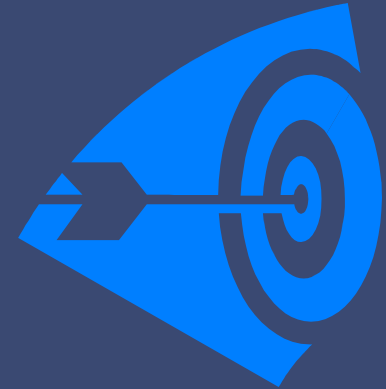


# Course: Enterprise Applications and Open Source Systems for e-Governance implementation

Day 3

Session 3: Introduction to ERP Applications

# Agenda



- Introduction to ERP Applications
- Benefits of ERP Applications
- Comparison of ERP applications with the custom developed/bespoke software systems
- Challenges in ERP system implementations and measures for addressing the challenges

# Introduction

- In today's environment, there is a much greater interaction between the citizens and Governments.
- Governments are more closely linked to Citizens , internal staffs and its suppliers.
- Governments seek to obtain operational efficiencies that will lower costs, improve citizens relations, increase revenues etc.
- All units of an organization must work together in a goal congruence to achieve maximum operating effectiveness and efficiencies.
- The pre-requisite is that the information must be accurate and timely managed.

# Historical system architectures

- Historically, organizations created “islands of automation / information”.
- A hodge-podge of various systems that operated or managed various divergent business processes.
- Sometimes these systems were integrated with each other and sometimes they weren't.
- Sometimes they were loosely interfaced and sometimes they were more tightly interfaced.

## IT Scenario.....Before ERP

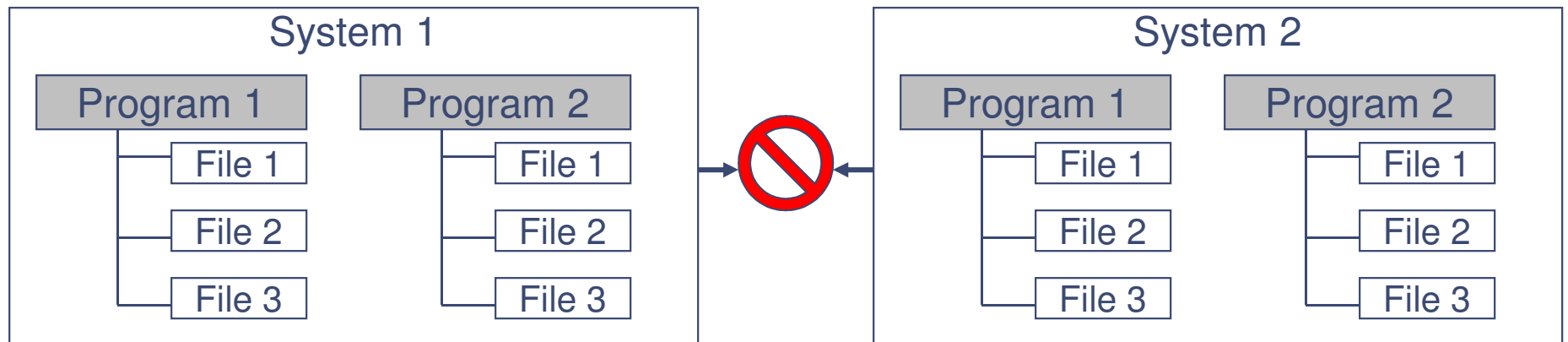
- Finance department decides to implement IT software....calls IT expert....develops IT solution for Finance department
- Purchase Department decides to implement IT software....calls IT expert....develops IT solution for Purchase department
- HR team decides to implement IT software .....do.....  
Develops Human Resource Software
- Production Planning team decides to implement IT software  
.....do..... Develops Planning Software

### **Result**

**Too many home grown , independent, standalone and non-integrated software systems  
in the organization**

# Traditional File System

- Each system uses its own programs and files
- When systems are not integrated
  - ✓ Inability to share data
  - ✓ Difficult to maintain
  - ✓ data duplication (i.e. redundancy)

