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MAKING THE CULTURE CHANGES THAT ASSURE DIGITAL TRANSFORMATION SUCCESS

Whitepaper

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BOTTOM LINE

Change management is central to gaining lasting success with any digital transformation strategy, and it requires manufacturers to put employees first, selectively focusing on technologies that enable every team member to excel based on greater insights in order to drive innovation.

Manufacturers have always looked at automation as a way to increase production and decrease cost. Traditionally, companies have prioritized on automating the physical aspects of manufacturing, for instance, robotic material handling. Digital transformation is just another form of automation that focuses on the intellectual or information-based aspects of manufacturing, such as 3D computer-aided design (CAD) or predictive process control. Despite the differences, the fundamental driving forces remain the same: increase production and reduce cost.

Digital transformation has taken on significantly greater importance in the wake of the unprecedented change and unpredictability that have marked this new decade. Many manufacturers need the flexibility to make 10,000 parts one day and then make 10,000 different parts the next. Moreover, companies need to anticipate and address rapid changes in market demand or supply chain availability. Those decisions and processes require people.

As a result, there is now a greater need than ever to empower all of a manufacturer's employees—from the back office to the factory floor.

START WITH EMPLOYEES FIRST

It's become clear that the greatest productivity gains in manufacturing happen when digital transformation strategies put workers first. Simply focusing on technology alone won't solve the innate productivity roadblocks holding companies back. Instead, it requires manufacturers to create a culture that embraces change and then equip employees with the best possible tools to communicate, collaborate, and stay connected.

Employee ownership or buy-in is critical to the success of any digital transformation initiative. Therefore, senior management teams, specifically CEOs, need to take responsibility for directly addressing employees' concerns about new technologies taking their jobs while providing open communication on why these new systems matter. These communication efforts should start before the pilot and then progress well into production to build acceptance and reduce resistance to change.

When manufacturers adopt new technologies to accentuate the strengths of their employees and scale their production capacity and quality, employees have a chance to own that success. This creates a culture of trust that gives everyone a chance to see how and why their contributions matter.

Early digital transformation efforts have focused on professionals involved in back-office operations, most notably sales and accounting, as well as employees responsible for managing quality, production scheduling, and the supply chain, to name a few. However, full digital transformation needs to extend to technicians and others working on the shop floor. These employees need information at their fingertips to change from one production to the next, identify issues with production or quality, and take the appropriate actions.

Digital transformation on the manufacturing floor needs to start by providing every technician affected by the new technologies a chance to learn and grow. This starts with education about how technologies will help production teams along with training on how monitoring, analytics, and other technologies can be used to improve production efficiency. As manufacturers move into execution of their digital transformation strategy, starting with change management provides an opportunity to improve existing workflows by empowering workers to guide themselves through, for example, production set-up and monitoring.

Digital transformation done right is about self-transformation and the willingness to help production technicians reinvent themselves and add valuable skills. With skilled employees in demand, providing an opportunity to grow professionally is a great retention—and recruiting—strategy. New technologies that are owned by production teams make it from pilot to production because they're trusted. That needs to be the true goal of digital transformation.

GET THE CORNERSTONES OF DIGITAL TRANSFORMATION RIGHT

Manufacturers have put a new focus on business continuity strategies for navigating rapid changes in market demand and resources across the supply chain. At the same time, companies have come to rethink many aspects of their business, not only the tools and training, but also safety, facility set-up, and remote work options. Collectively, these priorities have served as a catalyst for expanding digital transformation to drive greater innovation around visibility, support remote access technologies, enable production cell redesigns, and facilitate health screenings.

To support these objectives, digitally transforming any manufacturing business needs to be built on the following three cornerstones to be successful:

1. Excel on every aspect of protecting employees' health and welfare. In many cases, this also provides workers an opportunity to expand the scope of their jobs for greater enrichment. For example, adopting social distancing guidelines can present new ways for factory employees to achieve more autonomy and ownership of their jobs.

2. Increase spending on training and development to keep current employees' skill sets current. It is important to invest now in educating the next generation of supply chain, production, quality, and manufacturing execution leaders.

3. Double down on the latest technologies that enable workers to be more connected and productive, whether they're working in the plant or remotely. Manufacturers relying on key technologies to digitally transform themselves are employing six key strategies to:

   • Provide remote enterprise resource planning (ERP) access to employees to keep workers connected and productive while working safely. Additionally, remote access for back-office workers frees up space in the facility to support growing production demands.

