

CHAPTER 3

Information Systems, Organizations, and Strategy

LEARNING OBJECTIVES

After reading this chapter, you will be able to answer the following questions:

1. Which features of organizations do managers need to know about to build and use information systems successfully? What is the impact of information systems on organizations?
2. How does Porter's competitive forces model help companies develop competitive strategies using information systems?
3. How do the value chain and value web models help businesses identify opportunities for strategic information system applications?
4. How do information systems help businesses use synergies, core competencies, and network-based strategies to achieve competitive advantage?
5. What are the challenges posed by strategic information systems and how should they be addressed?

OPENING CASE: E-BAY FINE TUNES ITS STRATEGY

The opening case, "eBay Fine-tunes Its Strategy," illustrates some of the ways that information systems help businesses compete and also the challenges of sustaining a competitive advantage. Perhaps the most intriguing question you could ask about eBay is this: Exactly what is its core competency?

An interesting aspect of this case that jumps into the chapter's material nicely is how companies find it necessary to change their business strategies over time, or at least fine tune them. eBay started out as an online auction house. Now it has three revenue streams: fees and commissions associated with its auction place, direct advertising on its Web sites, and end-to-end service providers such as PayPal. It's also added diverse businesses like Skype, an Internet-based telephone company, which has very little connection to its core business.

This vignette illustrates how even the most successful businesses must continually change their core strategy in response to changes brought about by their internal and external environment.

You can begin this chapter with a discussion focused on students' direct experiences with eBay, Amazon, and other online shopping sites. Ask students if they prefer the old-style auction method of purchasing goods or the newer option eBay offers to "buy it now." Ask students to look at the differences in eBay from a seller's standpoint, not just a buyer's point of view. You might also ask students if they've had any experience with PayPal, Skype, and other businesses eBay now owns. Ask them how these diverse businesses fit into eBay's overall strategy.

3.1 ORGANIZATIONS AND INFORMATION SYSTEMS

You could say that this chapter relies on the chicken-and-egg theory to develop a relationship between organizations and information systems. You need to design information systems that serve the existing organization. At the same time you must be ready and willing to restructure the organization to take advantage of the improvements an information system can offer. So which one takes precedence—the organization or the information system? Actually neither one; they must support each other.

Chapter 3 describes how organizations and information systems work together, or sometimes against each other. The idea, of course, is to keep them in sync, but that's not always possible. We'll look at the nature of organizations and how they relate to information systems.

WHAT IS AN ORGANIZATION?

An **organization** is very similar to the information system described in Chapter 1. Remember Figure 1-4 from Chapter 1? Compare it to Figure 3-2 from Chapter 3.

FIGURE 1-4 FUNCTIONS OF AN INFORMATION SYSTEM

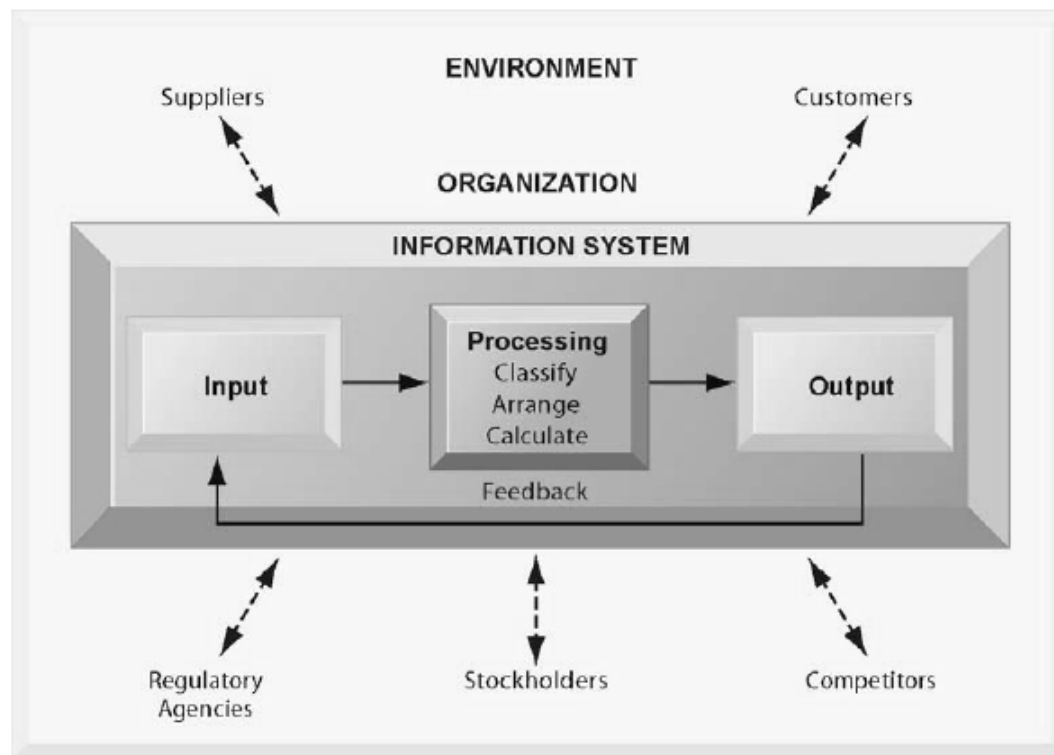
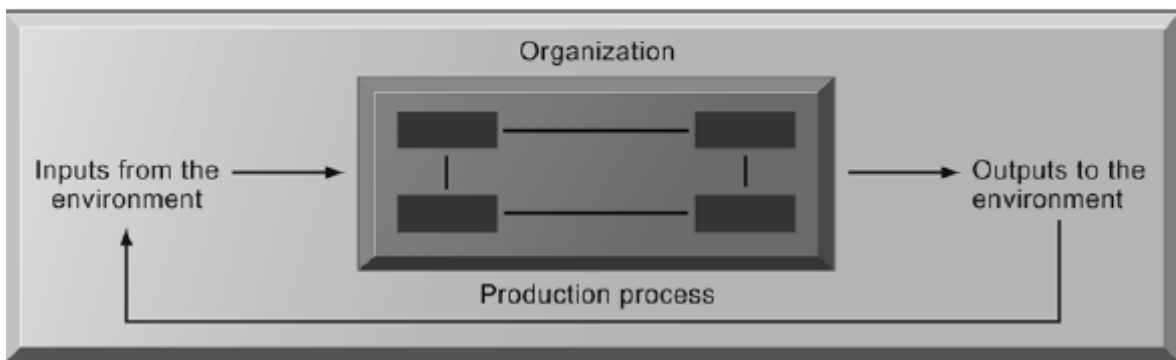


FIGURE 3-2 THE TECHNICAL MICROECONOMIC DEFINITION OF THE ORGANIZATION



These two figures have many things in common. Both information systems and organizations require inputs and some sort of processing, both have outputs, and both depend on feedback for successful completion of the loop.

Information systems use data as their main ingredient and organizations rely on people. However, the similarities are remarkable. Both are a structured method of turning raw products (data/people) into useful entities (information/producers).

Students can consider some of the organizations they have been involved in. Each of them had a structure, even if it wasn't readily apparent. Perhaps the organization seemed chaotic or didn't seem to have any real purpose. Maybe that was due to poor input, broken-down processing, or unclear output. It could very well be that feedback was ignored or missing altogether.

FEATURES OF ORGANIZATIONS

Ask students to think about the class as an organization of sorts. How many of the following characteristics fit the class?

- Clear division of labour
- Hierarchy
- Explicit rules and procedures
- Impartial judgments
- Technical qualifications for positions
- Maximum organizational efficiency

These characteristics describe organizations that are called bureaucracies. Although they are usually considered slow, cumbersome, and unprogressive, that isn't necessarily so. Many organizations have bureaucratic characteristics and operate very well.

ROUTINES AND BUSINESS PROCESSES

All organizations, including business firms become very efficient over time because individuals in the firm develop **routines** for producing goods and services. Some of the *standard operating procedures (SOPs)*, politics, and culture are so ingrained in organizations that they actually hinder the success of the group. Students can think about their experiences in groups. They had a leader (hierarchy), a set of rules by which they operated (explicit rules and procedures), and people appointed to perform certain tasks (clear division of labour). Students probably voted on different issues (impartial judgments), and decided on the best person to fulfill various positions within the group (technical qualifications for positions). Hopefully, the organization was able to fulfill its goals (maximum organizational efficiency), whether writing a class report or winning a softball game.

