

Three Sure Ways to Get Your Factory Fit for the Future

How the right business technology drives
insight, transformation, and growth

EPICOR[®]



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Executive Summary

Behind the scenes of the world's leading industrial and manufacturing companies, a profound digital transformation is now underway.¹

As with any profound transformation, the opportunities for competitive advantage and growth are enormous, but so are the challenges. How do you determine what your next digital transformation steps should be? How do you position your manufacturing business to take the next step—and the one after that?

This eBook will help you answer these questions. In it we will:

- ▶ Introduce the role of visibility in digital transformation
- ▶ Consider three key trends that are shaping the future of manufacturing by delivering the visibility that enables transformation:
 - Growth of the Internet of Things (IoT)
 - The advance of analytics
 - The migration of applications to the cloud
- ▶ Identify the traits you need in your core systems to take advantage of these trends—giving you the visibility to identify and take the steps that will help transform your business into the factory of the future

¹ Industry 4.0: Building the digital enterprise, PwC, 2016.





What It Takes to Be a Grow Getter

Wherever your manufacturing business is on its digital transformation journey, there's so much to consider that it's easy for paralysis to set in.

To keep your forward momentum, it pays to learn from businesses that seem unfazed by the challenge and are successfully driving transformation and growth. We call these businesses Grow Getters.

Grow Getters embrace continual change²

Step by step, embrace change

One thing Grow Getters have in common—especially the small-to-midsize manufacturers that we talk to—is that they move forward in small, smart, incremental steps. They identify the big changes they want to make, but don't stress about the magnitude of their ambition. They know that if they keep making smart changes, step by step in the right direction, the momentum for innovation and transformation will build.



76% of high-growth companies vs. 49% of low-growth companies

prefer constant innovation over business stability

High-growth companies are

3x more likely

than low-growth companies



to find growth rewarding



rather than stressful

²MORAR Growth Survey, 2016

Grow Getters invest in technology and innovation²



High-growth companies



Low-growth companies

are planning significant investments in technology and innovation in the next year



Invest in visibility

Grow Getters know that they first need to identify the right steps to take. This is why they invest in technologies that give them greater visibility, from the factory floor through all of their core business processes—sales, financials, customer relationship management, supply chains, purchasing, inventory, shipping, invoicing, and so on.

We see this when we look at their technology investments. In a 2017 paper³, Aberdeen Group

points to three technology trends driving digital transformation for manufacturers—the Internet of Things (IoT), advanced analytics, and cloud-based capabilities.

All three promote greater operational flexibility and efficiency. Equally importantly, they all promote better visibility of operations—enabling manufacturers to achieve insights that they can translate into smart decisions and action.

³ What Does Digitalization in Manufacturing Mean Now?, Greg Cline, Aberdeen Group, January 2017.

Trend 1

IoT Makes Manufacturers Smarter

IoT-based smart devices are opening new windows of visibility into manufacturing processes.³

Because of this visibility, according to Aberdeen Group, manufacturers are using IoT devices to make more accurate, real-time decisions. The best in class are almost four times more likely to detect the unexpected—making them much more able to respond quickly and effectively to unforeseen events and their consequences.

Once IoT technologies such as sensors and actuators are embedded into your products or production equipment, you need to be able to handle the flow of data—to capture and store it, analyze it, and act on it. This fundamentally depends on the capabilities of your core business systems.

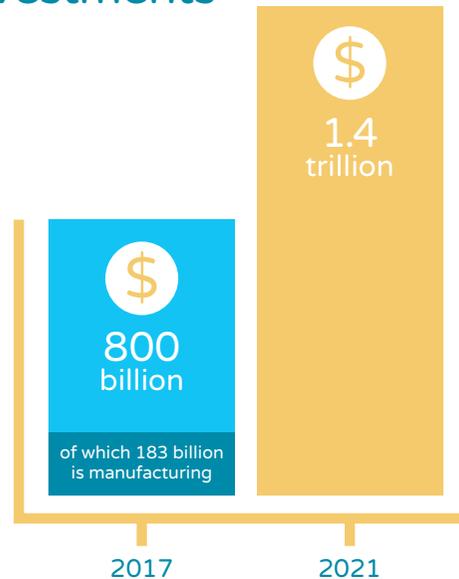
What is IoT?

