The M4.0 Tidal Wave is Coming-Are You Ready?

written by Lauri Moon | June 13, 2016

(Manufacturing Leadership — Paul Tate: 6-7-16) "Industry is about to experience more change, across more aspects of the business of manufacturing, and in a shorter time than perhaps any period of transition in the history of manufacturing", predicted David Brousell, Co-Founder and Global Vice President of the Manufacturing Leadership Council in his opening address at the *2016 Manufacturing Leadership Summit* earlier today.

Hosted by international research and consultancy company Frost & Sullivan at the Omni La Costa Resort in Carlsbad, CA, the theme of this year's 12th Annual Summit focuses on ***Manufacturing 4.0****: The New Rules of Leadership,* and has brought together over 200 senior industry leaders from across multiple sectors of the global manufacturing sector.

Citing the results of the Manufacturing Leadership Council's recent research study on *Factories of the Future*, Brousell continued that over the next five years the research suggests that a "tidal wave of digital change is coming" for manufacturing. This will engulf production and assembly processes, the devices and equipment on plant and factory floors, how design relates to production, how companies interact with customers and suppliers, and, perhaps most importantly, how and where leadership teams will pilot their companies in the years ahead.

On a broader scale, the impact of this digital transformation across society will be profound, he added. For example, until about 1900 observers suggest that human knowledge doubled around every 100 years. But today, he noted, IBM estimates that the build out of the Internet of Things alone will cause human knowledge to double every 12 hours!

Yet the digital transformation that is inherently part of M4.0 for the manufacturing sector, is still in its early stages in most companies, he explained. What's more, any manufacturing company that believes M4.0 is simply about investing in new digital

technologies alone is missing the point.

Digital tools are critically important, of course, but M4.0 is also about "cultural change and organizing differently – understanding and successfully implementing such things as flatter organizational structures and a collaborative innovation model – as well as re-tooling leadership teams with non-traditional skills sets," he added.

The problem is that many manufacturers appear to be struggling today to fully absorb and get into position to drive and lead this new industrial revolution.

Citing another recent Council research project on *Next-Generation Manufacturing Leadership,* Brousell reports that, "While manufacturers expect to receive significant benefits from digitization, they also say their leaders have not yet fully adjusted their mind-sets, behaviors, and skills in ways that will be necessary to take advantage of the possibilities of digitization."

Perhaps that's where the biggest challenge along the journey to M4.0 may lie for many manufacturing organizations in the years ahead. Time, however, is not on the side of those who delay.

"You will not have 25 years to get on board with M4.0," advised Brousell. "You are going to have to act fast – and with as much precision as possible."

(Paul Tate is Research Director and Executive Editor with Frost & Sullivan's Manufacturing Leadership Council. He also directs the Manufacturing Leadership Council's Board of Governors, the Council's annual Critical Issues Agenda, and the Manufacturing Leadership Research Panel.)

The Rise of Manufacturing Marks

the Fall of Globalization

written by Lauri Moon | June 13, 2016

(Geopolitical Weekly – Rebecca Keller: 6-7-16) Whether you're reading this article on a smartphone, tablet or laptop, chances are the device in front of you contains components from at least six countries spanning three or more continents. Its sleek exterior belies the complicated and intricate set of internal parts that only a global supply chain can provide. Over the past century, finished products made in a single country have become increasingly hard to find as globalization — weighted a term as it is — has stretched supply chains to the ends of the Earth. Now, anything from planes, trains and automobiles to computers, cellphones and appliances can trace its hundreds of pieces to nearly as many companies around the world. And its assembly might take place in a different country still. Opportunities for producing and assembling products and their components have spread worldwide, making it is easier for countries to climb the production value ladder. States at the bottom, extracting raw materials, can gradually move up, first making low-value components and then progressing to higher-value ones or basic assembly.

But just as technology spurred globalization and the shifts in international trade that followed, so, too, will it revolutionize how countries again do business with one another. Compounded by the economic and demographic changes taking place today, automation, advanced robotics and software-driven technologies are ushering in a new era — one of shorter supply chains that will provide fewer opportunities for the developing world. Regions once labeled "emerging economies" may instead stagnate, and the divide between the haves and have-nots within and among nations could widen further.

2016-17 WEDnetPA Funding

Applications Now Available

written by Lauri Moon | June 13, 2016

Did you know that the cost for attendance at one of IMC's Open Registration Workshops or Onsite Training at your facility could be covered by WEDnetPA funding? Contact Lauri Moon to discuss your training needs.

