

**INFORMATION
SYSTEMS,
ORGANIZATIONS,
MANAGEMENT,
AND STRATEGY**

OBJECTIVES

- **What do managers need to know about organizations in order to build and use information systems successfully?**
- **What impact do information systems have on organizations?**
- **How do information systems support the activities of managers in organizations?**

OBJECTIVES

- **How can businesses use information systems for competitive advantage?**
- **Why is it so difficult to build successful information systems, including systems that promote competitive advantage?**

MANAGEMENT CHALLENGES

- 1. Sustainability of competitive advantage**
 - 2. Fitting technology to the organization (or vice-versa)**
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ORGANIZATIONS AND INFORMATION SYSTEMS

The Two-Way Relationship Between Organizations and Information Technology

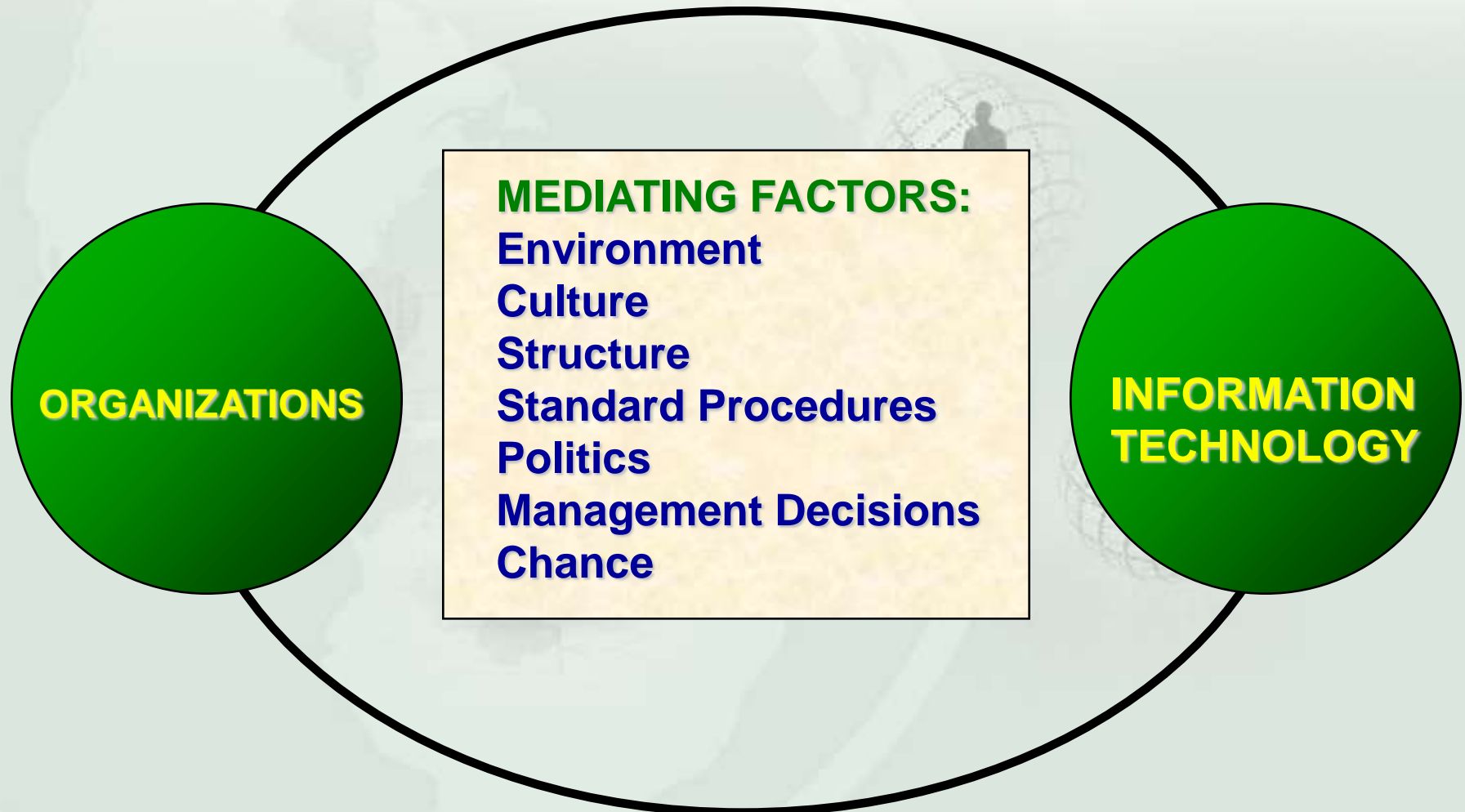



Figure 3-1

Organization:

- **Stable, formal structure**
 - **Takes resources from environment and processes them to produce outputs**
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ORGANIZATIONS AND INFORMATION SYSTEMS

