



Chapter 3

Information Systems, Organizations, and Strategy



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Chapter 3: Information Systems, Organizations, and Strategy

Learning Objectives

- 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?
- How do Porter's competitive forces model help companies develop **competitive strategies** using information systems?

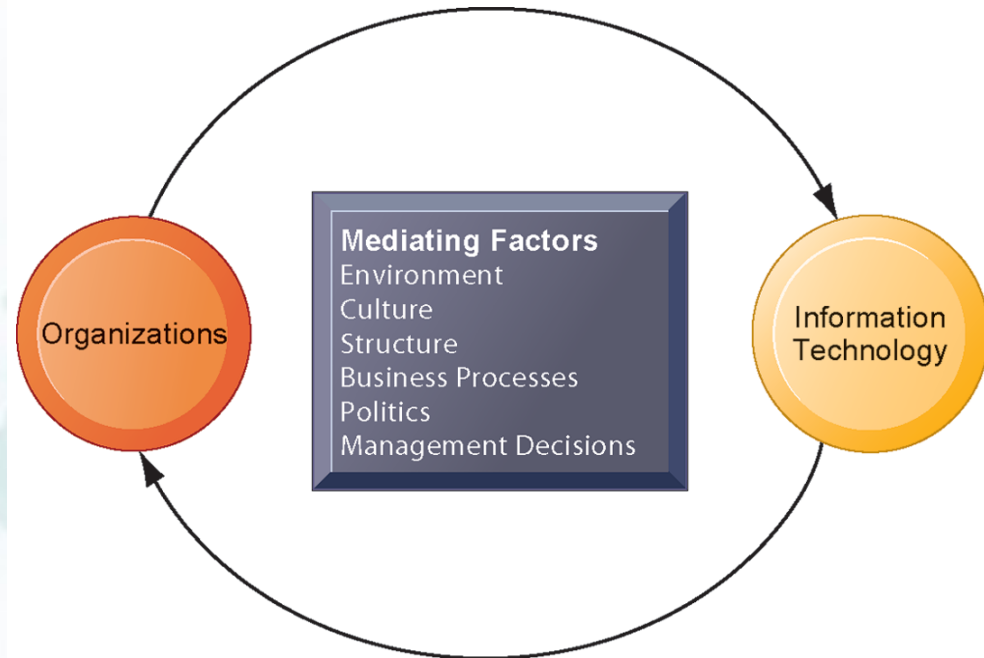


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Features of Organizations

- **Information technology and organizations influence each other**
 - Relationship influenced by organization's
 - Structure
 - Business processes
 - Politics
 - Culture
 - Environment
 - Management decisions