Applications for the Workforce and Economic Development Network PA (WEDnetPA) training reimbursement program for Fiscal Year 2016-17 are now available. Funding is provided through the PA Department of Community and Economic Development (DCED) and administered by 27 WEDnetPA Partners throughout the Commonwealth. The goal of WEDnetPA is to strengthen the business environment of Pennsylvania by providing qualified employers (primarily manufacturing or technology-based businesses) training reimbursement funding for new and existing employees that can improve their skill level and productivity. Companies determine their own training needs and can select among a wide range of training providers (the WEDnetPA partners, third-party providers or in-house staff) as well as how and where the businesses will receive the training (onsite, offsite or online). For more information on WEDnetPA visit www.wednetpa.com or click here.

Digital Manufacturing is a Growth Sector

written by Lauri Moon | June 13, 2016

American manufacturers are investing heavily in digital technologies, pouring 2.6 percent of their annual revenue into digital systems, according to PwC. That investment "is expected to increase to almost 5 percent of revenue in the next five years, an estimated $350 billion," says the consulting firm.

Venture capital firms have invested $3.6 billion since 2011 in start-ups developing

digital technologies for manufacturers. This funding reflects “an increase of nearly 50 percent annually with start-up investment focused on manufacturing software, ERP and inventory software and robotics and sensor technology,” states the consultancy.

Of the manufacturing companies that PwC surveyed, adopting digital manufacturing technologies will lower operating costs by at least 11 percent, “mostly through efficiencies gained by automating processes and production.”

Why Good Marketing Photos Are So Important for Industrials

written by Lauri Moon | June 13, 2016
Customers often encounter a business through photographs. Why not make a good impression?

Good Marketing Photos Are Good Marketing

Marketing is all about communicating your value to the customer. Unfortunately, many industrial businesses don’t understand the importance of good marketing photos and how the right styling and consistent imagery can help them not only convey quality, but also help them successfully tell their company story and create alignment across their brand.

Read more from *Industrial Marketer*

U.S. Manufacturing Sector Attracting Foreign Investment from Asia, Europe

written by Lauri Moon | June 13, 2016

(Forbes – Ellen Sheng: 5-27-16) The U.S. manufacturing sector, which has been on a decades-long slide, is increasingly attracting foreign capital from Asia and Europe, a recent study found.

The study, which was compiled by seven business schools, found that even though China remains a top manufacturing destination, more companies are shifting production volume to the U.S., rather than moving manufacturing out of the U.S.

Notably, the trend is being driven by foreign companies, mostly from Asia or Europe. The study surveyed senior supply chain executives at 85 of the world's largest manufacturers. The report was put together by The Global Supply Chain Benchmark Consortium, which consists of seven business schools and Avnet, a maker of electronics components.

"Companies are coming to the U.S. for proximity to the U.S. market and technological innovation," said Shiliang Cui, assistant professor of operations and information management at Georgetown University's McDonough School of Business

The U.S. is still the largest economy in the world and companies come for market access, he explained. The second reason is for innovation, particularly in research & development as well as manufacturing efficiency and capability.

"When people say reshoring, it means a U.S. firm bringing back manufacturing to the U.S.," said Cui, *emphasizing that the study didn't find much evidence of reshoring*. But "manufacturing is on the upwards trajectory here and, at least in our sample, this was brought on by non-U.S. firms," he said.

Jiangnan Mold Plastic Technology Corp., which makes plastic mold parts for the automotive industry, invested $45 million to set up a 250,000 square foot plant in Greer South Carolina that is expected to be fully operational in the second half of next year.

“This investment in South Carolina and in Spartanburg County will further strengthen Jiangnan’s effort to expand its global leadership role in the plastic molding industry,” Robert Cao, Jiangnan Mold Plastic’s chairman and general manager said in a statement in April.

In other cases, foreign companies buy existing manufacturers. The largest such deal was Haier Group’s $5.4 billion acquisition of General Electric’s appliance business, based in Louisville, Kentucky, earlier this year.

Drawn By Research & Development, Cost Efficiencies

Proximity to the U.S. market as well as R&D, innovation, and design capabilities were key reasons foreign companies wanted to shift manufacturing to the U.S., the survey found.

Increasingly, the U.S. is also attractive from a cost standpoint. China’s rising labor cost is narrowing the difference. Wages in China have risen about 15% a year for the last decade. The low cost of oil and gas as well as high productivity, driven by technology and automation, also makes the U.S. manufacturing sector attractive.

A recent study by Princeton, N.J. consulting firm BLS & Co. and Tractus Asia, an Asia-based foreign direct investment advisory firm, found that median electricity prices for U.S. industrial plants are one-third to half the prices in China while electricity savings in the U.S. can be as much as 70%.

China’s unit labor costs are just 4% lower than in the U.S. since wage growth has outpaced productivity growth and the yuan has appreciated, according to Oxford Economics. While manufacturing output per employee in China doubled between 2003 and 2016, *the U.S. remains 80% to 90% more productive*.

U.S. manufacturing may not be in a renaissance yet, but studies are finding increasing interest and signs of a shift.

(Ellen Sheng is a Forbes contributor.)

