
Chapter 11

Introduction to Commercial ERP Softwares

LEARNING OBJECTIVES

After reading this chapter, you will be able to understand the key features of following commercial ERP solutions:

- SAP ERP
- Oracle, Peoplesoft, JD EDWARDS
- MS Dynamics NAV/ Axapta
- BAAN
- RAMCO
- QAD

11.1 INTRODUCTION

We have already learnt that ERP solutions are semi-finished products that need to be configured. These products implement business processes and provide a backend database to support these business processes. The processes and the database reflects the industry for which ERP system has been built. For example, an ERP system meant for automotive industry will have different database fields than the one that is built for beverage industry. The processes will also be different for different industries. The ERP solutions for educational institutes will also be different from manufacturing and beverage industry. There are certain ERP softwares that cater to a particular functional unit of an organization, such as human resource management (HRM). These solutions provide complete functionality for HRM. The industries for which ERP solutions are available are shown in [Table 11.1](#). Almost all the industries are supported by, and require an ERP solutions.

Depending on the requirements, a company will pick appropriate ERP solution. We have already learnt about the selection processes and selection team in [Chapter 8](#). The selection team identifies various parameters that are important for their company and one important parameter is always functionality required by the organization. The selection team compares the functionality required by the company and the functionality provided by the ERP solution to pick an appropriate ERP solution. In this chapter, we will highlight features and functionality of major ERP softwares. It is not possible to cover all available ERP solution. Some of the products that we discuss in this chapter are market leaders and some are the representative industry solution. The information provided is mostly obtained from the Web sites of the solution providers that may change over a period of time. A vendor may provide ERP solutions for multiple industries or may just specialize in a particular industry. SAP is a vendor that has ERP solution for automotive industry as well as for oil

and gas industry, whereas Campus Dimensions provides ERP solution only for educational institutes. An ERP solution consists of a database, business processes, configuration tools and reporting tools. They provide graphical user interface (GUI) for conducting transactions. Let us first look at the Indian ERP market and then key features of major ERP solutions.

Table 11.1 Industry-specific ERP Solutions

Manufacturing	Service Industry
<ul style="list-style-type: none"> • Automotive • Consumer goods • Chemicals • High technology • Industrial manufacturing • Oil and gas • Mining 	<ul style="list-style-type: none"> • Banking, Financial Services and Insurance (BFSI) • Travel and transportation • Retail • Media and entertainment • Healthcare • Communications • Aviation • Education and research • Engineering and construction • Fashion and apparel • Food and beverages

11.2 INDIAN MARKET

There are over 200 ERP solutions available in the market across the world. Market share in terms of revenue for the major players is shown in Figure 11.1. SAP is the largest ERP vendor with revenue of US\$16 billion in year 2012. SAP has close to 1,00,000 customers, Oracle and Microsoft are just right behind with 80,000 and 70,000 customers. These numbers are indicative only as each vendor has multiple product offerings and there are no reliable source of information. ERP market is growing and is expected to grow at the rate of 10–20 percent. As shown in Figure 12.1, five major vendors have a share of 80 per cent and the remaining vendors have 20 per cent market share. SAP is the market leader in India and has a market share of about 50 per cent. Ramco is the largest Indian player among small enterprises that has a turnover of US\$40 million, and market share of 10 per cent. Indian ERP market is also growing at the same rate as the global market. The total Indian ERP market is estimated to be about US\$250 million. Since it is not possible to cover all the vendors and their ERP products in this chapter, we will cover only major ERP vendors and their products.

Companies in India are now investing heavily in IT and ERP solutions. Till date, ERP was considered a solution fit for large organizations but now small-and medium-sized enterprises are also investing in ERP systems. ERP market has grown from ₹ 1,495 crore in 2010 to ₹ 1,625 in 2011, at a rate of 9 per cent. Market share of SAP is 42 per cent, Oracle 16 per cent, Microsoft 12 per cent, and 31 per cent of others. SAP continues to be the leader in India. SAP and Oracle are popular with large organization. The Business By Design on cloud by SAP is popular among mid-size organizations. Microsoft products are popular with small to medium organizations.

