MIT 3103 ADVANCED MIS

Chapter 2

Competing With Information Technology

Learning Outcomes

- By the end of this unit, the learner should be able to:
  - Describe competitive concepts.
  - Describe competitive forces and competitive strategies.
  - Describe role of IT in business process reengineering.

Acknowledgement

- Notes adapted from Introduction to Information Systems by James A. O'Brien and George M. Marakas.

Introduction

- It is important to view information systems as more than a set of technologies that support efficient business operations, workgroup and enterprise collaboration, or effective business decision making.
- Information technology can change the way businesses compete.

Introduction

- You should also view information systems strategically, that is, as vital competitive networks, as a means of organizational renewal, and as a necessary investment in technologies; such technologies help a company adopt strategies and business processes that enable it to reengineer or reinvent itself to survive and succeed in today's dynamic business environment.

IT Strategy

- IT strategy (information technology strategy) is a comprehensive plan that outlines how technology should be used to meet IT and business goals.
  - An IT strategy, also called a technology strategy or IT/technology strategic plan
  - Is a written document that details the multiple factors that affect the organization's investment in and use of technology.

Competitive Strategy Concepts

- A major role of information systems applications in business is to provide effective support of a company's strategies for gaining competitive advantage.
- This strategic role of information systems involves using information technology to develop products, services, and capabilities that give a company major advantages over the competitive forces it faces in the global marketplace.

Competitive Strategy Concepts

- This role is accomplished through a strategic information architecture: the collection of strategic information systems that supports or shapes the competitive position and strategies of a business enterprise.

Competitive Strategy Concepts

- So a strategic information system can be any kind of information system (e.g., TPS, MIS, and DSS) that uses information technology to help an organization gain a competitive advantage, reduce a competitive disadvantage, or meet other strategic enterprise objectives.

Competitive Forces and Strategies

- A company can survive and succeed in the long run only if it successfully develops strategies to confront five competitive forces that shape the structure of competition in its industry.

Competitive Forces and Strategies

- In Michael Porter's classic model of competition, any business that wants to survive and succeed must effectively develop and implement strategies to counter the:
  - Rivalry of competitors within its industry.
  - Threat of new entrants into an industry and its markets
  - Threat posed by substitute products that might capture market share
  - Bargaining power of customers , and
  - Bargaining power of suppliers.

Rivalry of competitors within its industry

- Competition is a positive characteristic in business, and competitors share a natural, and often healthy, rivalry.
- This rivalry encourages and sometimes requires a constant effort to gain competitive advantage in the marketplace.
- This ever-present competitive force requires significant resources on the part of a firm.

Threat of new entrants

- Guarding against the threat of new entrants also requires the expenditure of significant organizational resources.
- Not only do firms need to compete with other firms in the marketplace, but they must also work to create significant barriers to the entry of new competition.
- This competitive force has always been difficult to manage, but it is even more so today.

Threat of new entrants

- The Internet has created many ways to enter the marketplace quickly and with relatively low cost.
- In the Internet world, a firm's biggest potential competitor may be one that is not yet in the marketplace but could emerge almost overnight.

The threat of substitutes

- The threat of substitutes is another competitive force that confronts a business.
- The effect of this force is apparent almost daily in a wide variety of industries, often at its strongest during periods of rising costs or inflation.

The threat of substitutes

- When airline prices get too high, people substitute car travel for their vacations.
- When the cost of steak gets too high, people eat more hamburger and fish.
- Most products or services have some sort of substitute available to the consumer.

