

# **Chapter 3**

## **Information Systems, Organizations, and Strategy**

# **Management Information Systems**

## **Chapter 3 Information Systems, Organizations, and Strategy**

### **Organizations and Information Systems**

- “ Information technology and organizations influence one another**
- “ Complex relationship influenced by organization’s structure, business processes, politics, culture, environment, and management decisions**

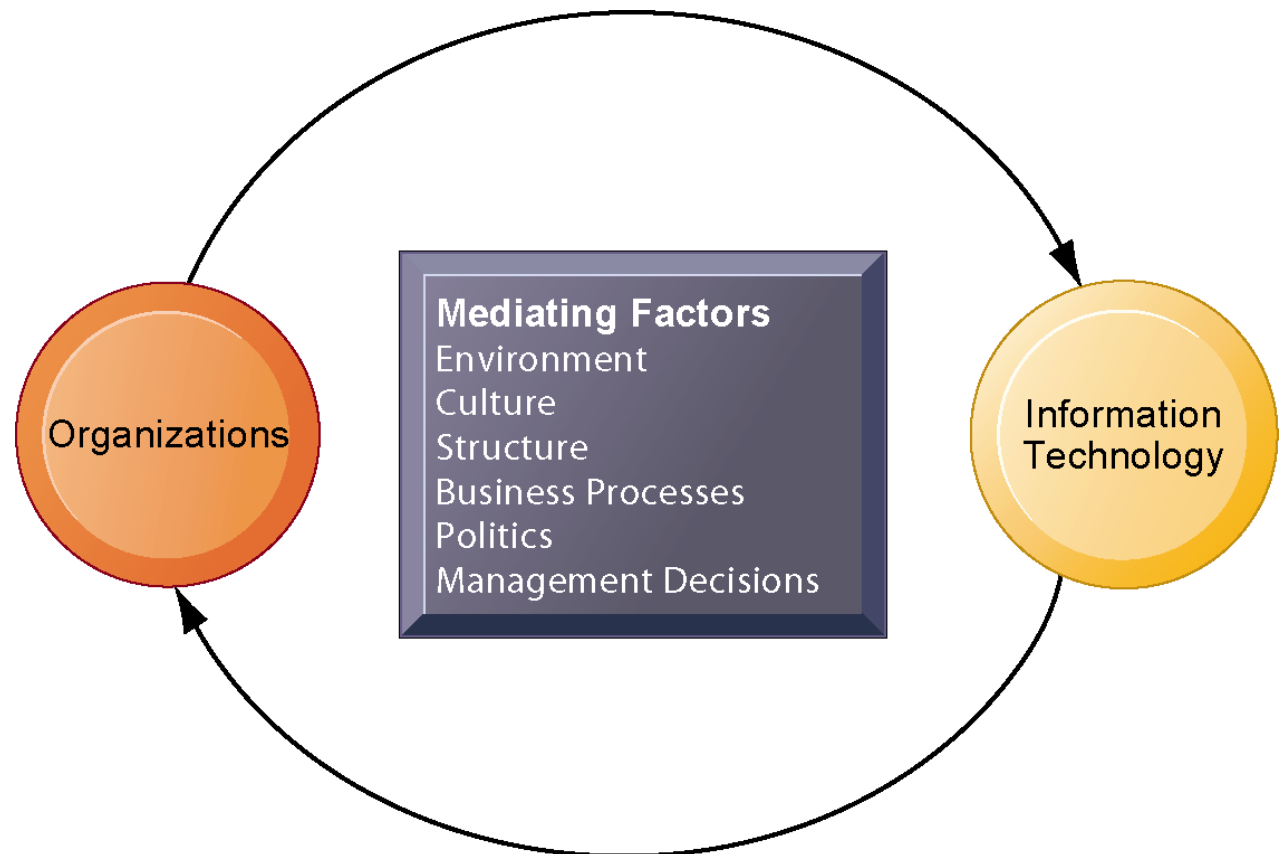
# Management Information Systems

## Chapter 3 Information Systems, Organizations, and Strategy

### Organizations and Information Systems

## The Two-Way Relationship Between Organizations and Information Technology

Figure 3-1



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.