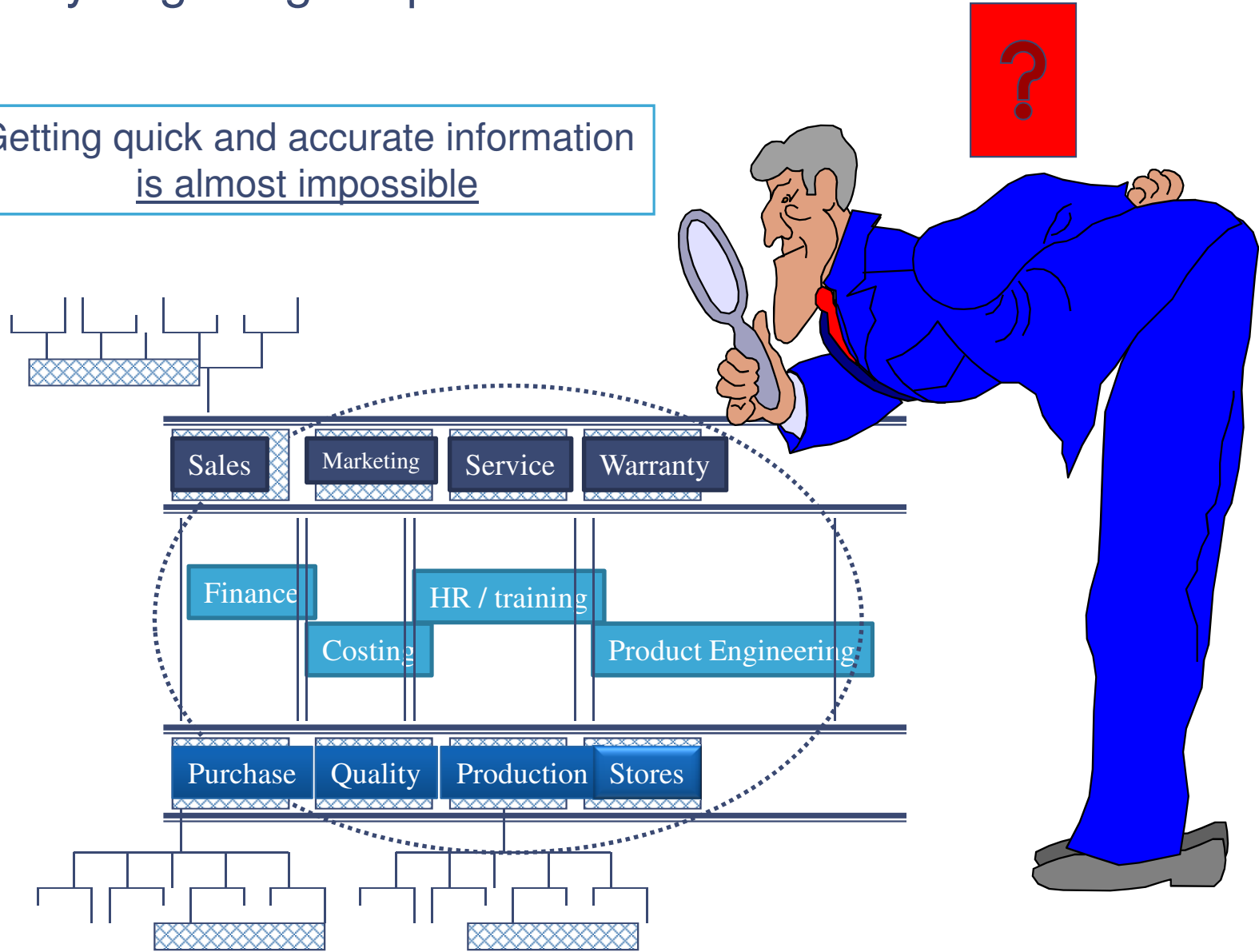


## Disadvantages of multiple systems

- Data in too many systems and hence manual compilation
- Duplication of data entry
- Non Standard procedures
- Variations in information formats
- Only few people has access to key information

# Delay in getting simple information

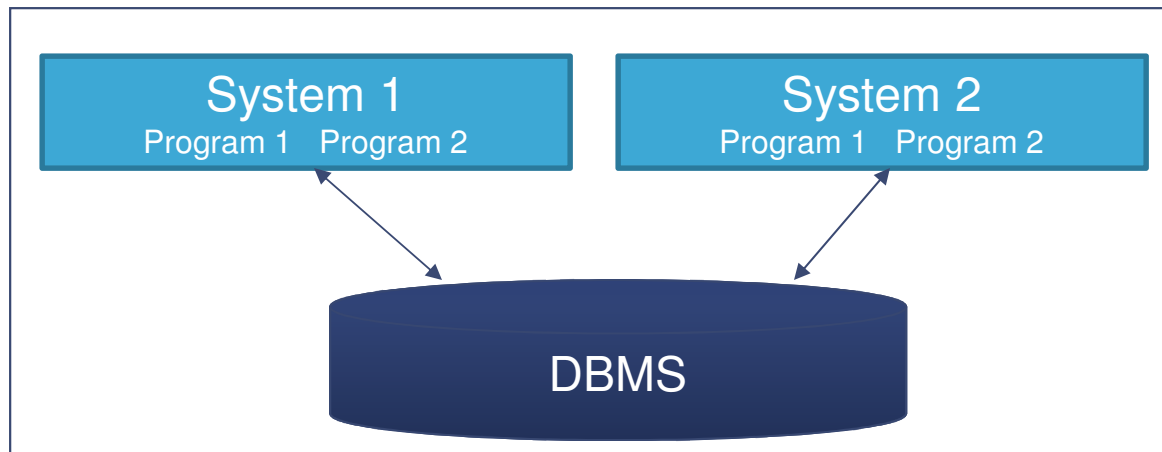
Getting quick and accurate information is almost impossible



