion requested by the White House.

Last week, the Appropriations Committee approved a version of the 2007 Defense Appropriations bill (H.R. 5631) that, according to an analysis by the American Association for the Advancement of Science (AAAS), would fund science and technology at 22.6 percent above the administration request. AAAS defines S&T as including Basic Research (6.1), Applied Research (6.2), Advanced Technology Development (6.3) and Medical Research.

The overall amount set by the committee, \$13.75 billion, was \$2.54 billion higher than the White House number but still 0.2 percent below the current-year figure of \$13.79 billion. A table detailing the AAAS analysis is available online at <http://www.aaas.org/spp/rd/dod07h3.pdf>.

— KEN JACOBSON

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