ORGANIZATIONAL POLITICS

People in organizations occupy different positions with different specialties, concerns, and perspectives. These differences result in political struggle for resources, competition, and conflict within every organization. Political resistance has proven to be one of the greatest difficulties to bring about organizational change.

ORGANIZATIONAL CULTURE

Generally, an organization's cultural assumptions are taken for granted and are rarely publicly announced or spoken about. As a rule, the organization's culture has proven to be a powerful restraint on making changes within the organization and its basic procedures and common business practices. This is especially evident when considering technological changes that may threaten these commonly held assumptions.

ORGANIZATIONAL ENVIRONMENTS

Organizations differ because their ultimate goals differ. Some organizations are small by nature or small by design. Using the same thought process as students did for recognizing the different structures in organizations, ask them to think about the unique differences in those organizations. Why are they different: size, goals, environmental factors that restrict their growth?

For instance, contrast a real estate company with an insurance company. The real estate company is constantly looking for new customers (buyers and sellers) and new products (houses or commercial properties) to sell. It may choose to stay small or to go with a nationwide conglomerate. The environmental factors that are likely to influence it are the state of the national economy or the nature of the local economy. Many external factors are out of its control. The employees of the company must respond quickly to potential sales or they simply won't make any money. This type of organization must be creative in the way it generates business and in the type of systems it uses.

On the other hand, the insurance company has relatively stable customers. People sign up with the insurer and pay their premiums on a regular basis. While customers may come and go, the turnover is fairly small.

Both of these businesses are small and entrepreneurial. But they must respond to their employees, customers and potential customers in very different ways. Each of them has different business processes that must be used to meet goals of staying in business.

ORGANIZATIONAL STRUCTURE

Table 3-2 shows some common organizational structures. Students can think about their experiences in the workplace or daily life, and try to list some organizations that fit into each category.

OTHER ORGANIZATIONAL FEATURES

Would you consider the same organizational structure for a softball team as you would for a theatre production group? Although there would be some similarities, the two groups would probably have some major differences. An automobile dealership would have some similarities to a department store (both sell products) and yet they would have major structural differences. Organizations that enter into collaborative partnerships tend to seek out companies with similar structures. It is much easier for the employees to work together if they aren't required to learn a whole different work structure on top of learning new tasks.

3.2

HOW INFORMATION SYSTEMS IMPACT ORGANIZATIONS AND BUSINESS FIRMS

The text discusses two major types of theories about how information systems impact and change organizations.

ECONOMIC IMPACTS

It's sometimes cheaper to use a computer than to hire a person. This is especially true as labour costs rise. As technology costs decrease, it can also substitute for other forms of capital, such as buildings (think about Internet stores) and communications (linking with suppliers and customers over the Internet) – and therefore reduce transaction costs.

Figure 3-6 can be used to demonstrate that as transaction costs decrease, firm size can decrease even as revenues increase

One way that technology in general, and information systems in particular, are saving companies a lot of money is in the reduced number of managers needed to oversee larger

numbers of workers. Technological changes support the **agency theory**, which allows a manager to supervise more employees at less cost.

ORGANIZATIONAL AND BEHAVIOURAL IMPACTS

IT Flattens Organizations

Behavioural researchers have theorized that information technology facilitates flattening of hierarchies. Points made in support of this theory include:

- IT pushes decision-making rights lower in the organization because lower-level employees receive the information they need to make decisions
- Managers now receive more accurate information on time, so they become quicker at making decisions, so fewer managers are required
- Management costs decline as a percentage of revenues, and the hierarchy becomes much more efficient.

Postindustrial Organizations

Postindustrial theories also support the notion that IT should flatten hierarchies. Points made in support of this theory include:

- Professional workers tend to be self-managing, and decision-making should become more decentralized as knowledge and information become more widespread throughout the firm.
- IT may encourage task force-networked organizations in which groups of professionals come together – face to face or electronically – for short periods of time to accomplish a specific task; once the task is accomplished, the individuals join other task forces.

Understanding Organizational Resistance to Change

Information systems are closely intertwined with an organization's structure, culture, and business processes. New systems disrupt established patterns of work and power relationships, so there is often considerable resistance to them when they are introduced. The complex relationship between information systems, organizational performance, and decision making must be carefully managed.

THE INTERNET AND ORGANIZATIONS

The Internet provides an open platform technology that allows transaction processing between businesses at much cheaper costs and provides an easy-to-use interface. Organizations are using the Internet, intranets, and extranets to improve their business processes, lower costs, and improve communications internally and externally. This will impact structure and the number of employees in an organization. Have students compare Chapter.ca's organization with that of a local bookstore.

IMPLICATIONS FOR THE DESIGN AND UNDERSTANDING OF INFORMATION SYSTEMS

To deliver genuine benefits, information systems must be built with a clear understanding of the organization in which they will be used. Central organizational factors to consider when planning a new information system include:

- The environment in which the organization must function
- The structure of the organization: hierarchy, specialization, routines, and business processes
- The organization's culture and politics
- The type of organization and its style of leadership
- The principal interest groups affected by the system and the attitudes of workers who will be using the system
- The kinds of tasks, decisions, and business processes that the information system is designed to assist.

Bottom Line: Organizations and information systems influence each other. Each organization shares common characteristics that the information system can enhance. On the other hand, each organization has unique characteristics that should be taken into account when incorporating technology. The organization should determine how the technology is incorporated and not let the information system totally dictate the organizational structure.

3.3

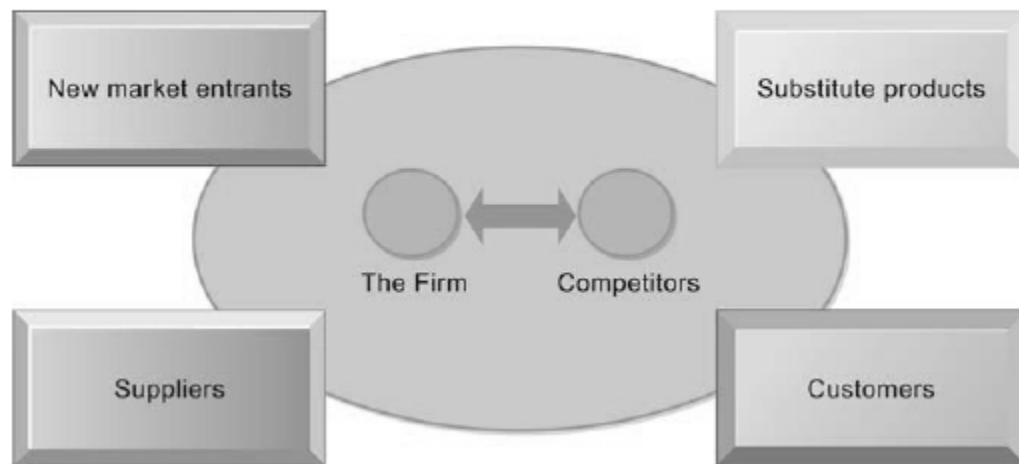
USING INFORMATION SYSTEMS TO ACHIEVE COMPETITIVE ADVANTAGE

Firms that “do better” than others are said to have a competitive advantage over others: They either have access to special resources that others do not, or they are able to use commonly available resources more efficiently — usually because of superior knowledge and information assets. In any event, they do better in terms of revenue growth, profitability, or productivity growth (efficiency), all of which ultimately in the long run translate into higher stock market valuations than their competitors.

PORTER'S COMPETITIVE FORCES MODEL

Michael Porter's framework – called the **competitive forces model** – has long been accepted as a useful tool for business people to use when thinking about business strategy and the impact of IT.

FIGURE 3-10 PORTER'S COMPETITIVE FORCES MODEL



Traditional Competitors

Efficient business processes can give companies the edge they need to place themselves in the lead. The rivalry among existing competitors in the Competitive Forces Model is high when competition is fierce in a marketplace, and low when competition is more complacent.

New Market Entrants

The threat of new entrants in the Competitive Forces Model is high when it is easy for new competitors to enter a market, and low when there are significant entry barriers to entering a market.

