



# Enterprise Resource Planning

- Industry drivers
- What is ERP?
- Planning and implementation
- ERP and BPR



# What drives industry towards ERP?

- Cost control and management
- Demand for flexibility
  - Balance flexibility with consistency
  - Global standardization
- Informed management decision making
- New business areas
- Drawbacks of existing applications
  - Variety of environments and interfaces
  - Difficult to get timely and accurate information
  - Age of existing systems
- Y2K



# Evolution of business systems

- Management Information Systems
- Decision Support Systems
- Executive Information Systems
- Strategic Information Systems
- Corporate Information Systems
- Enterprise Wide Systems
- Materials Requirements Planning (MRP)
- Manufacturing Resource Planning (MRP II)
- Enterprise Resource Planning



# What is ERP?

A multi-module application software that handles a wide variety of business information.

Note: Enterprise Resource PLANNING can be considered as a misnomer. The planning aspects is often falling short, instead focus is on operations.



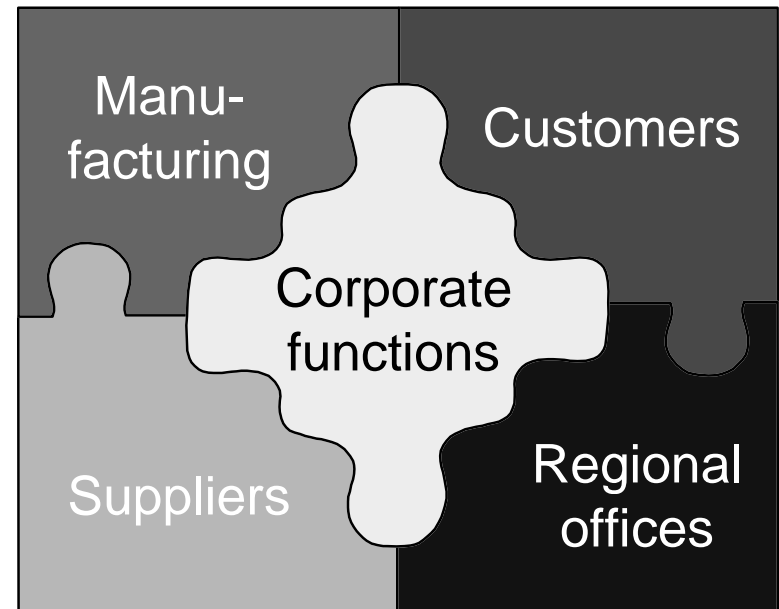
# Who is using ERP?

- So far, mainly big companies
  - Internal efforts required: Money, time
  - Software and consulting: 1:5 rate at least
  - Typical project: 30-100 mill.\$
- New market areas targetted
  - Medium-sized companies
  - From MRP to Supply Chain Management
- Vendor behaviour: Up-scale - down-scale



# The integration scope of ERP

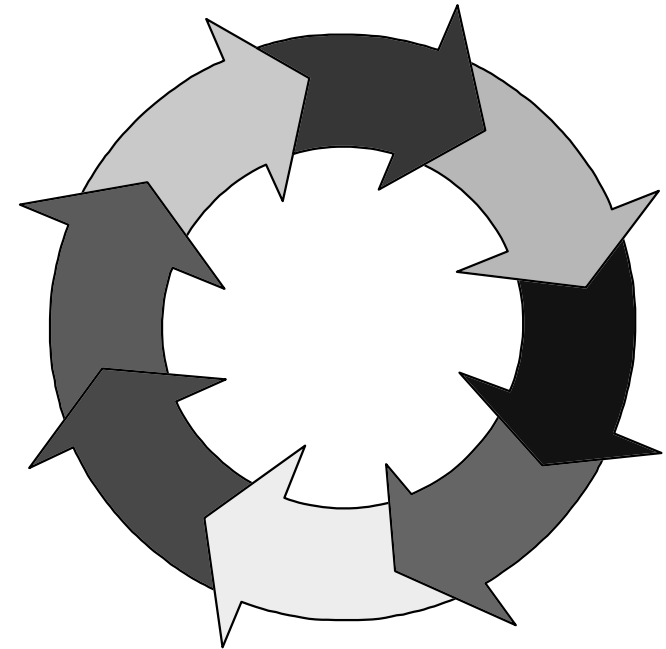
- Database(s)
- Applications
- Tools
- Interface
- Business Processes
  - Often considered as BPR facilitating





