White Paper



Manufacturing at the speed of change

Executive summary

The digital age is bringing its own form of revolution to manufacturing. Companies are being inundated with extreme advances in technology, driving a new reliance on integrated systems and next-generation solutions. Forward-thinking manufacturers, who once focused on simply controlling change, now must embrace flexibility and agility. Slow-moving manufacturers that can't embrace product innovation, IT advancement, and best practices are going to be left behind.

Many top-achieving manufacturers are regrouping after recent recession setbacks and moving into a revitalized era of smart innovation, strategic use of technology, and highly motivated employees.

This document examines the global market trends around manufacturing advances and offers insights into how to employ software solutions to turn speed and agile responsiveness into a competitive advantage.

Change drives innovation

Change doesn't have to be dramatic to be disruptive. Change can come in the form of a shift in market preferences, interruptions to the supply chain, new regulations, or competition from a developing market able to undercut pricing. When significant changes like these occur, manufacturers can lose valuable productivity as they adapt and refocus. Whether the change simply requires new procedures and retraining personnel, or it involves retooling and re-engineering, manufacturers know how disruptive—and costly—change can be to complex processes.

No matter how carefully the change is analyzed, there is always a risk. While a majority of customers may appreciate new product innovations, there is still the risk that a portion of the market will be unimpressed and turn to a company's competition. These possible drawbacks may explain manufacturing's long-standing reluctance to deviate from decades-old methodologies. Yet, willingness to challenge traditional processes and venture into new directions drives today's innovative problem-solving in manufacturing.



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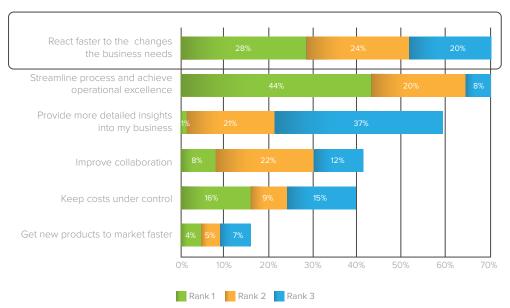
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Striving for a new, more flexible mindset

At a talk at the City Club of Cleveland, Jay Timmons, President and CEO, National Association of Manufacturers, stated, "Manufacturing today is dynamic, efficient, and technology driven. Applying certain types of manufacturing technology—from computer-aided design and computer-aided manufacturing systems to robotics and other automated processes—can deliver on a promise of lowered costs and higher productivity. However, the core technology—the enterprise resource planning (ERP) technology now found in most manufacturing companies and, by default, the manufacturing technology assets it controls—often fails when change enters the picture. Fortunately, flexible next-generation technology solutions now available can meet the rapidly changing market conditions that manufacturers face today."

According to IDC Manufacturing Insights, manufacturers are recognizing this need for agility. In the 2012 whitepaper "In Pursuit of Operational Excellence: Accelerating Business Change Through Next Generation ERP," IDC reported that when asked what was on their three-year ERP wish list, 72% of the manufacturers surveyed said, "React faster to the changes the business needs." The ability to streamline processes, improve collaboration, and get products to market faster—all answers relating to speed—also placed among the top responses.

Manufacturers' wish list for their ERP systems three years out



Source: IDC Manufacturing Insights: In Pursuit of Operational Excellence: Accelerating Business Change Through Next Generation ERP Pierfrancesco Manenti, January 2012

¹ The State of Manufacturing in America 2012, Remarks by Jay Timmons, President and CEO National Association of Manufacturers, City Club of Cleveland January 20, 2012 (http://www.nam.org/~/media/F68FB7BF75D74F2CA673DF57917E7799.ashx).

² Pierfrancesco Manenti, "In Pursuit of Operational Excellence: Accelerating Business Change Through Next Generation ERP," IDC Manufacturing Insights, January 2012, p. 13, figure 8.

Whether it's being first to market with a new product or providing the fastest delivery in your industry, speed wins.

