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PHONE: 703-750-2664 FAX: 703-750-0064 URL: WWW.MANUFACTURINGNEWS.COM

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Defense Department Is Scrutinizing U.S. Telecommunications Industry's Supply Chain

The Department of Defense is undertaking a massive "National Security Assessment" of the U.S. telecommunications networking industry. It has just issued a detailed, 19-page survey that it is requiring American companies to complete describing the manufacturers of equipment and software they are using in their networking facilities. "Failure to respond can result in a maximum fine of \$10,000, imprisonment of up to one year, or both," says the "Facility-Level Survey" that is being coordinated by the Commerce Department's Bureau of Industry and Security (BIS).

DOD's Office of Networks and Information and Integration wants companies to answer specific questions describing equipment being purchasing and the manufacturers and third-party vendors providing that equipment. "The principal goal of this data collection is to quantify replacement cycles for information network equipment, document network maintenance and pro-

curement practices and understand issues affecting network reliability and integrity," says the survey, which expires December 31, 2011. The effort will "help ensure the operational reliability of critical national information network infrastructure."

In directions on how to fill out the survey, the Bureau of Industry and Security tells companies that they must respond to every question. It asks companies to specify the 144 global networking device manufacturers that it lists as currently supplying the U.S. market, including such firms as Hitachi, Huawei, Nokia, Toshiba and dozens of other foreign entities.

It asks such questions as: "Identify how your U.S. network operations centers (NOCs) are protected from cyber attack." And: "Identify the detection and analysis techniques that your company uses to understand cyberattacks/threats to its U.S. network operations centers."

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Accenture: Offshore Outsourcing Has Not Worked

The strategy embraced over the past decade by U.S. manufacturing companies to shift production to countries with cheap labor may no longer be appropriate, according to a consulting firm that has been a big promoter of offshore outsourcing. "Companies are beginning to realize that having offshored much of their manufacturing and supply operations away from their demand locations,

they hurt their ability to meet their customers' expectations across a wide spectrum of areas, such as being able to rapidly meet increasing customer desires for unique products, continuing to maintain rapid delivery/response times, as well as maintaining low inventories and competitive total costs," according to Accenture analysts John Ferreira and Mike Heilala, who head the company's North

American Manufacturing practice.

Having surveyed 287 manufacturing companies, Accenture found that 61 percent are considering moving some of their manufacturing back to their home market. Ferreira and Heilala describe this as being a "secret shift" and a "quiet trend."

Many manufacturing companies that shifted production offshore "likely did so without a

complete understanding of the 'total costs,' and thus, the total cost of offshoring was considerably higher than initially thought," write the two analysts. "Part of the issue is that not all costs of offshoring roll up directly to manufacturing; rather, they impact many areas of the enterprise."

Companies have found that managing their supply operations from afar

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Offshoring Reversal...*(From one)*

has weakened their "overall operational planning, forecasting and general flexibility, while in some cases also driving up costs with the need for complex network management," according to Accenture. "In some cases, this situation has limited the companies' competitive advantage causing limitations on growth and revenue."

Almost half of the companies Accenture surveyed said they are facing issues regarding poor cycle and delivery times and product quality due to offshored manufacturing and supply operations. There have also been "dramatic" increases in many of the costs that first enticed them to move their production overseas. "Those seemingly initial cost savings are no longer so big," according to Ferreira and Heilala. "They are, in fact, diminishing as transportation, commodity cost and in-country labor rates rise and exchange rates change."

Seventy-three percent of the companies have seen significant increases in supplier material costs and component prices. Fifty-seven percent have experienced cost increases associated with logistics and transportation; 36 percent have seen price increases for overhead and administrative functions; 31 percent have been impacted by exchange rate differentials; 26 percent have had to build up their inventories as a means to buffer supply chain disruptions; and 25 percent have seen increases in the cost of quality. Other areas that are increasing in costs include material handling and warehousing; packaging; value-added taxes, customs and duties; product qualifications; customer service costs; procurement staff costs such as broker fees; and increased tooling costs. "These cost pressure issues are arising at a time when customer requirements for agility, speed and capability are becoming more challenging," say the Accenture executives.

Companies have not done a good job of determining the true cost of offshoring. They tend to look only at direct costs, such as logistics, product unit costs, supplier costs, manufacturing overhead, labor, material and packaging costs. But there are many other costs that have not been considered when shifting production to a foreign country, such as local taxes, regulations, customs duties, VAT taxes, the agility and speed of suppliers to respond to customer demand, poor quality inspection and validation, operational risks, inventory, safety stock, broker fees, infrastructure costs, tooling and mold costs, networks needed for plant material handling, training costs, organizational communi-

cations costs, local operations staffing, capital amortization, terms and exchange rate fluctuations.

