

Week 10 Information Systems, Organizations, and Strategy

Information systems and organizations influence one another. Information systems are built by managers to serve the interests of the business firm. At the same time, the organization must be aware of and open to the influences of information systems to benefit from new technologies.



Learning objectives. After studying this lecture, 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?



3.1 ORGANIZATIONS AND INFORMATION SYSTEMS

- What Is an Organization?
- Features of Organizations



3.2 HOW INFORMATION SYSTEMS IMPACT ORGANIZATIONS AND BUSINESS FIRMS

- Economic Impacts
- Organizational and Behavioral Impacts
- The Internet and Organizations
- Implications for the Design and Understanding of Information Systems



3.3 USING INFORMATION SYSTEMS TO ACHIEVE COMPETITIVE ADVANTAGE

- Porter's Competitive Forces Model
- Information System Strategies for Dealing with Competitive Forces
- The Internet's Impact on Competitive Advantage
- The Business Value Chain Model



3.4 USING SYSTEMS FOR COMPETITIVE ADVANTAGE: MANAGEMENT ISSUES

- Sustaining Competitive
- Advantage Aligning IT with Business Objectives
- Managing Strategic Transitions

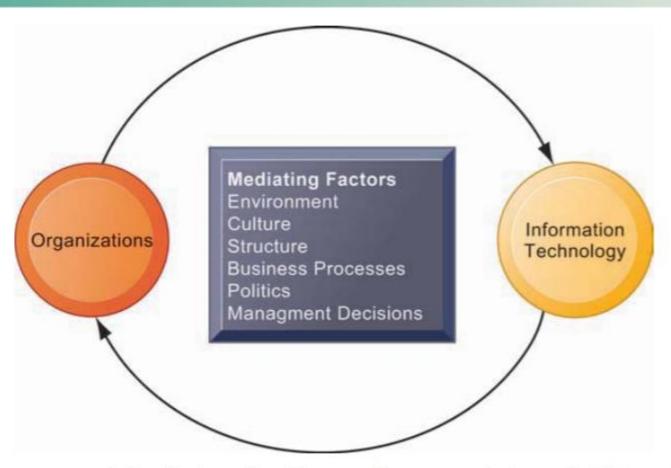


| | | Information Systems, Organizations, and Strategy | Discussion Questions during the class |
|--|--|---|--|
| | Topic title and General Information | Expected learning outcomes. After reading this chapter, you will be able to answer the questions: 1. Which features of organizations do managers need 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? | 1. It has been said that there is no such thing as a sustainable strategic advantage. Do you agree? Why or why not? 2. It has been said that the advantage that leadingedge retailers such as Dell and Walmart have over their competition isn't technology; it's their management. Do you agree? Why or why not? 3. What are some of the issues to consider in determining whether the Internet would provide your business with a competitive advantage? Task. Please, select one of the given questions and write your answer. 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 behavioral definition. • Identify and describe the features of organizations that help explain differences in organizations' use of information systems. • Describe the major economic theories that help explain how information systems affect organizations. 2. How does Porter's competitive forces model help companies develop competitive strategies using information systems? • Define Porter's competitive forces model explain how it works. • Describe what the competitive forces model explains about competitive advantage. • List and describe four competitive strategies enabled by information systems that firms can pursue. • Describe how information systems can support each of these competitive strategies and give examples. • Explain why aligning IT with business objectives is essential for strategic use of systems. 3. How do the value chain and value web models help businesses identify opportunities for information systems applications? • Define and describe the value chain model. • Explain how the value web and show how it is related to the value chain. • Explain how the value web and show how it is related to the value chain. • Explain how the value web and show how it is related to the value chain. • Explain how the value web and show how it i |
| | 1 | 3.1 ORGANIZATIONS AND INFORMATION SYSTEMS What Is an Organization? Features of Organizations | |
| | 2 | 3.2 HOW INFORMATION SYSTEMS IMPACT ORGANIZATIONS AND BUSINESS FIRMS • Economic Impacts • Organizational and Behavioral Impacts • The Internet and Organizations • Implications for the Design and Understanding of Information Systems | |
| | 3 | 3.3 USING INFORMATION SYSTEMS TO ACHIEVE COMPETITIVE ADVANTAGE • Porter's Competitive Forces Model • Information System Strategies for Dealing with Competitive Forces • The Internet's Impact on Competitive Advantage • The Business Value Chain Model • Synergies, Core Competencies, and Network-Based Strategies | |
| | 4 | 3.4 USING SYSTEMS FOR COMPETITIVE ADVANTAGE: MANAGEMENT ISSUES • Sustaining Competitive • Advantage Aligning IT with Business Objectives • Managing Strategic Transitions | enhances competitive advantage. • Explain how businesses benefit by using network economics. • Define and describe a virtual company and the benefits of pursuing a virtual company strategy. 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. • Explain how to perform a strategic systems analysis. |
| | | | |