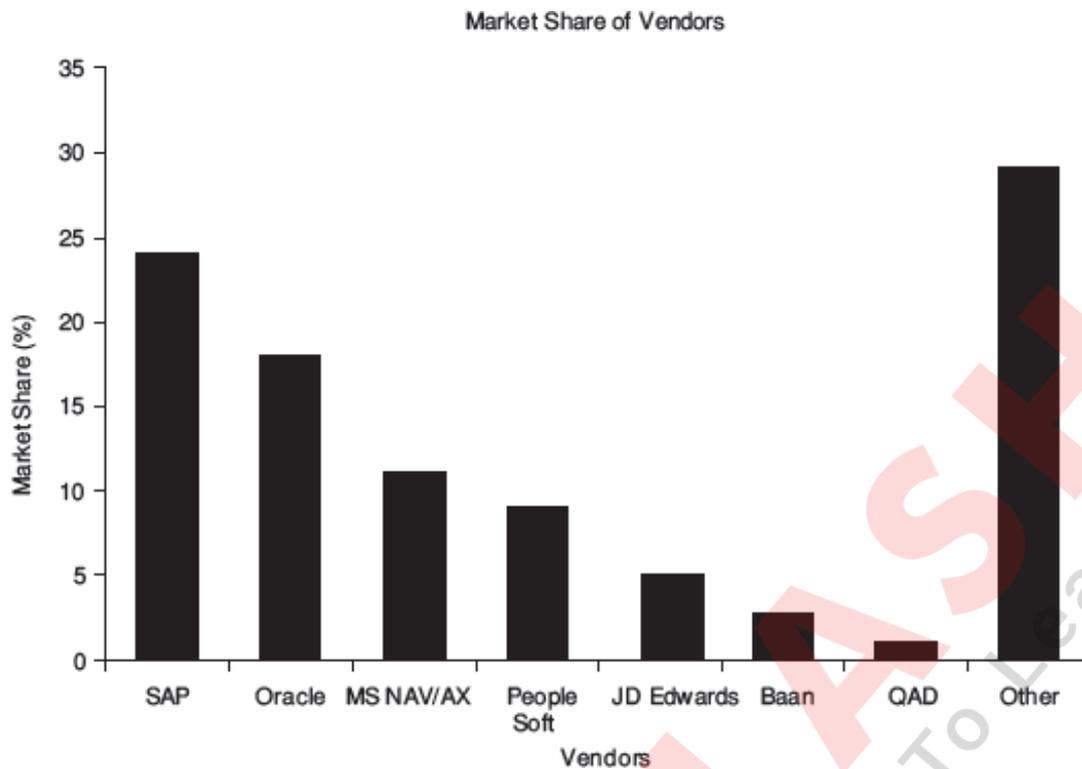


FIGURE 11.1 Market Share of Leading ERP Vendors

Indian government is supporting and promoting e-governance program in India which has also enhanced sales of ERP solutions. In 2001, reports contained a very dismal picture of ERP projects in India. The cost overrun and time overrun were reported close to 200 per cent. We discussed some of the reasons for ERP implementation failures in [Chapter 1](#). The success rate of ERP implementations has gone up considerably since then. The percentage of ERP projects is 17 per cent of the all the IT projects in 2012 which was nine per cent in 2011.

11.3 SAP

SAP AG is the world leader in enterprise software and software-related services in terms of revenue. Its headquarter is in Walldorf, Germany, with locations in more than 130 countries including India and the USA. SAP AG was founded in Germany in 1972. SAP AG has three ERP products:

- *SAP R/3* for large organizations. SAP is an acronym for Systems, Applications, and Products in data processing. This product has now been renamed to SAP ERP.
- *Business By Design* for small and medium enterprises.
- *Business One* for small and micro businesses.

Our discussion is focused on SAP ERP, as this is the flagship ERP product of the company. It supports multi-languages, currencies, financial calendars, financial reporting and tax laws. The present SAP ERP solution is based on client-server architecture (explained in [Section 1.6, Chapter 1](#)). Earlier version of the product was SAP R/2 that was based on mainframe architecture and it is now obsolete. SAP ERP supports more than 25 industries and has been installed in more than 50 countries. SAP ERP is available in as many as 25 languages. SAP ERP supports multiple currencies, tax-laws, fiscal years and

accounting systems. SAP has multiple industry solutions. SAP claims that the best business practices have been implemented in their solutions for each industry. Some of the industries that SAP ERP supports, are the following:

- Aerospace and defence
- Automotive
- Banking
- Chemicals
- Consumer products
- Defence and security
- Engineering, construction and operations
- Healthcare
- High tech
- Higher education and research
- Industrial machinery and components
- Insurance
- Media
- Mill products
- Mining
- Oil and gas
- Professional services
- Public sector
- Retail
- Telecommunications
- Transportation and logistics
- Utilities
- Wholesale distribution