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**Organizations and Information Systems**

**” What is an organization?**

**” Technical definition:**

- ” Stable, formal social structure that takes resources from environment and processes them to produce outputs
- ” A formal legal entity with internal rules and procedures, as well as a social structure.

**” Behavioral definition:**

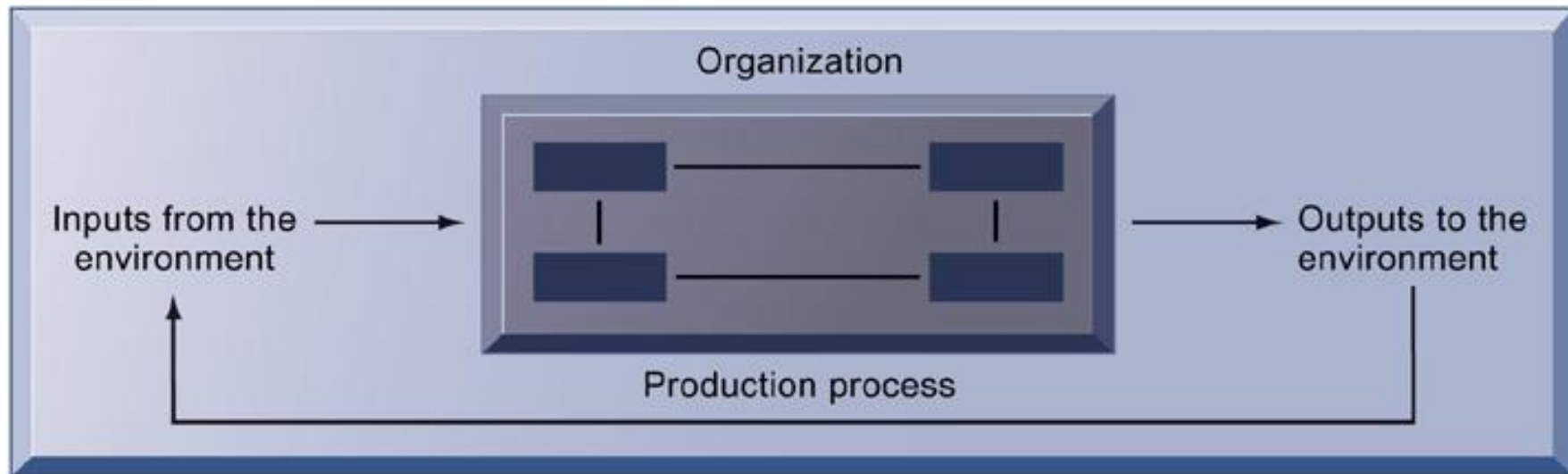
- ” A collection of rights, privileges, obligations, and responsibilities that is delicately balanced over a period of time through conflict and conflict resolution.

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## 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.