Substitute Products and Services

Even if they aren't better than your product, substitutes may be cheaper and the customer will be enticed by the lower price. The threat of substitute products or services in the Competitive Forces Model is high when there are many alternatives to a product or service, and low when there are few alternatives from which to choose.

Customers

The Internet offers customers the opportunity to quickly and easily compare prices. The Internet also makes it easy for customers to switch to a competitor's product or service where there is little **product differentiation** and all prices are known instantly. Customer power in the Competitive Forces Model is high when customers have many choices from whom to buy, and low when their choices are few.

Suppliers

New technology offers suppliers the chance to integrate information systems that tie them closer to their customers. Supplier power in the Competitive Forces Model is high when buyers have few choices from whom to buy; and low when their choices are many.

Use an example such as a bookstore to evaluate its position in the marketplace, and evaluate how technology has changed how the bookstore competes. Students should identify technologies as the Internet as having large impacts on local booksellers, as well as on publishers and distributors.

INFORMATION SYSTEM STRATEGIES FOR DEALING WITH COMPETITIVE FORCES

How can firms use information systems to counteract some of the forces outlined in Porter's competitive forces model? Four generic strategies are outlined in Table 3-4.

TABLE 3-3 *Four Basic Competitive Strategies*

STRATEGY	DESCRIPTION	EXAMPLE
Low-cost leadership	Use information systems to produce products and services at a lower price than competitors while enhancing quality and level of service.	Wal-Mart Dell Computer
Product differentiation	Use information systems to differentiate products and enable new services and products.	Google, eBay, Apple, Lands' End
Focus on market niche	Use information systems to enable a focused strategy on a single market niche; specialize.	Hilton Hotels Harrah's
Customer and supplier intimacy	Use information systems to develop strong ties and loyalty with customers and suppliers.	Chrysler Corporation Chapters.Indigo.ca

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Low-Cost Leadership

Use information systems to achieve the lowest operational costs and the lowest prices. Firms such as Wal-Mart have utilized IT to develop an **efficient customer response system** that directly links customer behaviour back to distribution, production, and supply chains.

Product Differentiation

Use information systems to enable new products and services, or greatly change the customer convenience in using your existing products and services. Through **mass customization**, organizations are able to offer individually tailored products or services by using mass production resources. Dell provides a good example of how a company can produce many products (mass production), yet have each one customized per a customer's needs. Other example can be found on the internet, such as customized cookies, customized wrapping paper, and customized clothing.

Focus on Market Niche

Use information systems to enable a specific market focus, and serve this narrow target market better than competitors. Information systems support this strategy by producing and analyzing data for finely tuned sales and marketing techniques. Information systems enable companies to analyze customer buying patterns, tastes, and preferences closely so

that they efficiently pitch advertising and marketing campaigns to smaller and smaller target markets.

Strengthen Customer and Supplier Intimacy

Use information systems to tighten linkages with suppliers and develop intimacy with customers. Chapters.Indigo.ca and Chrysler Corporation are both excellent examples that are quoted in the text of how these firms used information systems to strengthen their customer and supplier relationships. Strong linkages to customers and suppliers increase **switching costs** (expense a customer or company incurs in lost time and expenditure of resources when changing from one supplier or system to a competing supplier or system).

WINDOW ON TECHNOLOGY: 7-ELEVEN STORES ASK THE CUSTOMER BY ASKING THE DATA

7-Eleven Stores improved its competitive position by wringing more value out of its customers' data. This company's early growth and strategy had been based on face-to-face relationships with its customers and intimate knowledge of exactly what they wanted to purchase. As the company grew over time, it was no longer able to discern customer preference through personal face-to-face relationships. A new information system helped it obtain intimate knowledge of its customers once again by gathering and analyzing customer purchase transactions.

TO THINK ABOUT QUESTIONS

1. Why is knowing about the customer so important to a company such as 7-Eleven?

7-Eleven stores were unable to stock inventory efficiently and respond to changes in customer demand. The company used to know exactly what its customers wanted many years ago when it was a much smaller company and managers had more face-to-face relationships with their customers. But 7-Eleven expanded and grew too big for this approach. It needed to find a way to analyze what was being sold in each store and neighborhood and stock its stores accordingly.

2. What are the benefits of 7-Eleven's Retail Information System?

Before the company implemented its Retail Information System it could not determine which items were selling well, or which items were most profitable to sell in the first place. This made a difference to the company's bottom line because of missed sales opportunities, lower profits, and excess store inventory, some of which consisted of perishable goods that had a very short shelf life. Profit margins in this industry are exceedingly thin, so any way to reduce unwanted inventory and increase sales would provide a great boost to profits. Briefly, 7-Eleven had lost the ability to rationally decide what inventory to put on its shelves.

The store developed and implemented their own Retail Information System, which captured point-of-sale data, stored them in a large database, and then analyzed the data to show store managers what was selling in each of their stores. Managers could then make the final stocking decisions, supplementing the information from the system with their own personal knowledge of their customers and neighborhood.

7-Eleven's Retail Information System helped it increase profitability and even gain a competitive advantage. The database improves operational efficiency and decision making, helps the company understand its own consumers better, increases the chances that new successful products and services will flourish (whereas unpopular items will disappear quickly), and may help the company respond more efficiently to requests for information (such as how many units of a defective product were sold at each store, and when).

3. In terms of Porter's model, what strategic forces does the Retail Information System seek to address?

In Porter's competitive forces model, five competitive forces shape the fate of a firm: new market entrants, substitute products, suppliers, and customers. Clearly, the Retail Information System being used by 7-Eleven seeks to address the strategic forces of the customer. 7-Eleven is focused on their ability to attract and retain customers, and charge high prices. The power of customers grows if they can easily switch to a competitor's products and services, or if they can force a business and its competitors to compete on price alone in a transparent marketplace where there is little product differentiation.

4. Which of the strategies described in the chapter does the Retail Information System support?

There are four generic strategies in Porter's model: low-cost leadership, product differentiation, focus on market niche, and strengthening customer and supplier intimacy. In answering this question students could suggest that 7-Eleven is following a dual strategy. They are focusing on a market niche in that they have very close relationships with the people who frequent their store. In these neighborhood stores managers have the ability to communicate face-to-face with their customers and suppliers. In doing so they are able to glean first hand knowledge of what their customer's needs are. Thus, students could also suggest that 7-Eleven's strategy is based on strengthening customer and supplier intimacy.

MIS IN ACTION QUESTIONS

Visit a nearby 7-Eleven store. Observe the items available for sale and the sales process at the store.

1. What technologies does the store use to process a purchase? Do you see any other technologies being used at the store?
2. Do you think the selection of items for sale is appropriate for the neighborhood and the location of the particular 7-Eleven store you are visiting? What items might the Retail Information System have suggested for this store? Do you see any items that appear selling poorly at this store?
3. How well do you think 7-Eleven's Retail Information system works in stocking items for this store?

<http://www.7-eleven.com>

THE INTERNET'S IMPACT ON COMPETITIVE ADVANTAGE

More companies are incorporating the Internet in their business strategies. Because of the Internet, the traditional competitive forces are still at work, but competitive rivalry has become much more intense (Porter, 2001). Internet technology is based on universal standards that any company can use, making it easy for rivals to compete on price alone and for new competitors to enter the market. Table 3-5 summarizes some of the potentially negative impacts of the Internet on business firms identified by Porter.

TABLE 3-4 IMPACT OF THE INTERNET ON COMPETITIVE FORCES AND INDUSTRY STRUCTURE

Competitive Force	Impact of the Internet
Substitute products or services	Enables new substitutes to emerge with new approaches to meeting needs and performing functions.
Customers' bargaining power	Availability of global price and product information shifts; bargaining power to customers.
Suppliers' bargaining power	Procurement over the Internet tends to raise bargaining power over suppliers; suppliers can also benefit from reduced barriers to entry and from the elimination of distributors and other intermediaries standing between them and their users.
Threat of new entrants	The Internet reduces barriers to entry, such as the need for a sales force, access to channels, and physical assets; it provides a technology for driving business processes that makes other things easier to do.
Positioning and rivalry among existing competitors	Widens the geographic market, increasing the number of competitors, and reducing differences among competitors; makes it more difficult to sustain operational advantages; puts pressure to compete on price.