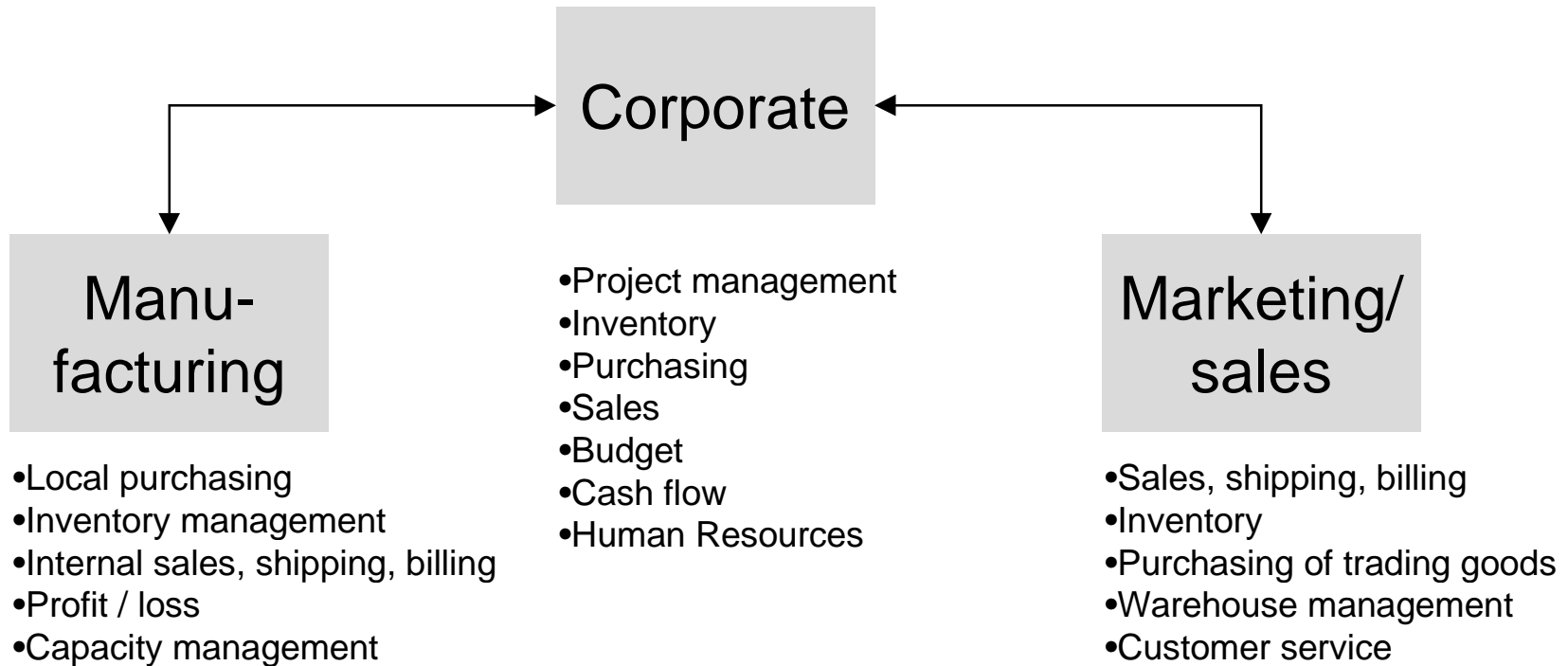
# Key functions

- Finance / Accounting
- Sales and Distribution
- Budgeting / Planning
- Human Resources
- Fixed Assets
- Material Management and Inventory Control
- Master Scheduling
- Work Order Management
- Logistics and Warehouse Man.
- Purchasing / Sourcing