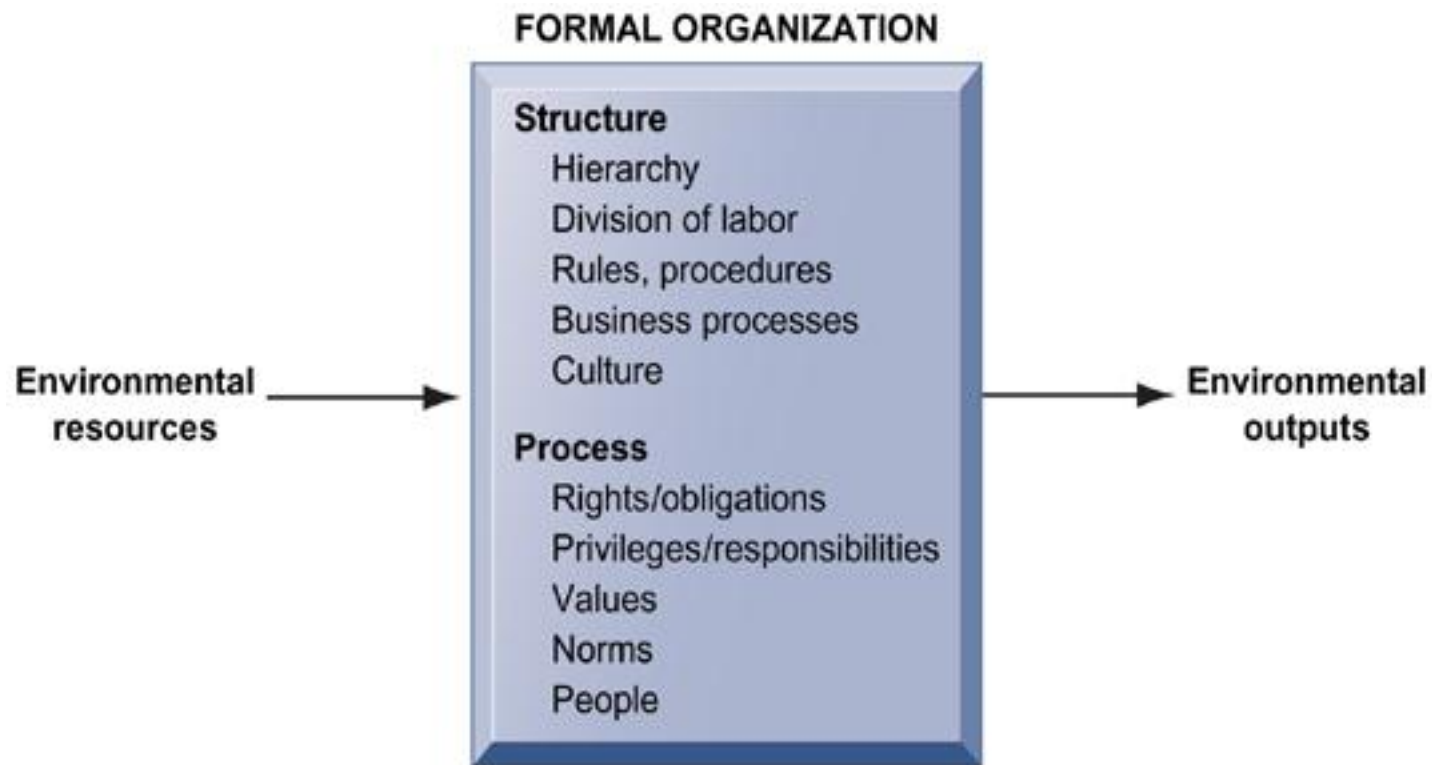
**Figure 3-2**

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### Organizations and Information Systems

## 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**

##### **” All modern organizations share some characteristics, such as:**

- ” Use of hierarchical structure**
- ” Accountability, authority in system of impartial decision making**
- ” Adherence to principle of efficiency**
- ” Other features include: Routines and business processes and organizational politics, culture, environments and structures**

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- “ **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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### Organizations and Information Systems

## Routines, Business Processes, and Firms

All 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.

