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National Academies: United States Loses Lead In Telecommunications

The United States must adopt a more aggressive strategy to fund research and development needed to foster its telecommunications industry, concludes a new study from the National Academies of Sciences. "The U.S. position as a leader in telecommunications technology is now at risk because of the recent decline in domestic support for long-term fundamental telecommunications research," says the first sentence of the study done at the request of the National Science Foundation. "Strong competition is emerging from Asian and European countries that are making substantial investments in telecommunications R&D."

The National Research Council's Committee on Telecommunications Research and Development recommends the federal government create a new research organization called the Advanced Telecommunications Research Activity (ATRA) "to stimulate and coordinate research across industry, academia and government," it says. ATRA would be structured on the success of the Defense Advanced Research Projects Agency and Sematech. Where ATRA would reside needs to be determined, but "its proposed mission would align with that of existing agencies within the Department of Commerce, and NSF has developed mechanisms for

BY RICHARD McCORMACK

joint academic-industry engineering research, albeit more focused and on a small scale," notes the committee in its recommendations.

All segments of the U.S. telecommunications industry — both equipment vendors and service providers — should be encouraged to support the new research organization "possibly taking advantage of the avenue provided by participation in joint, cooperative research activities organized by ATRA," notes the committee. "Indeed, industry should provide a significant fraction of total R&D funding for ATRA."

The U.S. lead in

(Continued on page eight)

Australia Unexpectedly Drops Out Of Intelligent Mfg. Systems Program

The international Intelligent Manufacturing Systems (IMS) project is losing one of its primary members. Australia has decided to back out of the multi-million dollar R&D collaboration. The Australian government "has decided to focus its support for international collaboration on its current suite of R&D and innovation programs," writes Tony Strasser, IMS Australia Secretariat. Australia stopped providing funding to the IMS Inter-Regional Secretariat, the IMS governing body which Australia has hosted, on August 11.

The IMS program is now entering its second phase, having completed its original 10-year trial period last year. Participants include the United States, Switzerland, Japan and South Korea. The European Union has approved participation, but ratification is in the hands of the European Council, with a favorable decision expected before September. Canada has not yet made a firm commitment to the second phase of the program.

Australia has decided to forego involvement in IMS and instead strengthen its \$25 million Industry Cooperative Innovation Program (ICIP). The Australian government wants to "build sectoral strength through international as well as domestic collaboration," writes Strasser.

Australian companies already engaged in IMS projects can continue their involvement, says Dr. Byung-Wook Choi, managing director of the IMS Inter-Regional Secretariat (IRS), which is now located in

(Continued on page four)

Universities Rest On Their Laurels As Other Countries Surpass U.S. In Higher Education, Says Commission

“The future of our country’s colleges and universities is threatened by global competitive pressures, powerful technological developments, restraints on public finance and serious structural limitations that cry out for reform,” states a draft report from the Department of Education’s Commission on the Future of Higher Education.

The U.S. higher education system “needs to improve in dramatic ways” and begin to address issues associated with escalating costs, inefficiencies, declining federal and state support and new programs aimed at educating more students in life-long learning pursuits.

“History is littered with examples of industries that, at their peril, failed to respond to — or even notice — changes in the world around them, from railroads to steel manufacturers,” states the report. “Without serious self-examination and reform, institutions of higher education risk falling into the same trap, seeing their market share substantially reduced and their services increasingly characterized by obsolescence. Already, troubling signs are abundant. Where once the United States led the world in educational attainment, recent data from the OECD indicate that our nation is now ranked ninth among major industrialized countries in higher education attainment.

Another half dozen countries are close on our heels. And these global pressures come at a time when data from the U.S. Department of Labor indicate that postsecondary education will be even more important for workers hoping to fill the fastest growing jobs in our new economy.”

The business community must become “directly and fully engaged” with the government and higher education leaders in developing new educational services tailored to a competitive economy.

“It’s time to be frank,” states the commission. “Among the vast and varied institutions that make up U.S. higher education, we have found much to applaud, but also much that requires urgent reform....[W]e must not be blind to the less inspiring realities of postsecondary education

in our country. We remained so far ahead of our competitors for so long that we began to take our postsecondary superiority for granted. The results of this inattention, little known to many of

our fellow citizens, are sobering. We may still have more than our share of the world’s best universities. But a lot of other countries have followed our lead and they are now educating more of their citizens to more advanced levels than we are. Worse, they are passing us by at a time when education is more important to our collective prosperity than ever.” To view the commission’s draft report, go to <http://www.ed.gov/about/bdscomm/list/hiedfuture/index.html>.

Big Drop In Foreign Students At U.S. Universities

Not as many foreigners are coming to the United States for advanced study in the sciences and engineering, according to the National Science Foundation. “2004 marks the third straight year in declining first-time, full-time enrollments of foreign graduate students in U.S. science and engineering programs,” says the agency. Between 2003 and 2004, enrollment of foreigners declined by 7 percent. Since 2001, enrollment of foreign students is down by 20 percent.

The number of postdoctoral appointees also dropped between 2003 and 2004. “Although the number of U.S. citizens and permanent resident postdocs increased slightly between 2003 and 2004, the increase was not enough to offset the drop in foreign postdocs, resulting in an overall decline of 2 percent in S&E postdocs at U.S. educational institutions, the first substantial decline since 1978,” says NSF in a six-page analysis, “Graduate Students and Post-doctorates in Science and Engineering: Fall 2004,” located at <http://www.nsf.gov/statistics/gradpostdoc>.

GAO: Better Oversight Needed Of H-1B Visas

The Department of Labor needs to improve its monitoring of companies hiring foreigners using the H-1B visa, according to the Government Accountability Office. The Labor Department “does not use its full authority to oversee employers’ compliance with program requirements,” says GAO.

Between 2002 and 2005, the agency reviewed more than 960,000 H-1B applications and approved almost all of them, but there were inaccuracies in many of those applications. “We found more than 3,000 applications that were certified even though the wage rate on the application was lower than the prevailing wage for that occupation,” says GAO. “We also found approximately 1,000 certified applications that contained erroneous employer identification numbers, which raises questions about the validity of the applications.”

The number of people with H-1B visas complaining about their employers is also increasing, as is the number of employer violations and penalties. In 2000, the Labor Department required employers to pay back wages totaling \$1.2 million to 226 H-1B workers. “By 2005, back wage penalties had increased to \$5.2 million for 604 workers,” says GAO.

The report, “H-1B Visa Program: More Oversight By Labor Can Improve Compliance With Program Requirements,” can be viewed at <http://www.gao.gov/new.items/d06901t.pdf>.

General Aviation Market Is UP

General aviation manufacturers continue to ship airplanes at a record pace. During the first half of 2006, the industry shipped a total of 1,843 airplanes, an increase of 19 percent over the same period of 2005, according to the General Aviation Manufacturers Association (GAMA). Industry billings rose 35 percent to \$8.8 billion, the highest recorded billings for the first half of a year in general aviation's history. "With our manufacturers' current backlog, we are confident that this trend will continue throughout the remainder of 2006," says GAMA president Pete Bunce. Shipment of piston-powered aircraft increased by 17.4 percent during the first half of the year to 1,270 units; turboprops were up 12 percent to 158 units; and business jets were up 28 percent to 415 units.

