Chapter No 2

Management Information Systems

Chapter 2

Management Information Systems

Compiled By: Muzammil Ahmad Khan and Kashif Shaikh

MIS Books

- Text Book
  1. Management Information System, 8th Edition
     By: James A. O'Brien, George Marakas

- Reference Books
     By: Kenneth C. Laudon, Jane P. Laudon
  2. Introduction to Information Systems: Supporting and Transforming Business
     By: Rainer, Turban, Potter, 1st Edition
## Marks Distribution

- Mid Term: __________ 15
- Assignment + Class Performance + Quiz + Presentation + Report: __________ 5
- Semester Final Paper: __________ 80
- Total Marks: __________ 100

## Marks Distribution [Sessional]

- Class Test: __________ 10 Points
- Assignment: __________ 10 Points
- Class Presentation: __________ 15 Points
- Project: __________ 15 Points
- Total Points: __________ 50 Points

- Performance Bonus: __________ 10 Points
Chapter No 2

Management Information Systems

MIS Website

- http://www.ssuet.edu.pk/courses/hs107/mis
- http://taimoor/hs107/mis

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Chapter 2

Competing with Information Technology

Learning Objectives

- Identify basic competitive strategies and explain how a business can use IT to confront the competitive forces it faces
- Identify several strategic uses of IT and give examples of how they give competitive advantages to a business
- Give examples of how business process reengineering frequently involves the strategic use of IT
Identify the business value of using Internet technologies to become an agile competitor or to form a virtual company

Explain how knowledge management systems can help a business gain strategic advantages

Technology is no longer an afterthought in business strategy, but the cause and driver

IT can change the way businesses compete

A strategic information system is any information system that uses IT to help an organization…

- Gain a competitive advantage
- Reduce a competitive disadvantage
- Or meet other strategic enterprise objectives
What does “Strategy” Means

- Consists of *competitive moves* and *business approaches* used by managers to run the company
- Management’s “*action plan*” to
  - Grow the business
  - Attract and please customers
  - Compete successfully
  - Conduct operations
  - Achieve target levels of organizational performance

Why Do Strategies Evolve?

- A company’s *strategy* is a *work in progress*
- Changes may be necessary to react to
  - Shifting market conditions
  - Technological breakthroughs
  - Fresh moves of competitors
  - Evolving customer preferences
  - Emerging market opportunities
  - New ideas to improve strategy
  - Crisis situations
Strategic Vision vs. Mission

- **A strategic vision** concerns a firm’s future business path - “where we are going”
  - Markets to be pursued
  - Future product-market/customer/technology focus
  - Kind of company management is trying to create

- **The mission statement** of a firm focuses on its present business purpose - “who we are and what we do”
  - Current product and service offerings
  - Customer needs being served
  - Technological and business capabilities
To succeed, a business must develop strategies to counter these forces:

- Rivalry of competitors within its industry
- New entrants into an industry and its markets
- Substitute products that may capture market share
- Bargaining power of customers
- Bargaining power of suppliers

The Five Forces Model of Competition

- Firms in Other Industries Offering Substitute Products
- Suppliers of Raw Materials, Parts, Components, or Other Resource Inputs
- Competitive pressures stemming from supplier bargaining and supplier-seller collaboration
- Rivalry among Competing Sellers
- Competitive pressures stemming from buyer bargaining to gain better market position, increased supplier-seller collaboration, market share, and competitive advantage
- Potential New Entrants
- Competitive pressures coming from the threat of entry of new rivals
- Buyers
- Competitive pressures stemming from buyer bargaining and buyer-seller collaboration
**Five Competitive Strategies**

- **Cost Leadership**
  - Become low-cost producers
  - Help suppliers or customers reduce costs
  - Increase cost to competitors
    - Example: Priceline uses online seller bidding so the buyer sets the price

- **Differentiation Strategy**
  - Differentiate a firm’s products from its competitors’
  - Focus on a particular segment or niche of market
    - Example: Moen uses online customer design
Innovation Strategy
- Unique products, services, or markets
- Radical changes to business processes
  - Example: Amazon’s online, full-service customer systems

Growth Strategy
- Expand company’s capacity to produce
- Expand into global markets
- Diversify into new products or services
  - Example: Wal-Mart’s merchandise ordering via global satellite tracking

Alliance Strategy
- Establish linkages and alliances with customers, suppliers, competitors, consultants, and other companies
- Includes mergers, acquisitions, joint ventures, virtual companies
  - Example: Wal-Mart uses automatic inventory replenishment by supplier
These strategies are not mutually exclusive
- Organizations use one, some, or all
- A given activity could fall into one or more categories of competitive strategy
- Not everything innovative serves to differentiate one organization from another
- Likewise, not everything that differentiates organizations is necessarily innovative