“Internet of Things” is a term used for the growing worldwide network of ordinary physical objects that now contain embedded technology designed to:

- ▶ Sense their internal states or aspects of the external environment
- ▶ Transmit the data collected
- ▶ Receive and act on data from other connected devices

This direct integration of the physical and digital worlds enables manufacturers to streamline, simplify, and improve their operations and customer service. They can automate many actions that used to be manual because the devices collecting data can now initiate specific processes when predetermined conditions appear.

Value of IoT investments⁴



⁴ Estimated in Worldwide Spending on the Internet of Things Forecast to Reach Nearly \$1.4 Trillion in 2021, IDC, June 2017

Technology Traits Critical to IoT Success

If you want your business systems to be fit for IoT and the factory of the future, there are four attributes they should exemplify.

1. Ability to go deep and broad

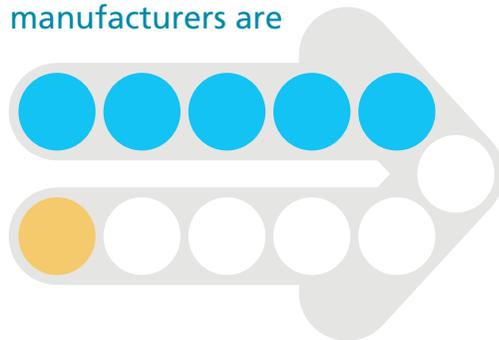
Aberdeen Group points out that as manufacturers deploy more and more sensors per asset (deep) and more assets with sensors (broad), IoT use cases will not only permeate operations, but extend to demand-sensing and the supply chain.

As you take your early IoT steps, therefore, it's worth thinking about the future and investing in a core business system that can support all of your IoT efforts, today and tomorrow. You want a system designed to manage multiple data flows, processes, and business functions in an integrated way—in other words, an enterprise resource planning (ERP) system.

How do you know if your current or preferred ERP system is the right one to support your IoT initiatives? This is where the other traits come into play.