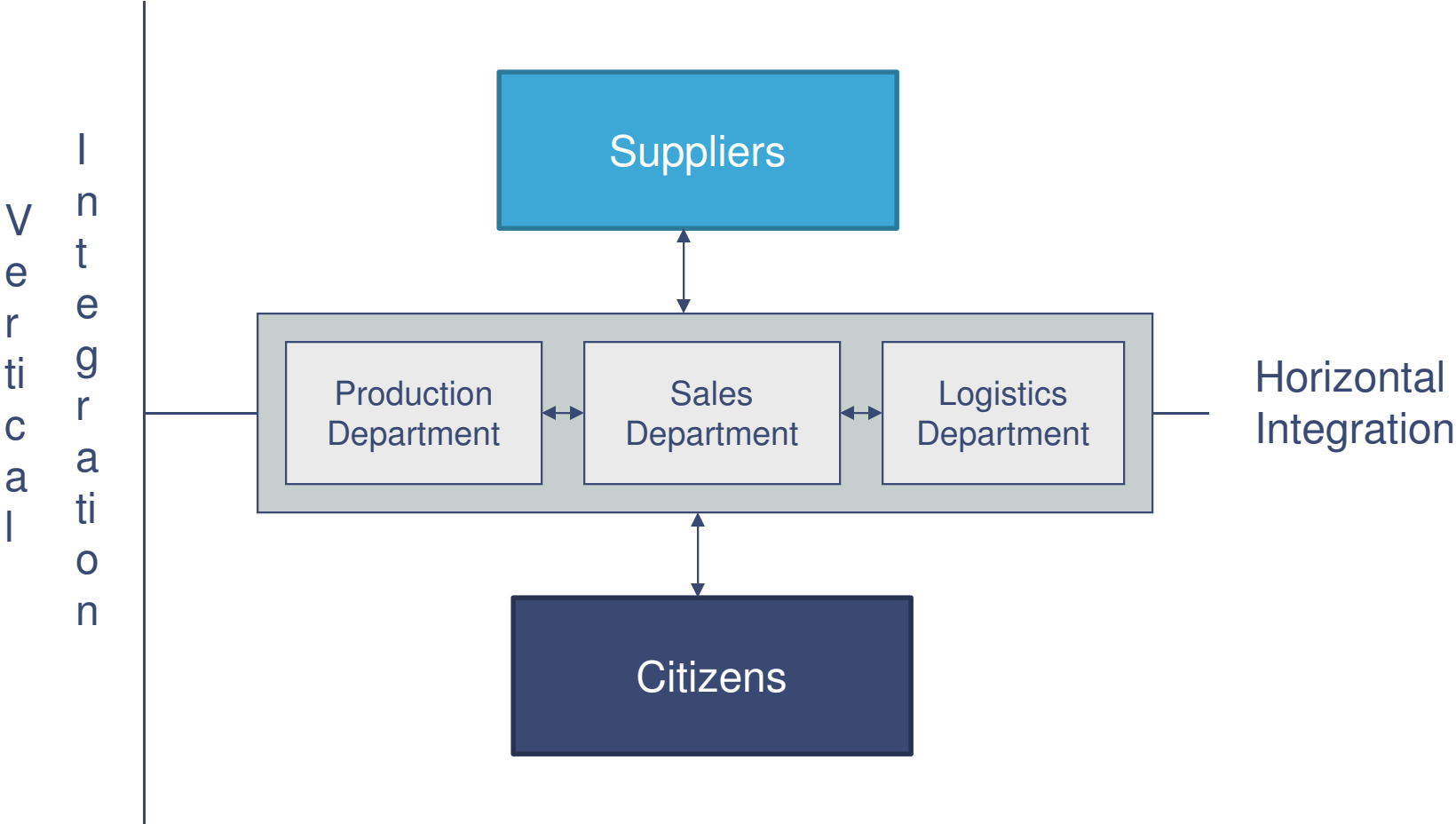


# Database Systems

- Systems share the same database
- Database allows systems integration
  - ✓ Systems share the same data
  - ✓ Systems are easy to maintain
  - ✓ No (or less) redundancy



# Business Integration?



So can we integrate existing systems to make our own ERP?

- Integration of existing system is technically very complex and expensive
- Need dedicated IT team
- System can become very unstable after addition of new functionalities
- Maintenance of system is expensive

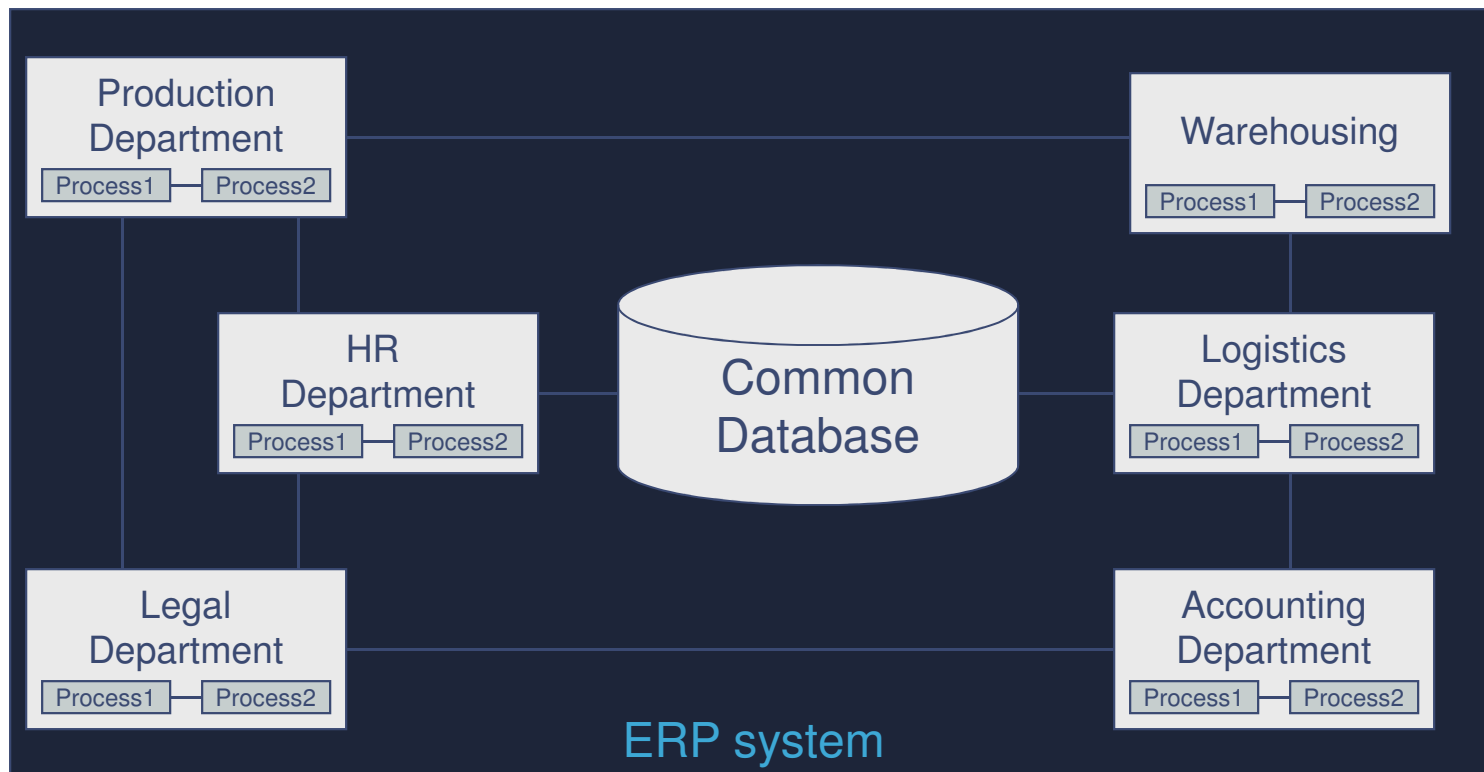
### **Solution**

**Readymade Software with built-in integration  
called as ERP**

# Enterprise Resource Planning (ERP) systems

## Enterprise Resource Planning (ERP) systems

- integrate all the **business** processes through a common information system (or an integrated set of info systems)

