Week 10: Organizations and Information Systems

CB2500 Information Management

Smart Banking (BI)
Smart e-Services (ISSN)

Smart IS Auditing (ISA)
Smart Global Business (GBSM)

Study Questions / Intended Learning Outcomes

Q7-1: How do information systems vary by scope?

Q7-2: How do enterprise systems solve the problems of departmental silos?

Q7-3 & CE10: How do CRM, SCM, and EAI support enterprise systems?

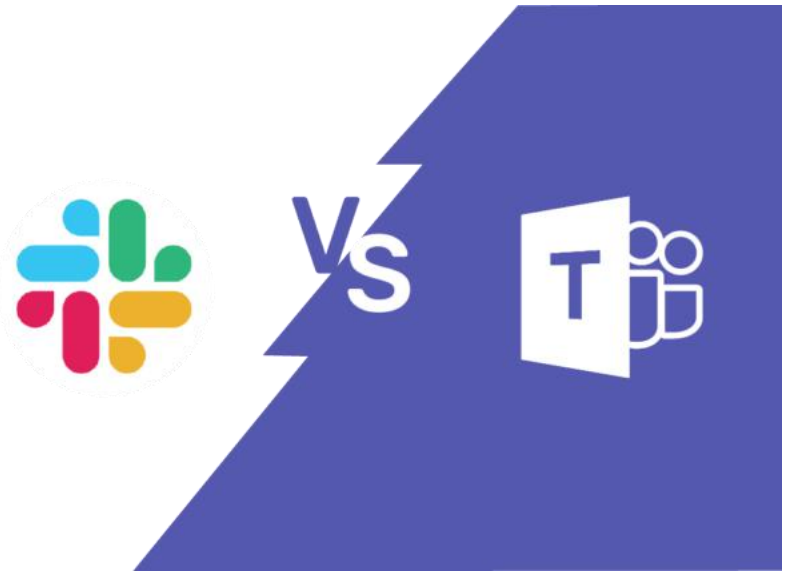
(for Q7-3, we have expanded and modified it using reference chapters and chapter extension 10)

Q7-1: How Do Information Systems Vary by Scope?

- Personal information systems
  - Used by an individual

Q7-1: How Do Information Systems Vary by Scope?

- Workgroup information systems
  - Usually 10 ~ 100 users
  - Problems solved by users within the group



Q7-1: How Do Information Systems Vary by Scope?

- Enterprise information systems
  - Usually 100 ~ 1k users
  - Cross department
  - Problems solved by multiple departments

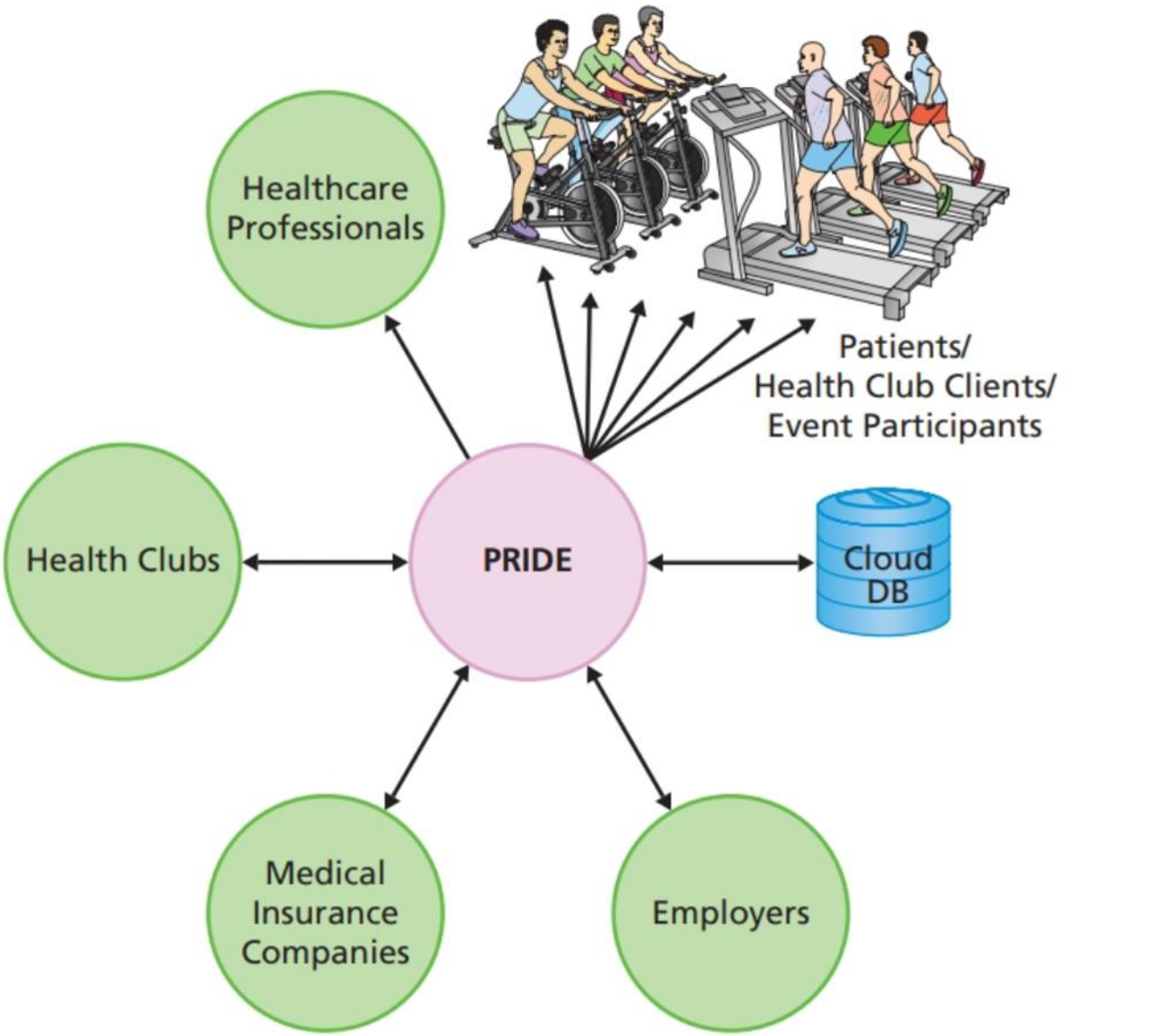
Q7-1: How Do Information Systems Vary by Scope?

- Inter-Enterprise information systems
  - 1k+ users
  - Cross organizations
  - Problems solved by multiple organizations

"Take one pill twice a day hidden in some cheese."

PRIDE:

A Toy Example of Inter-Enterprise IS



PRIDE:
Performance Recording, Integration, Display, and Evaluation

Information Systems by Scope: A Summary

Scope	Example	Characteristics
Personal	Drug Salesperson	Single user; procedures informal; problems isolated; easy to manage change
Workgroup	Physician Partnership	10–100 users; procedures understood within group; problem solutions within group; somewhat difficult to change
Enterprise	Hospital	100–1,000s users; procedures formalized; problem solutions affect enterprise; difficult to change
Inter-enterprise	PRIDE System	1,000s users; procedures formalized; problem solutions affect multiple organizations; difficult to change

Q7-2: How Do Enterprise Systems Solve the Problems of Departmental Silos?

