Lesson Proper for Week 17

Enterprise Resource Planning (ERP)

What is ERP?

ERP is an acronym for "enterprise resource planning." Enterprise Resource Planning (ERP) is the most cutting-edge business and information technology (IT) solution available in today's corporate world. Enterprise resource planning (ERP) is a comprehensive software system for managing a business's resources. ERP's was preceded by MRP (material requirements planning) and MRP II (manufacturing resources planning). ERP systems addressed the shortcomings of these earlier systems. Today's enterprise resource planning (ERP) systems integrate planning, inventory management, purchasing, engineering, order entry, production, accounting, and human resources.

Other Definition

ERP software, or enterprise resource planning software, does not live up to its acronym. Forget about planning—it accomplishes little of that—and forego the term resource, which is a slang phrase. However, keep in mind the enterprise component. This is the fundamental goal of ERP. The program aims to connect all departments and functions of a business into an unified computer system capable of meeting the unique needs of each department.

Integration of all Departments

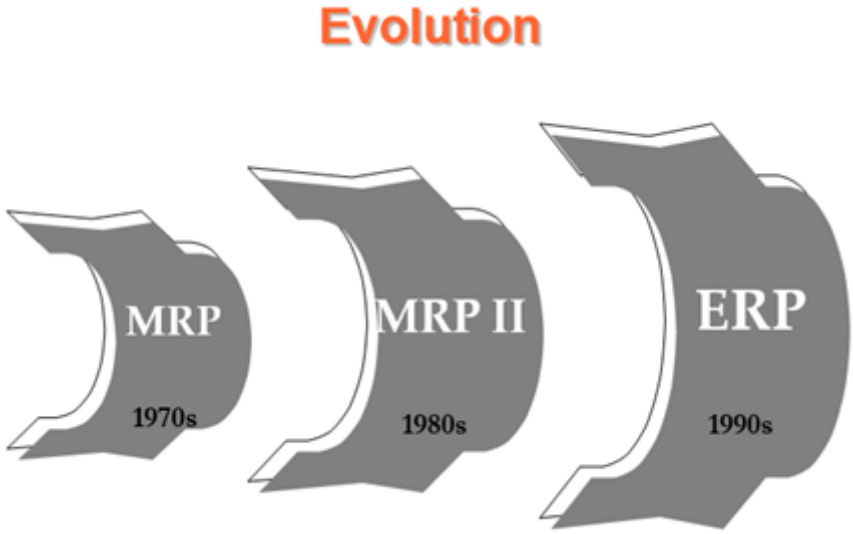
An integrated approach can provide huge dividends if properly implemented. Consider a customer order. When a consumer places an order, it typically travels through the company on paper, being typed and rekeyed into different departments' computer systems. All that inbox time generates delays, missing orders, and blunders.

No one in the organization genuinely understands the order status because the finance department, for example, cannot access the warehouse's computer system to verify if the item has been dispatched. "You'll have to call the warehouse," dissatisfied customers hear.

A single unified software program divided into software modules that substantially match the old standalone systems replaces the old standalone computer systems in finance, HR, production, and warehouse. But now the software is linked so that someone in finance can go into the warehouse software to see if an order has been shipped.

However, most suppliers' software has evolved flexible enough that you can install individual modules without buying the complete package. Many organizations, for example, will only deploy an ERP finance or HR module, leaving the remainder for later.

Evolution of ERP:



Material Requirements Planning (MRP)

Manufacturing Resource Planning (MRP II)

- Is a company wide management system at aiming at lowering costs and inventories, while increasing productivity and customer service.