Manufacturing Unexpectedly Accelerates Amid U.S. Growth Signs

written by Lauri Moon | June 13, 2016

Factories are using a pickup in bookings from the U.S. and abroad to help trim stockpiles, laying the ground for bigger gains in production later in the year.

(IW – Bloomberg: 6-1-16) Signs of better U.S. growth are cropping up, including in manufacturing, which has been a laggard of the economy.

Activity at factories unexpectedly expanded at a faster pace in May, helped by an increase in orders, the Institute for Supply Management reported Wednesday. The Tempe, Ariz.-based group's index climbed to 51.3 from 50.8 in April, while the median forecast in a Bloomberg survey of 81 economists called for 50.3. Readings greater than 50 indicate growth.

Factories are using a pickup in bookings from the U.S. and abroad to help trim stockpiles, laying the ground for bigger gains in production later in the year. The recent stabilization in oil prices also will probably help stem the slump among energy producers that has contributed to weak business investment, and growth this quarter is set to get a boost from household purchases, which posted a better-than-forecast gain in April.

"Manufacturing is starting to look better," said Scott Brown, chief economist at Raymond James Financial Inc. in St. Petersburg, Florida, who had projected an ISM factory reading of 51.2. "It's an encouraging sign that things aren't unraveling. Ultimately, production is going to increase because of stronger consumer demand."

The new orders gauge was little changed at 55.7 compared with 55.8 in April. A measure of production cooled to 52.6 from 54.2.

Estimates for the manufacturing index in the Bloomberg survey ranged from 49 to 52.

Twelve of 18 industries surveyed by the purchasing managers' group reported growth in May.

One weak spot was the factory employment measure, which held at 49.2, indicating manufacturers trimmed payrolls last month.

In other signs that the industry is turning around, the index of supplier deliveries jumped to 54.1, the highest level since December 2014, from 49.1. A reading greater than 50 means shipments slowed, which often happens when suppliers have trouble keeping up with demand.

The ISM's gauge of factory inventories fell to 45 from 45.5. The index has been lower than 50 for almost a year as producers trim the amount of goods on hand.

Right Direction

"Things, for me, are pointing in the right direction," Bradley Holcomb, chairman of the ISM factory survey, said on a conference call with reporters. With businesses having pared stockpiles and orders picking up, "there's a bit of an inventory shortage" and "suppliers are now having a harder time catching up so they're slower."

The overall tone of the comments from manufacturers in the survey was "cautiously optimistic," he said.

The report also showed the headwinds from sluggish overseas markets may be dissipating. The index of export orders held at 52.5 in May, marking the third straight month demand from abroad has grown.

Manufacturers also are seeing a pickup in price pressures. The index of prices paid jumped to 63.5, the highest level since June 2011, from the previous month's 59.

The factory survey data follows a report on Tuesday that showed the American consumer came back with a vengeance in April after a sluggish start to the year. *Households increased spending during the month by the most since August 2009, and incomes also grew.*

AME Releases Mid-Atlantic Region May Newsletter

written by Lauri Moon | June 13, 2016
Check out the May AME Mid-Atlantic Region Newsletter featuring upcoming events including a Leadership Techniques to Start Using Right Now Lean Leadership Panel event May 26th in Concordville, PA.

MA Region Newsletter May 2016

Videon Central Announces Manufacturing and Testing Services

written by Lauri Moon | June 13, 2016
What's the opposite of off-shoring manufacturing to countries where labor is cheaper? Bringing it even closer to home. That's what Videon Central is doing with its new Manufacturing Services. Though the business has long manufactured and tested its own products, it is now opening its doors and offering Manufacturing and Testing Services to other companies in the Centre Region and beyond.

Specializing in contract manufacturing and product testing for highly-regulated industries, Videon's facility has equipment to stress products to the point of failure, a process that offers valuable reliability information and guarantees long term quality. "Our chamber can take a product from -100°C to +200°C in less than 5 minutes," explains Production Manager Ian Urbanik. "Or it can shake the product, simulate lightning strikes, keep it in a humid environment…and in any of those stress scenarios, we identify the weak links of the design. Change that part of the design, and you have a product that will last longer even in rugged circumstances. A more reliable product means fewer field returns and higher bottom line profit."

Read on…

Videon HALT Services Datasheet

Videon EMI Testing Package Datasheet

Videon Temperature Testing Services Datasheet

Two Key Innovation Questions

written by Lauri Moon | June 13, 2016
Q 1. What is an Innovative Enterprise?

Q 2. And why is innovation so directly aligned with success?

An Innovative Enterprise is probably best defined as a company that can continually *improve and reinvent* its *products and services* and its *work processes* – both *what* it brings to the marketplace and *how* it does that – and that has that whole "renewal process" integrated into its normal operations.

And what does that output look like?

Click here to find out!