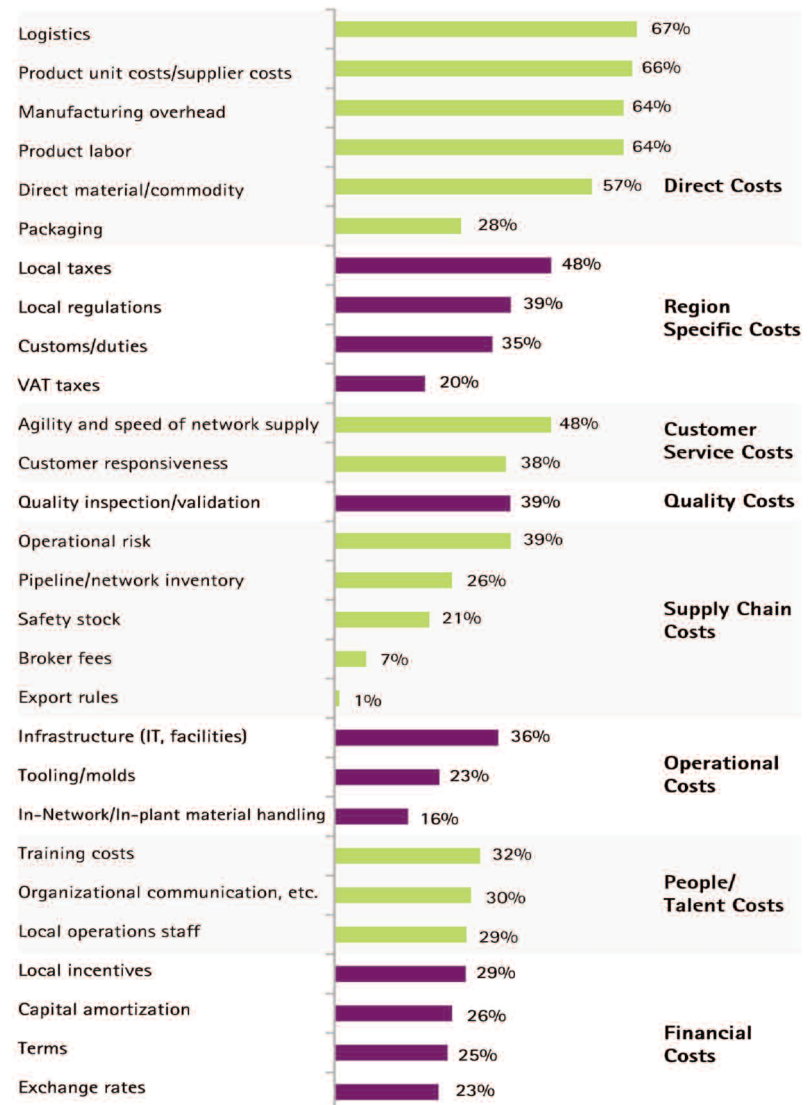
"The overreliance on direct costs to the exclusion of other legitimate cost factors distorts the business case for offshoring and likely many decisions to offshore were incorrectly made," say Ferreira and Heilala.

The direct costs upon which the initial decisions were made are also changing. Labor represents only 5 to 10 percent of the total cost of most goods, so it's no longer a driving consideration for moving production. Rising transportation and energy costs and less favorable exchange rates are also working against companies' original calculations for savings.

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Companies Typically Only Consider Direct Costs When Deciding to Offshore Outsource Production Intended For Export Back To The United States

(Cost factors manufacturers routinely consider as part of their organization's total cost model used to evaluate offshoring decisions)



(Source: "Manufacturing's Secret Shift, Gaining Competitive Advantage By Getting Closer To The Customer," Accenture)

Renegotiated Korea Trade Agreement Won't Be Very Good For U.S. Autos

The proposed Korea Free Trade Agreement will lead to a modest increase in American cars being exported to Korea, but the rise of auto imports from Korea is expected to be more than 10 times higher.

If the revised trade agreement is approved by Congress, then American automobile exports to Korea are expected to increase by between \$48 million and \$66 million (or 41 to 56 percent), to between \$167 million and \$185 million, according to an analysis by the International Trade Commission. The ITC estimates that U.S. exports of auto parts and components to Korea will increase by \$194 million (or 54 percent) under the agreement.

These numbers are tiny in comparison to projected Korean exports to the United States as a result of the agreement. "The Commission's economic simulation estimates that U.S. imports from Korea of products in the broader motor vehicles and parts sector would likely rise by \$907 million (11 percent)" from \$8.245 billion following implementation of the Free Trade Agreement, notes the ITC. "An estimated 44 percent of this increase would likely be attributable to the displacement of other coun-

tries' exports to the United States."

Between 2008 and 2010, the U.S. exported an average of 7,700 vehicles per year to Korea. By comparison, the United States imported 561,626 vehicles from South Korea in 2010, accounting for 4.9 percent of the U.S. market of 11,554,576 vehicles.

The ITC analysis estimates that the number of exports of American cars to Korea will increase to between 10,800 and 12,000 vehicles "in the absence of the 7.5 percent price gap" caused by Korean tariffs, which are set at 8 percent and will decline to 4 percent before being phased out entirely over five years, if the trade agreement is approved by Congress. The U.S. tariff on Korean autos is 2.5 percent and will also be phased out over five years.

