

The State of Manufacturing Technology in 2016... and Beyond

written by admin | January 19, 2016

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(IW - Kimberly Knickle: 1-8-16) As an industry, manufacturing is “hot.” Regions are creating manufacturing initiatives, countries are creating policies to lure manufacturing back and prepare the next generation of talent, maker fairs show entrepreneurs and small-scale artisans how they too can design and manufacture their own products, what manufacturers sell goes well beyond the 100-year-old recipe and the mechanical drawings, and new technologies are changing the economies of scale so that large- and small-scale value chains can be successful.

Worldwide manufacturers will spend an estimated \$323 billion on external IT expenditures, according to IDC’s Pivot Table: Worldwide Manufacturing IT Spending Guide, Version 2, 2013–2018. All of this change means that IT is increasingly an integral part of manufacturing’s success and we’re on our way to a digital transformation.

Our predictions span topics that are relevant across the entire company, in the plant operations, engineering and R&D, supply chain planning and execution, and service delivery. Key themes relate to customer engagement and customer service, supply chain modernization to support evolving market requirements and manufacturers’ “need for speed,” the fundamental nature of innovation in processes, products and services, and the fact is it isn’t enough just to have technology—companies must work to create value from their investments and have the right talent. And most importantly, the rapid adoption of new technologies and innovation accelerators is changing business models.

I’d like to set the stage with some background, essentially a few of the drivers or expectations behind manufacturers’ business priorities, IT initiatives and the predictions we share below. Our first driver is digital business transformation (DX)

(see graphic at the top of the page) and the fact that manufacturers are applying and must apply third-platform technologies and innovation accelerators to enable DX. In our graphic, you can see the core technologies that includes, from Big Data and analytics to next generation security. For manufacturers, DX is changing the way manufacturers design, make and deliver products and services, as well as how they define those products and services.

Our second key driver is cyber-IQ, combining technologies such as the Internet of Things (IoT) and cognitive with massive datasets and advanced analytics and improving the way people and machines interact. In the manufacturing industry, this impacts everyday work and processes in our organizations as well as connections to suppliers and customers.

A couple of our drivers relate to manufacturers' dynamic business environment, including the way geographic regions increase competition, add customer complexity and operating challenges. Regional variations above and beyond cost will continue to factor into many manufacturing decisions—for example, which markets are emerging, where the best talent is located, and which factors are most relevant when selecting a new location for a plant.

Similarly, change in the value chain is also a factor in our predictions. Regardless of how vertically integrated manufacturers are, they've always recognized the success of their products in the market is based on their ability to cooperate and collaborate as a network. In some manufacturing industry segments, OEMs are increasingly relying on Tier 1 or even Tier 2 suppliers for innovation or cost savings, with mixed results.

Similarly, manufacturers across all industry segments are putting more information and influence in the hands of their customers. This elevates the requirement for collaboration, communication and coordination in a secure, organized and resilient manner.

Two of our drivers are about key assets—information assets and the workforce. IDC estimates the digital universe is growing at 40% per year, and will reach 44ZB, or 44 trillion gigabytes by 2020. The challenge is to exploit information as an asset that can fuel digital transformation—to create new efficiencies or generate new revenue

streams. Information must be usable for analysis and in turn analyzed; this will provide manufacturers with visibility into the actual product performance and create a foundation for continuous improvement and new products and services.

In the workforce, manufacturers have long-time, experienced workers close to retirement and a new generation of tech-savvy workers; knowledge is leaving the organization, and new ways of working are entering the organization. There are an increasing number of manufacturers without the talent and workers they need in their factories, supply chains, engineering, and research and development. As a result, manufacturers are embedding tech into everyday work life, to help their employees do their jobs—manage their operations, design products and develop new intellectual property from anywhere in the world and more easily access critical work-related information from anywhere.

And our final driver is about business-relevant security, spanning cyber and physical security across IT and OT (operations technology). In addition to securing data centers, networks, transactional systems, customer data and engineering designs, the convergence of IT and OT and the addition of sensor data on connected assets, products and supply chains are changing the security roadmap. An integrated approach to security will also account for sensors, supervisory control and data acquisition (SCADA), GIS, GPS, data historians. Really a mix of IT and OT, or a mix of what's traditionally on the network and what's just getting onto the network.

Top 10 Manufacturing Predictions for 2016

With that introduction, let me share our predictions for 2016:

1. **The Impact of Customer Centricity:** By the end of 2017, those manufacturers that have leveraged customer-centricity investments will gain market share growth in the range of 2-3 percentage points.
2. **Global Standards for Global Manufacturers:** In 2016, 90% of manufacturers will impose their global standards on all operations, including outsourced operations and suppliers, to decrease risk and increase market opportunities.
3. **Value Realization:** By the end of 2016, 65% of manufacturers will have metrics in place to evaluate and drive pervasive changes in the workplace with their new technology investments.

4. Building on IoT-enabled Products and Processes. By 2019, 75% of manufacturing value chains will undergo an operating model transformation with digitally connected processes that improve responsiveness and productivity by 15%.

5: Redefining Modern Supply Chain Logistics. By 2019, 50% of manufacturers will have modernized their logistics network to leverage 3-D printing, robotics and cognitive computing to support innovative postponement strategies.

6: The Decline of Short-Term Forecasting. By the end of 2019, enterprise-wide improvements in resiliency and visibility will render short-term forecasting moot for 50% of all consumer products manufacturers and 25% of all others.

7: Enterprise Quality via the Product Innovation Platform. By 2018, 60% of top 100 global manufacturers will be using a product innovation platform approach to drive enterprise quality throughout the product and service lifecycles.