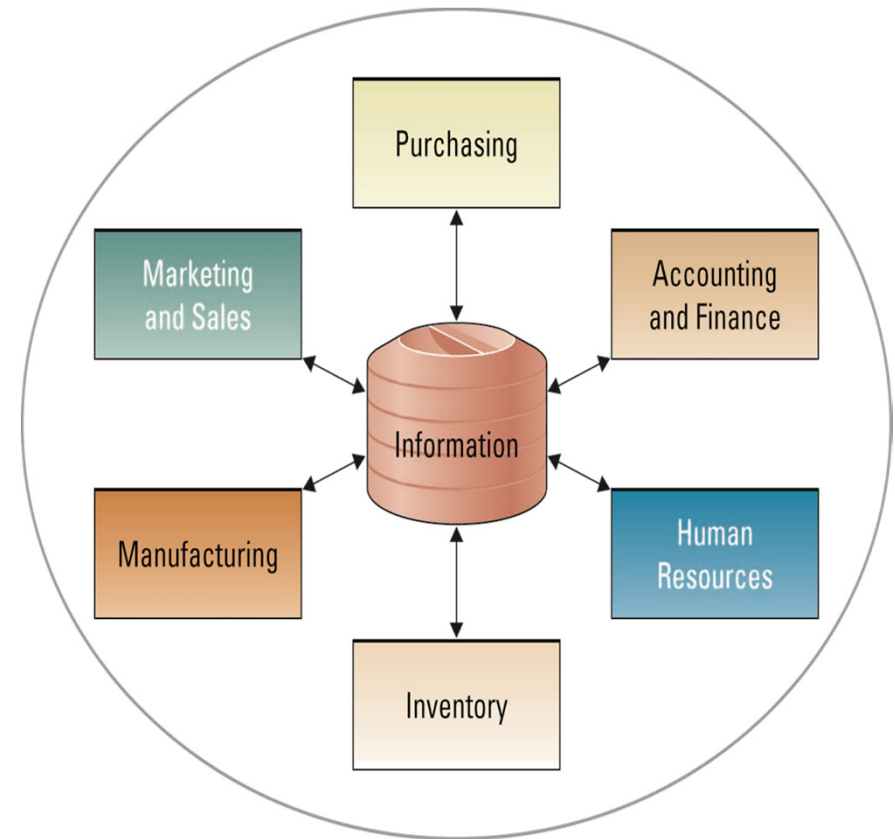


## **Enterprise Resource Planning**

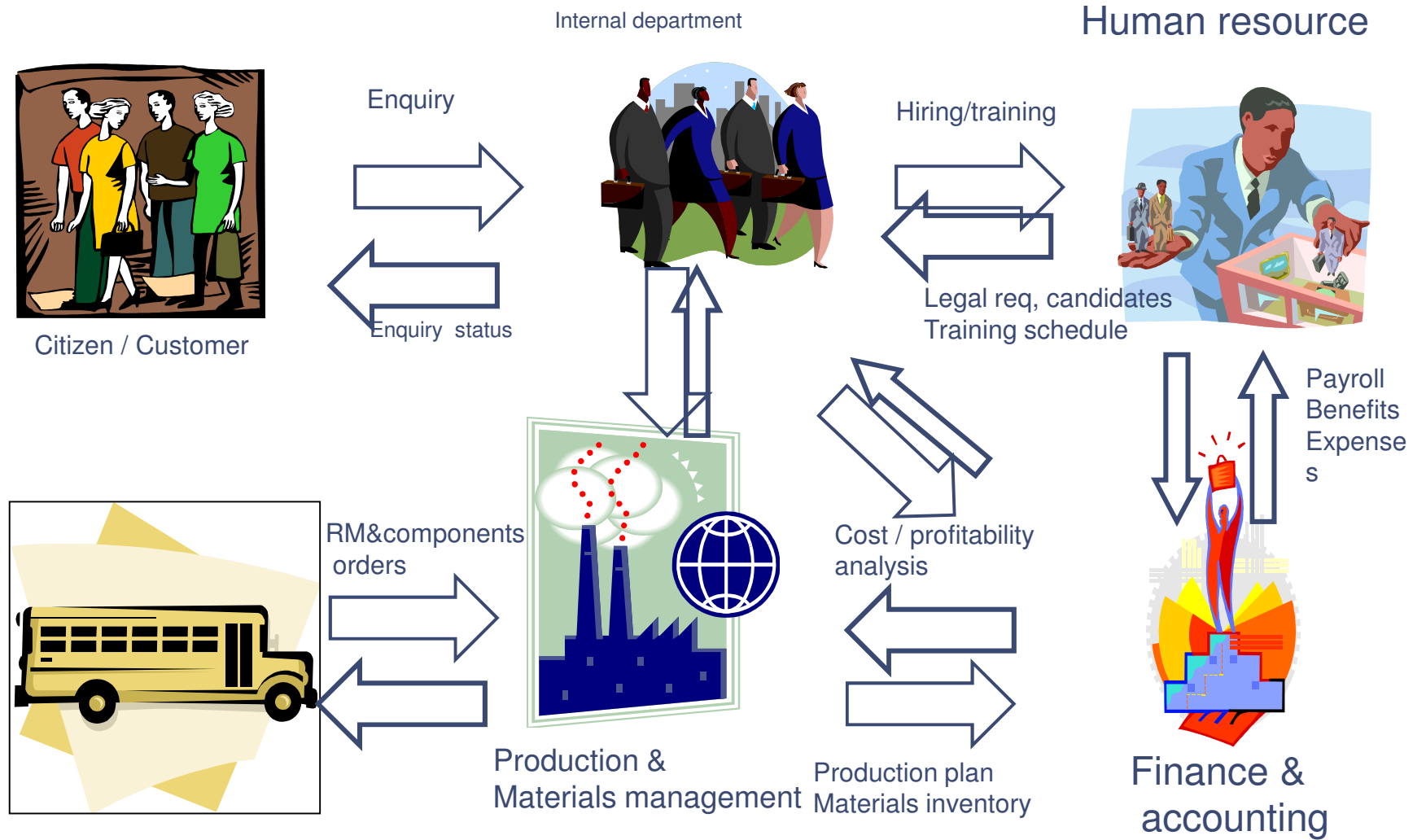
Integrate all departments and functions across an organization / department onto a single computer system that can serve all those different departments' particular needs.

