

# Introduction to ERP

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May 2003

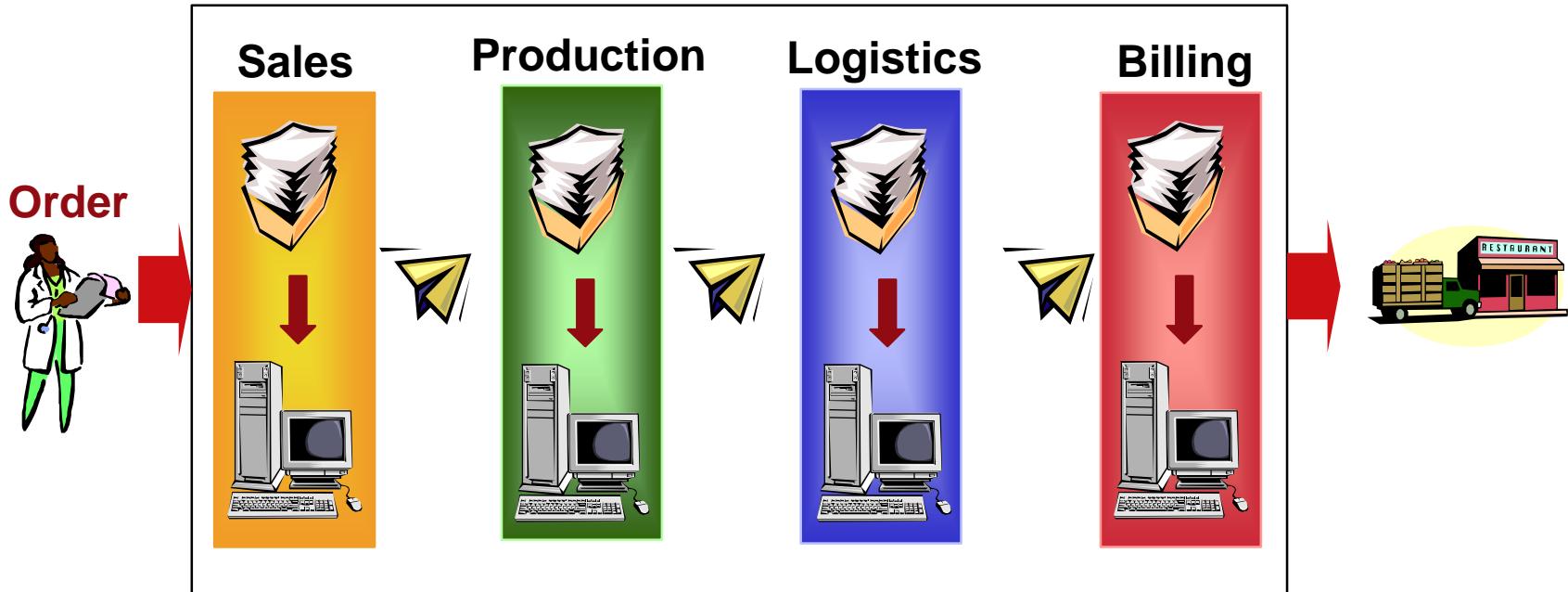
# What is ERP? The dream ...

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- ERP attempts to integrate all departments and functions across a company onto a single computer system that can serve all those different departments' particular needs.
- ERP automates the tasks involved in performing a business process
- If installed correctly, it can have a tremendous payback