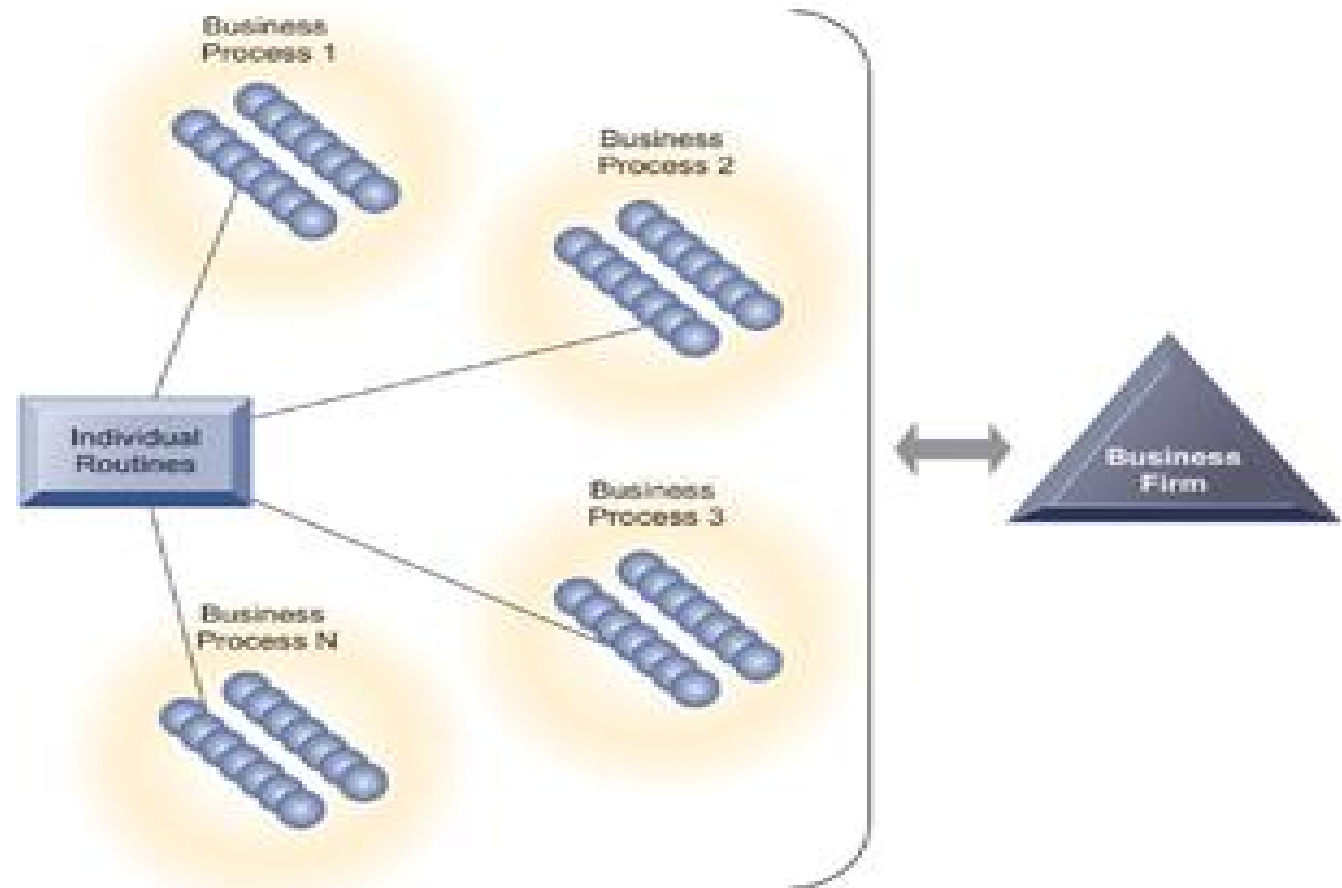


Figure 3-4

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**“ Organizational politics**

- “ Divergent viewpoints lead to political struggle, competition, and conflict
- “ Political resistance greatly hampers organizational change

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#### **“ 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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#### **“ 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

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### Organizations and Information Systems