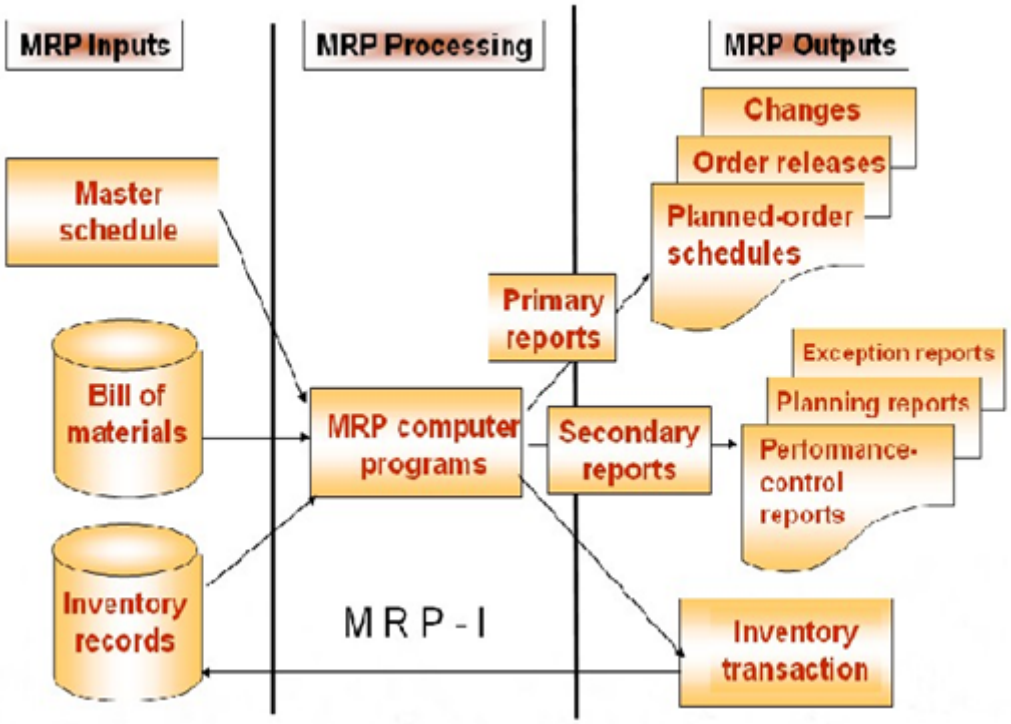
Enterprise Resource Planning (ERP)

MRP was originally a management concept.

ERP is technical subset of MRP II

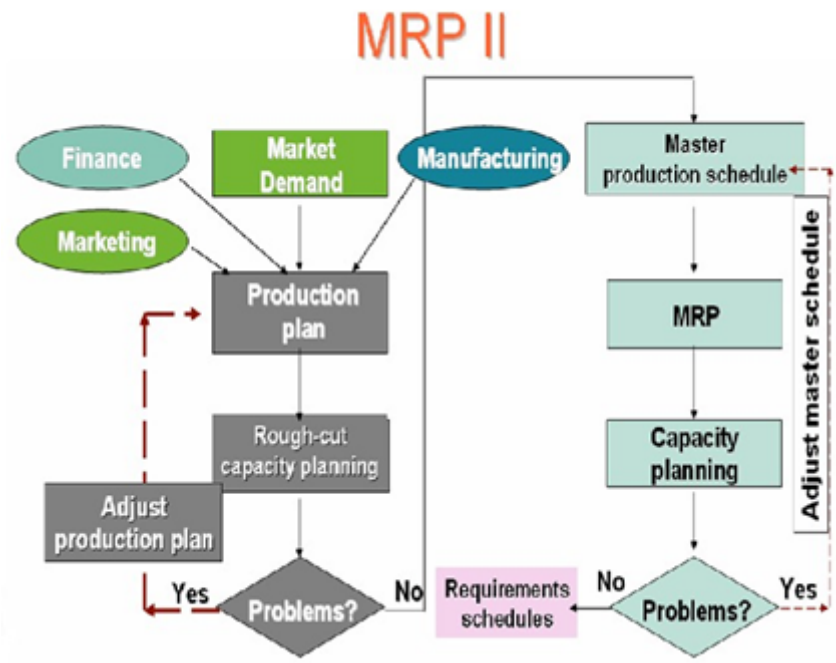
- ERP can be implemented in isolation, the complete benefit can only be gained if the entire reengineering process is followed

Material Requirements Planning (MRP)



Computer-based information system that translates master schedule requirements for end items into time-phased requirements for subassemblies, components, and raw materials.