Aerospace Market Is UP

The U.S. aerospace industry is on a record course this year. Orders, shipments and backlog "showed significant gains in the first half of 2006, which would put the sector ahead of last year's record-setting numbers if the trend continues," says the Aerospace Industries Association. Manufacturers of civil aviation and defense products booked \$116 billion in orders during the first six months of this year, "which, projected to an annual figure of \$233 billion, would exceed last year's record of \$219 billion," says AIA.

Industry shipments totaled \$88 billion in the first half of 2006, a pace that would total \$177 billion and surpass last year's record of \$162 billion.

"Civil aerospace is coming off an extraordinary year in which orders nearly doubled from 2004 and nearly tripled compared to 2003," says AIA. "The first half of 2006 saw a continuation of that impressive pace, with \$78 billion in orders, a rate that would put it at \$156 billion and surpass 2005's record of \$151 billion."

Defense shipments are on pace to increase for the sixth-straight year, while civil aerospace is in its third year of growth, up nearly 50 percent over 2003. The industry's growing backlog of unfilled orders totaled \$280 billion after two quarters of 2006, "meaning both defense and civil shipments are expected to continue growing," says the Arlington, Va.-based trade group.

Semiconductor Market Is UP

Worldwide sales of semiconductors rose to \$19.6 billion in June, up 9 percent from the same month in 2005, reports the Semiconductor Industry Association. Total sales for the first six months of the year hit \$118 billion, up 8.3 percent from the same period in 2005. Unit sales of PCs rose approximately 10 percent during the second quarter of 2006 compared to the same quarter in 2005, but the average price of a laptop declined by 18 percent. There were 235 million cell phones sold during the second quarter of 2006, which represents an increase of 4 percent over the first quarter.

Market Forces Blow In Wind Energy's Favor

The installed base of wind power in the 20 member countries of the International Energy Agency (IEA) is quickly growing. In 2005, wind capacity in the IEA countries increased by 20 percent over 2004, or by 8,927 megawatts to a total installed base of 85,364 MW. From 1995 to 2005, the percentage of electricity generated from wind grew from 0.2 percent of total generation to 1.2 percent.

Eight countries now generate 1 percent of their electricity from wind (Australia, Denmark, Germany, Greece, Ireland, the Netherlands, Portugal and Spain). In Denmark, wind accounts 18.5 percent of total electricity generation.

"Having reached its technological maturity, wind energy can now contribute in many different aspects and is regarded nowadays just as any other energy source in modern power systems equipped for 21st century needs and constraints," according to the IEA.

Growth of installed capacity last year skyrocketed in some countries. Korea increased its capacity the most, by 233 percent, followed by Portugal (100 percent), Australia (86 percent), Norway (69 percent) and Ireland (58 percent). In the United States, installed capacity increased by 36 percent or by 2,431 megawatts to a total installed base of 9,149 MW. In Germany wind capacity increased by 1,808 MW to 18,428 MW; and in Spain, it increased by 1,630 MW to 10,028 MW. Spain generates the most electricity from wind — 20,236 GWh.

Lack of transmission lines from good wind sites, regulatory hurdles for new generators and problems with radar and radio interference are slowing the adoption of wind in many places throughout the world, says the IEA.

To view the IEA's "2005 Annual Report on Wind Energy," go to <http://www.ieawind.org>.

Meanwhile, in the United States, California has lost its 25-year lead in wind power capacity. Texas now has 2,370 megawatts of installed capacity, compared to 2,323 MW in California. Texas added 375 megawatts of wind capacity during the first six months of this year, about half of the total amount installed in the country over that period, reports the American Wind Energy Association (AWEA).

The United States is on track to install 3,000 megawatts of capacity this year, which would "decisively eclipse the previous record of 2,431 MW set in 2005," says AWEA. An estimated 10,000 MW of new natural gas fired electric plants will be installed this year, and only 400 MW of coal- and oil-fired capacity, "making wind power second only to natural gas in new capacity and new power generation for the second year in a row," says AWEA.

For a list of the projects completed so far in the United States in 2006 and those under construction, go to http://www.awea.org/newsroom/releases/AWEA_Quarterly_Market_Report_072506.html.

Wanted: Complaints About China

U.S. companies harboring a beef against China have an opportunity to express themselves to the U.S. government and the World Trade Organization. "This fall, the WTO will hold its fifth annual review of China's compliance with WTO commitments," says Pat Cleary, senior vice president of communications at the National Association of Manufacturers. "To prepare for the WTO, the office of the U.S. Trade Representative will seek input from us in the business community." NAM will make a submission to USTR on behalf of manufacturers with regards to concerns about intellectual property rights abuses, subsidies and currency manipulation, among other issues raised by companies. "Company names will not be used in our report unless you explicitly authorize us to do so," says Cleary. Deadline for submissions is Friday, August 25. Comments can be sent to namtrade@nam.org. To view last year's submission, go to http://blog.nam.org/archives/2006/08/china_wto_compl.php. Cleary can be reached at PCLEARY@nam.org.

Commerce Secretary Seeks Business Companions For Chinese Trade Trip

Commerce Secretary Carlos Gutierrez will lead a business development mission to China in November, in an attempt to help companies increase business there. Executives interested in traveling with the secretary can apply on-line at www.export.gov/chinamission or contact the Department of Commerce's Office of Business Liaison at 202-482-1360.

Australia... (From page one)

Seoul, Korea. "However, for projects under abstract or outline phase, Australian companies may participate in projects subject to ISC's approval."

The Australian government "is looking to support a larger number of international collaboration projects through its [ICIP] program over the next four years," says Strasser. The Australian government is contacting all of the companies involved in IMS partnerships and "will advise them of the opportunities for funding through ICIP," Strasser adds. Australia's IMS secretariat is "winding down its operations. We thank you for your interest and support of IMS during our involvement."

Bush Rejects AFL-CIO's 301 Petition Of Chinese Labor Abuses

The Office of the U.S. Trade Representative (USTR) has rejected the AFL-CIO's recent call for an investigation into labor practices in China. The USTR issued the same rebuff as it did in turning down a similar petition in 2004: "We do not need to conduct a year-long investigation to know that there are serious concerns with labor rights and working conditions in China," says USTR spokesman Sean Spicer.

It is the lack of change in USTR's approach that irks the labor organization, which in June filed the petition calling for the investigation under Section 301 of the 1974 Trade Act. "They answered in almost the same words," noted Robert Baugh, executive director of AFL-CIO's Industrial Union Council. "But the whole point of updating the petition was that a lot more information has come out since. Meanwhile, USTR made a lot of promises [in 2004], and nothing has happened."

This time around, the AFL-CIO is joined in its discontent by two members of Congress who acted as co-petitioners: Reps. Chris Smith (R-N.J.) and Benjamin Cardin (D-Md.). In addition, 11 senators and another 29 House members sent a separate support letter to USTR.

Smith, calling himself "deeply disappointed" by USTR's decision, said in a statement: "It was my hope that the USTR would have seized this petition as a chance to correct a flawed trade policy that continues to lead to worker exploitation in China and has resulted in over 1.3 million jobs lost here at home."

According to Smith, "the evidence of worker exploitation in China is overwhelming." USTR's statement didn't exactly disagree. "Clearly China has much more to do in the area of labor rights," it acknowledged, saying it would "keep up the pressure on China to do so."

