What Is Enterprise Resource Planning (ERP)?

At its core, an ERP is an application that automates business processes, and provides insights and internal controls, drawing on a central database that collects inputs from departments including accounting, manufacturing, supply chain, sales, marketing and human resources (HR).

Once information is compiled in that central database, leaders gain cross-departmental visibility that empowers them to analyze various scenarios, discover process improvements and generate major efficiency gains. That translates to cost savings and better productivity as people spend less time digging for needed data.

ERP software that's tailored to meet the needs of an individual business pays major dividends, making these systems a critical tool for companies across industries and of all sizes. Many of the world's best-known and most successful firms have leaned on ERP for the last quarter century. Now, this software can be configured and priced to meet the needs of all-size businesses.

Put simply, an ERP system helps unify people, processes and technology across an organization.

Key Takeaways

ERP is critical business software that collects information from various departments in a common database, enabling leaders to monitor the pulse of a company using a single vision of reality.
Enterprise resource planning systems unify critical business functions like finance, manufacturing, inventory and order management, customer communication, sales and marketing, project management and human resources. One major feature is detailed analytics and reporting on each department.
ERP can generate major time and financial savings by providing organization-wide visibility that spotlights inefficient processes and reveals opportunities for growth.
There are several deployment models for ERP software, including on-premises, cloud and hybrid. While cloud ERP has become extremely popular in recent years, which approach is best depends on company needs.
Businesses should make sure they understand the capabilities, implementation models, integration requirements and total cost of ownership of a short list of suppliers before picking a winner.

Why Is ERP Important for Businesses?

ERP systems have become table stakes for businesses looking to use resources wisely. They can help leaders reallocate human and financial capital or build more efficient processes that save money without sacrificing on quality or performance.

An ERP is also an asset when it comes to planning and coordination. Employees can see current available inventory and customer orders in detail, then compare supplier purchase orders and forecasted future demand. If necessary, they can make adjustments to head off problems. ERP software improves communication and collaboration as well because workers can check on the status of other departments to guide their own decisions.

As a comprehensive source of data, an ERP system also provides a host of reports and analytics that can be difference-makers for the business. Turning a vast trove of information into charts and graphs that clearly illustrate trends and help model possible results is an ERP capability executives find invaluable.

How Does an ERP System Work?

ERP systems work by using a defined, standard data structure. Information entered by one department is immediately available to authorized users across the business. This uniform structure helps keep everyone on the same page. For example, say a local food distribution chain has multiple locations that often share stock and personnel. As quality, sales and employee data from these sites is fed into the ERP system, it’s formatted to indicate which location it comes from.

Data is then woven into business processes and workflows across departments. Leaders can see if one location is doing significantly better at avoiding spoilage than a sister site a few towns over and work to figure out why, while operations can make sure staffing levels align with traffic patterns. Finance can compare sales to rents to help executives decide whether to consolidate.

ERP systems deliver the most value when a company has modules for each major business function and ensures timely, accurate data entry. And, the more stakeholders have access, the better.

When a company uses business systems from multiple vendors, integrations are generally possible to make data automatically flow into the ERP. This data can then be used throughout the ERP instance to benefit any process or workflow.

How Can ERP Improve or Help a Business?

ERP enables companies to identify areas of the business with room for improvement or opportunities for expansion. User uptake is key: The more employees with access, the more likely teams will spot problems, whether a spike in demand for a certain product, late shipments from a supplier or an impending cash flow crunch. Employees can then proactively mitigate the issue to the extent possible.

Executives are generally focused on outcomes—using information to achieve objectives, like increasing efficiency, reducing costs and responding to changing consumer needs or market conditions.

For business units, ERP software can automate many error-prone tasks, like account reconciliations, customer billing and order processing, and provide the information teams need to operate more efficiently.

But the real beauty of ERP is that it can give both a 10,000-foot view of the company's health and detailed insights into a specific process or KPI by not only storing and organizing data, but identifying patterns and flagging anomalies that require investigation.