Manufacturing Resource Planning (MRP II)



Expanded MRP with emphasis placed on integration

[a] Financial planning

[a] Marketing

[a] Engineering

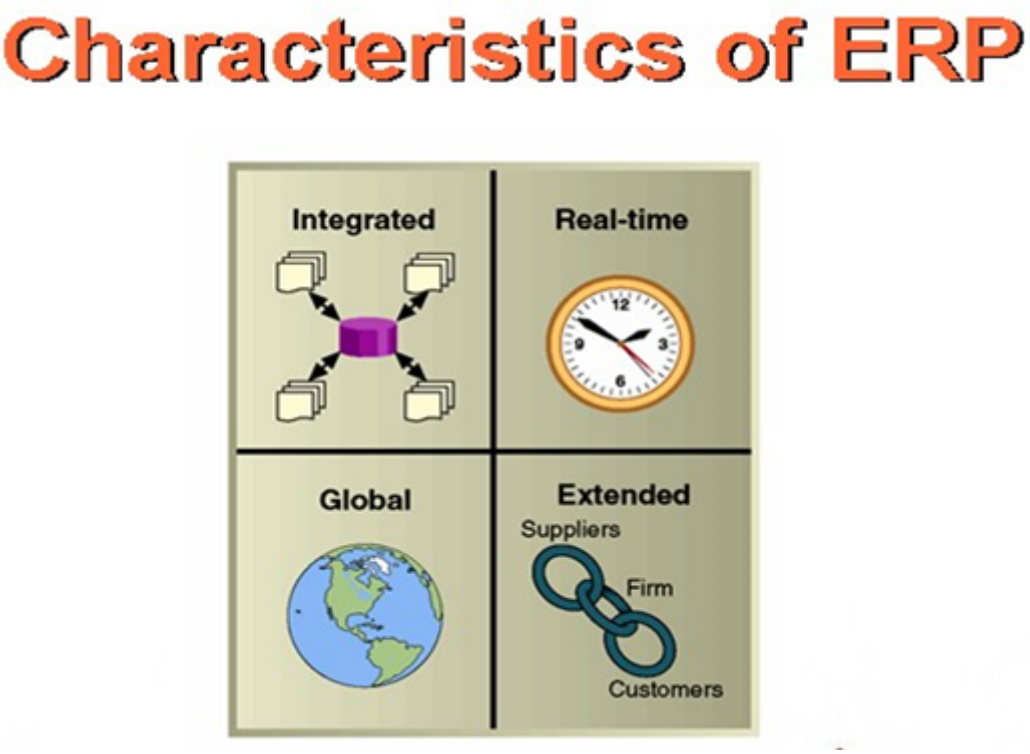
- Purchasing
- Manufacturing

ERP – New World Order

Enterprise Resource Planning (ERP)

It really doesn't have anything to do with resource or planning. However the key word is ENTERPRISE

ERP attempts to integrate all departments and functions of a company into a single system that can serve all those different departments' needs.



It is really a back office software, however with new CRM modules, it is not completely a back office software.

What will ERP do for a Business

* Financial information should be integrated.
* Customer order information should be integrated.
* Improve the consistency and efficiency of the production process.
* Inventory should be reduced.
* Ensure that HR information is consistent.

Advantages of ERP:

* Improve access to information

* Improve workflow and efficiency
* Best Practices
* BPR
* New process discovery
* Return On Investment (ROI)

Disadvantages of ERP:

* Costs
* Time
* 12-18 months implementation
* 1-3 years real transformation
* Training
* Acceptance
* Everyone gets brought down to the same knowledge level.

How ERP has affected vendors

* Improved response time to match client expectations.
* Controlling production and inventories is essential.
* Assists in the management of order tracking and shipping information
* Keep track of the expenditures associated with specific activities
* Increase client satisfaction and loyalty

How has ERP occasionally failed?