Q7-2: How Do Enterprise Systems Solve the Problems of Departmental Silos?

Department	Application
Sales and marketing	• Lead generation • Lead tracking • Customer management • Sales forecasting • Product and brand management
Operations	• Order entry • Order management • Finished-goods inventory management
Manufacturing	• Inventory (raw materials, goods-in-process) • Planning • Scheduling • Operations
Customer service	• Order tracking • Account tracking • Customer support and training
Human resources	• Recruiting • Compensation • Assessment • HR planning
Accounting	• General ledger • Financial reporting • Cost accounting • Accounts receivable • Accounts payable • Cash management • Budgeting • Treasury management

What Are the Problems of Information Silos?

- Data are duplicated

Employee

Name	HireDate	Email	DeptNo	DeptName
Jones	Feb 1, 2007	Jones@ourcompany.com	100	Accounting
Smith	Dec 3, 2004	Smith@ourcompany.com	200	Marketing
Chau	March 7, 2004	Chau@ourcompany.com	100	Accounting
Greene	July 17, 2007	Greene@ourcompany.com	100	Accounting

a. Table Before Update

Employee

Name	HireDate	Email	DeptNo	DeptName
Jones	Feb 1, 2007	Jones@ourcompany.com	100	Accounting and Finance
Smith	Dec 3, 2004	Smith@ourcompany.com	200	Marketing
Chau	March 7, 2004	Chau@ourcompany.com	100	Accounting and Finance
Greene	July 17, 2007	Greene@ourcompany.com	100	Accounting

b. Table with Incomplete Update

What Are the Problems of Information Silos?

- Disjointed business processes (in diff departments)

What Are the Problems of Information Silos?

- Lack of integrated enterprise information

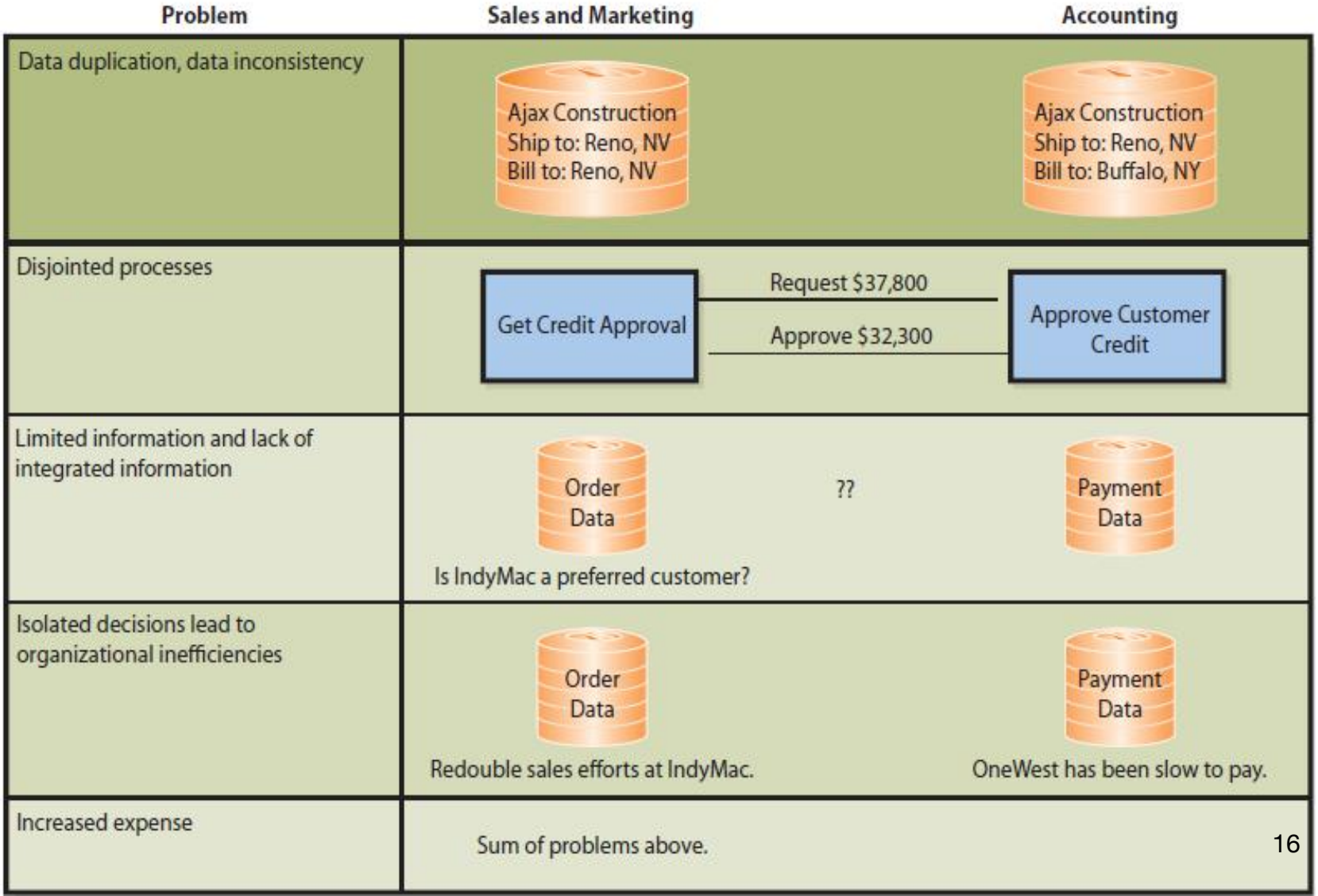
What Are the Problems of Information Silos?