However, Koreans still might not buy many American autos. Koreans have always favored Korean-made products, and there is no indication such a preference will change. There is also a good chance that Korean consumers "will view vehicles that do not meet Korean safety standards as unsafe and avoid purchasing them,

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U.S. Passenger Vehicle Market and Sales By Korean Producers in Units, 2006 - 2010

	2006	2007	2008	2009	2010
Total sales	16,559,625	16,089,222	13,194,741	10,401,682	11,554,576
Sales of Korean imports	690,802	643,949	562,947	577,042	561,626
Market share (percent)	4.2	4.0	4.3	5.5	4.9
Sales of Hyundai Group (Hyundai and Kia)	749,882	772,482	675,139	735,127	894,496
Market share (percent)	4.5	4.8	5.1	7.1	7.7
Sales of imports	581,677	534,493	486,788	534,756	512,991
Market share (percent)	3.5	3.3	3.7	5.1	4.4
Sales of U.S. production	168,145	237,989	188,351	200,371	381,505
Market share (percent)	1.0	1.5	1.4	1.9	3.3
Sales of GM Daewoo (imports)	109,125	109,456	76,159	42,286	48,635
Market share (percent)	0.7	0.7	0.6	0.4	0.4

Korea Passenger Vehicle Market by Source: U.S. Producer Imports, and Imports from the United States in Units, 2006 - 2010

	2006	2007	2008	2009	2010
Total	976,211	1,039,806	1,020,502	1,235,736	1,192,780
Domestic production	935,681	986,416	958,854	1,174,743	1,102,218
Market share (percent)	95.9	94.9	94.0	95.0	92.4
Imports	40,530	53,390	61,648	60,993	90,562
Market share (percent)	4.2	5.1	6.0	4.9	7.6
Imports of GM, Ford, and Chrysler vehicles	4,556	6,235	6,980	6,140	7,450
Market share (percent)	0.47	0.60	0.68	0.50	0.62
Total Korean imports from United States	3,435	6,849	7,773	6,642	13,044
Market share (percent)	0.35	0.66	0.76	0.54	1.09

(Source: "U.S.-Korea Free Trade Agreement: Passenger Vehicle Sector Update," U.S. International Trade Commission, April, 2011)

Global Meeting Will Propose Common Industrial Policies

The international Intelligent Manufacturing Systems (IMS) program, which has sponsored leading-edge manufacturing research for the past 20 years, is sponsoring a conference in Italy in mid-May to discuss the growing disconnect between the global expansion of multinational companies and government policies that have not kept pace.

The 2011 World Manufacturing Forum intends to be similar in scope to the annual World Economic Forum in Davos, Switzerland. The event will bring senior government policymakers from around the world into direct discussions with executives from global corporations about the need for coordinated industrial policies that encourage a new era of sustainable development and radical innovation.

Companies have moved beyond the confines of national borders, but governments are stuck in place and they are making poor policy choices that are inhibiting the adoption of a sustainable business and manufacturing practices, according to the event's sponsors.

The World Manufacturing Forum "responds to the needs for a global dialogue to support sustainable innovation in an ever-growing global industry that is facing challenges such as increasing carbon dioxide emissions, growing power consumption and an alarming scarcity in raw materials, water and fossil fuels," says Fred-Holger Gunther, former Senior Vice President of Bosch Group in Stuttgart, Germany, and chairman of the World Manufacturing Forum Executive Committee. "We want to discuss these matters with policy makers across the globe."

The event, to be held May 16 – 17 in the town Cernobio on Lake Como in Italy, will discuss the need for new government policies to foster new product and process innovation, common standards to reduce waste and proposals to promote mass customization, additive manufacturing, virtual modeling, interoperability, product intelligence, workforce development skills and workplace improvements. For information, go to www.worldmanufacturingforum.org.

Korea FTA & Autos...*(From page three)*

although U.S. safety standards reportedly are currently among the most stringent in the world," notes the ITC, quoting testimony presented earlier this year before the House Ways and Means Committee.

In 2010, Korea's total automobile market was the 12th largest in the world, at 1,192,780 vehicles, of which Korean production accounted for 92.4 percent market share. Imports from GM, Ford and Chrysler totaled 7,450 automobiles, accounting for 0.6 percent of the Korean market. Foreign transplants in the United States exported 5,594 vehicles to Korea in 2010.

Hyundai and Kia (which is owned by Hyundai) sold 894,496 vehicles in the United States. Of that total, 381,515 vehicles were made in factories established in the United States. Combined with their Korean imports, Hyundai and Kia accounted for 7.7 percent of the U.S. market in 2010.

More impressively, Hyundai's market share increased from 5.1 percent in 2008 to 7.7 percent in 2010, despite the fact that the overall U.S. market declined from 13 million to 11.5 million vehicles.

"The removal of the 2.5 percent U.S. import tariff on passenger cars in the fifth year of the FTA's implementation would likely result in increased U.S. imports of passenger cars from Korea," according to the ITC.

Currently, Korea requires auto imports that come from companies that have a fleet average fuel efficiency of 40 miles per gallon by 2015. But the U.S. standard is for 35.5 mpg by 2016. As a result, the trade agreement has been modified to provide for a 19 percent allowance in fuel efficiency for American cars. "With the allowance, U. S. producers can target 2016 for fuel efficiency improvement in U.S.-made vehicles and export vehicles to Korea without incurring additional R&D expenditures to meet Korean emissions requirements during 2012 – 15," says the ITC in its study "U.S.-Korea Free Trade Agreement: Passenger Vehicle Sector Update" located at <http://www.usitc.gov/publications/332/pub4220.pdf>.

DOD Telecom Survey...*(From page one)*

It asks corporations how many data centers they operate in and outside the United States; identify how they remotely manage their networks; and from whom they buy parts and systems when they upgrade or add new networks. It wants to know their suppliers of routers, line cards, chassis, switches, multiplexers, and other data handling equipment.

"As a condition of purchasing equipment, does your company require equipment manufacturers and their authorized distributors to disclose the original developers (including subcontractors) of software that enable the operation of acquired equipment currently deployed in your network systems?" the survey asks.

