Announcements

- Read Frito Lay case for Tuesday.
- Homework assignment 2 is posted on web (due on January 26th)

posted on website:
- Group/Company Assignments
- Presentation/News Folio Assignments
Student Presentations
Business Processes

What is a business process?

- A designed succession of actions to the accomplish of some result in a business.

Example

- Order Fulfillment
A Business Process

Business Functions

Customer

Sales

Finance

Inventory Control

Warehousing

Order

Take Order

Enter Order

Credit Check

Check Stock

Print Packing list

Find Goods

Tell Mfg. to make order

Print Invoice

Ship
So where do Information Systems Fit into this Story??

- Coordinates flow of information between functional departments carrying out a business process.
  - Increase Speed
  - Reduce Errors
- May reduce number of steps in a business process.
- May even allow new processes that would not have been feasible before...
Information System Roles

- Competitive Advantage
- Effectiveness
- Efficiency

Information Systems

Support of Strategies for Competitive Advantage

Support of Business Decision Making

Support of Business Processes and Operations
A few Information System Categories...
Transaction Processing Systems

- Record and Process data resulting from business transactions
- Example: Credit card trans. processing
- 2 types
  - Real-time
  - Batch-Processing
An example: Process Control Systems

- Monitor and control physical processes

Example:
An example decision support systems
What is Business Process Reengineering?

- A fundamental rethinking and redesign of business processes

- Minor improvement to a business process is often called streamlining the business process
Business Process Example

Customer
  - Sales
  - Finance
  - Inventory Control
  - Warehousing

Business Functions

Order
  - Take Order
  - Enter Order
  - Credit Check

Check Stock
  - Print Packing list
  - Find Goods

Print Invoice
  - Ship
  - Tell Mfg. to make order
A Streamlined Business Process

Business Functions
- Customer
  - Sales
  - Finance
    - Inventory Control
  - Warehousing

Order
- Automatic Credit Check
  - Take Order
    - Enter Order
      - Check Stock
        - Print Packing list
        - Find Goods
  - Ship

Tell Mfg. to make order
A Reengineered Business Process

Business Functions
- Customer
  - Order (On web)
- Sales
- Finance
- Inventory Control
- Warehousing

Automatic Credit Check
Automatic Checking of Stock

Inform Mfg. to replenish stock

Print Packing list
And invoice

Find Goods
Ship
Role of Information Systems in Business Process Reengineering?

- IS often enables complicated business processes be made more simple.

- IS doesn’t always drive business process reengineering though...
Porter Competitive Model?

- **What is it?**
  - A model to help understand the competitive environment in which a company operates.

- **What are the “5 forces”?**
  - Intra-Industry Competition
  - Bargaining power of Suppliers
  - Bargaining power of Customers
  - Substitutes
  - Threat of New Entrants.
Porter Competitive Model

(Identify the Industry and the Specific Market Being Evaluated)

- Potential New Entrants
- Intra-Industry Rivalry
  - Strategic Business Unit
- Bargaining Power of Suppliers
- Bargaining Power of Buyers
- Substitute Products and Services
**Intra-Industry Rivalry**

SBU: UCSC
Rivals: UC campuses, CSU, Private universities, Community Colleges

**Bargaining Power of Suppliers**
- Faculty
- Staff
- Equipment and Service Suppliers
- Alumni
- Foundations
- Governments
- IT Vendors

**Bargaining Power of Buyers**
- Students
- Parents
- Businesses
- Employers
- Legislators

**Potential New Entrants**
- Foreign Universities
- Shift in Strategy by Universities or Companies

**Substitute Products and Services**
- Internet Distance Learning
- Books and Videotapes
- Computer-Based Training
- Company Education Programs

**Porter Competitive Model**
Education Industry – Universities
Porter Model in Business Paper

- You must include a Porter Model in your Business Paper
  - Figure
    - Make it look nice!
  - Narrative analysis of the five forces
    - Identify the industry.
    - Identify the major buyers, suppliers, potential new entrants, substitutes, and inta-industry rivals.
    - Discuss if and why these players put strong or weak competitive pressures on your business.
**Example: Usefulness of Porter Model**

- **Bob wants to start a dentist office**
  - However, bob did not go to dental school
  - Bob will hire the dentist and other staff
  - Is this a good model?

