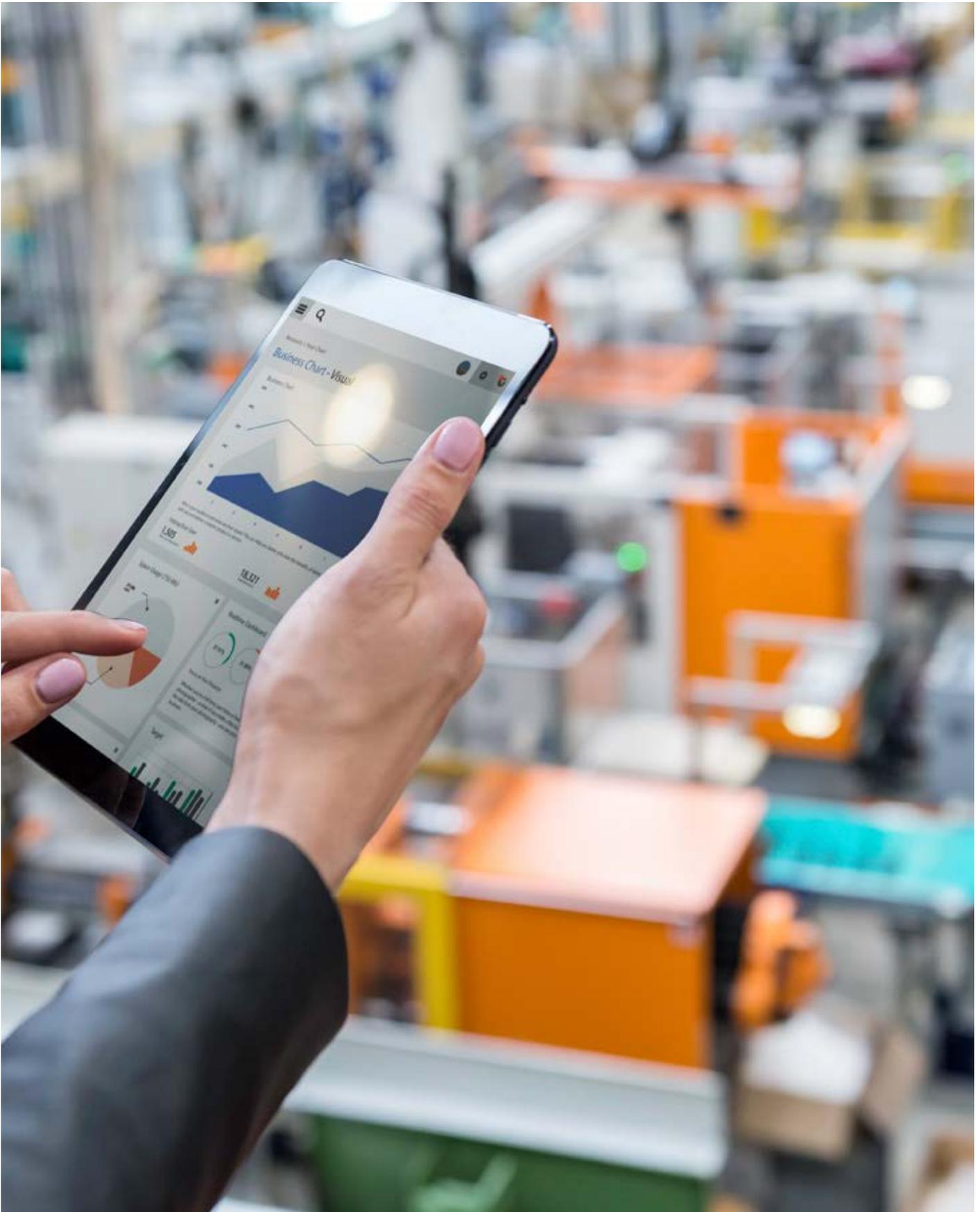


Epicor White Paper

# Are You A Future-Ready Manufacturer?



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## Are You A Future-Ready Manufacturer?



It's important for American manufacturers to stay current if they wish to remain successful. Positioning yourself for growth means looking to the future and gaining efficiencies through new technologies. That's why this question may be the most important one for your business—are you a future-ready manufacturer?

Before you can adequately answer that question, you and the members of your organization need to know the answers to these three questions:

- ▶ Where are we today?
- ▶ Where do we want to be in three to five years?
- ▶ How can we embrace innovation and automation?

If decision-makers in your organization can't answer these questions, you have bigger issues than you may realize.

At the very least, tackling these tough questions now will put you ahead of competitors who are consumed with putting out today's fires rather than focusing on growth opportunities. Manufacturers that aren't prepared for the coming global megatrends and don't invest in breakthrough technologies will be rendered irrelevant—and more often than not, it will happen at a much faster rate than they ever could have dreamed possible.

## The paradigm is shifting

Ten years ago, if someone had told you that in 2017 the world's largest taxi service would own no vehicles (Uber®), our largest media service would produce no content (Facebook®), and the world's largest retailer would have no inventory (Alibaba®), you probably wouldn't believe it.

