Announcements

1. HW # 1 due Next Thursday paper or electronic submission(Web page)
2. Business Paper Preferences , Due 10-11-2012(Web Page)
3. Computer Lab Hour(if you know Microsoft Access, You may not attend)
   Date Time : Oct 10 and 11 : 08:00 -09:30 PM
   Location: Baskin Engineering Building Room 109
   Instructor: TAs.

* Due to space limit: you should arrange Date and time(All class are same)
Class Objectives

- What is Competitive Advantages
- Porter’s competitive forces model
- Companies develop competitive strategies using information systems
- The value chain and value web models, strategic information system applications
- synergies, core competencies, and network-based strategies to achieve competitive advantage?
• Competing on a global scale
• Quality enhance competitive advantage
• Evaluate the role of business process management (BPM),
• Enhancing competitiveness.
Functions on Competitive Advantages (CA)

- Competitive Advantages
  - Porter’s CA Model
  - Competitive Advantages Strategies with IS
  - IT
  - Value Chains
  - Quality Control
  - Global Business
  - BPM
  - New Enhanced Business
Achieving Competitive Advantage; Case Study

Verizon or AT&T: Which Company Has the Best Digital Strategy?

Problem
• Intense competition, difficult strategic decisions.

Solutions
• Verizon heavily promotes its FiOS service whereas AT&T partners with smartphone developers like Apple to strengthen its wireless business.
Cutting-edge technologies like the iPhone and fiber-optic networks offer Verizon and AT&T opportunities to gain an edge.

Illustrates digital technology’s role in gaining and maintaining a competitive advantage

And what about substitute providers like cable companies and Wi-Max (wide area Wi-Fi)?
Verizon or AT&T: Which Company Has the Best Digital Strategy?

- Determine business strategy
- Select new products and services
- Implement strategy
- Partner with other vendors
- Deploy iPhone
- Deploy FIOS network

**Business Challenges**
- Opportunities from new technology
- Powerful competitors

**Information System**
- Create new products
- Provide new services

**Business Solutions**
- Increase sales
- Increase service

Verizon(FIOS) or AT&T(I Phone)
Apple’s iTunes: Music’s New Gatekeeper

**Problem:** Taking advantage of opportunities from new and disruptive technology, staying ahead of traditional competitors.

**Solutions:** Launched iPod and set up iTunes Music Store to create a marketplace for portable, downloadable music.
Partnerships with artists and recording labels allow iTunes to supply exclusive content in return for driving sales and increasing groups’ popularity.

Illustrates digital technology’s role in gaining and maintaining a competitive advantage.
Apple’s iTunes: Music’s New Gatekeeper

- Design business strategy
- Design new products and services

- Transform music sales and distribution process
- Collaborate with music labels
- Build online storefront and digital services for music delivery
- Create new digital platforms or storing and playing music

Business Challenges
- Opportunities from new technology
- Slowing growth

People

Organization

Information System
- Sell on the Web
- Manage music with new digital entertainment products

Business Solutions
- Increase sales
One way to understand competitive advantage
Five competitive forces shape fate of firm

1. Traditional competitors
   • Competitors in market space continuously devise new products, new efficiencies, switching costs.

2. New market entrants
   • Some industries have low barriers to entry:
     • E.g., food industry versus microchip industry
     • Newer companies may have advantages:
       • Newer equipment, younger workforce, and so on.
3. Substitute products and services
   • Substitutes customers can purchase if your prices too high.
   • E.g., Internet music service versus CDs.

4. Customers
   • Can customers easily switch to competitor’s products?
   • Can customers force firm and competitors to compete on price alone (transparent marketplace).

5. Suppliers
   • The more suppliers a firm has, the greater control it can exercise over suppliers.
In Porter’s competitive forces model, the strategic position of the firm and its strategies are determined not only by competition with its traditional direct competitors but also by four forces in the industry’s environment: new market entrants, substitute products, customers, and suppliers.
Basic strategy: **Align IT with business objectives**

- 75 percent of businesses fail to align their IT with their business objectives, leading to lower profitability.

