Information Systems for Business Integration: ERP Systems

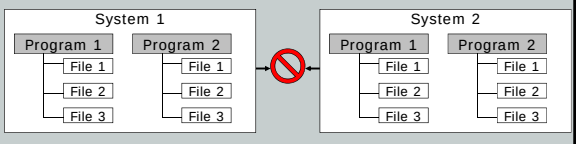
(December 3, 2012)

LEARNING GOALS

- Explain the difference between horizontal and vertical business integration.
- Describe how Enterprise Resource Planning systems integrate internal business processes.
- Distinguish between core and extended EPR components.

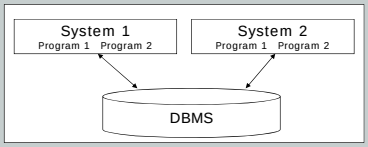
Traditional File System: Integration problem

- 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)



Database Systems: A Solution to Integration problem

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



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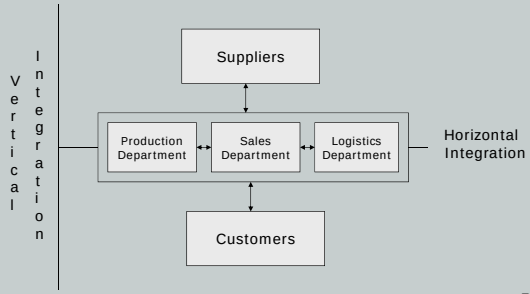
Business Integration?



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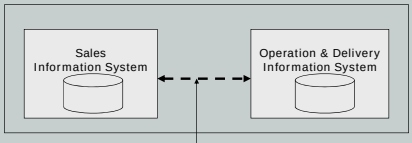
Why Horizontal Integration?

- Possible consequences of bad horizontal integration:
  - Delivery personnel not available when needed
  - Sold products not delivered on time
  - Etc.



Lack of good integration means:
- No reliable interface
- No effective communications

Q: What kind of solution can provide business integration in this specific case?

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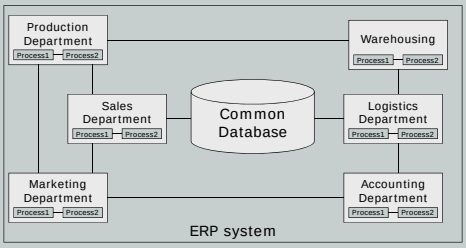
Systems for Horizontal Integration

- Enterprise Resource Planning (ERP) systems
  - integrate all the ***internal*** processes through a common information system (or an integrated set of info systems)



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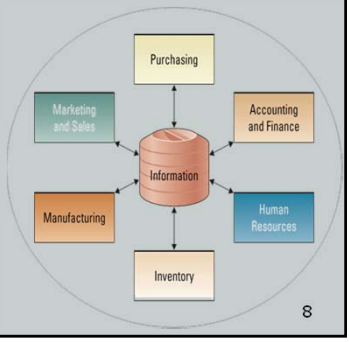
Enterprise Resource Planning Systems

- 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



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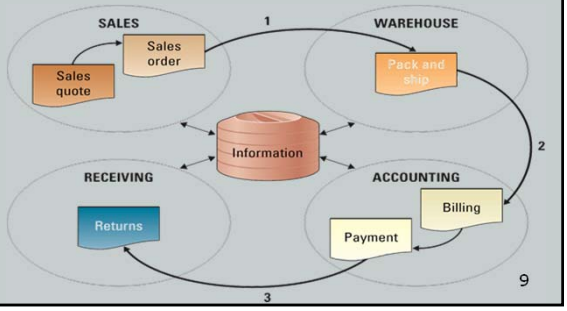
Enterprise Resource Planning Systems

- ERP systems automate business processes



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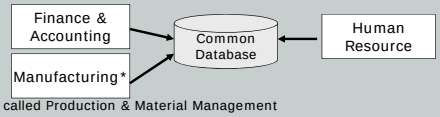
ERP Components (or Modules)

- Two types of components
  - Core ERP Components
  - Extended ERP Components
- Core ERP Components
  - Traditional components found in most ERP systems
  - Are primarily focused on internal operations: Finance, Accounting, manufacturing, HR.



* Also called Production & Material Management

* Helps from products development to production

* Handles demand forecasting, production planning, production scheduling, quality control, etc.

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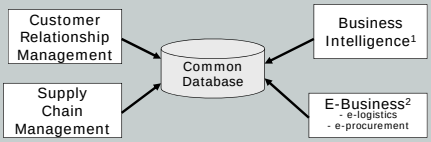
ERP Components (or Modules)

- Extended ERP Components
  - Extra components that might be included
  - They primarily focus on external operations: CRM, SCM, E-Business, Business Intelligence.



1 Provide information that help users in decision-making

1 Collects info used throughout the organization, organize it, and uses analytical tools to help decision-making process

2 Includes **e-logistics** (managing transportation & storage of goods over the Internet) and **e-procurement** (B2B purchase & sale of supplies & services over the Internet)

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ERP Components (or Modules)

- ERP mainly used by medium and large businesses
  - Average lifetime cost: $15 Million (2010 surveys)
  - Implementation process: up to 5 years

The largest vendors worldwide in 2012

#	Vendor	Revenue (million $)	Market share (%)
1	SAP	4726	28.7
2	Oracle Applications*	1674	10.2
3	The Sage Group	1221	7.4
4	Microsoft Dynamics	616	3.7
5	SSA Global Technologies	464	2.8

* In January 2005 Oracle bought PeopleSoft, then the 3rd player.

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Cost of ERP Systems

Associated ERP Risk (Cost)
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.

Factors in ERP System Success

- Active support of upper management
- Having the best people on the implementation team
- Managing the time line well
- User involvement in the planning and implementing ERP systems

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Summary Questions

	Book	Notes
1) What is the difference between Horizontal integration and Vertical integration? What could be the consequences of a bad horizontal integration?		5,6
2) (a) What kind of information system is typically used by organizations for horizontal integration?		7
3) (a) What are the core modules found in ERP systems?		10
4) What does the Manufacturing ERP component allow? Name some of the activities it handles		10
5) Name the three major ERP software vendors		12
6) What are the success factors of ERP implementation?		14

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