Each of these solutions have different functionality appropriate to the industry. Let us look at the modules that are available in SAP ERP for manufacturing organizations and banking industry. The product SAP ERP for a manufacturing organization has the following modules:

- **Logistics execution processes:** These processes support physical flow of materials. These processes are divided and supported by the following modules:
 - Material management (MM)
 - Sales and distribution (SD)
 - Production planning (PP)
 - Quality management (QM)
 - Plant maintenance (PM)
 - Service management (SM)
- Accounting and finance
 - Financial accounting (FI)

- Controlling (CO)
- Enterprise controlling (EC)
- Fixed asset management (AM)
- Project systems (PS)
- Human resource management
 - Human resource

The 12 modules listed above contain sub-modules to provide complete functionality. For example, FI module has the following sub-modules: General Ledger (GL), Accounts Receivable (AR), Accounts Payable (AP), Legal consolidation (LC) and accounting information system.

These modules provide complete framework for defining accounting system of an organization and carry out transactions. Similarly, other modules also have sub-modules. There are 72 sub-modules in SAP ERP, and there are close to 20,000 tables in SAP ERP to define the data requirements of an organization. SAP ERP can work with Oracle, SQL server, Ingress or Sybase. SAP AG has recently acquired Sybase that has now become preferred database server for SAP ERP. There are 1,000 standard business processes that have been documented and standardized for SAP ERP to reflect industry best practices. SAP ERP can support 2,000 other processes as well. SAP ERP provides login-based access. Every transaction is recorded and logged. Once a transaction has been saved, it cannot be deleted or modified. If a transaction is changed, a new copy is created leaving an audit trail behind. SAP ERP application server can be installed on Windows or Linux and their variants operating systems. SAP ERP application layer has been implemented in ABAP language that is proprietary language of SAP AG and is similar to PL/SQL language. According to each specific industry, the modules and sub-modules change. The modules for banking industry and automotive industry would be entirely different. The modules that we discussed above are core modules for a manufacturing industry. The product SAP ERP for a banking organization has the following modules and sub-modules:

- Financial performance management
- Risk and compliance management
- Sustainability
- Customer service contact centre
- Customer analytics
- Customer information management
- Marketing campaign management and customer segmentation
- Sales force management
- Charging and billing management
- Price optimization
- Loyalty management
- Lease management
- Corporate cash management
- Deposit management
- Loans management

- Collateral management
- Corporate loans
- Accounting and financial close for banking
- Real estate life cycle management
- Currency management and optimization
- Covered bonds
- Payment engine
- Rapid deployment solutions for banking

These modules are entirely different from the modules for a manufacturing organization. ERP is mostly associated with manufacturing because of its roots in manufacturing. But in last 15 years, scenario has completely changed. ERP solutions are available for every industry. You may visit Web site of SAP and look up the modules for different industries. We have listed modules for manufacturing and banking, two very diverse industries, above. It is not possible to go into details of each module. There are many dedicated books that explain SAP and its modules. You may recall that SAP ERP is a semi-finished product that has to be configured as per the functional requirements of the client organization. An organization may purchase license for a limited set of modules and get them configured.

Other systems such as CRM (customer relationship management), SCM (supply chain management), and business intelligence can be integrated to SAP ERP. SAP releases new versions of SAP ERP on a regular intervals to incorporate changes in the regulations and business practices.

Business By Design is a recent cloud-based offering from SAP for medium and small non-manufacturing organization who could be in retail or marketing etc. It is an integrated suite consisting of financials, human resources, sales, procurement, customer service, and supply chain. The modules that it offers are the following:

Financials

- Financial and management accounting
- Cash flow management

Customer relationship management

- Sales
- Service
- Marketing

Human resource management

- Organizational management
- Human resource
- Employee self service

Supply chain management

- Supply chain set up management
- Supply chain planning and control

- Manufacturing, warehousing and logistics

Supplier relationship management

- Sourcing
- Purchasing

Executive management support

- Business performance support

Project management

Compliance management

The discussion on SAP and its products should make it amply clear that a single company may have very diverse offerings in terms of functionality and architecture. One should carefully document requirements of the organization and then look for a matching ERP system.

