


ARCHERPOINT

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eBook

Technology Trends in Discrete Manufacturing

A guide to help you understand what's best for your business

Taking Your Business to the Next Level

The manufacturing industry in the U.S. experienced a strong comeback in 2015 and is expected to continue in 2016.

As confidence continues to build, it's time for discrete manufacturers to look at how they can take their organizations to the next level—to push from “steady” to downright impressive in 2016.

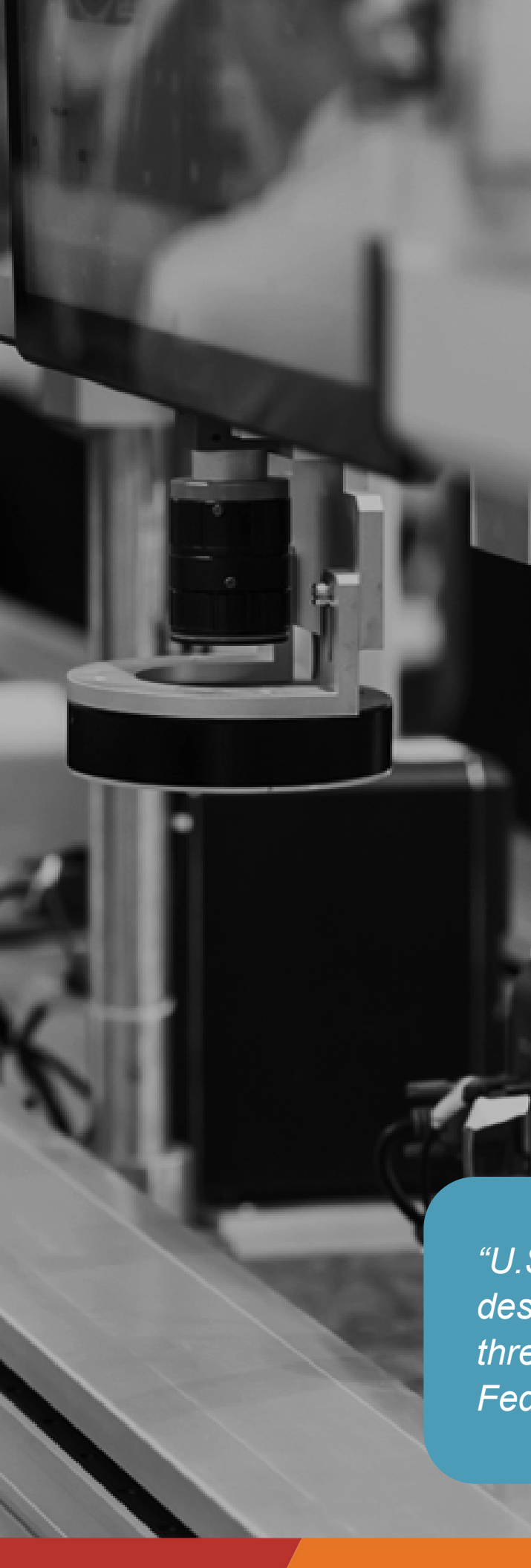
The business is there—you just need to get the pieces in place to push your company ahead of the competition. The focus is on how to use technology to provide better information, improve quality, and optimize operations, ultimately improving customer satisfaction. According to research by Frost and Sullivan, a global consulting firm, “The advancements and trends existing today have the potential to further accelerate the growth of manufacturing sector across the U.S. and Europe.”

With the right tools and a carefully considered plan, you can take advantage of technology without breaking the bank or interrupting operations.

1. Information

To be successful in 2016, manufacturers need to gather data, in context and in real time, and then make that data work for them. This data then becomes actionable information on which you can base intelligent decisions. Integrating supply chain and financial solutions and mobile technology have made this much more attainable task. With real time data capture and tablets connected to the back office, the shop floor, warehouse operators, and production planners can work together to keep things running smoothly. With the right solution, you can better manage queries, adapt to changing





priorities, adjust sequencing, and provide relevant feedback. The result: Better overall visibility across the organization that keeps everyone in sync, which improves productivity and produces actionable insights.