Nonetheless, USTR permitted itself a note of optimism, stating in "background" it distributed in announcing the petition's rejection that "data compiled by China's National Bureau of Statistics suggests that real wages, adjusted for inflation, rose 10-11 percent per year between 1996 and 2004."

Upward movement sounds good, but a 2005 U.S. Bureau of Labor Statistics study the AFL-CIO cited in its petition pointed to evidence that workers in China's manufacturing sector were compensated at the level of 57 cents U.S. per hour — which includes take-home pay and social insurance payments by employers.

Even if it increased at a rate of 11 percent per year, *MTN* calculates, a wage starting at 57 cents in 2005 would take until 2037 to reach \$16.08 per hour, a figure roughly equivalent to the current level of pay for manufacturing workers in the U.S. Were it to increase over the same period by 5 percent annually — a respectable rate in most places other than today's China — it would reach no higher than \$2.72 per hour in 2037 and would take until 2074 to reach \$16.52.

And even the figure of 57 cents per hour including benefits is likely to be an overestimate, the AFL-CIO petition claims. Among other things, it says, the BLS wage study "includes permanent urban residents but does not include most lower-paid migrant factory workers, who comprise the vast majority of factory workers" in China.

— KEN JACOBSON

Toyota Is Bullish On U.S. Market, Due To Rapid Population Growth

Despite downbeat news about domestic automotive manufacturers, the United States auto sector is strong and growing, according to Toyota's top U.S. executive. "What we're seeing is not the demise of the U.S. industry, it's the globalization that's occurring," Jim Press, president of Toyota North America, told a recent luncheon at the National Press Club.

Want evidence of this globalization? General Motors sold more cars outside the United States last year than it did in America. "We're going to see more of that in the future," Press told reporters.

Growth in the United States market for automobiles should be robust over the next two decades, Press predicts. Total unit sales should increase from 17 million this year to 20 million within a decade. Yet that forecast could be low. The population of the United States is projected to grow from 300 million this year to 370 million over the next 19 years, Press pointed out.

Moreover, the average American buys an average of 13 cars over their lifetime, and more than half of these purchases occur after the age of 50. "Sixty percent of the U.S. population will be over 50 in the next five years and our Baby Boomers won't reach their peak spending power until 2009," Press told the Press Club members.

Generation X is starting to buy cars for their offspring and 63 million members of Generation Y will be on the market for a car over the next 10 years. By 2010 they'll be buying one in every four vehicles sold in the United States.

"If you ever wonder about the future of the auto business, you could do what I do on a Sunday. It's kind of fun," Press said. "Go to the hospital maternity wards. Do you ever do that, just go up there? You don't know anybody. They're all friendly, right? Everybody's having a good time and big smiles and while you're there in this happy place, just remember, each one of those little blue and pink baskets is 13 or 14 purchase cycles. It'll cheer you right

up. It's a wonderful opportunity."

Press sees a bright future for hybrid vehicles. Toyota has now sold more than 350,000 hybrids in the United States. "In fact, we've sold more hybrids in the U.S. this year than Cadillac, Buick or even Mercedes Benz sold cars," said Press. "It's a big business and believe me more will follow."

The company is reducing the size of hybrid components by 75 percent and reducing costs by half. It plans to offer hybrid vehicles throughout its entire product line of cars and trucks. "Being able to thumb your nose at a gas station on a regular basis is just the icing on the cake," said Press.

Most all of the electronic components and the electric motors used in hybrids will be utilized in a future hydrogen vehicle. Toyota is working on a vehicle that can cross the United States on one tank of gas "and clean the air while they're being driven," said Press.

When asked if Toyota will finish U.S. as the country's third largest 2006 automaker, surpassing DaimlerChrysler for the first time, Press said it "really is more a factor

of what DaimlerChrysler does than us. That's not our goal." Toyota, he added, "does not have the manpower or the resources to worry about what's going on in the other companies."

Asked if Toyota favors an increase in corporate average fuel efficiency levels, he said "we support increasing CAFE."

- Toyota employs 32,000 Americans in nine manufacturing plants. Its tenth plant, in San Antonio, will be operational next year. The company has more employees than General Mills, Texas Instruments and Cisco Systems. Including its dealers and suppliers, the company is directly responsible for another 177,000 jobs. Toyota's total spinoff employment is 400,000 U.S. jobs, about the size of a city like Miami.

- Toyota purchases \$28 billion in parts and services in the United States.

- Toyota is building an R&D facility in Ann Arbor, Mich., which will employ 1,100 engineers.

- The Toyota Camry is the number-one selling passenger car in the United States. The Lexus is the number-one selling luxury line. The Prius is the number-one selling hybrid in the United States.

Motorola, Wipro Create Company Aimed At Telecom Outsourcing

Motorola has entered into a joint venture with Wipro Ltd. of India, one of the leading companies in outsourcing of IT services. The two firms have created a company called WMNetServe to sell outsourcing services for planning, deployment, security, operations and support of telecommunications networks. The new company will have its headquarters in Europe.

"The combined strength of Wipro and Motorola gives WMNetServe a significant competitive advantage in managed services," said Srikanth Kannankote, corporate vice president of Motorola. Adds A.L. Rao, CEO of Wipro: "WMNetServe enables customers to benefit from Motorola's leadership position in wireless technology and services, and leverage Wipro's global delivery model and two decades of experience in telecom outsourcing."

The two companies hope to capitalize on the growing trend in outsourcing of telecommunications services. According to Mercer Management Consulting, this market is expected to almost double to \$48 billion by 2010, up from \$26 billion in 2005. Motorola and Wipro say there is an industry-wide shift taking place away from in-house teams managing networks and upgrading to next generation platforms.

U.S. Industry Is On The Nanotech Ball

A great many more industrial sectors of the U.S. economy are "transitioning resolutely to the nano-future," according to a survey of 600 industry executives. Progress toward applying nanotechnologies has been across the board, from both traditional industries to emerging fields, according to the survey conducted by the National Center for Manufacturing Sciences (NCMS), with funding from the National Science Foundation.

"In 2000, one could identify only a handful of companies with nanotechnology programs," says M.C. Roco of the National Science Foundation. "In 2005, 18 percent of the surveyed industries are already marketing products, about 80 percent expect to commercialize nano-products by 2010, and almost everyone expressed confidence their organizations will be involved with nanotechnology in the future after 2010."

Applications of two-dimensional nanotechnology products such as coatings and thin films and particulates are proliferating across most major industrial sectors, but commercializing more complex, three-dimensional nanotechnology products is proving more difficult, says Manish Mehta, principal investigator at NCMS. Process scalability, financing and regulation are areas that need to be addressed. "These challenges require concerted and innovative public-private collaborations with unprecedented knowledge-sharing to overcome so as to reap the visionary benefits," says Mehta. The "2005 NCMS Survey of Nanotechnology in the U.S. Manufacturing Industry" is located at <http://www.ncms.org/publications/PDF/05NCMSNanoFinalReportWithAppendices>.

