A

Seminar report

on

"ERP"

Submitted in partial fulfillment of the requirement for the award of degree
of Bachelor of Technology in Computer Science

SUBMITTED TO: **SUBMITTED BY:**
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<u>Preface</u>

I have made this report file on the topic **ERP**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude to …………..who assisting me throughout the prepration of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

What is ERP?

ERP is short for "enterprise resource planning." Enterprise Resource Planning (ERP) is the latest business, information technology (IT) tool in the Corporate World today. Enterprise resource planning is an integrated software solution used to manage a company's resources. ERP's was preceded by MRP (material requirements planning) and MRP II (manufacturing resources planning). These earlier systems had limitations addressed by ERP systems. Today's ERP systems integrate planning, inventory, Purchasing, engineering, order entry, manufacturing, accounting and human resources

Other Definition

Enterprise resource planning software, or ERP, doesn't live up to its acronym. Forget about planning—it doesn't do much of that—and forget about resource, a throwaway term. But remember the enterprise part. This is ERP's true ambition. The software attempts to integrate all departments and functions across a company onto a single computer system that can serve all those departments' particular needs.

Integration of all Departments
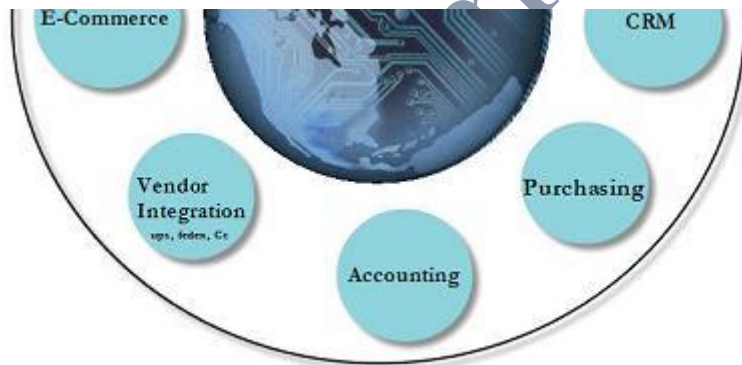
That integrated approach can have a tremendous payback if companies install the software correctly.

Take a customer order, for example. Typically, when a customer places an order, that order begins a mostly paper-based journey from inbox to inbox throughout the company, often being keyed and rekeyed into different departments' computer systems along the way. All that lounging around in inbox causes delays and lost orders, and all the keying into different computer systems invites errors.

Meanwhile, no one in the company truly knows what the status of the order is at any given point because there is no way for the finance department, for example, to get into the warehouse's computer system to see whether the item has been shipped. "You'll have to call the warehouse" is the familiar refrain heard by frustrated customers.

ERP vanquishes the old standalone computer systems in finance, HR, manufacturing and the warehouse, and replaces them with a single unified software program divided into software modules that roughly approximate the old standalone systems. Finance, manufacturing and the warehouse all still get their own software, except now the software is linked together so that someone in finance can look into the warehouse software to see if an order has been shipped.

Back in the '90s ERP was developed as a tightly integrated monolith, but most vendors' software has since become flexible enough that you can install some modules without buying the whole package. Many companies, for example, will install only an ERP finance or HR module and leave the rest of the functions for another day.