2. Traceability

While many proactive manufacturing organizations are incorporating traceability into their operations for strategic purposes, i.e., for quality control and maintenance tracking, food and drug companies are actually being legislated into implementing robust lot and serial tracking solutions into their manufacturing processes. Two major catalysts for the focus on traceability: The Food Safety Modernization Act (FSMA) and the “Internet of Things.” The FSMA was signed into law in January 2011 and represents the most sweeping reform to food safety laws in decades. One of the articles gives the FDA the authority to mandate a recall if necessary. Until the FSMA, recalls were voluntary. The FDA might also demand an electronic tracking report of suspected contaminated goods within a 24-hour period. This would be a very difficult request to accommodate for companies that are not already using electronic data capture devices. The other new trend, commonly referred to as “The Internet of Things,” or IoT, includes—among many other things—savvy consumers wanting to know more about what they are buying, where the ingredients came from, and so on. Fortunately, today’s WMS and MES solutions give companies the level of technology and flexibility

“U.S. manufacturing growth edged up despite a stronger U.S. dollar and the threat of an interest rate rise from the Federal Reserve later this year.”—Reuters

required to meet changing and unique requirements and regulations. Automatic data capture processes inherent in WMS and MES prompt the scanning of serial numbers, lot numbers, BOM revision numbers, purchase and sales history—in short, you will gain insight into what part has been used where and for what reason. For manufacturers that need the ability to define traceability requirements on a part-by-part basis, such as those dealing with defense or government regulations, each part can have its own special tracking requirements. Another advantage of traceability is the ability to view on-hand inventory balances by viewing a listing of lot or serial numbers rather than requiring a visual count. Today's software can also auto-assign serial numbers, so manual entry is no longer required.

Lot and serial numbers can be assigned at shipping or receiving posts or to materials at the time they are issued before proceeding. Customer shipments can be tracked back to the raw material lot that was used to produce the finished part, back to the suppliers, through outsourcers, or to customers by lot or batch.

For example, knowing which sub-components make up a parent component and when/how the item was produced can be extremely valuable if you are tracing a quality issue, and knowing which customers have a particular item can be invaluable when dealing with a recall. In many industries, entities or companies will refuse delivery unless serial numbers match exactly to ensure quality and safety.

This process goes a long way in ensuring quality in a product where safety and security are paramount. Other advances in traceability include the flexibility to follow your business processes:

- Track an unlimited amount of products through inventory that have lot numbers or serial numbers, including lot numbers for ingredients used in manufacturing.





- Flexibility in tracking – Recording lot or serial numbers when a product is received (and tracking each number) or waiting to enter the serial number when the product is shipped, or a combination of both. Technology Trends in Discrete Manufacturing: Take Your Business to the Next Level.
- Pre-assign specific lot or serial numbers for the warehouse to pick or allow warehouse personnel the convenience of picking any serial number and recording it at the time of shipping.
- Lot number and serial number traceability with the ability to capture expiration date, test certification, specification, and related references. A complete history of each lot and serial number can be looked up for each product, as well as the customer who received that product.
- Rack expiration dates by lot number or serial number.
- Search, report, and manage on source, expiration date, lot, inspection, and quarantine information.

3. Workflow

Manufacturing operations optimize how manufacturers plan and execute. Everything, from materials delivery to workflow to replenishment to distribution, needs to be system driven; otherwise, needless costs will be added, quality will be compromised, and efficiency will most definitely be affected.

“Advances in technology — coupled with changing labor demographics — are proving to be the lynchpin shaping this new business model.”