## 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.

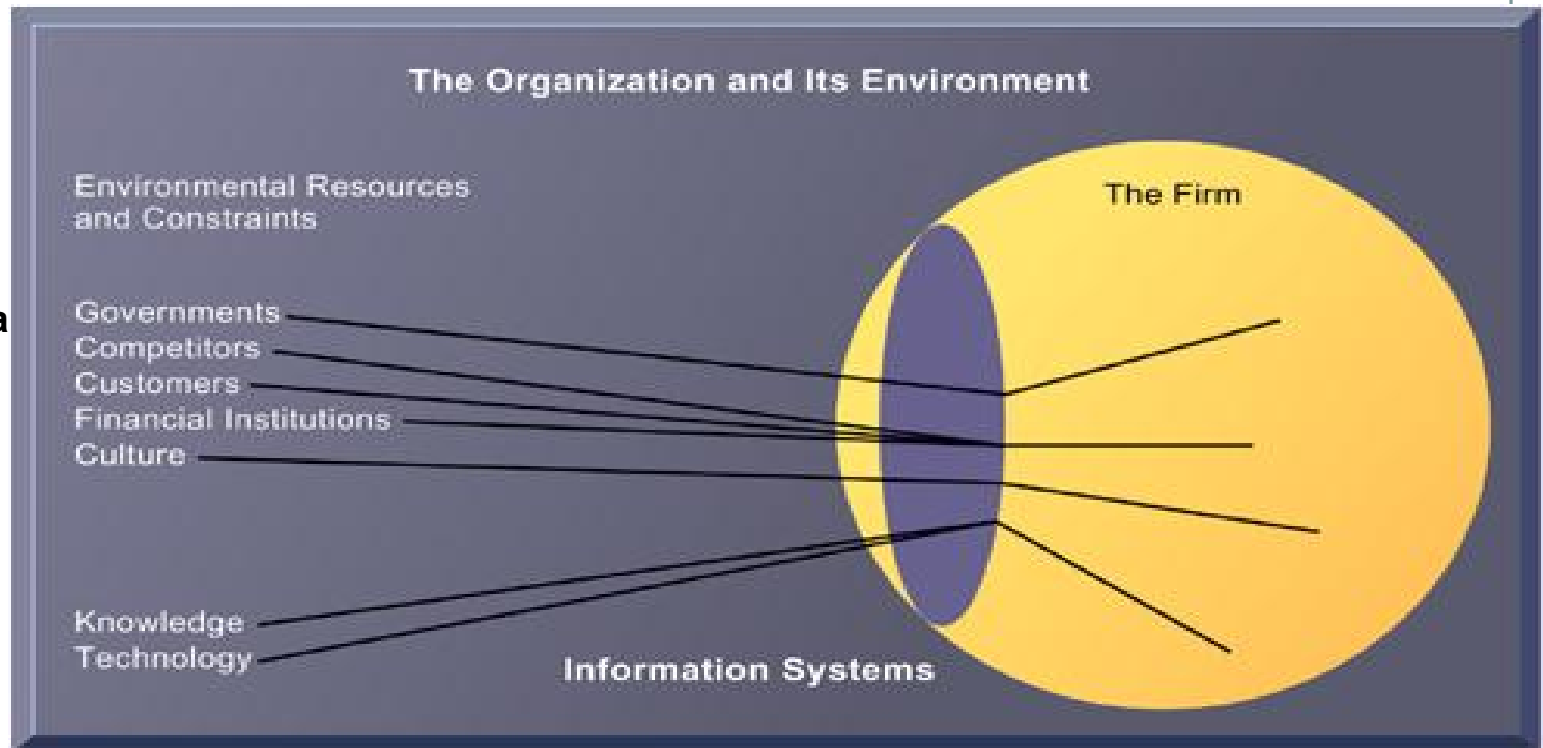


Figure 3-5

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### **Organizations and Information Systems**

#### **“ Disruptive technologies**

- “ Technology that brings about sweeping change to businesses, industries, markets**
- “ Examples: personal computers, word processing software, the Internet.**
- “ 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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**” Organizational structure**

**” Five basic kinds of structure**

- ” Entrepreneurial:** Small start-up business
- ” Machine bureaucracy:** Midsize manufacturing firm
- ” Divisionalized bureaucracy:** Fortune 500 firms
- ” Professional bureaucracy:** Law firms, school systems, hospitals
- ” Adhocracy:** Consulting firms