# ERP concept

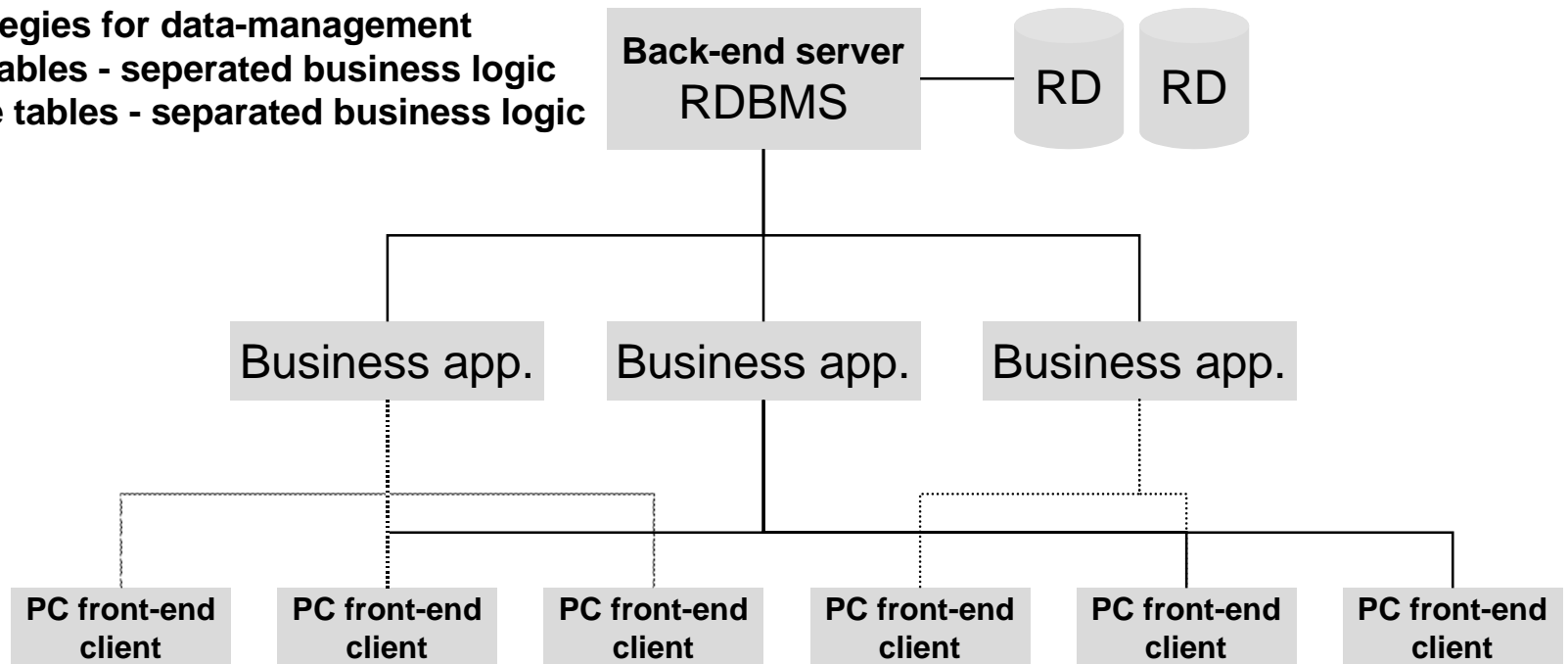




# Typical ERP architecture

## Two strategies for data-management

- Shared tables - seperated business logic
- Separate tables - seperated business logic



- Typical architecture is 3-tier client/server
- Central back-end server for RDBMS
- Server farm for business applications
- PC-client for front-end access
- Typical network protocol is TCP/IP (IPX, SNA also occur)