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THE TECHNICAL MICROECONOMIC DEFINITION OF THE ORGANIZATION

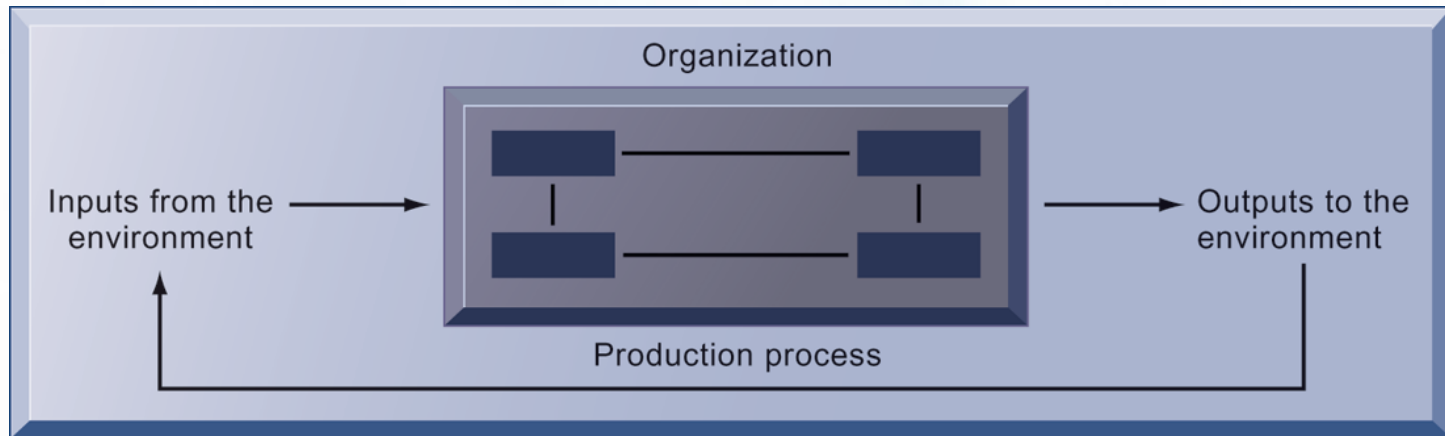


FIGURE 3-2

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**.



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THE BEHAVIORAL VIEW OF ORGANIZATIONS