Best-in-class manufacturers are

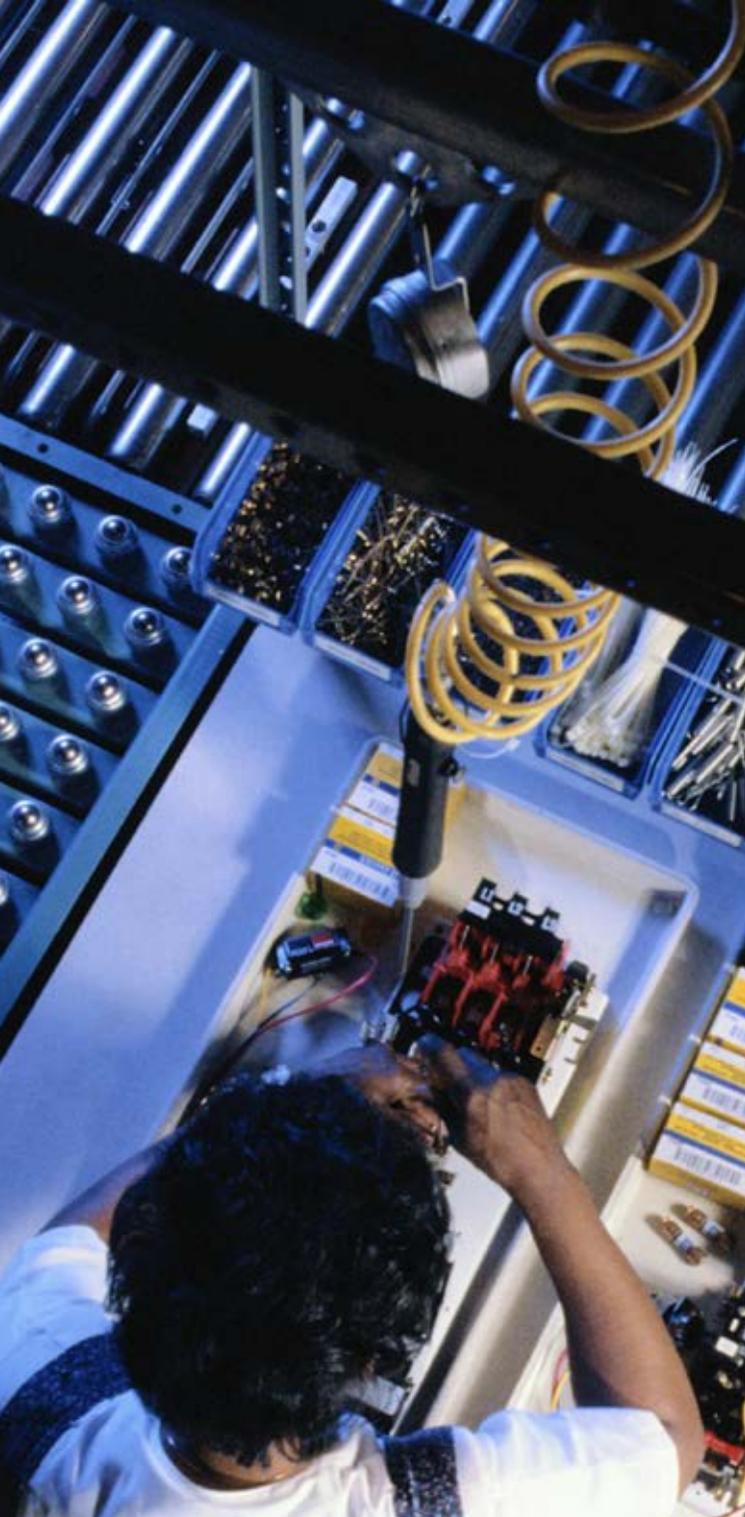
5x
more likely



to synthesize
information from
multiple fast-changing
data sources

The more [processes] that we're able to integrate into Epicor [ERP], the more that we're able to use the software itself to do what we need to do.

—Jack Barnes
Philadelphia Mixing Solutions



2. Ease of integration and interoperability

The most obvious requirement is a solution that is relatively easy to integrate with IoT technologies. You want your ERP architecture and interfaces to be streamlined, flexible, and based on standard open protocols. This will also make it easier to connect to the business systems of suppliers, partners, or customers—further extending your IoT-driven processes for more complete end-to-end process management and automation.

3. Manufacturing-ready solution

IoT implementations in other industries such as retail or healthcare are different from the deployments you'll need, so it helps if your ERP system is specifically designed for the business of manufacturing.

For example, you'll save a lot of time and effort if your ERP software supports advanced planning and scheduling across machinery, materials, and labor—or if it can analyze data relating to equipment utilization and material waste.

An ERP provider specializing in manufacturing may also take note of the customizations their customers make and build these into their updates and upgrades more readily than providers of more generic ERP solutions.

Epicor has an extremely good reputation in the manufacturing sector. I would venture to say that Epicor is the #1 ERP vendor for the industry.

—Saymaad Mansoor | SIDDCO Group



We are embracing communication with Epicor Social Enterprise, and I have been surprised how many people are using the tool.

—Anthony Gercar | Enpress LLC

4. The human element

IoT implementations aren't always about creating automated end-to-end processes, so think about how easily an ERP solution will help your people interact with data generated by IoT implementations. Can they readily turn this data into meaningful intelligence to support smart decisions? Will it then be easy for them to take the smart steps they've identified?

The quality of analytics is clearly key here (see page 10 for more on this), but there is other ERP functionality that can empower your people. These include social and mobile capabilities, which reinforce the value of IoT deployments by giving people the flexibility to act quickly and comprehensively—wherever they are, whatever the device.