- Inefficiency: Decisions are isolated

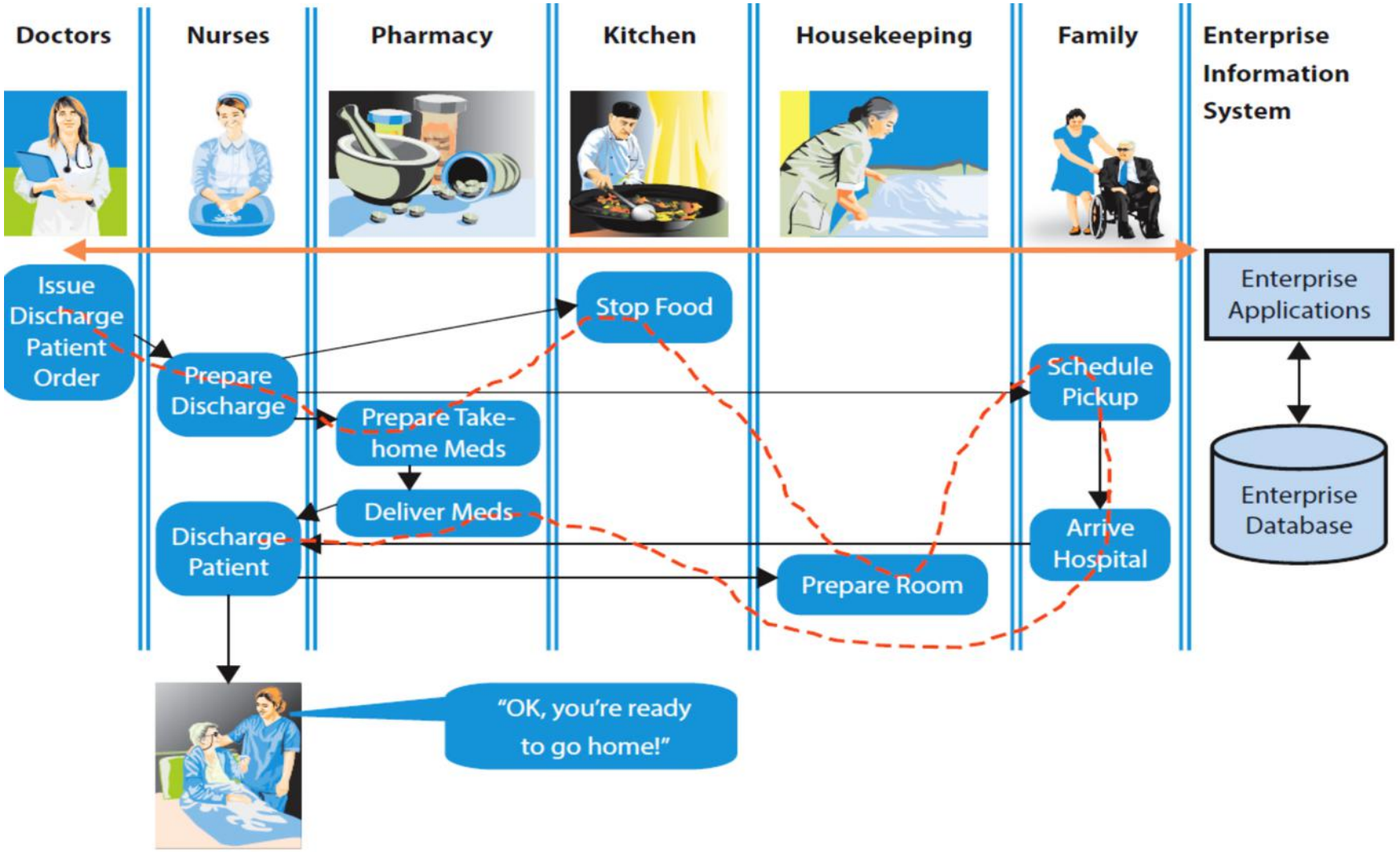
What Are the Problems of Information Silos?

- Finally…

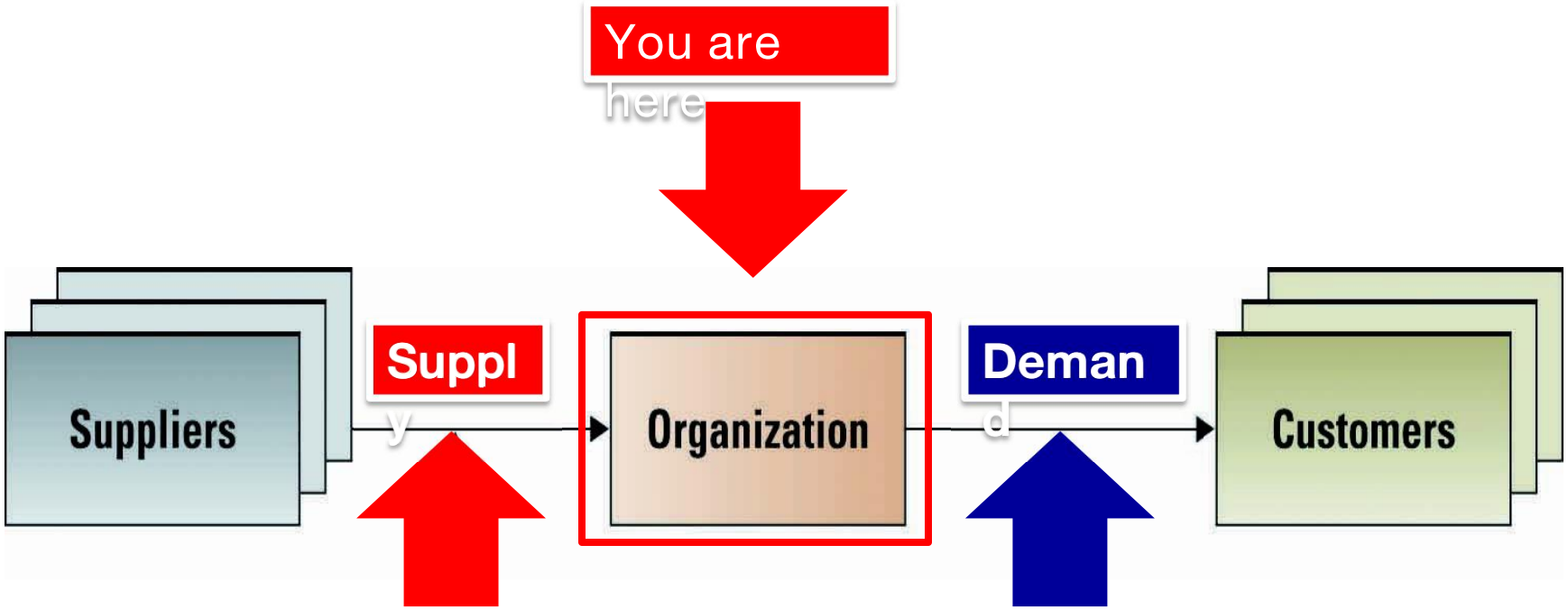
Problems of Information Silos: A Summary



An Enterprise System for Patient Discharge



Q7-3 & CEQ10: What are the differences among CRM, SCM, and ERP systems?



Customer Relationship Management (CRM)

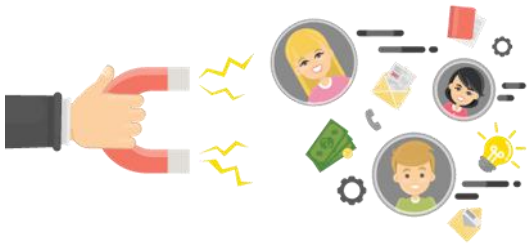
- Suite of applications, a database, and a set of inherent processes