# An example: order fulfillment

## Before ERP



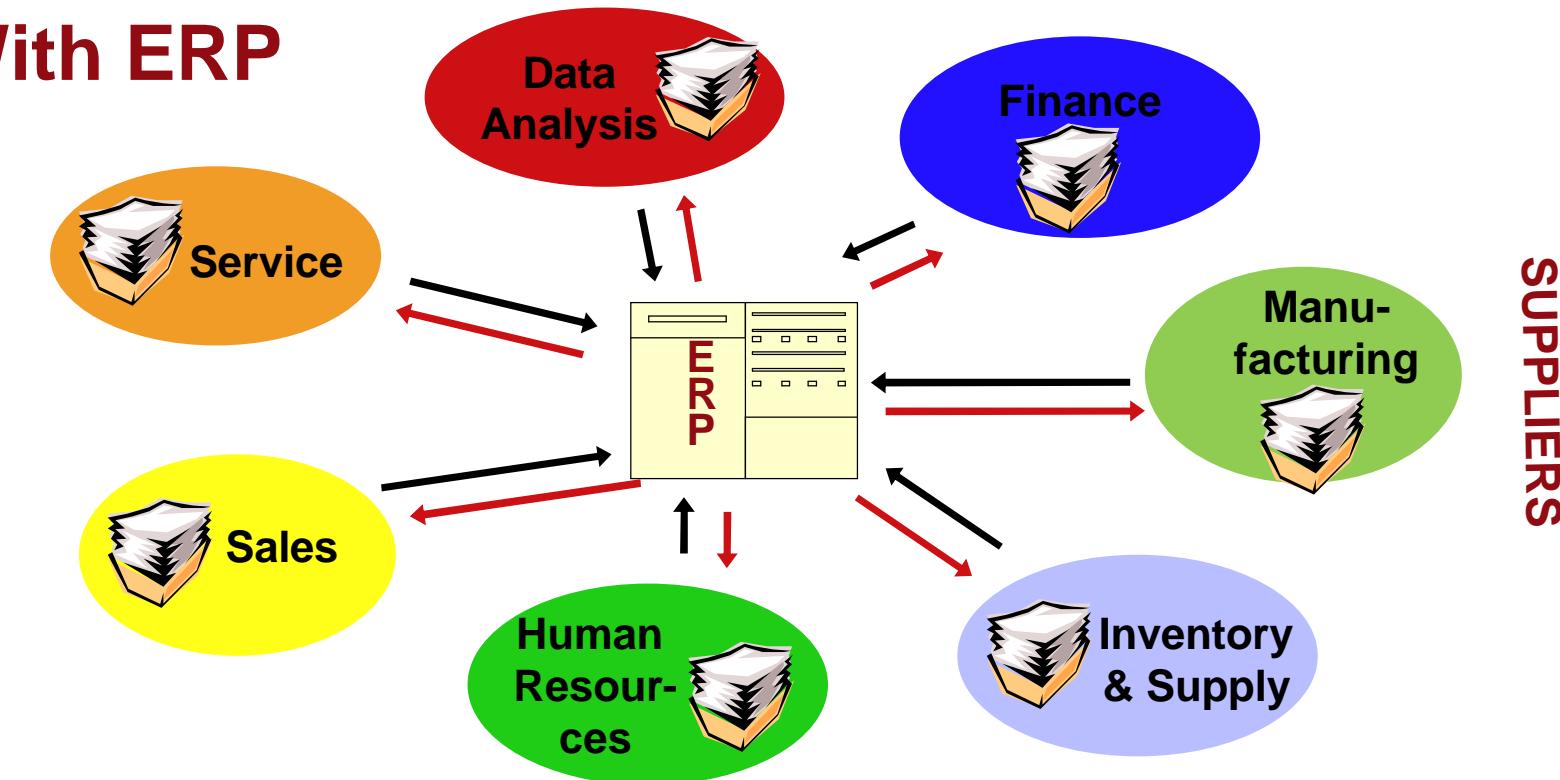
### Problems:

Delays, lost orders, keying into different computer systems invites errors

# An example: order fulfillment (2)

## With ERP

CLIENTS



Front-Office Functions

Back-Office Functions

Adapted from Putting the Enterprise into the Enterprise System, T. Davenport, HBR, 1998

# ERP evolution

1960-70's	MRP
	Inventory and process time reduction with new production planning systems
1980's	MRP II
	Greater reductions due to the integration with accounting and human resource systems
1990's	ERP
	Focused on clients. Real time transactions. Asset management
2000's	ERP Extended or ERP II
	Focused on clients, optimizing the whole business network; including suppliers and clients

# ERP Package Saturation in U.S. Manufacturing Firms

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- Company has installed a package ERP system 44.1%
  - Company is currently installing a package ERP system 18.8%
  - Company plans to install a package ERP system within 18 months 10.3%
  - No ERP system is planned 26.8%
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Source: Enterprise Resource Planning Survey of US Manufacturing Firms, Mabert, Soni and Venkatraman, *Production and Inventory Management Journal*, 2000