# Can ERP investments be justified?

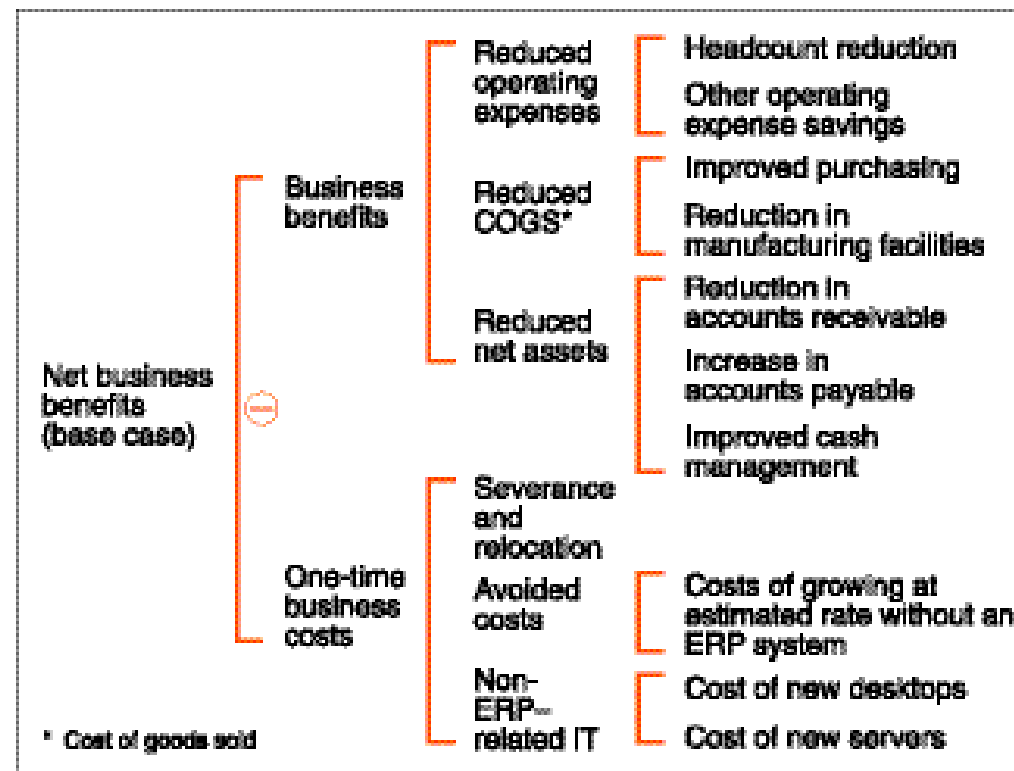
- Hard and soft costs
- Hard and soft benefits
- The "soft side" is difficult to calculate
- Approach
  - Establish base case and ERP case
  - Compare costs and benefits
- Define borderlines
  - Cost
  - Schedule
  - Benefit reduction