FDA Creates Nano-Tech Commission

The Food and Drug Administration has created an internal Nanotechnology Task Force. The group is charged with determining regulatory approaches "that encourage the continued development of innovative, safe and effective FDA-regulated products that use nanotechnology materials," says acting FDA Commissioner Andrew von Eschenbach. "The task force will identify and recommend ways to address any knowledge or policy gaps that exist so as to better enable the agency to evaluate possible adverse health effects from FDA-regulated products that use nanotechnology materials." The task force is planning a public hearing for Oct. 10: <http://www.fda.gov/OHRMS/DOCKETS/98fr/06n-0107-nm00002.pdf>.

As U.S. Production Declines, So Too Does Manufacturing Energy Use, Reports EIA

The U.S. manufacturing sector's use of energy declined between 1998 and 2002, reports the Energy Information Administration. The drop can be attributed to a decline in real value added by virtually all industrial sectors save for chemicals, petroleum and coal, according to the EIA report "Energy Use In Manufacturing," the first since 1998.

"Among the manufacturing industries that have traditionally used the most energy, it has been found that the change in energy consumed from one period to another is positively correlated with the change in real value of shipments between the two periods," says the report. "If the real value of shipments increases by some percentage between years, it is expected that energy consumption increases by approximately that percentage."

With capacity utilization down for most industries, energy consumption was down, too.

EIA says it is difficult to assess how rising energy prices impacted the manufacturing sector from 1998 to 2002, but that "it certainly tightened operating margins. For example, had the sector maintained the same level of natural gas use in 2002 as was used in 1998, the 42 percent increase in cost would have to have been absorbed. However, first use consumption of natural gas fell by 13 percent between 1998 and 2002. Still, the sector-wide expenditures on natural gas increased by nearly 30 percent—over \$5.75 billion...When the cost of inputs to production processes, such as energy sources, undergo percentage increases greater than that of the price of the manufactured product, profit margins are squeezed."

Between 1998 and 2002 energy costs for manufacturers increased substantially, with coal prices up 20 percent (to \$44.46 per short ton); electricity up 9 percent (to \$0.048 per kWh); distillate oil up 34 percent (to \$0.75 per gallon); residual oil up 54 percent (to \$0.57 per gallon); and natural gas up 42 percent (to \$4.01 per 1,000 cubic feet). Since then, energy prices have risen even more.

Manufacturers' investment in energy management audits and efficiency improvements related to lighting, HVAC, direct machine drives, compressed air systems and steam production increased substantially during the period. Forty percent of manufacturing establishments participated in an energy audit or equipment upgrades, up 7 percent from 1998.

The full report is located online at http://www.eia.doe.gov/emeu/mecs/special_topics/energy_use_manufacturing/energyuse98_02/98energyuse02.html.

Aeronautics R&D Budget Is Way Down, And Current Proposals Are Filled With Pork

The Senate Appropriations Committee has joined the House in providing more funding for aeronautics research at NASA than was requested by the White House, but industry experts told members of the House Science Committee that much more money is needed for the agency to continue making a significant contribution to this critical — and increasingly vulnerable — sector of the U.S. economy.

In reporting out its version of the bill that funds NASA (H.R. 5672) last month, the Senate panel stipulated that NASA aeronautics research receive \$35 million more than the \$724.4 million the administration requested for next year. The full House has voted to increase the request by \$100 million, but its figure still falls well short of this year's \$912.3 million appropriation.

Senate appropriators said in their report that they are “concerned with the steady decline in the aeronautics research and technology request,” adding: “Even more alarming, NASA's budget projections indicated that this trend will continue.” The administration's 2007 budget revealed the intention to leave NASA aeronautics hovering at the low-\$700-million level through 2011; in 1994, its appropriation was \$1.54 billion.

Witnesses testifying before the House Science Space and Aeronautics Subcommittee on July 18, however, indicated that the Senate panel might have reason to be alarmed more than just \$35 million's worth. The Senate report also includes a long list of earmarks — suggesting that, like in the current year, scores of millions will be subtracted from NASA funding for such projects.

Michael Romanowski, vice president of Civil Aviation of the Aerospace Industries Association (AIA), replied with a flat “no” to the question of whether the U.S. aerospace industry is “satisfied with the direction of NASA aeronautics.” He told Science subcommittee members that

BY KEN JACOBSON

critical research needed to cope with the possibility that U.S. air traffic could triple within 20 years “is unfunded and missing from the work plans of any governmental agency.”

With the U.S. air-transportation system already overburdened, he said, an estimated \$200 million to \$300 million per year is required for research into air traffic management, environment and safety under the multi-agency Next Generation Air Transportation System (NGATS). The changes NGATS would bring are “not just critical for NASA, they're not just critical for industry, they're critical to our economy, [which] is continually more dependent on aviation and services provided by aviation,” Romanowski said.

Paul Kaminsky, who chaired the National Research Council panel that drafted its recently released “Decadal Survey of Civil Aeronautics,” said NASA aeronautics would need “about twice the budget” it has today to carry out work envisioned under the “base program” put forward by the survey, which does not offer budget recommendations.

Furthermore, “stability of funding [is] extremely important,” he said. “You can't control the people in education and the infrastructure by just turning a knob. This takes a few years to absorb and a few years to wind down,” so “one wants to build a stable foundation.”

Kaminsky, who was under secretary of Defense for Acquisition and Technology in the Clinton administration, argued that the Decadal Survey “demonstrates that we have a

target-rich environment for aeronautics research and technology, countering the arguments made by some” — among them, proponents of cutting NASA's aeronautics' budget — “that this is a mature field which isn't in need of technology investment.”

Rep. Dennis Kucinich (D-Ohio), whose district includes NASA's Glenn Research Center, supplied the hearing a hopeful note when he pointed to a \$1 billion Senate add-on to the overall NASA budget engineered at the Appropriations Committee level by Sens. Barbara Mikulski (D-Md.) and Kay Bailey Hutchison (R-Texas). The sum, meant to reimburse NASA for costs connected with the loss of the Shuttle Columbia, “would free up money for aeronautics,” said Kucinich.

But the report accompanying the Senate legislation also includes the list of earmarks, 76 of them, to come out of NASA funds. Although no dollar amounts are attached to the earmarks, and although the list is shorter than that appearing in the conference report for this year's bill — a list that contained 184 earmarks totaling \$274.5 million — it appears reasonable to expect that they represent a sizable chunk of change.

For one thing, the home state of Rep. Richard Shelby (R-Ala.), the chairman of the Appropriations subcommittee that funds NASA, is leading in number of earmarks with 13. In the current-year bill, Alabama led all states in number of earmarks with 22 and value of earmarks with \$52.5 million.

For another, many of the 2007 bill's Alabama earmarks are repeaters from this year: It appears that 10 of those listed in the Senate report accompanying H.R. 5672 correspond to earmarks that totaled \$24 million in the current fiscal year. Overall, earmarks proposed this year seem to match earmarks accounting for

(Continued on page 13)

Singapore Is A Manufacturing Success Story

Singapore's manufacturing sector is flourishing. The Singapore Economic Development Board found the country's total manufacturing output increased by 22.5 percent from June 2005 to June 2006. Virtually all sectors of manufacturing experienced robust growth, including electronics, transport engineering and chemicals. "The star of the growth was the biomedical manufacturing industry with 60 percent increase in output," reports the Singapore Economic Development Board.

