



LESSON PREVIEW

Enterprise Resource Planning

Large organizations often incorporate software systems to manage various activities, including human resources, financial management, inventory control, manufacturing, customer relationships, transaction processing, and project management. In a big business, no part of the business works in a vacuum. Each is connected to all the others in various ways. And, while each of these systems does a great job in its specific area, in order for a business to succeed and prosper, it must be able to make use of all the interconnections.

Using those interconnections wisely is how the business will continue to grow and succeed. This is where enterprise resource planning (ERP) software comes in. ERP is used to manage all these activities by linking them together and creating a way to exchange data between all the areas of an organization.

After completing this section, you will be able to:

- Describe what an enterprise resource planning (ERP) system is.
- Describe the use of ERP modules in business.
- Describe how businesses use ERP systems to increase efficiency and value.
- Describe the drawbacks of using ERP system software.
- Explain why most ERP systems are Cloud based.
- Explain how ERP systems allow managers to combine the functions of a business to maximize efficiencies.
- Explain how financial management system software interacts with ERP.
- Explain how accounting system software allows managers to be more efficient.
- Explain how human resource management software interacts with ERP.
- Describe how computer-aided design and manufacturing software interacts with ERP.
- Explain how transaction processing system software interacts with ERP.
- Explain how project management system software interacts with ERP.
- Explain how customer relationship system software interacts with ERP.



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What Is an Enterprise Resource Planning System?

Enterprise resource planning (ERP) is software that businesses use to manage activities in both the internal and external operational environment. The goals of ERP systems are to eliminate the duplication of data, increase data integrity, and enable more structured and logical decision making. Essentially, ERP systems provide an integration hub that links members of an organization and connects processes and various technologies across an organization.



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How ERP Modules Are Used in Business

A software module is an element of a computer program that is intended for a specific task. Individual **modules** are integrated with the ERP system, thus allowing for a single source for organizational data retrieval and analysis.

A module approach allows businesses to acquire specific modules that are relevant to its operations. It can add or delete modules as market conditions change.



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How Businesses Use ERP Systems to Increase Efficiency and Value

ERP systems help organizations improve operational efficiency in the following ways:

- Centralized database: ERP systems are used to consolidate data in a central location for access and retrieval, which cuts down on data redundancy and access time.
- Access to data: Most ERP systems are designed to be user friendly and provide upper-management to lower-level employees the ability to access and interpret data.
- Customizable: Organizations can customize the ERP system to meet specific requirements and objectives, creating customized reports and output, leading to more informed decision making.



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Drawbacks of Using ERP Software in Business

While ERP systems offer many benefits, there are some drawbacks associated with implementing these systems, including:

- Cost
- Learning curve
- Maintenance costs



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Why Most ERP Systems Are Cloud Based

ERP systems are offered in on-premise and Cloud-based options. Cloud-based ERP systems are stored and maintained offsite and accessed via the Internet. Cloud-based ERP systems are a form of **Software as a Service (SaaS)**, which permits users to access software running on collective resources. This allows organizations to access data and reports from remote locations at any hour of the day. They may also be cheaper than on-premise options and there is less IT infrastructure expense, lower maintenance costs, and reduced IT labor expense.



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How ERP Systems Allow Managers to Combine Various Functions

ERP systems facilitate informed business decisions due to the integration of data. They allow managers to view reports that are generated from across the organization. Various business software applications can be integrated with an ERP system, including:

- Customer relationship management (CRM)
- Business intelligence (BI)
- E-commerce
- Project management



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How Financial Management Systems Interact with ERP

Financial management systems are designed to create, store, and report financial transactions. ERP systems can be integrated with financial management systems to provide centralized access and management of financial data. The benefits of this type of integration include:

- Speed
- Visibility
- Structure
- Reporting



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How Accounting Systems Interact with ERP

Accounting system software is designed to handle a variety of financial calculations, including accounts receivable and payable, billing, and payroll as well as payment processing, ledger journaling, expenses, and purchase orders. Integration with ERP allows organizations to track other resources, including:

- **Tangible assets:** A tangible asset has a determined value and is usually in a physical form. Tangible assets include land, equipment, and inventory.
- **Intangible assets:** An intangible asset is not physical in nature and has a theorized value. Intangible assets include goodwill, brand equity, intellectual property, patents, and trademarks.
- **Human resources:** Human resources include all the employees within an organization.



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How Human Resource Management Software Interacts with ERP

Human resource management (HRM) is the area of the organization that oversees the recruitment, hiring, training, compensation, and establishment of personnel-related policies of an organization. An HRM module in an ERP system provides a single source of connectivity and data exchange for personnel-related information. Many HR modules may include a centralized employee database, performance evaluation design and collection, timesheet features, and performance tracking. Most HRM modules provide a structured dashboard that provides information to managers and includes employee absences or leaves, task monitoring, compensation, and performance review status.



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How Computer-Aided Design and Manufacturing Software Interacts with ERP

Computer-aided design (CAD), also known as **computer-aided design and drafting (CADD)**, is an automated process using software and hardware for the documentation and design of real-world objects. The integration of CAD software with ERP systems benefits manufacturers due to the single source integration and data analysis. ERP software takes data from CAD files and decodes the design and manufacturer specifications into usable information for use throughout the manufacturing process. Processes can be tracked through the whole manufacturing progression, allowing managers to monitor efficiency and the use of materials, machines, and labor as well as the level of completion.



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How Transaction Processing Systems Interact with ERP

Transaction processing systems (TPS) are designed to collect data pertaining to business transactions. The proliferation of e-commerce–based organizations has perpetuated the use of TPS in today's business environment. Integration of TPS with ERP has many advantages to managers, including:

- Time savings
- Reduction in human error
- Cash flow reporting
- Labor cost reduction



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How Project Management Systems Interact with ERP

Project management modules are specifically designed to integrate with an ERP system to support the integration of project data and information. These modules provide a centralized location where data are stored and easily retrieved, allowing management to review planning, management, and analysis of an organization's project, regardless of whether the project is in the planning, development, or monitoring phase.

Integration also allows for projects to be divided into phases, subprojects, and tasks, which can be tracked. Through integration, monitoring and reporting are more efficient due to the single source of data collection and interpretation.



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How Customer Relationship Systems Interact with ERP

Organizations use customer relationship management (CRM) systems to assist in the management of the critical relationships with customers, including the marketing, sales, and service areas of the organization. CRM provides insights into customer satisfaction and how best to retain customers.

Typically, businesses purchase and deploy ERP and CRM systems separately. However, if a business's ERP and CRM systems maintain their own databases, these databases normally must be regularly synchronized, which can cause gaps in data alignment and lead to redundant and misinformed data. Businesses that utilize integrated CRM and ERP systems mitigate the probability of these issues by using a shared database, resulting in automatic updates and instantaneous data visibility.



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