# Base case

Exhibit 1

## Base case net benefits tree

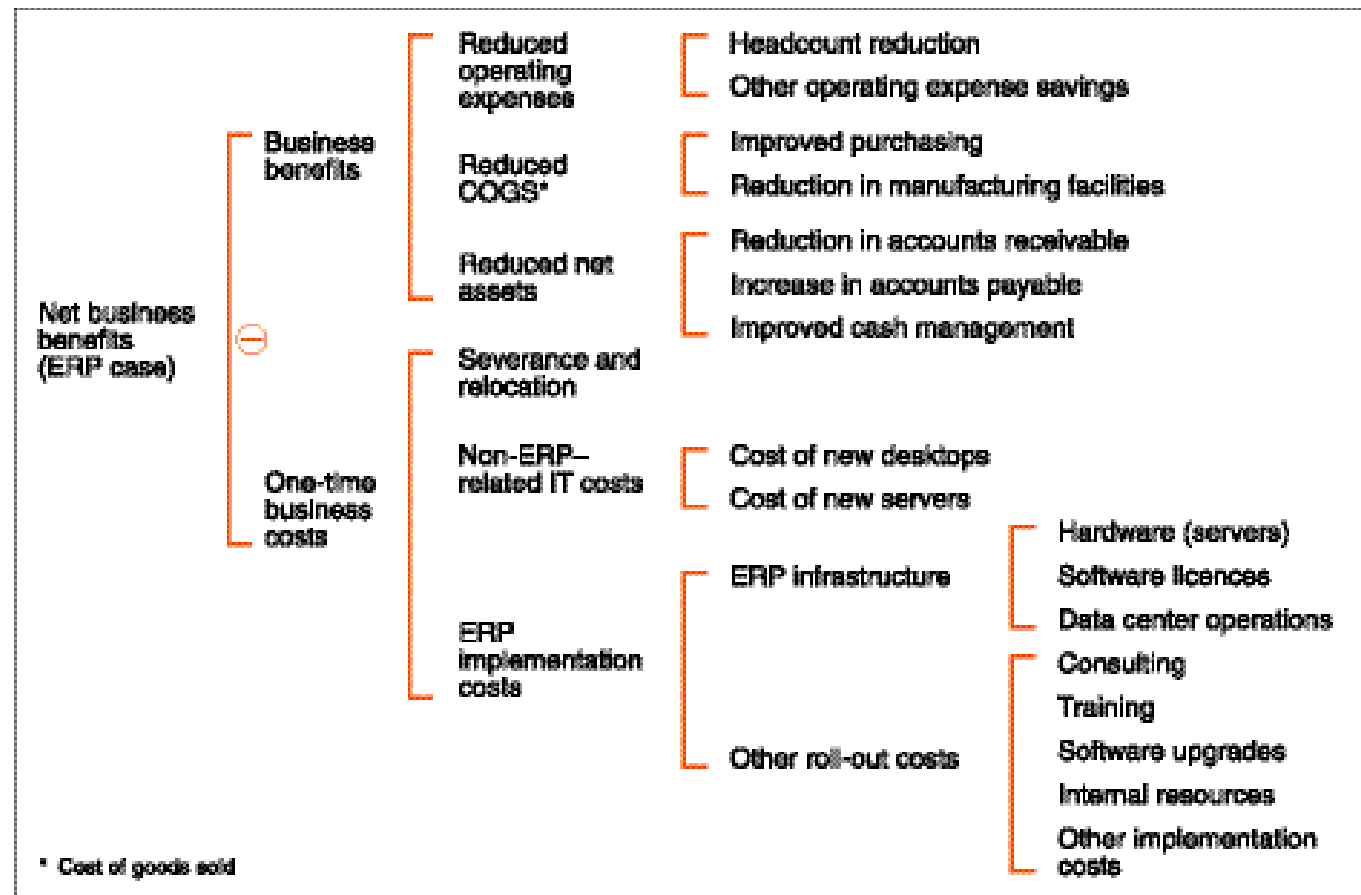




# ERP case

Exhibit 2

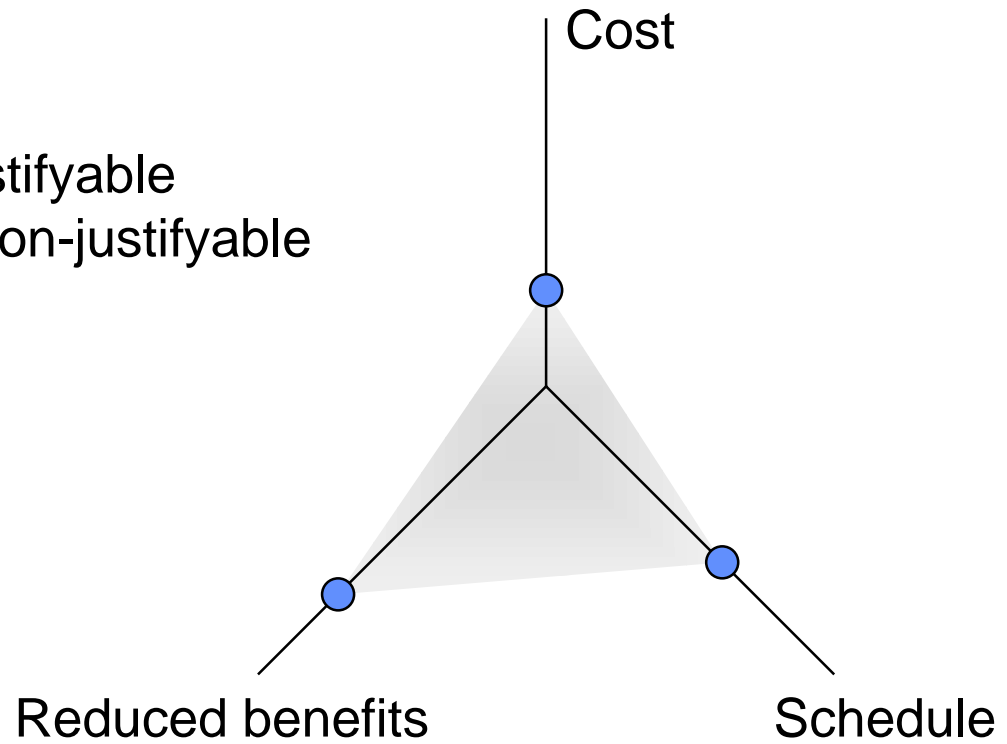
## ERP case net benefits tree





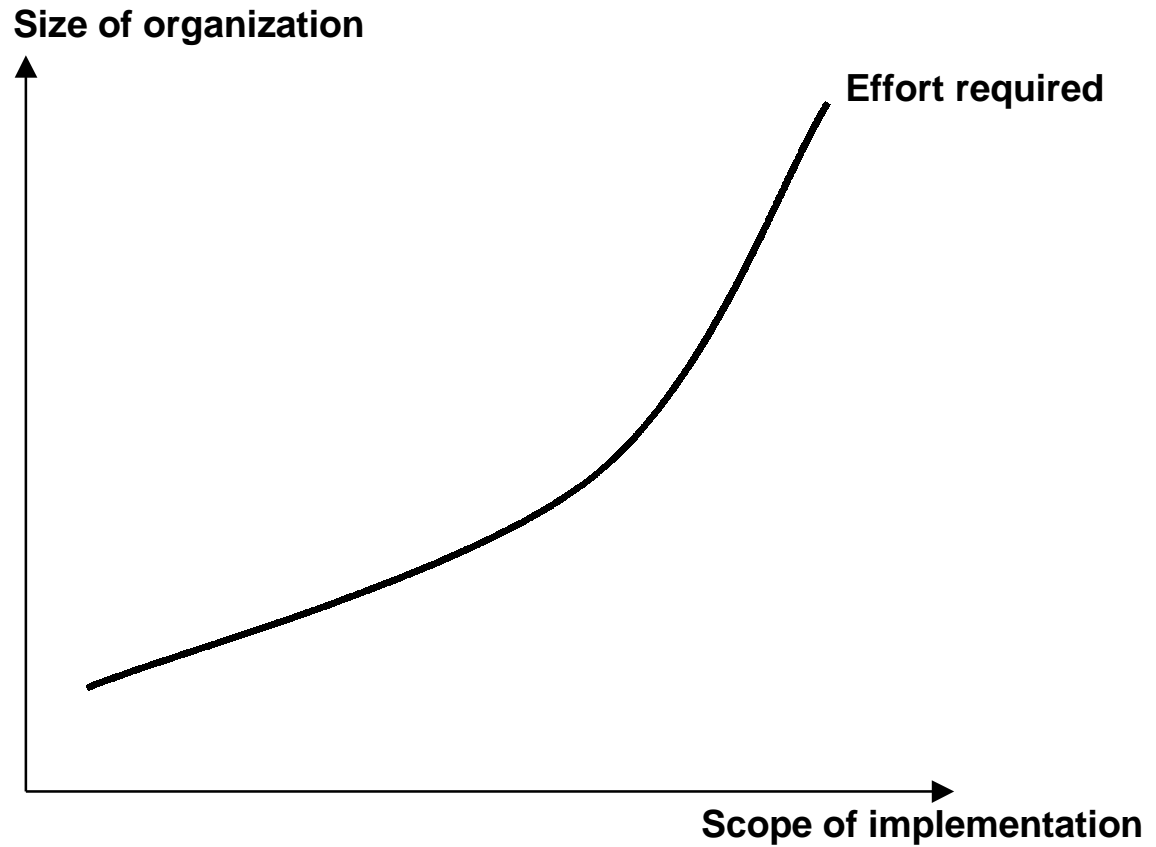
# Borderlines (for worst case)

Within space: Justifiable  
Outside space: Non-justifiable





# Implementation effort





# ERP & BPR

- Very often introduced together
  - BPR as ground-breaker
  - ERP as enabling technology
- "Best practices in-the-box"
  - What is best practice?
- Adaptation
  - Adapting ERP to business processes
  - Adapting BPs to ERP ready-made processes
  - Cost considerations