Manufacturing contributes 28 percent to Singapore's GDP (as

opposed to 12 percent in the United States), and is the "catalyst of Singapore's economic growth," says the board. "Last year, the government announced a \$177 billion target by 2018 for its manufacturing industry," says the board. "As manufacturing jobs shift to locations such as China and India, Singapore has pushed a value-added manufacturing and R&D strategy, and its manufacturing growth shows no signs of slowing."

Singapore's manufacturing industry grew 16.4 percent during the first six months of 2006, with a

59.4 percent increase in the pharmaceutical sector. Semiconductor production rose 33.7 percent from June 2005 to June 2006; precision engineering was up by 15.4 percent over that period, with higher output growth in machinery (37.5 percent), driven by production of semiconductor machinery and equipment, industrial process control equipment, special purpose machinery, lifting, hoisting and conveying machinery and transformers. For further information, contact Miss. Kok Yit Hoe, yithoe@edb.gov.sg.

Telecom R&D... (Continued from page one)

telecommunications is at risk because the country has lost its ability to compete in commodity products, due to cost disadvantages. Therefore, it is imperative for the country to focus on high-value innovation that is made possible "only by a greater emphasis on research," says the National Research Council report. "Expansion of telecommunications research is also necessary to attract, train and retain research talent."

But research funding is in decline, with fewer equipment vendors forced to focus more on short-term product development. "Telecommunications research is increasingly being done at universities rather than industry and outside rather than inside the United States," says the committee. "In addition, the diversity of players in today's telecommunications industry makes it difficult to design and deploy major end-to-end innovations."

In the meantime, federal funding of research has not increased to cover declining industry investments, even though the sector still has not matured. "No systematic efforts, such as took place for the semiconductor industry with Sematech, have emerged," says the committee. "Because the benefits of

much telecommunications research cannot be appropriated by individual firms, therefore, public funding of such research appears necessary."

The National Science Foundation has been increasing its investment in telecommunications R&D with an emerging emphasis on networking. But the Defense Advanced Research Projects Agency (DARPA), which has been credited with creating the Internet, "has been shifting its emphasis toward more immediate

military needs and giving less attention to long-term telecommunications research," says the panel.

Both NSF and DARPA should assess their investments in basic telecommunications research "and consider increasing both their emphasis on and their level of investment in such research," notes the report. "To stay at the forefront, DARPA should continue support of telecommunications research for military applications, even if there is the chance of commercial development of those technologies."

Members of the National Academy of Sciences Committee on Telecommunications Research and Development:

Robert Lucky, Telcordia Technologies (retired), Chair
James Adams, Rensselaer Polytechnic Institute
Frederick Chang, University of Texas, Austin
John Cioffi, Stanford University
Richard DeMillo, Georgia Institute of Technology
Reed Hundt, McKinsey and Company
Jeffrey Jaffe, Novell
Edward Kozel, Open Range Ventures
Rajiv Laroia, Flarion Technologies
David Messerschmitt, University of California, Berkeley
Eli Noam, Columbia University
Daniel Pike, GCI Cable and Entertainment
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Theodore Rappaport, University of Texas, Austin
William Spencer, Sematech (Emeritus)
David Teece, University of California, Berkeley
Hemant Thapar, Link-A-Media Devices
Jack Wolf, University of California, San Diego

GAO Will Audit U.S.-China Commission

BY KEN JACOBSON

The Government Accountability Office (GAO) is embarking on a study of the U.S.-China Economic and Security Review Commission (USCC) at the request of Sen. Robert Byrd (D-W.Va.). GAO's work may have implications for the panel's 2007 activities: Under Senate Appropriations Committee report language, a portion of USCC's proposed funding would be contingent on its review's findings.

While the White House has requested \$4 million for USCC for the coming year, a raise of \$1 million from its current budget, the Senate Appropriations Committee has held the line at \$3 million while commenting tersely in its report: "The Committee provides that \$1,500,000 shall be obligated only after the Secretary of State consults with the Committee on the findings of the GAO's audit of the Commission."

Byrd's office failed, despite repeated requests, to provide *MTN* with an explanation of what has aroused the concern of the senator, whose amendment to Defense Authorization legislation brought the panel into existence in 2000. The House has voted to approve the administration's request of \$4 million for USCC in 2007, its appropriators commending the panel for "its efforts to monitor the evolving U.S.-China relationship."

Describing GAO's charge, a spokeswoman said the office "will look at whether the commission is acting within its mandate and in accordance with applicable laws." The study is expected to focus on the commission's operations, comprising an audit of its activities and its use of appropriated funds.

After accepting Byrd's request in June, GAO spent last month pulling a review team together, and it will spend this month in what it calls the "design commitment phase": initial gathering of material, determining which issues are relevant to study, and developing

questions to pursue. It expects to discuss the results of this preliminary effort with the senator's office in September.

Created as the U.S.-China Security Review Commission, the body received its current name and a revised list of responsibilities under legislation enacted in 2003. Under appropriations legislation for 2006 (Pub.L. 109-108), its duties were tweaked and it was made subject to the provisions the Federal Advisory Committee Act (FACA), which commonly applies to executive-branch commissions rather than to legislative-branch commissions such as USCC.

Current law, a USCC fact sheet says, calls for it to "focus its work and study on the following eight areas: proliferation practices, economic transfers, energy, U.S. capital markets, regional economic and security impacts, U.S.-China bilateral programs, WTO compliance, and the implications of restrictions on speech and access to information in the People's Republic of China."

Brookings Discovers Mfg. Job Loss Issue

Seven Great Lake states have been hit hard by job losses in manufacturing over the past five years, accounting for 37.5 percent — or 1.1 million — of the three million lost jobs in manufacturing, according to an analysis by the Brookings Institution. Michigan alone lost 218,000 manufacturing jobs between 2000 and 2005.

The loss of so many manufacturing jobs is a "major cause for concern," says Brookings in a new study. "Between 2000 and 2005, the nation as a whole lost 17.6 percent of its manufacturing job base. During that period, all the Great Lakes states except Indiana (13.9 percent manufacturing job loss) and Wisconsin (14.7 percent job loss) lost larger percentages of their manufacturing jobs than the entire nation."

Michigan lost the greatest percentage of manufacturing jobs (24.3 percent), followed by New York (22.7 percent). Illinois, Ohio and Pennsylvania lost 20 to 21 percent of their manufacturing jobs.

Nevertheless, the percentage of gross state product generated by manufacturing in these states, with the exception of New York, increased during the period, due to an overall productivity increase in the manufacturing sector of 38 percent between 1997 and 2004.

Brookings analyzed job losses in 25 major metropolitan areas in the seven states and found huge declines in many of them. Flint, Mich., recorded the greatest percentage of manufacturing jobs lost, at 55 percent, between 1996 and 2005. Ann Arbor, Mich., Canton, Ohio, Rochester, N.Y. and Youngstown, Ohio, all lost more than 30 percent of their manufacturing jobs.

Chicago lost the most manufacturing jobs at 141,300, followed by Detroit at 103,300 and Cleveland at 47,300. Dayton, Flint and Youngstown had fewer jobs in 2005 than they did in 1995.