11.3 ORACLE

Oracle was founded in 1977 and was focused on providing relational database management system. In 1988, Oracle entered ERP market starting with accounting system and eventually building and releasing e-Business suite that consists of ERP, SCM and CRM. Turnover of Oracle Corporation is close to US\$37 billion. Oracle, just like SAP offers industry-specific solutions. Oracle offers ERP solutions for more than 20 industries. These industries are listed below.

- Aerospace and defense
- Automotive
- Chemicals
- Communications
- Consumer goods
- Education and research
- Engineering and construction
- Healthcare
- Public sector
- Retail
- Travel and transportation
- Health sciences
- High technology
- Industrial manufacturing
- Life sciences
- Media and entertainment
- Natural resources
- Oil and gas
- Professional services
- Utilities
- Wholesale distribution

- Financial services

You will notice that Oracle supports almost all the industries that SAP supports except mining, media and insurance. ERP solution for manufacturing has the following modules and sub-modules.

Financials

- General Ledger
- Receivables
- Internet expenses
- Payables
- Assets
- iAssets
- Internet receivables
- Advanced collections
- E-Business tax
- Legal entity configurator
- Financial intelligence
- Web ADI
- Workflow
- Cash management

Distribution

- Procurement contracts
- Sourcing
- Purchasing
- iProcurement
- Landed cost management
- Services procurement
- iSupplier portal
- Procurement intelligence
- Advanced pricing
- Order management
- Shipping execution

Manufacturing and maintenance

- Engineering
- Collaborative planning
- Constraint based

Planning

- Service parts planning
- Bills of material
- Work in process
- Manufacturing execution

Projects

- Project costing
- Project billing
- Project management
- Project resource management
- Project collaboration

System for discrete manufacture

- Project manufacturing
- Quality
- Cost management
- Inventory management
- Enterprise asset management

Sales and service

- Telesales
- Scripting
- Sales
- Quoting
- AR deductions and settlement
- Channel rebates and POS

Management

- Supplier ship and debit
- Service contracts
- Teleservice
- Universal work queue
- Install base

These offerings are close to what SAP ERP offers to manufacturing industry. These modules cover all function of a manufacturing organization. One can compare and contrast the modules and sub-modules of SAP and Oracle ERP with respect to their own requirements and then make a decision on what is more suitable. We have described selection process in [Chapter 8](#). It is essential that an organization understands its requirements and selects the most appropriate ERP solution.

11.4 ORACLE PEOPLESOFT

Peoplesoft was founded in 1987 with a focus on HRM. In 1995, it added solutions specific to academic institutions to its offerings. It also offers ERP solution for manufacturing organizations. But HRM and academic institutes solutions are its flagship solutions. In 2005, PeopleSoft was acquired by Oracle. PeopleSoft is also known for their educational ERP solution. Since we have already looked at modules offered by SAP and Oracle for manufacturing organizations, let us look at the modules of PeopleSoft for academics institutes:

- Academic advertisement

- Campus self service
- Contributors relations
- Hostel management system
- Financial aid
- Gradebook
- Recruiting and admissions
- Student administration
- Student financials
- Student records

PeopleSoft is not the only company providing solution for academic institutes. There are many more vendors such as Innovations Labs that has a solution for academic institutes called Campus Dimensions, Calibre Mindware Programming and eCampus etc. Oracle and SAP also have ERP solutions for universities and academic institutes. These solutions cover all aspects of an academic organization. We can clearly see that modules/functionality provided are industry specific.

11.5 JD EDWARDS

JD Edwards (JDE) was founded in 1977 that was bought by PeopleSoft in 2002. PeopleSoft was then acquired by Oracle and hence JDE has become an Oracle company. The ERP product of JDE is EnterpriseOne and is for mid-size companies. JDE offers complete solution that consists of hardware, middleware, software and services unlike most other ERP solution providers who only sell the software and rely on implementation partner to select appropriate hardware, software and provide services. JDE claims that their ERP has low cost of ownership, requires less training and is a high return on investment (ROI) product.

JDE's ERP is available for the following industries: manufacturing, automotive, chemical, paper and packaging, food and beverages, fashion and apparels, home builders, oil and gas, commercial real estate.