   • Gain greater visibility and control across the shop floor by having ERP and manufacturing execution systems (MES) all reside on a single, unified platform. This is especially important for manufacturers that rely on short-notice production runs and need to shift quickly from one production style or process to another.

   • Connect the shop floor with ERP systems via intuitive, touch-screen user interfaces and dashboards at the work center to help digitize manufacturing operations, streamline data access, and collect real-time production information. This is critical to empowering workers while improving production quality and efficiency.

   • Improve the insights gained into production and quality using real-time analytics for up-to-the-moment updates on whether products and production are running within acceptable parameters, product or material quality, and other factors that contribute to timely delivery, quality assurance, and reduced waste.

   • Use smarter, better sensors and interfaces that blur the line between worker and system, improving everything from production efficiency to health and safety. Manufacturers should evaluate the cost and productivity benefits of retrofitting existing machinery versus investing in new smart machines.

   • Replace legacy learning approaches with automated training tools. According to the World Economic Forum, this can help reduce training time by as much as 75%, further increasing the expertise and knowledge of production team members across locations.

## DIGITAL TRANSFORMATION INITIATIVES ARE ACCELERATING

Digital transformation had already been gaining traction among manufacturers faced with customer demands for faster turnaround, mass customization, pricing pressures, and global competition. However, the pandemic significantly accelerated businesses' digital transformation efforts. Consider the conclusion of McKinsey & Company in its Covid-19 survey that, driven by the urgency to keep connected with employees, customers and suppliers, global organizations pushed their digital transformation initiatives seven years ahead of schedule.

Meanwhile, in its Global Manufacturing Outlook, KPMG International Services Ltd. quantified how the pandemic spurred manufacturers' digital transformation efforts based on interviews with industrial manufacturing CEOs. Among KPMG's findings were:

- 48% of industrial manufacturing CEOs say the pandemic accelerated their digital transformation strategies by years.

- 86% say remote working has initiated big changes in how they've chosen to nurture their corporate culture.

- 79% say the pandemic has shifted to focus inside their manufacturing operations to social needs.

- Supply chains (24%), operations (17%), and supply of talent (17%) are the three greatest risks industrial manufacturing CEOs are most concerned with today.

"COVID-19 is not the only threat manufacturers face to their market position," Stéphane Souchet, Global Sector Head, Industrial Manufacturing, KPMG International Services Ltd., observed in the report. "In fact, it has jolted them into considering the way threats are interconnected and caused them to adopt a broader strategy to enhance competitive advantage. This encompasses the supply chain, operations, finance, and their stakeholders. Technology is just one tool, albeit a very important one, to strengthen resilience. By taking a more agile and flexible approach, they will be ready for any future disruptions. The implication is clear. A stronger, better prepared and more resilient organization is likely to thrive once the pandemic has passed."
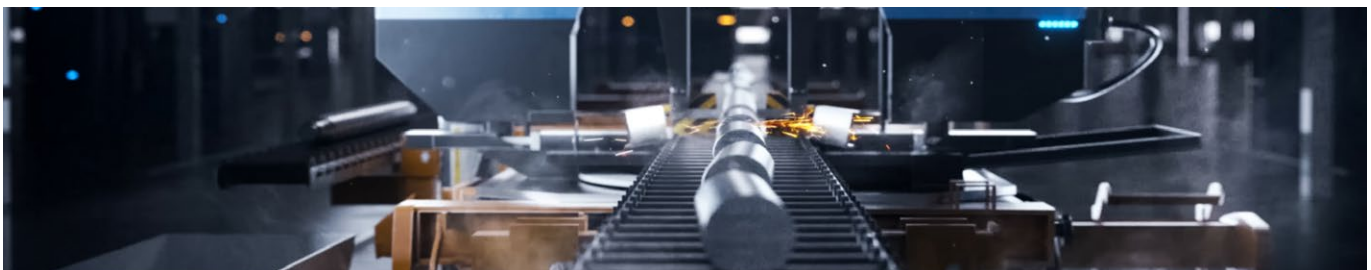
CONSIDER EIGHT STRATEGIES FOR YOUR DIGITAL TRANSFORMATION ROADMAP

When looking at manufacturers that have implemented digital transformation, there are eight strategies being adopted across multiple industries. Manufacturing executives either beginning or expanding their own digital transformation initiatives should consider including these following eight strategies in their roadmap.