For example:

- ▶ In-field service agents could receive IoT-generated alerts and act on them at the point of need
- ▶ Factory-floor operators could crowdsource ideas to respond to an issue arising from an IoT-driven process

Trend 2

Using Analytics for Better Decision-Making



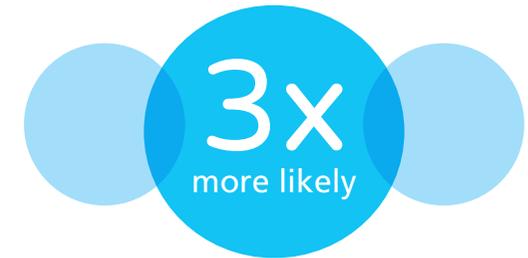
Data lies at the heart of the fourth industrial revolution, but the massively growing information flow brings little value without the right analytics techniques.⁵

This isn't news to best-in-class manufacturers. Aberdeen Group has found them more than three times more likely than others to have implemented analytical capabilities to combine, harmonize, and mine different data sources (e.g., sensors, files, new data streams) and more than twice as likely to have implemented capabilities to analyze large data volumes.

When you're a small-to-midsized manufacturer, analytics can be one of the biggest stumbling blocks, as it takes specialized skills to turn data into insight that you can act on.

It helps, therefore, if your ERP system can also help you up the analytics ladder. You want those without specific analytics skills to be able to quickly understand what is happening, so they can do their jobs more effectively. You want managers and decision-makers to be able to dig more deeply into what has happened, to understand why it has happened. Ultimately, you want analytics that will help you predict what will happen and even recommend smart actions to take when it does.