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

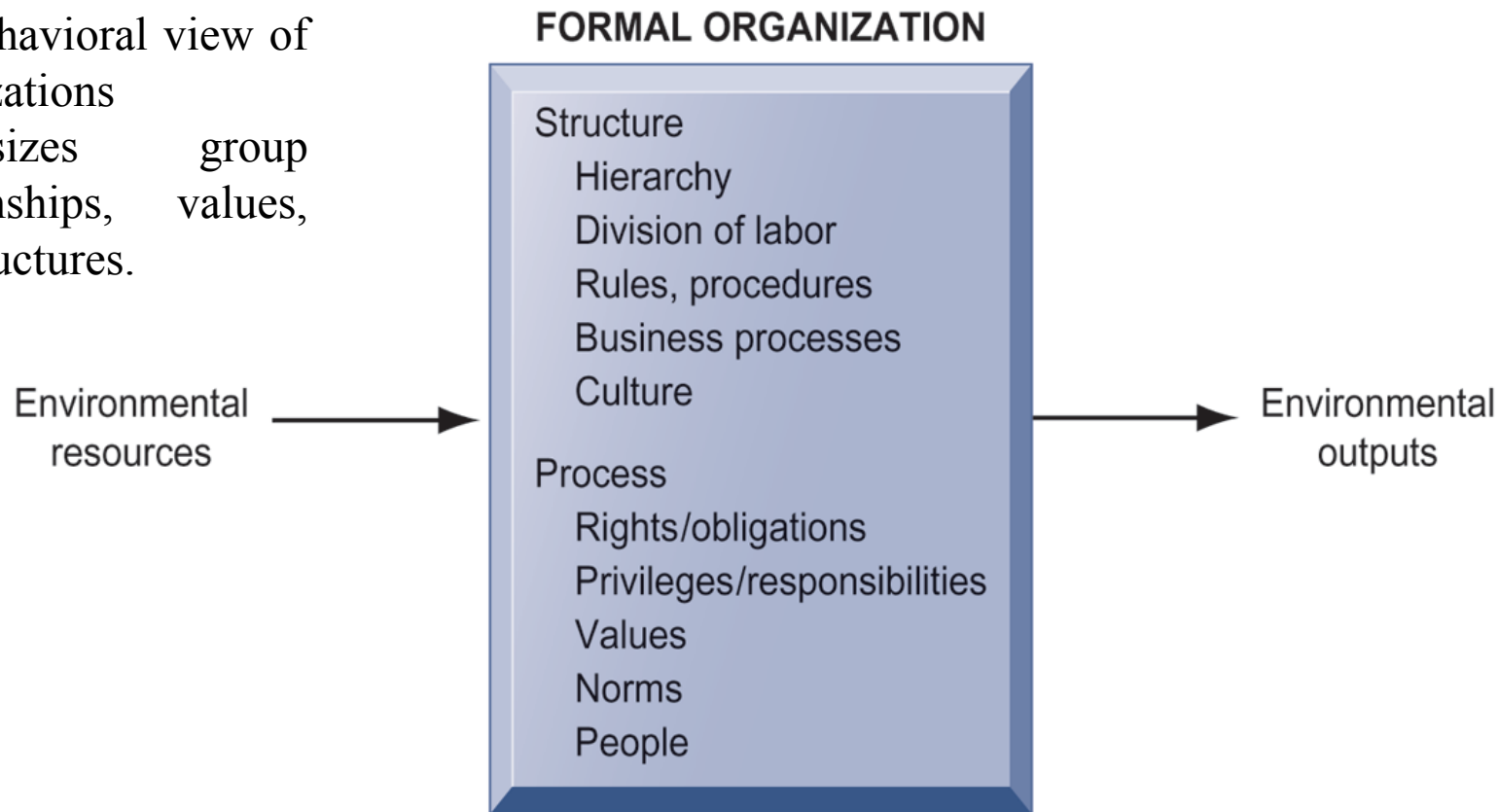


FIGURE 3-3



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Features of Organizations

- **Features of organizations**
 - Use of hierarchical structure
 - Accountability, authority in system of impartial decision making
 - Adherence to principle of efficiency
 - Routines and business processes
 - Organizational politics, culture, environments, and structures
- **Routines and business processes**
 - **Routines (standard operating procedures)**
 - Precise rules, procedures, and practices developed to cope with virtually all expected situations
 - **Business processes:** Collections of routines
 - **Business firm:** Collection of business processes



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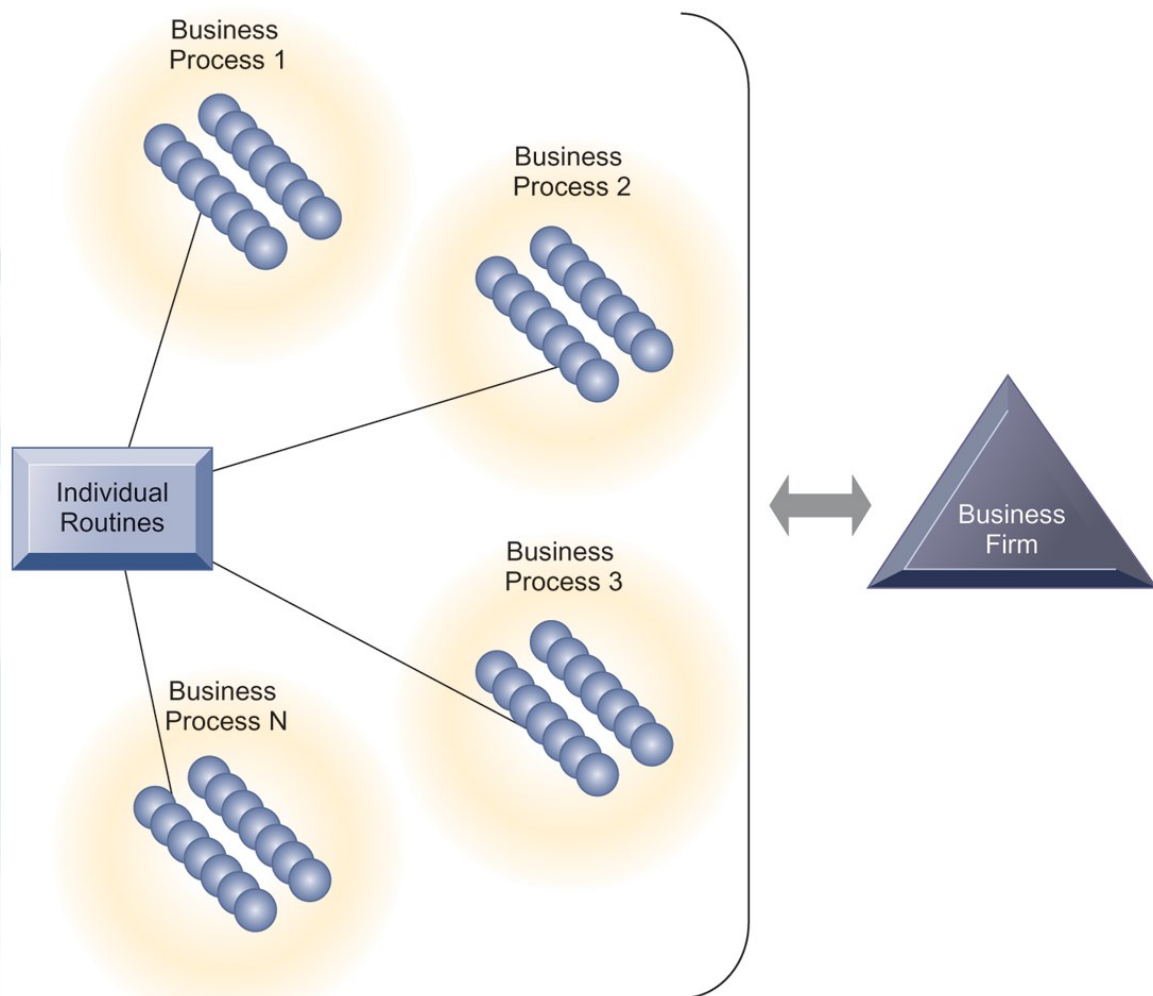
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Features of Organizations

