



EXECUTIVE BRIEF

Select an ERP system that keeps up with the evolving needs of manufacturing operations

Manufacturing

Efficiently turning raw materials into finished products means looking beyond the walls of today's factories to global value chains where advances such as big data and the internet of things (IoT) are enabling external collaboration and driving operational innovations. To keep up with evolving business practices and constantly changing markets, manufacturers need an enterprise resource planning (ERP) system that not only supports their procurement, project management, operations, sales, and other day-to-day activities, but also gives them the flexibility to easily shift wherever and whenever business demands.

Modern ERP systems might be better called **digital operations platforms (DOP)** to reflect their artificial intelligence (AI) and experience-driven nature, as well as the critical role they play in cloud-based digital businesses. The right digital operations platform is one that allows a manufacturer to quickly react to external factors impacting the business, along with the agility to implement operational innovations that help maintain a competitive advantage.

When selecting a modern ERP system, manufacturers should consider the following criteria:

Depth of industry and business processes

Today's manufacturing operations are complex, and it takes an entire internal and external ecosystem to keep things running smoothly. When selecting an ERP system, manufacturers should make sure it's built to manage the complete manufacturing operation—from financials and strategic planning to shop floor management, quality control, and scheduling. In addition, the ERP system should be designed to meet the **unique needs of the manufacturer's industry**. This could mean built-in tank scheduling for brewers, or federal security compliance for US aerospace and defense manufacturers. Modern ERP systems need to be flexible, cloud-based systems that can expand along with a manufacturer, whether that expansion includes adding new services or opening new operations around the globe.

A modern ERP system leverages technology that goes beyond enabling manufacturing operations. It should serve as a unifying foundation for the business ecosystem—with capabilities such as business analytics, enterprise asset management (EAM), and even a built-in commerce network. Depending on a manufacturer's particular needs, an ERP system should be able to seamlessly integrate with other, more specialized applications, such as product lifecycle management (PLM), human capital management (HCM), and product configuration tools.

A manufacturer should be able to easily configure its full digital operations platform around its ERP system with complementary applications that address its specific industry and operational needs. Ideally, industry-specific capabilities should be built directly into the ERP system, enabling the manufacturer to focus on the specific, key processes that are truly unique to its business. With modern ERP systems' reliance on configuration instead of customization, manufacturers would benefit from continuous cloud upgrades with no coding needed, allowing for future flexibility as their business needs change over time.

Security and risk management

Part of selecting an ERP system means ensuring that it supports a comprehensive approach to data security. By fostering an environment that prioritizes security, manufacturers can minimize and perhaps even prevent harmful cyberattacks. Here are some principles and action items that can guide the way toward a safer technology infrastructure:

- **Adopt a secure cloud framework**—A manufacturer should place as much of its computing capability as possible within a framework that has been certified for compliance with recognized standards such as ISO 27001, ITAR, and FedRAMP. Top-tier cloud infrastructure providers typically comply with these standards and maintain ongoing processes for staying compliant with new and evolving security standards.
- **Follow current industry and technology security standards**—FDA regulations and standards such as HIPAA and ITAR and are designed to optimize security around the types of information that are critical to specific industries. To achieve effective security, both a manufacturer and its cloud infrastructure provider need to meet the security standards that are relevant to the manufacturer's industry and specific business practices.
- **Use compliance validation services**—Third-party consultants that specialize in evaluating regulatory and security compliance can provide a useful, impartial evaluation for ensuring that the right security efforts are putting a manufacturer in the right position.

Support for complex workflows

The right ERP system will help a manufacturer maintain a competitive advantage and business approach. The platform needs to be able to accommodate the rapid development of enterprise capabilities tailored to the manufacturer's unique business requirements and workflows. A modern ERP system should support extensibility that enables manufacturers to build their own applications and mobile apps, and automate unique workflows that are built for a manufacturer's specific business needs.

A modern ERP system should be intuitive and easy to use, and not require that users need extensive knowledge of complex source codes or programming languages to extend the software. It's critical that any extensions of the system continue to work when updates or upgrades are deployed. And because today's workforce is mobile, the ERP system should be optimized for use via desktop, tablet, and smartphone.

Flexible application environments

Look for an ERP system that can access data and seamlessly run business processes, regardless of where the applications are deployed—on-premises, in the cloud, or both. If a manufacturer has existing applications that it's hesitant or unable to decommission, it's critical that the ERP system be able to integrate and perform well with them—whether they're third-party applications or from the same vendor. The ERP system should provide the flexibility to make an often-complex web of applications work together and eliminate information silos. It's crucial that an ERP system can be upgraded, replaced, or even fail without also taking the entire network down with it.