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

Evolution

MRP
1970s

MRP II
1980s

ERP
1990s
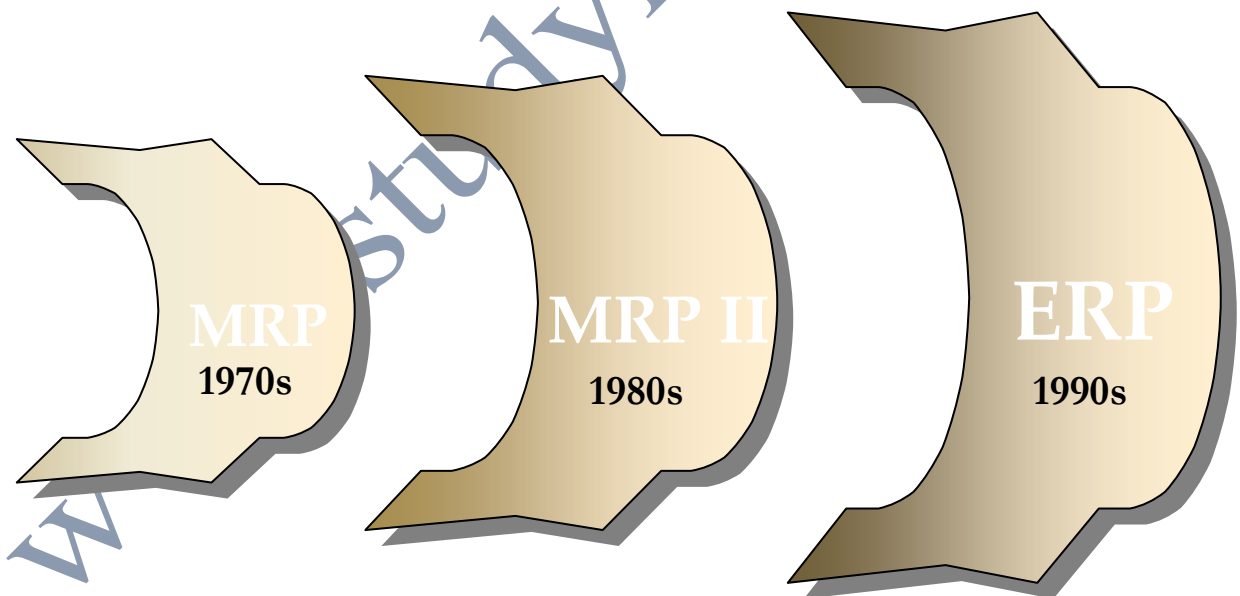
**Material Requirements Planning (MRP)**

Computer-based information system that translates master schedule requirements for end items into time-phased requirements for subassemblies, components, and raw materials.
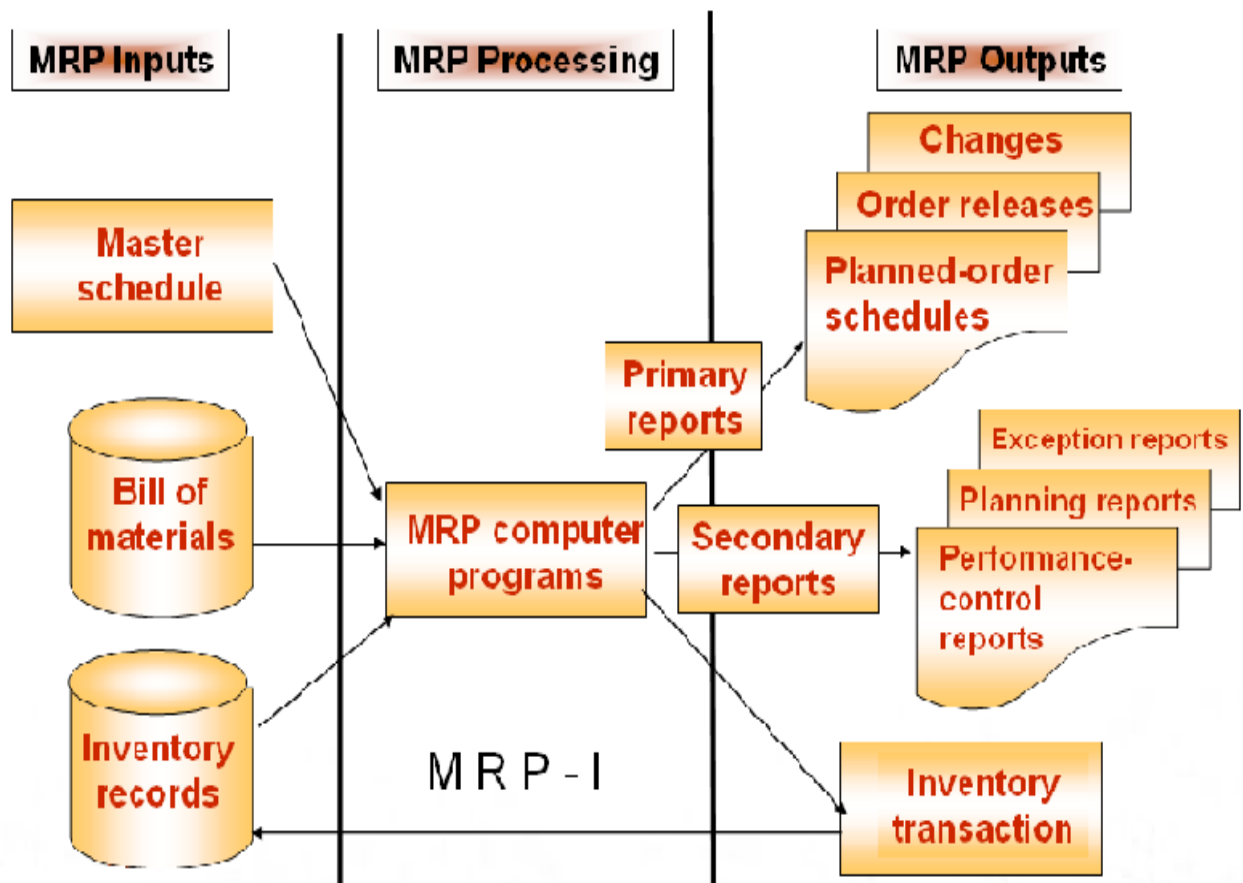
Manufacturing Resource Planning (MRP II)