1. **Gain Greater financial visibility across manufacturing operations.**

   The need for insights into how stable sales are, along with revenue and production forecasts, is driving manufacturers to adopt more finely tuned financial systems. Understanding the business' financial health means going beyond accounting and sales to understanding the impact of variations in manufacturing operations. This is making data from ERP, MES, quality management system (QMS), and warehouse management system (WMS) important factors in evaluating the business. When all of these technologies run on a single database, manufacturers can achieve a level of visibility and accountability that no integrated system can match.

End-to-End Solution for Mid-Market Manufacturers
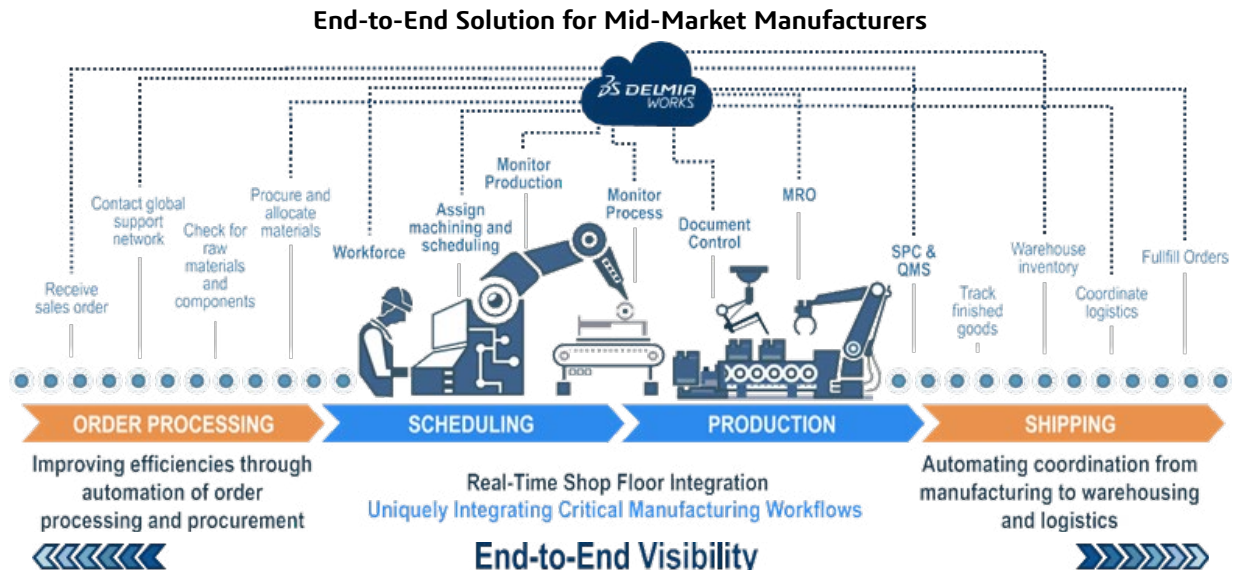
2. Modernize quoting and pricing.

Enhanced configure, price and quote (CPQ) processes are proving integral to achieving faster time-to-market, greater channel visibility and control, increasing margins, and reducing errors. Manufacturers are moving to digital channels quickly, using streamlined CPQ processes and more visually compelling quotes of custom-configured products using 3D images as a competitive advantage.