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**“ Other Organizational Features**

- “ Goals
- “ Constituencies
- “ Leadership styles
- “ Tasks
- “ Surrounding environments



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## **Chapter 3 Information Systems, Organizations, and Strategy**

### **How Information Systems Impact Organizations and Business Firms**

#### **“ 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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**How Information Systems Impact Organizations and Business Firms**

### **” Transaction cost theory**

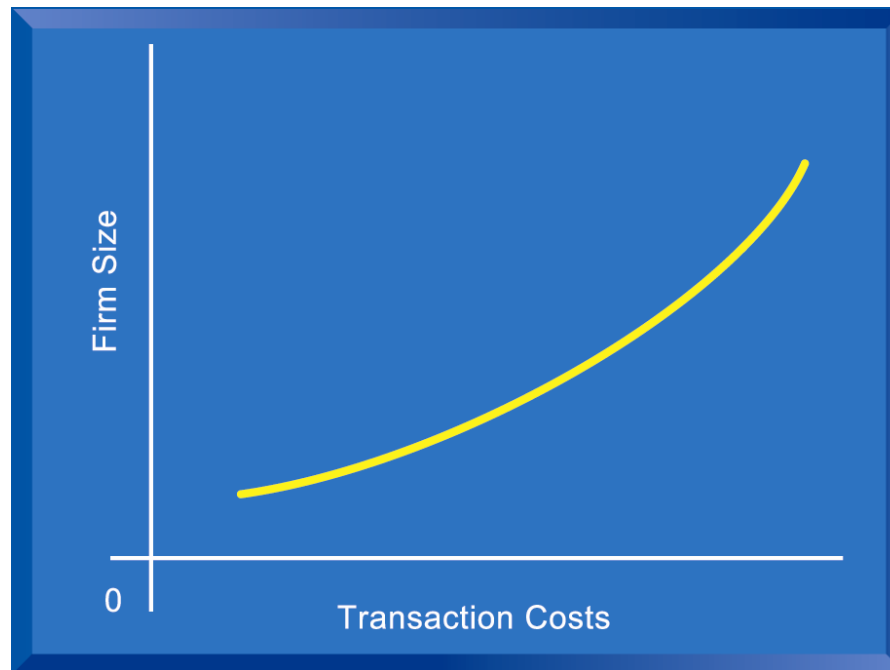
- ” Firms seek to economize on cost of participating in market (transaction costs)
- ” IT lowers market transaction costs for firm, making it worthwhile for firms to transact with other firms rather than grow the number of employees

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## Chapter 3 Information Systems, Organizations, and Strategy

How Information Systems Impact Organizations and Business Firms

### The Transaction Cost Theory of the Impact of Information Technology on the Organization



Firms traditionally grew in size to reduce transaction costs. IT potentially reduces transaction costs for a given size.

Figure 3-6

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**How Information Systems Impact Organizations and Business Firms**