Organizations are composed of **individual routines and behaviors**, a collection of which make up a business process.

A collection of business processes make up the business firm.

New **information system applications** require that individual routines and business processes **change to achieve high levels of organizational performance.**





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Features of Organizations

- **Organizational politics:**
 - Divergent viewpoints lead to political struggle, competition, and conflict.
 - Political resistance greatly hampers organizational change.
- **Organizational culture:**
 - **Encompasses set of assumptions that define goal and product**
 - **What** products the organization should produce
 - **How and where** it should be produced
 - **For whom** the products should be produced
 - **May be powerful unifying force as well as restraint on change**



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Features of Organizations

- **Organizational environments:**
 - Organizations and environments have a **reciprocal relationship**.
 - Organizations are **open to**, and **dependent on**, the social and physical environment.
 - Organizations can influence their environments.
 - Environments generally **change faster** than organizations.
 - Information systems can be **instrument of *environmental scanning***, act as a lens.
- **Disruptive technologies**
 - Technology that brings about **sweeping change to businesses**, industries, markets
 - **Examples:** personal computers, word processing software, the Internet, the PageRank algorithm
 - **First movers and fast followers**
 - First movers—inventors of disruptive technologies
 - Fast followers—firms with the size and resources to capitalize on that technology



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The Impact of Information Systems on Organizations

- **Economic impacts**
 - IT changes **relative costs of capital and the costs of information**.
 - Information systems technology is a **factor of production**, like capital and labor.
 - IT **affects the cost and quality** of information and changes economics of information.
 - Information technology helps **firms contract in size** because it can **reduce transaction costs** (the cost of participating in markets)
 - Outsourcing



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The Impact of Information Systems on Organizations

- **Transaction cost theory**
 - Firms seek to economize on transaction costs (the costs of participating in markets).
 - Vertical integration, hiring more employees, buying suppliers and distributors
 - IT lowers market transaction costs for firm, making it worthwhile for firms to **transact with other firms** rather than **grow the number of employees**.
- **Agency theory:**
 - Firm is **nexus (set) of contracts** among self-interested parties requiring supervision.
 - Firms experience **agency costs** (the cost of managing and supervising) which **rise as firm grows**.
 - IT can **reduce agency costs**, making it possible for firms to grow **without adding** to the costs of supervising, and **without adding employees**.

