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One Advanced Industries Super-Sector

MANUFACTURING
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For the last couple years, I have been reporting on changes and challenges impacting the manufacturing sector. New technologies are changing the shape of manufacturing. From robotics to 3D printing to mobile technologies that have changed everything from supply chain management to order fulfillment, manufacturing has a very different look about it. Information technology professionals now play a key role in the ever-changing manufacturing environment, while the workforce has become much more tech-savvy. The result is a new kind of manufacturing industry – STEM-based and overwhelmingly broad.

An explosive new report from the Brookings Institution on "America's Advanced Industries" links 50 otherwise isolated industries – including 35 from the manufacturing sector and 15 more from energy and service – into one advanced industries super-sector in order to measure the real economic impact manufacturing and production in all its forms is having today.

"Technology is exploding," explains Mark Muro, a senior fellow and director of policy for the Metropolitan Policy Program at Brookings. "Manufacturing is turning out to be a very different, much more dynamic and high technology pursuit that is at the center of all sorts of things that are going on today."

The 50 Industries That Constitute the Advanced Industries Sector

MANUFACTURING		ENERGY
Aerospace Products and Parts	Motor Vehicles	Electric Power Generation, Trans., and Distribution
Agr., Construction, and Mining Machinery	Navigation, Measurement, and Control Instruments	Metal Ore Mining
Aluminum Production and Processing	Other Chemical Products	Oil and Gas Extraction
Audio and Video Equipment	Other Electrical Equipment and Components	**SERVICES**
Basic Chemicals	Other General Purpose Machinery	Architecture and Engineering
Clay Products	Other Miscellaneous Manufacturing	Cable and Other Subscription Programming
Commercial and Service Industry Machinery	Other Nonmetallic Mineral Products	Computer Systems Design
Communications Equipment	Other Transportation Equipment	Data Processing and Hosting
Computers and Peripheral Equipment	Pesticides, Fertilizers, and Other Agr. Chemicals	Medical and Diagnostic Laboratories
Electric Lighting Equipment	Petroleum and Coal Products	Mgmt., Scientific, and Technical Consulting
Electrical Equipment	Pharmaceuticals and Medicine	Other Information Services
Engines, Turbines, and Power Trans. Equipment	Railroad Rolling Stock	Other Telecommunications
Foundries	Resins and Synthetic Rubbers, Fibers, and Filaments	Satellite Telecommunications
Household Appliances	Semiconductors and Other Electronic Components	Scientific Research and Development
Industrial Machinery	Ship and Boat Building	Software Publishers
Iron, Steel, and Ferroalloys	Medical Equipment and Supplies	Wireless Telecommunications Carriers
Motor Vehicle Bodies and Trailers	Reproducing Magnetic and Optical Media	
Motor Vehicle Parts		

This recasting of the sector paints an interesting picture of manufacturing in the 21st century – a truly high-tech endeavor that pulls far more weight in the economy than anyone even suspected.

According to the report, every new job falling into that advanced industries sector creates 2.2 jobs domestically. That means that of the 12.3 million workers currently employed in the super-sector, " another 27.1 million U.S. workers owe their jobs to economic activity supported by advanced industries through their supply chains and their employees consumption."

"When you include both direct and indirect employment through this multiplier effect, you arrive at nearly 1/5 of the nation's economic activity attributed to this relatively modest-sized set of 50 industries," Muro notes. "Its importance is beyond arguing."

For all of the upside to the changing nature and perception manufacturing, it also underscores a critical need for a workforce with advanced STEM (science, technology, engineering and mathematics) skills and high-tech experience to drive it. While workers are well compensated in the advanced industry, the skills gap remains a huge challenge.

The Brookings report calculates that 60% of the jobs posted for the advanced industry are for STEM workers, compared to 34% outside the sector. Those job postings, it states, remain unfilled longer, indicating a major supply problem in the workforce.

The report also details a number of recommendations for the private and public sectors to address the supply problem.

For more information about America's Advanced Industries, the Brookings' full report can be found at www.brookings.edu.

Contact us with questions regarding the ever-changing manufacturing sector.

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