



'Made in America' Needs an Industry 4.0 Skills Update

Let's build on the momentum for reshoring supply chains with investment in education and training.

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One of the president's signature initiatives since the beginning of his administration has been his "Made in America" campaign to reshore U.S.-owned manufacturing and attract FDI (foreign direct investment) by foreign-owned firms. This campaign has helped accelerate both trends, reaching 180,000 manufacturing jobs reshored in 2017. This rate is far above previous years, but needs to increase another 100 to 200% to remove the U.S.'s lack of self-sufficiency in key product categories.

We need a much stronger response from corporations that are still too obsessed with offshoring.

The most profound impact of COVID-19 on American manufacturing has been to add a powerful new impetus behind the “Made in America” movement. Building on nationalist sentiments, rising Chinese labor rates, and America’s new-found energy independence, there is now a widespread and transformational commitment to reshoring supply chains. For the last year, work has been flooding out of China to avoid rising costs and U.S. tariffs. Too much of that work has gone to Southeast Asia, India and Mexico. It is time to increase the U.S. share of that work while the supply chains are in flux.

Understandably, the most immediate COVID-19 concerns relate to our heavy dependence on imports for medical products deemed “essential” by the Department of Homeland Security: medical devices, pharmaceuticals and vaccines, personal protective equipment, sanitation and disinfectant products, testing and laboratory supplies. According to China trade expert [Rosemary Gibson](#), we import, largely from China, 90+% of antibiotics used in the U.S., 80% of all pharmaceuticals or active ingredients for pharmaceuticals, and about 95% of personal protective masks. Eight senators and three congressmen have introduced bills to address these dependencies.

But our lack of self-sufficiency goes well beyond medical. The U.S. has similar dependencies in rare-earth minerals, 5G communication systems, electronic components, computers, and cell phones—plus huge trade deficits in heavy industry and electronic segments. And there is a growing federal commitment to reducing dependence on foreign-supplied components for the nation’s defense production and electric grid needs.

Putting all these events together, we are now seeing the emergence of a mega trend towards optimally self-sufficient supply chains in American manufacturing.

These developments are consistent with a national interest in a strong and flexible “dual use” industrial base able to meet the nation’s needs both for national security and global economic competitiveness. In this sense, we have the opportunity to use the COVID-19 crisis to build a more self-sufficient and resilient dual-use industrial base.

While all this is good news for manufacturing in America, there is a danger that the focus on “renewal” and “re-launching” will end up being catchwords for a restoration of the status quo, instead of an opportunity for much higher levels of innovation, productivity, profitability and global competitiveness. These catchwords could increase protectionism rather than competitiveness. It could also exacerbate fears of automation and robotics, which Luddite factions characterize as job destroyers.

The most effective way to arrest those fears is to provide the strong leadership and added education investments from industry and government needed to upskill the front-line manufacturing workforce to help U.S.-based manufacturing accelerate the use of advanced technologies in manufacturing and quality control processes.

To that end, the nonprofit Manufacturing Skill Standards Council (MSSC) will release on June 1 a certified production technician 4.0 certification. Based on extensive research in 2019 with a select committee, MSSC has chosen nine emerging 4.0 technologies it believes will profoundly influence manufacturing and quality control processes: 5G, artificial intelligence (AI), autonomous robots, additive (3D), data analytics, Industrial Internet of Things (IIoT), augmented reality, nanomanufacturing, advanced materials.

The MSSC delivers its signature CPT certification and other credentials through a network of some 2,700 MSSC-trained Instructors and 1,700 MSSC-authorized test sites, mostly in community colleges and secondary schools, in all 50 states. The training and certification, for both incumbent workers and job applicants, is fully online, including the certification assessments, which can be taken on a laptop or tablet at home through Proctor U. Students who can commit 30-35 hours per week can earn the full CPT certification in six to eight weeks.

MSSC's intent is to ensure that CPT 4.0 technicians will have a basic understanding of these technologies as a foundation to build on as companies apply them in different ways on the factory floor. This will add to the capacity of these technicians to keep pace with technological change and increase their digital literacy and earning potential. The National Student Clearinghouse just released their finding, based on tracking 63,000 CPT certificants, that individuals with MSSC CPT credentials earn, on average, close to \$45,000 annually within five years.

Phase V Stimulus legislation, currently under consideration in Congress, may also offer increased funds to industry for the kind of training offered by MSSC's CPT 4.0 program.

The intent is that CPT 4.0 and similar programs will offer longer-term strategic benefits to the nation's industrial base:

- Widen the pipeline of high-skilled job applicants by leveraging MSSC's nationwide delivery infrastructure of community colleges and secondary schools
- Expand foreign direct investment in U.S. plants, since the availability of higher skilled labor is now the most important plant location criterion.
- Fill the deepening manufacturing skills gap with higher skilled technicians

Most important, such programs will facilitate significant improvements in labor productivity. Labor productivity enhancement is, in turn, the key competitiveness, enabling increased and sustained economic growth—the best pathway to recover from the long-term effects of COVID-19.

The persistent manufacturing skills gap is a major barrier to reshoring and increased FDI. That is why the Reshoring Initiative welcomes the work of high-quality training and credentialing organizations in overcoming that barrier.

The non-profit Reshoring Initiative documents, promotes and enables reshoring and FDI trends. RI provides the free online TCO Estimator that helps companies identify the 20 to 30% of their offshoring that could be more profitably reshored. RI also provides tools to help suppliers identify major importers and convince them to reshore and buy from the suppliers instead. RI's goal is to balance the \$800 billion goods trade deficit. Doing so will require 5 million manufacturing workers, a 40% increase. Higher-skilled workers will accelerate the nation's ability to balance that deficit.

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