# Enterprise Resource Planning Systems

- ERP systems integrate all the functions and departments within an organization through a common information system
- At the heart of ERP systems is a common database
- When a user enters or updates information in one module, it is immediately and automatically updated throughout the entire system



# Entreprise Resource planning



## What is an ERP?

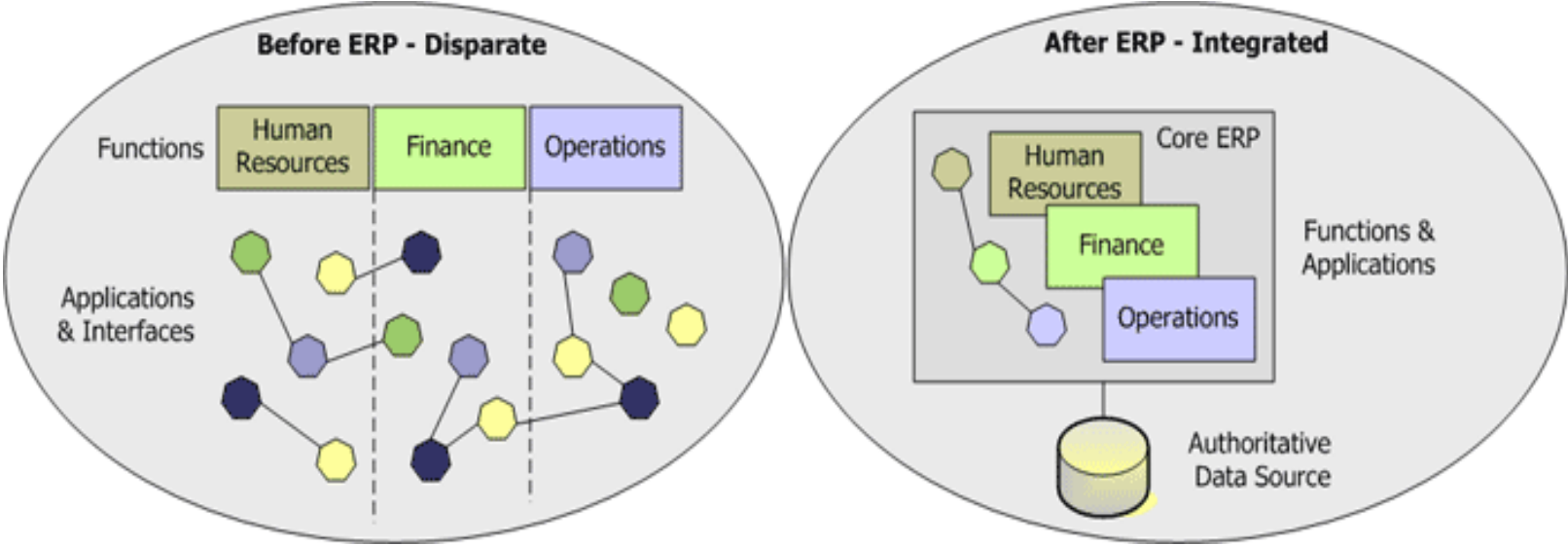
- Enterprise-wide system that integrates the business functions and processes of an organization
- Integration of business functions into one seamless application
- Usually runs on a relational database
- Replaces countless departmental and workgroup information systems



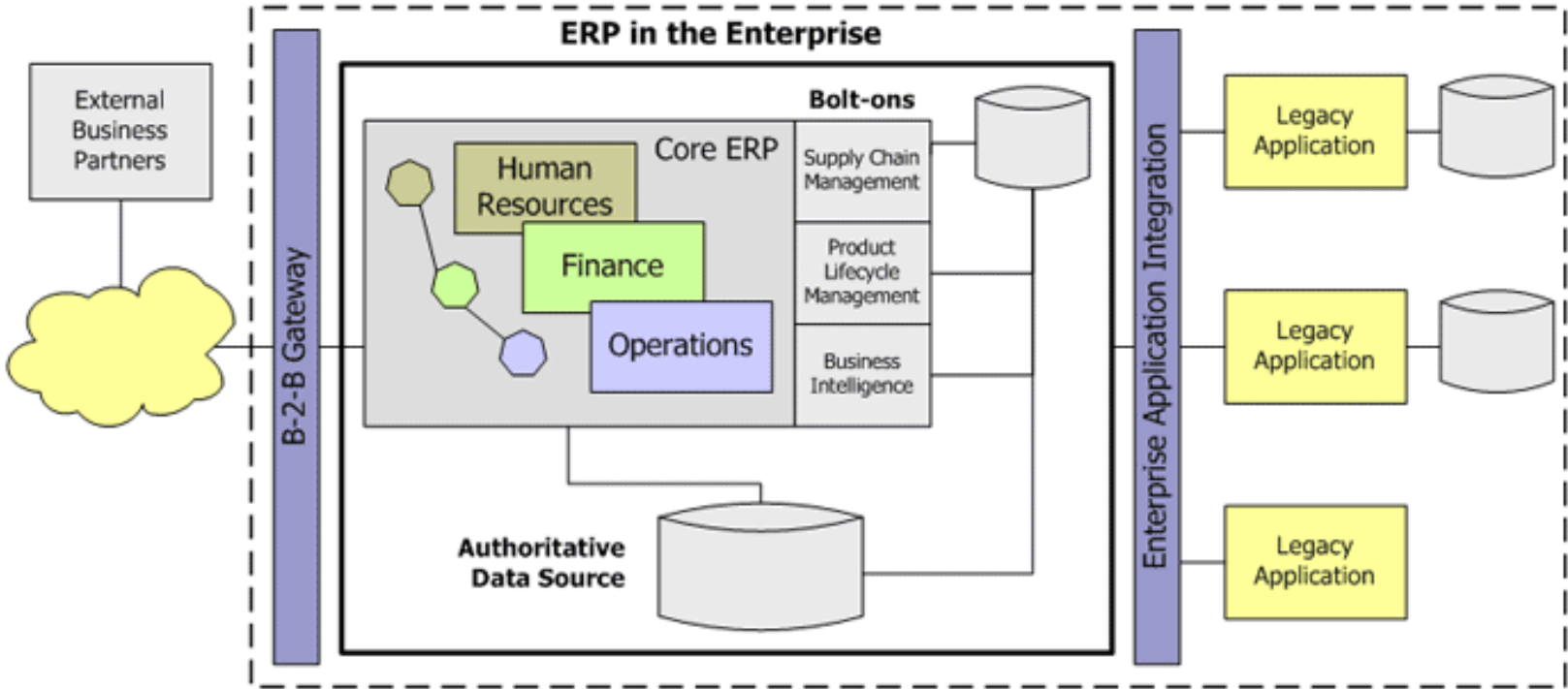
## What is an ERP?