Basic Strategies in the Business Use of Information Technology

<table>
<thead>
<tr>
<th>Lower Costs</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Use IT to substantially reduce the cost of business processes.</td>
<td></td>
</tr>
<tr>
<td>Use IT to lower the costs of customers or suppliers.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Differentiate</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Develop new IT features to differentiate products and services.</td>
<td></td>
</tr>
<tr>
<td>Use IT features to reduce the differentiation advantages of competitors.</td>
<td></td>
</tr>
<tr>
<td>Use IT features to focus products and services at selected market niches.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Innovate</th>
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</thead>
<tbody>
<tr>
<td>Create new products and services that include IT components.</td>
<td></td>
</tr>
<tr>
<td>Develop unique new markets or market niches with the help of IT.</td>
<td></td>
</tr>
<tr>
<td>Make radical changes to business processes with IT that dramatically cut costs, improve quality, efficiency, or customer service, or shorten time to market.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Promote Growth</th>
<th></th>
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<tbody>
<tr>
<td>Use IT to manage regional and global business expansion.</td>
<td></td>
</tr>
<tr>
<td>Use IT to diversify and integrate into other products and services.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Develop Alliances</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Use IT to create virtual organizations of business partners.</td>
<td></td>
</tr>
<tr>
<td>Develop interenterprise information systems linked by the Internet and extranets that support strategic business relationships with customers, suppliers, subcontractors, and others.</td>
<td></td>
</tr>
</tbody>
</table>
Other Competitive Strategies

- **Lock in Customers and Suppliers**
  - Deter them from switching to competitors

- **Build in Switching Costs**
  - Make customers and suppliers dependent on the use of innovative IS

- **Erect Barriers to Entry**
  - Discourage or delay other companies from entering the market
  - Increase the technology or investment needed to enter

Other Competitive Strategies

- **Build Strategic IT Capabilities**
  - Take advantage of strategic opportunities when they arise
  - Improve efficiency of business practices

- **Leverage Investment in IT**
  - Develop products and service that would not be possible without a strong IT capability
Customer-Focused Business

- What is the business value in being customer-focused?
  - Keep customers loyal
  - Anticipate their future needs
  - Respond to customer concerns
  - Provide top-quality customer service

- Focus on customer value
  - Quality, not price, has become the primary determinant of value
  - Consistently

Providing Customer Value

- Companies that consistently offer the best value from the customer’s perspective…
  - Track individual preferences
  - Keep up with market trends
  - Supply products, services, and information anytime, anywhere
  - Tailor customer services to the individual
  - Use Customer Relationship Management (CRM) systems to focus on the customer
Building Customer Value via the Internet

- View the firm as a chain of basic activities that add value to its products and services
  - Primary processes directly relate to manufacturing or delivering products
  - Support processes help support the day-to-day running of the firm and indirectly contribute to products or services
- Use the value chain to highlight where competitive strategies will add the most value
Using IS in the Value Chain

Strategic Uses of IT

- A company that emphasizes strategic business use of IT would use it to gain a competitive differentiation
  - Products
  - Services
  - Capabilities
Reengineering Business Processes

- Called BRP or simply Reengineering
  - Fundamental rethinking and radical redesign of business processes
  - Seeks to achieve improvements in cost, quality, speed, and service
- Potential payback is high, but so is risk of disruption and failure
- Organizational redesign approaches are an important enabler of reengineering
  - Includes use of IT, process teams, case managers

Reengineering Business Processes

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BPR Versus Business Improvement

<table>
<thead>
<tr>
<th></th>
<th>Business Improvement</th>
<th>Business Process Reengineering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Change</td>
<td>Incremental</td>
<td>Radical</td>
</tr>
<tr>
<td>Process Change</td>
<td>Improved new version of process</td>
<td>Brand-new process</td>
</tr>
<tr>
<td>Starting Point</td>
<td>Existing processes</td>
<td>Clean slate</td>
</tr>
<tr>
<td>Frequency of Change</td>
<td>One-time or continuous</td>
<td>Periodic one-time change</td>
</tr>
<tr>
<td>Time Required</td>
<td>Short</td>
<td>Long</td>
</tr>
<tr>
<td>Typical Scope</td>
<td>Narrow, within functions</td>
<td>Broad, cross functional</td>
</tr>
<tr>
<td>Horizon</td>
<td>Focal and functional</td>
<td>Focal</td>
</tr>
<tr>
<td>Participation</td>
<td>Bottom up</td>
<td>Top-down</td>
</tr>
<tr>
<td>Path to Execution</td>
<td>Cultural</td>
<td>Cultural, structural</td>
</tr>
<tr>
<td>Primary Enabler</td>
<td>Statistical control</td>
<td>Information technology</td>
</tr>
<tr>
<td>Risk</td>
<td>Moderate</td>
<td>High</td>
</tr>
</tbody>
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Management Information Systems