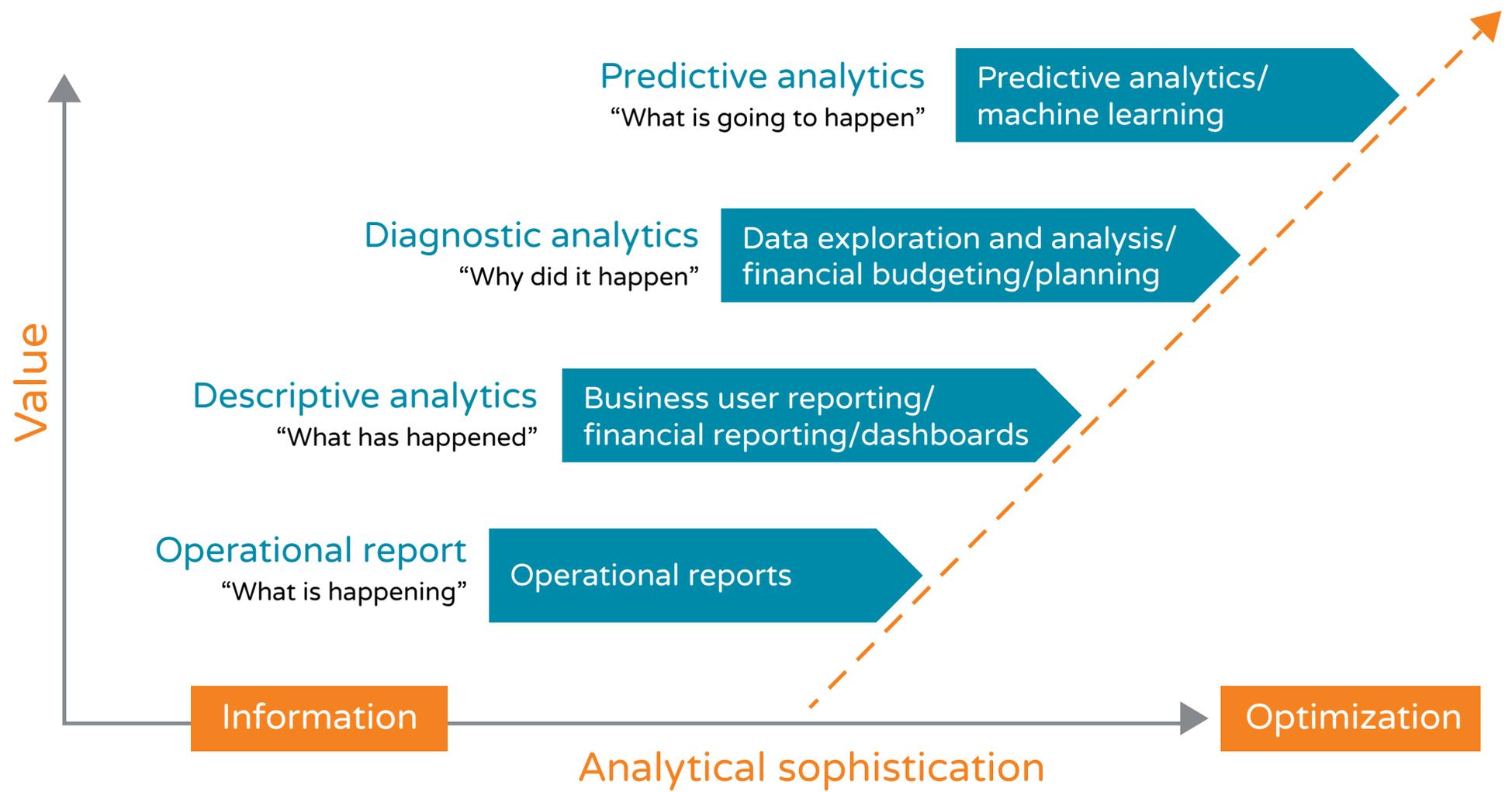
Best-in-class manufacturers are



to combine, harmonize, and mine heterogeneous data sources

⁵ Industry 4.0: Building the digital enterprise, PwC, 2016

ERP can help you up the analytics ladder





Technology Traits Critical to Analytics Success

If you want your business to make smart, data-driven decisions—today and in the factory of the future—there are three attributes to look for in an ERP solution, to add to the four traits already covered.

1. Ready-to-go analytics

Ideally your ERP system won't ask you to do all the hard work to pull insight from data. Look for pre-built analytics functionality that is already mapped to your most likely common needs, such as materials handling, financials, sales, or production. This is particularly important when it comes to answering those all-important "why" questions.

Make sure, though, that you also have the flexibility to customize and build your own views, queries, reports, and dashboards as you gain confidence and discover new needs.

Finally, ask about the ERP provider's support for predictive analytics and about their analytics vision and roadmap. You want to feel confident that they will advance with you as you take each step towards your vision of the future.

With the rich reporting capabilities of Epicor ERP, our quality engineers can now analyze vast amounts of data on just about any parameter. ... We have ... significantly reduced material wastage and improved manufacturing processes and quality.

—Saymaad Mansoor | SIDDCO Group

Epicor allows us to visually manage that data. ... [It] dictates most of the business process; this is very much the backbone of our business process.

—Keith Diekmann | Dalsin Industries

2. Visual discovery

We know that people can typically spot points of interest more quickly when data is presented visually rather than in tables. Acting on this knowledge, best-in-class manufacturers are twice as likely as others to use visual discovery methods to simplify decision-making.

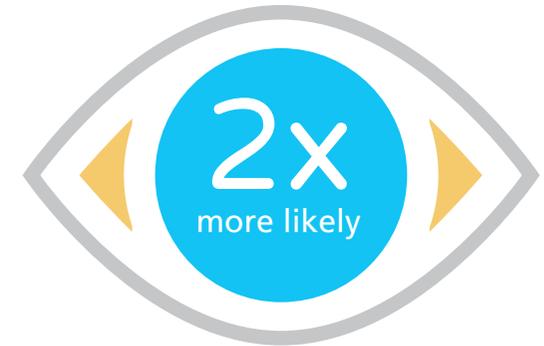
Data visualization really comes into its own in helping your people spot anomalies in real-time production data, so they can identify and take the steps that make the business more efficient and responsive. It's a classic example of a small change that leads to big results.