- Links business processes
- Maintains audit trail
- Utilizes a common information system
- Implementation normally involves BPR: Business Process Reengineering

# Before/After ERP



# ERP Enterprise Architecture



# ERP Architecture

## Two-tier Implementations

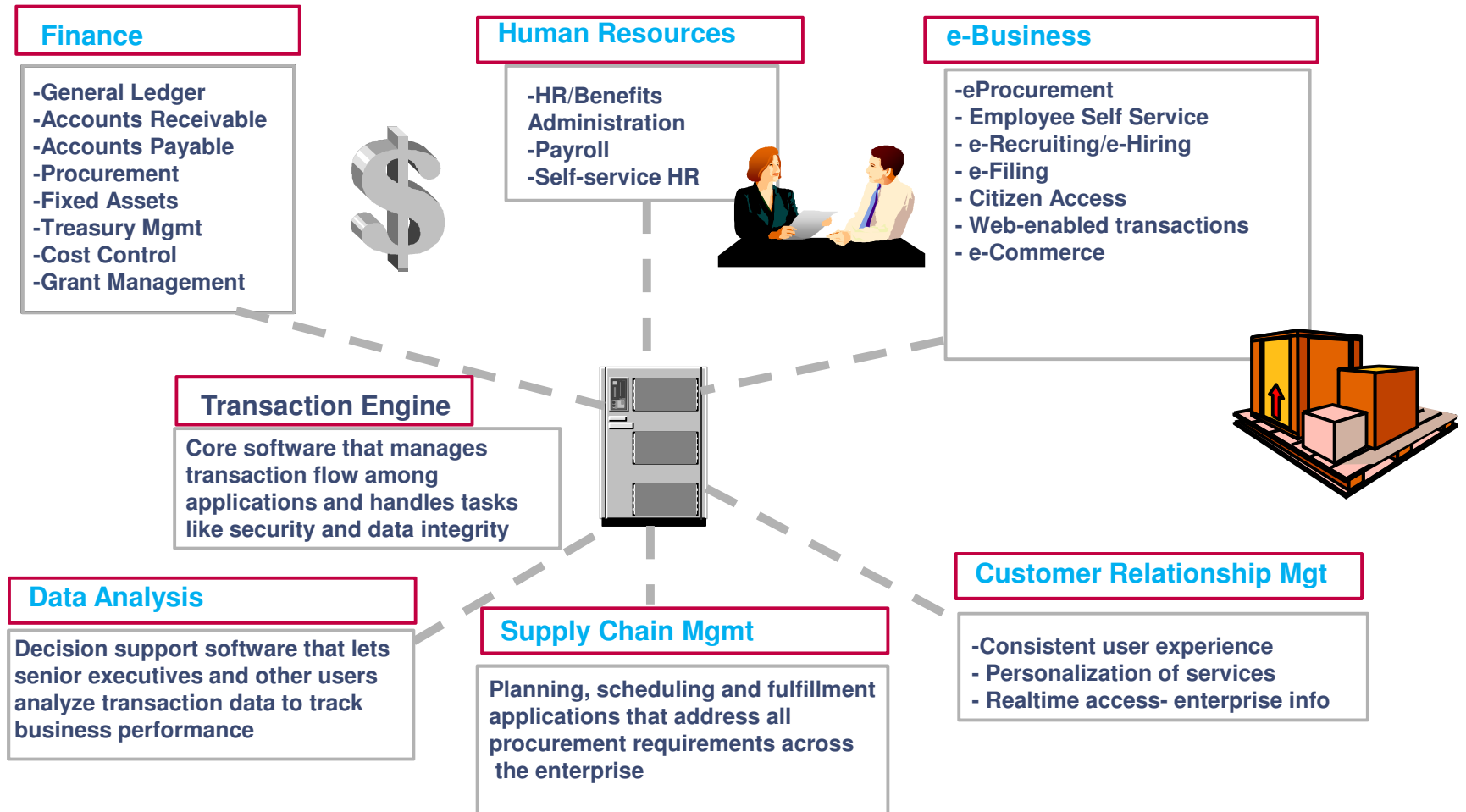
- In typical two-tier architecture, the server handles both application and database duties.
- The clients are responsible for presenting the data and passing user input back to the server.
- While there may be multiple servers and the clients may be distributed across several types of local and wide area links, this distribution of processing responsibilities remains the same.

# ERP Architecture

## Three-tier Client/Server Implementations

- In three-tier architectures, the database and application functions are separated.
- This is very typical of large production ERP deployments.
- In this scenario, satisfying client requests requires two or more network connections.
- Initially, the client establishes communications with the application server.
- The application server then creates a second connection to the database server.