Part 01



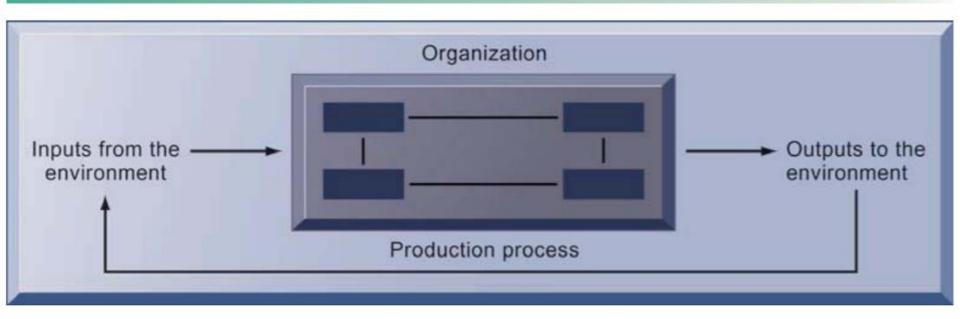
FIGURE 3.1 THE TWO-WAY RELATIONSHIP BETWEEN ORGANIZATIONS AND INFORMATION TECHNOLOGY



This complex two-way relationship is mediated by many factors, not the least of which are the decisions made—or not made—by managers. Other factors mediating the relationship include the organizational culture, structure, politics, business processes, and environment.



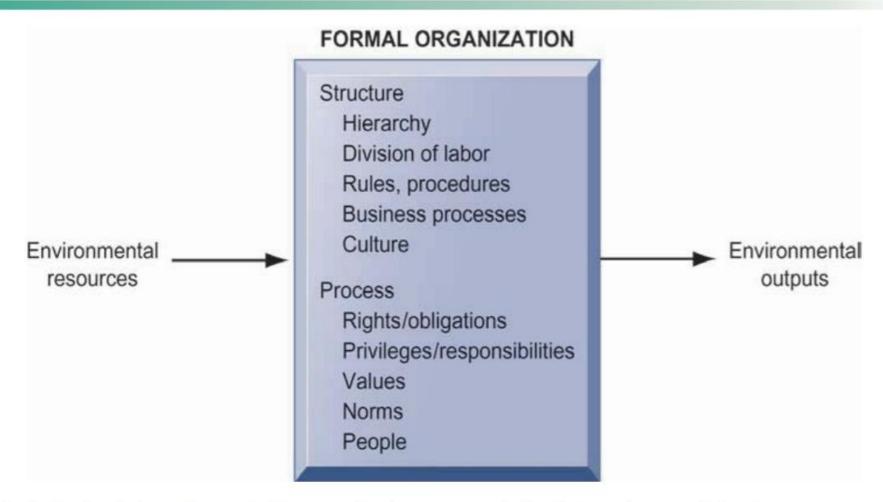
FIGURE 3.2 THE TECHNICAL MICROECONOMIC DEFINITION OF THE ORGANIZATION



In the microeconomic definition of organizations, capital and labor (the primary production factors provided by the environment) are transformed by the firm through the production process into products and services (outputs to the environment). The products and services are consumed by the environment, which supplies additional capital and labor as inputs in the feedback loop.



FIGURE 3.3 THE BEHAVIORAL VIEW OF ORGANIZATIONS



The behavioral view of organizations emphasizes group relationships, values, and structures.



WHAT IS AN ORGANIZATION? Part3

How do these definitions of organizations relate to information systems technology? A technical view of organizations encourages us to focus on how inputs are combined to create outputs when technology changes are introduced into the company. The firm is seen as item, with capital and labor substituting for each other quite easily.



WHAT IS AN ORGANIZATION?Part4

The technical and behavioral definitions of organizations are not contradictory. Indeed, they complement each other: The technical definition tells us how thousands of firms in competitive markets combine capital, labor, and information technology, whereas the behavioral model takes us inside the individual firm to see how that technology affects the organization's inner workings.



FEATURES OF ORGANIZATIONS

modern organizations share certain characteristics. They are bureaucracies with clearcut divisions of labor and specialization. Organizations arrange specialists in a hierarchy of authority in which everyone is accountable to someone and authority is limited to specific actions governed by abstract rules or procedures. These rules create a system of impartial and universal decision making. Organizations try to hire and promote employees on the basis of technical qualifications and professionalism (not personal connections).



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. Routines—sometimes called standard operating procedures—are precise rules, procedures, and practices that have been developed to cope with virtually all expected situations.



Organizational Politics

People in organizations occupy different positions with different concerns, and perspectives. As a result, they naturally have divergent viewpoints about how resources, rewards, and punishments should be distributed.



Organizational Culture

Organizational culture encompasses this set of assumptions about what products the organization should produce, how it should produce them, where, and for whom. Generally, these cultural assumptions are taken totally for granted and are rarely publicly announced or discussed.