"Manufacturing job losses were a major reason for the poor overall job performance in most of the 25 metropolitan areas," says the study. "Manufacturing accounted for 190.2 percent of all jobs lost in Dayton, Ohio, from 1995 to 2005; 131.2 percent of all jobs lost in Flint and 397.9 percent of all jobs lost in Youngstown, Ohio....Advanced service industries, which in principle could have substituted for manufacturing as drivers of regional prosperity, have not generated enough jobs to offset recent manufacturing job losses in most of the Great Lake's region's manufacturing-dependent metropolitan areas."

Brookings recommends that the federal government start enforcing trade agreements and adopting "meaningful, enforceable labor and environmental

(Continued on page 13)

FALL CONFERENCE CALENDAR

August 27 -31 European Conference on **Artificial Intelligence**, Riva del Garda, Italy: <http://ecai2006.itc.it/>.

August 28 - 31 Training for Programming and Implementation of the **Dimensional Measuring Interface Standard** (DMIS 5.0), Brighton, Mich.: <http://www.dmis.org>.

August 28 - Sept. 1 European Technology Platform for **Sustainable Chemistry**, Budapest, Hungary, <http://www.suschem.org>

August 29 - Sept. 2 5th **China International Equipment Manufacturing Expo.**, Shenyang: <http://www.chinaview.cn>.

September 5 - 8 European Conference on **Computational Fluid Dynamics**, Egmond aan Zee, the Netherlands, <http://www.eccomascfd2006.nl/>

September 5 - 8 **Shingo Prize** Public Sector Conference, Las Vegas: <http://www.shingoprize.org>.

September 6 - 13 **IMTS 2006**, Chicago, Ill.: <http://www.imts.com>.

September 7 - 14 **IPCWorks 2006**, Fort Worth, Texas: <http://www.ipc.org/IPCWorks>.

September 8 - 11 **China International Fair For Investment and Trade**, Xiamen International Investment Promotion Center <http://www.chinafair.org.cn/chinafair2004/website/english/index/index.aspx>.

September 10 - 12 Commonwealth of **Virginia's Innovative Technology** Symposium, Roanoke: <http://www.covits.org>.

September 12 - 14 **Aerospace Manufacturing** and Automated Fastening Conference & Exhibition, Toulouse, France: Sponsor: SAE International, <http://www.sae.org/events/amaf/>.

September 12 - 14 Southeast **Lean Training** from the Lean Enterprise Institute, Durham, N.C.: <http://www.lean.org>.

September 12 - 14 **Automotive Composites** Conference & Expo, Troy, Mich. Sponsored by SPE: www.4spe.org/communities/divisions/d39.php,

September 13 - 14 **Lean Six Sigma** Summit West, San Francisco, Calif., www.sixsigmasummit.com/NA-2601/ediary.

September 13 - 14 **Design for Six Sigma**, Las Vegas: <http://www.wcbf.com/quality/5060>.

September 18 **Innovative Interdisciplinary Research**, Pisa, Italy: www.nest-promise.net/events.html.

September 18 - 21 **Global Windpower**, Adelaide, Australia: <http://www.auswea.com.au/global06/>.

September 18 - 22 **Lightweight Design of Aircraft Structures**, Hamburg, German: <http://www.tutech.de/veranstaltungen>.

September 19 **AWS Welding in Aircraft** and Aerospace, Dayton, Ohio: <http://www.aws.org/conferences>.

September 19 - 20 **Setup Reduction Blitz** and TPM Blitz, San Antonio, Texas. Sponsored by Association for Manufacturing Excellence, <http://www.ame.org>.

September 20 - 22 Second **Multi-Material Micro Manufacturing** (Four-M): Technologies and Applications Conference, Grenoble, France. Organized by the European Union's Four-M Center of Excellence, <http://www.4m-net.org/Conference>.

September 20 - 23 International Congress on **Mechanical Engineering**, Varna, Bulgaria: <http://www.met.tea.bg>.

September 21 - 22 **Lean Accounting** Summit, Orlando, Fla.: <http://www.leanaccountingsummit.com/home.asp>.

September 25 - 27 **Indicators for Science, Technology and Innovation Policies** in the 21st Century, Ottawa, Ontario, Canada: http://www.oecd.org/document/24/0,2340,en_2649_3448_7_37075032_1_1_1_1,00.html.

September 26 Forum on **Investing in Innovation** and Competitiveness, Paris, France: <http://www.forum-financement.com/paris/>.

September 26 - 27 Applied **Lean Ergonomics**, Ann Arbor, Mich.: <http://www.humantech.com/seminars>.

September 27 - 29 **Lean Accounting** and Performance Measurement, University of Kentucky's Center for Manufacturing, Lexington, Ky.: www.mfg.uky.edu/lean/champions/accounting.html.

September 28 Convocation on **Rising Above the Gathering Storm: Energizing and Employing Regions, States and Cities**, Washington, D.C. Sponsored by the National Academies of Sciences: <http://www7.nationalacademies.org/gatheringstorm/>.

September 28 - Oct. 1 International Trade Fair and Conference for **Renewable Energy**, Augsburg, Germany, http://www.renexpo.de/english/profil_ren.shtml.

(Continued on next page)

Calendar... (From page 10)

October 4 - 5 **Renewables To Hydrogen**, Albuquerque, N.M. Sponsored by the National Hydrogen Association, <http://www.hydrogenassociation.org/renewablesForum/>.

October 9 - 10 **European Manufacturing Strategies Summit 2006**, Dusseldorf, Germany: <http://www.ems-summit.com/>

October 11 - 12 **DELMIA** North American User Conference, Dearborne, Mich.: www.delmia-uc.com.

October 11 - 12 **Application of Nanotechnologies In Industry and Fashion**, London: http://www.nano.org.uk/newsletter/smart_textiles/.

October 11 - 12 **International Conference on Gas Turbine Technology**, Brussels, Belgium: <http://www.eu-gasturbine.org>.

October 11 - 13 **National Nuclear Security Administration's Future Technologies Conference**, Washington, D.C.: www.dcslsinc.com/technology.

October 15 - 19 **Conference on Transmission & Distribution Construction Operation and Live-Line Maintenance**, IEEE Power Engineering Society, Albuquerque, N.M.: <http://www.esmoconference.com/>.

October 16 - 20 **Association for Manufacturing Excellence, Annual Conference**, Dallas, Texas: <http://www.ame.org>

October 16 - 20 **Human Systems For Lean**, University of Kentucky's Center for Manufacturing, Lexington, Ky.: <http://www.mfg.uky.edu/lean/champions/hrlm.html>.

October 18 - 20 **American Composites Manufacturers Association's Composites & Polycon 2006**, St. Louis, Mo.: <http://www.acmashow.org>.

October 19 - 22 **12th Annual Manufacturing in Mexico Summit**, San Carlos, Sonora, Mexico: www.offshoregroup.com/summit.asp.

October 25 - 26 **European Six Sigma Summit**, Amsterdam, <http://www.sixsigmaiq.com/GB-2591/ediary>.

October 25 - 26 **Hydrogen and Fuel Cell Technologies**, Hamburg, Germany: www.h2expo.com.

October 30 - Nov. 2 **International Conference of Nanotechnology**, San Francisco: <http://nanotechcongress.com/>.

October 29 - Nov. 3 **Lean Executive Leadership Institute**, University of Kentucky's Center for Manufacturing, Lexington, Ky.: <http://www.mfg.uky.edu/lean/executive/leli.html>.