Technical Microeconomic Definition of the Organization

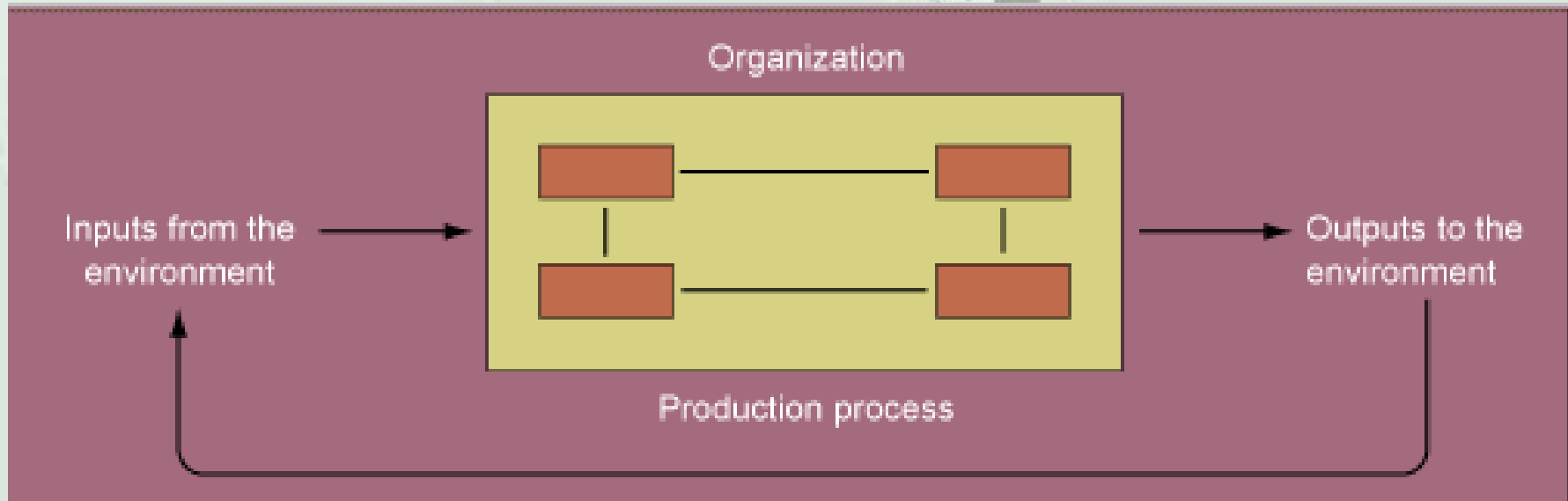


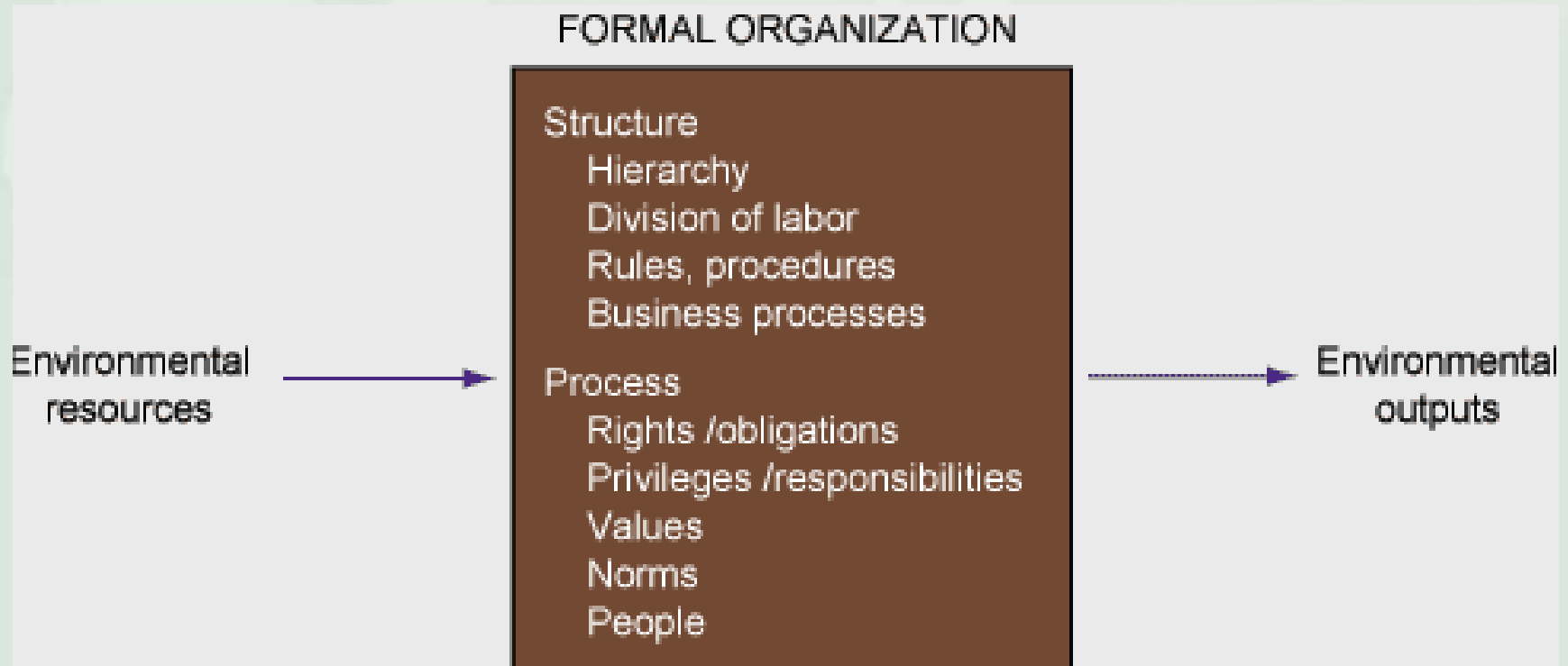
Figure 3-2

Behavioral definition of Organization:

- **Collection of rights, privileges, obligations, responsibilities**
- **Delicately balanced**
- **Conflict resolution**

COMMON FEATURES OF ORGANIZATIONS

The Behavioral View of Organizations



ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

- **Organizations are bureaucracies that have certain structural features**

ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

Structural Characteristics of Organizations:

- **Clear division of labor**
 - **Hierarchy**
 - **Explicit rules and procedures**
 - **Impartial judgments**
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- The background of the slide features a light blue world map. Overlaid on the map are several silhouettes: a person in a hard hat in the center, and two people standing next to globes on the right side.

ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

Structural Characteristics of Organizations (cont.):

- **Technical qualifications**
- **Maximum organizational efficiency**

ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

Standard Operating Procedures:

- **Precise rules, procedures, and practices**
- **Enable organizations to cope with all expected situations**

ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

Organizational Politics:

- **Divergent viewpoints leads to political struggle, competition, and conflict**
- **Hamper organizational change**

ORGANIZATIONS AND INFORMATION SYSTEMS

Common Features of Organizations

Organizational Culture: a set of fundamental assumptions about:

- **What products the organization should produce**
- **How and where it should produce them**
- **For whom they should be produced**

ORGANIZATIONS & INFORMATION SYSTEMS

Organization and Its Environment

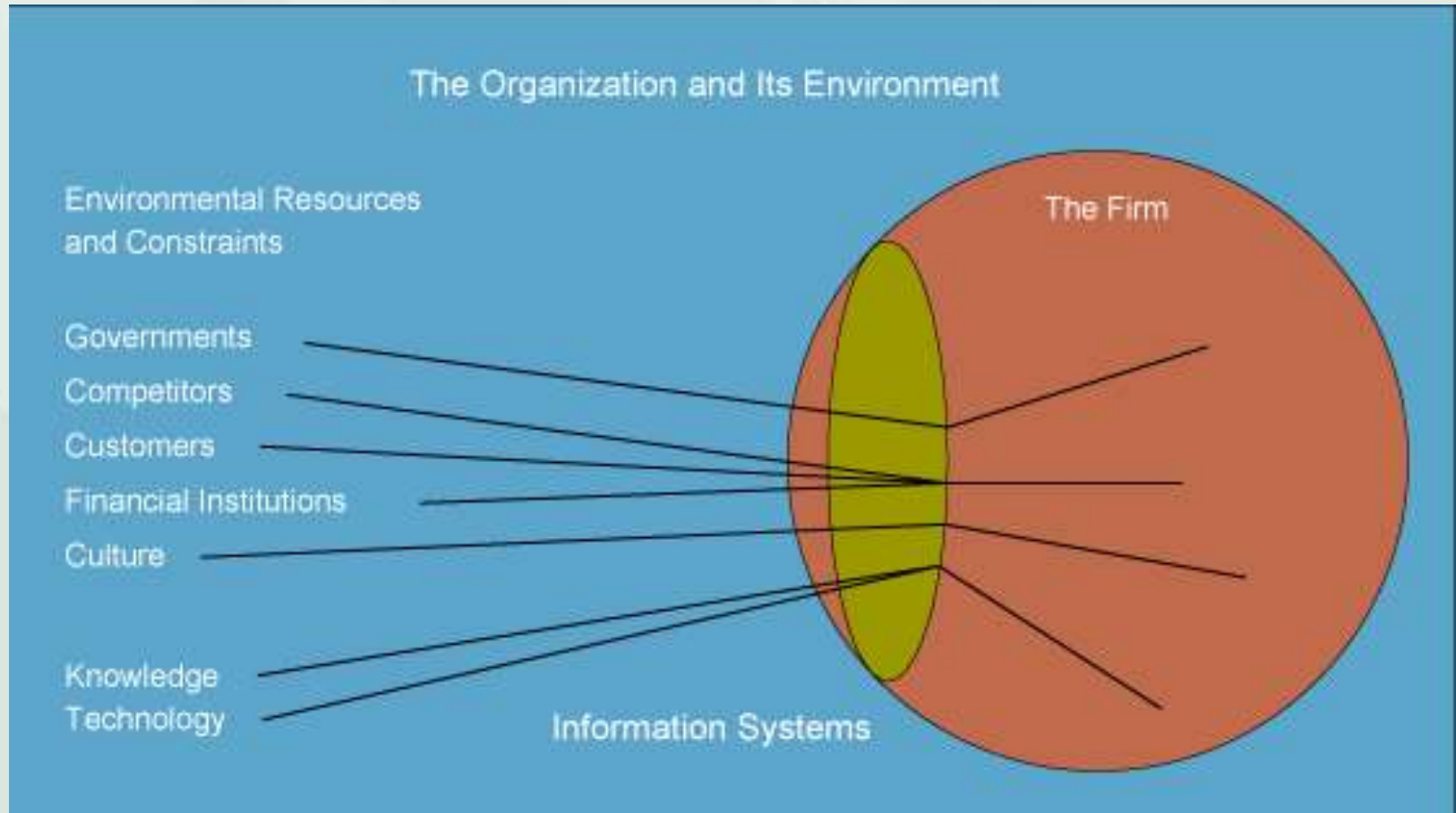


Figure 3-4

THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Information Technology Infrastructure and Information Technology Services