THE BUSINESS VALUE CHAIN MODEL

The **value chain model** highlights activities where a business can use information systems to have strategic advantage. Some activities are referred to as **primary activities**, and are those related to creating the product or service (obtaining raw materials, shipping, sales, etc.). Also important are **support activities**: human resources, accounting, and finance. These functions support the primary functions of production, shipping, and sales and marketing.

Using the business value chain model will cause you to consider benchmarking your business processes against your competitors or others in related industries, and

identifying industry best practices. **Benchmarking** involves comparing the efficiency and effectiveness of your business processes against strict standards and then measuring performance against those standards. Industry **best practices** are usually identified by consulting companies, research organizations, government agencies, and industry associations as the most successful solutions or problem-solving methods for consistently and effectively achieving a business objective.

EXTENDING THE VALUE CHAIN: THE VALUE WEB

More companies are incorporating the Internet in their business strategy through the use of value webs. In simple terms, a value web is a collection of independent firms that use information technology to coordinate their value chains to produce a product or service for a market collectively. A **value web** is a collection of independent firms that use information technology to coordinate their value chains to produce a product or service for a market collectively.

WINDOW ON ORGANIZATIONS: AMAZON.COM: AN INTERNET GIANT FINE-TUNES ITS STRATEGY

Amazon.com has become one of the Web's most satisfying online retail shopping site. Their success is attributed to their ability to use Internet technology as a way to develop and execute a value web strategy to link up more efficiently with their suppliers, strategic partners, and customers. The continuous efforts by Amazon to be innovative in their business strategy and use of information systems have been the main ingredient for Amazon's success. The case demonstrates the vital importance of information technology to the success of Amazon.com.

TO THINK ABOUT QUESTIONS

- 1. Analyze Amazon.com using the competitive forces and value chain models. How has it responded to pressures from its competitive environment? How does it provide value to its customers?**

Amazon continuously seeks new and innovative ways to expand and build upon its product offerings. They have been extremely innovative in their business strategy and have invested heavily in information systems.

Amazon provides value to its customers by making it an easy place to shop. The one-click experience is pleasurable, and customers continue to realize significant cost savings over traditional shopping. Over the years, Amazon has been very successful in building a very large and loyal customer base that are willing to pay a premium for access.

The competitive forces model provides a general view of the firm, its competitors, and the firm's environment. Table 3-4 can be used in order to answer this question.

Competitive forces model:

- Existing competitors: Brick-and-mortar stores, as well as existing online retailers will continue to put pressure on Amazon. Competitor rivalry will be even more intense.
- New market entrants: eBay, Yahoo!, and Google are all attempting to take market space from Amazon. The Internet makes it easier for competitors to enter the market and it offers them very low barriers to entry. Competitive rivalry has become much more intense.
- Substitute products and services: Products and services being offered by Amazon can be easily duplicated and offered by competitors. This makes it easy for rivals to compete.
- Customers: Amazon customers have a lot of power in that they can easily switch to competitors. Amazon and its competitors all operate in a transparent marketplace where there is little product differentiation. Customers can easily find the lowest-cost provider on the Web.
- Suppliers: Amazon's suppliers can have a significant impact on profits. This becomes even more crucial as more companies enter the online retail marketing. Amazon's suppliers may exercise greater force over Amazon as they are now in a position to enter lucrative deals with other online retail competitors such as eBay and Yahoo!.

The value chain model highlights specific activities in the business where competitive strategies can best be applied and where information systems are most likely to have a strategic impact.

- Primary activities:
 - Inbound logistics: Amazon has scaled back on the number of warehouses they have. They maintain very little of their own inventory (relying instead on distributors) and do not have to pay and maintain storage facilities.
 - Operations: Amazon does not transform raw materials into finished products.
 - Outbound logistics: Amazon keeps their inventory at the lowest possible levels in order to keep storage costs down.
 - Sales and marketing: Amazon has a very large and loyal customer base.
 - Service: Amazon has a return policy that is easy to conduct. Mainly, warranty service is covered by the product manufacturer rather than Amazon.
- Support activities:
 - Administration and management: Amazon keep employment levels as lean as possible in order to keep overhead costs down.
 - Human resources: Amazon also keep the number of works low in order to realize cost savings.
 - Technology: provide superior customer service through one-click. Amazon holds a patent on one-click that it licenses to other online retailers.

- Procurement: Amazon invest heavily in information systems in order to obtain operational efficiency at the lowest cost possible.

2. Describe Amazon's evolving business strategy.

Amazon's initial response was to sell books at lower prices than physical bookstores while providing additional value and customer service. This strategy catapulted Amazon to become one of the first—and largest—Internet retailers. Today, its name is still synonymous with Internet retailing. However, this strategy was not enough to provide adequate revenue growth for profitability. Amazon changed its strategy from being an online bookstore to being an online superstore, selling the same range of goods as Wal-Mart. Amazon has used information technology to implement an innovation strategy for strategic advantage. Their strategic use of information technology utilizes an online full service customer system and the business benefits have been that of market leadership.

3. Why did the company change its strategy?

Amazon's move to being an online superstore increased its presence on the Internet but also raised costs. Amazon tried to solve this new set of problems by finding ways to reorganize its business to reduce operational costs and by charging other businesses to use its online storefront to reach new customers. And it has tried to keep innovating with new products while maintaining its brand image of reliability, quality, and high customer service; but the Internet makes it easier for other companies to compete on the same playing field, and Amazon will probably have to continue fine-tuning its strategy to remain competitive.

4. Do you think Amazon can continue to be successful? Explain your answer.

In pure online retailing, Amazon is considered the leader and they stand out from all others. Their strategy continues to be a combination of vast selection, efficiency, discount process, and personal service.

Amazon's success can be attributed to their exhaustive focus on convenience, selection, and personalization and they have lived up to their claims as "Earth's Biggest Selection" by building an inventory of millions of products. Amazon are not showing any signs of slowing down however, they are now facing powerful online retail competitors such as eBay, Yahoo! and Google. All of these competitors are also very adept at using information systems to develop new products and services. In order to maintain their powerful position, Amazon must continue to develop innovative business strategies and information systems.

Without a doubt, Amazon must continuously introduce new and unique products and services to its customers. In order to accomplish this, they will clearly need to use a multi-prong competitive strategy as no single strategy will give them a competitive advantage.

MIS IN ACTION QUESTIONS

Search for an iPod nano on Amazon.ca, eBay.ca, and Yahoo! Shopping. Compare the shopping experience at these sites to answer the following questions.

1. Evaluate how each site offers information about a product, including information about the reliability of the vendor (seller).
2. Evaluate each of the sites in terms of how many sources for the product they offer.
3. Evaluate the sites in terms of pricing and availability of the product you have selected.
4. Which site would you choose for shopping for your nano? Why?

<http://www.amazon.ca>

<http://www.ebay.ca>

<http://ca.shopping.yahoo.com/>

SYNERGIES, CORE COMPETENCIES, AND NETWORK-BASED STRATEGIES

A large corporation is typically made up of a collection of multiple business units. Information systems achieve additional efficiencies or enhanced services by tying together the operation of these disparate business units. In essence, information systems can improve the overall performance of the organizations business units by promoting synergies and core competencies.

Synergies

Some companies have used information systems to create synergies. Ask students to consider some, including the AirMiles reward system being accepted at numerous vendors. An information system is necessary to create and maintain such loyalty systems.

Enhancing Core Competencies

A **core competency** is an activity for which a firm is a world-class leader. Any information system that encourages the sharing of knowledge across business units enhances competency. Ask students for examples: UPS is one such example, where information systems allow package tracking, and improved customer control of the shipping process. This allows UPS to be more efficient than competitors, at least until other competitors implement the same technology. To be competitive, they will need to continually innovate.

Networked-Based Strategies

The availability of Internet and networking technology has inspired strategies that take advantage of firms' abilities to create networks or network with each other. Network-

based strategies include the use of network economics, virtual company strategy and business ecosystems.

Network Economics — model of strategic systems at the industry level based on the concept of a network where adding another participant entails zero marginal costs but can create much larger marginal gains.

Virtual Company Strategy — A **Virtual Company** is an organization that uses networks to link people, assets, and ideas to create and distribute products and services without being limited to traditional organizational boundaries or physical locations.