Expanded MRP with emphasis placed on integration

- Financial planning

- Marketing

- Engineering

- Purchasing

- Manufacturing

MRP II
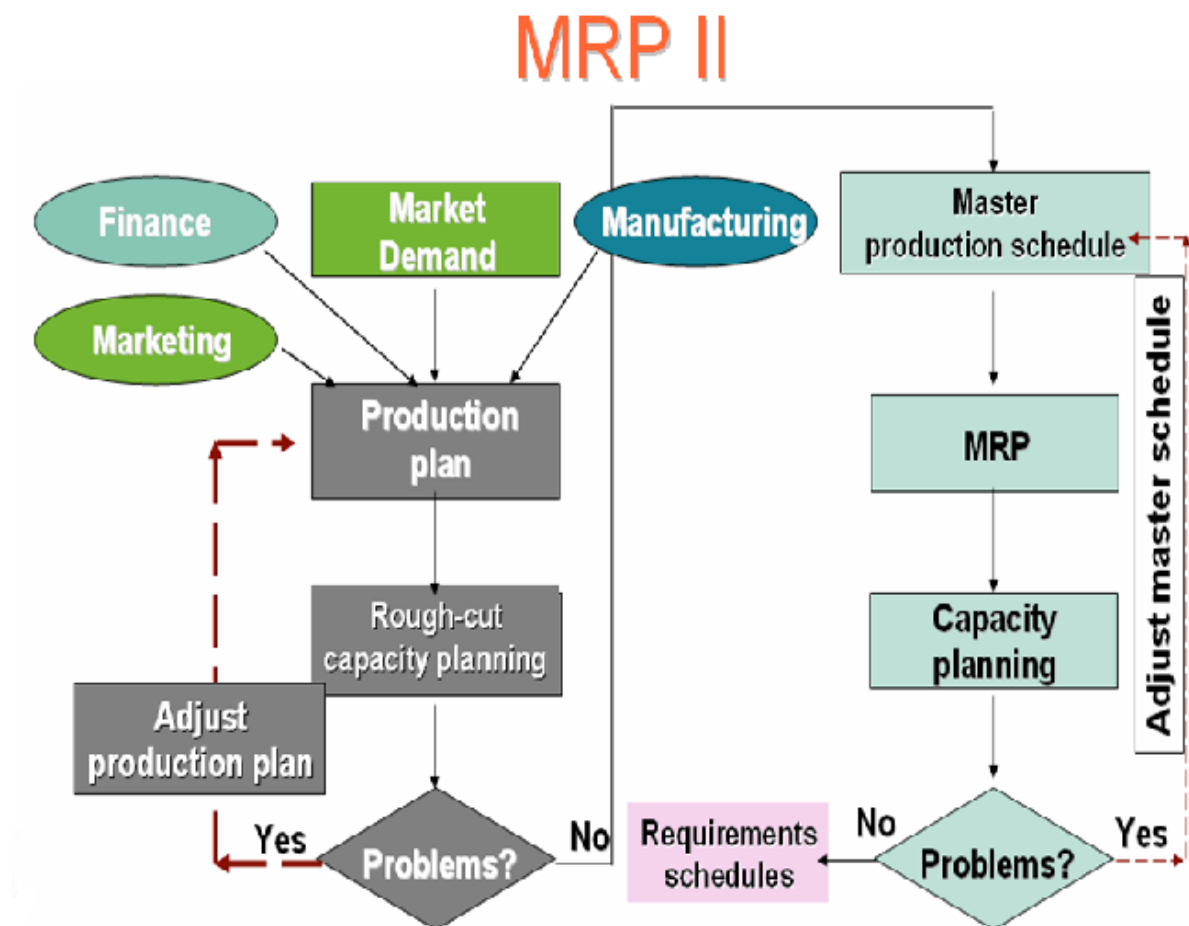
ERP – New World Order

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
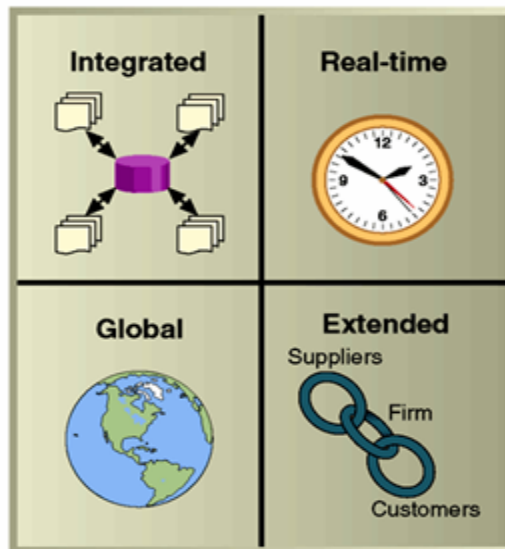
What will ERP do for a Business

- Integrate financial information

- Integrate customer order information

- Standardize and speed up manufacturing process

- Reduce inventory

- Standardize HR information

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

- Faster turn around to meet customer demands.

- Production and inventory control

- Helps manage tracking and shipping information on orders

- Track costs of certain activities

- Improve customer loyalty

How has ERP occasionally <u>failed</u>?