**To align IT:**

- Identify business goals and strategies.
- Break strategic goals into concrete activities and processes.
- Identify metrics for measuring progress.
- Determine how IT can help achieve business goals.
- Measure actual performance.
Solutions

Low-cost leadership

Product differentiation

Focus on market niche

Strengthen customer and supplier intimacy.
Low-cost leadership

• Use information systems to achieve the lowest operational costs and the lowest prices.

• E.g. Wal-Mart

  Inventory replenishment system sends orders to suppliers when purchase recorded at cash register.

  Minimizes inventory at warehouses, operating costs.

  Efficient customer response system.
Supermarkets and large retail stores such as Wal-Mart use sales data captured at the checkout counter to determine which items have sold and need to be reordered.

Wal-Mart’s continuous replenishment system transmits orders to restock directly to its suppliers. The system enables Wal-Mart to keep costs low while fine-tuning its merchandise to meet customer demands.
Product differentiation

• Use information systems to enable new products and services, or greatly change the customer convenience in using your existing products and services.

• E.g., Google’s continuous innovations, Apple’s iPhone.

• Use information systems to customize, personalize products to fit specifications of individual consumers.

  Dell

  Mass customization at Lands’ End
Focus on market niche.

• Use information systems to enable specific market focus, and serve narrow target market better than competitors.

  Analyzes customer buying habits, preferences

  Advertising pitches to smaller and smaller target markets

• E.g., Hilton Hotel’s OnQ System, Diet Food, Single’s

  Analyzes data collected on guests to determine preferences and guest’s profitability
Strengthen customer and supplier intimacy.

- Strong linkages to customers and suppliers increase switching costs and loyalty

- Toyota: uses IS to facilitate direct access from suppliers to production schedules
  Permits suppliers to decide how and when to ship suppliers to Chrysler factories, allowing more lead time in producing goods.

- Amazon: keeps track of user preferences for purchases, and recommends titles purchased by others
Some companies pursue several strategies at same time.

- Dell emphasizes low cost plus customization of products.

Successfully using IS to achieve competitive advantage requires precise coordination of technology, organizations, and people.
On the Dell Inc. Web site, customers can select the options they want and order their computer custom built to these specifications. Dell’s assemble-to-order system is a major source of competitive advantage.
Read the Interactive Session and then discuss the following questions:

• What competitive strategy are the credit card companies pursuing? How do information systems support that strategy?

• What are the business benefits of analyzing customer purchase data and constructing behavioral profiles?

• Are these practices by credit card companies ethical? Are they an invasion of privacy? Why or why not?
The Internet’s Impact on Competitive Advantage

- Enables new products and services
- Transforms industries
- Increases bargaining power of customers and suppliers
- Intensifies competitive rivalry
- Creates new opportunities for building brands and large customer bases
• Existing competitors: widens market, increasing competitors, reducing differences, pressure to compete on price

• New entrants: reduces barriers to entry (e.g., need for sales force declines), provides technology for driving business processes

• Substitute products and services: facilitates creation of new products and services

• Customers’ bargaining power: bargaining power shifts to customer

• Suppliers’ bargaining power: procurement over Internet raises power over suppliers, suppliers can benefit from reduced barriers to entry and elimination of intermediaries
The Business Value Chain Model

• Highlights specific activities in a business where competitive strategies can best be applied and where information systems are likely to have a strategic impact.
  • Primary activities
  • Support activities
  • Benchmarking
  • Best practices
This figure provides examples of systems for both primary and support activities of a firm and of its value partners that would add a margin of value to a firm’s products or services.
Extending the Value Chain: The Value Web

- A firm’s value chain is linked to the value chains of its suppliers, distributors, and customers.
- A value web is a collection of independent firms that use information technology to coordinate their value chains to produce a product collectively.
- Value webs are flexible and adapt to changes in supply and demand.
The value web is a networked system that can synchronize the value chains of business partners within an industry to respond rapidly to changes in supply and demand.
Synergies, Core Competencies, and Network-Based Strategies