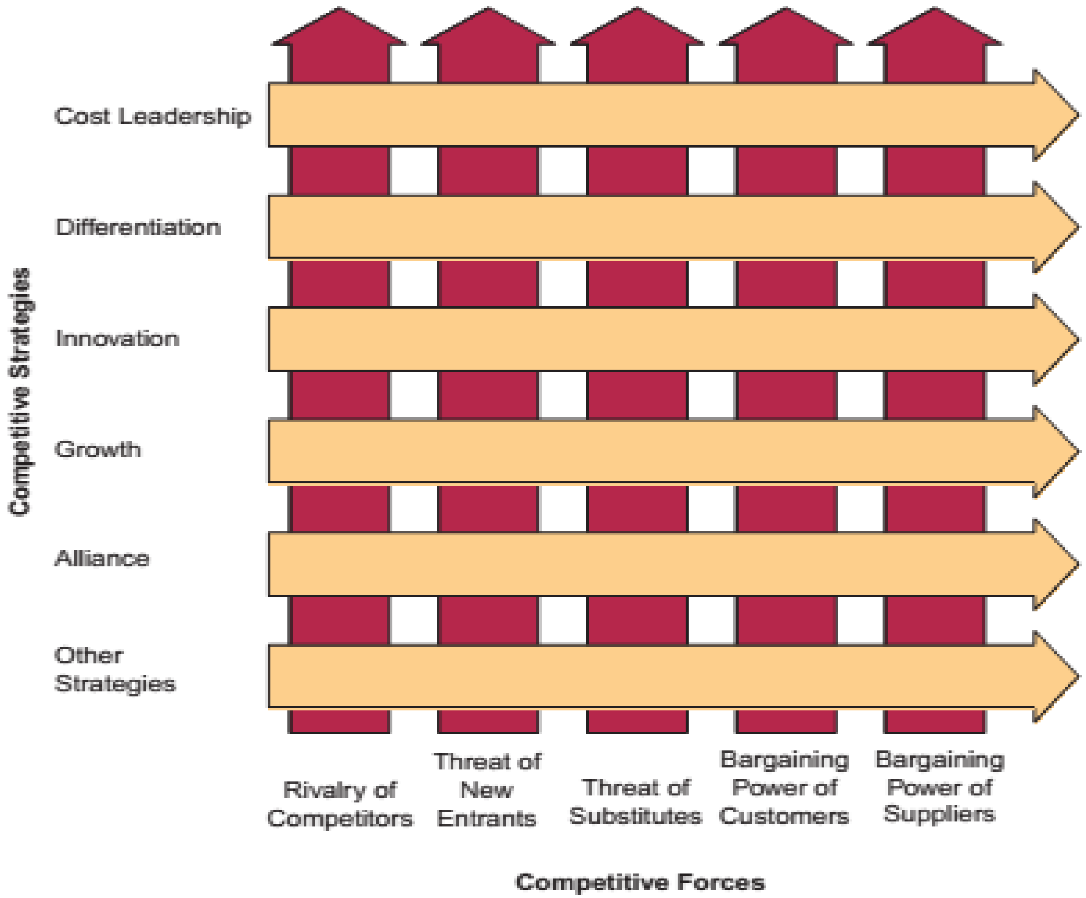
Customer and Supplier bargaining powers

- Finally, a business must guard against the often opposing forces of customer and supplier bargaining powers.
- If customers' bargaining power gets too strong, they can drive prices to unmanageably low levels or just refuse to buy the product or service.

Customer and Supplier bargaining powers

- If a key supplier's bargaining power gets too strong, it can force the price of goods and services to unmanageably high levels or just starve a business by controlling the flow of parts or raw materials essential to the manufacture of a product.

How Businesses can counter the threats of competitive forces



5 basic Competitive Strategies

- Businesses can counter the threats of competitive forces that they face by implementing one or more of the five basic competitive strategies:
  - Cost Leadership Strategy.
  - Differentiation Strategy.
  - Innovation Strategy.
  - Growth Strategies.
  - Alliance Strategies.

Cost Leadership Strategy

- Becoming a low-cost producer of products and services in the industry or finding ways to help suppliers or customers reduce their costs or increase the costs of competitors.

Differentiation Strategy

- Developing ways to differentiate a firm's products and services from those of its competitors or reduce the differentiation advantages of competitors.
- This strategy may allow a firm to focus its products or services to give it an advantage in particular segments or niches of a market.