Information systems department:

- **Formal organizational unit**
- **Responsible for information systems in the organization**



THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Information Technology Services

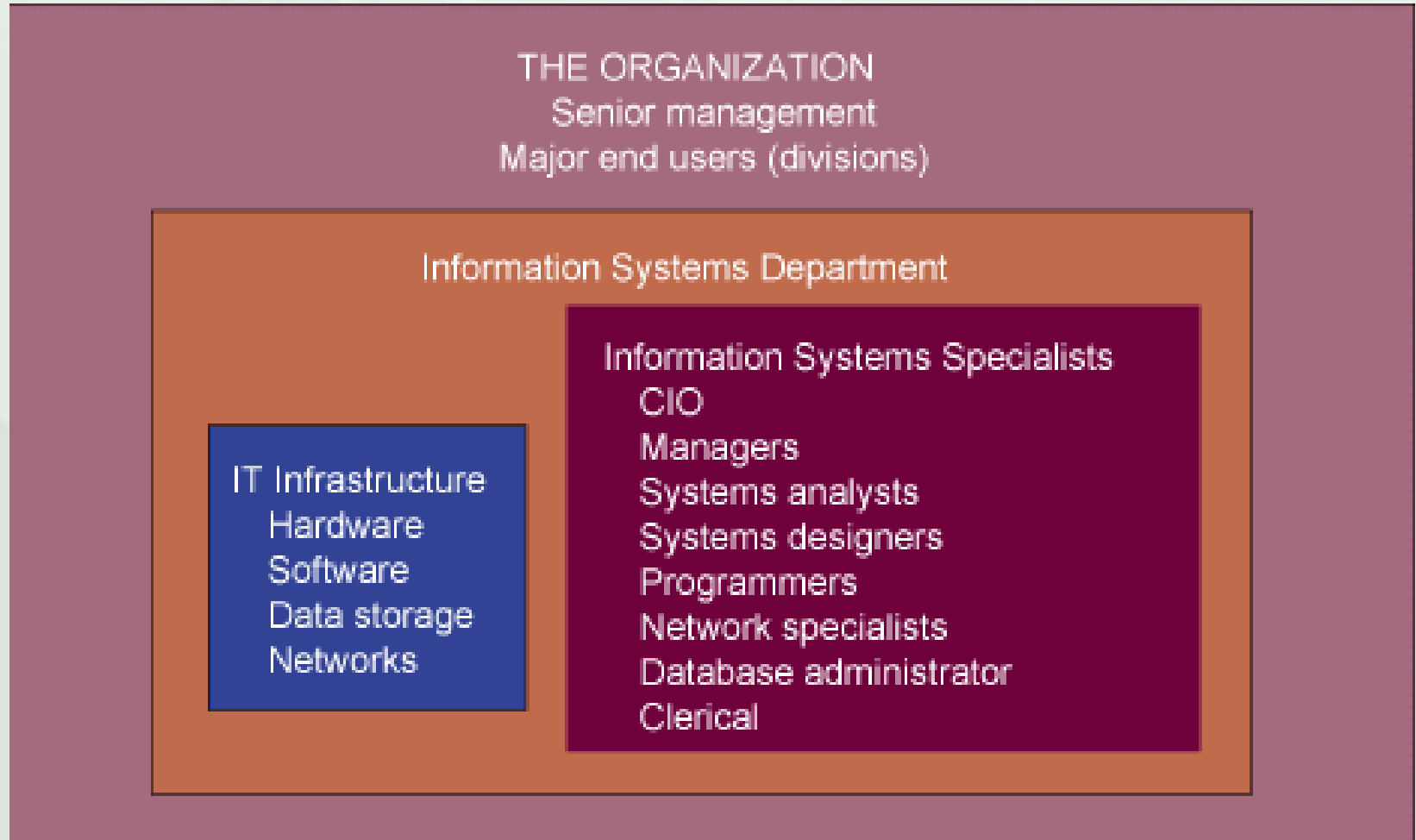


Figure 3-5

THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Information Technology Infrastructure and Information Technology Services

Includes specialists:

- **Programmers:** Highly trained, write software
- **Systems analysts:** Translate business problems into solutions, act as liaisons between the information systems department and rest of the organization



THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Information Technology Infrastructure and Information Technology Services

Specialists (cont.):

- **Information system managers:**
Leaders of various specialists
- **Chief information officer (CIO):** Senior manager in charge of information systems function in the firm
- **End users:** Department representatives outside the information system department for whom applications are developed


How Information Systems Affect Organizations

Economic theories

- **Information technology is a factor of production, like capital and labor**

THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

How Information Systems Affect Organizations



Transaction cost theory: Firms can
conduct marketplace transactions
internally more cheaply to grow larger



THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Transaction Cost Theory

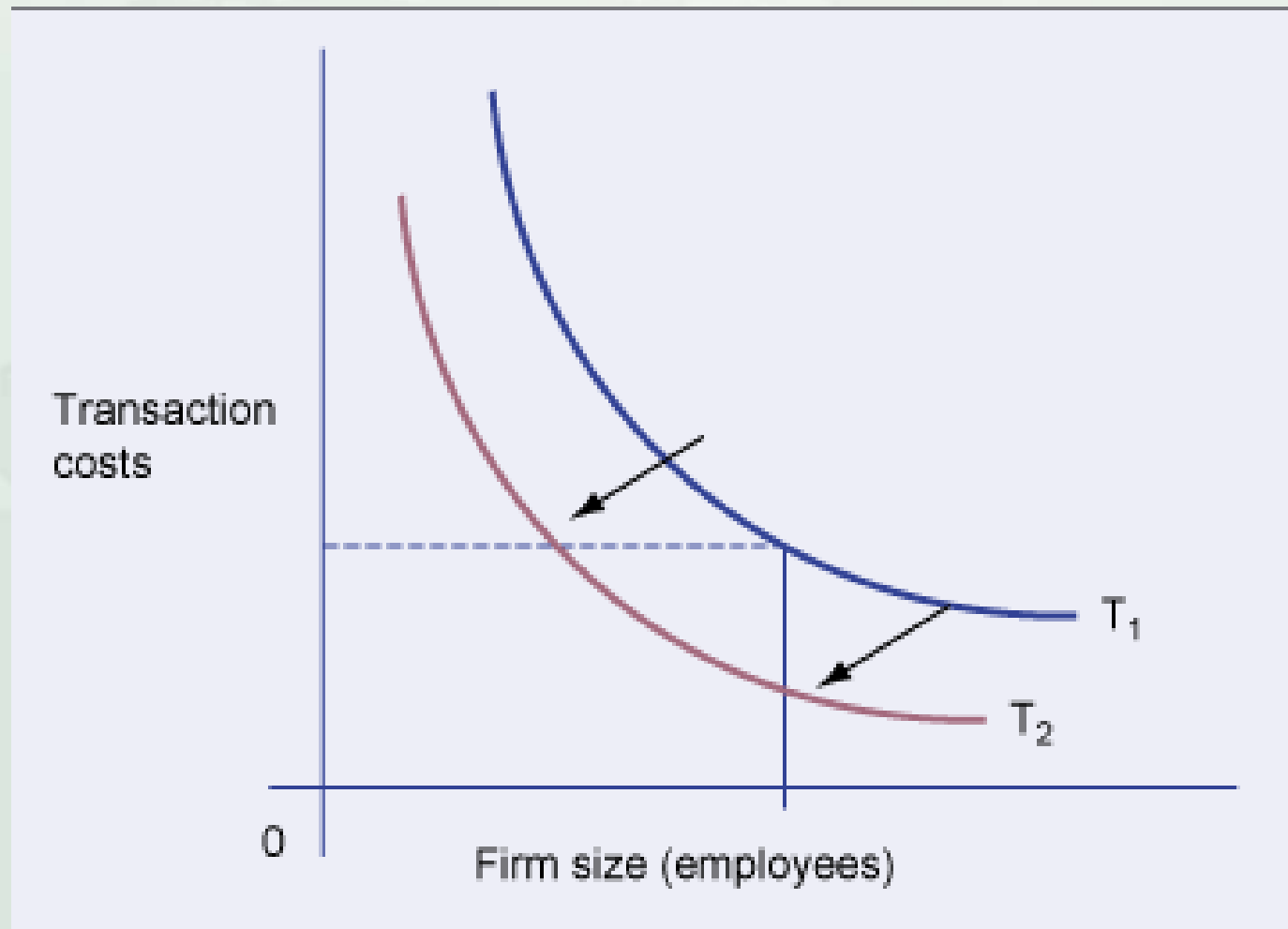


Figure 3-6



THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

How Information Systems Affect Organizations

- **Agency theory:** Firm is nexus of contracts among self-interested parties requiring supervision



THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

Agency Cost Theory

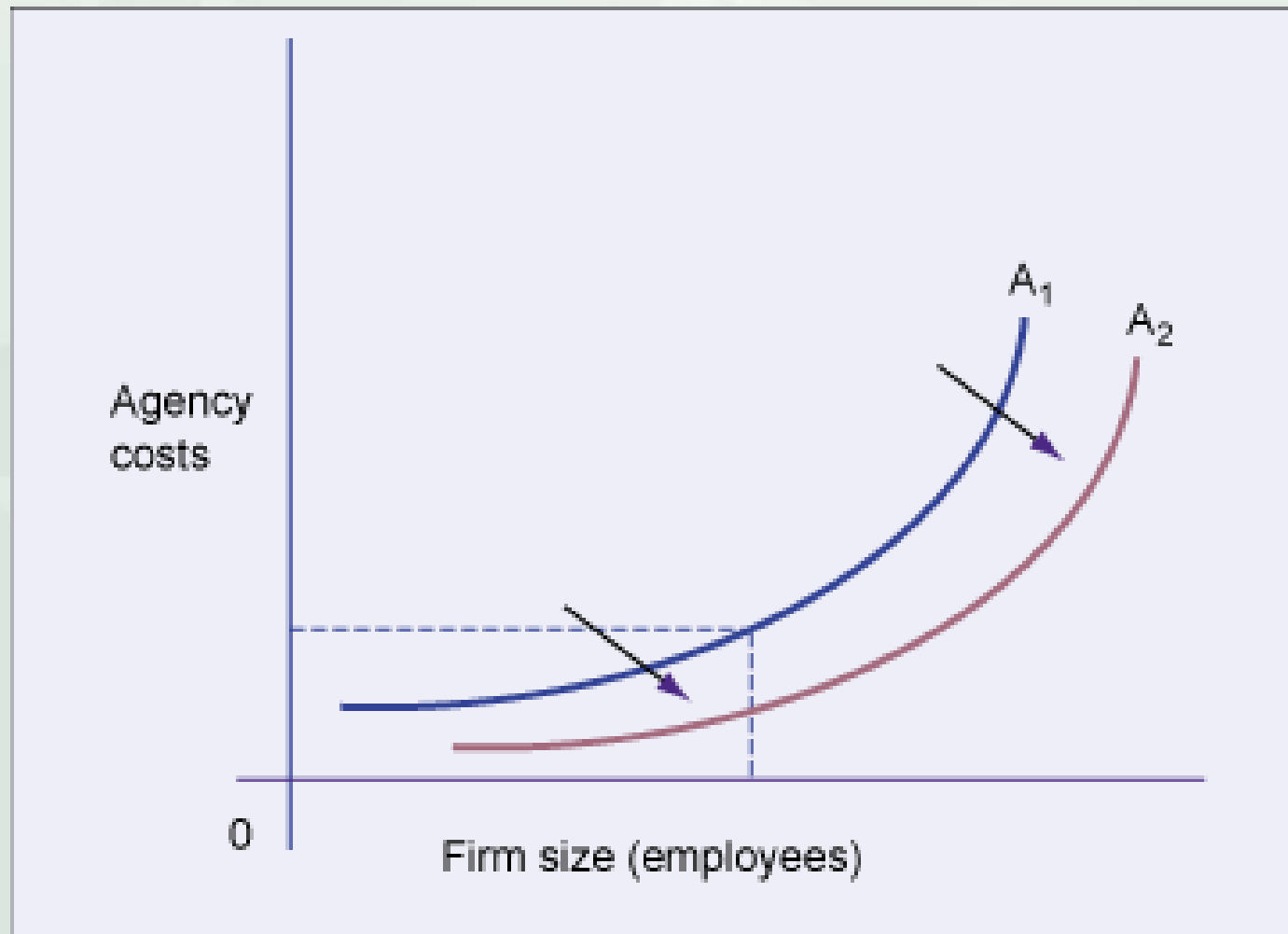


Figure 3-7

THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

How Information Systems Affect Organizations

Behavioral theories:

- **Information technology could change hierarchy of decision making**
- **Lower cost of information acquisition**
- **Broadens the distribution of information**

THE CHANGING ROLE OF INFORMATION SYSTEMS IN ORGANIZATIONS

How Information Systems Affect Organizations

Virtual organization:

- **Task force networked organizations**
- **Uses networks to link people, assets, and ideas to create and distribute products and services without being limited to physical locations**

The Role of Managers in Organizations

Classical model of management:

- **Traditional description of management**
- **Focuses on formal functions: plan, organize, coordinate, decide, control**

Behavioral model of management:

- **Describes management based on observations of managers on the job**

Managers and Decision Making

Process of Decision Making

- **Strategic Decision Making:** Determines long-term objectives, resources, and policies
- **Management Control:** Monitors effective or efficient usage of resources and performance of operational units



Managers and Decision Making

- **Operational control:** Determines how to perform specific tasks set by strategic and middle-management decision makers
- **Knowledge-level decision making:** Evaluates new ideas for products, services, ways to communicate new knowledge, ways to distribute information

Managers and Decision Making

Decisions are classified as:

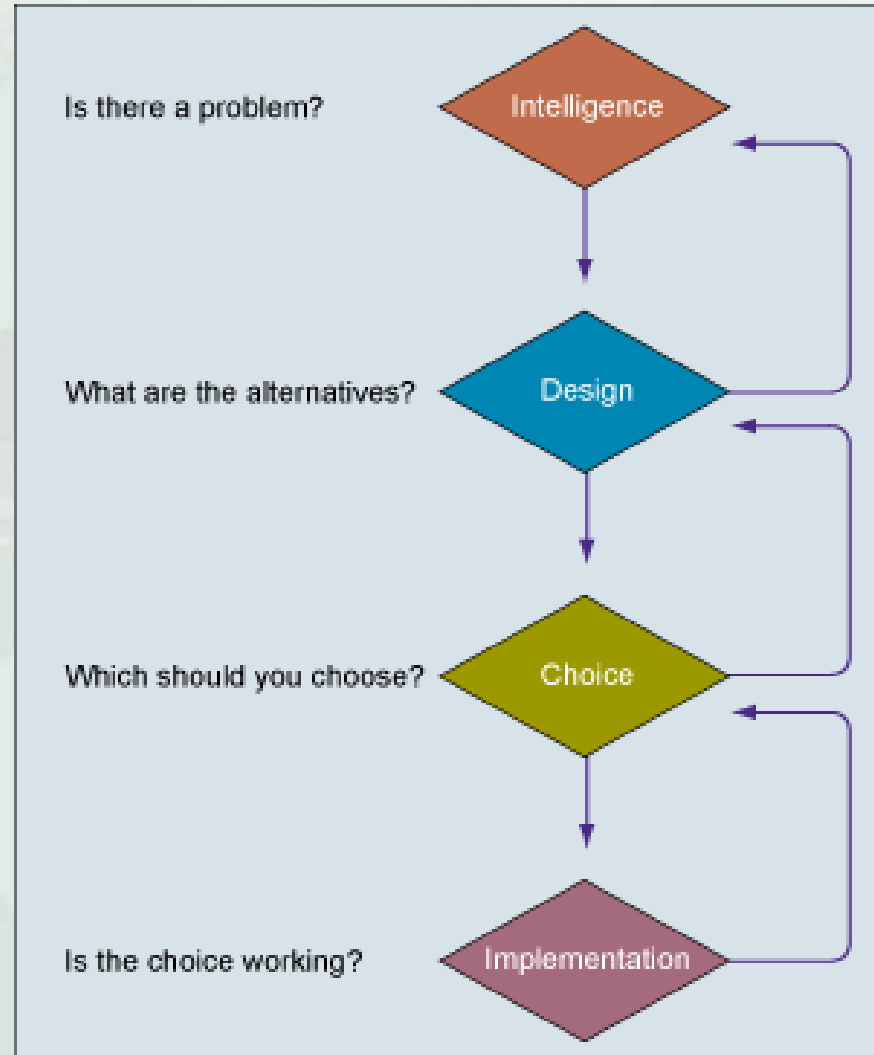
- **Unstructured:** Non routine, decision maker provides judgment, evaluation, and insights into problem definition, no agreed-upon procedure for decision making
- **Structured:** Repetitive, routine, handled using a definite procedure

Stages of Decision Making

- **Intelligence:** Collect information, identify problem
- **Design:** Conceive alternative solution to a problem
- **Choice:** Select among the alternative solutions
- **Implementation:** Put decision into effect and provide report on the progress of solution

MANAGERS, DECISION MAKING, AND INFORMATION SYSTEMS

Decision-Making Process



Models of Decision Making

- **Rational:** People, organizations, and nations engage in consistent, value-maximizing calculations or adaptations within certain constraints
- **Cognitive style:** Underlying personality dispositions toward the treatment of information, selection of alternatives, and evaluation of consequences

Models of Decision Making

- **Systematic decision makers:**
Cognitive style, describes people who approach a problem by structuring it in terms of some formal method
- **Intuitive:** Cognitive style, describes people approaching a problem with multiple methods in an unstructured manner

Models of Decision Making

- **Organizational models of decision making:** Consider structural and political characteristics of an organization

Implications for the Design and Understanding of Information Systems

Factors to consider while planning a new system:

- **Organizational environment**
- **Organizational structure, hierarchy, specialization, standard operating procedures**

MANAGERS, DECISION MAKING, AND INFORMATION SYSTEMS

Implications for the Design and Understanding of Information Systems

- **Culture and politics of the organization**
 - **Type of organization and its style of leadership**
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MANAGERS, DECISION MAKING, AND INFORMATION SYSTEMS

Implications for the Design and Understanding of Information Systems

- **Groups affected by the system and the attitudes of workers who will be using the system**
- **Kinds of tasks, decisions, and business processes, information system is designed to assist**

Implications for the Design and Understanding of Information Systems

Characteristics to be kept in mind while designing systems:

- **Flexibility and multiple options for handling data and evaluating information**
- **Capability to support a variety of styles, skills, and knowledge**

MANAGERS, DECISION MAKING, AND INFORMATION SYSTEMS

Implications for the Design and Understanding of Information Systems

- **Capability to keep track of many alternatives and consequences**
- **Sensitivity to the organization's bureaucratic and political requirements**

INFORMATION SYSTEMS AND BUSINESS STRATEGY

What is Strategic Information System

- **Computer system at any level of an organization**
- **Changes goals, operations, products, services, or environmental relationships**
- **Helps organization gain a competitive advantage**

Digital firms

- **Manage the supply chain by building efficient customer “sense and response” systems**
- **Participate in “value webs” to deliver new products and services**

Value Chain Model:

- **Highlights the primary or support activities adding a margin of value to products or services**
- **Helps achieve a competitive advantage**

Primary Activities:

- **Directly related to the production and distribution of a firm's products or services**

Support Activities:

- **Make the delivery of primary activities possible**
- **Consist of the organization's infrastructure, human resources, technology, and procurement**