# ERP Functionality



# Why implement an ERP System?

To support Organization's goals / objectives

Integrated, on-line, secure, self-service processes for business

Eliminate costly fragmented technologies

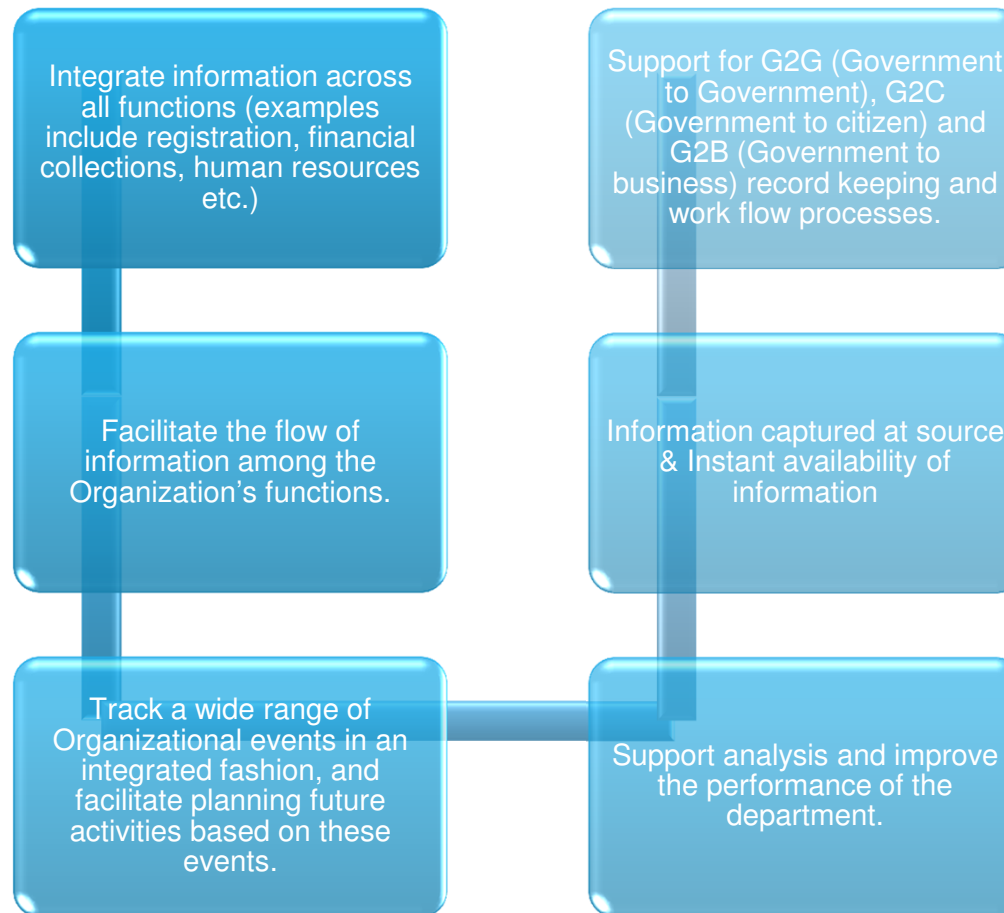
Improved Integration of Systems and Processes

Lower Costs

Empower Employees

Enable Partners, Citizens and Suppliers

# What will an ERP do for your Institutions / departments?





What will an ERP do for your Institution / department?

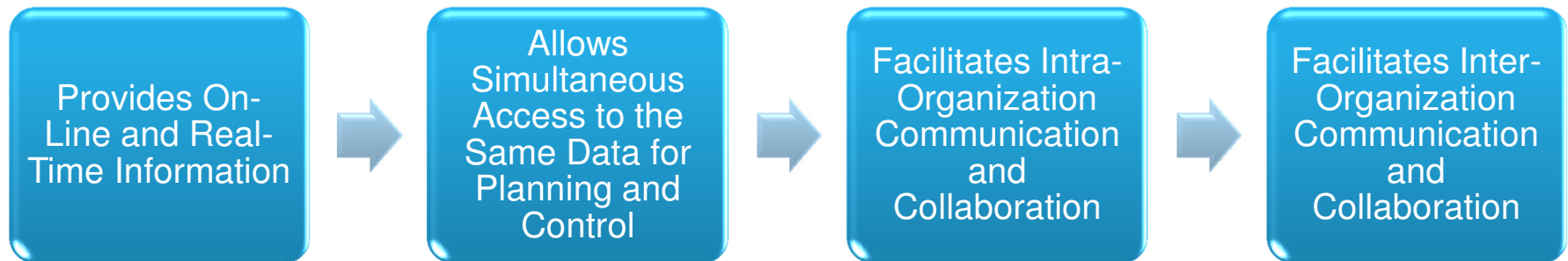
Allow users or internal staff to:

- Input data into one system to enable it to be processed with other data
- Access data as information reports in a real-time environment
- Share common data and practices across the entire institution
- Re-engineer business practices

## How does ERP create value?



## How does ERP create value?...cont'd



# Advantages of ERP

## **Tangible benefits:**

- Improves the productivity of process and personnel
- Lowering the cost of products and services purchased
- Paper and postage cost reductions
- Inventory reduction
- Lead time reduction
- Reduced stock obsolescence
- Faster product / service look-up and ordering saving time and money
- Automated ordering and payment, lowering payment processing and paper costs

# Advantages of ERP

## **Intangible benefits:**

- Increases organizational transparency and responsibility
- Accurate and faster access to data for timely decisions
- Can reach more vendors, producing more competitive bids ;
- Improved customer response
- Saves enormous time and effort in data entry ;
- More controls thereby lowering the risk of mis-utilization of resources
- Facilitates strategic planning
- Uniform reporting according to global standards

# Advantages/Disadvantages of ERP

## Advantages:

- Information entered once into system
- Allows customization
- Provides functionality to interact with other modules

## Disadvantages:

- Implementation is expensive and lengthy
- Maintenance is costly and time consuming
- Data errors are replicated through the system

# What is an ERP – Key Characteristics

- Integrating all the business functions
- Integrating the systems running in all the locations
- Transparency of information using a single data source across the organization
- Software must be
  - Responsive
  - Modular
  - Flexible
  - Easy to add functionalities
  - Provide growth path

# What is an ERP – Key Characteristics

## **Integration**

Seamless integration of all the information flowing through an Organization— financial and accounting, human resource information, supply chain information, and customer information.