- Intended to support customer-centric organization

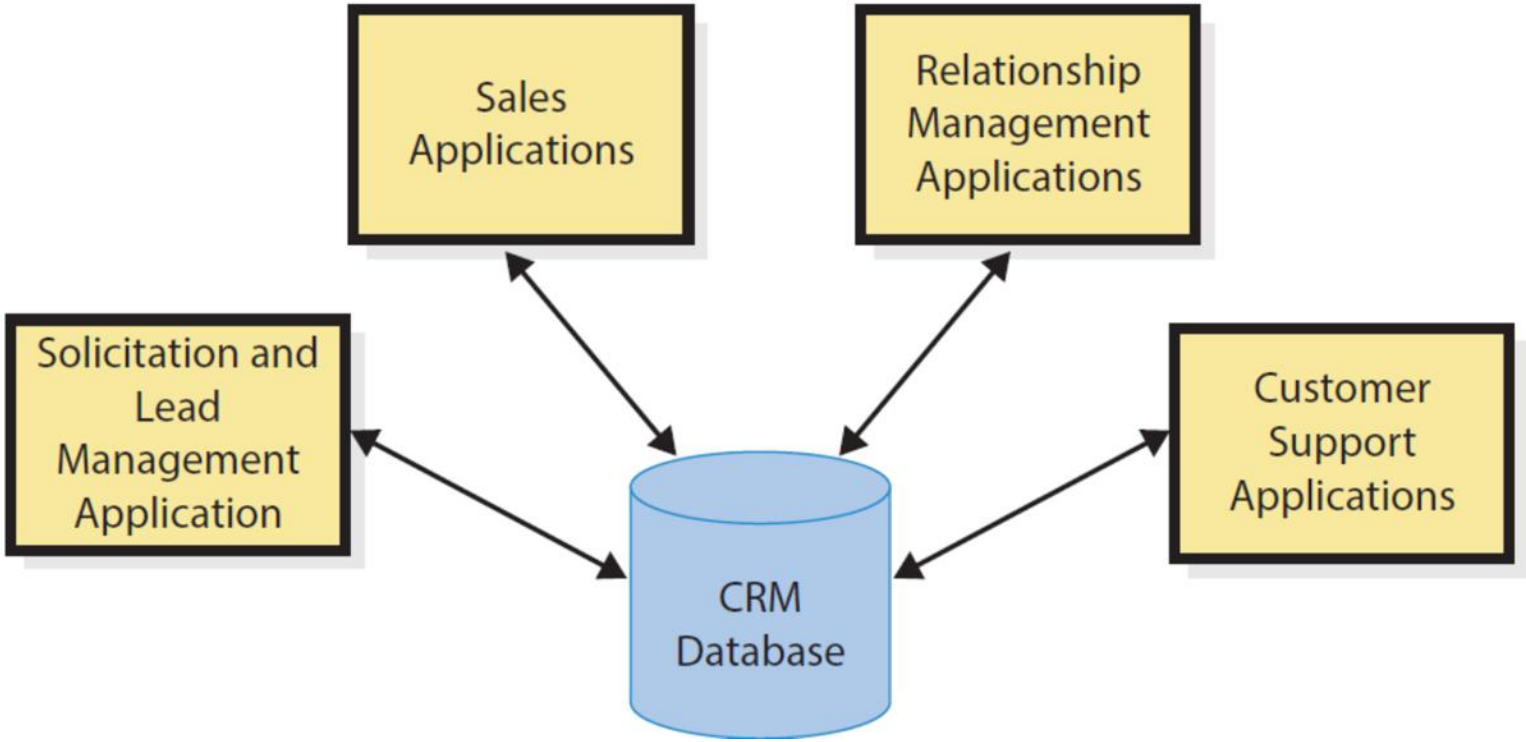
The customer facing/related processes.

Customer Relationship Management (CRM)

- Manage all interactions with customer through four phases of customer life cycle:



CRM Applications

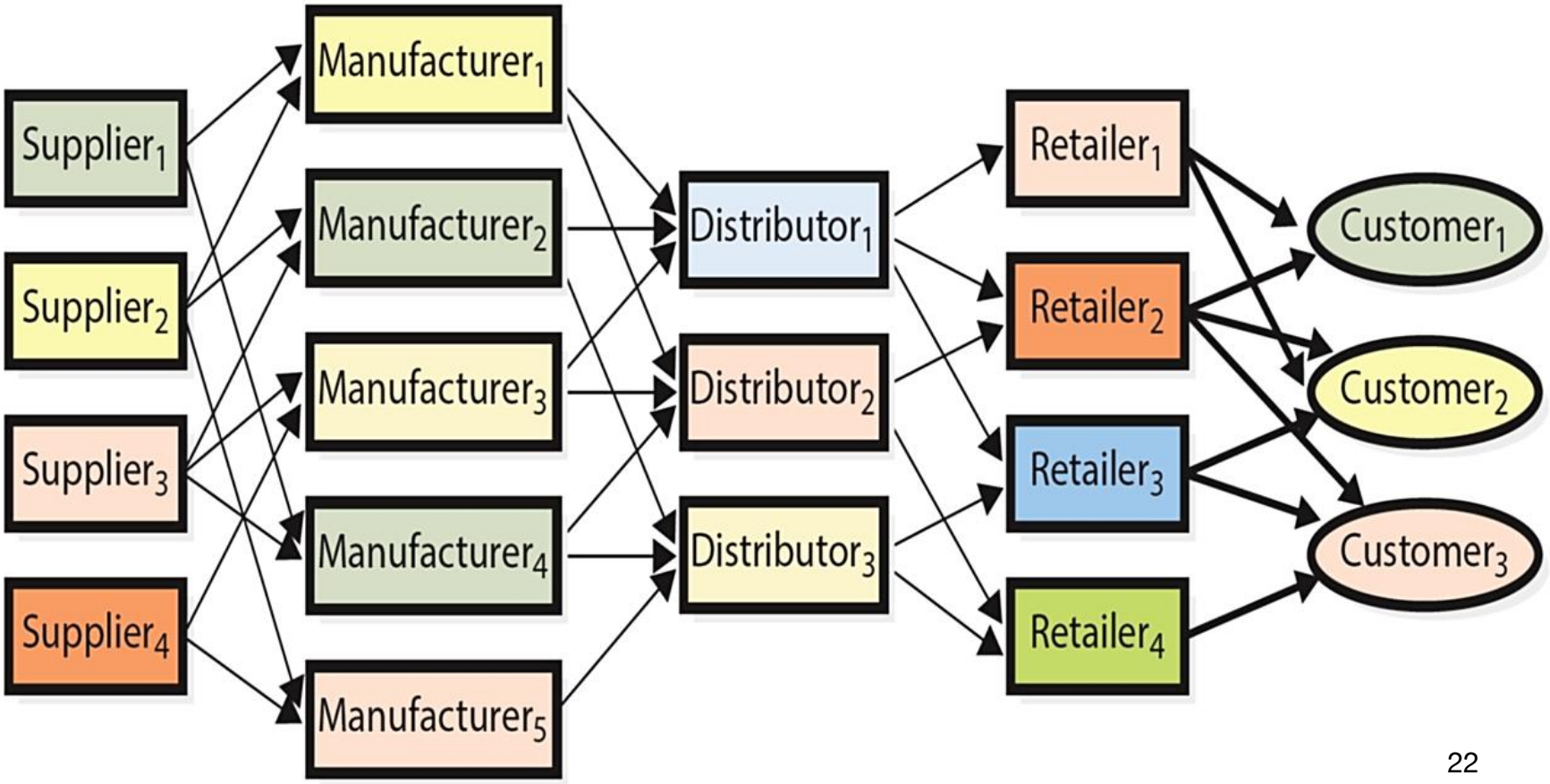


Customer profile info, transaction history, complaints, …
For targeting, selling, after sale service, re-selling…