DOD wants to know if companies lease their equipment and if so whether they know the manufacturers of

the equipment, software providers and the principal subcontractors involved in making that equipment and writing the software code. It seeks detailed information about all types of technologies: asynchronous transfer mode core switches; carrier Ethernet service routers, resilient packet rings, optical switches, terrestrial and undersea long-haul dense wave division multiplexers, coarse wave division multiplexers, intelligent photonic cross connects, optical patch panels and microwave transmission suppliers. It asks companies: "Name five network equipment manufacturers that you perceive as offering the steepest discounts on their products." Finally, it asks: "How many hours did it take to complete this survey?"

The survey is located at http://www.bis.doc.gov/info_network_survey/index.htm.

MIT Will Delve Into U.S. Manufacturing Crisis

The Massachusetts Institute of Technology has awoken to the crisis in U.S. manufacturing and has put together a major study team to come up with solutions to America's industrial decline.

MIT President Susan Hockfield has established a team that will work over the next two-and-a-half years to produce a non-academic book that is intended to highlight the importance of manufacturing to the U.S. economy and outline a strategy that puts the United States back into global competition.

Members of the group involved in the MIT Commission on Production in the Innovation Economy include 17 MIT professors from across academic disciplines including economics, engineering, chemistry, nuclear physics, biotechnology, political science and business. John Reed, chairman of the MIT Corp. and retired CEO of Citigroup and former chairman of the New York Stock Exchange, is also on the committee.

"Our hypothesis is if we can't master production, we will not get the value out of innovation," says project co-director Suzanne Berger, MIT professor of political science. The other co-director is Phillip Sharp, a Nobel Prize winner in biology and founder of Biogen.

A new model is emerging for innovation that is different from the one that has driven the U.S. economy over the past 20 years. Growth of companies in the information technology sector was built on the model of an American company focusing on research and design and outsourcing production to overseas manufacturers. Companies like Apple, Broadcom, Cisco and Hewlett-Packard can send designs to Asia for production and reap profits by focusing on marketing, sales and distribution.

Over the past 25 years, "the great new companies have been in this information technology model: Modular companies that you could break apart, where it was not the

case that you needed to master integration between all of the phases in order to do well," says Berger. The companies that have done best are in software, where capital requirements are relatively low. This business model has provided a good match with venture capitalists wanting a return on investment over three to five years.

But it will not work for new energy products, medical devices, electric vehicles, environmental, construction and security technologies, advanced materials, biotechnology, nanotechnology and other new industries, says Berger. "The venture capital industry is not going to be well suited to helping these new companies."

The issue today is "how do you go from startup to scale up," she adds. "We are surrounded by startups here in Cambridge, Mass., but the problems is they can't scale up. However true it might have been with IT — to be strong in R&D and design and distribution without

mastering production — it does not look like it will be true in the whole wave of new technologies and emerging industries. We see a much tighter integration of innovation and production in these new industries. Our hypothesis is if we can't master production then we will not get the value out of innovation. It is not going to be a model that looks like IT. It's a model in which innovation will follow production out of the United States. What we are investigating in this project is what are the possibilities of developing the production capability that would allow the United States to gain advantage from the innovations that we are able to do in our country."

The initiative will be similar to one undertaken more than 20 years ago at MIT, headed up by Michael Dertouzos, director of MIT's Laboratory of Computer Science, Richard Lester of MIT's nuclear engineering department, and Nobel Prize winning economist Robert Solow. That effort resulted in the book "Made in America: Regaining the Productive Edge." Lester is on the current committee.

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NIST Is Spared Budget Ax

The National Institute of Standards and Technology will not suffer much of a budget shortfall this year. The final Continuing Resolution that reduced overall federal government funding by \$38 billion for the remainder of 2011 largely bypassed NIST. The agency's overall budget is set to decline from \$856.6 million in 2010 to \$750 million in 2011, but \$57 million of that decline is associated with the elimination of congressional pork barrel projects.

The agency's core laboratory research budget will increase by a slight margin, from \$495 million in 2010 to \$497 million for 2011. (President Obama requested \$679 million for next year). The Manufacturing Extension Partnership program receives a budget increase as well, from \$124.7 million in 2010 to \$128.4 million in 2011. (Obama requested \$142.6 million for 2012.)

The Technology Innovation Program (TIP) takes a hit, however, declining from \$70 million in 2010 to \$44.8 million this year, ruling out a new round of competitive grants for this year. (Obama requested \$75 million for TIP in 2012.)

The Baldrige Performance Excellence Program will receive \$9.6 million in 2011, the same amount as in 2010. Obama has requested that the federal government stop funding the Baldrige program in 2012.

Other NIST areas take budget cuts. Construction and major renovations decline from \$22 million in 2010 to \$11.9 million in 2011 (with a \$25 million request for 2012); and the competitive construction grants program, which was funded at \$20 million in 2010, was zeroed out for 2011 (and is not in the Obama budget for 2012).

U.S.-China Comparison In Food Industry

China is increasing its imports of American agricultural products, but high value-added taxes, tariffs and non-tariff measures are reducing U.S. producers' potential for additional sales, according to the U.S. International Trade Commission. China's imports of agricultural products from the United States increased from \$2.1 billion in 2002 to \$17.8 billion in 2010, an average annual increase of 31 percent.

China last year overtook Mexico as the second leading export destination of goods from the United States. "Yet U.S. agricultural exports to China are highly concentrated in a few products, with soybeans, cotton, hides and skins and processed animal feed accounting for 84 percent of the total in 2010," says the ITC. "Many grain and meat products in which the United States is globally competitive are not imported by China."