Innovation Strategy

- Finding new ways of doing business.
- This strategy may involve developing unique products and services or entering unique markets or market niches.

Innovation Strategy

- It may also involve making radical changes to the business processes for producing or distributing products and services that are so different from the way a business has been conducted that they alter the fundamental structure of an industry.

Growth Strategies

- Significantly expanding a company's capacity to produce goods and services, expanding into global markets, diversifying into new products and services, or integrating into related products and services.

Alliance Strategies

- Establishing new business linkages and alliances with customers, suppliers, competitors, consultants, and other companies.
- These linkages may include mergers, acquisitions, joint ventures, forming of "virtual companies," or other marketing, manufacturing, or distribution agreements between a business and its trading partners.

5 basic Competitive Strategies

- One additional point regarding these strategies is that they are not mutually exclusive.
- An organization may make use of one, some, or all of the strategies in varying degrees to manage the forces of competition.
- Therefore, a given activity could fall into one or more of the categories of competitive strategy.

5 basic Competitive Strategies

- For example, implementing a system that allows customers to track their order or shipment online could be considered a form of differentiation if the other competitors in the marketplace do not offer this service.
- If they do offer the service, however, online order tracking could not serve to differentiate one organization from another.

Competitive Strategies

- For example, implementing a system that allows customers to track their order or shipment online could be considered a form of differentiation if the other competitors in the marketplace do not offer this service.
- If they do offer the service, however, online order tracking would not serve to differentiate one organization from another

Strategic Uses of Information Technology

- How can business managers use investments in information technology to support a firm's competitive strategies?
- Information Technology can help a business implement the five basic competitive strategies.

Strategic Uses of Information Technology

- Lower Costs
  - Use IT to substantially reduce the cost of business processes.
  - Use IT to lower the costs of customers or suppliers.

Strategic Uses of Information Technology

- Differentiate:
  - Develop new IT features to differentiate products and services.
  - Use IT features to reduce the differentiation advantages of competitors.
  - Use IT features to focus products and services at selected market niches.

Strategic Uses of Information Technology

- Innovate
  - Create new products and services that include IT components.
  - Develop unique new markets or market niches with the help of IT.
  - Make radical changes to business processes with IT that dramatically cut costs; improve quality, efficiency, or customer service; or shorten time to market.

Strategic Uses of Information Technology

- Promote Growth:
  - Use IT to manage regional and global business expansion.
  - Use IT to diversify and integrate into other products and services.

Strategic Uses of Information Technology

- Develop Alliances:
  - Use IT to create virtual organizations of business partners.
  - Develop interenterprise information systems linked by the Internet and extranets that support strategic business relationships with customers, suppliers, subcontractors, and others.

Strategic Uses of Information Technology

- Additional ways that information technology can be used to implement competitive strategies:
  - Lock in customers and suppliers.
  - Create switching costs.
  - Raise barriers to entry.
  - Leverage investment in IT

Lock in customers and suppliers

- Investments in information technology can allow a business to lock in customers and suppliers (and lock out competitors) by building valuable new relationships with them.
- These business relationships can become so valuable to customers or suppliers that they deter them from abandoning a company for its competitors or intimidate them into accepting less profitable business arrangements.

Lock in customers and suppliers

- Early attempts to use information systems technology in these relationships focused on significantly improving the quality of service to customers and suppliers in a firm's distribution, marketing, sales, and service activities.
- More recent projects characterize a move toward more innovative uses of information technology.

Creating switching costs

- A major emphasis in strategic information systems has been to find ways to create switching costs in the relationships between a firm and its customers or suppliers.
- In other words, investments in information systems technology can make customers or suppliers dependent on the continued use of innovative, mutually beneficial interenterprise information systems.

Creating switching costs

- They then become reluctant to pay the costs in time, money, effort, and inconvenience that it would take to switch to a company's competitors.

Raise barriers to entry

- By making investments in information technology to improve its operations or promote innovation, a firm could also raise barriers to entry that would discourage or delay other companies from entering a market.