* Some vendors face downtime when the ERP system is first installed and configured.
* There was little planning prior to implementing an ERP system.
* The new system is not being used by employees since they have not been trained.
* The cost of implementing ERP was far higher than anticipated.
* Inadequate software selection

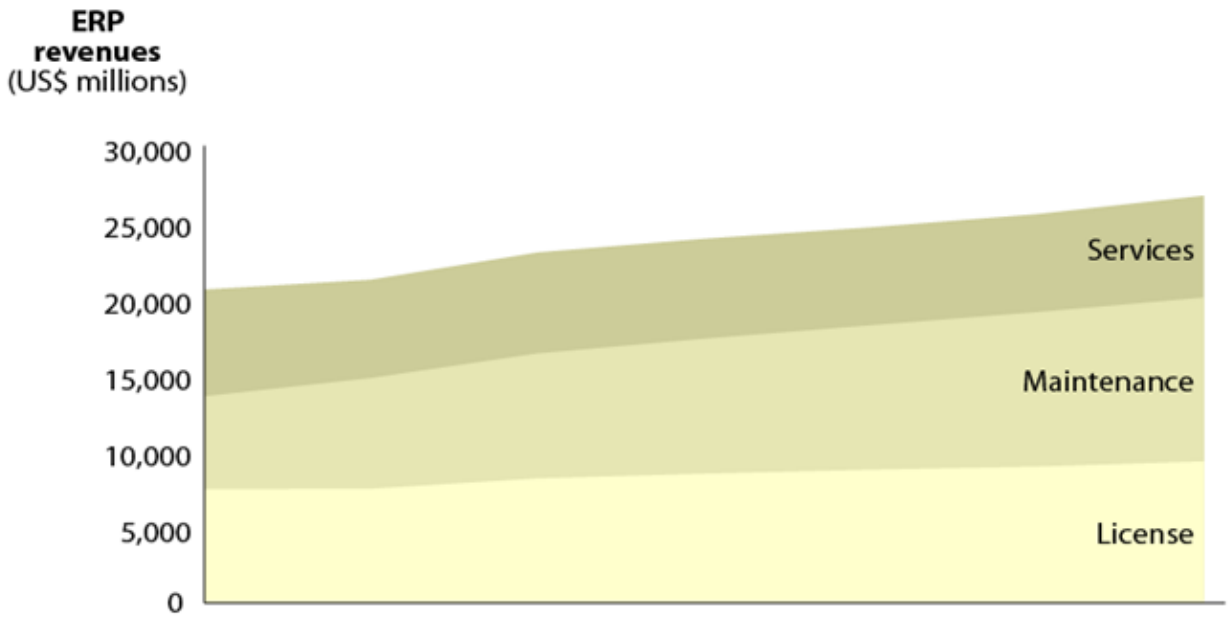
Future of ERP

* Web-based interfaces and object-oriented databases are becoming increasingly popular.
* ERP packages that are fully integrated are becoming more offered from a variety of vendors.
* Self-service applications and web-based order entry are examples of this.
* Transition away from client/server applications and toward web-based apps
* It has effectively communicated its information technology value.
* ASPs are becoming increasingly popular.

What to expect from ERP in the future

* The majority of the ERP implementation efforts were directed towards Fortune 1000 organizations.
* ERP systems will be changed to be more beneficial to medium-sized businesses.
* Reduce the amount of time required to implement ERP systems.
* ERP systems will be made available as a "pre-bundled" software package that may be customized..
* Alignment of e-business and enterprise resource planning strategies

ERP market forecast



	2002	2003	2004	2005	2006	2007	2008	CAGR
License	$5,455	$5,489	$6,156	$6,474	$6,733	$6,934	$7,281	4.2%
Maintenance	$6,100	$7,264	$8,202	$8,858	$9,478	$10,141	$10,750	7.0%
Services	$7,011	$6,459	$6,632	$6,566	$6,435	$6,434	$6,691	0.2%
Total	**$18,566**	**$19,212**	**$20,999**	**$21,898**	**$22,645**	**$23,510**	**$24,723**	**4.2%**

(US$ millions)
(numbers have been rounded)

Key Players

* SAP
* Oracle
* JD Edwards
* People soft

SAP as ERP

[a] SAP was the first company to invent ERP Software

[a] The concept of ERP has been around since the 1960's

In 1972, five former IBM employees -- Dietmar Hopp, Hans-Werner Hector, Hasso Plattner, Klaus Tschira, and Claus Wellenreuther -- launch a company called Systems, Applications, and Products in Data Processing in Mannheim, Germany. Their vision: to develop standard application software for real-time business processing.

One year later, the first financial accounting software is complete, forming the basis for the continuous development of other software components in what later came to be known as the "R/1 system." "R" stands for real-time data processing.

By the end of the decade, intensive examination of SAP's IBM database and dialog control system leads to the birth of SAP R/2.