Foundational to the success of a CPQ strategy will be adopting design-to-manufacturing processes, which further accelerate time to market by speeding new product development cycles, improving product quality, and increasing yield rates. To create a unified design-to-manufacturing platform, manufacturers will need to rely on integrated production systems encompassing simulation/finite element analysis (FEA), computer-aided manufacturing (CAM), inspection, work instructions, and ERP software. By integrating these solutions on a single platform, manufacturers can stop revenue leaks while increasing margins and profits, as the graphic below illustrates.
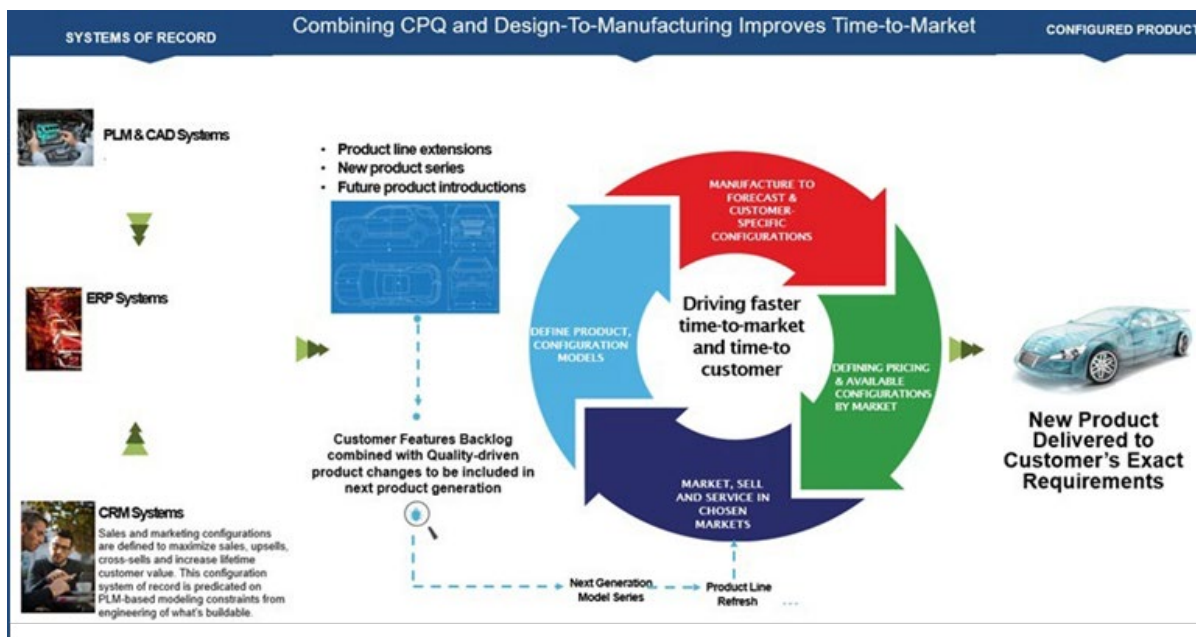
3. Expand real-time production and process monitoring.

Manufacturers pursuing digital transformation strategies are increasing their real-time process and production monitoring to assess and reduce risk. The insights gained from these systems serve as an early-warning system of factors that could impact revenue and margins. Knowing that every machine, process, and system is operating within parameters brings greater stability to production and revenue forecasts. Production and process monitoring is gaining momentum across a broader base of manufacturers as a means to strengthen their financial results and achieve greater resilience.

4. Design in regular internal quality audits.

The truest test of any digital transformation effort is if it's making a difference in product quality. Internal quality audits help keep digital transformation initiatives moving forward with focused, valuable feedback. Such audits are particularly important for highly regulated industries, such as medical devices, that need to comply with the United States Food and Drug Administration (FDA) regulations, as well as International Organization for Standardization (ISO) requirements.

5. Invest in track-and-trace and supply chain visibility.

The ability to provide proof that inbound supplier shipments to a manufacturing facility are clean and in compliance with health and safety regulations is a competitive strength for manufacturers. Tier 1 suppliers, including major automotive companies, are reshoring their supply chains and working with manufacturers on anticipated audit, health, and safety requirements. Moreover, as more of their customers work to transform themselves digitally, manufacturers are adopting track-and-trace today in anticipation of more generous data sharing and collaboration.
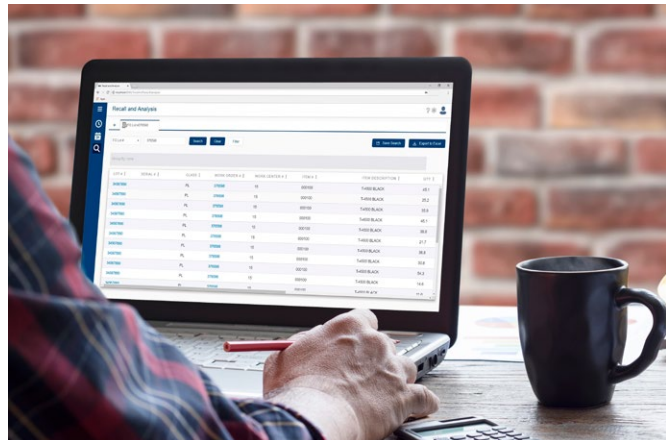
6. Take advantage of pre-built manufacturing processes.