Addressing more complex forces, bigger issues, and a wider scope of needs

Traditionally, manufacturers honed their market advantage by focusing on product strength and refining internal systems to increase productivity and cost savings. First-generation ERP solutions were adequate for such time-saving efficiency gains. Today, the challenges are markedly different; yesterday's responses are not enough.

The global economy, increased competition from emerging markets, complex supply chains, increased compliance requirements, and the volatile costs of raw materials are forcing manufacturers to monitor and react to vast external issues, as well as to manage their own internal productivity. The ability to adapt to a changing environment is more critical than the mere ability to keep the production line moving.

When a proactive manufacturer can track market trends, closely collaborate with customers on new product configurations, predict fluctuations in pricing, and continually expand revenue with new value-add services, then it can focus on opportunities, not just challenges. Highly flexible, next-generation ERP solutions make the difference, allowing manufacturers to speed response time, improve business intelligence, monitor social trends, refine lean strategies, equip users with mobile tools, collaborate with colleagues in real time, and anticipate customer needs—creating an important competitive edge.

Duncan Angove, president of products and support for Infor, said in a recent blog posting that he believes "speed—not just scale—is the new basis for competition. It's no longer about how big a company is; it's about how fast you can execute. You may never be able to out-scale a competitor, but you can outrun them. Doing something faster than your competition is one of the most important things you can do to stay ahead of the game," he said.³

Speed affects profits, processes, and people

There's no denying the traditional roles that speed plays in a manufacturer's success. Here's when speed really counts:

- **Product delivery**—It affects customer satisfaction, shortens order-to-cash cycles, and improves cash flow.
- Performance—It increases workforce productivity and efficiency.
- Design and engineering—It improves innovation and brings new products to market faster.
- Supply chain processes—It improves profitability and helps meet market demand.

 $^{3 \}quad \text{Duncan Angove, The Infor Blog, August 17, 2012, blogs.infor.com/insights/2012/08/survival-of-the-fastest.html.} \\$

Today, additional emerging challenges underscore the importance of responding quickly, especially when a manufacturer needs to:

- Monitor and respond to social media comments made by customers.
- Adapt processes to comply with an increasing number of regulations.
- · Attract and retain qualified personnel in highly skilled positions.
- Collaborate with customers for made-to-order products.

Social media fuels dynamic communication

The impact social media has had on manufacturing is gaining attention. Deloitte's Center for the Edge publishes an annual Shift Index to provide executives with an overview of the deep dynamics changing our world, and what companies can do to address them. The most recent Shift Index points to the impact of social tools and recommends that industry harness that momentum, saying: "Companies must tap into knowledge flows and expand the use of powerful tools, such as social software, to solve operational/product problems more efficiently and effectively as well as to discover emerging opportunities."

Rapid changes require rapid responses

At one point, simply having the ability to adapt was an indication of whether or not your manufacturing organization would succeed. Managing change was an indication of strategic prowess. The most advanced manufacturers preached change management and continuous improvement to their workforce. However, not only have global and economic market conditions drastically changed, but the necessary level and speed of response has undergone a transformation as well. Today, in order to claim a position in the forefront of a market, a manufacturer must anticipate and prepare for a market change long before it happens. New technologies now emerge so rapidly that prominent companies, like Nokia and RIM, can go from market leadership to near-extinction in a matter of months.

Manufacturers are learning that success is all about being proactive.⁵

Speed influences market dominance

Foresight is critical to beating the competition to any opportunity that may appear. Hungry competitors eagerly await those same inklings of economic recovery, emerging market niches, and budding customer demands. The manufacturer first to release an appropriate product, establish a supply chain in a new geographic area, or launch a marketing promotion aimed at an emerging demographic is more likely to stake a claim to the opportunity. First to arrive in a market is often the first to own a dominating share of that market. Recognizing a trend that is in motion is too little, too late. By that point, there will be a line of other manufacturers with a new customized product, a flexible supply chain, or a tailored pricing structure already in place.