Business Ecosystems: Keystone and Niche Firms — **Business Ecosystem** is another term for loosely coupled but interdependent networks of suppliers, distributors, outsourcing firms, transportation service firms, and technology manufacturers.

Figure 3-14 can be used to show how the traditional competitive forces model changes when the concept of industry ecosystems is introduced.

3.4

USING SYSTEMS FOR COMPETITIVE ADVANTAGE: MANAGEMENT ISSUES

Strategic information systems often change the organization as well as its products, services, and operating procedures, driving the organization into new behavioural patterns. Successfully using information systems to achieve a competitive advantage is challenging and requires precise coordination of technology, organizations, and management.

SUSTAINING COMPETITIVE ADVANTAGE

Using information systems to beat the competition and increase the value of a product is not easy. Because competitors can quickly copy strategic systems, competitive advantage is not always sustainable. Sustaining a competitive advantage constantly requires changing processes and methods of conducting business. Managers simply cannot rest on their laurels with today's fast paced, fast changing technological advances. Technology changes much faster than organizations can adapt. As soon as employees and managers become comfortable with a particular system, it's almost time to make some more changes.

ALIGNING IT WITH BUSINESS OBJECTIVES PERFORMING A STRATEGIC SYSTEMS ANALYSIS

Completing a strategic systems analysis is one of the first steps managers should take to help determine how they can use information systems to gain a competitive advantage. Ask yourself these questions about your own firm:

1. What is the structure of the industry in which your firm is located?
 - What are some of the competitive forces at work in the industry: Are there new entrants to the industry? What is the relative power of suppliers, customers, and substitute products and services over prices?
 - Is the basis of competition quality, price, or brand?
 - What are the direction and nature of change within the industry? From where are the momentum and change coming?
 - How is the industry currently using information technology? Is the organization behind or ahead of the industry in its application of information systems?
2. What are the business, firm, and industry value chains for your firm?
 - How is the company creating value for the customer—through lower prices and transaction costs or higher quality? Are there any places in the value chain where the business could create more value for the customer and additional profit for the company?
 - Does the firm understand and manage its business processes using the best practices available? Is it taking maximum advantage of supply chain management, customer relationship management, and enterprise systems?
 - Does the firm leverage its core competencies?
 - Is the industry supply chain and customer base changing in ways that benefit or harm the firm?
 - Can the firm benefit from strategic partnerships and value webs?
 - Where in the value chain will information systems provide the greatest value to the firm?

MANAGING STRATEGIC TRANSITIONS

A vital attribute of any manager's success is the ability to adapt to change. The pace of technological change is at its highest level ever. With each advance, the organization must use **strategic transitions**, a movement between levels of sociotechnical systems, to its advantage. Making changes in the information systems should trigger a review of associated processes to make sure they are in sync. Teaming up with competitors may seem at odds with wanting to beat the competition, but in fact may be the smartest thing to do. Technological changes allow you to do both without sacrificing too much.

Of course the Internet has turned many traditional management practices to dust. Customers have access to much more information and data than they ever did before. They can compare product prices across hundreds of companies with a few clicks. Before the Internet, customers may have had access to a limited number of retailers. Through the Internet, they now have access to hundreds of retailers open 24 hours a day. Once

retailers had only local competition; now they have to compete with other retailers located halfway around the world.

As we continue through the book, students should keep in mind how organizations are structured, how information needs vary from one organization to another, and how information systems can enhance or detract the characteristics of an organization. The most important thing to remember is that at the core of every organization are people.

Bottom Line: A well-developed strategic information system that is integrated throughout the company can be used to lower overall costs and provide greater value to the company, the supplier, and the customer.

SUMMARY

1. *Identify and describe important features of organizations that managers need to know about in order to build and use information systems successfully.*

Managers need to understand certain essential features of organizations to build and use information systems successfully. All modern organizations are hierarchical, specialized, and impartial, using explicit routines to maximize efficiency. All organizations have their own cultures and politics arising from differences in interest groups, and they are affected by their surrounding environment. Organizations differ in goals, groups served, social roles, leadership styles, incentives, types of tasks performed, and type of structure. These features help explain differences in organizations' use of information systems.

2. *Evaluate the impact of information systems on organizations.*

Information systems and the organizations in which they are used interact with and influence each other. The introduction of a new information system will affect organizational structure goals, work design, values, competition between interest groups, decision making, and day-to-day behaviour. At the same time, information systems must be designed to serve the needs of important organizational groups and will be shaped by the organization's structure, task, goals, culture, politics, and management. Information technology can reduce transaction and agency costs, and such changes have been accentuated in organizations using the Internet.

Information systems are closely intertwined with an organization's structure, culture, and business processes. New systems disrupt established patterns of work and power relationships, so there is often considerable resistance to them when they are introduced. The complex relationship between information systems, organizational performance, and decision making must be carefully managed.

3. *Demonstrate how Porter's competitive forces model and the value chain model help businesses use information systems for competitive advantage.*

In Porter's competitive forces model, the strategic position of the firm and its strategies are determined by competition with its traditional direct competitors but also they are also greatly affected by new market entrants, substitute products and services, suppliers, and customers. Information systems help companies compete by maintaining low costs, differentiating products or services, focusing on market niche, strengthening ties with customer and suppliers, and increasing barriers to market entry with high levels of operational excellence.

The value chain model highlights specific activities in the business where competitive strategies and information systems will have the greatest impact. The model views the firm as a series of primary and support activities that add value to the firm's products or services. Primary activities are directly related to production and distribution, whereas support activities make the delivery of primary activities possible. A firm's value chain can be linked to the value chains of its suppliers, distributors, and customers. A value web consists of information systems that enhance competitiveness at the industry level by promoting the use of standards and industry-wide consortia and by enabling businesses to work more efficiently with their value partners.

4. *Demonstrate how information systems help businesses use synergies, core competences, and network-based strategies to achieve competitive advantage.*

Because firms consist of multiple business units, information systems achieve additional efficiencies or enhanced services by tying together the operations of disparate business units. Information systems help businesses leverage their core competencies by promoting the sharing of knowledge across business units. Information systems facilitate business models based on large networks of users or subscribers that take advantage of network economics. A virtual company strategy uses networks to link to other firms so that a company can use the capabilities of other companies to build, market, and distribute products and services. In business ecosystems, multiple industries work together to deliver value to the customer. Information systems support a dense network of interactions among the participating firms.

5. *Assess the challenges posed by strategic information systems and management solutions.*

Implementing strategic systems often requires extensive organizational change and a transition from one sociotechnical level to another. Such changes are called strategic transitions and are often difficult and painful to achieve. Moreover, not all strategic systems are profitable, and they can be expensive to build. Many strategic information systems are easily copied by other firms so that strategic advantage is not always sustainable. A strategic systems analysis is helpful.

KEY TERMS

The following alphabetical list identifies the key terms discussed in this chapter.

Agency theory — economic theory that views the firm as a nexus of contracts among self-interested individuals who must be supervised and managed.

Benchmarking — setting strict standards for products, services, or activities and measuring organizational performance against those standards.

Best practices — the most successful solutions or problem-solving methods that have been developed by a specific organization or industry.

Business ecosystem — loosely coupled but interdependent networks of suppliers, distributors, outsourcing firms, transportation service firms, and technology manufacturers.

Competitive forces model — model used to describe the interaction of external influences, specifically threats and opportunities that affect an organization's strategy and ability to compete.

Core competency — activity at which a firm excels as a world-class leader.

Efficient customer response systems — system that directly links consumers behaviour to distribution, production, and supply chains.

Mass customization — the capacity to offer individually tailored products or services using mass production resources.

Network economics — model of strategic systems at the industry level based on the concept of a network where adding another participant entails zero marginal costs but can create much larger marginal gains.

Organization — stable, formal social structure that takes resources from the environment and processes them to product outputs.

Primary activities — activities most directly related to the production and distributing of a firm's products or services.

Product differentiation — competitive strategy for creating brand loyalty by developing new and unique products and services that are not easily duplicated by competitors.

Routines — precise rules, procedures and practices that have been developed to cope with expected situations.

Strategic transitions — a movement from one level of sociotechnical system to another. Often required when adopting strategic systems that demand changes in the social and technical elements of an organization.

Support activities — activities that make the delivery of a firm's primary activities possible. They consist of the organization's infrastructure, human resources, technology, and procurement.

