Enterprise resource planning

**Enterprise resource planning** (**ERP**) is a business management software—usually a suite of integrated applications—that a company can use to collect, store, manage and interpret data from many business activities, including:-

* Product planning, cost and development(Production Department)
* Manufacturing or service delivery(Manufacture Department)
* **Marketing** and sales (Sales Department)
* **Inventory management**
* Shipping and **payment**

ERP provides an integrated view of core business processes, often in real-time, using common databases maintained by a database management system. ERP systems track business resources—cash, raw materials, production capacity—and the status of business commitments: orders, purchase orders, and payroll. The applications that make up the system share data across the various departments (manufacturing, purchasing, sales, accounting, etc.) that provide the data. ERP facilitates information flow between all business functions, and manages connections to outside stakeholders.

Enterprise system software is a multi-billion dollar industry that produces components that support a variety of business functions. IT investments have become the largest category of capital expenditure in United States-based businesses over the past decade. Though early ERP systems focused on large enterprises, smaller enterprises increasingly use ERP systems.

The ERP system is considered a vital organizational tool because it integrates varied organizational systems and facilitates error-free transactions and production. However, ERP system development is different from traditional systems development. ERP systems run on a variety of [computer hardware](http://en.wikipedia.org/wiki/Computer_hardware) and [network](http://en.wikipedia.org/wiki/Computer_network) configurations, typically using a [database](http://en.wikipedia.org/wiki/Database) as an [information repository](http://en.wikipedia.org/wiki/Information_repository).

## History

### Origin of "ERP"

In 1990, [Gartner Group](http://en.wikipedia.org/wiki/Gartner_Group) first used the [acronym](http://en.wikipedia.org/wiki/Acronym_and_initialism) ERP[[6]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-6) as an extension of [material requirements planning](http://en.wikipedia.org/wiki/Material_requirements_planning) (MRP), later [manufacturing resource planning](http://en.wikipedia.org/wiki/Manufacturing_resource_planning)[[7]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-7)[[8]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-8) and [computer-integrated manufacturing](http://en.wikipedia.org/wiki/Computer-integrated_manufacturing). Without replacing these terms, ERP came to represent a larger whole that reflects the evolution of application integration beyond manufacturing.[[9]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-9)

Not all ERP packages developed from a manufacturing core. Vendors variously began with accounting, maintenance, and human resources. By the mid–1990s ERP systems addressed all core enterprise functions. Governments and non–profit organizations also began to use ERP systems.

### Expansion

ERP systems experienced rapid growth in the 1990s, because the [year 2000 problem](http://en.wikipedia.org/wiki/Year_2000_problem) and introduction of the [euro](http://en.wikipedia.org/wiki/Euro) disrupted legacy systems. Many companies took the opportunity to replace their old systems with ERP.

ERP systems initially focused on automating [*back office*](http://en.wikipedia.org/wiki/Back_office) *functions* that did not directly affect [customers](http://en.wikipedia.org/wiki/Customer) and the general public. [*Front office*](http://en.wikipedia.org/wiki/Front_office) *functions*, such as customer relationship management (CRM), dealt directly with **customers**, or [e–business](http://en.wikipedia.org/wiki/Electronic_business) systems such as e–commerce, e–government, e–telecom, and e–**finance**—or [supplier relationship management](http://en.wikipedia.org/wiki/Supply_chain_management) (SRM) became integrated later, when the Internet simplified communicating with external parties.[[*citation needed*](http://en.wikipedia.org/wiki/Wikipedia:Citation_needed)]

"ERP II" was coined in 2000 in an article by Gartner Publications entitled *ERP Is Dead — Long Live ERP II*.[[12]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-12) It describes web–based software that provides real–time access to ERP systems to employees and partners (such as suppliers and customers). The ERP II role expands traditional ERP resource optimization and transaction processing. Rather than just manage buying, selling, etc.—ERP II leverages information in the resources under its management to help the enterprise collaborate with other enterprises.[[13]](http://en.wikipedia.org/wiki/Enterprise_resource_planning#cite_note-13) ERP II is **more** flexible than the first generation ERP. Rather than confine ERP system capabilities within the organization, it goes beyond the corporate walls to interact with other systems. *Enterprise application suite* is an alternate name for such systems.

Developers now make more effort to integrate mobile devices with the ERP system. ERP vendors are extending ERP to these devices, along with other business applications. Technical stakes of modern ERP concern integration—hardware, applications, networking, supply chains. ERP now covers more functions and roles—including decision making, stakeholders' relationships, standardization, transparency, globalization, etc.