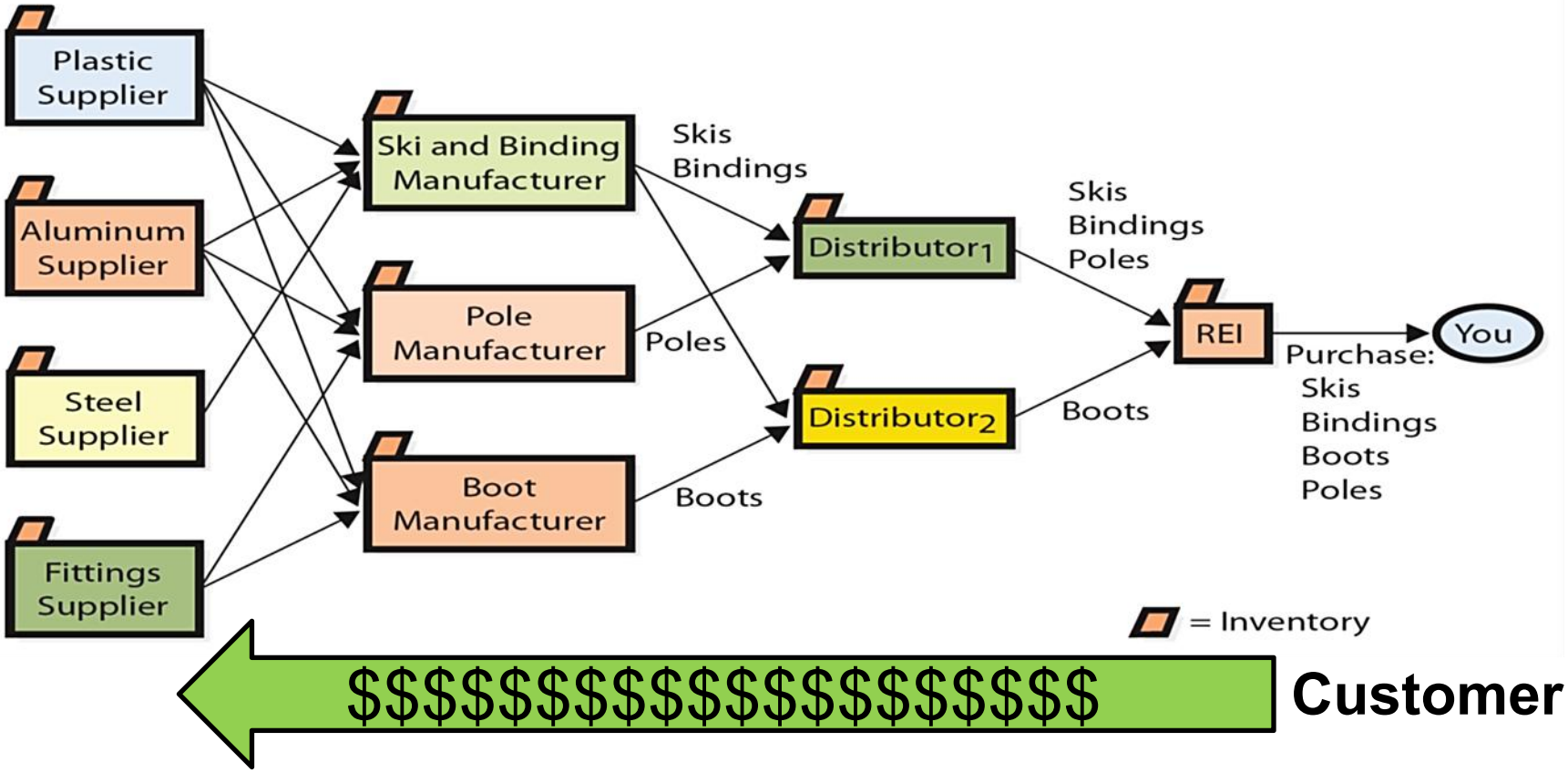
→ Can BI techniques be applied here?

What Is a Supply Chain?

Supply Chain (Network) Relationships



Supply Chain Example



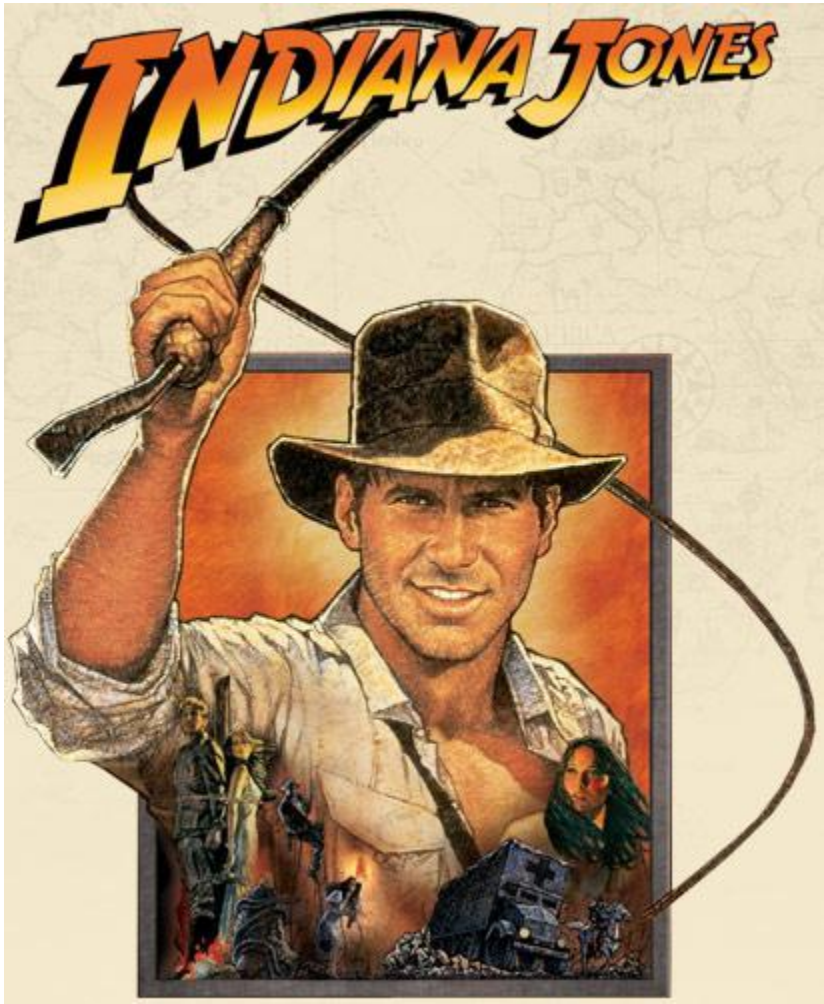
Flowing upstream: _____

Flowing downstream: _____

What Is the Bullwhip Effect?