Other business upsides:

Access to data from anywhere: Employees no longer need to shuffle through piles of papers or files scattered across a desktop. With cloud-based ERP, a warehouse manager can log in from a mobile device while on the shop floor, or a salesperson can check inventory while at a customer site.

Information is always up-to-date: Because the ERP system is continually receiving information from various departments, it's updated immediately as inventory is pulled, a payment is posted or emails are sent to customers. This provides a major advantage because decision-makers are basing their choices on up-to-the-minute data.

Business decisions based on the same data: With a common database, all decision-makers are on the same page. There are no duplicate or conflicting sources of information, and companies have the ability schedule and distribute dynamic reports automatically. Need more depth? Underlying data can be accessed simply by clicking the report.

Who Uses ERP?

Companies across every industry, with diverse business models, have realized the benefits that come with ERP. Flexible solutions with extensive functionality can cater to a wide variety of organizations and requirements. Industries that count on ERP to run their businesses include:

- Advertising and digital media
- Apparel, footwear and accessories
- Campus stores
- Consulting
- Education
- Energy
- Financial services
- Food and beverage
- Health and beauty
- Healthcare and life sciences
- IT services
- Manufacturing
- Media and publishing
- Nonprofit
- Professional services
- Restaurants and hospitality
- Retail
- Software and technology
- Transportation and logistics
- Wholesale distribution

Roles & Users

Within those organizations, a number of job functions benefit from ERP, including but not limited to:

- **Finance/accounting:** The accounting team is often the first adopter. This group will track and report on all transactions and other financial information in the system, including accounts payable (AP), accounts receivable (AR) and payroll. With ERP, financial planning and analysis (FP&A) experts—whether a separate role or part of the accounting department—can turn comprehensive financial data into forecasts and reports on revenue, expenses and cash flow.
- **Supply chain:** Employees focused on operations, a group that includes purchasing agents, inventory planners, warehouse managers and senior supply chain leaders, rely on the ERP system to ensure a smooth and continuous flow of goods from supplier to customer. They count on accurate, detailed

information provided by the system to optimize inventory levels, prioritize orders, maximize on-time shipments, avoid supply chain disruptions and identify inefficient processes.

- **Sales and marketing:** An ERP solution can increase the productivity of and drive better results for your sales team by automating lead management and monitoring the interactions prospects have with your company. Reps can document discussions and change the status of prospects as they move through the sales funnel. Using those same records, marketing can automate and manage outreach across all channels, from email to display ads to social media, and measure the effectiveness of those messages and channels to better allocate its budget.
- **Human resources:** The HR department tracks all employee information and broader workforce trends in the ERP. It can quickly find contact information, compensation and benefits details and other documents for each employee. HR can also monitor metrics like retention by department, average pay by title, promotion rate and other metrics to better allocate its own staff and assist line-of-business managers.

When You Need ERP

- While ERP software was initially designed for enterprises—as the name indicates—today's cloud-based software-as-a-service (SaaS) ERP offerings have lowered barriers to entry and helped countless emerging and midsize companies increase their efficiency, visibility and, in turn, profitability.
- So how do you know if ERP is for you?
- All companies should regularly review their current technology and ask: Is our technology helping—or holding us back? When outdated or inadequate systems introduce inefficiencies, muddy the data waters or can't support changes the business wants to make, it's time to look for a new solution.
- Other signs it's time for a change: Inaccurate data, a lack of integration among systems, high error rates and over-reliance on email and spreadsheets. Although there are costs that come with purchasing and deploying ERP software, it often delivers a quick return on investment. And, there's help available for those looking to build a business case.

12 Benefits of ERP Systems

Today's ERP solutions have rich feature sets that bring countless benefits to businesses. While what an individual firm sees as the greatest value of this technology will vary, here are key universal advantages ERP delivers:

1. Cost savings: Perhaps the biggest value proposition of ERP systems is they can save your organization money in a number of ways. By automating many simple, repetitive tasks, you minimize errors and the need to add employees at the same rate as business growth. Cross-company visibility makes it easier to spot inefficiencies that drive up costs and leads to better deployment of all resources, from labor to inventory to equipment. And with cloud ERP, companies may quickly see incremental value from the software, over and above what they're spending.