Organizational Culture, part 2

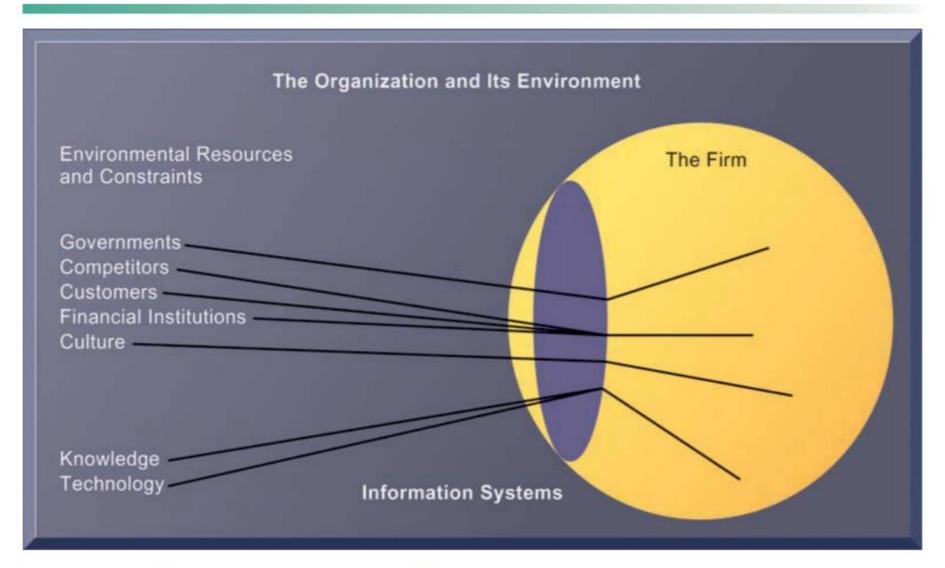
- Organizational culture is a powerful unifying force that restrains political conflict and promotes common understanding, agreement on procedures, and common practices. If we all share the same basic cultural assumptions, agreement on other matters is more likely.
- However, there are times when the only sensible way for a firm to move forward is to employ a new technology that directly opposes an existing organizational culture. When this occurs, the technology is often stalled while the culture slowly adjusts.

Organizational Environments

On the one hand, organizations are open to, and dependent on, the social and environment that surrounds them. Without financial and human resources—people willing to work reliably and consistently for a set wage or revenue from customers—organizations could not exist. Organizations must respond legislative and other requirements imposed by government, as well as the actions of customers and competitors.



FIGURE 3.5 ENVIRONMENTS AND ORGANIZATIONS HAVE A RECIPROCAL RELATIONSHIP



Environments shape what organizations can do, but organizations can influence their environments and decide to change environments altogether. Information technology plays a critical role in helping organizations perceive environmental change and in helping organizations act on their environment.



Disruptive Technologies

Sometimes a technology and resulting business innovation comes along to radically change the business landscape and environment. These innovations are loosely called "disruptive." (Christensen, 2003). What makes a technology disruptive? In some cases, disruptive technologies are substitute products that perform as well as or better (often much better) than anything currently produced.



LE 3.1 DISRUPTIVE TECHNOLOGIES: WINNERS AND LOSERS

| TECHNOLOGY | DESCRIPTION | WINNERS AND LOSERS | | | |
|---|---|--|--|--|--|
| Microprocessor chips (1971) | Thousands and eventually millions of transistors on a silicon chip | Microprocessor firms win (Intel, Texas Instruments) while transistor firms (GE) decline. | | | |
| Personal computers (1975) | Small, inexpensive, but fully functional desktop computers | PC manufacturers (HP, Apple, IBM), and chip manufacturers prosper (Intel), while mainframe (IBM) and minicomputer (DEC) firms lose. | | | |
| Digital photography (1975) | Using CCD (charge-coupled device) image sensor chips to record images | CCD manufacturers and traditional camera companies win, manufacturers of film products lose. | | | |
| World Wide Web (1989) | A global database of digital files and "pages" instantly available | Owners of online content, news benefit while traditional publishers (newspapers, magazines, and broadcast television) lose. | | | |
| Internet music, video, TV services (1998) | Repositories of downloadable music, video, TV broadcasts on the Web | Owners of Internet platforms, telecommunications providers owning Internet backbone (ATT, Verizon), local Internet service providers win, while content owners and physical retailers lose (Tower Records, Blockbuster). | | | |
| PageRank algorithm | A method for ranking Web pages in terms of their popularity to supplement Web search by key terms | Google is the winner (they own the patent), while traditional key word search engines (Alta Vista) lose. | | | |
| Software as Web service | Using the Internet to provide remote access to online software | Online software services companies (Salesforce.com) win, while traditional "boxed" software companies (Microsoft, SAP, Oracle) lose. | | | |
| Could you give me your examples of the disruptive technologies? | | | | | |

Could you give me your examples of the disruptive technologies? iOS, Android, Harmony from Huawei, Symbain from Nokia

TABLE 3.2 ORGANIZATIONAL STRUCTURES

| TABLE 3.2 ORGANIZATIONAL STRUCTURES | | | | | |
|-------------------------------------|---|---|--|--|--|
| ORGANIZATIONAL TYPE | DESCRIPTION | EXAMPLES | | | |
| Entrepreneurial structure | Young, small firm in a fast-changing environment. It has a simple structure and is managed by an entrepreneur serving as its single chief executive officer. | Small start-up business | | | |
| Machine bureaucracy | Large bureaucracy existing in a slowly changing environment, producing standard products. It is dominated by a centralized management team and centralized decision making. | Midsize manufacturing firm | | | |
| Divisionalized bureaucracy | Combination of multiple machine bureaucracies, each producing a different product or service, all topped by one central headquarters. | Fortune 500 firms, such as General Motors | | | |
| Professional bureaucracy | Knowledge-based organization where goods and services depend on the expertise and knowledge of professionals. Dominated by department heads with weak centralized authority. | Law firms, school systems, hospitals | | | |
| Adhocracy | Task force organization that must respond to rapidly changing environments. Consists of large groups of specialists organized into short-lived multidisciplinary teams and has weak central management. | Consulting firms, such as the Rand Corporation | | | |



Other Organizational Features

Organizations have goals and use different means to achieve them. Some organizations have coercive goals (e.g., prisons); others have utilitarian goals (e.g., businesses). Still others have normative goals (universities, religious groups). Organizations also serve different groups or have different constituencies, some primarily benefiting their members, others benefiting clients, stockholders, or the public.



