Industry 4.0—
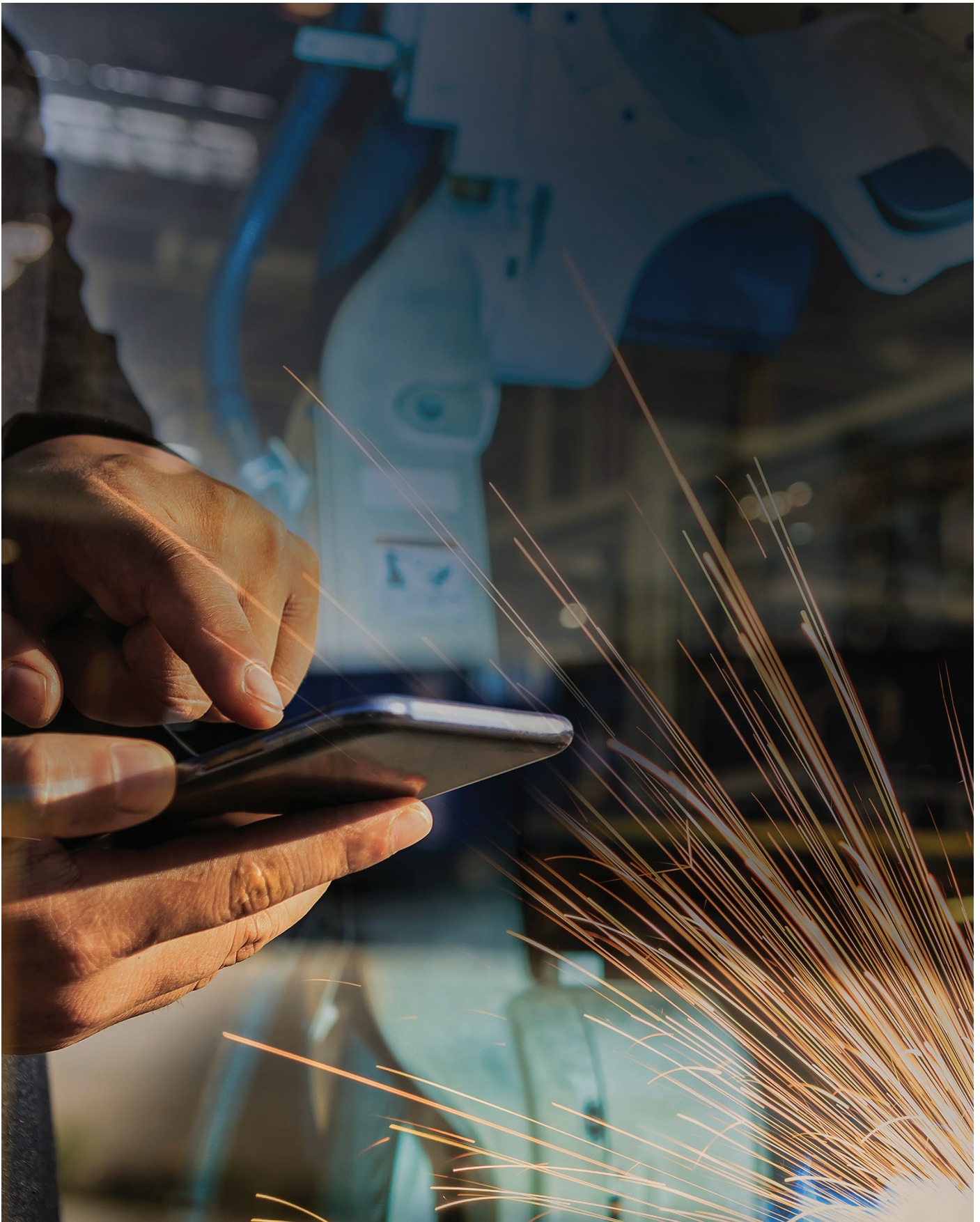# Where is This Revolution Going?

EPICOR

Industry 4.0—Where is This Revolution Going?

> "Unlike the previous industrial revolutions, [Industry 4.0] is unfolding at an exponential pace… rather than a linear one."
>
> —Xi Jinping, Chinese President

For any company trying to establish—or even simply maintain—a foothold in today's rapidly changing business environment, the rate at which Industry 4.0 is expanding can feel overwhelming.

Standard business practices are shifting. New technologies are bursting onto the scene every week, and the average business has more data on hand and more ways to process that information than the biggest companies did 25 years ago. All of these changes seem to be happening at a quicker and quicker pace.

There is one other significant way the current environment differs from the first three revolutions. When we talk about Industry 4.0, it's not just factories producing the goods that consumers and businesses want to buy that are dominating the field.

Without a doubt, software companies still focus on manufacturers. For example, Epicor partners with numerous manufacturing sectors to provide the cutting-edge data analytics, business intelligence, and enterprise resource planning (ERP) resources that companies need to compete.