# ERP evolution

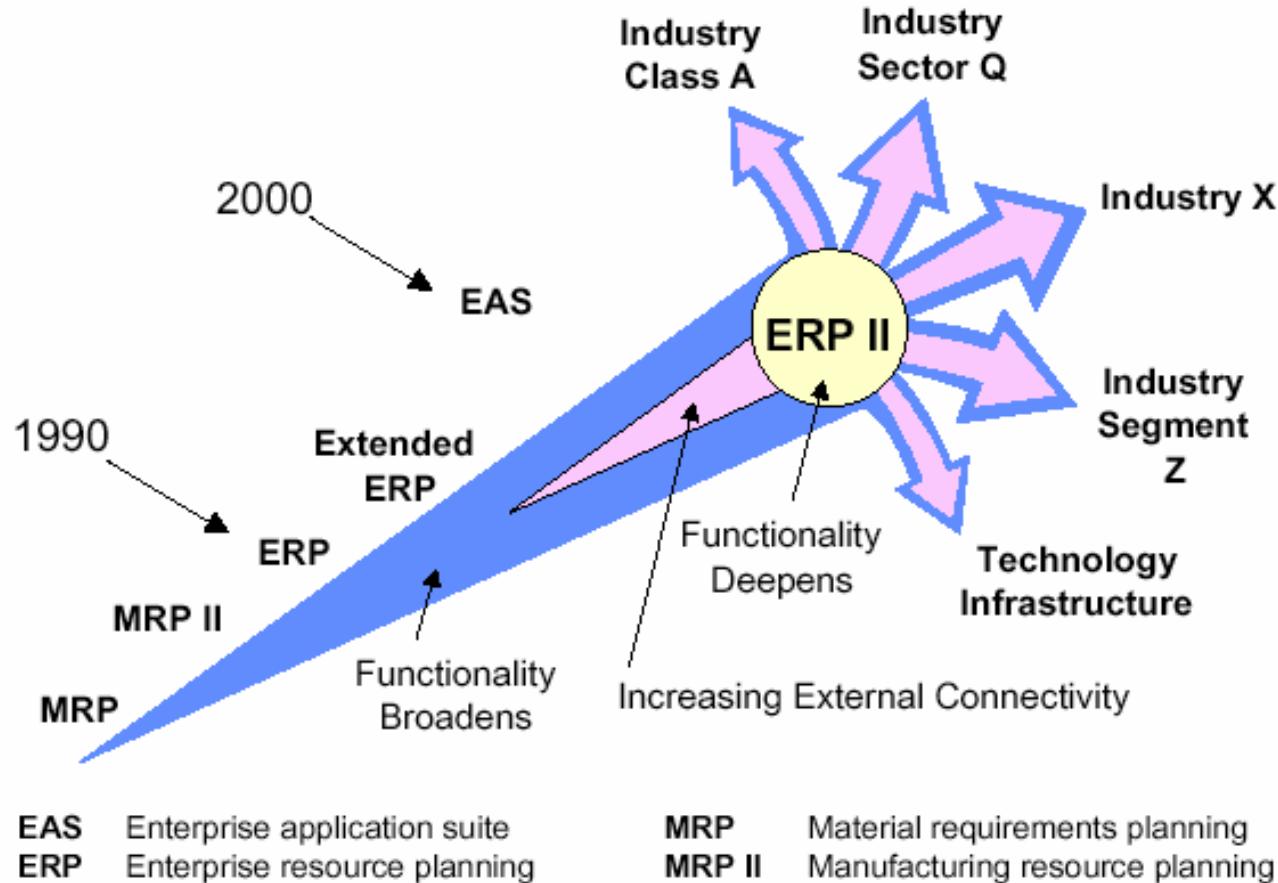
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# ERP evolution (2)