3.2 HOW INFORMATION SYSTEMS IMPACT ORGANIZATIONS AND BUSINESS FIRMS

Information systems have become integral, online, interactive tools deeply involved in the minute-to-minute operations and decision making of large organizations. Over the last decade, information systems have fundamentally altered the economics of organizations and greatly increased the possibilities for organizing work.



ECONOMIC IMPACTS

From the point of view of economics, IT changes both the relative costs of capital and the costs of information. Information systems technology can be viewed as a factor of production that can be substituted for traditional capital and labor. As the cost of information technology decreases, it is substituted for labor, which historically has been a rising cost. Hence, information technology should result in a decline in the number of middle managers and clerical workers as information technology substitutes for their labor.



ECONOMIC IMPACTS, part 2

- According to transaction cost theory, firms and individuals seek to economize on transaction costs, much as they do on production costs. Using markets is expensive because of costs such as locating and communicating with distant suppliers, monitoring contract compliance, buying insurance, obtaining information on products, and so forth (Coase, 1937; Williamson, 1985).
- Traditionally, firms have tried to reduce transaction costs through vertical integration, by getting bigger, hiring more employees, and buying their own suppliers and distributors, as both General Motors and Ford used to do.

ECONOMIC IMPACTS, part 3

As transaction costs decrease, firm size (the number of employees) should shrink because it becomes easier and cheaper for the firm to contract for the purchase of goods and services in the marketplace rather than to make the product or offer the service itself. Firm size can stay constant or contract even as the company increases its revenues.



10-minute break ECONOMIC IMPACTS, part 4

Information technology also can reduce internal management costs. According to agency theory, the firm is viewed as a "nexus of contracts" among self-interested individuals rather than as a unified, profit-maximizing entity (Jensen and Meckling, 1976). A principal (owner) employs "agents" (employees) to perform work on his or her behalf.



ECONOMIC IMPACTS, part 5

Information technology, by reducing the costs of acquiring and analyzing information, permits organizations to reduce agency costs because it becomes easier for managers to oversee a greater number of employees. By reducing overall management costs, information technology enables firms to increase revenues while shrinking the number of middle managers and clerical workers.

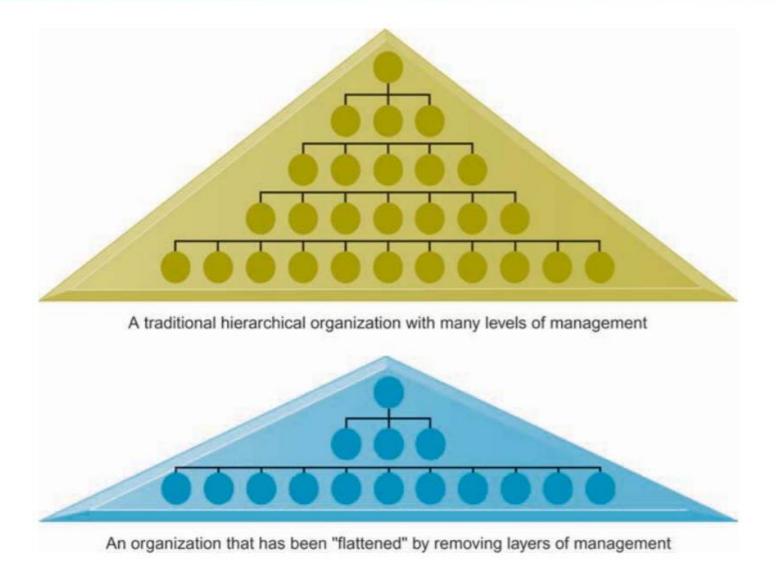


ORGANIZATIONAL AND BEHAVIORAL IMPACTS

Theories based in the sociology of complex organizations also provide some understanding about how and why firms change with the implementation of new IT applications.



FIGURE 3.6 FLATTENING ORGANIZATIONS

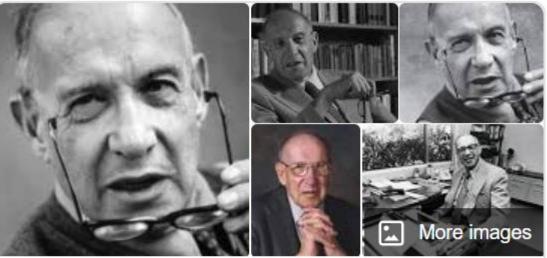


Information systems can reduce the number of levels in an organization by providing managers with information to supervise larger numbers of workers and by giving lower-level employees more decision-making authority.