China's non-tariff barriers "effectively prohibit imports of U.S. beef, pears, fresh potatoes, pet food and strawberries and significantly restrict imports of U.S. apples and pork," says the report, which lists 16 major non-tariff barriers that restrict or ban imports from the United States. These barriers and tariffs have reduced U.S. exports to China in 2009 by between \$1.3 billion and \$2.1 billion, says the commission. "There is also concern that Chinese government policies that have benefited Chinese agricultural production and exports may have weakened the U.S. competitive position vis-à-vis China in third-country markets," says the ITC in a 306-page study.

China's overall trade deficit in agricultural products increased from \$5.3 billion in 2005 to \$30.8 billion in

2010. That trade gap "is likely to continue given that future growth in food demand, driven by rapidly rising per capita income, is expected to outpace increases in domestic production," notes the ITC. The United States is China's largest supplier of agricultural imports, accounting for 27 percent of its total imports between 2005 and 2010. China's exports have also been growing, from \$19.6 billion in 2005 to \$35.7 billion in 2010. China exports processed vegetables, garlic and preserved mushrooms, fruit juice and processed fruit such as canned citrus and peaches. Chinese juice accounted for 72 percent of U.S. juice imports between 2005 and 2010.

Agricultural production in China was valued at \$543 billion in 2009, accounting for 11 percent of GDP and employing just under half of the country's population. The average farmer in China owns 1.4 acres of land compared to in the United States where the average farm size is 1,529 acres. China consumes 50 percent of global pork production, 40 percent of cotton, 30 percent of rice and more than 25 percent of soybeans and soybean oil.

China is now the largest exporter in global markets for mandarin oranges, apples, apple juice, garlic and other vegetables. The United States exported \$99 billion in agricultural goods in 2009, or one-third of U.S. farm cash receipts.

The report, "China's Agricultural Trade: Competitive Conditions and Effects on U.S. Exports," is located at <http://www.usitc.gov/publications/332/pub4219.pdf>.

Chinese and United States Agricultural Production and Trade: Comparative Statistics

	China	United States
Population (2009)	1,338 million	307 million
Cropland (2009)	122 million hectares	164 million hectares
Cropland per agricultural worker (2007)	0.4 hectares	78.5 hectares
Value of farm production (2007)	\$537 billion	\$329 billion
Agriculture as share of GDP (2009)	10.6 percent	1.2 percent
Value of agricultural imports (2010)	\$66 billion	\$86 billion
Top five agricultural imports by value	Soybeans, cotton, palm oil, dairy products, and hides and skins	Coffee, cocoa products, wine, malt beverages, beef
Top five agricultural import suppliers	United States, Brazil, Argentina, European Union-27 (EU-27), Australia	Canada, EU-27, Mexico, China, Brazil
Value of agricultural exports (2010)	\$36 billion	\$119 billion
Top five agricultural exports by value	Processed vegetables, fresh vegetables, miscellaneous processed foods, fresh fruit, and animal feed	Soybeans, corn, wheat, cotton, and animal feed
Top five agricultural export markets	Japan, EU-27, Hong Kong, United States, Korea	Canada, China, Mexico, Japan, EU-27

(Source: "China's Agricultural Trade: Competitive Conditions and Effects On U.S. Exports," U.S. International Trade Commission, March, 2011)

DOD Industrial Policy Shop Adds Manufacturing To Its Mission

The office within the Department of Defense that is in charge of overseeing the health of the defense industrial base has embraced “manufacturing” as a core issue. The Office of Industrial Policy has changed its name to “Manufacturing and Industrial Base Policy,” and its mission has been expanded to manage a new Industrial Base Fund and the DOD Manufacturing Technology (ManTech) program.

“The inclusion of ‘manufacturing’ in the title ensures the linkage between ‘industry’ and ‘manufacturing’ is firmly established and effectively coordinated,” writes Brett Lambert, Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy. The office will continue to monitor the industrial base, but it will have a bigger mission of supporting efforts “to expand the industrial base and address supply chain vulnerabilities.”

The new Manufacturing and Industrial Base Policy office will start a new program “to expand the industrial base by identifying firms that are non-traditional suppliers,” according to Lambert. “The program will include outreach regarding opportunities to obtain contracts and subcontracts to firms of all sizes in the vicinity of DOD installations. The program will also include an ongoing review of the industrial base, including the identification of markets of importance to the DOD in which firms that are not traditional suppliers can make a significant contribution.”

The ManTech program is being shifted to Lambert’s shop from the Director of Defense Research and Engineering.

The office is also in charge of the newly reinvigorated Defense Production Act Title III program intended to “create assured, affordable and commercially viable production capabilities and capacities for items essential for national defense.” The office has programs aimed at establishing, strengthening or expanding the domestic industrial bases for the following technologies:

- Atomic Layer Deposition (ALD) Hermetic Coatings
- Continuous Filament Boron Fiber
- Methanol Fuel Cell Components for Soldier Power
- Photovoltaic Solar Cell Encapsulant
- Armor and Structural Transformation: Steel to Titanium - Beryllium Production
- Lithium Ion Battery Production
- Military Lens System Fabrication and Assembly
- Mini-Refrigerant Compressors for Man-Portable Cooling
- Silicon Carbide Monolithic Microwave Integrated Circuit Devices
- Thermal Battery Production
- Thin Silicon-on-Insulator Wafers
- Radiation Hardened Electronics Capital Expansion
- Radiation Hardened Microprocessors
- Rigid Polymer Materials
- Yttrium Barium Copper Oxide High-Temperature Superconductor
- Flexible, High Temperature Aerogel Blanket Materials
- Radiation Hardened Cryogenic Readout Integrated Circuits
- POSS Nanotechnology

- SiC Powder Production and Ceramic Armor Mfg.