## Characteristics

ERP (Enterprise Resource Planning) systems typically include the following characteristics:

* An integrated system that operates in (or near) real time without relying on periodic updates[[*citation needed*](http://en.wikipedia.org/wiki/Wikipedia:Citation_needed)]
* A common **database** that supports all applications
* A consistent look and feel across modules
* Installation of the system with elaborate application/data integration by the Information Technology (IT) department, provided the implementation is not done in small steps

## Functional areas

An ERP system covers the following common functional areas. In many ERP systems these are called and grouped together as *ERP modules*:

* [Financial accounting](http://en.wikipedia.org/wiki/Financial_accounting): [General ledger](http://en.wikipedia.org/wiki/General_ledger), [fixed asset](http://en.wikipedia.org/wiki/Fixed_asset), [payables](http://en.wikipedia.org/wiki/Accounts_payable) including vouchering, matching and payment, [receivables](http://en.wikipedia.org/wiki/Accounts_receivable) cash application and collections, [cash management](http://en.wikipedia.org/wiki/Cash_management), [financial consolidation](http://en.wikipedia.org/wiki/Consolidation_%28business%29)
* [Management accounting](http://en.wikipedia.org/wiki/Management_accounting): [Budgeting](http://en.wikipedia.org/wiki/Budgeting), costing, [cost management](http://en.wikipedia.org/wiki/Cost_management), [activity based costing](http://en.wikipedia.org/wiki/Activity_based_costing)
* [Human resources](http://en.wikipedia.org/wiki/Human_resources): [Recruiting](http://en.wikipedia.org/wiki/Recruitment), [training](http://en.wikipedia.org/wiki/Training), [rostering](http://en.wikipedia.org/wiki/Schedule_%28workplace%29), [payroll](http://en.wikipedia.org/wiki/Payroll), [benefits](http://en.wikipedia.org/wiki/Employee_benefit), [401K](http://en.wikipedia.org/wiki/401K), [diversity management](http://en.wikipedia.org/wiki/Diversity_%28business%29), [retirement](http://en.wikipedia.org/wiki/Retirement), [separation](http://en.wikipedia.org/wiki/Employee_exit_management)
* Manufacturing: [Engineering](http://en.wikipedia.org/wiki/Engineering), [bill of materials](http://en.wikipedia.org/wiki/Bill_of_materials), work orders, scheduling, capacity, [workflow management](http://en.wikipedia.org/wiki/Workflow_management_system), [quality control](http://en.wikipedia.org/wiki/Quality_control), manufacturing process, manufacturing projects, manufacturing flow, [product life cycle management](http://en.wikipedia.org/wiki/Product_life_cycle_management)
* Order Processing: [Order to cash](http://en.wikipedia.org/wiki/Order_to_cash), order entry, **credit checking**, pricing, available to promise, inventory, shipping, sales analysis and reporting, sales commissioning.
* Supply chain management: Supply chain planning, supplier scheduling, [product configurator](http://en.wikipedia.org/wiki/Product_configurator), [order to cash](http://en.wikipedia.org/wiki/Order_to_cash), [purchasing](http://en.wikipedia.org/wiki/Purchasing), [inventory](http://en.wikipedia.org/wiki/Inventory), claim processing, warehousing (receiving, putaway, picking and packing).
* [Project management](http://en.wikipedia.org/wiki/Project_management): Project planning, resource planning, project costing, work breakdown structure, [billing](http://en.wikipedia.org/wiki/Invoice), time and expense, performance units, activity management
* Customer relationship management: Sales and marketing, commissions, service, customer contact, [call center](http://en.wikipedia.org/wiki/Call_center) support - CRM systems are not always considered part of ERP systems but rather Business Support systems (BSS).
* Data services : Various "self–service" interfaces for customers, suppliers and/or employees

## Components

* Transactional database
* Management portal/[dashboard](http://en.wikipedia.org/wiki/Dashboard_%28business%29)
* [Business intelligence](http://en.wikipedia.org/wiki/Business_intelligence) system
* Customizable reporting
* Resource planning and [scheduling](http://en.wikipedia.org/wiki/Schedule_%28workplace%29)
* Analysing the product
* External access via technology such as [web services](http://en.wikipedia.org/wiki/Web_service)
* [Search](http://en.wikipedia.org/wiki/Enterprise_search)
* [Document management](http://en.wikipedia.org/wiki/Document_management)
* Messaging/**chat**/[wiki](http://en.wikipedia.org/wiki/Wiki)
* [Workflow management](http://en.wikipedia.org/wiki/Workflow_management_system)

<http://en.wikipedia.org/wiki/Enterprise_resource_planning>