- Natural dynamic of multistage supply chain

- Variability in **size** and **timing** of orders increases at each stage up supply chain

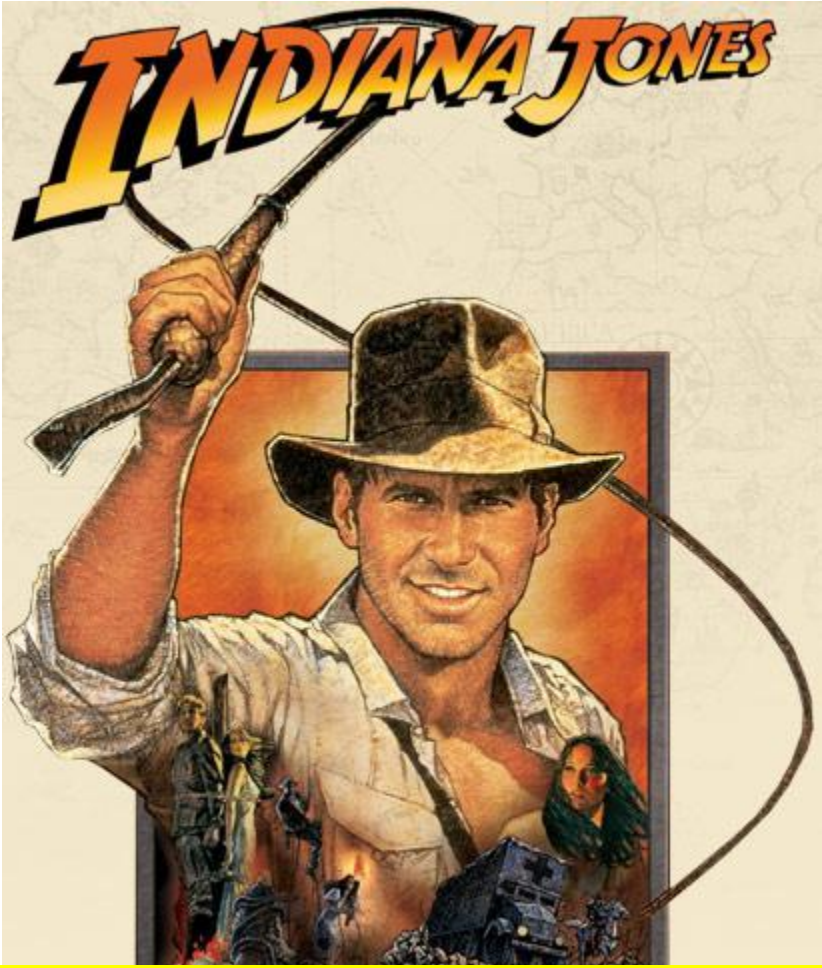


Lee, H. L., Padmanabhan, V., & Whang, S. (1997). The bullwhip effect in supply chains. *Sloan management review*, *38*, 93-102.

What Is the Bullwhip Effect?

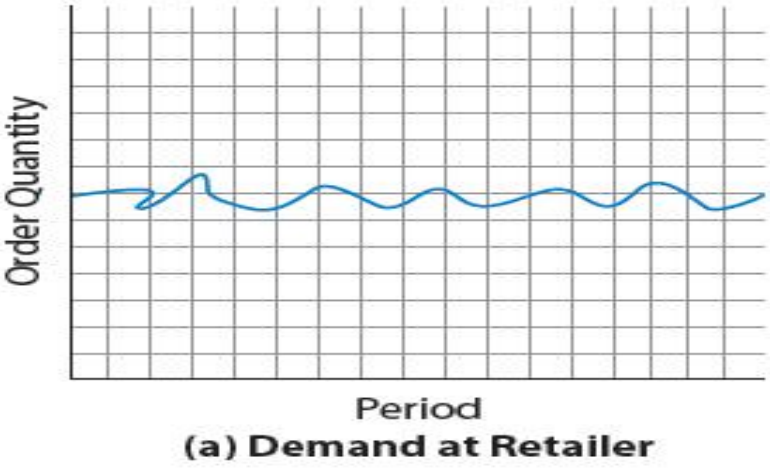
- Large demand fluctuations force distributors, manufacturers, suppliers to carry larger inventories