- During initial ERP start up, some vendors experience a down time

- Not enough planning before setting up an ERP system

- Employees aren't trained to use the new system

- Cost to implement ERP was much greater than expected
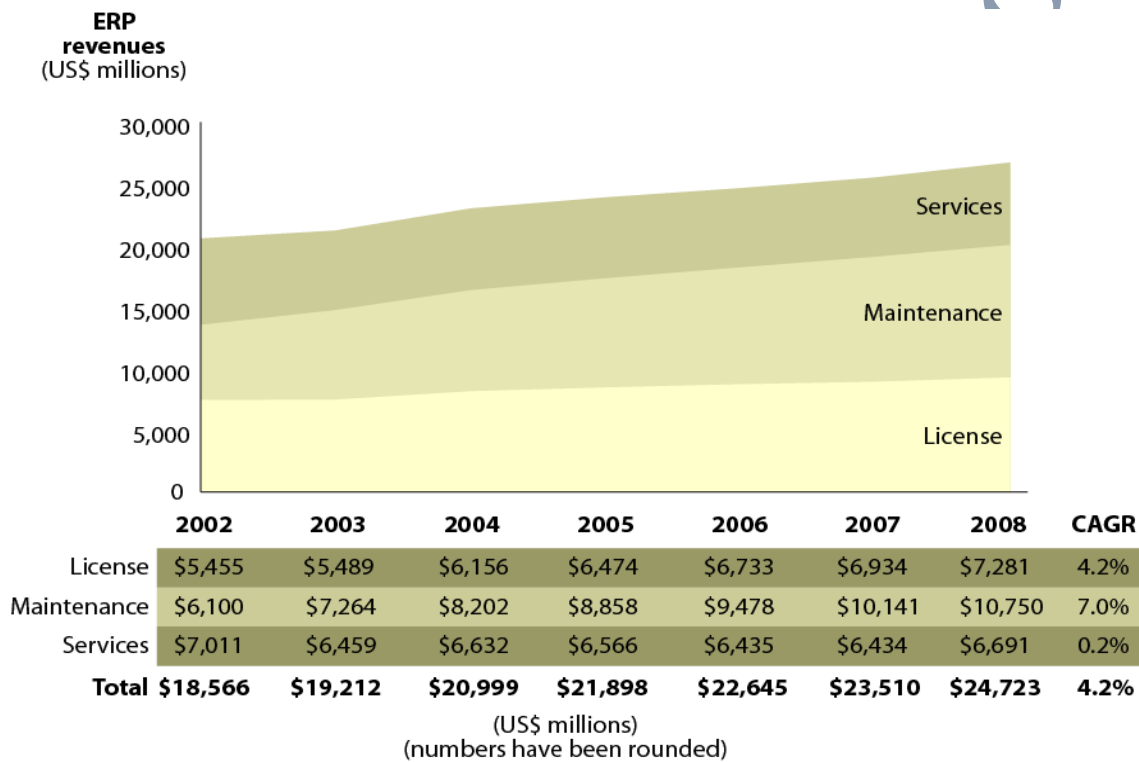
- Poor software selection

Future of ERP

- Web based interfaces and object oriented databases are the trend

- Complete, integrated ERP suites are becoming available from numerous sources

- Self service applications, web based order entry

- Move from client/server applications to internet based applications

- Communicated its IT value

- ASP are becoming widely used

What to expect from ERP in the future

- Most of the introduction of ERP was focused towards Fortune 1000 companies

- ERP will become redesigned to benefit medium sized companies.