2. Workflow visibility: With all workflows and information in one place, employees with access to the system can see the status of projects and the performance of different business functions relevant to their jobs. This visibility may be particularly valuable to managers and leaders, and it's far faster and easier than searching for the right documents and constantly asking colleagues for updates.

3. Reporting/analytics: Data is useful only if companies can analyze and understand it, and an ERP helps with that. Leading solutions have impressive reporting and analytics tools that allow users to not only track KPIs, but display any metrics or comparisons they can dream up. Since an ERP is all-encompassing, it can help a business understand how a change or problem with a process in one department affects the rest of the company.

4. Business insights/intelligence: Because ERPs can access data from across the company, these systems can uncover impactful trends and provide extensive business insights. This leads to better decision-making by organizational leaders who now have easy access to all relevant data.

5. Regulatory compliance & data security: Financial reporting standards and governmental and industry-specific data security regulations change frequently, and an ERP can help your company stay safe and compliant. An ERP provides an audit trail by tracking the lifecycle of each transaction, including adherence to required approval workflows. Businesses may also reduce the chance of errors and related compliance snafus

with automation. ERP software provides financial reports that comply with standards and regulations, and SaaS applications are well-equipped to help companies with PCI-DSS compliance.

6. Risk management: ERP technology reduces risk in a few ways. Granular access control and defined approval workflows can strengthen financial controls and reduce fraud. Additionally, more-accurate data heads off mistakes that could lead to lost sales or fines. And finally, the ability to see the status of the entire operation enables employees to quickly handle risks posed by business disruptions.

7. Data security: ERP providers understand that your system houses critical, sensitive data and take necessary steps to ensure it is secure. This diligence is more important than ever as the volume and scale of cyberattacks increase. Cloud ERP software, in particular, uses cutting-edge security protocols to ensure your company doesn't fall victim to a damaging attack.

8. Collaboration: Employees are most effective when they work together. ERP solutions make it easy to share information—like purchase orders, contracts and customer-support records—among teams. It knocks down walls between departments by giving employees appropriate access to data on related business functions.

9. Scalability: The right ERP system will be scalable and flexible enough to meet your company's needs today and for the foreseeable future. Cloud systems in particular adapt to minor and major operational changes even as the amount of data the organization captures and demand for access increase.

10. Flexibility: While ERP software helps businesses follow best practices, it also offers the flexibility to support unique processes and objectives. The system gives administrators the ability to build out company-specific workflows and create automatic reports important to different departments and executives. An ERP enhances your organization's innovation and creativity.

11. Customization: While most companies find that modern ERPs support their businesses "out of the box," some firms need to add to the extensive built-in functionality. If you have a lot of specialized processes, look for an extensible system that allows your integrator or IT staff to write code that adds needed features, or that can integrate with homegrown or legacy solutions. However, before going the custom route, take a close look at

your processes—the prebuilt functionality and configurations modern ERP solutions support are based on best practices gathered from thousands of companies. Aim to minimize customizations.

12. Customer & partner management: An ERP can strengthen a company's partner and customer relationships. It can provide insights on suppliers, shipping carriers and service providers, with the cloud enabling even better, more convenient information exchange. When it comes to customers, the solution can track survey responses, support tickets, returns and more so the organization can keep its finger on the pulse of customer satisfaction.

6 Disadvantages of ERP Systems

Despite all the value ERP brings, there are challenges businesses may encounter. Many of these can be avoided by preparation and choosing the right supplier partner.

1. System cost: Because they were expensive to purchase, implement and maintain, early ERP systems were accessible only to large companies. However, that hasn't been the case for two-plus decades. While ERPs still require a time and financial investment, the technology has become much more affordable thanks to both SaaS systems that charge a recurring fee and more solutions designed for small and midsize businesses entering the market. Organizations can use tools to calculate estimated savings after one and three years, for instance, to find out when returns will surpass costs.