### **“ Agency theory:**

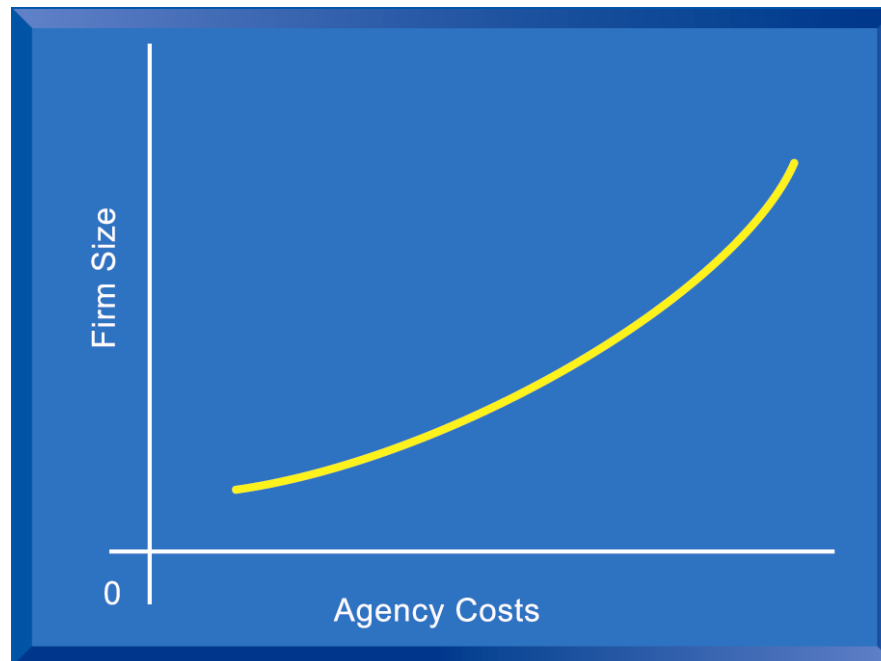
- “ Firm is nexus of contracts among self-interested parties requiring supervision
- “ Firms experience agency costs (the cost of managing and supervising) which rise as firm grows
- “ IT can reduce agency costs, making it possible for firms to grow without adding to the costs of supervising, and without adding employees

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How Information Systems Impact Organizations and Business Firms

### The Agency Cost Theory of the Impact of Information Technology on the Organization



As firms grow in size and complexity, traditionally they experience rising agency costs.

Figure 3-7

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### **How Information Systems Impact Organizations and Business Firms**

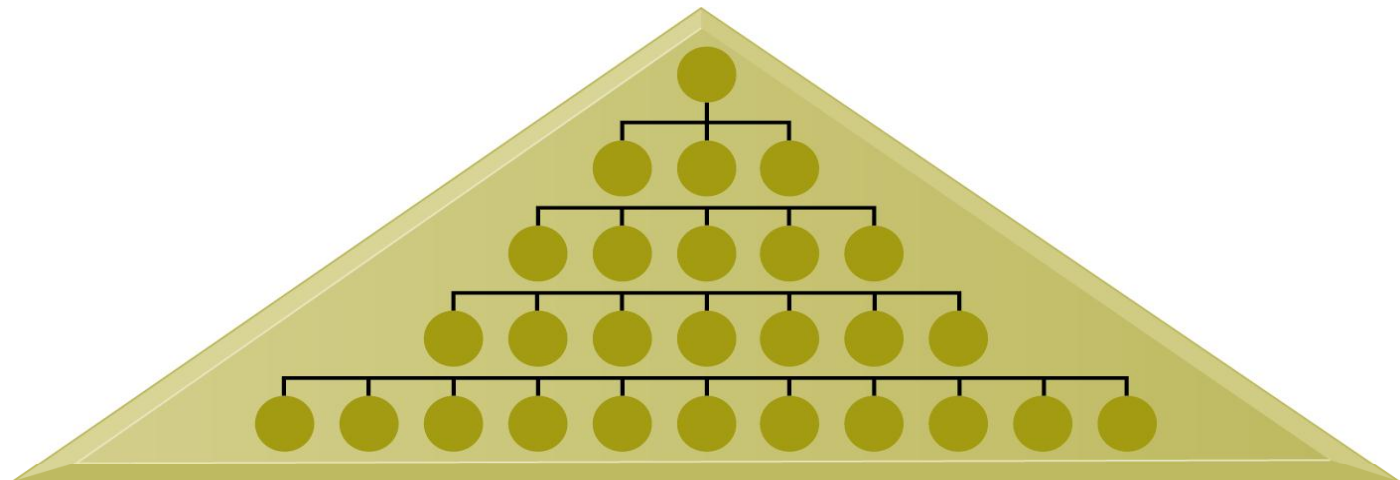
- ” Organizational and behavioral impacts**
  - ” IT flattens organizations**
    - ” Decision making pushed to lower levels
    - ” Fewer managers needed (IT enables faster decision making and increases span of control)
  - ” Postindustrial organizations**
    - ” Organizations flatten because in postindustrial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