Raise barriers to entry

- Typically, these barriers increase the amount of investment or the complexity of the technology required to compete in an industry or a market segment.
- Such actions tend to discourage firms already in the industry and deter external firms from entering the industry.

Leverage investments in IT

- Investing in information technology enables a firm to build strategic IT capabilities so that they can take advantage of opportunities when they arise.
- In many cases, this happens when a company invests in advanced computer-based information systems to improve the efficiency of its own business processes.

Leverage investments in IT

- Then, armed with this strategic technology platform, the firm can leverage investment in IT by developing new products and services that would not be possible without a strong IT capability.

Leverage investments in IT

- An important current example is the development of corporate intranets and extranets by many companies, which enables them to leverage their previous investments in Internet browsers, PCs, servers, and client/server networks.

Building a Customer-Focused Business

- The driving force behind world economic growth has changed from manufacturing volume to improving customer value.
- As a result, the key success factor for many firms is maximizing customer value.

Building a Customer-Focused Business

- For many companies, the chief business value of becoming a customer-focused business lies in its ability to:
  - Help them keep customers loyal,
  - Anticipate their future needs,
  - Respond to customer concerns, and
  - Provide top-quality customer service.

Building a Customer-Focused Business

- This strategic focus on customer value recognizes that quality, rather than price, has become the primary determinant in a customer's perception of value.

Building a Customer-Focused Business

- Companies that consistently offer the best value from the customer's perspective are those that:
  - Keep track of their customers' individual preferences;
  - Keep up with market trends;
  - Supply products, services, and information anytime and anywhere; and
  - Provide customer services tailored to individual needs.

Building a Customer-Focused Business

- Thus, Internet technologies have created a strategic opportunity for companies, large and small, to offer fast, responsive, high-quality products and services tailored to individual customer preferences.

Building a Customer-Focused Business

- Internet technologies can make customers the focal point of customer relationship management (CRM) and other e-business applications.
- In combination, CRM systems and Internet, intranet, and extranet Web sites create new channels for interactive communications within a company, as well as communication with customers, suppliers, business partners, and others in the external environment.

Building a Customer-Focused Business

- Such communications enable continual interaction with customers by most business functions and encourage cross-functional collaboration with customers in product development, marketing, delivery, service, and technical support.

Building a Customer-Focused Business

- Typically, customers use the Internet to:
  – Ask questions,
  – Lodge complaints,
  – Evaluate products,
  – Request support, and
  – Make and track their purchases.

Building a Customer-Focused Business

- Using the Internet and corporate intranets, specialists in business functions throughout the enterprise can contribute to an effective response.

Building a Customer-Focused Business

- This ability encourages the creation of cross-functional discussion groups and problem-solving teams dedicated to customer involvement, service, and support.

Building a Customer-Focused Business

- Even the Internet and extranet links to suppliers and business partners can be used to enlist them in a way of doing business that ensures the prompt delivery of quality components and services to meet a company's commitments to its customers.
- This process is how a business demonstrates its focus on customer value.

Building a Customer-Focused Business

- Intranets, extranets, e-commerce Web sites, and Web-enabled internal business processes form the invisible IT platform that supports this e-business model.
- The platform enables the business to focus on targeting the kinds of customers it really wants and “owning” the customer’s total business experience with the company.

Building a Customer-Focused Business

- A successful business streamlines all business processes that affect its customers and develops CRM systems that provide its employees with a complete view of each customer, so they have the information they need to offer their customers top-quality personalized service.

Building a Customer-Focused Business

- A customer-focused business helps its e-commerce customers help themselves while also helping them do their jobs.
- Finally, a successful business nurtures an online community of customers, employees, and business partners that builds great customer loyalty as it fosters cooperation to provide an outstanding customer experience

The Value Chain and Strategic IS

- Value chain is another important concept that can help you identify opportunities for strategic information systems.
- The value chain concept was developed by Michael Porter.