• **Synergies:**
  
  • When output of some units can be used as inputs to other units
  
  • When two firms can pool markets and expertise (e.g., recent bank mergers)
  
  • Lower costs and generate profits
  
  • Enabled by information systems that ties together disparate units so they act as whole
• **Core competency:**
  - Activities for which firm is world-class leader.
    - E.g., world’s best miniature parts designer, best package delivery service.
  - Relies on knowledge that is gained over many years of experience as well as knowledge research.
  - Any information system that encourages the sharing of knowledge across business units enhances competency.
    - E.g., Procter & Gamble uses intranet to help people working on similar problems share ideas and expertise.
• Network-based strategies:
  • Network economics:
    • Marginal costs of adding another participant are near zero, whereas marginal gain is much larger
    • E.g., larger number of participants in Internet, greater value to all participants
  • Virtual company:
    • Uses networks to link people, resources, and ally with other companies to create and distribute products without traditional organizational boundaries or physical locations
• Disruptive technologies:
  • Technologies with disruptive impact on industries and businesses, rendering existing products, services and business models obsolete:
    • Personal computers
    • World Wide Web
    • Internet music services
  • First movers versus fast followers
    • First movers of disruptive technologies may fail to see potential, allowing second movers to reap rewards (fast followers)
The Internet and Globalization

- Prior to the Internet, competing globally was only an option for huge firms able to afford factories, warehouses, and distribution centers abroad.
- The Internet drastically reduces costs of operating globally.
- Globalization benefits:
  - Scale economies and resource cost reduction
  - Higher utilization rates, fixed capital costs, and lower cost per unit of production
  - Speeding time to market
An HP Laptop’s Path to Market

Hewlett-Packard and other electronics companies assign distribution and production of their products to a number of different countries.
Interactive Session: People
Will TV Succumb to the Internet?

• Read the Interactive Session and then discuss the following questions:
  • What competitive forces have challenged the television industry? What problems have these forces created?
  • Describe the impact of disruptive technology on the companies discussed in this case.
  • How have the cable programming and delivery companies responded to the Internet?
  • What people, organization, and technology issues must be addressed to solve the cable industry’s problems?
  • Have the cable companies found a successful new business model to compete with the Internet? Why or why not?
Global Business and System Strategies

• Domestic exporters
  • Heavy centralization of corporate activities in home country

• Multinationals
  • Concentrates financial management at central home base while decentralizing production, sales, and marketing to other countries

• Franchisers
  • Product created, designed, financed, and initially produced in home country but rely on foreign units for further production, marketing, and human resources

• Transnationals
  • Regional (not national) headquarters and perhaps world headquarters; optimizing resources as needed
Global Business

Foreign Country

- Domestic exporters

Finance HQ

B C D E

- Multinationals

Foreign Country

- Franchisers

HQ

M S F Hu

- Transnationals

Export
Import
Global System Configurations

- **Centralized systems:**
  - All development and operation at domestic home base

- **Duplicated systems:**
  - Development at home base but operations managed by autonomous units in foreign locations

- **Decentralized systems:**
  - Each foreign unit designs own solutions and systems

- **Networked systems:**
  - Development and operations occur in integrated and coordinated fashion across all units
Global System Configuration

- Centralized systems:

- Duplicated systems:

- Decentralized systems:

- Networked systems:
The large Xs show the dominant patterns, and the small Xs show the emerging patterns. For instance, domestic exporters rely predominantly on centralized systems, but there is continual pressure and some development of decentralized systems in local marketing regions.

<table>
<thead>
<tr>
<th>SYSTEM CONFIGURATION</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic Exporter</td>
</tr>
<tr>
<td>Centralized</td>
<td>X</td>
</tr>
<tr>
<td>Duplicated</td>
<td></td>
</tr>
<tr>
<td>Decentralized</td>
<td>x</td>
</tr>
<tr>
<td>Networked</td>
<td></td>
</tr>
</tbody>
</table>
What Is Quality?