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>Bob’s Dentist Office</th>
<th>Buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentist (Alice)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New Entrants**

**Substitutes**

No! Dentist has too much bargaining power, she could always go into business for herself.
Example: Usefulness of Porter Model

- Suppose Alice, who is a dentist, opens an office

<table>
<thead>
<tr>
<th>Suppliers</th>
<th>New Entrants</th>
<th>Buyers</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Staff</td>
<td>• Dental School Graduates</td>
<td>• Public in general</td>
</tr>
<tr>
<td>• Hygienists</td>
<td>• Dentists moving in from other regions</td>
<td>• Insurance companies</td>
</tr>
</tbody>
</table>

Intra-industry rivals
- SBU: Alice’s Dentist Office
- Other local dentist offices

Substitutes
- Alternative Medicine?
“Primary” Porter Strategies

- In economics you will learn a market where
  - Product is a commodity
  - Firms all have the same production costs
  - New firms can enter market at no cost ("free entry")
  
  profits are driven to zero.

- Consequently Firms need to
  - Differentiate and/or
  - Achieve Cost leadership
"Primary" Porter Strategies

**Differentiation**—customer values the differences that you provide in products, services or capabilities.

**Cost**—become the lowest cost provider. If this is the only primary strategy in the industry, over time there will only one ultimate winner.
Porter Supporting Strategies

- **Innovation**
  - Can reduce costs and or differentiate

- **Growth**
  - Help offset fixed costs
  - Establish reputable brand (differentiate)

- **Alliances**
  - Achieve more complete solution (differentiate)
  - Integration of each others technology may reduce costs
Rules Regarding Strategies

- Must pick at least one of the two primary strategies.

- Can pick any combination of supporting strategies.

Let’s test the logic of this using Dell and Wal-Mart Stores.
Dell, Inc. Strategies

Primary Strategy:

Differentiation

Least Cost

Supporting Strategies:

Innovation

Growth

Alliances
Wal-Mart Strategies

Primary Strategy:
Least Cost
Differentiation

Supporting Strategies:
Innovation
Growth
Alliances
Porter Model Tips

1. To incorrectly define the industry can cause major problems in doing Section I of the business analysis paper.

2. You must identify the specific market being evaluated.

3. Your analysis company is the “Strategic Business Unit.”

4. Identify rivals by name for majors, by category for minor rivals if needed to present the best possible profile of rivals.
Porter Model Tips

1. Be sure to address the power implications of both customers and suppliers. Power buys them what?

1. Identify buyers and suppliers by categories versus companies.

1. Summarize your Porter Model analysis.
What do Porter Models Have to do with IT?

Any ideas?
Strategic Application Evolution

Progression of Information Technology within an enterprise.
Level 1: Strategic
Level 2: Offensive
Level 3: Defensive
Level 4: Cost-Justified
Level 5: Controlled

The progression is from bottom to top.
Strategic Uses of Information Technology

**Strategy**

- Improving Business Processes
- Promote Business Innovation
- Locking in Customers and Suppliers

**IT Role**

- Use IT to reduce costs of doing business
- Use IT to create new products or services
- Use IT to improve quality
  - Use IT to link business to customers and suppliers

**Outcome**

- Enhance Efficiency
- Create New Business Opportunities
- Maintain Valuable Customers and Relationships
Strategic Uses of Information Technology

Strategy
- Raise Barriers to Entry
- Build a Strategic IT Platform
- Build a Strategic Information Base

IT Role
- Increase amount of investment or complexity of IT needed to compete
- Leverage investment in IS resources from operational uses to strategic uses
- Use IT to provide information to support firm’s competitive strategy

Outcome
- Increase Market Share
- Create New Business Opportunities
- Enhance Organizational Collaboration
Porter Model and Information Systems:

1. Build **barriers** to prevent a company from **entering** an industry?

2. Build in costs that would make it difficult for a customer to **switch** to another supplier?

3. Change the basis for competition within the industry?

4. Change the balance of power between a company and its customers or suppliers?

5. Provide the basis for new products and services?
Porter’s Value Chain

- The Competitive Model deals with the environment within which a company competes.

- The Value Chain addresses the flow of a product through the organization.
  - It starts with the original idea in research and tracks its progress all the way to the customers.
Generic Value Chain

SUPPORT ACTIVITIES

FIRM INFRASTRUCTURE

HUMAN RESOURCE MANAGEMENT

TECHNOLOGY DEVELOPMENT

PROCUREMENT

PRIMARY ACTIVITIES

INBOUND LOGISTICS

OPERATIONS

OUTBOUND LOGISTICS

MARKETING AND SALES

SERVICE
Value Chain Purpose

- A way of classifying a company's activities and how they help deliver value to the customer.