Meanwhile manufacturers, distributors, and retailers sitting on top of vast inventory stocks and hundreds of facilities are struggling to stay afloat—like Sears® and JC Penney®—or are going under year after year under this new paradigm.

Today's factories are smarter than ever. Plants are embracing robots for practically every purpose. Lean manufacturing, Six Sigma™, change management—the trends morph and pivot all the time, but at their heart, the key is working smarter and more efficiently—all the time.

## Keep an eye on the forecast

The next generation of manufacturers can't afford to sit on the sidelines. They'll need to be aware of how the world is changing, pay attention to economic and geopolitical forecasts, and—this can't be emphasized enough—invest in technology.

Innovation is important, but for the average manufacturing plant looking for a toehold, the key is knowing your customers and their needs just a little bit better than the competition does. KPMG™ made that last point clear in its 2016 Global Manufacturing Outlook:

"With limited baseline growth expected in most markets, manufacturers will need to invest in new technologies in order to grow the pie."

PricewaterhouseCoopers™ polls manufacturing decision-makers every quarter on where they plan to spend money. The tech-spending trend is clearly on the upswing. In the third quarter of 2015, 22 percent of manufacturers were looking to spend more on IT. That figure had doubled by the last quarter of 2016 to 44 percent.

How do you set your course for growth? Keep your eyes on these four key areas:

**1. Ensure and increase profitability**—If your business' data isn't useful, visible, and accessible 24/7, you don't have the clearest picture of what's going on at your company. Data analytics and business intelligence tools are helping even the smallest startups gain an advantage and boost profitability.

**2. Drive productivity up and costs down**—You gain efficiencies by making your workforce more capable. Reduce the rate of rework and quality mistakes, remove a time-wasting step in your process, and give people the tools and training they need to achieve "wins." Remember, some of the best waste-reduction and safety culture ideas come from the shop floor.

**3. Open new opportunities for growth**—Add new services and products and extend your reach by selling into new segments and geographic areas. You could also move production to areas with lower operational costs.

**4. Leverage technology for growth—today and tomorrow**—Allow for better connectedness with open architecture. Hardware and software upgrades will become easier for your customers and staffers and extensibilities will let users tap into modern technologies as they become mainstream.

Keep these tenets in mind as we move into what's happening in the world and how we can prepare for the unexpected.

## Megatrends that can't be ignored

PricewaterhouseCoopers and other research firms focus on megatrends—global, sustained, and macroeconomic developments that impact societies, economies, governments, cultures, and businesses like yours. Here's what's happening:

- ▶ **Economic power shifts east**—Not all economists agree that China's economy—approximately \$11 trillion gross domestic product—will eclipse the United States'—coming in at just under \$18 trillion—sometime soon. However, there is little question that China, India, Brazil, Russia, and the Asian Pacific nations will eventually surpass the U.S. and European Union in population and purchasing power. That doesn't mean every company will do business overseas, set up shop there, or look to expand. However, it does mean you should be thinking about shifting markets and where it is you need to be to compete.
- ▶ **Population explosion**—The world's population will jump from seven billion to eight billion by 2025. If population trends continue, Africa will account for 50 percent of the world's population growth by 2050, while Japan and countries in Europe will see a great decline.
- ▶ **Extreme urbanization**—1.5 million new urbanites are being born every week. Cities that occupy less than 1 percent of the world's land mass will consume 75 percent of the resources we create. Mega-corridors—sometimes called "sprawls"—between major cities are where many manufacturers will want to set up shop.
- ▶ **Scarce resources**—Fresh drinking water is lacking in many population boom areas. The world's food demand will grow by 35 percent and energy demand by 50 percent. Current oil reserves won't be enough, so count on more ocean drilling and fracking and hopefully some breakthroughs in cost-effective, renewable fuel sources.

Is your industry up for meeting the enormous challenges ahead? Can governments reduce spending in other areas to bankroll the long list of infrastructure improvements that are needed? We'll see soon enough. Today's smart factory will be left in the dust. The smart factory or system of tomorrow's Industry 4.0 will feature:

## The Factory of Tomorrow

- ▶ **Interoperability**—Machines, devices, vehicles, buildings, sensors, and people will connect and communicate with each other through the Internet of Things (IoT). Consumers will eventually expect—and have—connectivity with everyday end products.
- ▶ **Informational transparency**—Systems will create a virtual copy of the physical world through sensor data. Think augmented reality (AR) or virtual reality (VR) technologies.
- ▶ **Technical assistance**—Factory systems will help humans make decisions and solve problems, including some problems that teams of people can't complete themselves. Examples include vast analytics and data intelligence.
- ▶ **Automation (decentralized decision-making)**—Cyber-physical systems will make simple decisions on their own and become more autonomous than ever before.

## What modern factories will look like

Have you heard of Industry 4.0? For now, it's mostly a buzzword, though we can already see its early payoff in pharmaceuticals, auto manufacturing, and other sectors.

Industry 1.0 began in the early 1800s and involved mechanization, steam power, and water power. Industry 2.0—mass production, assembly lines, and electricity—began at the start of the 20th century. Soon, we'll see the shift from Industry 3.0—plants run by computers and products made via automation—to Industry 4.0—modern, smart cyber-physical systems.