2. Need for training: Like any new tech, ERP has a learning curve. Anyone who will use the software—that is, ideally, most or all of your employees—requires some level of training. Although there may be resistance at first, that should fade away as people realize how much the technology will help them. Newer systems that receive frequent updates are more intuitive and user-friendly, reducing training requirements and increasing adoption.

3. Data conversion costs: When moving to a new ERP, you may need to convert some data into a format that's compatible with the new platform. This can lead to unexpected costs and delays, so review your databases, and work with your IT team or an integration partner to identify potential data compatibility issues early on.

4. Complexity: An ERP system is loaded with features, and that can be daunting to your workforce. But the software available today is far easier to use than legacy systems because vendors have focused on improving the user experience. Additionally, employees need access to only the modules and dashboards required for their jobs, which can make it more approachable. Thorough training should temper concerns about complexity.

5. Maintenance: In the past, maintenance was a large expense that deterred lower-revenue businesses from adopting ERP. Not only did a company need an IT staff to handle patches, security and required system upgrades, it often had to pay the vendor or a third-party service provider for its expertise. This is less of a concern with a SaaS system because the provider takes care of all maintenance and regularly moves all customers to the latest version—and it's all built into the subscription price. Companies concerned about maintenance should thoroughly vet a potential supplier to ensure it offers a true vendor-managed SaaS system.

6. Doesn't solve process and policy issues: If you have error-prone or inefficient processes, an ERP won't necessarily fix them, even though it may increase accuracy. It *can*, however, uncover problems in your operations and help you brainstorm better ways to do business. The same goes for policies that hold the organization back—it's up to you to adjust those and then configure the system to support better ways of doing business.

5 Key Features of ERP systems

There are a few fundamental features that make an ERP system an ERP system and distinguish it from other types of software. Those include:

1. Common database: Many of an ERP's advantages stem from a common database that allows organizations to centralize information from numerous departments. This single source of data eliminates the need to manually merge separate databases, each controlled by the business functions they serve. A common database enables a consistent, cross-functional view of the company.

2. Consistent UX/UI: Across departments and roles, everyone uses the same user interface (UI) and has a similar user experience (UX) with an ERP. Modules for inventory management, HR and finance all have the same look and feel and shared functionality. This increases the software's adoption rate and can make it easier for staff to move between departments. A consistent UX and UI also result in efficiency gains because users can quickly find and understand information from all corners of the business.

3. Business process integration: An ERP must be able to support and integrate the processes that make your business successful, whether related to accounting, supply chain or marketing. The right platform will have the ability to unify a diverse set of processes—connecting workflows that play crucial roles in the company's success boosts productivity and visibility, and that translates to lower costs.

4. Automation: Another basic feature of ERP software is the ability to automate repetitive tasks like payroll, invoicing, order processing and reporting. This reduces manual, and sometimes duplicative, data entry, saving time and minimizing errors. Automation frees up your staff to focus on value-added work that takes advantage of their special knowledge and skills.

5. Data analysis: One of the most valuable aspects of an ERP is that it breaks down information silos. When you can mix and match data from just about any part of your business into insightful reports, you uncover areas that are performing exceptionally well *and* those that are failing to meet expectations. Leaders can analyze problems and get to work resolving them right away.

Types of ERP Deployment Models

Various ERP deployment models address the needs of different organizations. Here's an explanation of how each works and key differences:

On-premises ERP: With an on-premises system, the business runs the software on servers it owns and is responsible for security, maintenance, upgrades and other fixes. Upkeep usually requires in-house IT staffers with the required expertise. For many years, on-premises ERP was the only option, but the popularity of this deployment model has declined rapidly in recent years, and market-watcher IDC predicts continued declines (see chart, below).

