

ERP ENTERPRISE RESOURCE PLANNING

Enterprise resource planning (ERP) is an industry term for the broad set of activities that help an organization manage its business. An important goal of ERP software is to integrate back office business processes and facilitate the flow of information within an organization so business decisions can be data-driven.

ERP software suites are built to collect and organize data from various levels of an organization and connect business activities across departments. A structured approach to ERP can help a company standardize and automate its business processes and improve the efficiency of operations. In addition to saving time and money, an integrated approach to managing business processes ensures that everyone is working with the same data and watching the same key performance indicators (KPIs).

Organizations tend to realize they need ERP software when they begin outgrowing their business systems, especially when business systems are composed of disparate applications collected over time. As the gap widens between what business software is capable of doing and what business processes need, pain points begin to emerge and this often leads to a search for ERP software capable of integrating work-

flows. There is no one-size-fits-all model for ERP software, and companies have a variety of deployment options.

Types of ERP software: On premises and cloud

Legacy ERP systems tend to be architected as large, complex, homogeneous systems which do not lend themselves easily to a cloud service delivery model. As such, most ERP systems, particularly those from large legacy vendors, are run on premises. Deployment of a new ERP system in-house can involve considerable business process re-engineering, employee retraining and back-end support for database integration, data analytics and ad hoc reporting.

As more companies begin to store data in the cloud, however, ERP vendors are responding with cloud-based services to perform some functions of ERP -- particularly those relied upon by mobile users. Cloud-based ERP modules are built to be loosely coupled, which can reduce the cost and complexity of a deployment. In some cases, companies are using hybrid cloud deployments in which part of the ERP software suite runs on premises and part runs in the cloud.

Some companies are reluctant to put mission-critical systems and applications in the cloud for a variety of reasons, including perceived security risks or loss of data control.

Other companies in highly regulated industries or government agencies may be restricted by where systems and data can be located geographically.

Multi-tiered ERP systems

The most common ERP deployment, either on-premises or cloud-based, is a standard monolithic system from one vendor, generally a large legacy vendor. However, many organizations now run multiple ERP systems under one environment, commonly known as two-tier (or multi-tier) ERP. Reasons for this include geographic differences in the organization, different divisions running different systems or company mergers for which various systems have been brought into one environment.

These deployments often have one large, "Tier 1" ERP that runs across the organization and includes functions that are critical to the organization as a whole, and one or more other ERPs, called Tier 2, that run less critical functions, or ones that are specific to departments.

Key ERP software modules

The ERP software modules that a company selects often depend upon the specific business processes it wants to improve, and also upon whether the company sells products or services. Businesses that sell products often have manufacturing, supply chain and distribution functions that the ERP modules must address. For organizations that sell services, ERP capabilities that support service level agreements (SLAs), field services and sales operations are very important.

In order for an ERP software deployment to be useful, software modules needs to be loosely coupled and integrate easily with other software systems the organization uses. Core modules included in many ERP software products include:

Finance - gathers financial data and generates reports such as ledgers, trail balance data, overall balance sheets and quarterly financial statements.

Human resource management - gathers data and generates reports about such things as employee recruitment, performance reviews, training and professional development,

performance reviews, mediation and exit interviews.

Inventory management - gathers data and generates reports about non-capitalized assets and stock items.

Supply chain management - gathers data and generates reports about materials, information, and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer.

ERP vendors

There are many ERP vendors with a wide variety of functions and on-premises or cloud deployment options.

The most widely deployed legacy platforms are SAP, Oracle and Microsoft Dynamics, all of which have multifunction ERP systems and on-premises and cloud deployment options. Their customers range from large enterprises to small and medium-sized businesses.

Other leading vendors have multifunction systems, including Epicor Software Corp., Infor, IFS World, Sage Software Inc., SYSPRO USA, IQMS and QAD Inc. Leading ERP cloud vendors include NetSuite Inc., Kenandy Inc., Acumatica Inc. and Plex.

Many of the smaller ERP vendors have specialized capabilities for business processes, such as supply chain, financials, engineering, research and development and HR, as well as functions that focus on specific industries like manufacturing, retail, healthcare or public sector.

ERP support

ERP vendors have a variety of support models for ERP systems, depending on licensing contracts with customers.

Support services usually have multiple levels -- from phone support to consulting -- and associated costs, and include services like bug fixes, incident resolution, patches, and updates and upgrade assistance.

Support services are generally handled by the ERP vendors, although there are independent firms that offer third-party support for some vendors' ERP systems