What we'll see more often are connected factories with devices that gather data, self-monitor, and report performance; machines that collect information that can be analyzed and made actionable autonomously; and factory workers with wearable technology and mobile devices, making them more productive and efficient.

## Future-ready and driving change everywhere

Companies at the forefront of Industry 4.0 will not only have a leg up on competitors in their fields of expertise, but they'll also be poised to pass established firms in completely different markets. We're already seeing this with Google™ and Apple® giving auto manufacturers a run for their money. Both tech giants are advancing the intelligent and self-driving vehicle trend, forcing auto makers like GM® and Ford® to play catch-up.

These cars won't just be "cool" to drive. They'll be safer and more convenient. Vehicles will include collision-avoidance systems, lane tracking, and parking assistance, and they'll override common mistakes typically made by drivers.

Convenience will be a key benefit for the elderly and the disabled, who enjoy broader mobility options. Based on the current rate of innovation, autonomous self-driving cars will hit the market as soon as 2020. Technology will also be available that allows these cars to communicate in real time with other vehicles on the road and smart buildings.

In five years, these new vehicles could become a real threat to the personal vehicle market,

taxi and courier services, and traditional auto makers that weren't prepared to take advantage of market trends.

## The people behind the technology

A common complaint among manufacturers is that good talent is hard to find and harder to keep. There's a talent shortage out there for the makers of tomorrow. A renaissance of trade skills education is underway, but it could take years to come to fruition.

What the smartest manufacturers are doing is getting to know what makes productive employees tick and bending a lot more than "traditional" companies.

There are at least six keys to talent acquisition and retention in manufacturing:

- ▶ Understand the generational differences between employees—Millennials won't necessarily respond to the same environment that worked for Baby Boomers
- ▶ Create workplace choice—allow for choice within the types of tech devices, hours, and work environment
- ▶ Adjust leadership styles to individuals—training is key, and so is communication between team leaders
- ▶ Respect and reward competence—validation is crucial to creating a positive work environment
- ▶ Encourage collaboration and initiative—identify the "good idea" people in your organization
- ▶ Provide educational and growth opportunities—offer programs that allow your employees to advance at their own pace

Companies falling behind in one or more of these competencies can be sure their competitors aren't—and they're always looking for good people ready to jump ship.

## Are You A Future-Ready Manufacturer?

“We look at several hundred metrics on a monthly basis, and everything from sales, to operations, to inventory is visible. We’ve grown dramatically ... and the software has grown with us.”

—Matt Brnik, President  
Schaedler Yesco

“The silos that existed between our companies have been removed. The duplication of information listed under variable headings is gone... We have the ability to act on extremely reliable information ...”

—David Smith, Senior Vice President,  
Operations | UFP Technologies

### Industry 4.0 will change how everyone does business

As with any new trend, most manufacturers will let others go first. Some will dip their toes in the pool until they get a handle on which technologies are worth investing in now—or they’ll decide they’re better off waiting.

Processes may not change. Decades- or even centuries-old products won’t go out of style. Who wants to live in a world without paper and vulcanized rubber? Manufacturing will change, though—the advantages Industry 4.0 provides make that an inevitability. Consider all of Industry 4.0’s technologies and capabilities:

- ▶ IoT
- ▶ Omnichannel experiences
- ▶ Data privacy/encryption
- ▶ Collaboration
- ▶ Mobility
- ▶ Cloud, extensibility, and microservices
- ▶ Compliance and traceability
- ▶ Multilevel customer interaction and profiling
- ▶ Geolocation
- ▶ Data discovery and algorithms
- ▶ Manufacturing intelligence
- ▶ AR
- ▶ Additive manufacturing (3D printing)
- ▶ Big data and analytics
- ▶ Blockchain and cryptocurrency

Those who accept where the future is headed and ride the crest of the wave will come out ahead.

### The smart curve is accelerating—don’t get left behind

Look at the big picture. Dream big. How much more efficient and intelligent would our factories be with real-time datasharing and interaction between all of these areas?

- ▶ Finance
- ▶ CAD and PLM
- ▶ Computer tracking/inventory
- ▶ Predictive/preventive maintenance
- ▶ Automated collection
- ▶ Logistics
- ▶ Enterprise resource planning (ERP) software
- ▶ Product marketing
- ▶ Suppliers and customers
- ▶ After-market servicing and parts.

The sky is the limit. Our customers’ insights show what makes our current analytics tools a great fit for their teams.

The benefits go well beyond cold and technical to the personal—demonstrating that a winning partnership between a manufacturer and key vendor always comes down to the human touch.

## About Encompass

Encompass Solutions is a business and software consulting firm that specializes in ERP systems, EDI, and Managed Services support for Manufacturers and Distributors. Serving small and medium-sized businesses since 2001, Encompass has helped modernize operations and automate processes for hundreds of customers across the globe. Whether undertaking full-scale implementation, integration, and renovation of existing systems, Encompass provides a specialized approach to every client’s needs. By identifying customer requirements and addressing them with the right solutions, we ensure our clients are equipped to match the pace of Industry.

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