3. Available anywhere in real time

We've already discussed how mobile ERP capabilities help make the most of IoT deployments. It's also true that the visibility provided by analytics is most useful if it's available at the point of need—whether on the factory floor, in the warehouse, at a customer site, or in the boardroom.

Up-to-the-second accuracy isn't always necessary, but confidence in the currency of the data is. This calls for ERP reporting and analytics that balance data crunching with system performance, offering different levels of "real time" for different needs.

Best-in-class manufacturers are



than all others to have implemented visual discovery methods to simplify decision-making.

Trend 3

Migration of Manufacturing Applications to the Cloud

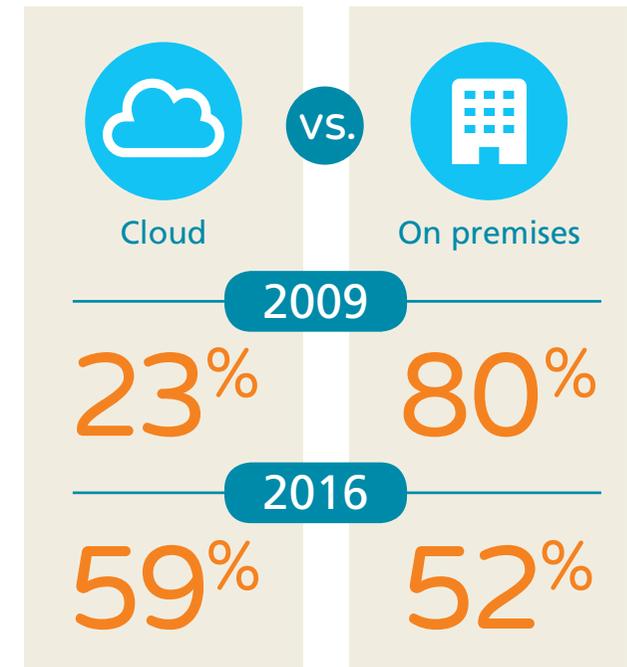


Through the cloud, best-in-class manufacturers can achieve real-time visibility and enhance internal and external collaboration. ... Driven by the need for real-time access to critical data, as well as collaboration anywhere across their supply chain, the migration of key manufacturing software applications to the cloud is happening now.³

For Aberdeen Group, the data clearly supports the thesis that manufacturers manage operations better through their use of cloud-based applications. It isn't hard to see why. The availability, flexibility, and scalability of cloud-based applications is ideal. With the right cloud technology platform:

- ▶ People can access the information they need wherever they have Internet access
- ▶ Different entities and locations within a business can come together on a single platform, enhancing internal collaboration and operational efficiency
- ▶ The advantages can extend beyond the business—upstream to suppliers and downstream to customers—for true end-to-end visibility and process integration

Interest in cloud-based vs. traditional ERP³



Some respondents indicated interest in both deployment models.

Technology Traits Critical to Cloud Success

Not all cloud implementations are equal. If you expect to leverage cloud flexibility in your factory of the future, consider these attributes in your ERP solution.

1. Cloud-ready architecture

Look for a cloud-ready ERP solution that is streamlined, standardized, and open—the very characteristics we covered when discussing ease of integration and interoperability. These characteristics have a direct effect on the solution’s scalability, reliability, and performance.