The Value Chain and Strategic IS

- It views a firm as a series, chain, or network of basic activities that add value to its products and services and thus add a margin of value to both the firm and its customers.
- In the value chain conceptual framework, some business activities are primary processes; others are support processes.

The Value Chain and Strategic IS

- Primary processes are those business activities that are directly related to the manufacture of products or the delivery of services to the customer.
- In contrast, support processes are those business activities that help support the day-to-day operation of the business and that indirectly contribute to the products or services of the organization.

The Value Chain and Strategic IS

- This framework can highlight where competitive strategies can best be applied in a business.
- So managers and business professionals should try to develop a variety of strategic uses of the Internet and other technologies for those basic processes that add the most value to a company's products or services and thus to the overall business value of the company.

Strategic Uses of IT

- Organizations may view and use information technology in many ways.
- For example, companies may choose to use information systems strategically, or they may be content to use IT to support efficient everyday operations.

Strategic Uses of IT

- If a company emphasized strategic business uses of information technology, its management would view IT as a major competitive differentiator.
- They would then devise business strategies that use IT to develop products, services, and capabilities that give the company major advantages in the markets in which it competes.

Reengineering Business Processes

- One of the most important implementations of competitive strategies is business process reengineering (BPR), often simply called reengineering.
- Reengineering is a fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in cost, quality, speed, and service.

Reengineering Business Processes

- BPR combines a strategy of promoting business innovation with a strategy of making major improvements to business processes so that a company can become a much stronger and more successful competitor in the marketplace.

Reengineering Business Processes

- Although the potential payback of reengineering is high, so too is its risk of failure and level of disruption to the organizational environment.
- Making radical changes to business processes to dramatically improve efficiency and effectiveness is not an easy task.

Reengineering Business Processes

- For example, many companies have used cross-functional enterprise resource planning (ERP) software to reengineer, automate, and integrate their manufacturing, distribution, finance, and human resource business processes.
- Although many companies have reported impressive gains with such ERP reengineering projects, many others either have experienced dramatic failures or did not achieve the improvements they sought.

Reengineering Business Processes

- Many companies have found that organizational redesign approaches are an important enabler of reengineering, along with the use of information technology.
- For example, one common approach is the use of self-directed cross-functional or multidisciplinary process teams .

Reengineering Business Processes

- Employees from several departments or specialties, including engineering, marketing, customer service, and manufacturing, may work as a team on the product development process.

Reengineering Business Processes

- Another example is the use of case managers, who handle almost all tasks in a business process instead of splitting tasks among many different specialists.

The Role of Information Technology in BPR

- Information technology plays a major role in reengineering most business processes.
- The speed, information-processing capabilities, and connectivity of computers and Internet technologies can substantially increase the efficiency of business processes, as well as communications and collaboration among the people responsible for their operation and management.

The Role of Information Technology in BPR

- For example, the order management process is vital to the success of most companies.
- Many of them are reengineering this process with ERP software and Web-enabled e-business and e-commerce systems.

Becoming an Agile Company

- We are changing from a competitive environment in which mass-market products and services were standardized, long-lived, information-poor, and exchanged in one-time transactions, to an environment in which companies compete globally with niche market products and services that are individualized, short-lived, information-rich, and exchanged on an ongoing basis with customers .

Becoming an Agile Company

- Agility in business performance means the ability of a company to prosper in rapidly changing, continually fragmenting global markets for high-quality, high-performance, customer-configured products and services.

Becoming an Agile Company

- An agile company can make a profit in markets with broad product ranges and short model lifetimes and can produce orders individually and in arbitrary lot sizes.
- It supports mass customization by offering individualized products while maintaining high volumes of production.

Becoming an Agile Company

- Agile companies depend heavily on Internet technologies to integrate and manage their business processes while they provide the information-processing power to treat their many customers as individuals.

Becoming an Agile Company

- To be an agile company, a business must use four basic strategies.
  - First, the business must ensure that customers perceive the products or services of an agile company as solutions to their individual problems. Thus, it can price products on the basis of their value as solutions, rather than their cost to produce.
  - Second, an agile company cooperates with customers, suppliers, other companies, and even with its competitors. This cooperation allows a business to bring products to market as rapidly and cost- effectively as possible, no matter where resources are located or who owns them.