October 30 **Can Higher Education Foster Economic Growth?** Chicago, Ill. Sponsored by the Federal Reserve Bank of Chicago, http://www.chicagofed.org/news_and_conferences/conferences_and_events/2006_higher_education.cfm.

October 31 - Nov. 2 **FABTECH International** and the American Welding Society Welding Show, Atlanta, Ga.: <http://www.fmafabtech.com/FABTECH-Home.cfm>.

November 1 - 2 **World Nano-Economic Congress**, Singapore: <http://www.world-nano.com>.

November 1 - 3 **SMMA The Motor & Motion Association's Fall Technical Conference**, Global Advances for the Motors and Drives Industry, St. Louis.: <http://www.smma.org>.

November 5 - 10 **ASME International Mechanical Engineering Congress**, Chicago, Ill.: www.asme.org

November 8 - 10 **Lean Accounting and Performance Measurement**, University of Kentucky's Center for Manufacturing, Lexington, Ky.: <http://www.mfg.uky.edu/lean/champions/accounting.html>.

November 6 - 9 **Introduction to Process Instrumentation and Control**, University of Kansas campus, Lawrence, Kansas: <http://www.continuinged.ku.edu/programs/process/>.

November 7 - 10 **Industries of the Future - West Virginia**, Charlestown, W.V.: www.iofwv.nrce.wvu.edu.

November 13 - 15 **RFID Implementation: How to Evaluate, Justify and Deploy Your RFID Solution**, Las Vegas, Nev. Sponsored by the U. of Kansas: <http://www.continuinged.ku.edu/programs/rfid/implementation/>.

November 13 - 15 **A&D Programs Conference**, Phoenix, Arizona, www.aviationnow.com/conferences.

November 21 - 23 **Information Society Technologies**, Helsinki, Finland. Sponsored by the European Union, <http://europa.eu.int/istevent>.

November 26 - 28 **Europe Innovation**, Technology Transfer, Industrial Manufacture, Valencia, Spain: <http://www.europe-innova.org/index.jsp>.

November 27 - 30 2006 **Defense Manufacturing Conference: Affordability and Superiority — Can We Really Have Both?** Nashville, Tenn.: www.dmc.utcd Dayton.com/

December 5 - 7 **Just-In-Time Supply Chain**, University of Kentucky's Center for Manufacturing, Lexington, Ky.: <http://www.mfg.uky.edu/lean/champions/time.html>.

December 7 - 8 **Product Safety and Liability Prevention**, Milwaukee, Wisc. Contact Randall Goodden, rgoodden@go.com.

A New Policy Approach Is Needed In This Era Of Rapid Globalization

The United States is in “urgent need” of a “new policy agenda” that comes to grips with the fact that globalization has driven a wedge between corporate interests and national interests, according to the former chief economist of the U.S.-China Economic and Security Review Commission.

“Not yet understood by national policymakers,” warns Thomas Palley of Economics for Democratic and Open Societies, is that “in the era of globalization, profit maximization by firms contributes to the maximization of global output, but it does not necessarily maximize national output.”

Palley, who spoke at a conference on “Global Competition and Comparative Advantage” hosted by the Wilson Center in Washington, D.C., stressed in a background paper that while “in the 1950s it could reasonably be said that what was good for General Motors was good for the country[, this] was not because the managers at General Motors were any more altruistic or patriotic than they are today.”

Rather, “it was because the global economy was less open, and firms were less technologically capable of organizing production on a global basis. Consequently, corporate interests aligned closely with national interests.” Now that this “alignment has been fractured by globalization,” there is a “need for national policies that re-root corporations by realigning profit maximization with the national interest.”

But Palley has observed a “failure to recognize the distinction between corporate and national interests,” he told *MTN* in an e-mail interview, that “seems to be particularly acute in the U.S.” While policymakers in “the other Anglo-Saxon economies” — the UK, Canada and Australia — share Americans’ outlook to some degree, those in countries such as France, Japan and China “appear to have internalized this difference.”

Why should the U.S. be home to what appears an outdated perspective that distorts expectations as to the effects of globalization? “First, and most obviously,” Palley said, “there is the influence of corporate money and lobbying on politics in Washington.”

But inappropriate expectations may also arise from “genuine misunderstanding of economics, with policymakers mistakenly interpreting the pursuit of corporate interests as identical with the pursuit of the public interest,” Palley suggested.

“We have long known that this identity is not true for monopoly. We now need to learn that it is also not true in a globalized economy. Unfortunately, the economics profession has completely missed this point.”

In light of Palley’s argument, the widely held assumption that leadership in innovation alone can be counted on to provide a solid foundation for the nation’s economic future appears shaky indeed. “In the pre-globalization era domestically developed science and technology innovations were likely to be applied domestically so that benefit accrued significantly to the innovating country,” his paper states.

“Today, with corporations organizing production on a global basis, there is nothing to ensure that domestically produced innovations will be applied domestically. Instead, corporations may simply transfer the innovation to a foreign production location. This may be the best way for the corporation to maximize profits, but it may not maximize national income.”

Not only has the prospect of lowering production costs pulled firms in this direction, but, according to Palley, U.S. law has pushed them. U.S. corporations’ “taking account of American national interest would be a breach of fiduciary duty,” he points out, “since managers have an obligation to maximize shareholder value.”

But not all countries’ firms have the freedom — or the obligation — “to choose their business strategy on a global basis, without regard to...national interest,” Palley notes.

“In China the national government exerts significant control over corporations, and national interest is factored into business strategy. From a national perspective that means China is advantaged relative to the U.S., though shareholders in Chinese corporations are not as well served as shareholders in U.S. corporations.”

— **KEN JACOBSON**

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Chinese Government Promotes Massive Investment In Steel

Chinese steel production increased by 175 percent between 2000 and 2005, from 126 million tons to 348 million tons of steel annually, according to Alan Price of Wiley Rein & Fielding, a firm representing the American Iron and Steel Institute and the Steel Manufacturers Association. Steel capacity is closer to 400 million tons.

"The incredible growth was possible only because the Chinese government made a conscious decision to funnel tremendous resources into the steel industry," Price told a recent meeting of the U.S.-China Economic and Security Review Commission. China now accounts for 31 percent of total world production.

"The expansion of China's steel industry has come at the expense of foreign producers," says Price. Chinese exports of wire rod, seamless tubular products, rebar and flat rolled products are booming and are driving down prices. The country's use of iron ore, scrap coke and other inputs is driving prices up for the rest of the world. As U.S. producers suffer from the surge of Chinese imports, they're also watching as steel-using industries move their production to China to take advantage of Chinese subsidies "or go out of business altogether," says Price.

The Chinese government holds a majority interest in every major steel producer in the country, as well as many minor ones, Price states. There are approximately 800 steel mills in China.

The Chinese government is funding these companies with a variety of different loans and when the companies are unable or unwilling to pay them back "the banks convert the debt into equity in the company," says Price. "In 2000 alone, the Chinese government converted more than \$7 billion in direct financing into equity in 37 different Chinese steel companies."

The Chinese government promotes the industry by forgiving loans to steel producers; providing cash grants; extending tax credits for exports; making grants for the purchase of raw materials and energy, controlling raw material prices; erecting import barriers such as high tariffs on foreign produced steel; prohibiting foreign companies from owning majority stakes in Chinese steel companies; and manipulating its currency.