INFORMATION SYSTEMS AND BUSINESS STRATEGY

Firm Value Chain

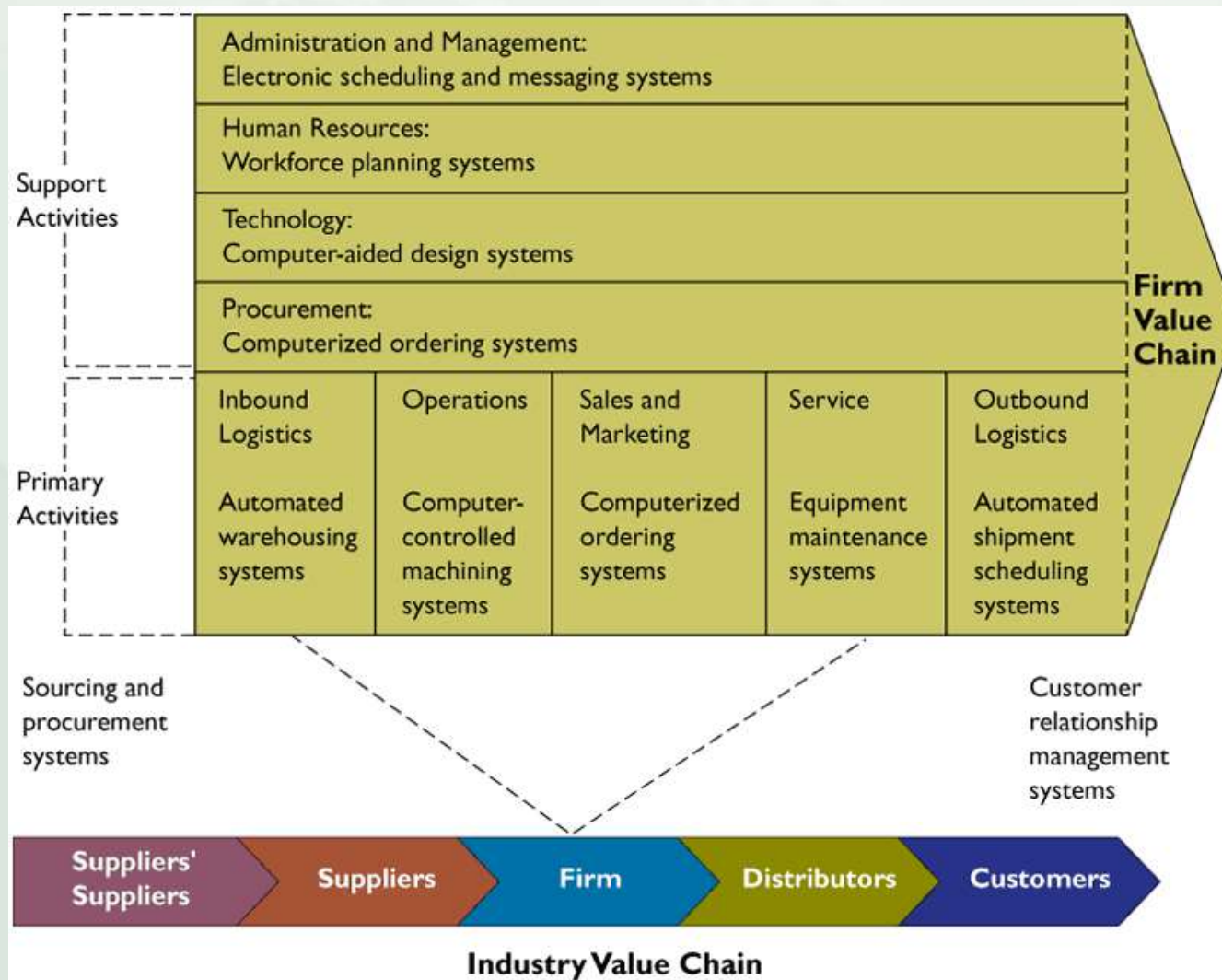


Figure 3-11

Value Web:

- **Customer-driven network of independent firms**
- **Uses information technology to coordinate value chains for collectively producing a product or service**

INFORMATION SYSTEMS AND BUSINESS STRATEGY

The Value Web

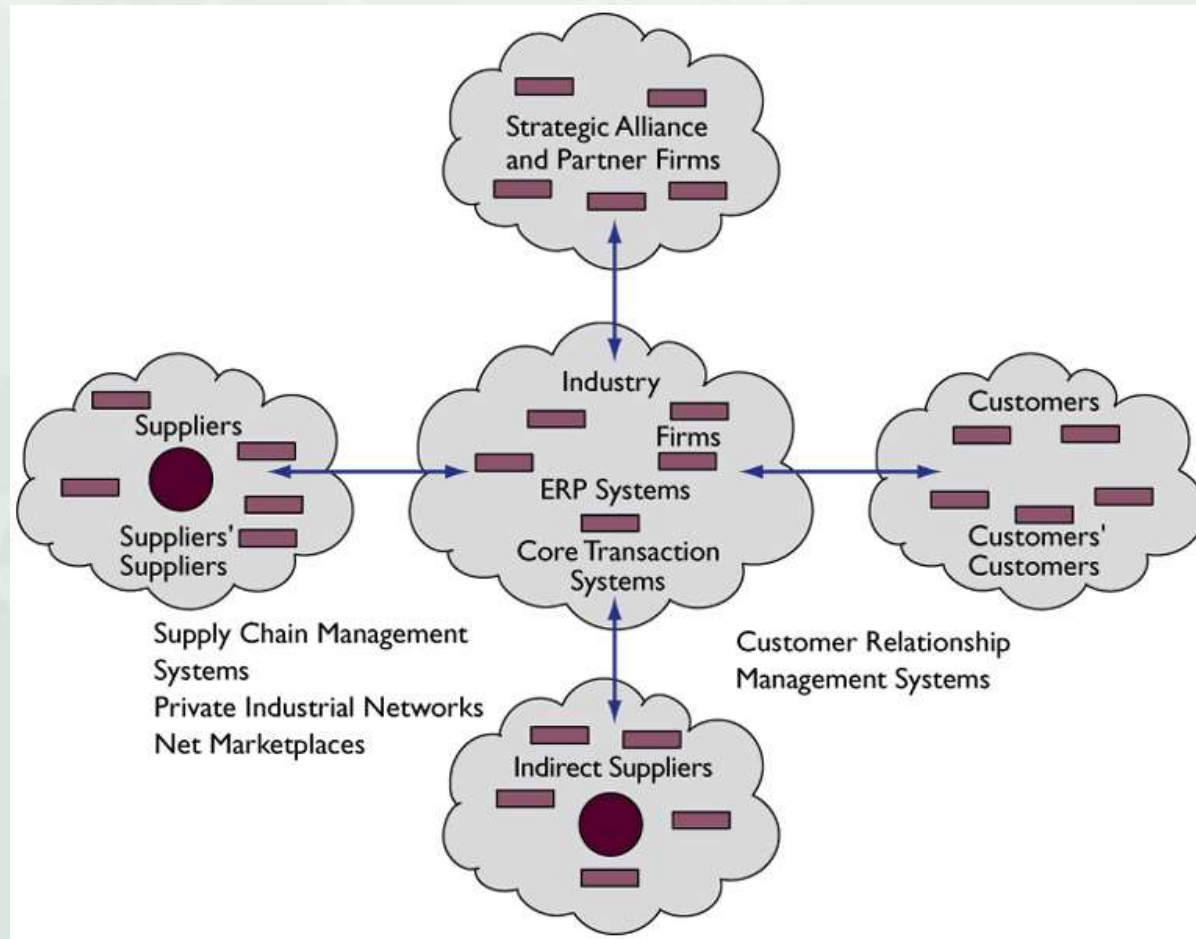


Figure 3-12

Product Differentiation:

- **Competitive strategy**
- **Creates brand loyalty by developing new and unique products and services**
- **Products and services not easily duplicated by competitors**

Focused Differentiation:

- **Competitive strategy**
- **Enables development of new market niches for specialized products or services**
- **Helps businesses compete better than competitors in the target areas**

Supply Chain Management and Efficient Customer Response System

Efficient Customer Response System:

- **Directly links consumer behavior back to distribution, production, and supply chains**