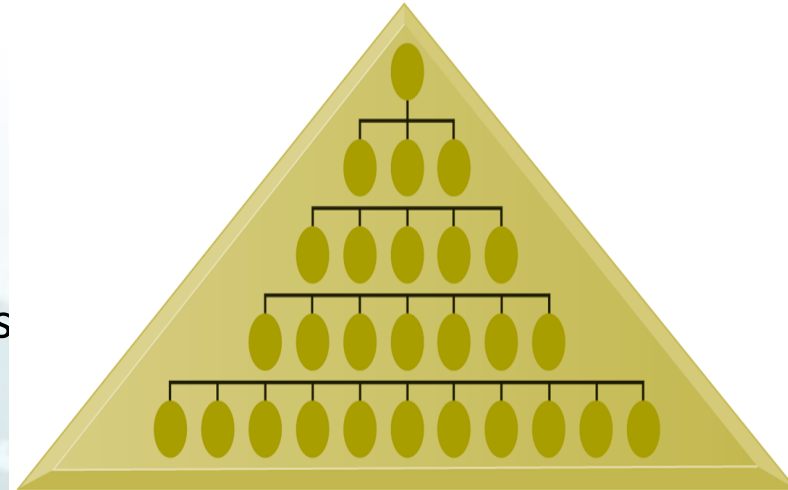


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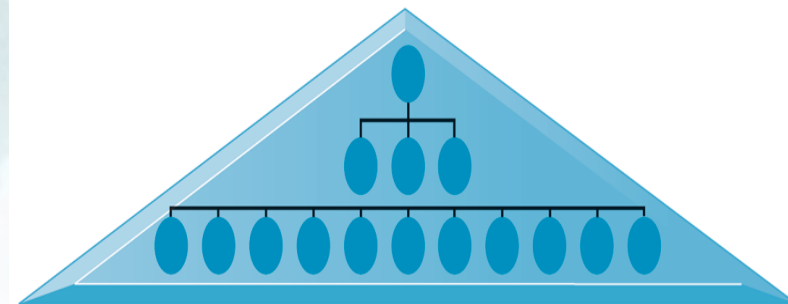
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The Impact of Information Systems on Organizations

- **Organizational and behavioral impacts**
 - **IT flattens organizations**
 - Decision making is pushed to lower levels.
 - Fewer managers are needed (IT enables faster decision making and increases span of control).
 - **Postindustrial organizations**
 - Organizations flatten because in postindustrial societies, authority **increasingly relies on knowledge and competence rather than formal positions.**



A traditional hierarchical organization with many levels of management



An organization that has been "flattened" by removing layers of management



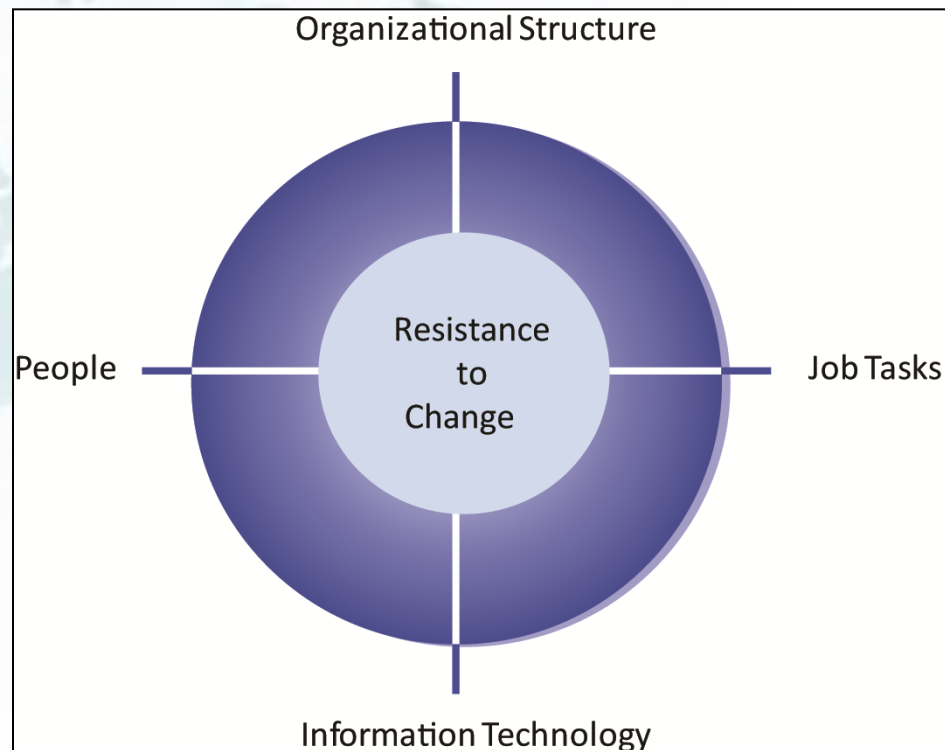
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The Impact of Information Systems on Organizations

- **Organizational resistance to change**
 - Information systems become bound up in organizational politics because they **influence access to a key resource—information.**
 - Information systems potentially **change an organization's structure, culture, politics, and work.**
 - Most common reason for **failure of large projects** is due to **organizational and political resistance to change.**

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.