- A framework for evaluating decisions like outsourcing or deployment of IT.
Things to Remember Regarding the Value Chain

- The ultimate objective is value to customer.

- As a new product and/or services moves through the value chain, it is important to maximize value-add activities and minimize things that do not add value to customer.

- Functional departments must be sure to emphasize the ultimate goal of value to customer and not do things that seem to make them look good but contradicts the ultimate objective.
Simple Value Chain for Manufacturing Industry

- Research and Development
- Engineering
- Production and Manufacturing
- Marketing and Distribution
- Service
Simple Value Chain for Retail Industry

Partnering with Vendor → Buying → Managing Inventory → Distributing Inventory → Operating Stores → Marketing and Selling
Examples of IT Supporting Value Chain
Other terms in Chapter 2

- **Agile Company**
  - Ability to prosper in rapidly changing environment
  - Some good examples in O’Brien ch2
A Virtual Company

A form of organization that uses telecommunications networks and other IT to link the people, assets and ideas of a variety of business partners, no matter where they may be located, in order to exploit a business opportunity.
Virtual Company Positives

• Share infrastructure and risk.
• Link complementary core competencies.
• Reduce concept-to-cash time through sharing.
• Increase facilities.
• Expand market coverage.
• Migrate from selling products to selling solutions.
• Migrate from selling boxes to selling systems.
Possible Negative Factors

• Will the vendor be able to perform the service at a cost sufficiently low enough and still gain a profit?

• Will the people laid off take with them essential skills and insights that the company needs?

• Will the vendor be able to respond to the organization’s new needs for capabilities and flexibility?
Explicit knowledge
- That which can be written down

Tacit Knowledge
- That which is cannot be written down
- Example: How to Ride a bicycle.

Much of a company’s value is in its knowledge
- Patents, documents
- Tacit knowledge in employee’s heads
Other terms in Chapter 2

- **Knowledge-Creating Company**
  - Create new business knowledge
  - Disseminate knowledge throughout company

- **Knowledge Management Systems**
  - Facilitate this dissemination
  - Often, like a search engine on a company intranet.

- Aside: might a knowledge management system affect the negotiating power of employees?
Total Quality Management

How do you say to a long time, loyal, hard working employee that quality isn’t good enough?
Total Quality Management

1. We are good, but we must continue to improve.

2. Individually and/or departmentally we may be very good but we must be as good in the total efforts of the entire organization.
What You’d Get From 99.9% Suppliers

• At Least 20,000 Wrong Drug Prescriptions Each Year.
• More than 15,000 Newborn Babies Dropped by Doctors or Nurses Each Year.
• Unsafe Drinking Water at Least One Hour Each Month.
• No Telephone Service or Television Transmission for Nearly Ten Minutes Each Week.
• Two Short or Long Landings at O’Hare Airport Each Day.
• Nearly 500 Incorrect Surgical Procedures Each Week.
• 2,000 Lost Articles of Mail Per Hour.
What You’d Get From Six Sigma Suppliers

• One Wrong Prescription in 25 Years.

• Three Newborn Babies Dropped by Doctors or Nurses in 100 Years.

• Unsafe Drinking Water One Second Every Sixteen Years.

• No Telephone Service or Television Transmission for Nearly Six Seconds in 100 Years.

• One Short or Long Landing in Ten Years in all the Airports in the U.S.

• One Incorrect Surgical Procedure in Twenty Years.

• Thirty-five Lost Articles of Mail Per Year.
Porter models are important as a way to evaluate competitive environment and/or internal processes.

Use Porter strategy terminology in discussing how an industry and companies in the industry compete.
Some Terminology from Messerschmitt
Definitions

- **An application**
  - a software program that provides direct and specific value to a user or organization

- **A networked application**
  - distributes programs across 2 or more computers which collaborate in realizing an application.
Definitions

- **Information Technology**
  - the suite of technologies that manage the storage, communication, and manipulation of information.

- **Infrastructure**
  - part of the information technology shared by many applications
    - Hardware - computers and the network
    - Software - operating system, middleware
Definitions

**Middleware**

software falling between the operating system and the application.
History of Computing

- **Centralized**
  - A few big mainframes to automate business functions such as payroll and accounting

- **Time-Shared**
  - Terminals added so many could access main frame

- **Decentralized**
  - PCs on every desk

- **Networked**
  - Applications could be geographically distributed
Definitions

Legacy Applications

- Applications implemented in the technology of yesterday.