"The net effect of these subsidies has been to drive the expansion of the Chinese steel industry to levels far beyond anything the market would have created," says Price. "This monster that has been built is just not something that would exist if you had a market building this approach. Would China have a steel industry? Of course. Would it have probably the largest one in the world today? Actually, it probably would. Would it be its current size? Absolutely not. Would it be its current shape? Absolutely not. Would the world steel market be very different today? Yes. Would there be substantial exports into China? Yes."

Manufacturers Alliance/MAPI Develops Innovation Model

It takes six years before investments in frontier research at academic institutions get turned into products made by industry, according to a new "innovation model" developed by two economists at the Manufacturers Alliance/MAPI. "This accounts for research time, publications, dissemination and absorption by the private sector," says MAPI. "But clearly, the investment pays off." The model is the first attempt to quantify U.S. manufacturing innovation "as a synthesis of several related indicators," say authors Jeremy Leonard and Cliff Waldman.

The main determinants of success in product and process innovation rely on "vigorous" investments in basic scientific research in universities, the science and engineering workforce, and manufacturing R&D. "Only by maintaining our historical lead in both product and process innovation can we meet the ever broadening global challenge," says MAPI president Thomas Duesterberg in describing the importance of the model. "This paper shows us in a rigorous empirical way what policies we need to encourage and nurture the innovative process." The papers (ER-601e and ER-612e) are available free for members and for \$50 for non-members by calling Mary Pearson at 730-647-5139 or via e-mail at mpearson@mapi.net.

Brookings... (From page nine)

standards [to] correct [for] market failures that currently give many low-wage countries an artificial cost advantage over the United States." It recommends adoption of some form of universal health care coverage to reduce the compensation costs of U.S. manufacturers. And it recommends the Manufacturing Extension Partnership program be increased "not reduced as the current administration has proposed."

The report, "Bearing the Brunt: Manufacturing Job Loss in the Great Lakes Region, 1995 - 2005," is available at <http://www.brookings.edu>.

NASA Budget... (From page seven)

\$81.9 million of the \$274.5 million approved for 2006.

The state that looks to be in second place for the coming year is that of the subcommittee's ranking minority member, Mikulski. Maryland is second both in number of earmarks with six and in value at \$11.5 million; for the current year, the state placed fourth in value at \$18.7 million.

The 2006 runner-up at \$28.8 million, West Virginia, has four earmarks in the 2007 bill that seem to correspond to items worth \$8.5 million this year; that state is home to the Appropriations Committee's ranking minority member, Sen. Robert Byrd. Virginia, 2006's No. 3 at \$19.1 million, has only two in the current report, but they correspond to \$6.35 million in 2006 items, putatively positioning the state for fourth place in value.

Europe Creates RFID Consortium

A consortium of 31 global organizations supported by the European Commission has launched a three-year research, development, training and demonstration project focused on radio frequency ID (RFID) tags. The so-called "Building Radio frequency IDentification solutions for the Global Environment" (BRIDGE) project will receive 7.5 million euro and is being coordinated by GSI, the global data standards body. It will be developing tags based on the EPCglobal standard.

Participants in the program include universities in Europe and China, RFID providers, large retailers, manufacturers and small- and medium-sized enterprises. For information on the project, contact its coordinator Henri Barthel at 32 2 788 7823 or via e-mail at henri.barthel@gsi.org.

PWC Opens Tax Charts To Public

Corporate and individual tax rates in over 100 countries have been posted by PricewaterhouseCoopers on its Web site for the first time. "The 2006 release marks the first time the Worldwide Tax Summaries will be available digitally and free of charge to the public," says the firm. "Globalization and the increase in cross border activity have prompted the firm to make the WTS electronically available, allowing regional and local professionals to regularly update the site with significant developments and changes in legislation." The site includes information on branch income, income determination, deductions, group taxation, tax incentives, withholding taxes and tax rates. Visit the site at www.pwc.com/taxsummaries.

Kerry Challenges New SBA Chief

President Bush's nominee to head the Small Business Administration received an earful of complaints from Sen. John Kerry (D-Mass.) during his recent Senate confirmation hearing. Steve Preston, described by Kerry as being a "serious nominee who brings business acumen and a wealth of management experience to an agency woefully in need of better management," is confronting an agency that has experienced a 37 percent decline in its budget during the Bush administration. The budget cuts, the largest suffered by any federal agency, have left the agency understaffed and unable to fund many of its most popular lending programs, such as the Microloan and the New Market Venture Capital programs, said Kerry. "Morale at the SBA is at an all-time low and capable employees have already moved on," Kerry told Preston during the hearing. "There is much to be done to reinvigorate this agency, which has been left to wither on the vine."

Kerry asked that Preston be an aggressive advocate for small companies, "something this administration has been missing," he said. "You are not a political person and I urge you to trust your instincts and do the right thing, not the political thing. This is not the time for politics. With investment and commitment, this could be an agency that makes a real difference in people's lives, and that means fighting for realistic budgets, too." Kerry said. "Please do not come back and tell us that it is possible 'to do more with less.' At some point, and we have reached that point, it is not possible."

GAO: DOD Wastes Billions

The Department of Defense is wasting billions of dollars due to fraud and abuse, according to an assessment from the Government Accountability Office (GAO). "DOD's pervasive financial and business management problems adversely affect the economy, efficiency, and effectiveness of its operations, and have resulted in a lack of adequate accountability across all major business areas," says the GAO. "These problems have left the department vulnerable to billions of dollars of fraud, waste, and abuse annually, at a time of increasing fiscal constraint. Further evidence of DOD's problems is the long-standing inability of any military service or major defense component to pass the test of an independent financial audit because of pervasive weaknesses in financial management systems, operations and controls."

DOD needs to develop and implement a comprehensive, integrated, and enterprise-wide business transformation plan, says GAO. It should create the position of a chief management officer, "with the right skills and at the right level within the department to provide the needed sustained leadership to oversee the department's overall business transformation process," says GAO in its report titled "Department of Defense: Sustained Leadership Is Critical to Effective Financial and Business Management Transformation" (GAO-06-1006T), located at <http://www.gao.gov/new.items/d061006t.pdf>.

Steel Embarks On PR Blitz

The American Iron and Steel Institute has found that Washington policymakers don't understand how modern steelmaking has become, and that policymakers' perceptions about the industry are wrong. A recent Harris Interactive poll of Congress conducted for AISA found that it has become imperative to educate policymakers "about the new face of America's steel industry," says AISI.

AISI has launched an advocacy campaign intended to inform and educate Washington elites about the economic impact of the steel sector, its environmental achievements, adoption of advanced technology and how the steel industry is "one of America's strategic assets." The industry is directing an advocacy campaign aimed at members of Congress, officials in federal agencies and the White House emphasizing "that this is a vital industry, the backbone of American manufacturing and one that is vital to our nation's military," says AISI chairman Louis Schorsch, president and CEO, Mittal Steel USA. "We want policymakers to recognize that having a strong domestic steel industry is important to jobs and to the economy. They need to recognize that U.S. steel industry productivity has more than tripled since the early 1980s, generating each year more than \$350 billion in direct and indirect economic output."