The Role of Information Technology

- IT plays a major role in reengineering most business processes
  - Can substantially increase process efficiencies
  - Improves communication
  - Facilitates collaboration

A Cross-Functional Process

- Many processes are reengineered with...
  - Enterprise resource planning software
  - Web-enabled electronic business and commerce systems
Reengineering Order Management

- IT that supports this process…
  - CRM systems using intranets and the Internet
  - Supplier-managed inventory systems using the Internet and extranets
  - Cross-functional ERP software to integrate manufacturing, distribution, finance, and human resource processes
  - Customer-accessible e-commerce websites for order entry, status checking, payment, and service
  - Customer, product, and order status databases accessed via intranets and extranets

Becoming an Agile Company

- **Agility** is the ability to prosper
  - In rapidly changing, continually fragmenting global markets
  - By selling high-quality, high-performance, customer-configured products and services
  - By using Internet technologies
- An agile company profits in spite of
  - Broad product ranges
  - Short model lifetimes
  - Individualized products
  - Arbitrary lot sizes
Strategies for Agility

- An agile company...
  - Presents products as solutions to customers’ problems
  - Cooperates with customers, suppliers and competitors
  - Brings products to market as quickly and cost-effectively as possible
  - Organizes to thrive on change and uncertainty
  - Leverages the impact of its people and the knowledge they possess

How IT Helps a Company be Agile

<table>
<thead>
<tr>
<th>Type of Agility</th>
<th>Description</th>
<th>Role of IT</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Ability to co-opt customers in the exploitation of innovation opportunities - As sources of innovation ideas - As co-creators of innovation - As users in testing ideas or helping other users learn about the idea</td>
<td>Technologies for building and enhancing virtual customer communities for product design, feedback, and testing</td>
<td>eBay customers are its de facto product development team because they post an average of 10,000 messages each week to share tips, point out glitches, and lobby for changes.</td>
</tr>
<tr>
<td>Partnering</td>
<td>Ability to leverage assets, knowledge, and competencies of suppliers, distributors, contract manufacturers, and logistics providers in the exploration and exploitation of innovation opportunities</td>
<td>Technologies facilitating interfirm collaboration, such as collaborative platforms and portals, supply-chain systems, etc.</td>
<td>Yahoo! has accomplished a significant transformation of its service from a search engine into a portal by initiating numerous partnerships to provide content and other media-related services from its website.</td>
</tr>
<tr>
<td>Operational</td>
<td>Ability to achieve speed, accuracy, and cost economy in the exploitation of innovation opportunities</td>
<td>Technologies for modularization and integration of business processes</td>
<td>Ingersoll-Rand, a global wholesale, has deployed an integrated trading system allowing its customers and suppliers to connect directly to its procurement and ERP systems.</td>
</tr>
</tbody>
</table>

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Creating a Virtual Company

- A virtual company uses IT to link…
  - People
  - Organizations
  - Assets
  - Ideas

- Inter-enterprise information systems link…
  - Customers
  - Suppliers
  - Subcontractors
  - Competitors

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Virtual Company Strategies

- Basic business strategies
  - Share information and risk with alliance partners
  - Link complimentary core competencies
  - Reduce concept-to-cash time through sharing
  - Increase facilities and market coverage
  - Gain access to new markets and share market or customer loyalty
  - Migrate from selling products to selling solutions

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Building a Knowledge-Creating Company

- A knowledge-creating company or learning organization…
  - Consistently creates new business knowledge
  - Disseminates it throughout the company
  - Builds it into its products and services
Two Kinds of Knowledge

- Explicit Knowledge
  - Data, documents, and things written down or stored in computers

- Tacit Knowledge
  - The “how-to” knowledge in workers’ minds
  - Represents some of the most important information within an organization
    - A knowledge-creating company makes such tacit knowledge available to others

Knowledge Management

- Successful knowledge management
  - Creates techniques, technologies, systems, and rewards for getting employees to share what they know
  - Makes better use of accumulated workplace and enterprise knowledge
Knowledge Management Techniques

- Leveraging organizational “know-how”
- Performance support
- Interacting with operational databases
- Building expert networks
- Capturing & distributing expert stories
- Real-time information management
- Communication and collaborative
- New content creation
- Accessing and retrieving documents stored online

Knowledge Management Systems (KMS)

- Knowledge management systems
  - A major strategic use of IT
  - Manages organizational learning and know-how
  - Helps knowledge workers create, organize, and make available important knowledge
  - Makes this knowledge available wherever and whenever it is needed
- Knowledge includes
  - Processes, procedures, patents, reference works, formulas, best practices, forecasts, and fixes