The 1990s: A New Approach to Software and Solutions

SAP R/3 is unleashed on the market. The client-server concept, uniform appearance of graphical interfaces, consistent use of relational databases, and the ability to run on computers from different vendors meets with overwhelming approval.

With SAP R/3, SAP ushers in a new generation of enterprise software -- from mainframe computing to the three-tier architecture of database, application, and user interface.

SAP R/3 ERP Implementation at BPCL

Introduction

BPCL was one of the earliest amongst organizations in the energy sector to successfully implement Enterprise Resource Planning (ERP). While there have been some attempts by other organizations to implement ERP, the effort at BPCL was considered significant because for the first time it encompassed the entire operation of an integrated downstream oil marketing company involving nearly 200 locations across the country. This was certainly a bold technological step considering the general bandwidth-constraints prevailing then.

As BPCL's General Manager (Information Systems) put it, "It was a veritable technological challenge inasmuch as we could not get a reference case of running the downstream oil industry transactions comparable to BPCL's magnitude on a TDM/TDMA VSAT link anywhere in the world."

With this achievement, BPCL also came to be ranked among the large ERP

implementations of the country.

Three pronged IT initiatives at BPCL

Started in 1996 with organizational restructuring.

[a] Communication network within organization – Intranet.

[a] Information network for entire corporation – VSAT.

[a] Transaction processing with customers countrywide – QBM.

Selection of SAP/ R3

The first step was the selection of appropriate vendors1 from among those in the market. Three vendors were short-listed for further analysis based on their Indian presence, technology features, industry knowledge, and availability of manpower. Following observations were made:

SAP's R/3	Oracle's OED	Ramco's Marshall
Industry leader with multiple leading oil company implementations Indian presence Technology and R&D advancements	Acquisition of British Petroleum's in-house developed product being marketed as the Oil Energy Downstream (OED) suite of systems Indian presence	Indian vendor Availability of resources R&D investments

A cross-functional management team was formed to evaluate the short-listed vendors. Following criterion was considered:

Business Functionality	Technology	Oil Industry Specifics	Localization	Vendor Credentials

Fit with current requirement Fit with future requirements Options for process flexibility Ease of use Audit trail	Performance throughput Scalability Fit with hardware and network plan Technical design of the product Integration Ease of deployment Road map	Implementat ion in oil industry and abroad Support to oil accounting	Excise, MODVAT, Sales Tax, TDS, etc.	Market share Financial strength Technology partnership

For the final selection, Oracle abstained from the evaluation quoting its inability to demonstrate the product as per BPCL's requirement. SAP's "R/3" was found more fit over Ramco's "Marshal" to support the complexity of current and future business needs of BPCL.

ERP refers to a broad set of activities supported by multi-module application software that helps an organization manage its business.

product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, tracking orders, finance, and HR.