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The Impact of Information Systems on Organizations

- **The Internet and organizations**
 - The Internet **increases the accessibility, storage, and distribution of information and knowledge for organizations.**
 - The Internet can **greatly lower transaction and agency costs.**
 - **Example:** Large firm delivers internal manuals to employees via a corporate Web site, saving millions of dollars in distribution costs
- **Organizational factors in planning a new system:**
 - Environment
 - Structure
 - Hierarchy, specialization, routines, business processes
 - Culture and politics
 - Type of organization and style of leadership
 - Main interest groups affected by system; attitudes of end users
 - Tasks, decisions, and business processes the system will assist

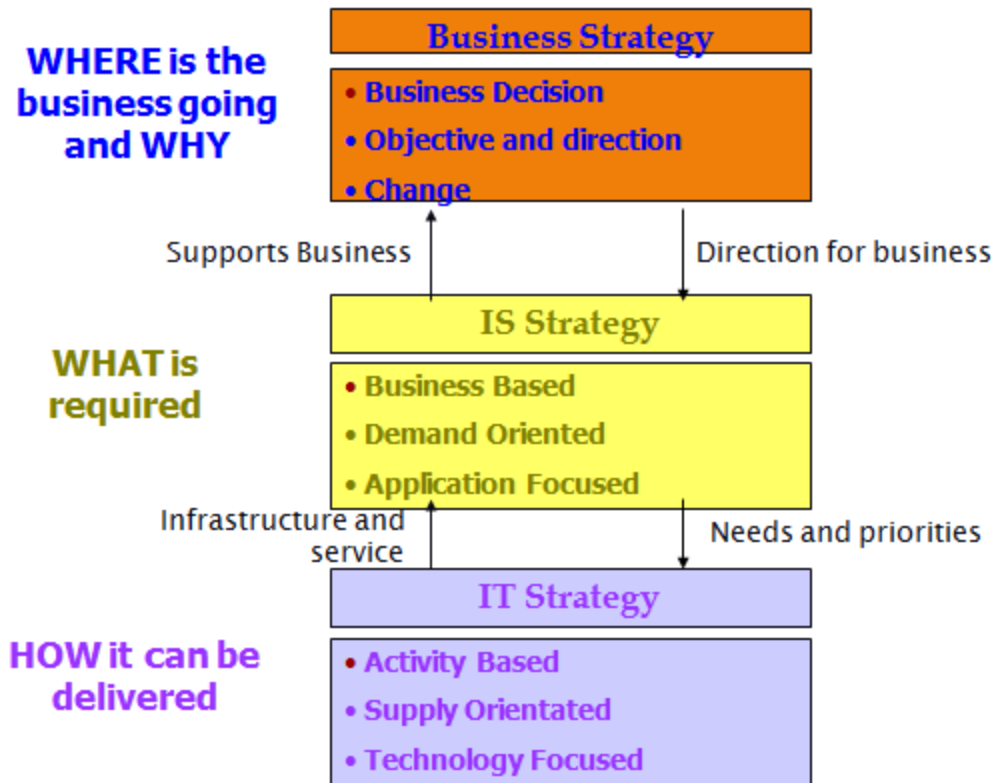


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Relationship between business strategy and IS/IT strategy

Business, IS and IT Strategies - Relationship





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IS STRATEGY

Definition:

“The process of identifying a **portfolio of computer-based applications** to be implemented, which is both highly *aligned* with **corporate strategy** and has the ability to create an *advantage* over competitors.”

Refers to IS Demand:

- Defines the **organization’s requirement or demand for information and systems** to support the overall strategy of the business;

Refers to IT Supply:

- Concerned with outlining the vision of **how technology can support organization’s demand** for information and systems;
- Addresses provision of **IT capabilities and resources (HW, SW, Telco)** and services (operations, systems development, and support).