Switching costs — the expense a customer or company incurs in lost time and expenditure of resources when changing from one supplier or system to a competing supplier or system.

Transaction cost theory — economic theory stating that firms grow larger because they can conduct marketplace transactions internally more cheaply than they can with external firms in the marketplace.

Value chain model — model that highlights the primary or support activities that add a margin of value to a firm's products or services where information systems can be best applied to achieve a competitive advantage.

Value web — customer-driven network of independent firms that use information technology to coordinate their value to collectively produce a product or service for a market.

Virtual company — an organization that uses networks to link people, assets, and ideas to create and distribute products and services without being limited to traditional organizational boundaries or physical locations.

REVIEW QUESTIONS

1. Which features of organizations do managers need to know about to build and use information systems successfully? What is the impact of information systems on organizations?

Define an organization and compare the technical definition of organizations with the behavioural definition.

The technical definition for an organization defines an organization as a stable, formal social structure that takes resources from the environment and processes them to produce outputs. This definition of an organization focuses on three elements: capital, labour, and production and products for consumption. The technical definition also implies that organizations are more stable than an informal group, are formal legal entities, and are social structures.

The behavioural definition states that an organization is a collection of rights, privileges, obligations, and responsibilities that are delicately balanced over a period of time through conflict and conflict resolution. This definition highlights the people within the organization, their ways of working, and their relationships.

The technical definition shows us how a firm combines capital, labour, and information technology. The behavioural definition examines how information technology impacts the inner workings of the organization.

Identify and describe the features of organizations that help explain differences in organizations' use of information systems.

Common features for organizations include formal structure, standard operating procedures, politics, and culture. Organizations can differ in their organizational type, environment, goals, power, constituencies, function, leadership, tasks, technology, and business processes.

Describe the major economic theories that help explain how information systems affect organizations.

The two economic theories discussed in the book are transaction cost theory and agency theory. The transaction cost theory is based on the notion that a firm incurs transaction costs when it buys goods in the marketplace rather than making products for itself. Traditionally, firms sought to reduce transaction costs by getting bigger, hiring more employees, vertical and horizontal integration, and small-company takeovers. Information technology helps firms lower the cost of market participation (transaction costs) and helps firms shrink in size while producing the same or greater amount of output.

The agency theory views the firm as a nexus of contracts among interested individuals. The owner employs agents (employees) to perform work on his or her behalf and delegates some decision-making authority to the agents. Agents need constant supervision and management, which introduces management costs. As firms grow, management costs rise. Information technology reduces agency costs by providing information more easily so that managers can supervise a larger number of people with fewer resources.

Describe the major behavioural theories that help explain how information systems affect organizations.

Behavioural theories, from sociology, psychology, and political science, are useful for describing the behaviour of individual firms. Behavioural researchers theorize that information technology could change the decision-making hierarchy by lowering the costs of information acquisition and distribution. IT could eliminate middle managers and their clerical support by sending information from operating units directly to senior management and by enabling information to be sent directly to lower-level

operating units. It even enables some organizations to act as virtual organizations because they are no longer limited by geographic locations.

One behavioural approach views information systems as the outcome of political competition between organizational subgroups. IT becomes very involved with this competition because it controls who has access to what information, and information systems can control who does what, when, where, and how.

Explain why there is considerable organizational resistance to the introduction of information systems.

There is considerable organizational resistance to new information systems because they change many important organizational dimensions, such as culture, structure, politics, and work. Leavitt puts forth a model that says that changes in technology are absorbed, deflected, and defeated by organizational task arrangements, structures, and people. In this model the only way to bring about change is to change the technology, tasks, structure, and people simultaneously. In a second model, the authors speak of the need to unfreeze organizations before introducing an innovation, quickly implementing the new system, and then refreezing or institutionalizing the change.

Describe the impact of the Internet and disruptive technologies on organizations.

The Internet increases the accessibility, storage, and distribution of information and knowledge for organizations; nearly any information can be available anywhere at any time. The Internet increases the scope, depth, and range of information and knowledge storage. It lowers the cost and raises the quality of information and knowledge distribution. That is, it lowers transaction costs and information acquisition costs. By using the Internet, organizations may reduce several levels of management, enabling closer and quicker communication between upper levels of management and the lower levels. The Internet also lowers agency costs.

Disruptive technologies caused by technological changes can have different effects on different companies depending on how they handle the changes. Some companies create the disruptions and succeed very well. Other companies learn about the disruption and successfully adopt it. Other companies are obliterated by the changes because they are very efficient at doing what no longer needs to be done. Some disruptions mostly benefit the firm. Other disruptions mostly benefit consumers.

2. How does Porter's competitive forces model help companies develop competitive strategies using information systems?

Define Porter's competitive forces model and explain how it works.

This model provides a general view of the firm, its competitors, and the firm's environment. Porter's model is all about the firm's general business environment. In this model, five competitive forces shape the fate of the firm:

- traditional competitors
- new market entrants
- substitute products and services
- customers
- suppliers
-

Describe what the competitive forces model explains about competitive advantage.

Some firms do better than other because they either have access to special resources that others do not, or they are able to use commonly available resource more efficiently. It could be because of superior knowledge and information assets. Regardless, they excel in revenue growth, profitability, or productivity growth, ultimately increasing their stock market valuations compared to their competitors.

List and describe four competitive strategies enabled by information systems that firms can pursue.

The four generic strategies, each of which often is enabled by using information technology and systems include:

- Low-cost leadership: lowest operational costs and the lowest prices.
- Product differentiation: enable new products and services, or greatly change the customer convenience in using existing products and services.
- Focus on market niche: enable a specific market focus and serve this narrow target market better than competitors.
- Strengthen customer and suppliers: tighten linkages with suppliers and develop intimacy with customers.

Describe how information systems can support each of these competitive strategies and give examples.

- Low-cost leadership: use information systems to improve inventory management, supply management, and create efficient customer response systems. Example: Wal-Mart.
- Product differentiation: use information systems to create products and services that are customized and personalized to fit the precise specifications of individual customers. Example: Google, eBay, Apple, Lands' End.
- Focus on market niche: use information systems to produce and analyze data for finely tuned sales and marketing techniques. Analyze customer buying patterns, tastes, and preferences closely in order to efficiently pitch advertising and marketing campaigns to smaller target markets. Example: Hilton Hotels, Harrah's.
- Strengthen customer and supplier intimacies: use information systems to facilitate direct access from suppliers to information within the company. Increase switching costs and loyalty to the company. Example: IBM, Amazon.com

Explain why aligning IT with business objectives is essential for strategic use of systems.

The basic principle of IT strategy for a business is to ensure the technology serves the business and not the other way around. The more successfully a firm can align its IT with its business goals, the more profitable it will be. Business people must take an active role in shaping IT to the enterprise. They cannot ignore IT issues. They cannot tolerate failure in the IT area as just a nuisance to work around. They must understand what IT can do, how it works, and measure its impact on revenues and profits.

3. How do the value chain and value web models help businesses identify opportunities for strategic information system applications?

Define and describe the value chain model.

The value chain model highlights specific activities in the business where competitive strategies can best be applied and where information systems will most likely have a strategic impact. The model identifies specific, critical leverage points where a firm can use information technology most effectively to enhance its competitive position. The value chain model views the firm as a series of basic activities that add a margin of value to a firm's products or services. The activities are categorized as either primary or support activities. Primary activities are most directly related to production and distribution of the firm's products and services, which create value for the customer. Support activities make the delivery of primary activities possible and consist of organization infrastructure. A firm's value chain can be linked to the value chains of its suppliers, distributors, and customers.

Explain how the value chain model can be used to identify opportunities for information systems.

Information systems can be used at each stage of the value chain to improve operational efficiency, lower costs, improve profit margins, and forge a closer relationship with customers and suppliers.

Define the value web and show how it is related to the value chain.

A value web is a collection of independent firms that use information technology to coordinate their value chains to collectively produce a product or service. It is more customer driven and operates in a less linear fashion than the traditional value chain. The value web is a networked system that can synchronize the business processes of customers, suppliers, and trading partners among different companies in an industry or in related industries.

Explain how the value web helps businesses identify opportunities for strategic information systems.