Becoming an Agile Company

- Third, an agile company organizes so that it thrives on change and uncertainty. It uses flexible organizational structures keyed to the requirements of different and constantly changing customer opportunities.
- Fourth, an agile company leverages the impact of its people and the knowledge they possess. By nurturing an entrepreneurial spirit, an agile company provides powerful incentives for employee responsibility, adaptability, and innovation.

Creating a Virtual Company

- In today's dynamic global business environment, forming a virtual company can be one of the most important strategic uses of information technology.
- A virtual company (also called a virtual corporation or virtual organization) is an organization that uses information technology to link people, organizations, assets, and ideas.

Creating a Virtual Company

- Virtual companies typically form virtual workgroups and alliances with business partners that are interlinked by the Internet, intranets, and extranets.

Creating a Virtual Company

- This company has organized internally into clusters of process and cross-functional teams linked by intranets.
- It has also developed alliances and extranet links that form interenterprise information systems with suppliers, customers, subcontractors, and competitors.

Creating a Virtual Company

- Thus, virtual companies create flexible and adaptable virtual workgroups and alliances keyed to exploit fast-changing business opportunities.

Virtual Company Strategies

- A business may not have the time or resources to develop the necessary manufacturing and distribution infrastructure, personnel competencies, and information technologies to take full advantage of a new market opportunity in a timely manner.

Virtual Company Strategies

- It can assemble the components it needs to provide a world-class solution for customers and capture the market opportunity only by quickly forming a virtual company through a strategic alliance of all-star partners.

Virtual Company Strategies

- Today, the Internet, intranets, extranets, and a variety of other Internet technologies are vital components in creating such successful solutions.

Basic business strategies of virtual companies.

- Share infrastructure and risk with alliance partners.
- Link complementary 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.

Building a Knowledge-Creating Company

- Many companies today can only realize lasting competitive advantage if they become knowledge-creating companies or learning organizations.
- That means consistently creating new business knowledge, disseminating it widely throughout the company, and quickly building the new knowledge into their products and services.

Building a Knowledge-Creating Company

- Knowledge-creating companies exploit two kinds of knowledge:
  - Explicit knowledge , which is the data, documents, and things written down or stored on computers.
  - Tacit knowledge , or the “how-tos” of knowledge, which resides in workers. Tacit knowledge can often represent some of the most important information within an organization.

Building a Knowledge-Creating Company

- Long-time employees of a company often “know” many things about how to manufacture a product, deliver the service, deal with a particular vendor, or operate an essential piece of equipment.
- This tacit knowledge is not recorded or codified anywhere because it has evolved in the employee’s mind through years of experience.

Building a Knowledge-Creating Company

- Furthermore, much of this tacit knowledge is never shared with anyone who might be in a position to record it in a more formal way because there is often little incentive to do so or simply, “Nobody ever asked.”

Knowledge Management Systems

- Knowledge management has thus become one of the major strategic uses of information technology.
- Many companies are building knowledge management systems (KMS) to manage organizational learning and business know-how.

Knowledge Management Systems

- The goal of such systems is to help knowledge workers create, organize, and make available important business knowledge, wherever and whenever it's needed in an organization.
- This information includes processes, procedures, patents, reference works, formulas, "best practices," forecasts, and fixes.

Knowledge Management Systems

- Knowledge management systems also facilitate organizational learning and knowledge creation.
- They are designed to provide rapid feedback to knowledge workers, encourage behavior changes by employees, and significantly improve business performance.

Knowledge Management Systems

- As the organizational learning process continues and its knowledge base expands, the knowledge-creating company works to integrate its knowledge into its business processes, products, and services.

Knowledge Management Systems

- This integration helps the company become a more innovative and agile provider of high-quality products and customer services, as well as a formidable competitor in the marketplace.

End of chapter 2