2. Choice in deployment

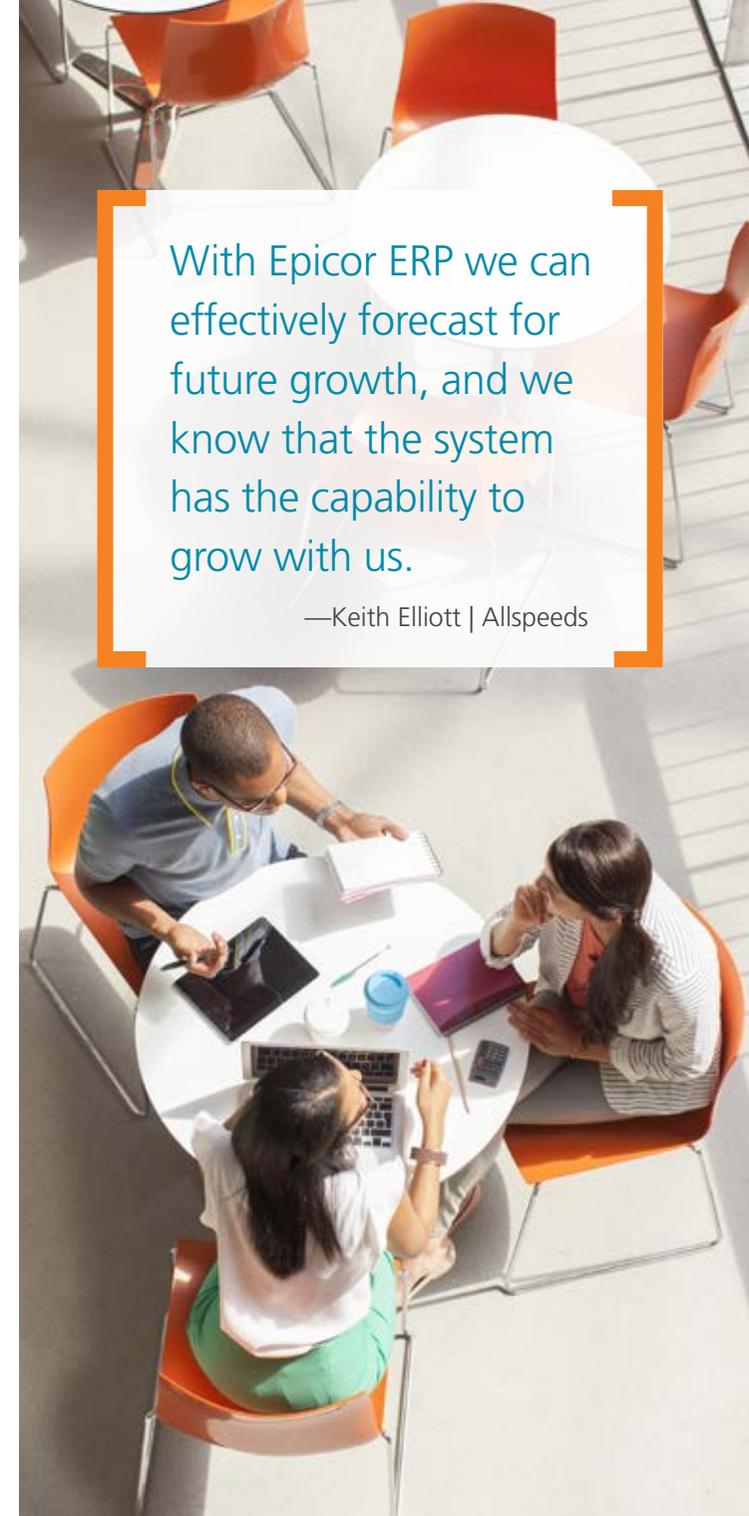
Many small-to-midsize manufacturers choose a software-as-a-service (SaaS) model of ERP delivery because:

- ▶ They find it more cost-effective and secure to rely on a specialized IT provider than on their own small in-house IT team
- ▶ It gives them automatic access to updates, to keep pace with technology change and compete with the best

Those who prefer to host their ERP system themselves should look for a solution that offers a flexible cloud-based architecture in a hosted option. Ideally you also want the flexibility to move to a SaaS version if that is better for your business in future.

With Epicor ERP we can effectively forecast for future growth, and we know that the system has the capability to grow with us.