However, our network is growing wider. Today, we're delivering solutions to dozens of sectors within the retail, distribution, and service markets. These companies are taking advantage of the high-tech options that more and more manufacturers rely on, such as:

- ▶ Internet of Things (IoT)
- ▶ Advanced robotics
- ▶ Cloud computing and data storage
- ▶ Virtual reality (VR) or augmented reality (AR)
- ▶ Automation
- ▶ Digitization
- ▶ Value chain engineering
- ▶ Additive manufacturing or 3D printing
- ▶ Blockchain cryptography

This list is growing all the time. Some companies will look to dip their toes into multiple pools and divert resources towards technologies that precipitate growth and greater market share.

Industry 4.0 presents a unique challenge for potentially millions of businesses over the next 5 to 10 years—especially for IT teams and software providers.

Here are just a few snapshots of the challenges—and opportunities—that lie ahead.

Making sense of all these new gadgets

As the world's population booms and robots continue to replace sections of the workforce, it won't just be the "widget makers" of old who'll be changing the way everyone does business. Count on the service industry to push out in front and invest a fortune on hardware, software, and infrastructure.

We see evidence of that in healthcare—along with the inevitable hiccups that accompany accelerating changes. Case in point, hospitals and doctors' offices are increasingly relying on IoT devices installed at the bedside or worn at home to give practitioners real-time data on their patients. They include heart monitors, infusion pumps, etc.

Managing all of these IoT devices is arguably the biggest pain point for healthcare IT departments. "Traditional [healthcare] infrastructure management has primarily used WiFi—often assuming that if the WiFi infrastructure is performing well, then everything is operating properly," described a recent report from NetworkWorld. "But this is not always the case, as essential device and application information is excluded from conventional infrastructure management."

A healthcare IT specialist warns, "If we don't know how these devices are behaving on the network, we simply can't use them with any sort of assurance."

IoT devices have become a "blind spot" of sorts for the wireless network managers who can't guarantee 24/7 reliability. More importantly, IoT devices may not be the reliable safety net that doctors and nurses count on for their patients.

IT needs help. Vendors need to step up their capabilities—and they will.

Finance first

Financial decision makers are always hesitant to invest in new technologies and big data tools to reap the rewards of those investments. A recent McKinsey study illustrates why. Large IT projects:

▶ Run over budget 45 percent of the time
▶ Deliver 56 percent less value than planned
▶ Damage the company's bottom line or threaten the business' survival 17 percent of the time

Many businesses worry they don't have—or won't be able to hang on to—the in-house IT talent needed to implement new or upgraded systems. Twenty-seven percent of businesses cite their internal IT "skills gaps" as the number one reason they're foregoing analytics improvements, according to a recent Dun & Bradstreet/Forbes report.

Another key reason is that 41 percent of CFOs say they lack sound financial metrics for IT return on investments—according to a new research study, 2018 CFO Insights on New Technologies from Grant Thornton.

The study found that more than three quarters of the executives surveyed agree that digital transformation is critical—23 percent in the short-term and 56 percent in the long-term. More than 300 CFOs from companies with revenues between $100 million and over $20 billion were surveyed.

Software companies need to be aware of what's driving CFO tech strategies today. Listed in order of importance, CFOs are most concerned with:

▶ Improving operational performance
▶ Reducing costs

▶ Improving customer experience
▶ Enabling better performance management

However, those aren't the same goals they expect to be guiding their choices in just two years' time. CFOs expect that by 2020, their priorities will have shifted to: [1]

▶ Improving customer experience
▶ Improving operational experience
▶ Reducing costs
▶ Improving competitive differentiation

Reducing costs

As noted earlier, Industry 4.0 encompasses more than just factories. Service industries are reaping the benefits, too—such as restaurants and food producers. In many cases, they're finding cost savings thanks to savvy vendors like Enevo®.

Enevo combines sensor technology and analytics software inside trash dumpsters, an area where many businesses throw money away—in this case, literally. The vendor found about 9 percent of scheduled waste collections are missed, and 21 percent of sites need their service levels adjusted. Those numbers improve within the first 90 days of switching to sensors and data software.

McDonald's is now experimenting with Enevo's sensors on their trash receptacles. Now, staff will know exactly when it's time to pull out nearly full liners and re-bag. Consider all of the obvious benefits:

▶ Staffers aren't wasting time making random trash checks
▶ Customers don't encounter foul-smelling or overflowing receptacles
▶ Sensor-equipped dumpsters let waste haulers know when to pick up trash

The bottom line is that companies are saving money, customers are more likely to be satisfied and become repeat customers, and employees' time is better utilized.

Vendors that recognize those kinds of opportunities stand to do a lot more business.

The growth of the cloud

"Companies must re-architect operations around large-scale digital innovation networks, in effect becoming a new corporate species. We're going to see a massive jump in the number of digital services and the pace of innovation," said Frank Gens, chief analyst for IDC Research and author of "IDC FutureScape: Worldwide IT Industry 2018 Predictions."

"Cloud everywhere for everything is what we're likely to see over the next several years," Gens predicts. "If you're not in the cloud, you're isolated from innovation."

Epicor customers are increasingly turning to the cloud to create and store data and applications, but many aren't ready to transition to an "all-cloud" environment.

Business leaders know about the cloud. They're enthusiastic and aware of the potential benefits it provides, but vendors would be wise to offer onsite, hosted, and cloud storage options for businesses' present and future needs.