Information systems enable value webs that are flexible and adaptive to changes in supply and demand. Relationships can be bundled or unbundled in response to changing market conditions. Firms will accelerate time to market and to customers by optimizing their value web relationships to make quick decisions on who can deliver the required products or services at the right price and location. Information systems make it possible for companies to establish and operate value webs.

Describe how the Internet has changed competitive forces and competitive advantage.

The Internet has nearly destroyed some industries and severely threatened others. The Internet has also created entirely new markets and formed the basis of thousands of new businesses. The Internet has enabled new products and services, new business models, and new industries to rapidly develop.

Because of the Internet, competitive rivalry has become much more intense. Internet technology is based on universal standards that any company can use, making it easy for rivals to compete on price alone and for new competitors to enter the market. Because information is available to everyone, the Internet raises the bargaining power of customers, who can quickly find the lowest-cost provider on the Web.

4. How do information systems help businesses use synergies, core competencies and network-based strategies to achieve competitive advantage?

Explain how information systems promote synergies and core competencies.

A large corporation is typically a collection of businesses that are organized as a collection of strategic business units. Information systems can improve the overall performance of these business units by promoting synergies and core competencies.

Describe how promoting synergies and core competencies enhances competitive advantages.

The concept of synergy is that when the output of some units can be used as inputs to other units, or two organizations can pool markets and expertise, these relationships lower costs and generate profits. In applying synergy to situations, information systems are used to tie together the operations of disparate business units so that they can act as a whole.

A core competency is an activity for which a firm is a world-class leader. In general, a core competency relies on knowledge that is gained over many years of experience and a first-class research organization or simply key people who stay abreast of new external knowledge. Any information system that encourages the sharing of knowledge across business units enhances competency.

Explain how businesses benefit by using network economics.

In a network, the marginal costs of adding another participant are almost zero, whereas the marginal gain is much larger. The larger the number of participants in a network, the greater the value to all participants because each user can interact with more people.

The availability of Internet and networking technology has inspired strategies that take advantage of the abilities of the firm to create networks or network with each other. In a network economy, information systems facilitate business models based on large networks of users or subscribers that take advantage of network economies. Internet sites can be used by firms to build communities of users that can result in building customer loyalty and enjoyment and build unique ties to customers, suppliers, and business partners.

Define and describe a virtual company and the benefits of pursuing a virtual company strategy.

A virtual company uses networks to link people, assets, and ideas, enabling it to ally with other companies to create and distribute products and services without being limited by traditional organizational boundaries or physical locations. One company can use the capabilities of another company without being physically tied to that company. The virtual company model is useful when a company finds it cheaper to acquire products, services, or capabilities from an external vendor or when it needs to move quickly to exploit new market opportunities and lacks the time and resources to respond on its own.

5. What are the challenges posed by strategic information systems and how should they be addressed?

List and describe the management challenges posed by strategic information systems.

Information systems are closely intertwined with an organization's structure, culture, and business processes. New systems disrupt established patterns of work and power relationships, so there is often considerable resistance to them when they are introduced.

Implementing strategic systems often requires extensive organizational change and a transition from one sociotechnical level to another. Such changes are called strategic transitions and are often difficult and painful to achieve. Moreover, not all strategic systems are profitable. They are expensive and difficult to build because they entail massive sociotechnical changes within the organization. Many strategic information systems are easily copied by other firms so that strategic advantage is not always

sustainable. The complex relationship between information systems, organizational performance, and decision making must be carefully managed.

Explain how to perform a strategic systems analysis.

Managers should ask the following questions to help them identify the types of systems that may provide them with a strategic advantage.

1. *What is the structure of the industry in which the firm is located?* Analyze the competitive forces at work in the industry; determine the basis of competition; determine the direction and nature of change within the industry; and analyze how the industry is currently using information technology.
2. *What are the business, firm, and industry value chains for this particular firm?* Decide how the company creates value for its customers; determine how the firm uses best practices to manage its business processes; analyze how the firm leverages its core competencies; verify how the industry supply chain and customer base are changing; establish the benefit of strategic partnerships and value webs; clarify where information systems will provide the greatest value in the firm's value chain.
3. *Have we aligned IT with our business strategy and goals?* Articulate the firm's business strategy and goals; decide if IT is improving the right business processes and activities in accordance with the firm's strategy; agree on the right metrics to measure progress toward the goals.

Discussion Questions

1. **It has been said that there is no such thing as a sustainable competitive advantage. Do you agree? Why or why not?**

Students will argue both sides, and there is no definite answer to the question. There is little that a company can do that cannot be duplicated over time. Citibank and its ATM machines and American Airlines and its reservation systems are good examples. Think about companies that had strategic advantages in the 1920s or 1940s that no longer exist. In contrast, some companies, such as Wal-Mart, maintain a strategic advantage for a long time. Wal-Mart maintains its lead by striving to advance even further.

Gary Hamel, whom some call the leading strategy expert in business today, says there is no such thing as sustainable strategic advantage. Hamel is founder and chairman of Strategos and a research fellow at Harvard Business School. He believes that, in the past, most companies were built to do one thing exceedingly well for an exceedingly long period of time. In today's marketplace, companies built for scale, replication, diligence, and exactitude must learn to change, adapt, and experiment at the speed that you see in the new economy.

New economy companies must master some virtues of the old economy. These companies are learning that scale, operational excellence, and global infrastructure are important. They can constitute hard-to-duplicate competitive advantages that allow them to capture the rents on their innovation. Many have been trained to think that there is no such a thing as sustainable competitive advantage. They have been trained to think about innovation in products and technology, not innovation in business models. They assume that being radical is risky and being incremental is safe. We have to rewire people with new thinking skills.

2. It has been said that the advantage that leading-edge retailers such as Dell and Wal-Mart have over their competition isn't technology; it's their management. Do you agree? Why or why not?

Student answers will vary but here are some points their answers should include:

- a. How well has each company, Dell and Wal-Mart, used information systems to reduce transaction costs and agency costs?
- b. How well has each company used information systems to take advantage of Porter's Competitive Forces model:
 - Keeping new market entrants out
 - Either preventing substitute products and services that may compete with their own, or introducing substitute products and services that pull customers away from their competitors
 - Holding onto customers by competing on prices alone when there is very little product differentiation
 - Exercising more control over suppliers
- How well has each company's management used information systems to enhance
 - Low-cost leadership – Wal-Mart is the king at this; Dell sometimes uses this strategy
 - Product differentiation – Dell uses this strategy against Apple and HP (the two leading computer sellers)
 - Focusing on market niche – neither company uses this much
 - Strengthening customer and supplier intimacy – Wal-Mart wrote the book on this one; Dell uses this strategy extensively

COLLABORATION AND TEAMWORK: IDENTIFYING OPPORTUNITIES FOR STRATEGIC INFORMATION SYSTEMS

With a group of three or four students, select a company described in *The National Post*, *The Globe and Mail*, *Fortune*, *Forbes*, *Canadian Business*, or another business publication. Visit the company's Web site to find additional information about that company and to see how the firm is using the Web. On the basis of this information, analyze the business. Include a description of the organization's features, such as important business processes, culture, structure, and environment, as well as its

business strategy. Suggest strategic information systems appropriate for that particular business, including those based on Internet technology, if appropriate. If possible, use Google Sites to post links to Web pages, team communication announcements, and work assignments; to brainstorm; and to work collaboratively on project documents. Try to use Google Docs to develop a presentation of your findings for the class.

As students will select different companies, group answers will vary. General comments for facilitating project preparation are provided below.

The groups can use the value chain to identify the primary and support activities that most directly create value for the company's customers. The groups can then list and describe the information systems that would support or improve these activities, thus adding value to the chain.

The groups can use Figure 3-10 to help identify specific threats and opportunities for their company. The groups can then select one or more of the basic competitive strategies described in the text to deal with these competitive forces, adapting the strategy to their company. Finally, the groups should list and describe the information systems that will contribute to their company's ability to effectively execute the specific strategies.

LEARNING TRACK MODULE

The Changing Business Environment for Information Technology. Students will find a Learning Track Module on this topic at the MyMISLab site for this chapter. This Learning Track surveys the major changes in the global business environment facing firms today.

HANDS-ON MIS: PROJECTS

Management Decision Problems

1. HBC Data

HBC could collect transaction data on sales to determine if their assumptions were correct. In addition, they could use data from a source such as Statistics Canada to determine the demographics (age, income, etc.) of their target shoppers to better determine what products would be appropriate. So, the IS could both predict and confirm merchandising decisions.