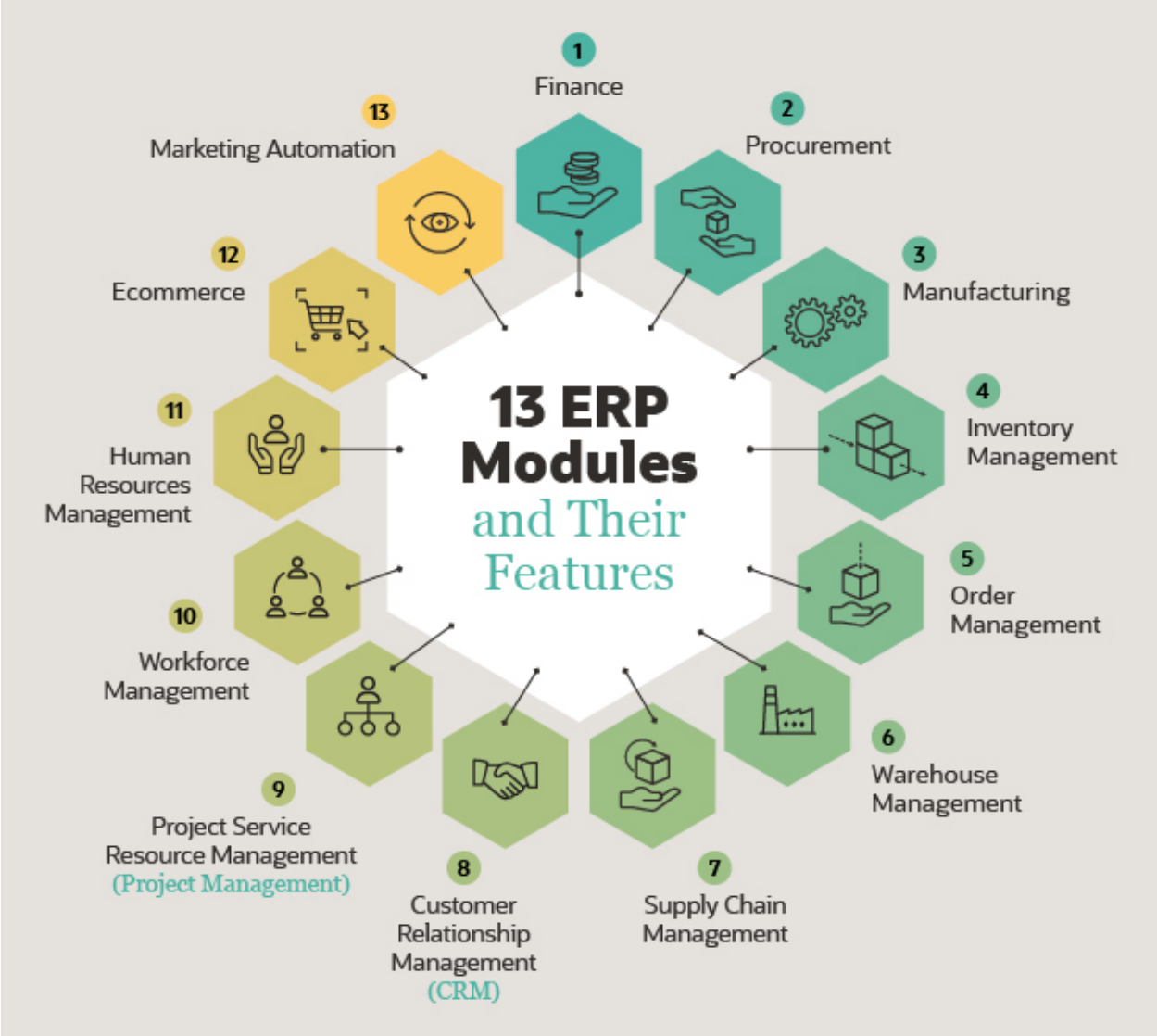
Cloud-based ERP: Cloud-based ERP runs on remote servers managed by a third party. Users typically access a cloud ERP through a web browser, giving them greater flexibility—they can dig into information and reports from anywhere with an internet connection. There are multiple deployment options for cloud ERP, including single-tenant and multi-tenant.