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Peter Drucker

American-Austrian consultant

Peter Ferdinand Drucker was an Austrian-born
American management consultant, educator, and
author, whose writings contributed to the philosophical
and practical foundations of the modern business
corporation. Wikipedia

Born: November 19, 1909, Vienna, Austria

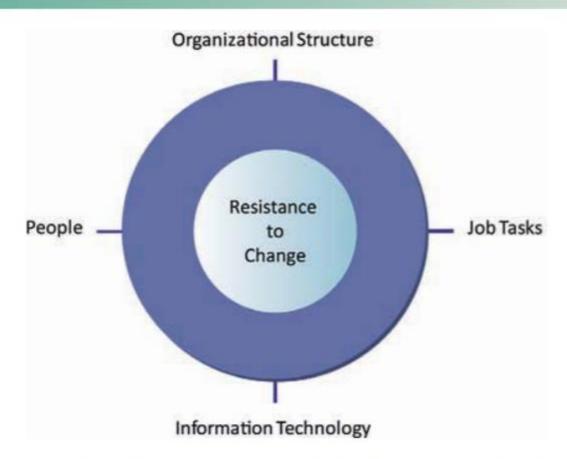
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Understanding Organizational Resistance to Change

Many new information systems require changes in personal, individual routines that can be painful for those involved and require retraining and additional effort that may or may not be compensated.



FIGURE 3.7 ORGANIZATIONAL RESISTANCE TO INFORMATION SYSTEM INNOVATIONS



Implementing information systems has consequences for task arrangements, structures, and people. According to this model, to implement change, all four components must be changed simultaneously.



THE INTERNET AND ORGANIZATIONS

- The Internet, especially the World Wide Web, has an important impact on the relationships between many firms and external entities, and even on the organization of business processes inside a firm. The Internet increases the accessibility, storage, and distribution of information and knowledge for organizations.
- Businesses are rapidly rebuilding some of their key business processes based on Internet technology and making this technology a key component of their IT infrastructures.



IMPLICATIONS FOR THE DESIGN AND UNDERSTANDING OF INFORMATION SYSTEMS

- 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



3.3 USING INFORMATION SYSTEMS TO ACHIEVE COMPETITIVE ADVANTAGE

In almost every industry you examine, you will find some firms do better than most others. There's almost always a stand-out firm. In the automotive industry, Toyota is considered a superior performer. In pure online retail, Amazon is the leader; in off-line retail, Walmart, the largest retailer on earth, is the leader. In online music, Apple's iTunes is considered the leader with more than 70 percent of digital music sold worldwide, and in the related industry of digital music players, the iPod is the leader. In Web search. Google is considered the leader.



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.

ABOUT MICHAEL PORTER

"He has influenced more executives - and more nations - than any other business professor on earth. Now, he and an all-star team aim to rescue the U.S. economy."

— Geoff Colvin, Senior Editor-at-large Fortune magazine, 2012

READ MORE ABOUT MICHAEL PORTER

MICHAEL PORTER BIOGRAPHY



Michael Porter is the founder of the modern strategy field and one of the world's most influential thinkers on management and competitiveness. The author of 19 books and over 130 articles, he is the Bishop William Lawrence University Professor at Harvard Business School and the director of the school's Institute for Strategy and Competitiveness, which was founded in 2001 to further his work and research.

A LETTER FROM MICHAEL PORTER

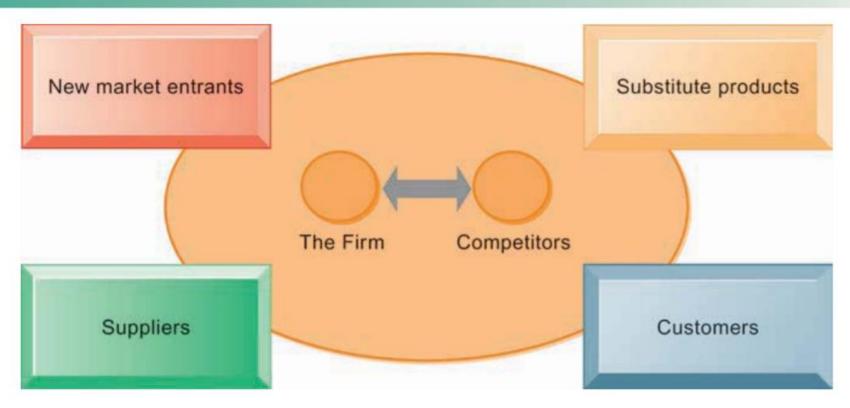
strategy, and social causes. He is the Bishop William Lawrence University Professor at Harvard Business School, and he was one of the founders of the consulting firm The Monitor Group and FSG, a social impact consultancy. Wikipedia

Born: May 23, 1947 (age 72 years), Ann Arbor, Michigan, United States



DORTER'S COMPETITIVE FORCES

FIGURE 3.8 PORTER'S COMPETITIVE FORCES MODEL



In Porter's competitive forces model, the strategic position of the firm and its strategies are determined not only by competition with its traditional direct competitors but also by four other forces in the industry's environment: new market entrants, substitute products, customers, and suppliers.



PORTER'S COMPETITIVE FORCES MODEL: Traditional Competitors

All firms share market space with other competitors who are continuously devising new, more efficient ways to produce by introducing new products and services, and attempting to attract customers by developing their brands and imposing switching costs on their customers.