Students can examine literature on Wal-Mart's data mining for other ideas on how data and IS can support merchandising decisions. There are examples of product placement that HBC could use. In addition, students can look at how loyalty cards can provide information to retail stores, and how that information can be used for direct marketing as well as merchandising.

2. US Airways

Management should first of all consider the synergies between the organizations: structure, management styles, if they use the same enterprise systems, etc. The more synergies, the less chance for resistance and issues of integration. Management would need to make decisions regarding the IS: if the data are not compatible, which system should be adopted; how to merge the systems; etc. Organizationally, the company needs to decide on management, location, etc.

Improving Decision Making: Using a Database to Clarify Business Strategy

Software skills: Database querying and reporting; database design

Business skills: Reservation systems; customer analysis

This exercise encourages students to develop queries and reports to help them make better use of transaction data to understand their business. From analyzing these data, the hotel owners should be able to find ways of generating more revenue. The solutions provided here were created using the query wizard and report wizard capabilities of Access. Students can, of course, create more sophisticated reports if they wish, but valuable information can be obtained from simple query and reporting functions.

The existing database can be easily queried to find out the average length of stay per room type, the average number of visitors per room type, and the base income per room during a specified period of time. One can see from these queries and reports that oceanfront rooms are the most popular and rooms overlooking side streets are the least popular. Side rooms appear to have the most occupants per room and longer average stays, suggesting that they are used primarily by budget-conscious families on vacation. The owners could consider raising the rates for oceanfront rooms or emphasizing ocean views in their advertising and promotions. Additionally, they could step up promotions of their family vacation packages to increase occupancy rates for side rooms.

To answer questions more precisely about the strongest customer base or what types of packages to promote, additional information is required. The database would have to be modified to capture information on whether the rooms were actually rented using the vacation package, business discount package, or romantic weekend package options. The database could also be modified to more clearly identify discounts for long stays or extra charges for more than four guests. (The existing database reflects such discounts and charges in the room rate.) Students should be encouraged to think creatively about what other pieces of information should be captured on the database that would help the owners think strategically.

The data are in the file named Ch03_Business_Strategy_Question.mdb, which can be found in the Chapter 3 folder. The answers for the report are in the file named Ch03_Business_Strategy_Solution.mdb, which is also in the Chapter 3 folder.

Improving Decision Making: Using Web Tools for Configuring and Pricing an Automobile

Software skills: Internet-based software

Business skills: Researching product information and pricing

Your current seven-year-old car has tried your patience one too many times, and you decide to purchase a new automobile. You have been interested in a Ford family car and want to investigate Ford's Focus (if you are personally interested in another car, domestic or foreign, investigate that one instead). Go to the Web site of CarsDirect (www.carsdirect.com) and begin your investigation. Explore the full details about the specific car, including pricing, standard features, and options. Locate and read at least two reviews if possible. Investigate the safety of that model based on the U.S. government crash tests performed by the National Highway Traffic Safety Administration if those test results are available. Explore the features for locating a vehicle in inventory and purchasing directly. Finally, explore the other capabilities of the CarsDirect site for financing.

Having recorded or printed the information you need from Cars Direct for your purchase decision, surf the Web site of manufacturer, in this case Ford (www.ford.ca). Compare the information available on Ford's Web site with that of CarsDirect for the Ford Focus. Be sure to check the price and any incentives being offered (which may not agree with what you found at CarsDirect). Next, find a dealer on the Ford site so that you can view the car before making your purchase decision. Explore the other features of Ford's Web site.

Try to locate the lowest price for the car you want in a local dealer's inventory. Which site would you use to purchase your car? Why? Suggest improvements for the sites of CarsDirect and Ford.

Answers will vary a great deal, and with the option of choosing a car other than the Ford Fusion, each student will more than likely turn in a different report. You might suggest that the students set up an Excel spreadsheet to use when comparing the auto information from each of the three Web sites. This will allow them to see from line-to-line the differences and similarities between the prices, safety ratings, features, etc. Also, have the students write a brief summary of the two reviews they read concerning the auto and in their final report tell which decision they made referring back to the reviews. The final report should also include a review of the Web sites with suggestions for improvement.

CASE STUDY

YOUTUBE, THE INTERNET, AND THE FUTURE OF MOVIES?

- 1. What competitive forces have challenged the movie industry? What problems have these forces created? What changes have these problems caused the movie and television studios to make?**

New market entrants and substitute products are the two main competitive forces challenging the movie industry. The traditional outlets for viewing movies – theatres, cable television, and movie rental businesses – are all challenged by new ways for customers to obtain products. The traditional outlets were very easy to control and ensured that the movie producers received compensation for their products. The distribution system was created, not necessarily for the customer's convenience, but to provide an orderly process for all the players to make money. With the advent of downloadable movies, the system is changing to more of a viewer-centric process. The main problem is that movie studios and producers, outlets for selling the movies, and the myriad of people involved in the old system, have no way of controlling downloads from all the different Web sites that make them available. With no controls in place, the industry cannot ensure its receiving just payments and rewards for the work they produce.

Several distributors have tried to squelch the download outlets but its virtually impossible to monitor all the Web sites and all their content. As NBC Universal's general counsel, Rick Cotton admitted, "There is only so much we can do." Some of the major studios entered into negotiations with YouTube and established licensing agreements. Other solutions follow the music industry trends of taking advantage of movie downloads and view them as another source of revenue. YouTube is helping build a revenue-sharing model with content creators and developing a filtering and digital fingerprinting technology that will help it control the unauthorized use of copyright protected material.

- 2. Describe the impact of disruptive technology on the companies discussed in this case?**

YouTube is to the motion picture industry what Napster was to the music industry. That is, it's a conduit to new processes that are more customer-driven than the old ones. YouTube has become the most popular video-sharing Web site because it gives users what they want when they want it. People wanted an outlet for the creative video diaries and amateur films that they created using inexpensive digital video equipment.

Disruptive technologies continually displace old technologies that, while they are still good products, no longer serve a customer base. That explains what is causing the changes in how customers want to receive motion pictures. Basically, once the cat is out of the bag, it's very difficult to get it back in.

3. How have the movie studios responded to YouTube? What is the goal of the response? What can the movie studios learn from music industry's dealings with online digital music and copyright infringement?

If you want to lay blame for all that's happening in the movie industry you could almost point your finger at hardware and software video-related manufacturers who provided cheap, easy-to-use tools for the average person.

Originally the movie industry tried to fight the thousands of illegal uses of their copyrighted material—much as the music industry tried to fight their battle years ago. It was and is a losing battle—both in protecting their copyrighted content and in the public relations fight for loyal customers. Many producers have chosen to not fight their customers but are trying to find ways to meet the needs and demands of both sides—the producers and the customers. It's a wise decision.

4. Should motion picture companies continue to use YouTube to promote their new films? Why or why not?

The answers obviously will vary. It's important to understand that YouTube continues to be the most popular video sharing Web site. With Google's clout behind it, it will continue to be a force to reckon with. The movie industry should continue to work with YouTube to find ways to use the site, if for nothing else than promotional reasons. By putting their own short videos and film clips on the site, before others do, movie studios can thwart some of the illegal use of their films. The average person would rather see a well-produced video than a second- or third-rate clip. By taking proactive measures rather than being reactive, the industry can control (to a greater extent) what appears on YouTube's site.

5. Go to YouTube.com and search for videos from your favorite movie or television show. What do you find on the site? Do you see any advertisements attached to the video? Do you feel this way of advertising is effective? Why or why not?

Answers will vary to most of this question but it should provoke some good classroom discussions or discussions in a chat forum. Key elements students should understand is that all artists, producers, and distributors deserve some compensation for their talent, time, investments, and labour. Illegally using copyrighted material is an act of theft. Both users and video- and audio-sharing Web sites are equally and legally responsible for properly using someone else's property.

Advertising is becoming a major source of revenue for many Web sites and YouTube is no different. That's especially true since Google, a company very dependent on advertising dollars, purchased YouTube. It's probably true that YouTube ads help get customers excited about seeing the actual movie.

Note: Demonstrating the use of Michael Porter's competitive forces model would be a good exercise in this discussion.