⁴ John Hagel III, John Seely Brown, and Duleesha Kulasooriya, "The 2011 Shift Index: Measuring the forces of long-term change," Deloitte Center for the Edge, November, 2011, p.4.

⁵ Jennifer Scott, "Nokia and RIM Settle Patent Dispute," Computer Weekly.com, Dec 21, 2012.

When asked what was on their three-year ERP wish list, 72% of the manufacturers surveyed said, "React faster to the changes the business needs." The ability to streamline processes, improve collaboration, and get products to market faster—all answers relating to speed—also placed in the top responses.

Anticipating market changes is key to survival

Anticipating a market trend is the first step in matching the manufacturing process to the speed of change. Developing an innovative product solution that meets an emerging market demand is the real test of a proactive manufacturer. Not only must the innovation meet predicted demographic expectations—perhaps even before the intended audience knows what it wants—but it also must be engineered in a way that anticipates the availability of raw materials, accurately predicts actual costs, and formulates the necessary supply chain.

Several components must be managed efficiently to achieve a consistently high speed to market. Today, manufacturers are turning to the specialized abilities of performance lifecycle management (PLM) tools to reduce their time to market, expand their product offerings—without expanding headcount—and offer more product choices to the customer.

Successful manufacturers also make comprehensive and accurate product information easily accessible to everyone throughout the value chain. They do this by leveraging integration with computer-aided design solutions to streamline new product design processes and accelerate new product introductions. The ability to track design changes and collaborate in real time with colleagues, contactors, engineers, suppliers, and customers speeds decision-making and encourages creative problem solving. For complex made-to-order and engineered-to-order configurations, real-time collaboration using social media tools helps manufacturers satisfy the needs of today's demanding customers. So, customers get the products they want, when they want them.

Reaching a new level of customer intimacy

Building customer loyalty is no longer about simply providing a good product at a good price. Speed of response, anticipation of needs, and effective communication and collaboration are also important to nurturing a long-term relationship with customers. Front-line personnel need to be able to spot potential issues—such as delays in delivery—while there is still time to intercede, formulate a solution, and communicate to the customer. In many industries, customers realize the time-saving value of being actively involved in defining specifications, testing prototypes, and monitoring compliance statistics. Building customer loyalty also involves reliable service, accurate invoicing, and timely communication and data-sharing. These are areas where advanced ERP solutions and integrated customer relationship management (CRM) tools prove helpful.

6 Manenti

ERP technology changes to match new demands

What it all comes down to is a technology system and a process that helps you, as a manufacturer, anticipate change and react with agility. Today's next-generation ERP solutions offer many advantages in achieving that goal. This technology gives you a powerful arsenal of tools to make you truly proactive, allowing you

Manufacturers must embrace today's fast-changing market conditions. By leveraging technology, they can turn speed and agility into a competitive advantage.

to anticipate key issues, and helping you to formulate strategic plans. The building blocks necessary to create a truly proactive system include a flexible business intelligence system, analytics embedded in the ERP solution, real-time data, an integrated CRM system, and full system-wide visibility. To be sure, your company culture must also be aligned to support a proactive, alert mindset that isn't content with following the competition.

Strategic decision-making tools speed responses

Embedded analytics help personnel—from C-level executives to front-line agents—to continually monitor issues, predict customer needs, and make well-informed decisions. These are critical for strategic problem-solving and proactive responses to pending market changes.

There are numerous benefits to implementing a next-generation ERP system that offers contextual decision-making and flexible business intelligence. Your company can change its entire management process, moving from a reactive management style to one that stresses taking corrective measures and making continual improvement. When your company moves into an analytical, preemptive mode, it can set long-term goals, build upon past successes, duplicate proven strategies, and continually refine systems.

Real-time data and visibility lead to a proactive approach

One of the first steps in creating a proactive company culture is ensuring that the organization has access to full-system visibility and real-time data. Ongoing, timely data capture helps maintain control. Working with real-time data, rather than a snapshot capture of historical data, allows your company to stay on top of potential problems. The use of automatic notification, alerts, and escalation rules keeps your managers informed of warning signs. Thanks to smartphones and tablet devices, even your frequently traveling executives can maintain connectivity and monitor dashboards whenever desired.