- Decrease time it takes to implement ERP systems

- ERP systems will become available in a "pre bundled" customizable software package

- Alignment of e-business and ERP strategies

ERP market forecast

ERP revenues (US$ millions)

	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

- **SAP was the first company to invent ERP Software**

- **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

" It is because we dream we discover, because we discover we design and because we design we deliver...
At BPCL, it's all about dreaming and delivering"

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.

- Communication network within organization – Intranet.

- Information network for entire corporation – VSAT.

- Transaction processing with customers countrywide – QBM.

Selection of SAP/ R3

The first step was the selection of appropriate vendors[1] 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	♦ Implementation 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 <u>fit</u> over Ramco's "Marshal" to support the complexity of current and future business needs of BPCL.

Details of the Estimated Quantitative Benefits on Account of ERP

SBU/ Entity	Benefit per Annum (Rs Crore)
Lubricants	*11.51*
Retail (Sales)	*1.90*
LPG	*2.00*
Refinery	*4.58*
Materials (Marketing)	*1.66*
Engineering and Projects	*4.77*
Information Systems	*0.61*
Human Resources	*1.95*
Industrial and Commercial	*2.31*
Aviation	*0.74*
Finance	*4.58*
Retail (Logistics)	*5.58*
Total Benefits	**42.19**

ERP Explained…

ERP refers to a broad set of activities supported by multi-module application software that helps an organization manage its business.
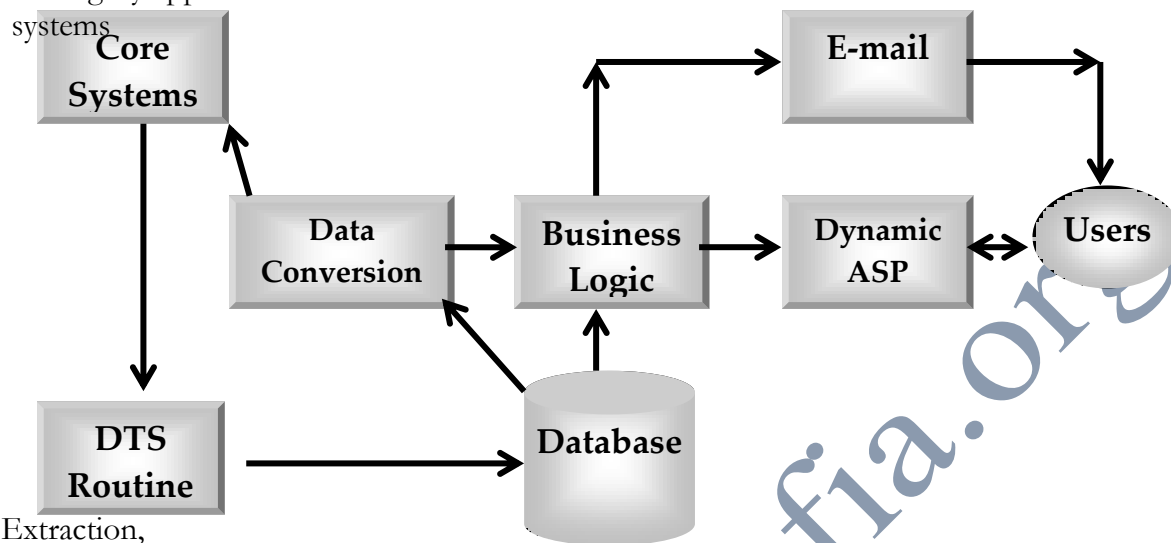
→ product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, tracking orders, finance, and HR.