PORTER'S COMPETITIVE FORCES MODEL: New Market Entrants

- In a free economy with mobile labor and financial resources, new companies are always entering the marketplace. In some industries, there are very low barriers to entry, whereas in other industries, entry is very difficult.
- New companies have several possible advantages: They are not locked into old plants and equipment, they often hire younger workers who are less expensive and perhaps more innovative.



Substitute Products and Services

In just about every industry, there are substitutes that your customers might use if your prices become too high. New technologies create new substitutes all the time. Even oil has substitutes: Ethanol can substitute for gasoline in cars; vegetable oil for diesel fuel in trucks; and wind, solar, coal, and hydro power for industrial electricity generation.



Customers

A profitable company depends in large measure on its ability to attract and retain customers (while denying them to competitors), 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, and all prices are known instantly (such as on the Internet).



Suppliers

The market power of suppliers can have a significant impact on firm profits, especially when the firm cannot raise prices as fast as can suppliers. The more different suppliers a firm has, the greater control it can exercise over suppliers in terms of price, quality, and delivery schedules.



INFORMATION SYSTEM STRATEGIES FOR DEALING WITH COMPETITIVE FORCES

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

- low-cost leadership,
- product differentiation,
- focus on market niche, and
- strengthening customer and supplier intimacy.



Low-Cost Leadership

Use information systems to achieve the lowest operational costs and the lowest prices. The classic example is Walmart. By keeping prices low and shelves well stocked using a legendary inventory replenishment system, Walmart became the leading retail business in the United States.



Product Differentiation

Use information systems to enable new products and services, or greatly change the customer convenience in using your existing products and services. For instance, Google continuously introduces new and unique search services on its Web site, such as Google Maps.



Product Differentiation, part 2

Manufacturers and retailers are information systems to create products and services that are customized and personalized to fit the precise specifications of individual customers. For example, Nike sells customized sneakers through its NIKEiD program on its Web site. Customers are able to select the type of shoe, colors, material, outsoles, and even a logo of up to eight characters.



COMPETITIVE ADVANTAGE

TABLE 3.3 IT-ENABLED NEW PRODUCTS AND SERVICES PROVIDING COMPETITIVE ADVANTAGE

| Amazon: One-click shopping | Amazon holds a patent on one-click shopping that it licenses to other online retailers. |
|--|--|
| Online music: Apple iPod and iTunes | The iPod is an integrated handheld player backed up with an online library of over 13 million songs. |
| Golf club customization: Ping | Customers can select from more than 1 million different golf club options; a build-to-order system ships their customized clubs within 48 hours. |
| Online person-to-person payment: PayPal | PayPal enables the transfer of money between individual bank accounts and between bank accounts and credit card accounts. |



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.



Focus on Market Niche, part 2

The data come from a range of sources—credit card transactions, demographic data, purchase data from checkout counter scanners at supermarkets and retail stores, and data collected when people access and interact with Web sites. Sophisticated software tools find patterns in these large pools of data and infer rules from them to guide decision making. Analysis of such data drives one-to-one marketing that creates personal messages based on individualized preferences.

Strengthen Customer and Supplier Intimacy

- Use information systems to tighten linkages with suppliers and develop intimacy with customers. Chrysler Corporation uses information systems to facilitate direct access by suppliers to production schedules, and even permits suppliers to decide how and when to ship supplies to Chrysler factories.
- Switching costs.



FOUR BASIC COMPETITIVE STRATEGIES

TABLE 3.4 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 | Walmart |
| 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, Amazon |



THE INTERNET'S IMPACT ON COMPETITIVE ADVANTAGE

TABLE 3.5 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 | 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 |
| | |

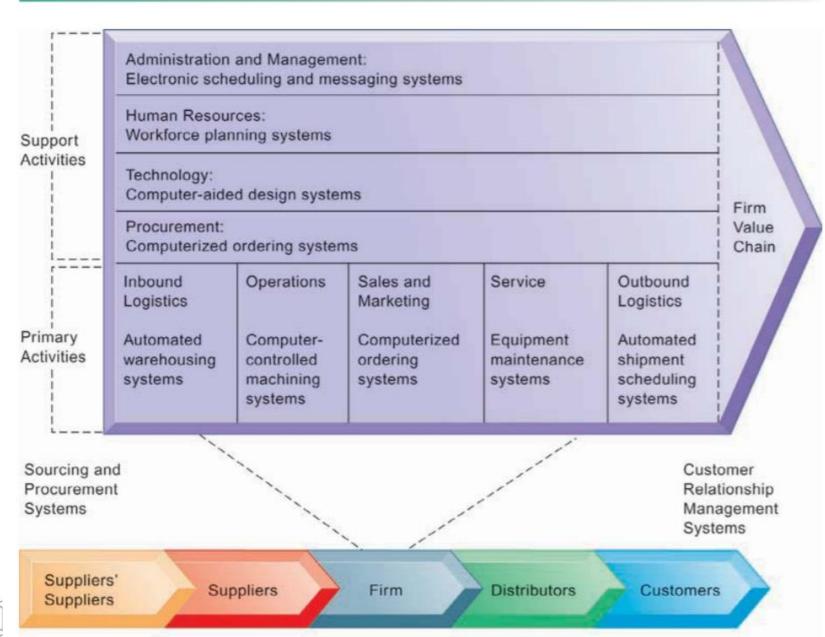
everyone, the Internet raises the bargaining power of customers, who can quickly find the lowest-cost provider on the Web.