The cloud certainly opens up new capabilities and accelerates innovation, but vendors can't lose sight of the big picture—what the customers want.

From our perspective, the overwhelming need is for gradually increasing levels of service, scalability, and financial agility. In short, customers want technology to help them do business smarter.

In addition to a surge in businesses turning to cloud applications, the IDC report also predicts that within the next three to four years: [2]

▶ Spending on cloud services and cloud-enabling hardware, software, and services will double to more than $530 billion
▶ 75 percent of commercial enterprise applications will use artificial intelligence (AI), and more than 90 percent of consumers will interact with customer support bots
▶ 90 percent of large enterprises will generate revenue from data-as-a-service, selling raw data, derived metrics, insights, and recommendations—an increase from less than 50 percent in 2017
▶ 50 percent or more of global gross domestic product will be digitized via digitally enhanced applications and operations

The environmental footprint of Industry 4.0

Environmental responsibility will be a key factor as Industry 4.0 evolves. The dollars and cents argument for that is clear. Manufacturers and industrial facilities that want to continue doing business with some of the world's biggest corporations will need to wean off fossil fuels if they want to continue doing business with them.

As an example, member companies of the Climate Disclosure Project (CDP) signed a pledge to only do business with eco-conscious suppliers, starting in 2018. Close to 90 percent of CDP members have formal climate change strategies in place. Many CDP companies also track and report their suppliers' carbon emissions.

Weaning off fossil fuels such as coal and oil is only part of the puzzle. Companies will have no choice but to reduce, reuse, and recycle—with a heavier emphasis on the reduce strategy.

As of January 2018, China is no longer accepting 24 common solid wastes and recyclable materials that the U.S., Europe, and Hong Kong have been unloading on the country for decades. The Chinese ban includes packaging plastics, steel dross, paper and cardboard, and textiles that fueled its industrial boom. If the Chinese ban remains in place, the global plastic exports it takes in will plummet from 7.4 metric tons (Tonnes) annually to just 1.5 Tonnes.

The manufacturing game is changing drastically. Savvy manufacturers will need to develop more sustainable packaging, choose resources that can be used over and over, and slash waste along every step of the supply chain.

Your partners must step up to the table

Succeeding in this fourth industrial revolution will require companies to not only trust and incorporate one or more new technologies, but also establish fruitful partnerships with outside vendors.

More than 90 percent of companies outsource some business function—such as IT support, payroll, building services, etc. Of course, that doesn't mean businesses have a clear picture of whether their vendors are worth the time and money.

[2] https://www.forbes.com/sites/sap/2017/10/31/idc-2018-predictions-if-youre-not-in-the-cloud-youre-isolated-from-innovation/#786f4c065713

When searching for a software provider to improve your operational performance and build your customer base, always keep these three steps in mind:

Spell out your requirements

An ESI International survey found nearly three-quarters of companies don't set clear requirements from their vendors. When a vendor doesn't have clear, written expectations, it's a surefire recipe for uneven results. Think of the precious time and money companies waste when they're forced to switch vendors months, sometimes years, into an unsatisfactory relationship.

Make your financial goals known

The number one reason companies tend to invest in new software and IT hardware is to reduce costs. However, only a third of organizations that outsource spell out their cost-savings goals to vendors. Cost-savings initiatives should be clear on both sides. Vendors should know you'll look elsewhere if they can't offer a price that's attractive along with good results.

Reevaluate periodically

About a third of companies don't evaluate how an outsourced project is matching up with the original goals. Even if you set out your goals from the start, it pays to check back throughout the process. Too many companies get used to minor problems and accept them as the norm.

How much easier and cheaper will it be to manufacture?

"The interplay between fields like nanotechnology, brain research, 3D printing, mobile networks, and computing will create realities that were previously unthinkable," concluded a report by the World Economic Forum (WEF). "Almost anyone will be able to invent new products and services easily and cheaply."

These are exciting times, yet they may be a little scary for established manufacturers that are struggling to remain competitive. Auditing giant KPMG echoed those sentiments in a recent global manufacturing report, "With limited baseline growth expected in most markets, manufacturers will need to invest in new technologies in order to grow the pie."

Keep in mind organizations like the WEF don't always paint a rosy picture of Industry 4.0. WEF consistently warns about:

▶ The challenges to create meaningful work for humans displaced by robots—potentially into the hundreds of millions worldwide over the next 20 years

▶ Not losing sight of sustainability and climate change initiatives

Yet, the WEF and many other economic forecasters believe manufacturers that embrace new technologies—both on the production floor and in their IT infrastructure—will enjoy a clear-cut competitive advantage.

About Epicor

Epicor Software Corporation drives business growth. We provide flexible, industry-specific software designed to fit the precise needs of our manufacturing, distribution, retail, and service industry customers. More than 45 years of experience with our customers' unique business processes and operational requirements are built into every solution—in the cloud or on premises. With this deep understanding of your industry, Epicor solutions dramatically improve performance and profitability while easing complexity so you can focus on growth. For more information, connect with Epicor or visit www.epicor.com.

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