In fact, all users can track role-relevant critical numbers on an ongoing basis with workspaces that display contextual data, forms, and collaborative groups on the home screen. Goals can be set for critical numbers and automatic alerts can be sent to the appropriate individuals when action should be taken. Using these types of systems helps your company stay alert to potential problems—such as low inventory or spikes in energy usage—and take corrective measures quickly.

Automating data management streamlines workflow

Processes for capturing data, generating reports, and alerting individuals can be largely automated. In a recent presentation, "Building the Productive Enterprise," IDC Manufacturing

A company-wide mindset that values proactive thinking is just as important as the technology tools that enable fast response.

Insights vice president Bob Parker stated that in the next five years "...at least half of all corporate standard processes will have automated data acquisition. At least a quarter will have self-correction capabilities." Today's advanced software solutions with flexible workflow design allow reports to be automatically generated and delivered to your staff at predetermined intervals. C-level executives can have key critical numbers sent to their smartphones every morning. Automating data capture processes, whenever possible, increases consistency and removes much of the risk associated with human error, distraction, and noncompliance. Automating simple tasks also frees up employees' time so they can be working on more productive tasks—such as completing billable assignments or building relationships with customers.

Fast access to data powers company-wide improvements

Performance management systems fuel a new attitude; one that is not willing to settle for moderate performance when it is now possible to maximize productivity, optimize the use of your workforce, and be keenly attuned to your customers' needs and expectations. You can do this by tracking Key Performance Indicators (KPIs) and customized critical numbers.

By incorporating role-based analytics, employees throughout your company can monitor the critical drivers to success. Potential issues can be identified and remedied before they cascade into profit-affecting issues or endanger the company's ability to meet a customer delivery.

Using advanced business intelligence tools also allows your company's annual goal-setting to be fact-based and tied to realistic abilities. Gone are the vague generalities that were more hope and dream than policy. Now, a step-by-step plan for improvement can lead your company forward.

Improving workforce performance with data access

Employees, no matter where they are located in your company, can make confident contributions to an initiative for process improvement. Armed with report-writing tools and access to relevant data, your staff can help spot impending issues that have a potential for long-range repercussions. For example, the billing manager can use analytics to research the cause of declining cash flow. Engineering can use warranty data to identify design flaws and expedite new concepts. Your inventory manager can use metrics to track trends in parts usage, predict purchasing needs, and adjust contracts with suppliers to be prepared for upcoming demand needs. Product managers can monitor social media and community groups to track buyer trends and forecast needs.

 $^{7 \}quad \text{Bob Parker, ``Building the Productive Enterprise,'' IDC Manufacturing Insights, October, 2012.} \\$

Complete visibility and real-time data in a contextual format make it easier for your employees to do their jobs more effectively. Giving your employees access to decision-making tools, relevant data, and strategic planning resources also builds your company culture in ways that support being proactive rather than reactive. Your employees learn to make decisions independently. They learn that slow response is no longer acceptable. Accuracy, demand planning, and forecasting improve company-wide in this new responsive culture.

Creating a responsive company culture

Sharing analytics, real-time reports, and providing access through mobile devices encourages personnel to take ownership of driving performance improvement and speeding results. Your employees feel involved and encouraged to make decisions, because they have the tools needed to be confident in those decisions. Employees become motivated to influence key issues and can see—quickly—the results of such actions. KPI data gives critical ongoing feedback to the employee, reinforcing positive actions.

An engaged employee will be alert for ways to improve efficiency, quality performance, or customer satisfaction anywhere in the manufacturing process. Access to performance data helps the employee recognize opportunities, research cause-and-effect theories, and uncover opportunities where changes can be made to streamline activities, speed delivery time, conserve use of resources, or anticipate a customer need.