The ability to switch from one manufacturing approach or strategy to another with minimal downtime is essential for enabling manufacturers to adapt quickly to changes in market demand. ERP systems that support pre-built manufacturing processes are becoming necessary as manufacturers look to gain more short-notice production runs across a broader customer base while launching new products of their own.
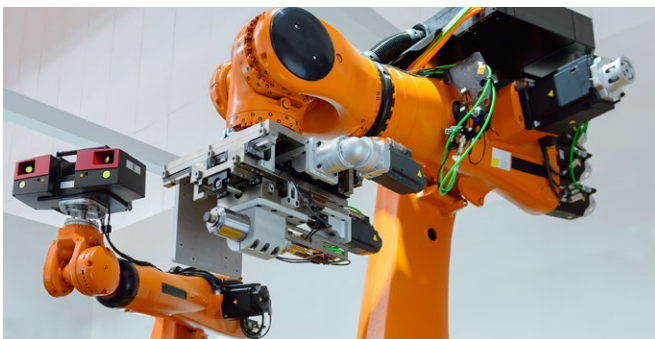
7. Add smart machines to provide data-driven insights not available before, helping to keep digital transformation strategies on track.

The best defense against any price war isn't to keep lowering prices and giving away margins. It's digitally transforming production lines with smarter machines that can get more done in less time and self-report their health. The latter is at the center of successfully adopting predictive maintenance within a manufacturing operation.

8. Integrate design-to-manufacturing processes.

When systems—including ERP, CAM, and simulation/FEA among others—are orchestrated on a common design-to-manufacturing platform, the synchronization of those systems' unique cadences or operating speeds enables manufacturers to accelerate time-to-market for new products, meet tight customer delivery dates, and improve quality. The following graphic contrasts the typical serial approach versus a concurrent and integrated approach to the design-to-manufacturing process. Notably, the latter approach saves manufacturers up to 25% or more production time while reducing costs.
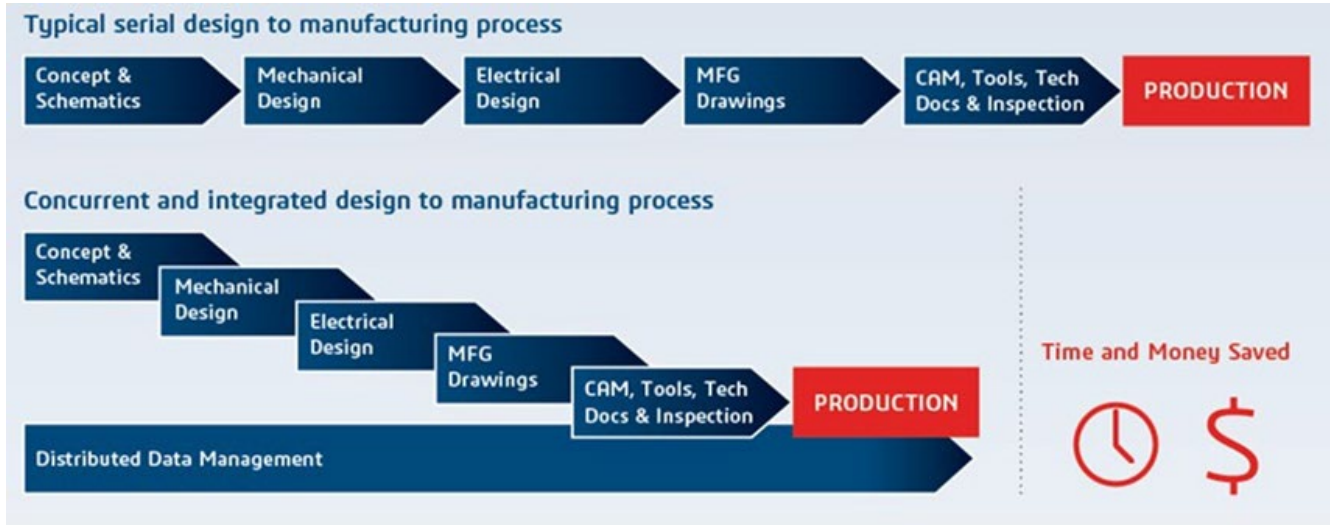
CONCLUSION

In adapting to an era where rapid change is the new normal, 48% of industrial manufacturing CEOs report they are now years ahead of their digital transformation strategies. Every manufacturer's digital transformation journey will be different. However, that journey needs to start from a common foundation: leading with a people-first strategy. By focusing on giving every worker the opportunities, tools, technologies, and systems they need to stay connected and contributing, manufacturers will be solidly positioned to succeed in implementing their digital transformation.

For more information, please visit www.3ds.com/delmiaworks **or call 1.866.367.3772**

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