The 2010 Defense Authorization Act Provided the ManTech program with \$20 million to ensure that investments are made to address defense industrial base shortfalls especially related to surge production requirements and diminishing sources of defense materials. Here are the awards made under that program:

- Advanced Manufacturing Process for Lower Cost Rechargeable Lithium Ion Batteries for DOD including the BB 2590, LithChem Energy, \$984,310
- Advanced Manufacturing Techniques for Portable Power Fuel Cell Systems, Jadoo Power, \$993,902
- Advanced Tooling for Mold In Place Coatings, Lockheed Martin, \$992,579
- Commercial Wafer Bonded Packaging of Uncooled FPAs, Raytheon, \$981,983
- Deployment of Lightweight Shock Mitigating Boat Manufacturing Innovation, Advanced Technology Institute, \$999,782
- Domestic Production of Military Specific 18650 Li Ion Cells, Bren Tronics, Inc., \$960,405
- Domestic Source for Improved Tail Rotor Blade Spar Program, SPARTA, Inc., \$976,678
- Electro Discharge Machining Fastener Removal System, Lockheed Martin, \$998,233
- Enabling Technology for Cost Effective Production of Steel Encapsulated Ceramic Tile Armor, Steel Founder’s Society of America, \$998,644
- Enhanced Life Management of Turbine Engine Rotating Components Using X-Ray Diffraction And Residual Stress Technologies, Proto Manufacturing Inc., \$999,410
- Friction Stir Repair of Aluminum Hull Ground Combat Vehicles, Edison Welding Institute, \$838,231
- Improved Manufacturing and NDE Processes For Composite Aerospace Structures, The Boeing Company, \$978,478
- Innovation Masking of Ferrous Inserts in Magnesium Aerospace Components Prior to Tagnite Anodization, Technology Applications Group, Inc., \$372,575
- Manufacturing of High Efficient, Cost Effective Fuel Filters for the Removal of Sulfur, Adaptive Materials, \$999,547
- Micro Components for Next Generation Jammer and Munitions, Nuvotronics, \$997,851
- Proactive Response to Potential Material Shortages Arising from Environmental Restrictions Using Automatic Discovery and Extraction of Information from Technical Documents, XSB, Inc., \$967,786
- Rapid Intelligent Fastener Fill System, Systems And Materials Research Corporation, \$1,000,000
- Recovering Complete Technical Data Packages to Remanufacture Obsolete Integrated Circuits, Sarnoff, \$999,988
- Reworkable, Hermetic RF Flip Chip Packaging Technology, The Boeing Company, \$987,076
- The Implementation of Advanced Titanium Machining Technology for the V-22, Creare Inc., \$999,995
- Very Low Cost Titanium Armor Manufactured by a High Volume Rapid Additive Manufacturing Process, MER Corporation, \$999,972

Accenture...

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"It is becoming increasingly clear that the physical location of supply and manufacturing operations can have a significant impact on competitiveness," say the Accenture analysts.

Although bringing production back to the United States may not represent the lowest-cost approach to production, providing customers with their own specific SKUs "in a timely fashion may be more important," says Accenture. Companies like BMW, Siemens Energy, Nissan and Electrolux have all made large production investments in the United States in order to better serve American customers. The moves by these large firms "add more credence to the fact that companies are in fact aggressively rebalancing supply to be closer to customer demand," say Ferreira and Heilala in their report "Manufacturing's Secret Shift, Gaining Competitive Advantage by Moving Closer to the Customer." "Over the next three years, nearshoring shifts appear poised to continue but different companies will take different directions. Most important, the direction manufacturers take will be highly dependent on both the customers' requirements and on the product itself — more customized products or those with less stable or difficult-to-predict demand patterns will require increasingly better matched supply to demand location."

Ferreira can be reached at john.a.ferreira@accenture.com. Heilala's e-mail address is Michael.a.heilala@accenture.com.

Here is how Accenture defines offshoring:

"There are many different definitions to offshoring. We define it as the act of separating manufacturing and supply operations away from demand sources — to regionally separate locales. Some have moved operations offshore to support offshore demand; however, this is not really offshoring. It is really an effort to get closer to one's customers and support regional growth. Moving operations offshore only to later import the goods back into a region to fulfill demand is offshoring."

MIT Study On Mfg.... *(Continued from page five)*

"That book really did have a profound impact on public thinking and that is what we are seeking to achieve with this project," says Berger. "We see the United States as strong in innovation, but we think our ability to extract value for the economy in the form of new companies that translate that innovation through production into new products and processes and jobs has not been very good."

This is especially true at a place like MIT, which receives a lot of federal funding for research. "What does that research create for the rest of society and the rest of the people out there?" Berger asks. "That is a very legitimate question for a place like MIT and the country."