• **Producer perspective:**
  - Conformance to specifications and absence of variation from specs

• **Customer perspective:**
  - Physical quality (reliability), quality of service, psychological quality

• **Total quality management (TQM):**
  - Quality control is end in itself
  - All people, functions responsible for quality

• **Six sigma:**
  - Measure of quality: 3.4 defects/million opportunities
How Information Systems Improve Quality

• Reduce cycle time and simplify production process.
• Benchmarking
• Use customer demands to improve products and services.
• Improve design quality and precision.
  • Computer-aided design (CAD) systems
• Improve production precision and tighten production tolerances.
Computer-aided design (CAD) systems improve the quality and precision of product design by performing much of the design and testing work on the computer.
Computer-aided design (CAD) systems improve the quality and precision of product design by performing much of the design and testing work on the computer.
Businesses are collections of business processes—ways of working and getting things done. See Chapter 1.

Sometimes they are written in manuals, but in many cases business processes are informal. In order to use information systems effectively, you need to change business processes.

Before you can change processes, you need to change people’s attitudes and behaviors, and even the organization itself.
Business process management (BPM)

Business process management = continuous improvement

Identify processes for change.
Analyze existing processes.
Design new process.
Implement new process.
Measure new process.
A Model of the Problem-Solving Process

- Problem solving: four-step process
  1. Problem identification
  2. Solution design
  3. Choice
  4. Implementation
1. Problem identification includes:
   • Agreement that problem exists
   • Definition of problem
   • Causes of problem
   • What can be done given resources of firm
2. Solution design
   • Generate possible alternatives/solutions
   • Consider as many as possible to understand range of solutions

3. Solution Evaluation & Choice:
   • “Best” solution
     • Analyze each alternative based on feasibility
     • Evaluate the results of each alternative
     • Choose
4. Implementation

• Building or purchasing solution
• Testing solution, employee training, documentation
• Change management
• Measurement of outcomes
• Feedback, evaluation of solution

• Problem solving is a continuous process, not a single event
• Sometimes chosen solution doesn’t work or needs adjustment
Problem Solving Is a Continuous Four-Step Process

During implementation and thereafter, the outcome must be continually measured and the information about how well the solution is working is fed back to the problem solvers. In this way, the identification of the problem can change over time, solutions can be changed, and new choices made, all based on experience.
The Role of Critical Thinking in Problem Solving

It is not enemy but a constructive processes

• Without critical thinking, it’s easy to jump to conclusions, misjudge a problem, and waste resources

• Critical thinking:
  • Sustained suspension of judgment with an awareness of multiple perspectives and alternatives
The Role of Critical Thinking in Problem Solving

• Four elements of critical thinking:

  1. Maintaining doubt and suspending judgment
  2. Being aware of different perspectives
     • Including technology, organization, and people perspectives
  3. Testing alternatives and letting experience guide
  4. Being aware of organizational and personal limitations
Business Processes in Book selling/Buying

Customer:
1. Go to bookstore
2. Search shelves
3. Book Available?
   - Yes: Purchase book
   - No: Clerk searches
4. Inquire about ordering
5. Able to order?
   - Yes: Go to another store
   - No: Customer

Customer:
- Return to Store
- Purchase book
- Take book home

Clerk:
1. Place Order
2. Receive book
3. Notify Customer
• A radical form of fast change

• Not continuous improvement, but elimination of old processes, replacement with new processes, in a brief time period

• Can produce dramatic gains in productivity, but increases organizational resistance to change
This work is protected by United States copyright laws and is provided solely for the use of instructors in teaching their courses and assessing student learning. Dissemination or sale of any part of this work (including on the World Wide Web) will destroy the integrity of the work and is not permitted. The work and materials from it should never be made available to students except by instructors using the accompanying text in their classes. All recipients of this work are expected to abide by these restrictions and to honor the intended pedagogical purposes and the needs of other instructors who rely on these materials.