—Keith Elliott | Allspeeds



Get Fit for the Future With Epicor ERP

Do you want your manufacturing business to use innovative technology to make smart, data-driven decisions that enable growth? Epicor can help.

Manufacturing specialists

We bring more than 45 years of experience working with manufacturers to our manufacturing applications, which include Epicor ERP 10, Epicor Mattec MES, and other specialized software.

When we roll out new capabilities, they are designed with you in mind, based on feedback from manufacturers around the world that use our software.

As a result, manufacturers that have moved to Epicor ERP 10 have found that they don't need a lot of customization to get the software in tune with their business. When we look at new advances—such as how we can start helping you to use predictive analytics—we start with key manufacturing needs, such as inventory planning and optimization.

We wanted the best system in the business. We chose Epicor ERP because it offered a flexible solution that could easily be customized to meet both existing and future needs.

—Jimmy Faroh | Challenger Door

Manufacturing industries served by Epicor include:

- ▶ Aerospace and defense
- ▶ Automotive
- ▶ Discrete manufacturing
- ▶ Electronics and high-tech
- ▶ Fabricated metals
- ▶ Furniture and fixtures
- ▶ Industrial machinery
- ▶ Medical devices
- ▶ Rubber and plastics



All Boxes Ticked

In these pages, we've featured the words of some of the manufacturing Grow Getters that are using Epicor ERP 10 to begin their journey of future-ready transformation. From the standardized, open nature of the Epicor ERP 10 technology platform to its variety of social, mobile, and analytics capabilities, it's giving them everything they need to get their factory fit for the future.

Epicor helps manufacturers build the factory of the future

Visibility through support for IoT rollouts	1. Deep and broad	<input type="checkbox"/> Epicor ERP 10 and wider manufacturing portfolio, including Epicor Mattec MES, supports automation, IoT, and cross-business visibility—from sales and CRM to production and supply chain management		
	2. Ease of integration	<input type="checkbox"/> Simplified, standardized architecture with Microsoft stack	<input type="checkbox"/> Open APIs	
	3. Manufacturing-ready	<input type="checkbox"/> 45+ years specializing in manufacturing software	<input type="checkbox"/> Out-of-the-box manufacturing process support	
	4. The human element	<input type="checkbox"/> Responsive, touch-friendly mobile capabilities	<input type="checkbox"/> Intuitive user interface	<input type="checkbox"/> Flexible, powerful social tools
Visibility through analytics	5. Ready-to-go analytics	<input type="checkbox"/> Epicor Data Analytics with starter content packs, fully customizable	<input type="checkbox"/> Epicor XL Connect for those who love Excel	<input type="checkbox"/> Epicor Smart Inventory Planning and Optimization Platform for predictive analytics
	6. Visual discovery	<input type="checkbox"/> Epicor Data Discovery for a variety of visualizations, drill down into detail		
	7. Real-time analytics anywhere	<input type="checkbox"/> Epicor mobile tools make data accessible on any device	<input type="checkbox"/> Epicor Data Analytics is updated daily, can use multiple data sources including MES	<input type="checkbox"/> Epicor Data Discovery gives up-to-the-second visualizations
Visibility through cloud-connectedness	8. Cloud-ready architecture	<input type="checkbox"/> Cloud-ready design and build is flexible, scalable, reliable, secure	<input type="checkbox"/> Open APIs simplify integration	
	9. Choice in deployment	<input type="checkbox"/> Flexible deployment available in the cloud or on premises	<input type="checkbox"/> Single-tenant, multitenant, and dedicated-tenant cloud options available	<input type="checkbox"/> Predictable update cycles

Next Steps

Manufacturers that are serious about transformation and growth are getting their businesses future-fit by investing in Epicor ERP. It gives them the visibility and insight to plan and support their next steps.

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 is 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.

ABERDEEN

About Aberdeen Group

Aberdeen is the only source for broad behavioral analytics for your specific markets with the expertise and resources to execute a highly optimized B2B marketing strategy.



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