Personnel must be trained to look for such opportunities, feel motivated to use the software capabilities to their fullest advantage, and receive positive feedback for taking above and beyond actions. Again, next-generation ERP solutions with advanced business intelligence capabilities, collaborative and social communities, and fully integrated systems for human capital management (HCM) make this possible—helping you to improve workforce productivity and optimize the skills of your employees.

Infor executive shares his perspective on the role of speed in manufacturing

As a solution provider of ERP systems for top manufacturers globally, Infor™ has a unique vantage point on the impact of speed in manufacturing. The role of technology in increasing manufacturers' ability to meet current market challenges is a topic Infor president, Duncan Angove addresses often. In a recent video interview, Angove said that he feels manufacturers' strategic agenda is around an entire IT transformation. "I mean it's really around speed, change, and insight in my mind. So how do you do everything fundamentally faster, make faster decisions, have your business process run faster, and how that translates into how your supply chains run faster, your working capital turns faster, you get product to market faster," he said.

Angove went on to say he thinks change and insight are the other items on the agenda of manufacturers. "How do we deliver more organizational agility so we can respond to threats or capitalize on opportunities more easily and more quickly? And...how do we leverage this vast sort of explosion in velocity, variety, and volume of data to create extra precise insight that helps to make better decisions?"

By design, technology is often both the response to change and the driving force behind speed of all types. It governs the speed of decisions, it controls the swiftness of responses to supply chain issues, and it determines the rate of moving product to market. Technology is also directly responsible for the explosion of information and its availability to potential users.

When asked how Infor solutions support the manufacturers' need for speed, Angove went on to describe the benefits of solutions designed specifically for manufacturing and distinct verticals. "I think we bring a set of design points to manufacturers that are different from the rest of the industry. Our solutions are specialized by industry and engineered for speed," he said. "So, we don't deliver generic business processes. We go down to the deepest part of the micro-vertical like boating, breweries, bakers, and automotive manufacturers, and build functionality that's very specific to their industry. And then we deliver all of that on a more agile and fast framework. So it's quick to implement, easy to upgrade, and helps our customers run faster," he added.

The Infor strategy for helping customers gain speed was outlined by Angove in a blog posting where he highlighted Infor's three key development principles:

- Build enterprise applications that are deeply specialized by industry. Software that's
 designed to solve the specific issues in a specific industry can be deployed faster and
 with fewer time-sapping modifications.
- Build all Infor applications on an open, standards-based technology platform called Infor ION. Because Infor ION is based on industry standards, you can plug in Infor applications or third-party applications more easily—it makes your software as agile as your business. But it's not just about integration. The foundation provided by Infor ION includes business process modeling built right into the core, which means you can quickly change your system to mirror a new or more efficient way of working.
- Finally, and most importantly, Infor delivers a completely new consumer-grade user
 experience that fundamentally changes the way people work. A consumer-grade user
 experience references the compelling and innovative technology advances seen in the
 world of consumer devices over the last several years. Mobile device apps and social
 networking are two examples.

The blog continues, "Internet sites and mobile apps feature rich images and media, intuitive search capabilities, and highly personalized messaging. Online shopping has evolved from order placement and payment processing just a few years ago to a completely different experience, where the applications predict and make recommendations on what you want to buy. The actual process of placing an order has been simplified to a single button-press. And it's all beautifully designed so that it's a rewarding experience.

"By contrast, business applications have fallen behind. With the latest releases of Infor applications, Infor has brought these elements from the consumer world to business applications—beautiful but functional user interfaces, smart and predictive analytics, even core application functionality accessible on a mobile device. Features once reserved for personal use are now built for business," said Angove.

Conclusion

In today's fast-changing global economy, manufacturers must embrace change, strive for a flexible working environment, and be agile enough to respond to new opportunities and challenges. Adapting the advanced technologies of next-generation ERP solutions is one of the most critical actions a forward-thinking manufacturer, like you, can take; one that will lead to a responsive mindset and turn speed into a powerful competitive weapon.



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