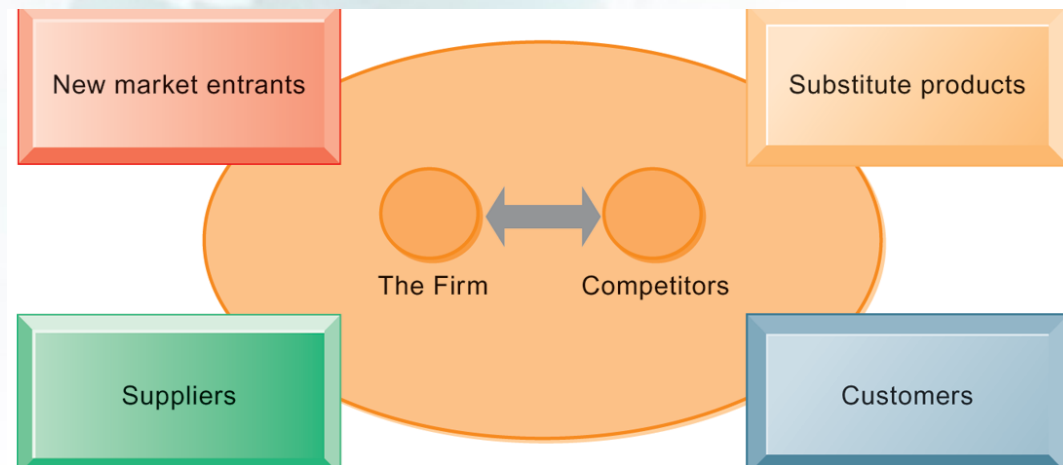


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Using Information Systems to Develop Competitive Strategies

- Why do some firms become leaders in their industry?
- Michael Porter's competitive forces model
 - Provides general view of firm, its competitors, and environment
 - Five competitive forces shape fate of firm:
 1. Traditional competitors
 2. New market entrants
 3. Substitute products and services
 4. Customers
 5. Suppliers





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Using Information Systems to Develop Competitive Strategies

- **Traditional competitors**
 - All firms share market space with competitors who are **continuously devising** new products, services, efficiencies, and switching costs.
- **New market entrants**
 - Some industries have **high barriers to entry** (ex: computer chip business).
 - New companies have **new equipment, younger workers**, but little **brand recognition**.
- **Substitute products and services**
 - Substitutes customers might use if your **prices** become **too high**, (ex: *iTunes substitutes for CDs*)
- **Customers**
 - Can customers easily switch to competitor's products? Can they force businesses to **compete on price alone** in transparent marketplace?
- **Suppliers**
 - Market power of suppliers when firm cannot raise prices as fast as suppliers



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Using Information Systems to Develop Competitive Strategies

- **Four generic strategies for dealing with competitive forces, enabled by using IT:**
 - Low-cost leadership
 - Product differentiation
 - Focus on market niche
 - Strengthen customer and supplier intimacy
- **Low-cost leadership**
 - Produce products and services at **a lower price** than **competitors**
 - Ex: Walmart's efficient customer response system
- **Product differentiation**
 - Enable **new products or services**, greatly **change customer convenience** and **experience**
 - Ex: Google, Nike, Apple
 - Mass customization



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Using Information Systems to Develop Competitive Strategies

- **Focus on market niche**
 - Use information systems to enable a **focused strategy** on a single market niche; specialize
 - Ex: Hilton Hotels' OnQ system
- **Strengthen customer and supplier intimacy**
 - Use information systems to develop **strong ties and loyalty** with customers and suppliers
 - Increase *switching costs*
 - Ex: Netflix, Amazon
- **The Internet's impact on competitive advantage**
 - Transformation or threat to some industries
 - Ex: travel agency, printed encyclopedia, media
 - Competitive forces still at work, but rivalry more intense
 - Universal standards allow new rivals, entrants to market
 - New opportunities for building brands and loyal customer bases



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Using Information Systems to Develop Competitive Strategies

- **Value chain model**
 - Firm as series of activities that add value to products or services
 - Highlights activities where competitive strategies can best be applied
 - Primary activities vs. support activities
 - At each stage, determine how information systems can improve operational efficiency and improve customer and supplier intimacy
 - Utilize benchmarking, industry best practices