ERP basically **helps a business to develop** in these particular areas-

§ Product Planning

§ Parts Purchasing

§ Managing Inventories

§ Suppliers Interaction

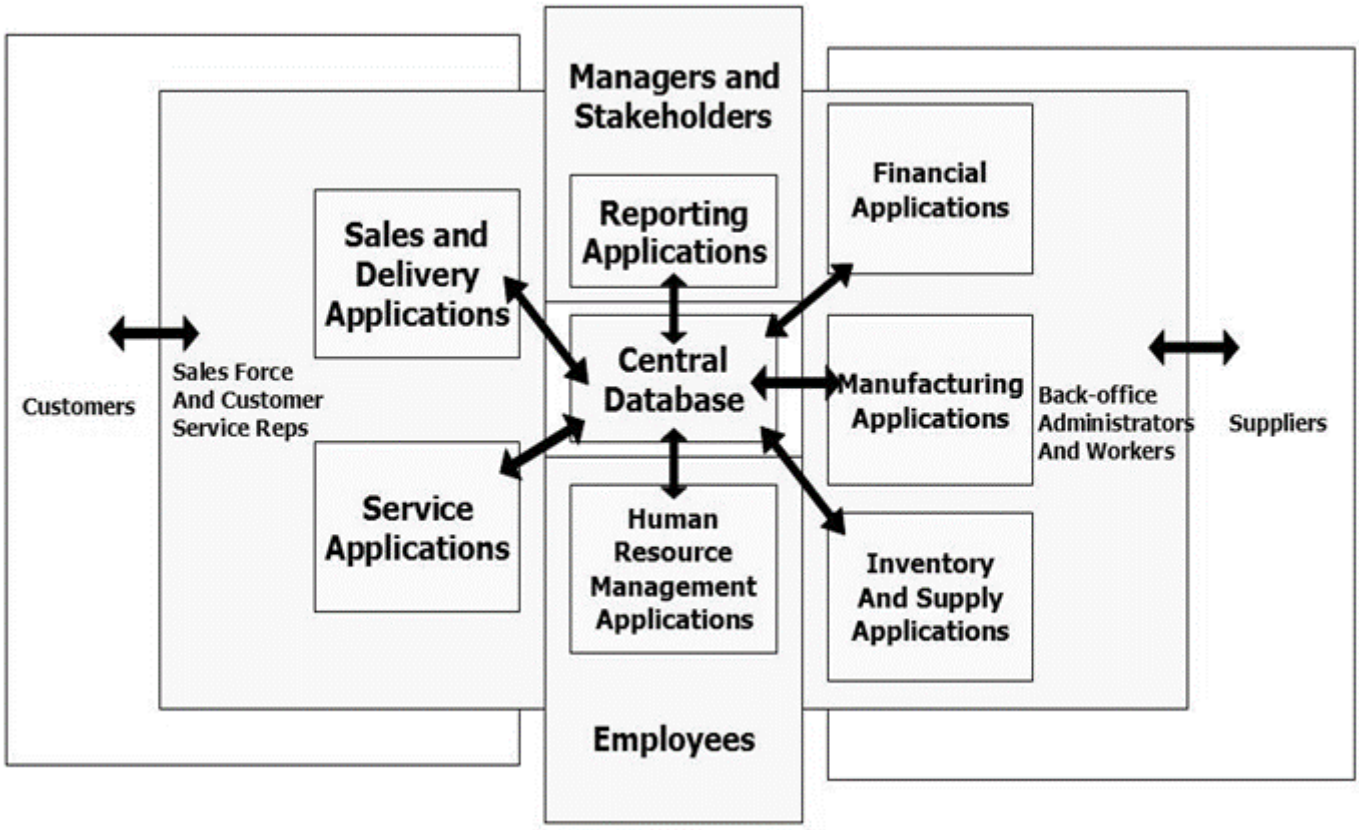
§ Customer Service

§ Tracking Orders

§ Company Finances

§ H R Management

ERP Modules



Implementation Details

§ **Implementation Partner**

SAP Consulting.

§ **Existing Environment**

SAP Enterprise.

§ **Database**

Oracle 9.2.0.5

§ **Hardware**

HP.

§ **Operating System**

HP-UX.

ERP's Operational Benefits

The important ones have been explained below:-

1. **Integrate financial information**

Finance has its own set of revenue numbers, sales has another version, and the different business units may each have their own version of how much they contributed to revenues. ERP creates a single version of the truth that cannot be questioned because everyone is using the same system.

2. Integrate customer order information

ERP systems can become the place where the customer order lives from the time a customer service representative receives it until the loading dock ships the merchandise and finance sends an invoice. By having this information in one software system, rather than scattered among many different systems that can't communicate with one another, companies can keep track of orders more easily, and coordinate manufacturing, inventory and shipping among many different locations at the same time.

3. Standardize and speed up manufacturing processes

Manufacturing companies especially those with an appetite for mergers and acquisitions—often find that multiple business units across the company make the same widget using different methods and computer systems. Standardizing those processes and using a single, integrated computer system can save time, increase productivity and reduce head count.

4. Reduce inventory

ERP helps the manufacturing process flow more smoothly, and it improves visibility of the order fulfillment process inside the company. That can lead to reduced inventories of the stuff used to make products, and it can help users better plan deliveries to customers, reducing the finished good inventory at the warehouses and shipping docks.

5. Standardize HR information

Especially in companies with multiple business units, HR may not have a unified, simple method for tracking employees' time and communicating with them about benefits and services. ERP can fix that.

◄ Preliminary Activity for Week 17

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