The commission will also try to dispel the myths that manufacturing is not essential to the health of the U.S. economy and that the natural evolution of manufacturing is similar to that of agriculture. "Our appetite for manufactured goods is much greater than our productive capabilities at this point," Berger notes, referring to the huge national trade deficit. The project will also investigate the need for investment in new manufacturing paradigms "that will speed up the passage from laboratory to market, including bringing low-volume but high-value products to market, integrating early stage production with R&D and deeply integrating services and production," according to a commission statement. It will investigate the potential for transformative process technologies such as integrated models of biotech manufacturing, customized semiconductor manufacturing, nanoscale production, energy efficient production and new integrated sensor-robotics-IT network centric production, "as well as for new business models that bring innovation to supply-chain management, workplace organizations, entrepreneurship and strengthening skills," says the commission.

The idea that U.S. producers must outsource production to low-cost labor countries in order to stay competitive doesn't seem to be correct either, given the success Germany has achieved in maintaining and growing industrial production and employment, notes Berger. "There doesn't seem to be a race to the bottom in which we need to be competing with Chinese wages and social standards in order to be competitive in world markets and Germany shows us this," she says. "In fact, the cost of labor is just not a significant contributor in many of these sectors."

Another goal of the project is to change how Americans think about manufacturing. "We really need a new mindset," says Berger. The group has received financial support from the Carnegie Foundation and is seeking additional sponsors.

MIT Commission on Production in the Innovation Economy (PIE)

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- Philip Sharp, Institute Professor, Professor of Biology, Co-Chair
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Congress Finds \$ For Labor Data

The Obama administration's desire to kill the Bureau of Labor Statistics' International Labor Comparisons (ILC) program has not been successful. The budget approved by Congress for the remainder of 2011, which included \$38 billion in cuts, spared the ILC, after a substantial lobbying campaign by the U.S. academic and business statistical communities made the case to Congress for its continuation. "It's really astonishing that ILC didn't get included in all the cuts in all the Continuing Resolutions up to the last one, which cut another \$38 billion," said one person involved in saving the ILC program. The Obama administration has called for the program to be cut again in the 2012 budget request to Congress, so its fate remains uncertain. The program provides an apples-to-apples comparison of labor costs throughout the world. Those involved in trying to save the program say that the administration and multinational companies do not want Americans to know the labor rates of people elsewhere in the world, against whom they are competing for jobs.

Multinationals Fire More Americans

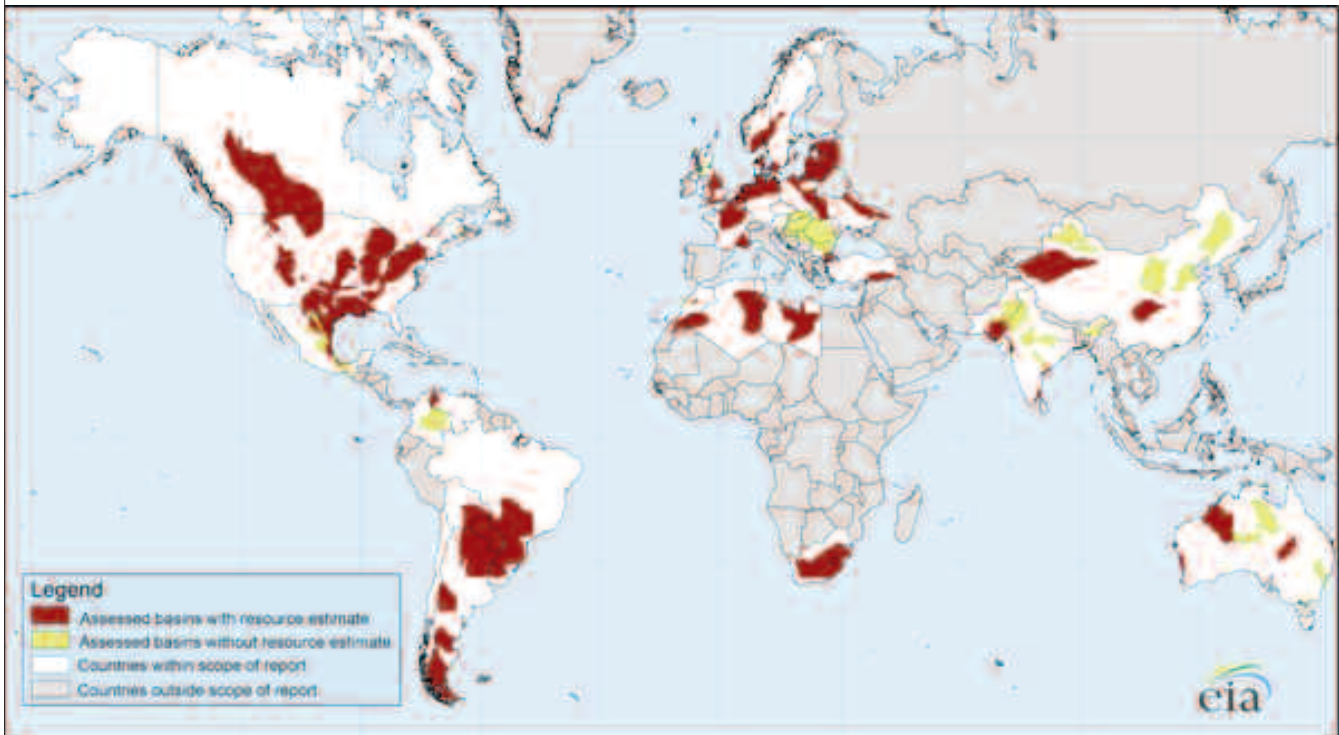
U.S. multinational companies reduced their worldwide employment by 4.1 percent in 2009 (to 31.3 million workers). Their U.S. workforce decreased by 5.3 percent (to 21.1 million worker) and their overseas employment fell by 1.5 percent (to 10.3 million). The release from the Bureau of Economic Analysis, "Summary Estimates for Multinational Companies: Employment, Sales and Capital Expenditures for 2009," is located at <http://www.bea.gov/newsreleases/international/mnc/2011/pdf/mnc2009.pdf>.