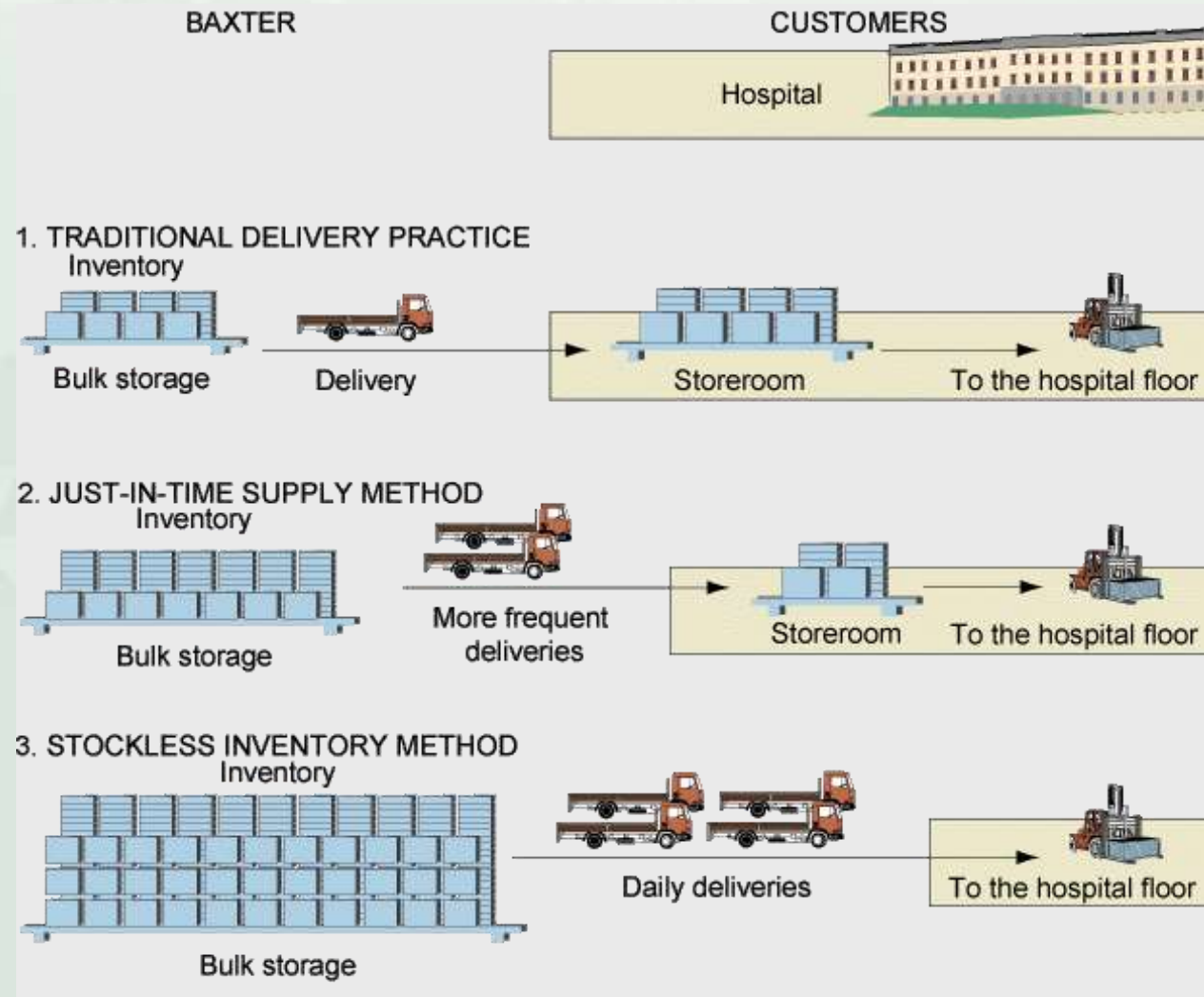
Supply Chain Management and Efficient Customer Response System

Switching costs:

- **Expense incurred by a customer or company in terms of time and expenditure of resources when changing from one supplier or system to another**

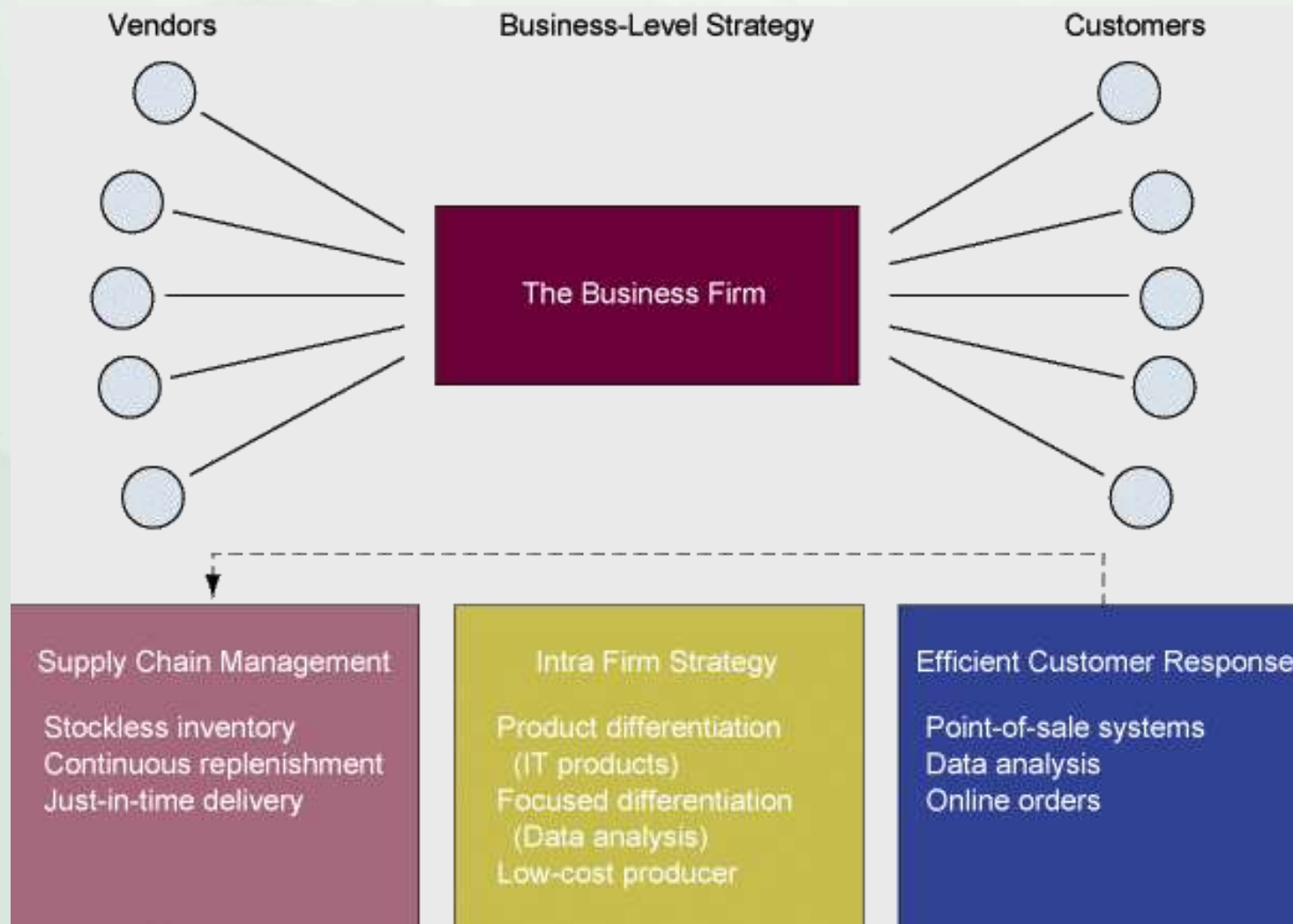
INFORMATION SYSTEMS AND BUSINESS STRATEGY

Stockless Inventory Compared to Traditional and Just-in-time Supply Methods



INFORMATION SYSTEMS AND BUSINESS STRATEGY

Enhancing Core Competencies



Core Competency:

- **Activity at which a firm excels as a world-class leader**
- **Information system encouraging the sharing of knowledge across business units enhances competency**

Information partnership:

- **Cooperative alliance formed between two or more corporations for sharing information to gain strategic advantage**
- **Help firms gain access to new customers, creating new opportunities for cross-selling and targeting products**