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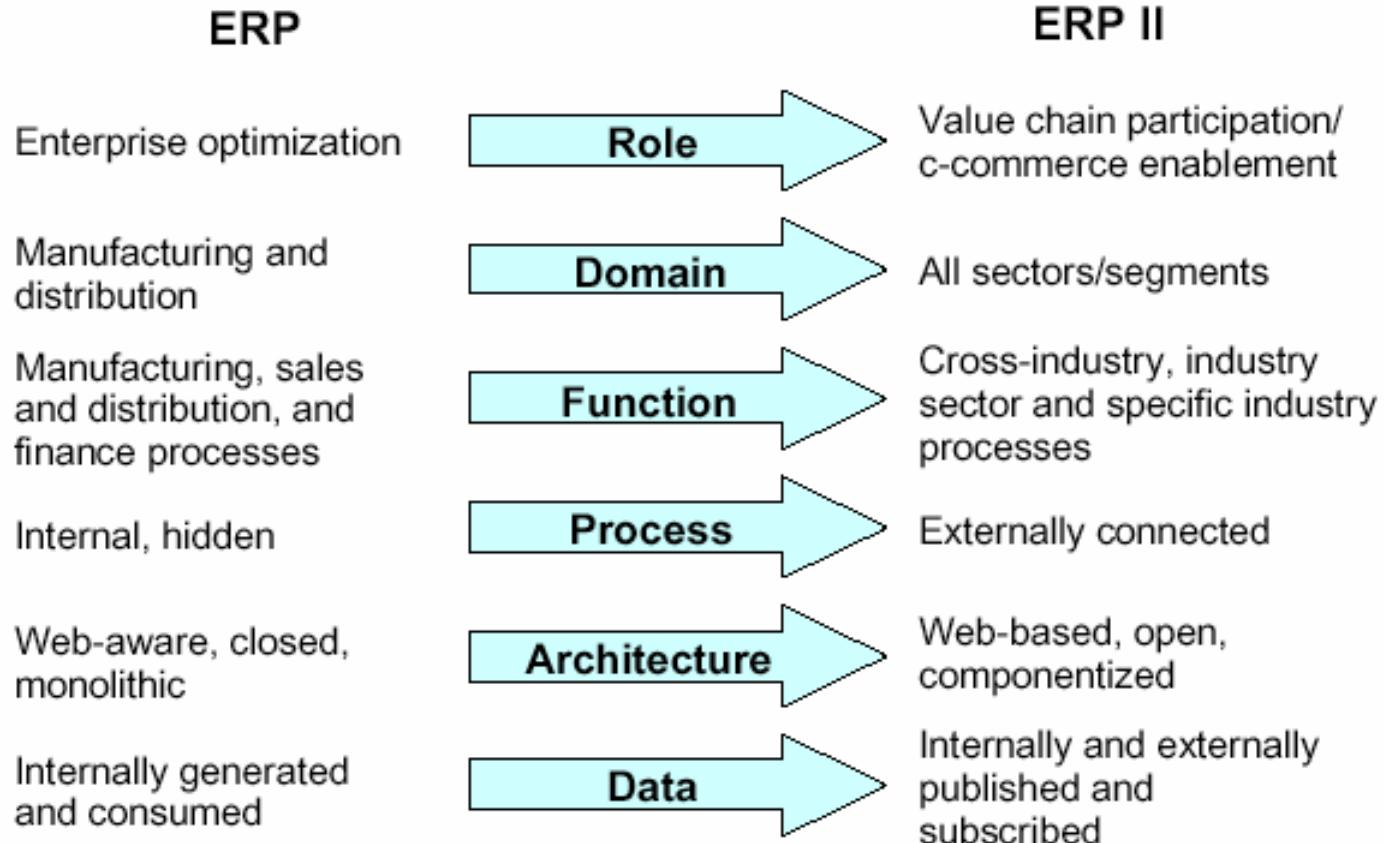
- Integrated systems that cover the firm's entire value chain
  - Industry oriented (specialized)
  - Transition from an internal view of the firm to business network vision within the industry
- Electronic commerce
  - Developing *html* interfaces for the intranet/internet
  - Supporting complete commercial transactions
- Applications with an object-oriented structure
  - Transition from an highly integrated structure to modules with higher complementarity
  - Plug & play facilities