Energy Department Finds Lots Of Gas In The World

A huge amount of new natural gas has been found in shale formations in the United States, but there is even more gas in similar formations throughout the world, according to the Energy Information Administration. An assessment of 48 shale gas basins in 32 countries found that there are 5,670 trillion cubic feet (Tcf) of technically recoverable shale gas resources, compared to 862 Tcf in the United States. The combined total of 6,622 Tcf is considered to be a conservative estimate. There are 16,000 Tcf of "traditional" natural gas reserves.

"Adding identified shale gas resources to current estimates of other gas resources increases total world technically recoverable resources by over 40 percent, to more than 22,000 trillion cubic feet," according to EIA administrator Richard Newell.

Last year, U.S. shale gas production reached 4.87 Tcf, or 23 percent of U.S. natural gas production, compared to only 0.39 Tcf in 2000. Rising production of shale gas has reduced both the price of natural gas and dependency on imports. EIA expects shale gas to account for 46 percent of U.S. production in 2035. The report is located at <http://www.eia.gov/analysis/studies/worldshalegas/?src=email>.



Domestic Manufacturers Still Not Represented On Commercial Trade Advisory Committee

Customs and Border Protection (CBP) has announced the new membership the private-sector advisory board that helps set policies related to imports of goods. The Advisory Committee on Commercial Operations of Customs and Border Protection (COAC) has appointed 20 individuals to provide it with expertise that "enhances CBP's efforts to secure and facilitate trade," says Alan Bersin, Commissioner of Customs and Border Protection. "Our partnership and the work we do together is critical to ensure the efficient flow of commerce and therefore, important for the economic vitality of the country."

COAC has been criticized for not having any representation from U.S. manufacturers that are being displaced by cheap or subsidized imports. The majority of its members are drawn from the importing and global transportation industries. COAC's charter states that "members shall represent the interests of either importers (and their agents) or those associated with the carriage of international freight."

The group has helped set policies that have hurt the economic prospects of American producers, being active in a political campaign to kill proposed regulations associated with placing the proper value on imports for duty collection (called the first-sale rule). COAC helps set policies related to the collection and distribution of funds associated with anti-dumping and countervailing duties, issues related to country-of-origin labeling, and enforcement issues related to importing products to comply with safety, health and environmental laws. The group is expected to provide advice on the development of advance electronic cargo information requirements, streamlining Customs procedures, facilitating trade, cargo security and protection of intellectual property rights. Here are the members:

- Leman Chip Bown, FedEx Trade Networks, Buffalo, N.Y.
- Scott Childers, Walt Disney Co., Kissimmee, Fla.
- Colleen Clarke, Roanoke Trade Services, Schaumburg, Ill.
- Mary Ann Comstock, UPS Supply Chain Solutions, Sweet Grass, Mont.
- Jeffrey Coppersmith, Coppersmith Global

Logistics, Inc., El Segundo, Calif.

- Robert DeCamp, A.N. Deringer, Rouses Point, N.Y.
- Matthew Fass, Maritime Products Intl., Newport News, Va.
- William Ferguson, NYK Line (NA), Jackson, N.J.
- Michael Ford, BDP International, Philadelphia, Pa.
- Carol Hallett, U.S. Chamber of Commerce, Washington, D.C.
- Donald Huber, General Electric, Ft. Myers, Fla.
- Karen M. Kenney, Liberty International, Inc., Pawtucket, R.I.
- Karen Lobdell, Integration Point, Chicago, Ill.
- Kathleen Neal, A.O. Smith Corp., El Paso, Texas
- James Phillips, General Motors LLC, Detroit, Mich.
- Ted Sherman, Target Corp., Brooklyn Park, Minn.
- Barbara Vatie, Air Transport Association, Washington, D.C.
- David Vitale, Urban Partnership Bank, Chicago, Ill.
- George Weise, Sandler & Travis Trade Advisory Services, Leesburg, Va.
- Jeffrey Whalen, Nike, Inc., Beaverton, Ore.

An excellent story describing the shakeup in the trade functions at the Customs and Border Protection appears in American Shipper located at http://www.americanshipper.com/newweb/FC/FLC_story_Pasp?news=185147.

Stanford's Acceptance Rate Is 7 Percent

Don't tell the 34,348 high-school students who applied for admissions into Stanford University that there is an education "crisis" in America. Stanford sent admissions letters to 2,472 of those applicants, an acceptance rate of 7 percent. "In our review, we were humbled by the exceptional accomplishments of those candidates who have been admitted, as well as the competitive strength of all of the applicants," said Richard Shaw, dean of admission and financial aid.

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Editor & Publisher: Richard A. McCormack (richard@manufacturingnews.com)

Senior Editor: Ken Jacobson, 202-462-2472 (ken@manufacturingnews.com)

Web Technical Coordinator: Krishna Shah (krishna@manufacturingnews.com)

Business Manager: Anne Anderson (anne@manufacturingnews.com)

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