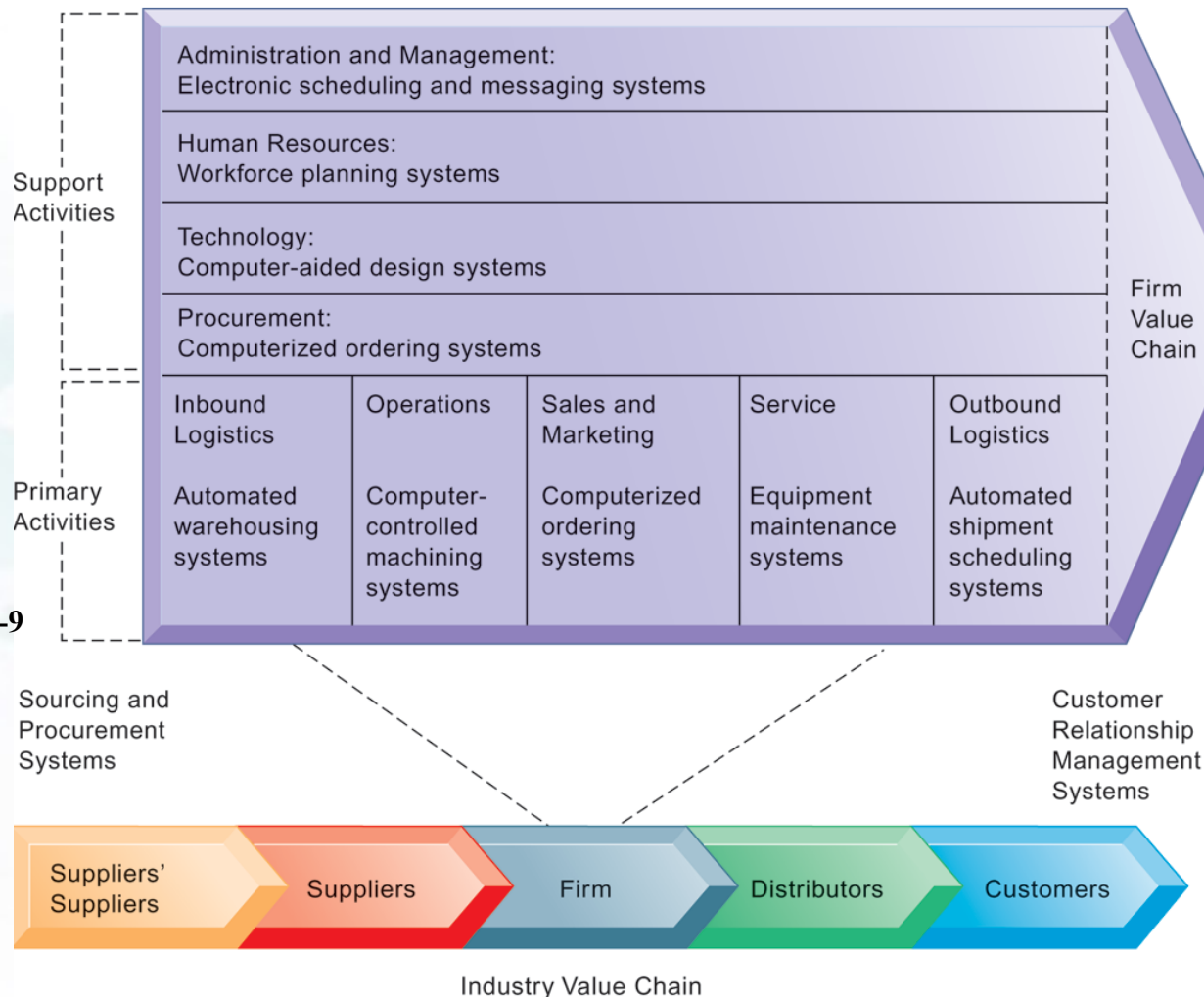
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THE VALUE CHAIN MODEL

Examples of systems for both primary and support activities of a firm and of its value partners that can add a margin of value to a firm's products or services.

FIGURE 3-9





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Using Information Systems to Develop Competitive Strategies

- **Value web:**

- Collection of independent firms using highly synchronized IT to coordinate value chains to produce product or service collectively
- More customer driven, less linear operation than traditional value chain

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.