- Reduces overall profitability of supply

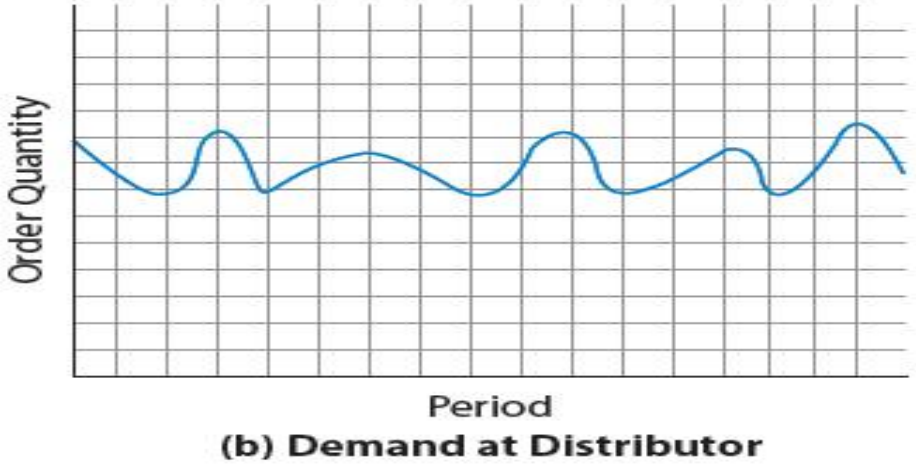


Anything we discussed before can solve this problem?
Customer info → supplier

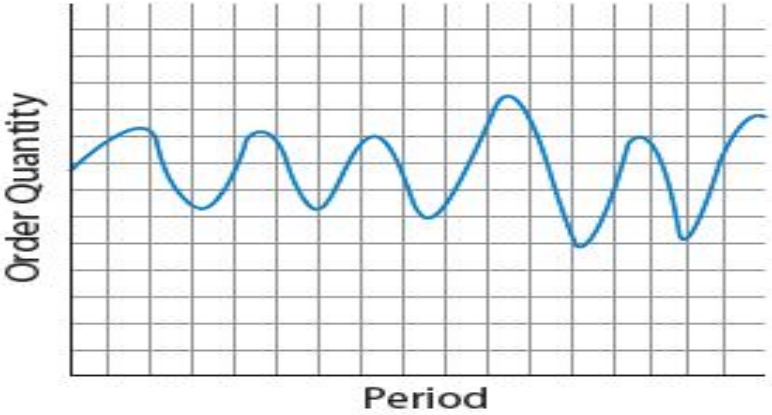
Bullwhip Effect in Charts



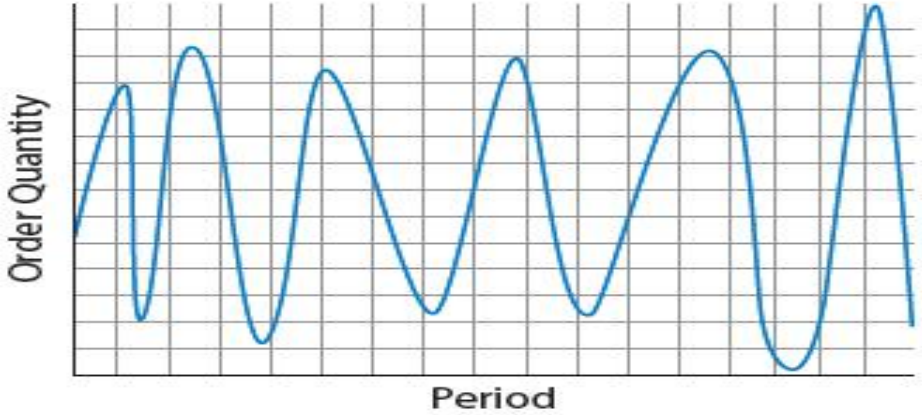
(a) Demand at Retailer



(b) Demand at Distributor

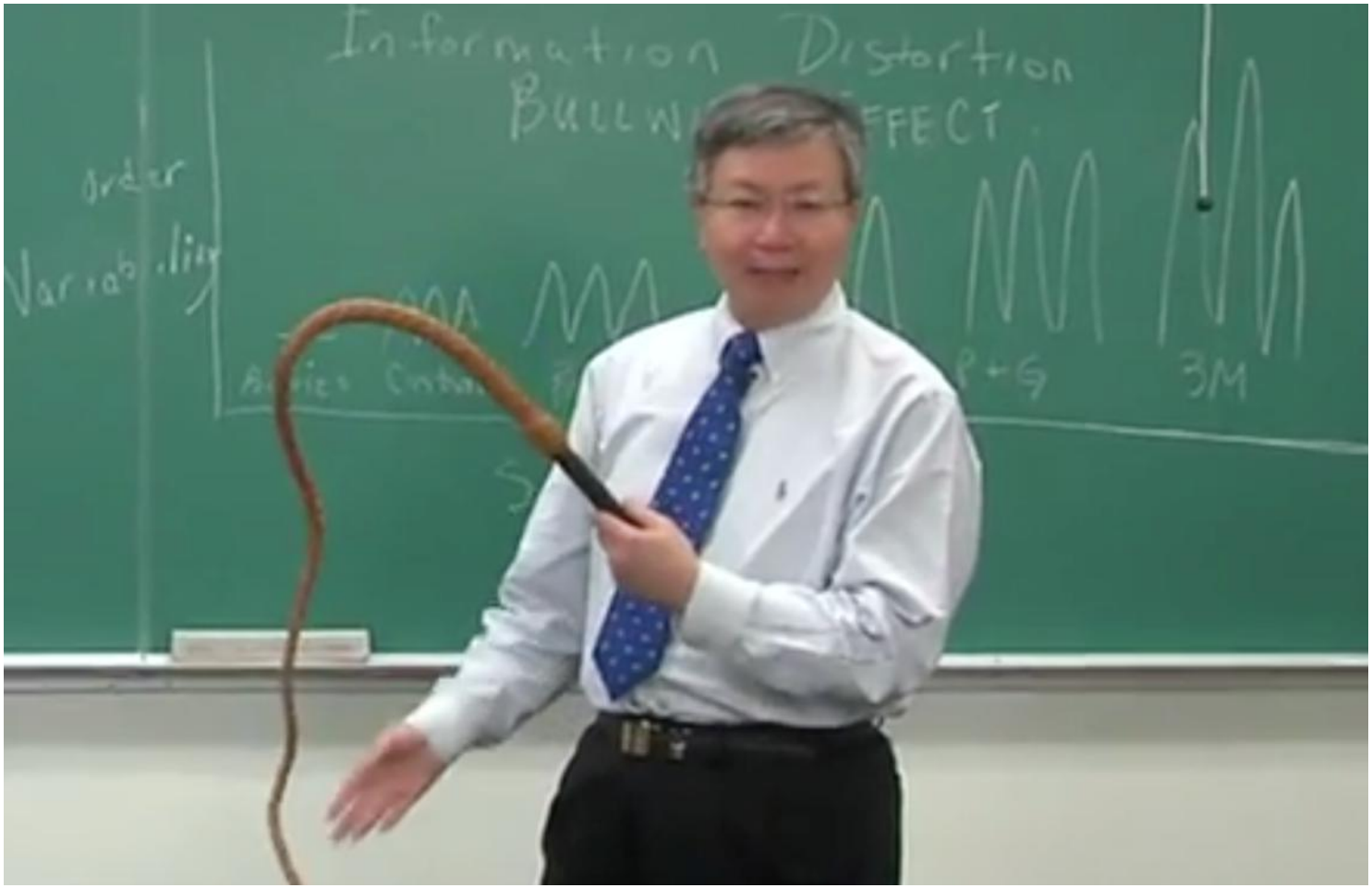


(c) Demand at Manufacturer



(d) Demand at Supplier

Let's see how top-notch scholar talks about "bullwhip effect"



Video: https://www.youtube.com/watch?v=lfZ6I8watQk

UReply Q1

What is “bullwhip effect” in supply chains? Why this happens?

CB2500 Information Management

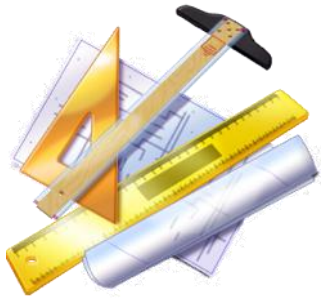
Smart Banking (BI)
Smart e-Services (ISSN)

Smart IS Auditing (ISA)
Smart Global Business (GBSM)

How to evaluate CRM and SCM's performance?

- Benchmarking – A process of _____ and _____ with other players in the industry

- Metrics – the assessment criteria



SCM Metrics

- Backorder
- Customer order promised/actual cycle time
- Transit time
- And a lot more…

Source: http://www.supplychainmetric.com/index.html

CRM Metrics

- Measure user satisfaction & interaction
  - Sales metrics, e.g.?
  - Service metrics, e.g.?
  - Marketing metrics, e.g.?

More examples: https://www.mycustomer.com/selling/crm/crm-metrics-what-should-you-monitor-and-measure

Enterprise Resource Planning (ERP)

- Suite of
  - _____;
  - _____; and
  - a set of _____

- For consolidating business operations into a _____ computing platform

Enterprise Resource Planning (ERP)

- Integrates all departments and functions throughout an organization into a single system (or integrated set of IT systems)

- employees can make enterprise-wide decisions by viewing enterprise-wide information on all business operations

By definition, not CRM, not SCM.
But commercially, already extended to include CRM and SCM aspects (or say, integrated together).
http://www.sap.com/pc/bp/erp/software/overview.html

Enterprise Resource Planning (ERP)

- Reasons ERP systems are powerful tools
  - ERP is a logical solution to incompatible applications
  - ERP addresses global information sharing and reporting
  - ERP avoids the pain and expense of fixing legacy systems

Enterprise Resource Planning (ERP)