# What is an ERP – Key Characteristics

## Packages

- Enterprise systems are not developed in-house
- Information Systems life cycle is different
  - Mapping organizational requirements to the processes and terminology employed by the vendor and
  - Making informed choices about the parameter setting.
- Organizations that purchase enterprise systems enter into long-term relationships with vendors.

# Costs of ERP

- Costs to implement an ERP system is not just a ‘one-time thing.’
- Real costs are in constant training, upgrading, and maintenance.
- Benefits are not seen right away.

Software cost: Purchasing the software.

Consulting fees: Hiring external experts to help implement the system correctly.

Process rework: Redefining processes in order to ensure the company is using the most efficient and effective processes.

Customization: If the software package does not meet all of the company's needs, it may be required to customize the software.

Integration and testing: Ensuring all software products, including disparate systems not part of the ERP system, are working together or are integrated. Testing the ERP system includes testing all integrations.

Training: Training all new users.

Data warehouse integration and data conversion: Moving data from an old system into the new ERP system.

## Other Costs

- IT Infrastructure costs
- Cost of maintaining parallel Systems
- Opportunity cost for using Internal Resources during ERP Implementations
- Follow up service cost !!!

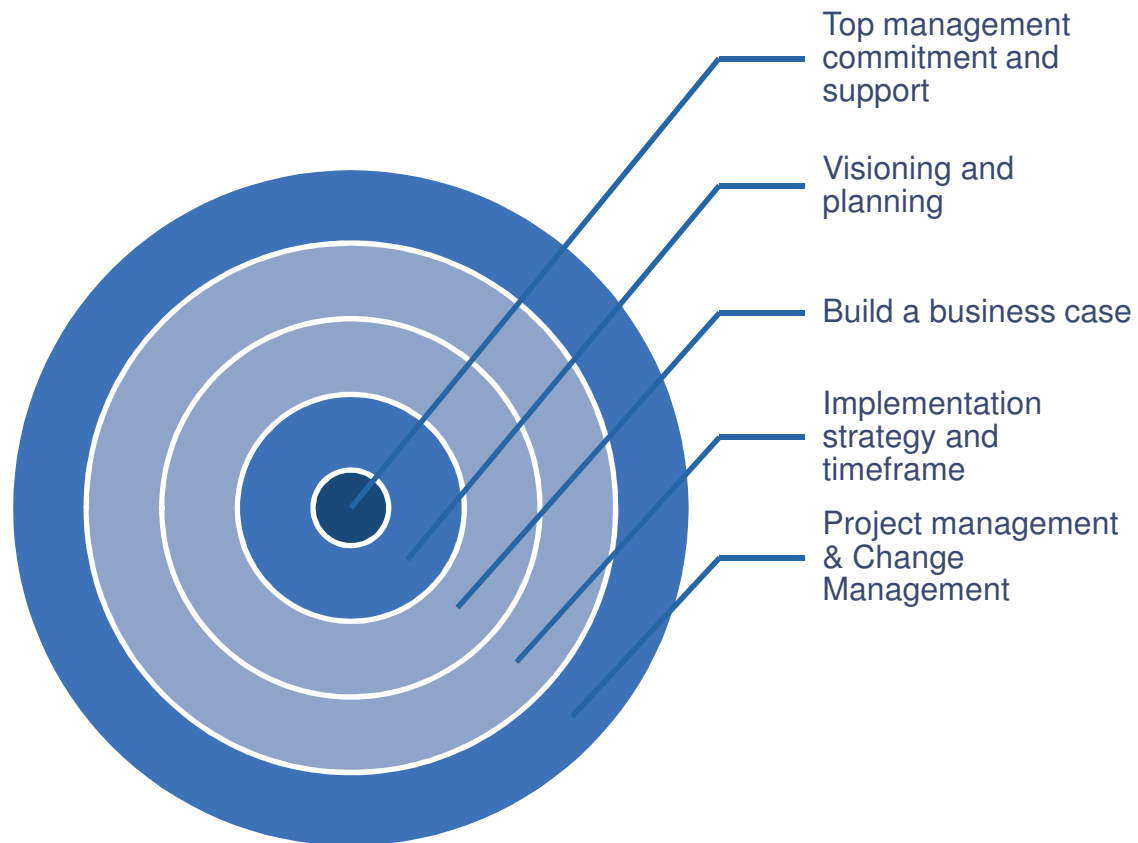
## Why does ERP project fails...

- Lack of sufficient top management support
- Inadequate definition of functional requirements
- Poor ERP package selection
- Incorrect time and effort estimates
- Insufficient expertise and resource for carrying out implementation

## Why does ERP project fails...cont'd

- Misfit of ERP applications with company's business processes
- Resistance to change in business processes
- Unrealistic expectations of benefits and ROI
- Inadequate training and system handover
- Poor project management

# Strategic Critical Success factors



## Tactical critical success factors

Balanced team

Project team: the  
**best and  
brightest**

**Communication  
plan**

Empowered  
decision makers

Team morale  
and motivation

**Project cost  
planning and  
management**

**BPR and  
software  
configuration**

## Tactical critical success factors..cont'd

**Legacy system  
consideration**

**IT infrastructure**

**Client consultation**

**Selection of ERP**

**Consultant selection  
and relationship**



## Tactical critical success factors..cont'd

**Training** and job  
redesign

**Troubleshooting/crises**  
management

**Data conversion and**  
**integrity**

**System testing**

**Post implementation**  
**evaluation**

Thank You...