Six Key Predictions for Manufacturing in 2015

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The landscape of manufacturing in America has undergone more significant changes than many of us in the industry care to remember. The recent past has been particularly painful, with economic downturns driving manufacturing overseas to take advantage of lower labor costs, and a generally depressed level of manufacturing activity becoming the norm.

However, there’s good news to share. The lower costs associated with reshoring are driving more local manufacturing activity; technological developments are drastically changing the way plants operate; and capital investments are on the rise.

As the director of the Georgia Center of Innovation for Manufacturing, I consult with manufacturing companies of all shapes and sizes on a wide range of projects. Over the past year, I’ve been privy to a convergence of activities that suggest to me that 2015 will be a landmark year for American manufacturing. Among my predictions:

1. Reshoring will continue, but at a slower pace

Manufacturers typically evaluate seven critical areas when it comes to operational decision making: transportation and energy costs; market demand for their products; rising labor costs in China and other developing nations; access to talent, tax, and regulatory policies; availability of capital; and currency trends.

In 2015 we will see jobs continuing to come back to America as trends around these divergent areas continue to work favorably for bottom lines. But this reshoring will happen in a more targeted way, with natural gas use serving as a driving factor in some cases.

The growing abundance of natural gas in the U.S. provides more affordable energy for factories, as well as new opportunities for products and services. PricewaterhouseCoopers estimates that high shale gas recovery and low prices could add 1 million U.S. manufacturing jobs and reduce natural gas costs by up to $11.6 billion annually through 2025. In fact, one particular U.S. steel manufacturer has already invested more than $100 million in a Midwest plant to help meet demand for tubes and pipes used in shale gas extraction activities.

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The U.S. shale gas boom has prompted some chemical producers – such as Dow Chemical (IW 500/21), which began construction on a Freeport, Texas plant in 2014 – to construct ethylene production plants in the southeast to take advantage of more affordable feedstock.

Then there are the manufactured goods themselves. Heavier goods equal higher shipping costs, a value-to-weight ratio that expands in concert with the distance between where they’re made and their market destinations. Higher transportation costs, combined with increasingly expensive labor rates in distant regions
such as China, are leading manufacturers of heavy equipment and steel products to move production from overseas back to the U.S., where these products are also sold. Shortening the supply chain has become a significant value proposition.

2. A manufacturing boom will hit the United States

Manufacturing growth over the past several years has been minimal. 2015 will launch a new wave of domestic manufacturing, as the industry sees broader growth. One reliably strong trend has been the national Purchasing Managers Index, which stood at 58.7 in November 2014. Rooted in a solid expansion of manufacturing activity, this index allows us to look forward and reasonably expect between 4% and 5% growth in domestic manufacturing.

However, manufacturing employment won’t grow at that same rate because facilities and operations have become far more productive and efficient.

3. Big data will drive big efficiency

According to the CSC Global CIO Survey: 2014-2015, 81% of manufacturers feel big data has a positive effect on production and efficiency, and 65% believe big data will be a strategic business driver moving forward.

That trend will continue, but the lynchpin in 2015 will be the widespread introduction of the Internet of Things (IoT). The Advanced Technology Development Center at Georgia Tech, one of the world’s top technology incubators, hosts a wide range of IoT companies, and a recent Verizon Enterprise Solutions report stated, “The IoT market reared its head last year, and we have seen an increase in interest from companies worldwide over 2014.” In addition, a November 2014 Forbes.com article entitled "Two High-Tech Stories To Watch In 2015: Digital and Industrial Internet of Things,” stated that, “IIoT will no longer be an intriguing, over-the-horizon concept.”

Sensor technologies will drive the concept of connected factories, and will fuel the introduction of mobility-based manufacturing. Web browsers will be used as dashboards to control equipment, identify snags, and make quick decisions that would have previously taken entire teams of people to handle.

As connected factories go online, myriad amounts of data will be collected. But 2015 will see that data put to use in a smarter way that makes things operate more efficiently.

4. Increased investments in predictive maintenance technologies

U.S. manufacturers will increase investments for predictive maintenance technologies in 2015. The proliferation of better and cheaper sensor technologies combined with the trend of connected factories will allow for greater opportunity to implement predictive maintenance technologies that will cut downtime and boost bottom lines.

Over the past four years I have been involved in an array of different predictive maintenance technology projects. Two such companies are Dahlonega, Ga.-based Polymer Aging Concepts, which has developed sensors that predict when to replace the insulation in motors, generators, or dry transformers before failure occurs, and Atlanta-based Jeneer Group, which developed an integrated down well sensor system that signals pump conditions for on and off cycles in landfills. These companies serve rapidly growing markets, and customers are lining up to do business with them.

A recent article in Reliable Plant entitled “Global machine condition monitoring equipment market to reach $2.1B by 2015” stated, “The need for eliminating catastrophic breakdowns and unnecessary maintenance costs
in production processes has and will continue to drive the adoption of condition monitoring solutions across several industries.”

5. Increased investment in capital equipment

With the convergence of several predictions outlined above, such as the increase in applications of sensor technologies and general industry growth, 2015 will be the year in which we will see a true renaissance in domestic manufacturing.

Improved bottom lines will drive replacement of aging legacy equipment and investment in new capital equipment that performs better, more efficiently and more reliably. Software will also assist in making current equipment more efficient.

6. Manufacturing will grow at a higher rate than GDP

U.S. gross domestic product (GDP) historically has been a marker against which industries peg their overall performance.

A report issued in December 2014 by the Institute of Supply Management stated that manufacturing revenues are expected to increase in 15 different manufacturing industries in 2015. It also asserted that capital expenditures, a major driver in the U.S. economy, are expected to increase by 3.7% in the manufacturing sector. Additionally, 67% of respondents to the ISM survey expect revenues to be greater in 2015 than in 2014, and the panel of respondents – all purchasing and supply executives – expect a 5.6% net increase in overall revenues for 2015, compared to a 3.6% increase reported for 2014 over 2013 revenues.

This momentum, combined with the factors outlined above, will contribute to a boom in manufacturing in 2015, helping the industry outpace the GDP for the first time in a long time.

John Zegers is the director of the Georgia Center of Innovation for Manufacturing. He has nearly 30 years of manufacturing experience, which includes extensive time spent as a manufacturer’s representative. He also has significant experience with original equipment manufacturers in the medical, automotive, heavy equipment and communications industries.

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