A **single-tenant** solution is a separate instance of the ERP used by just one company that doesn't share server space. This setup can give the client greater control over the software and allow for more customizations, but it also creates more work for the business. With a **multi-tenant** solution, a number of organizations use the same software instance and hardware. Most SaaS ERP solutions are multi-tenant, with the software vendor handling all updates and upgrades and regularly moving customers to the latest version. This reduces the need for an in-house IT team and ensures that the company always has the most up-to-date, secure instance of the software.

Hybrid ERP: Hybrid ERP combines elements of on-premises and cloud deployments. One hybrid approach is two-tier ERP, where a corporation keeps its on-premises ERP in place at headquarters but employs cloud systems for subsidiaries or certain regional offices. These cloud solutions are then integrated with the on-premises system. Other companies may turn to cloud solutions for certain business needs while sticking with their on-premises systems for other functions. Either way, the cloud systems must be linked to the on-premises platform to ensure a steady flow of information—often easier said than done.

Open-source ERP: Like other open-source applications, open-source ERP is an inexpensive, and sometimes free, alternative that's suitable for some companies. Many open-source ERP providers allow businesses to download their software for free and charge a low annual fee only if the customer wants cloud access. These solutions have improved, with more modern web-based interfaces and a growing number of modules, but companies need to understand what they're taking on with an open-source ERP. Support from the provider will be minimal, and configurations and system improvements tend to fall on the client. That means you need technical staff with a deep knowledge of how to develop and configure the software.

ERP Modules



An ERP comprises a number of different modules—bundles of features tailored for various aspects of the business, including back- and front-office roles. Here's a quick breakdown of the most widely used ERP modules.

Finance: A finance module, the foundation of just about every ERP system, manages the general ledger and all financial data. It tracks every transaction, including accounts payable (AP) and accounts receivable (AR), and handles reconciliations and financial reporting.

Procurement: The procurement module manages purchasing, whether raw materials or finished goods. It can automate requests for quotes and purchase orders and, when linked to demand planning, minimize overbuying and underbuying.

Manufacturing: Manufacturing can be complicated, and this module helps companies coordinate all the steps that go into making products. The module can ensure production is in line with demand and monitor the number of in-progress and finished items.

Inventory management: An inventory management module shows current inventory levels down to the SKU level and updates those numbers in real time. It also measures key inventory-related metrics. Any products-based company needs this module to optimize stock on-hand based on current and forecasted demand.

Order management: This application monitors and prioritizes customer orders from all channels as they come in and tracks their progress through delivery. An order management module can speed fulfillment and delivery times and improve the customer experience.

Warehouse management: A warehouse management module directs warehouse activities like receiving, picking, packing and shipping. It can generate time and cost savings in the warehouse by identifying more efficient ways to execute these tasks.

Customer relationship management (CRM): CRM is a popular module for businesses in a wide range of industries. It tracks all communications with clients, assists with lead management and can enhance customer service and boost sales.

Professional services automation (PSA): Services businesses often utilize a professional services automation (PSA) module to plan and track projects, including the time and resources spent on them. It can simplify client billing and encourage collaboration among staff members working on a project.

Workforce management (WFM): A workforce management (WFM) module keeps track of attendance and hours worked, and some can also manage payroll. This tool can record absenteeism and productivity by department, team and individual employee.

Human resources management (HRM): A human resources management (HRM) or human capital management (HCM) module version of a WFM module. It keeps employee records with detailed information, like available PTO and performance reviews, and can tease out workforce trends in various departments or demographics.

Ecommerce: An ecommerce module allows retailers and brands to manage the back- and front-ends of their online stores. They can change the site look and feel and add and update product pages with this application.

Marketing automation: This module manages marketing efforts across all digital channels—email, web, social—and enables organizations to optimize and personalize their messaging. A marketing automation tool can boost leads, sales and customer loyalty.