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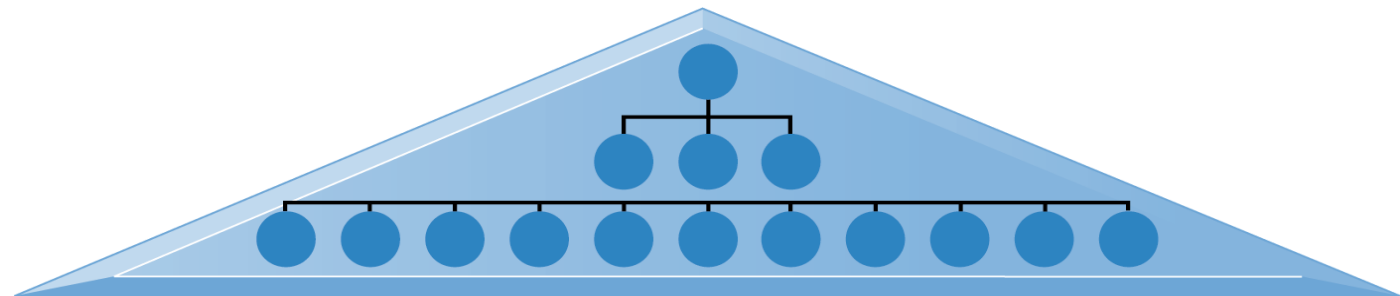
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How Information Systems Impact Organizations and Business Firms

### Flattening Organizations



A traditional hierarchical organization with many levels of management



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

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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How Information Systems Impact Organizations and Business Firms

### “ 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

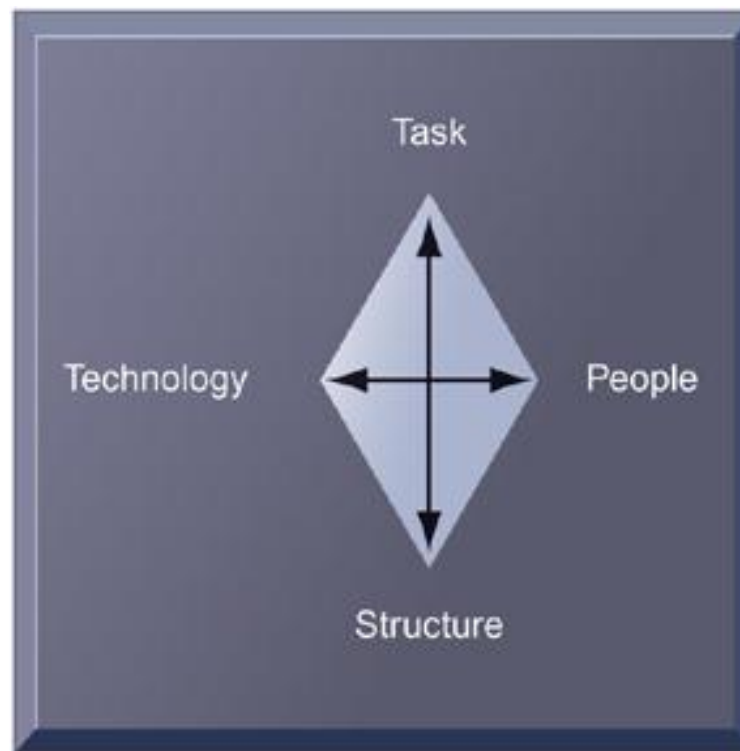


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How Information Systems Impact Organizations and Business Firms

### Organizational Resistance and the Mutually Adjusting Relationship Between Technology and the Organization



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.

**Figure 3-9**

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**How Information Systems Impact Organizations and Business Firms**

### **“ 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 corporate Web site, saving millions of dollars in distribution costs

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### **How Information Systems Impact Organizations and Business Firms**

- “ Central organizational factors to consider when 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