IMPACT OF THE INTERNET

The Internet has nearly destroyed some industries and has severely threatened more. For instance, the printed books industry and the travel agency industry have been nearly eliminated by the availability of substitutes over the Internet. Likewise, the Internet has had a significant impact on the retail, music, book,, software, telecommunications, and newspaper industries.



FIGURE 3.9 THE VALUE CHAIN MODEL







Primary activities

Primary activities are most directly related to the production and distribution of the firm's products and services, which create value for the customer. Primary activities include inbound logistics, operations, outbound logistics, sales and marketing, and service. Inbound logistics includes receiving and storing materials for distribution to production. Operations transforms inputs into finished products.



Support activities

Support activities make the delivery of the primary activities possible and consist of organization infrastructure (administration and management), human resources (employee recruiting, hiring, and training), technology (improving products and the production process), and procurement (purchasing input).



THE VALUE CHAIN MODEL

- Now you can ask at each stage of the value chain, "How can we use information systems to improve operational efficiency, and improve customer and supplier intimacy?" This will force you to critically examine how you perform value-adding activities at each stage and how the business processes might be improved.
- Here, supply chain management systems that coordinate the flow of resources into your firm, and customer relationship management systems that coordinate your sales and support employees with customers, are two of the most common system applications that result from a business value chain analysis



THE VALUE CHAIN MODEL, part 2

 Once you have analyzed the various stages in the value chain at your business, you can come up with candidate applications of information systems. Then, once you have a list of candidate applications, you can decide which to develop first. By making improvements in your own business value chain that your competitors might miss, you can achieve competitive advantage by attaining operational excellence, lowering costs, improving profit margins, and forging a closer relationship with customers and suppliers.



Extending the Value Chain: The Value Web

FIGURE 3.9 THE VALUE CHAIN MODEL

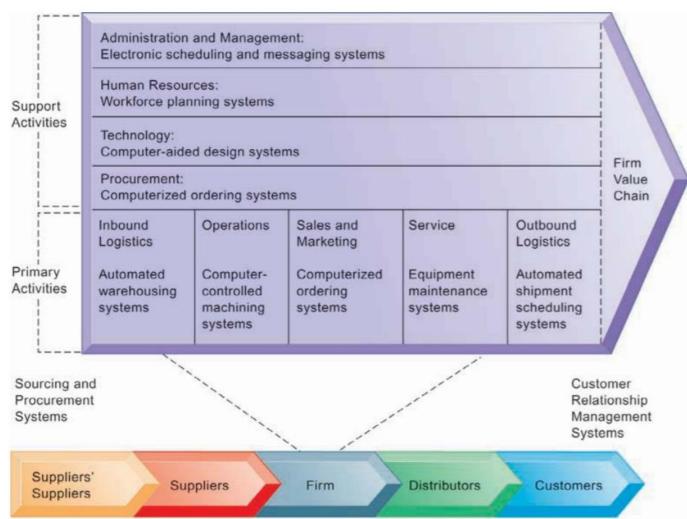
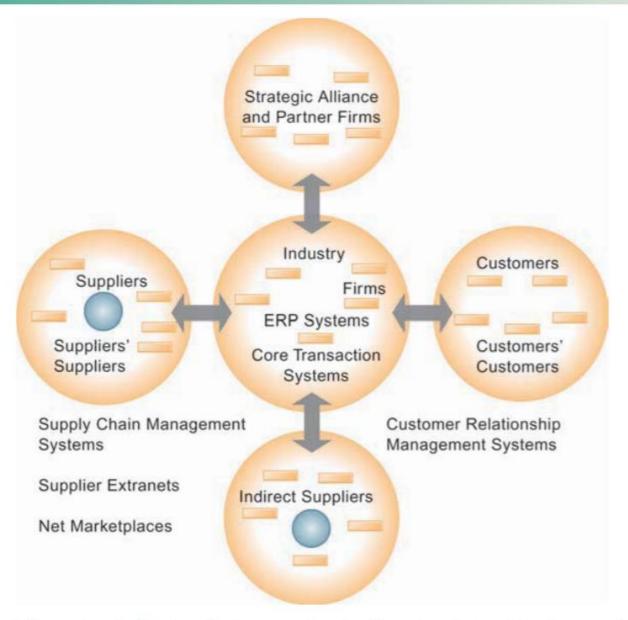




FIGURE 3.10 THE VALUE WEB





The value web is a networked system that can synchronize the value chains of business partners within an industry to respond rapidly to changes in supply and demand.



SYNERGIES, CORE COMPETENCIES, AND NETWORKBASED STRATEGIES

A large corporation is typically a collection of businesses. Often, the firm is organized financially as a collection of strategic business units and the returns to the firm are directly tied to the performance of all the strategic business units.



Synergies

The idea of synergies is that when the output of some units can be used as inputs to other units, or two organizations pool markets and expertise, these relationships lower costs and generate profits. Recent bank and financial firm mergers, such as the merger of JPMorgan Chase and Bank of New York as well as Bank of America and Countrywide Financial Corporation occurred precisely for this purpose.