Enterprise One offers the following modules and sub-modules for manufacturing sector:

Financial management

- Accounts payable and receivable
- Fixed asset accounting
- Advanced cost accounting
- Expense management
- Cash management

Capital asset management

- Resource assignment
- Equipment cost analysis
- Condition-based maintenance
- Preventive maintenance
- Work order management
- Real estate management

- Advanced real estate forecasting

Supply chain execution

- Transportation management
- Inventory management
- Warehouse management
- Advanced stock valuation
- Bulk stock inventory
- RFID processor
- EDI

Supply chain planner

- Supply chain business modeller
- Production distribution and planning
- Production scheduling
- Order promising
- Strategic network optimization

Manufacturing

- Manufacturing management
- Product data management
- Shop floor
- Requirements planning
- Quality management
- Engine to order

Mixed mode manufacturing

- Configure to order
- Engineer to order
- Manufacture to stock
- Manufacture to order
- Assembly to order

You can visit the Web site of JDE for further information and modules of other industry solutions. Web site of the vendor is a good source of information. The client list and their testimony also helps in making a decision. In order to get a clear idea if the product is suitable for you and fulfils your requirements, you will have to interact with implementation partners and consultants. Sometimes, multiple sessions may also be required.

11.6 MS DYNAMICS

Microsoft was founded in 1975. Microsoft acquired Great Plains Software, Damgaard, Navision and Solomon Software between 2000–2002. Each of these companies had an ERP product. Microsoft renamed the products as follows:

- Dynamics AX (formerly Axapta)
- Dynamics NAV (formerly Navision)

These products have since evolved and multiple versions of each product have been released. All these product are for small and mid-size organizations. All these products provide the following functionality:

- Financial management
- Supply chain management
- Manufacturing
- Distribution
- Customer relationship management
- Sales and marketing
- Service management
- Human resource management
- Content resource management
- Shop floor control

Dynamics NAV is for small organizations who require at most 500 concurrent users. Dynamics AX is for larger organizations. AX can support as many as 3,500 concurrent users. NAV is very popular among small organizations and AX with middle-sized organizations. Both these solutions are for manufacturing organizations.

11.7 BAAN

The company was founded in 1978 and got into ERP space in 1990s. Its product was known as BAAN that was renamed as SSA ERP Ln when the BAAN got acquired by SSA Global Technologies. SSA got acquired by Infor Global Solutions in 2006 and the ERP solution got renamed to Infor LN. The books and syllabus still use BAAN to refer to Infor LN. Infor LN is for engineering-based industries, including automotive, industrial equipment and machinery, high tech and electronics and aerospace and defence. The modules of Infor LN are the following.

- Global financial management
- Customer relationship management
- Sales and configuration order management
- Enterprise and supply chain planning
- Manufacturing control
- Sourcing and procurement
- Project management
- Quality management
- Service management
- Engineering data management
- Dynamic enterprise modelling

These modules together provide the functionality required by a engineering-based manufacturing firm.

11.8 RAMCO

Ramco was founded in 1999. Its ERP product is OnDemand ERP. Ramco has ERP solution for the following industries: aviation, banking, financial services, insurance (BFSI), energy and utilities, equipment rentals and services, government, infrastructure, logistics,

manufacturing, mining, professional services, and trading

The modules in the ERP system of Ramco for manufacturing organizations are the following:

- Manufacturing
- Supply chain management (SCM)
- Customer relationship management (CRM)
- Project management
- Analytics
- Financial management
- Human capital management (HCM)
- Enterprise asset management (EAM)
- Process control
- Advanced planning and optimization

Ramco has a solution for aviation industry. Its modules are very different from the modules of manufacturing industry.

Let us take a look at the modules in the ERP solution for aviation industry for managing its resources:

- Maintenance planning
- Hangar, shop and engine maintenance
- Reliability and engineering
- Technical records
- Human capital management
- Purchasing
- Inventory
- Warranty
- Maintenance
- Financials
- Third party maintenance
- Sales.

11.9 QAD

QAD was founded in 1979. QAD provides ERP solution for global manufacturing companies specializing in automotive, consumer products, high technology, food and beverage, industrial and life sciences products. The modules of QAD ERP are the following:

- Financials
- Customer management
- Manufacturing
- Supply chain
- Service and support
- Enterprise asset management
- Analytics

CONCLUSION

In this chapter, we learnt about Indian ERP market. We have briefly looked at some of the popular and well-known ERP solutions. SAP is the largest ERP vendor followed by Oracle. There are over 200 ERP vendors across the industries. Some vendors focus on specific industries while many vendors provide solutions for multiple industries. There are global vendors and there are Indian vendors. The important thing is to pick the most appropriate ERP solution.



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