Collaboration with suppliers and customer ecosystems

The ERP system that a manufacturer selects needs to be able to work beyond the enterprise—connecting the full technology ecosystem that includes customer, supplier, and partner applications.

Manufacturers have a number of principal responsibilities within these ecosystems: setting priorities; planning and executing supply chain strategies; driving incremental improvements, while quickly adapting to changing market and customer requirements; and linking changes in demand to changes in supply, while being mindful of the financial results. By enabling seamless communication between all stakeholders, the ERP system can help enable increased productivity, efficient decision-making, fewer errors, and improved customer satisfaction. Legacy ERP systems, on the other hand, often create an environment of unstructured communication, which causes confusion and a lack of collaboration between supplier and customer ecosystems.

Data connectivity for analytics and AI

Many organizations have data that lives in multiple places: files, spreadsheets, databases, cloud-based applications, and more. Data is often considered the single-most valuable asset in today's world of digital business. Connecting data across application silos, and capturing it in an unaltered form allows it to be reused for many new, different, and even unanticipated uses. Manufacturers have the opportunity to turn data into a competitive advantage—whether by improving operations, reaching more customers, or creating innovative products and services.

A modern ERP system offers tremendous potential for manufacturers to develop a culture of data-driven decision-making. It gives them the ability to capture, store, and analyze data—whether generated by disparate applications, people, or IoT infrastructure. Adding **machine learning and AI** to the mix enables manufacturers to analyze massive quantities of data and use it to discover patterns, sense and respond to real-time demand, identify profitable opportunities, and make recommendations with a high degree of precision. AI has the potential to help manufacturers adopt new approaches to optimizing supply chains, sales, and manufacturing processes, as well as identifying new opportunities and paths to growth.

Future-proof extensibility and scalability

Innovative new business models are disrupting many markets. In some cases, technology is driving these innovations. But in most cases, manufacturers are looking to technology to help support these new ways of doing business. The **cloud** offers a flexible platform from which manufacturers can engage in a continual digital transformation to help support business growth, differentiation, and the agility to transform business models and processes.

With the “old way” of doing business, an organization’s IT department’s primary focus was on maintaining existing infrastructure and on-premises solutions. As a result, IT resources were unavoidably stuck in a defensive operational mode where just keeping things up and running was often an overwhelming effort. IT was in a constant struggle to try to stay ahead of the basics, and often spread too thin to adequately **support the organization’s more strategic initiatives** to facilitate change and modernize the business. Manufacturers should be transforming their rigid, monolithic applications “of the past” into modern, component-based solutions that provide agility, configurability, extensibility, and interoperability.

A modern, cloud-based ERP can open up a new opportunities for a business, making it easier and more cost-effective to take advantage of a broad range of innovative technologies, from high-value extension applications to industry-driven solutions. By leveraging extensibility capabilities, manufacturers can extend the power of ERP systems beyond what they were designed for without a single change to the code.

With a cloud-based ERP, a manufacturer also gains the ability to easily scale resources and computing processing power to effectively meet the evolving needs of the business. With critical business applications operating in the cloud, manufacturers can seamlessly experience automatic upgrades that deliver the latest advances in enterprise functionality.

10 questions to ask ERP vendors during the selection process

1. How fast will my business be up and running on your software?
2. How can I configure my business’s unique needs without heavy reliance on coding and customizing the software?
3. What features and capabilities can we access via mobile devices?
4. How does the system architecture integrate with third-party applications?
5. How does your software enable seamless collaboration between internal and external stakeholders?
6. What services are available to support implementation and deployment?
7. How will the AI capabilities you provide help my operations?
8. What industry-specific capabilities does your software provide?
9. How will your cloud platform keep my data safe?
10. Which industry-specific security standards do you comply with?

Gain a digital foundation for agility

The modern era demands that manufacturers be agile. With social networking, mobile devices, and other means of instantaneous communication—all on a global scale—information can literally travel at the speed of light. Today's manufacturers must be able to rapidly act on anything that can impact business, whether it's sudden market changes, unexpected customer demands, or supply chain disruptions.

Not only does technology accelerate these challenges, it also offers the means for manufacturers to quickly and adequately respond to them. A modern, cloud-based ERP system can support the specific industry and business processes, workflows, and complicated application environments that define a business.

Support for seamless integrations and extensibility, internal and external collaboration, and advanced analytics enable manufacturers to not just respond to these challenges, but the immediate access to relevant data and real-time communication capabilities allow manufacturers to take it a step further and even turn those challenges into opportunities by being able to respond quicker than the competition.

A modern, cloud-based ERP system can also create a digital foundation with the agility to easily transform as a business grows. Evolution in business is inevitable. Selecting the right ERP system ensures that a manufacturer's business systems and processes can evolve to meet whatever tomorrow has in store.

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641 Avenue of the Americas, New York, NY 10011

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