Enhancing Core Competencies

A core competency is an activity for which a firm is a world-class leader. Core competencies may involve being the world's best miniature parts designer, the best package delivery service, or the best thin-film manufacturer. In general, a core competency relies on knowledge that is gained over many years of practical field experience with a technology. This practical knowledge is typically supplemented with a longterm research effort and committed employees.



Network-Based Strategies

The availability of Internet and networking technology have 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, a virtual company model, and business ecosystems.



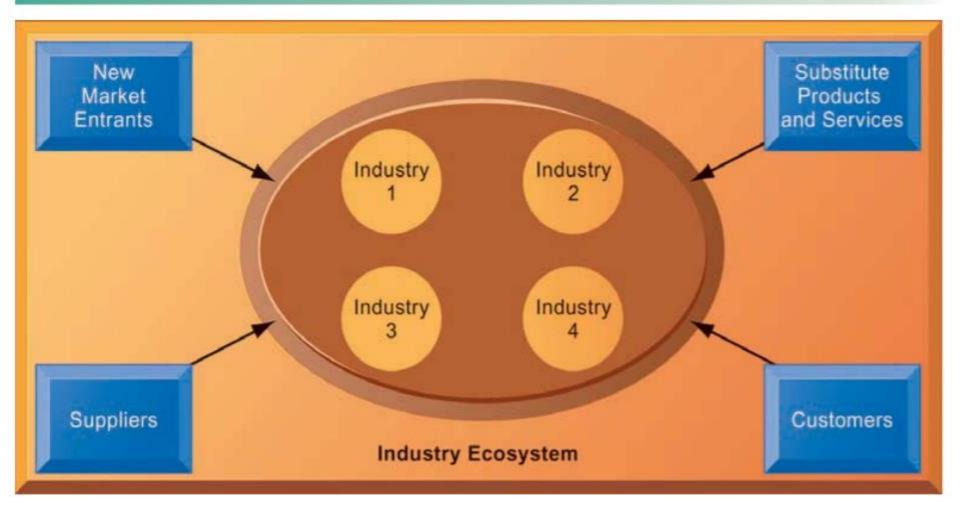
Network-Based Strategies

- Network Economics. Business models based on a network may help firms strategically by taking advantage of network economics. In traditional economics—The more any given resource is applied to production, the lower the marginal gain in output, until a point is reached where the additional inputs produce no additional outputs. This is the law of diminishing returns, and it is the foundation for most of modern economics.
- In some situations, the law of diminishing returns does not work.

Virtual Company Model

Virtual Company Model. Another network-based strategy uses the model of a virtual company to create a competitive business. A virtual company, also known as a virtual organization, 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.

FIGURE 3.11 AN ECOSYSTEM STRATEGIC MODEL



The digital firm era requires a more dynamic view of the boundaries among industries, firms, customers, and suppliers, with competition occurring among industry sets in a business ecosystem. In the ecosystem model, multiple industries work together to deliver value to the customer. IT plays an important role in enabling a dense network of interactions among the participating firms.

Apple, Huawei, Google





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 behavioral patterns. Successfully using information systems to achieve a competitive advantage is challenging and requires precise coordination of technology, organizations, and management.



SUSTAINING COMPETITIVE ADVANTAGE

The Internet can make competitive advantage disappear very quickly because virtually all companies can use this technology. Classic strategic systems, such as American Airlines's SABRE computerized reservation system, Citibank's ATM system, and FedEx's package tracking system, benefited by being the first in their industries. Then rival systems emerged.



ALIGNING IT WITH BUSINESS OBJECTIVES

The research on IT and business performance has found that (a) the more successfully a firm can align information technology with its business goals, the more profitable it will be, and (b) only one-quarter of firms achieve alignment of IT with the business. About half of a business firm's profits can be explained by alignment of IT with business (Luftman, 2003).



MANAGING STRATEGIC TRANSITIONS

Adopting the kinds of strategic systems described in this chapter generally requires changes in business goals, relationships with customers and suppliers, and business processes. These sociotechnical changes, affecting both social and technical elements of the organization, can be considered strategic transitions—a movement between levels of sociotechnical systems.



Review Summary

- 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?



Review Summary

Zou Yujie 2007574016

Agree, technological trends need to be constantly updated.

2007574023GongXirui

I agree. In the process of implementing policies and strategies, there will always be long-term problems, or should we return to the issue of sustainable development. Zuo Zhiye

Agreed, because the business strategy needs to change as the environment changes

Some features of organizations that managers need to know about to build and use information systems successfully include their business processes, organizational culture, organizational politics, surrounding environments, structure, goals, constituencies, and leadership styles. These features help explain differences in organizations' use of information systems.

2007574042李弈乐LiYile

Organizational culture, organizational structure, business processes



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?

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 help explain differences features organizations' use of information systems.

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

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 they are also greatly affected by new market entrants, substitute products and services, suppliers, and customers.



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

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 a firm's products or services. Primary activities are directly related to production and distribution, whereas support activities make the delivery of primary activities possible.



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

Because firms consist of multiple business units, information systems achieve additional efficiencies or enhance 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.



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

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.



Discussion Questions

- 1. It has been said that there is no such thing as a sustainable strategic advantage. Do you agree? Why or why not?
- What are some of the issues to consider in determining whether the Internet would provide your business with a competitive advantage?



Thank you