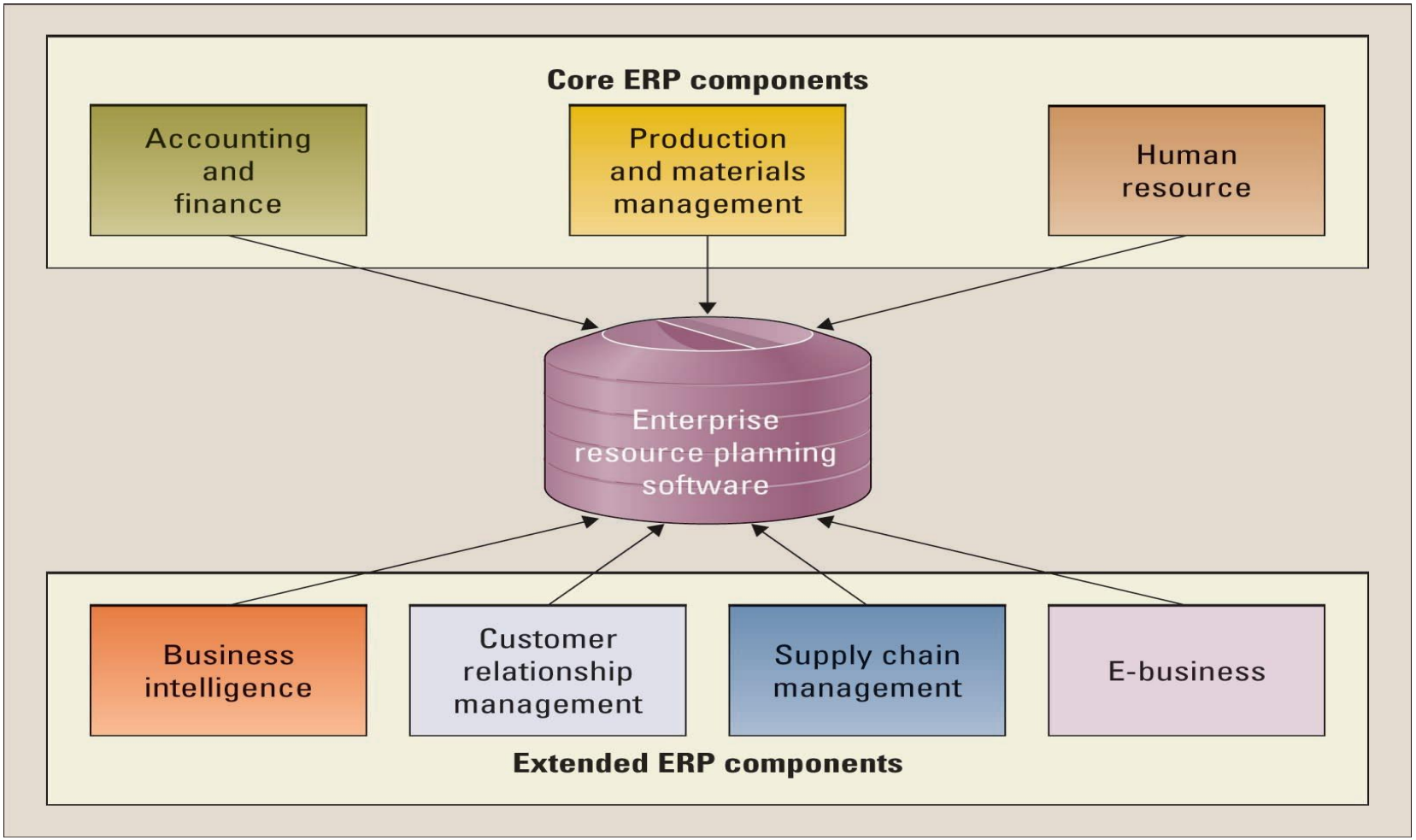
- Reasons ERP systems are powerful tools
  - ERP is a logical solution to incompatible applications
  - ERP addresses global information sharing and reporting
  - ERP avoids the pain and expense of fixing legacy systems

An integrated system for internal operations.

If not using ERP → need to have customized way to connect different systems from different vendors (very very difficult task!) to enable info flow.

A good video intro: https://www.youtube.com/watch?v=lYCEQqSM08I

ERP Components

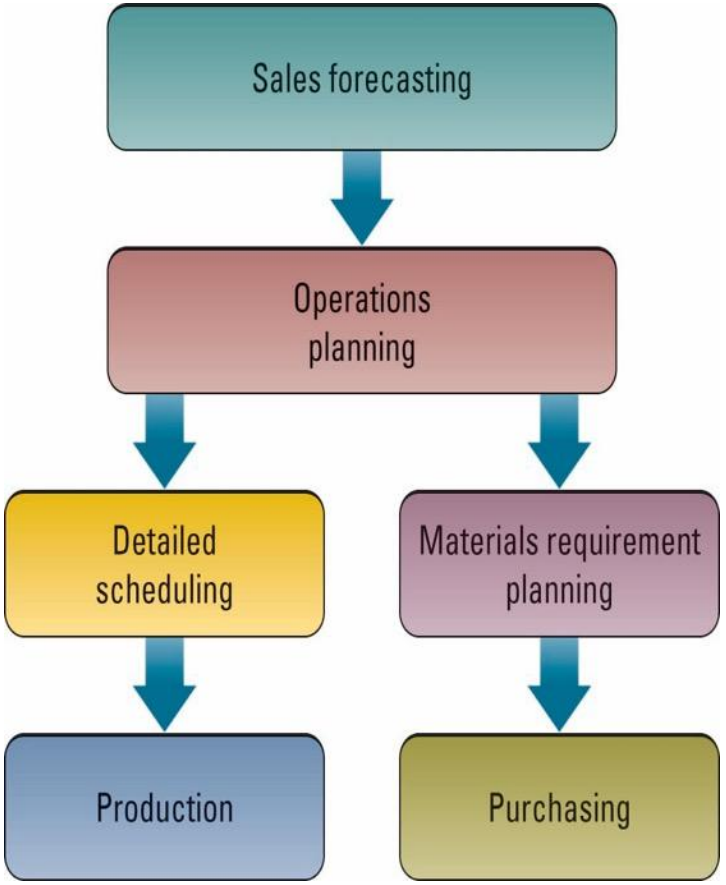


Accounting and Finance ERP Component

- Manages accounting data and financial processes within the enterprise with functions such as general ledger, accounts payable, accounts receivable, budgeting, and asset management

Production and Materials Management ERP Component

- Handles the various aspects of production planning and execution such as
  - demand forecasting
  - production scheduling
  - job cost accounting
  - quality control



Human Resource ERP Component

- Tracks employee information including payroll, benefits, compensation, performance assessment

- assumes compliance with the legal requirements of multiple jurisdictions and tax authorities

Extended ERP Components

- Extended ERP components include:
  - Business intelligence
  - Customer relationship management
  - Supply chain management
  - E-business components include
    - E-logistics
    - E-procurement

These are additional!

An ERP could have an extended module to manage data warehouse.

Why is this lecture valuable to you?

- This lecture provides you with solutions to resolve operational problems within and across organizations (e.g., information silos)

- You may use ERP, CRM, and SCM to solve operational problems with different stakeholders

Week 10 Recap

Q7-1: How do information systems vary by scope?

Q7-2: How do Enterprise Systems Solve the problems of departmental silos?

Q7-3 & QCE10: How do CRM, SCM, and EAI support enterprise systems?

(for Q7-3, we have expanded and modified it using reference chapters and chapter extension 10)

References and Disclaimer

- Ch. 7, CE. 10
- Reference book: Business Driven Technology, 5th Education, Chapter 4
- Reference book: Business Driven Information Systems, 3rd Edition, Chapter 8

- The PPT from publisher is slightly modified to suit the teaching/learning pace.
- Photos used in this PPT are copyrighted by the corresponding owners.