Why American Manufacturing is Vital to Future Prosperity

Hillary Schaub and Darrell M. West, Brookings

On Wednesday, July 9 Governance Studies hosted the 3rd annual John White, Jr. Forum [1] on Public Policy. The topic was Regional Manufacturing Hubs in the US, and we heard from a number of different experts. As noted in a recent White House report [2], the manufacturing industry is growing, but there is still much work to be done.

The sector comprises 12 percent of the overall economy and greater investments in community colleges and trade schools are necessary. Stronger STEM emphasis in primary and secondary schools in addition to a renewed emphasis on shop classes will help build vocational skills.

Although still in their preliminary stages, the existing hubs are already helping to create jobs. Manufacturing hubs are not only important for the success of the sector, but will benefit local communities, US competitiveness, and security. Members of Congress should work to authorize funds for the creation of additional manufacturing hubs.

This Is Not Your Grandfather’s Factory: The Rise of Manufacturing Innovation

The Obama administration has enacted policies to spur economic growth and diverse groups of Americans reap the benefits of those changes. Manufacturing supports the economies of local communities in ways that do not show up in national reports. It accounts for a large percentage of R&D spending and American patents. Innovators require manufacturing facilities to create new processes and develop new prototypes. A new wave of “makers” have built new sectors and companies, like 3-D printing and digital manufacturing. This has in effect democratized manufacturing. The positive feedback loop between manufacturing and innovation supports a larger entrepreneurial ecosystem. If America loses the ability to make things it creates a vicious circle that makes it harder to create jobs in the future.

Manufacturing is Growing Quickly

The manufacturing sector is growing faster than the rest of the economy. Over the past decade, manufacturing lost nearly a third of its workforce due to a lack of demand for American goods, the trade deficit, and general stagnation. However, since 2010 it has grown steadily in terms of the number of workers. Sixteen thousand direct manufacturing jobs were added to the economy this month and over 668 thousand since 2010. This represents the first period of sustained manufacturing job growth since the 1990s. The US share of exports has grown faster than other modern countries. Manufacturing plays a broader role in the economy and creates innovation benefits as well. .

US is a Competitive Location for Manufacturing

The US is a more competitive location for manufacturing than it has been in decades. A BCG [3] survey from late last year found that 54 percent of manufacturing executives were actively considering bringing production back to the US from China. An AT Kearney [4] study of global executives found that the US is the top destination in the world for job creating foreign direct investments for the second year in a row. The US scored the highest confidence level of any country since the survey launched 20 years ago. Low cost energy –in particular natural gas- entices many businesses to bring jobs back to America but it also has implications for every part of the supply chain, even those not dependent on energy.

The Administration’s Agenda

The Administration has established four pillars to address the challenges faced by manufacturing. The first is to increase competitiveness for the US as a location for production by reforming the tax code, making energy cheap, and investing in infrastructure. The second is to increase the nations innovation advantage by investing in R&D, new manufacturing technologies, and creating the National Network for Manufacturing Innovation (NNMI). The third pillar calls for investing in human capital to ensure businesses have access to highly skilled workers. This includes fixing our broken immigration system. Finally free trade deals that create a level playing field for competition are also critical.

The Collaborative Nature of the Hubs

The manufacturing hub in Youngstown, Ohio is built upon an extensive network of additive manufacturing technical expertise from across the nation to advance additive manufacturing and create new jobs. Launched by President Obama, it is the flagship Manufacturing Innovation Institute. Members pay yearly dues and in turn collaborate on translating R&D into practical uses.

Chicago, Illinois serves as the national hub for digital manufacturing and has partners all over the United States. The partner selection process takes into account

the role of local workforce development institutes. Key to these projects is getting various collaborators involved and getting them financially invested as is education and their willingness to collaborate.

The Importance of Workforce Development

The hubs place a strong emphasis on STEM education. Manufacturing employees need trainingin fundamental math, statistics, algebra, engineering, and software development. It is critical for hubs to collaborate with secondary schools, trade schools, universities, and community colleges to create a continuum of curriculum from the classroom to the workshop. Community colleges will help students learn the basics at a third or quarter of the cost of a four-year college. Manufacturing firms need to create learning opportunities for new employees coming in and pathways for their advancement. In addition they must invest in community colleges and technical universities to arm them with the capacity to help students learn the skills to work with advanced manufacturing systems.

Geography Matters

There are a number of reasons why geography matters in manufacturing. If design engineers have access to the shop floor they can help improve the quality of the product. Geography is also critical in the structure of the hubs themselves. Proximity between hubs and schools makes it easier to find qualified workers. Factories can also tailor products to local demands. Keeping the different links in the supply chain close to each other gives the US a leg up on competitors.

Manufacturing Supply Chains

Supply chains include everyone involved with manufacturing processes: starting with workforce development, design processes, manufacturing, operations, and facilities. Advanced manufacturing describes everything from conceiving, designing, producing, testing, fielding, supporting, and disposing of the product. After a decline in manufacturing the supply sees an equal if not greater fall. Rebuilding the supply chain takes time and investment. A better understanding of the supply chain (product, process and design capability) would aid efforts to bolster manufacturing in addition to low-cost product integration and network connectivity technologies.

Source URL (retrieved on *03/29/2015 - 4:03pm*):
http://www.foodmanufacturing.com/news/2014/07/why-american-manufacturing-vital-future-prosperity

Links:
[1] http://www.brookings.edu/events/2014/07/09-regional-manufacturing-hubs-innovation#/full-event/

[2] http://www.whitehouse.gov/sites/default/files/docs/manufacturing_innovation_report.pdf
[3] http://www.bcg.com/media/pressreleasedetails.aspx?id=tcm:12-144944
[4] http://www.atkearney.com/research-studies/foreign-direct-investment-confidence-index