8: The Digital Twin. By 2017, 40% of large manufacturers will use virtual simulation to model their products, manufacturing processes, and service delivery to optimize product and service innovation.

9: Smart Manufacturing with Cloud, Mobile, and Big Data and Analytics. By the end of 2017, 50% of manufacturers will exploit the synergy of cloud, mobility, and advanced analytics to facilitate innovative, integrated ways of working on the shop floor.

10: IT Transformation for Digitally Executed Manufacturing. In 2016, 20% of manufacturers will begin to break down organizational silos, reshape IT portfolios, and import new IT talent in the plant for digitally executed manufacturing.

New technologies and enhancements are necessary to achieve the digital transformation required for the next generation of manufacturing. Manufacturers must review their current application portfolio; modernize processes in the back office and the plant, and in all aspects of the value chain upstream and downstream; and upgrade their decision-making capabilities.

Consider the following to ensure you maximize the value from current and future technology investments:

- Help your IT talent learn new technologies and better understand the needs of their business customers.
- Ensure that IT and line of business are collaborating as true partners in the

selection and implementation of new technology.

- Consider how your investments in IT and operational technologies can lead to business transformation, not just incremental improvements.
- Look to your employees and customers for innovative ideas for the use of new technology and best practices in terms of implementation and use.
- Work with partners to accelerate your IT capabilities and serve the line of business. As you embed more technology in how you operate, external resources and expertise can help you move quickly and effectively.

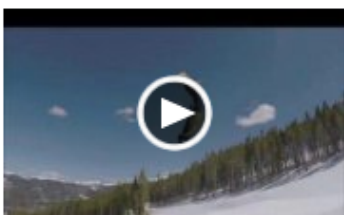
2016 promises to be an exciting year for those manufacturers that can move forward on their digital transformation journey.

(Kimberly Knickle is research vice president of IDC Manufacturing Insights.)

Manufacturers and Open Innovation

written by Lauri Moon | January 19, 2016

Check out the newly released video highlighting our manufacturing client, Gilson Boards. IMC, along with our IRC Network partners, is leading a statewide initiative to help manufacturers implement and utilize an open innovation business model. To learn more about how IMC can help you innovate, contact us at info@imcpa.com.



Gilson Boards Open Innovation Video

PA Soliciting Governors Cup Entries

written by Lauri Moon | January 19, 2016

PA Dept. of Community & Economic Development needs your help to ensure every eligible PA project is included in the Governor's Cup entry. Entries that meet at least one (just one!) of the following criteria: 20 or more new jobs created, \$1M or more in investment (construction cost, land and building), 20,000 sq ft or more in new construction or expansion qualify. Simply send project names and locations to Kara Golden at Red House Communications (kgolden@redhouse.com) no later than Friday December 4. Kara can answer questions via email or by calling 412-481-7275.

"The 2014 Governors Cup recognize the top performing states for capital investment attraction in a season that lasts all year." by Mark Arend, www.siteselection.com.
[Click here for entire story.](#)

IMC Tours Manufacturing Plants with PA House Legislative Manufacturing Caucus

written by Lauri Moon | January 19, 2016



IMC Meeting with PA House Manufacturing Caucus Members & WLCC Representatives

November 7, 2015 By MIKE REUTHER (mreuther@sungazette.com), Williamsport Sun-Gazette

State lawmakers and business leaders seem to agree that Pennsylvania lags behind many other states in economic development.

On Friday, several members of the House Legislative Manufacturing Caucus met locally to consider ways to improve business and industry opportunities.

“It’s a great opportunity to share what’s happening in manufacturing,” said Williamsport/Lycoming Chamber of Commerce Executive Vice President Jason Fink. “It’s also an opportunity to share the challenges they’ve been facing.”

State Rep. Fred Keller, R-Lewisburg, was among a number of lawmakers and others who toured the Kellogg Company in Muncy in the morning. Keller said he came away impressed by the company’s emphasis on safety. “They are doing this right,” he said.

But the company faces many of the same challenges as others across the state, according to officials. They noted the need for young people to pursue training that will help them find the work where they will be needed.

State Rep. Jeff Wheeland, R-Loyalsock Township, noted that the aging workforce locally will need to be replaced by the next generation. “For our youth there will be

so many job opportunities for those that are in demand,” he said. He added that the local area is blessed to have educational institutions such as Pennsylvania College of Technology that offers curriculums that train people for such jobs.

State Rep. Eli Evankovich, R-Murrysville, chairman of the Manufacturing Caucus, said economic development should include government partnering with business. “We need to have government move at the speed of business,” he said.

He lamented that traditional strategies are not always the best approach to business. High taxes are yet another hindrance to growing jobs. On the plus side, the state’s manufacturing base is well positioned with access to natural resources, good highways and proximity to major markets. “We are well-situated for a renaissance,” he said.

Williamsport/Lycoming Chamber of Commerce President Vincent Matteo said it’s important for state officials to understand the needs of business.

“Manufacturing drives the economy and other jobs,” said James Shillenn, executive director of Innovative Manufacturers’ Center (IMC), Williamsport. “You have to be making things.” IMC is a public-private partnership dedicated to increasing Central Pennsylvania manufacturers’ innovation, productivity and profitable growth to drive economic impact.

The group later toured First Quality Tissue in McElhattan.

IMC Client Releases New Product Video

written by Lauri Moon | January 19, 2016

IMC works with Gilson Boards, a Union County manufacturer and leader in revolutionizing snowboarding design and production, on product innovation and

manufacturing process improvement.

GILSON SNOWBOARDS from Gilson Boards on Vimeo.