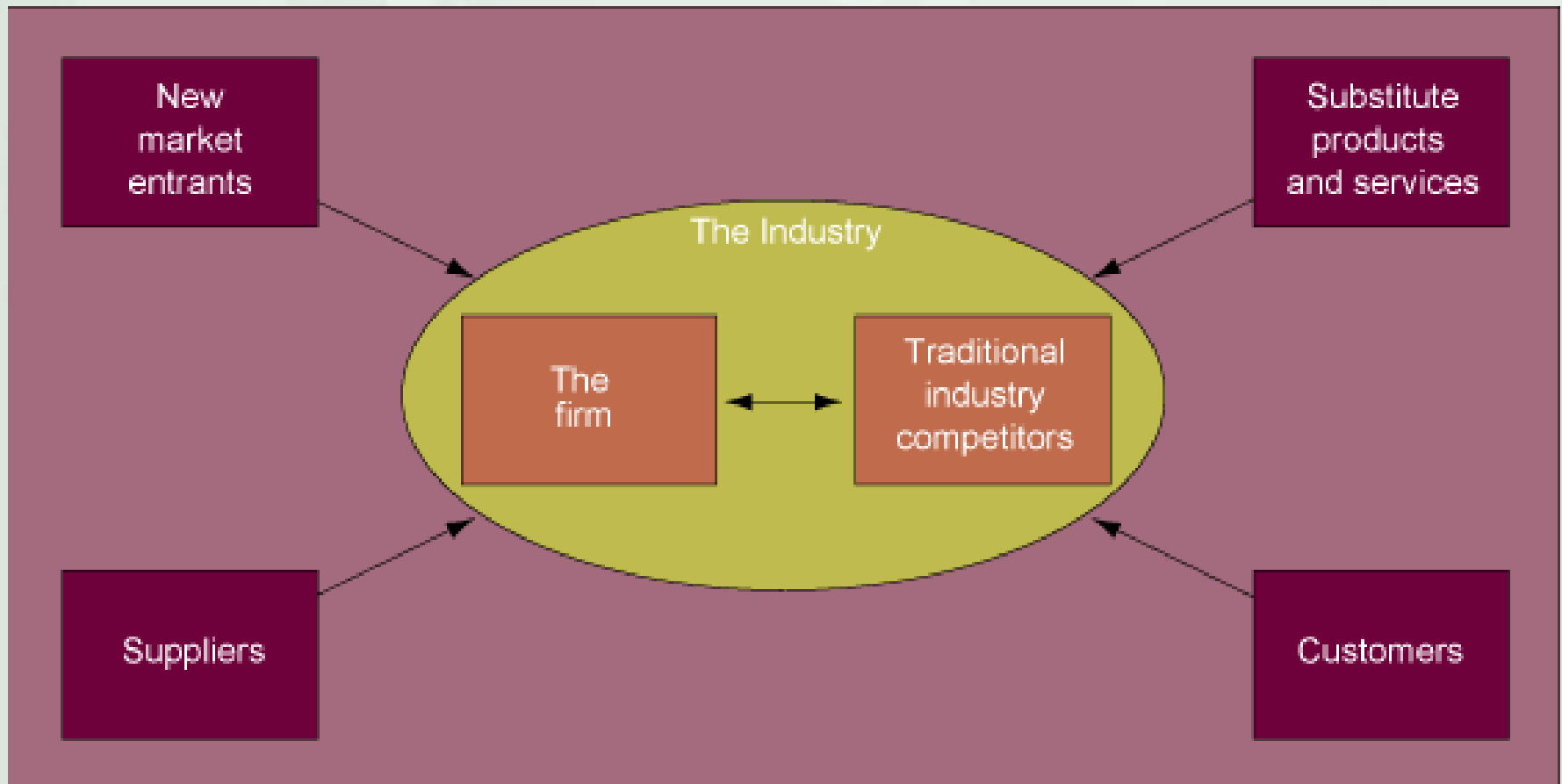
The competitive forces model:

- **Describes the interaction of external influences, specifically threats and opportunities, affecting an organization's strategy and ability to compete**



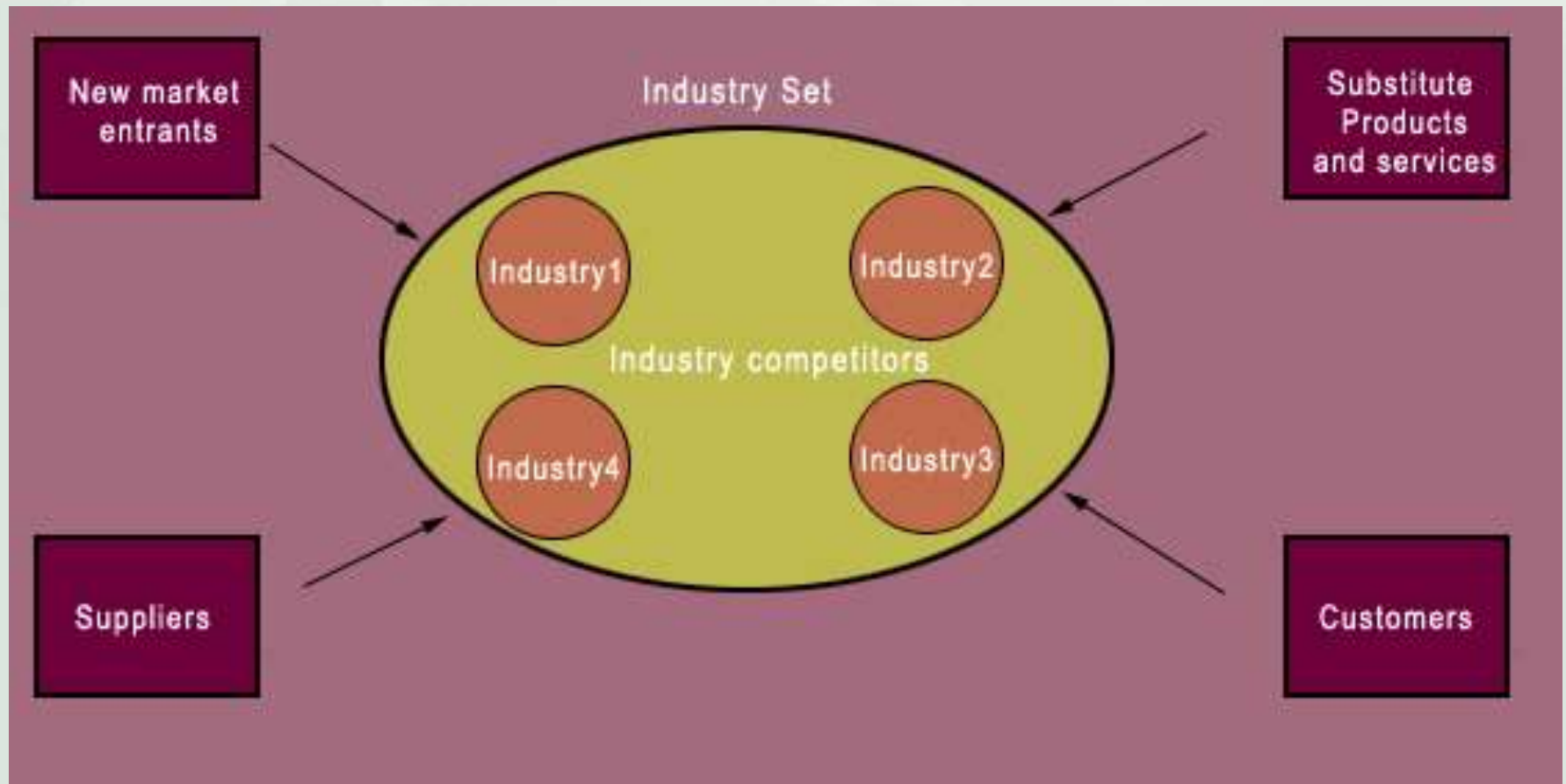
INFORMATION SYSTEMS AND BUSINESS STRATEGY

Porter's Competitive Forces Model



INFORMATION SYSTEMS AND BUSINESS STRATEGY

New Competitive Forces Model



Network Economics:

- **Model of strategic systems at the industry level**
- **Based on the concept of a network**
- **Adding another participant entails zero marginal costs but can create much larger marginal gain**

Using Systems for Competitive Advantage: Management Issues

Managing strategic transitions:

- **Movement from one level of sociotechnical system to another**
- **Required when adopting strategic systems demanding changes in the social and technical elements of an organization**

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