# ERP Evolution (3)

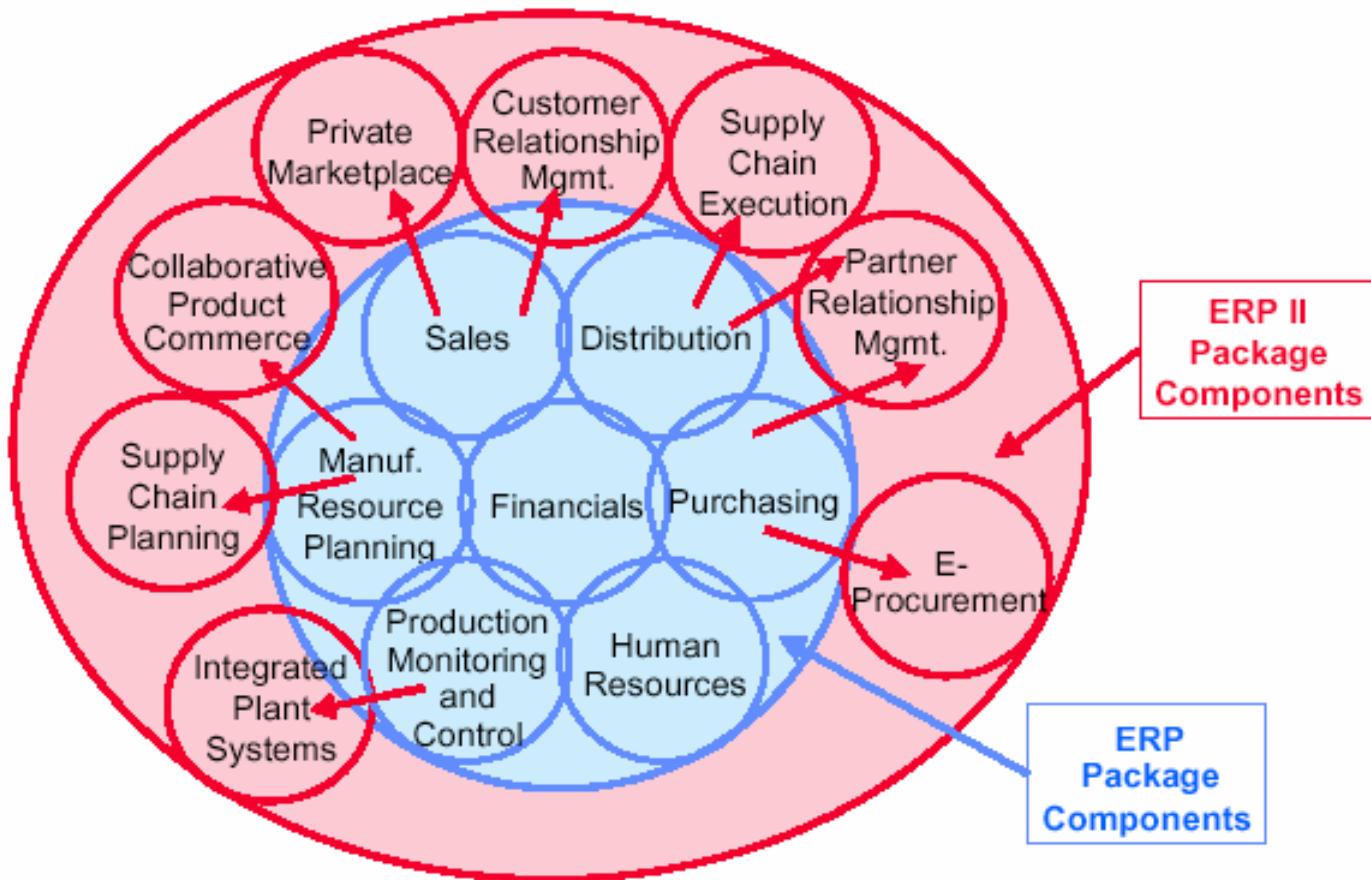


Source: Gartner Group, 2001

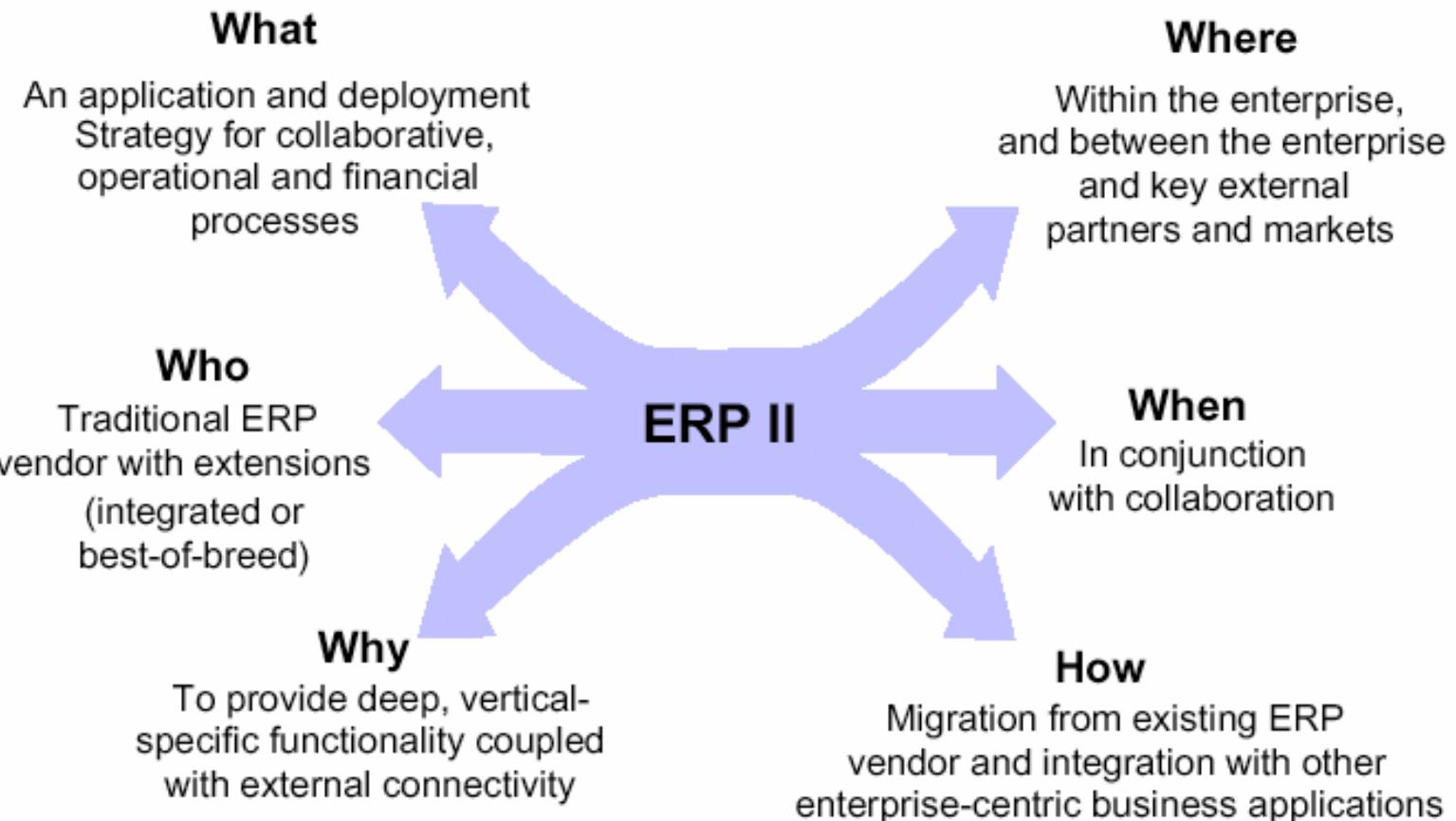
# Comparison: ERP vs. ERP II



# Functional Evolution



# ERP Evolution: Meeting the Challenges



Source: Gartner Research, 2001

# ERP System - Cost Components

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Software	30.2%
Consulting	24.1%
Hardware	17.8%
Implementation Team	13.5%
Training	10.9%
Other	3.3%

Source: Enterprise Resource Planning Survey of US Manufacturing Firms, Mabert, Soni and Venkatraman, *Production and Inventory Management Journal*, 2000

# Commercial ERP Package Implemented

SAP	25%
Oracle	14.2%
Multiple packages	9.8%
Baan	8.8%
J.D. Edwards	7.4%
Peoplesoft	2.5%
QAD	2.5%
SSA/BPCS	2.5%
Other packages	27.3%

Source: Enterprise Resource Planning Survey of US Manufacturing Firms, Mabert, Soni and Venkatraman, *Production and Inventory Management Journal*, 2000

# Hidden costs of ERP

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- Training
- Integration and testing
- Data conversion
- Data analysis
- Consultants ad infinitum
- Replacing your best and brightest
- Implementation teams can never stop
- Waiting for ROI
- Post-ERP depression

# ERP - Total Cost of Ownership (million \$)

	Median	Average	Smallest	Largest
Baan	16,1	13,6	0,8	25,6
JJD Edwards	3,9	5,7	0,8	21,6
Lawson	1,9	4,1	0,4	16,4
Oracle	5,4	11,2	1,4	42,8
Peoplesoft	7,4	15,5	1,3	58,6
SAP	13,9	52,2	0,8	308,2
SSA	1,7	7,6	0,7	29,6

Source: ERP Implementation Study Reveals Costs, Benefits, APICS - *The Performance Advantage*, October 1999.

# Project Risk Factors

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- Project Size
- Experience with technology
- Project Structure
- Stability of the group that will implement the system
- Strategic relevance of the system to be deployed
- Number of users new to the technology

# ERPs are enablers to other business opportunities