In today's highly competitive market, costs need to be kept low, which means people and machines need to be optimized, and this can be done through workflow process, aided by technology. Getting things done by the right people and machines, at the right time, in the right sequence, and in the right place is not a simple task, and the right technology can help. With a system-driven workflow, the need for expeditors can be eliminated—those “firefighters” who are always the ones saving the day by cleaning up last-minute orders—and those resources can focus on optimizing each business process, validating them as the process moves along, always finding better, more efficient ways to conduct business.

4. Material Flow

Connecting the shop floor with warehouse operations is the key to better flow of materials because it results in moving materials into production faster—and getting products out the door. This is crucial when you're dealing with limited space, because most manufacturers are challenged with JIT to keep the cost of materials down. In addition, there has been a recent resurgence in interest in Kanban principles. So, how do you continue to improve and maintain a high level of production? How do you synchronize and allow for JIT on the shop floor? With the right technology, the number of people involved in the process of picking, packing, and putting away can be cut in half.

5. Quality

Manufacturing has taken a hit in recent years when it comes to quality. Manufacturers searching for a competitive advantage might be wise to look beyond price and focus also on quality. Integrating quality into your manufacturing processes requires a commitment every step of the way—from inspection of your materials to having processes in place throughout the manufacturing process, ensuring your employees are consistently and regularly trained.





Again, well-thought-out processes need to be put in place, which can take advantage of technology. Manufacturing Execution Systems can manage this; machine maintenance can be tracked and scheduled to protect your investment and increase the quality of your products. Inspections using electronic checklists can be sent to the appropriate people immediately for quick response. Questions can be answered in real time, and feedback can be provided to production to take corrective measures quickly. Outside feedback from vendors and customers can also be processed and acted upon much more quickly. For example, using technology, NCR went from 24 days to 48 hours in its response time to customer quality issues.

What's Next?

In this eBook, we've named five ideas—but the list doesn't stop here. As a manufacturer, you are also a business owner who must never stop exploring how technology can make your business even stronger. For example, are you bar-coding? If not, have you considered it? It's been working beautifully for years in retail, so why not in your industry? Are you telling yourself you don't have time right now? Or you don't have the budget? Or you can simply add more employees? Well, many of your competitors know that's not the answer. They are investing in technology because it IS the future...and the present. In fact, the technology is there already. Your job as the owner or executive of your organization is to constantly evaluate these tools to see how they can work for you, just as they have in other industries. Taking advantage of technology as a manufacturer gives you the power of knowing exactly where your organization stands at any given time, which allows you to be proactive versus reactive—and that gives you the power you need to make intelligent business decisions, be more efficient, and stay way ahead of the competition. A critical shift in the world of logistics and supply chain is impacting the way you manage inventory.

Real-time communication, omni-channel distribution, and compliance regulations are bringing customers virtually into the four walls of your operation. Businesses that can constantly adapt to these challenges will have the competitive advantage.


Looking for Help?

At ArcherPoint, we work with manufacturers every day to help them achieve their desired future state. With decades of experience and training, our team analyzes every location of your business, maps your goals to your processes and technology, designs an integrated manufacturing solution, and determines what needs to be done to pull it all together to deliver real value. From forecasting and planning to production and shipping, we'll get you where you want to go. Contact emartin@archerpoint.com today to get started.

About ArcherPoint

Founded in 2002, ArcherPoint by Cherry Bekaert is a global Microsoft Dynamics ERP Solutions Partner, delivering modern workplace solutions including Microsoft Dynamics 365 Business Central, Dynamics NAV, Azure, Microsoft 365, and Power Platform across the US, Canada, Mexico, and Europe. Now backed by Cherry Bekaert, a leading CPA and advisory firm, ArcherPoint expands its capabilities beyond ERP to include strategic tax, audit, and advisory expertise. Our certified professionals design, implement, and support solutions for industries such as manufacturing, distribution, retail, logistics, and more—helping clients realize business value through comprehensive ERP, cloud, and advisory services that evolve with their needs.

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