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

- Product Planning
- Parts Purchasing
- Managing Inventories
- Suppliers Interaction
- Customer Service
- Tracking Orders
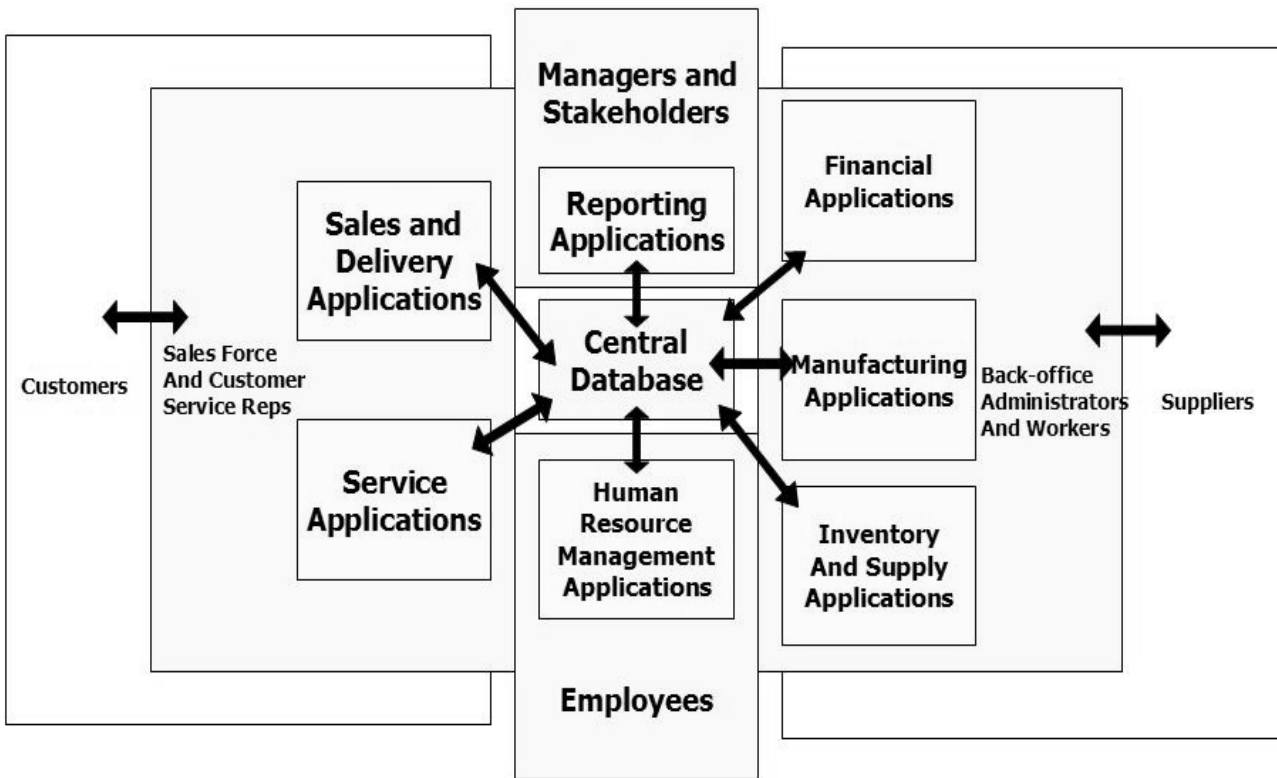- Company Finances
- H R Management

ERP Implementation @ BPCL

ERP system, Business
Information Warehouse
and legacy application
systems

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┌──────────────┐                              ┌──────────────┐
│    Core      │                              │   E-mail     │
│   Systems    │                              └──────────────┘
└──────────────┘
        │
        │      ┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────┐
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        │      │  Conversion  │   │   Logic      │   │    ASP       │   └──────────┘
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        ▼
┌──────────────┐                    ┌──────────────┐
│    DTS       │ ─────────────────→ │   Database   │
│   Routine    │                    └──────────────┘
└──────────────┘
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Extraction,
transformation & loading
of data onto application
databases

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.

Awards Received for IT Initiatives

■ "National Petroleum Management Programme (NPMP) Award for Excellence" in the categories of Information Technology.

■ Mrs. Gita Ramchandran, Chief Manager (IIS) received the award for Best Woman Executive in the areas of projects, construction and computer systems.

News Flash!

■ Upgraded SAP R/3 system from 4.0b to the Enterprise version on 1st August 2004.

■ Electronic Fund Transfer with effect from November 2004.

■ Corporate Finance Management and Real Estate Management modules from 1st April 2005.

■ Currently implementing the S C M.

Summary

- Bharat Petroleum, a FORTUNE 500 company and India's second largest oil firm, includes an extensive network of operations involving.

- 347 distribution locations and sales offices, 6,400 gas stations, and more than 2,060 liquefied petroleum gas (LPG) distributors.

- The company expanded into e-business when it upgraded its SAP® software, enabling greater efficiencies.