LEARNING OBJECTIVES

1. Which features of organizations do managers need to know about to build and use information systems successfully?

2. What is the impact of information systems on organizations?

3. How do Porter's competitive forces model, the value chain model, synergies, core competencies, and network economics help companies develop competitive strategies using information systems?

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

COMPETING ON PROCESSES

Grupo Modelo is Mexico's largest brewer of beer, with a capacity of 1.5 billion gallons annually, placing it in the top ten brewers of the world. Anheuser-Busch InBev, the largest brewer in the world, recently completed its acquisition of Grupo Modelo for a purchase price of €14 billion euros.

InBev already owned 50% of Grupo Modelo from a previous purchase. Like many firms that have grown from a collection of enterprises to a regional powerhouse and then to a global firm, Grupo Modelo needed to transform its administration so that managers could understand the complexity of the now larger firm, and compete with other global firms. In the future, Grupo Modelo would be competing with other firms on the basis of efficient business processes, and not just the taste of its beer.

- Grupo Modelo worked with the consulting firm Deloitte Consulting to implement an SAP enterprise management system, creating a single database for all the firm's business units.

- With nearly 100 different business units, from its seven breweries to convenience stores and distribution centers, the firm was hoping to integrate the disparate units and make it possible to manage them using a single software environment.

- **The first step in building an enterprise system is to identify, document, and begin to measure the firm's business processes.**

- This can take several years. Once identified, managers need to prioritize their efforts by focusing on the most important processes and build an administrative apparatus to manage them. For instance, there are thousands of business processes in large firms.

1) who will govern these processes?

2) Who will manage the risks associated with these processes?

3) And who will ensure that employees conduct business in compliance with the firm's official processes?

✓ **These are referred to as GRC challenges (for governance, risk, and compliance).**

➢ **Transforming a traditional organization into a modern competitive enterprise requires both significant cultural change and technology investment.**

- To address these challenges Grupo Modelo organized a new program to bring about the transformation of Grupo Modelo into a **_process-oriented firm_**.

- The new program, the Enterprise Model for Administration Transformation, worked with SAP enterprise software modules to build automated dashboards that would allow managers throughout the firm to visually observe how the firm's business processes were working.
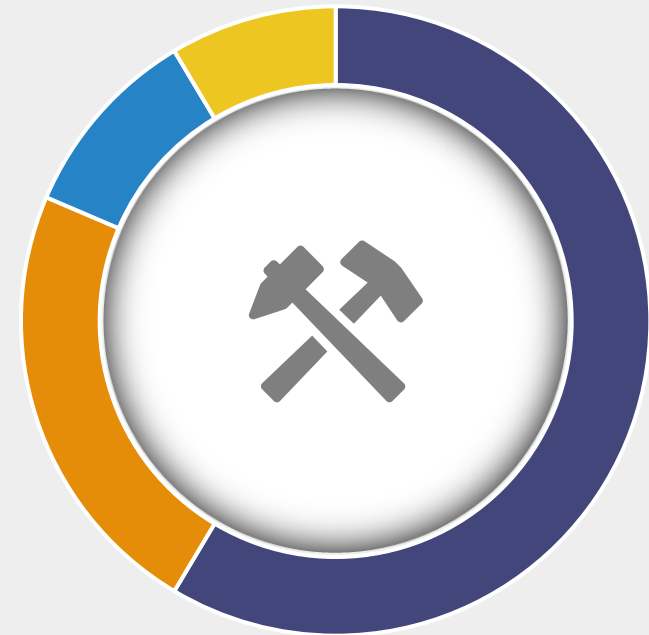
What Does The Sap's Access Control Module Do?

The Risk Management module measures and displays the change risks associated with each process, everything from supplier risk, to regulatory changes, and liability issues.

➢ **The software tracks key risk indicators and tries to estimate the potential losses and impacts of poor decisions, or adverse risk events**.

➢ **formalized security in the firm**

➢ **ensuring that only authorized employees could define business processes and access process information**

➢ **there was a proper "segregation of duties" in the firm**

→ SAP's Process Control module contains the descriptions of processes, regulations that affect the processes, and the extent to which employees comply with the processes.

→ Segregation of duties is an auditing concept that attempts to prevent fraud and errors by spreading tasks and authorizations to specific business processes among multiple users.

- The result of Grupo Modelo's enterprise systems effort is a unification of a far flung company doing business on a global scale, giving management for the first time insights into the firm that had been hidden before.

- Among the benefits cited by managers are **better security controls throughout the company**, **automating workflows**, **automated monitoring of processes and risk**, **and better decision making**.

- based on the notionthat all managers in the firm knew the correct way of performing a business process no matter where they were located.

- Grupo Modelo faced the challenge of becoming a "process oriented" firm, a firm where all the business processes were visible, measurable, and capable of being changed.

- The firm needed to identify, and then mitigate, security threats and understand the impact of other risks on the firm.

- New technology was one part of the solution : the firm built on the enterprise software of SAP by implementing process, security, and risk management modules.

- In order to raise awareness among all employees of the importance of this project, management created a program and a new office to implement and manage the transformation towards a process orientation.

- A successful implementation required that thousands of the firm's employees had to be trained in the new software and the newly defined business processes.

→ **The result is an information system that defines and makes visible on managers' desktops the important business processes of the firm.**
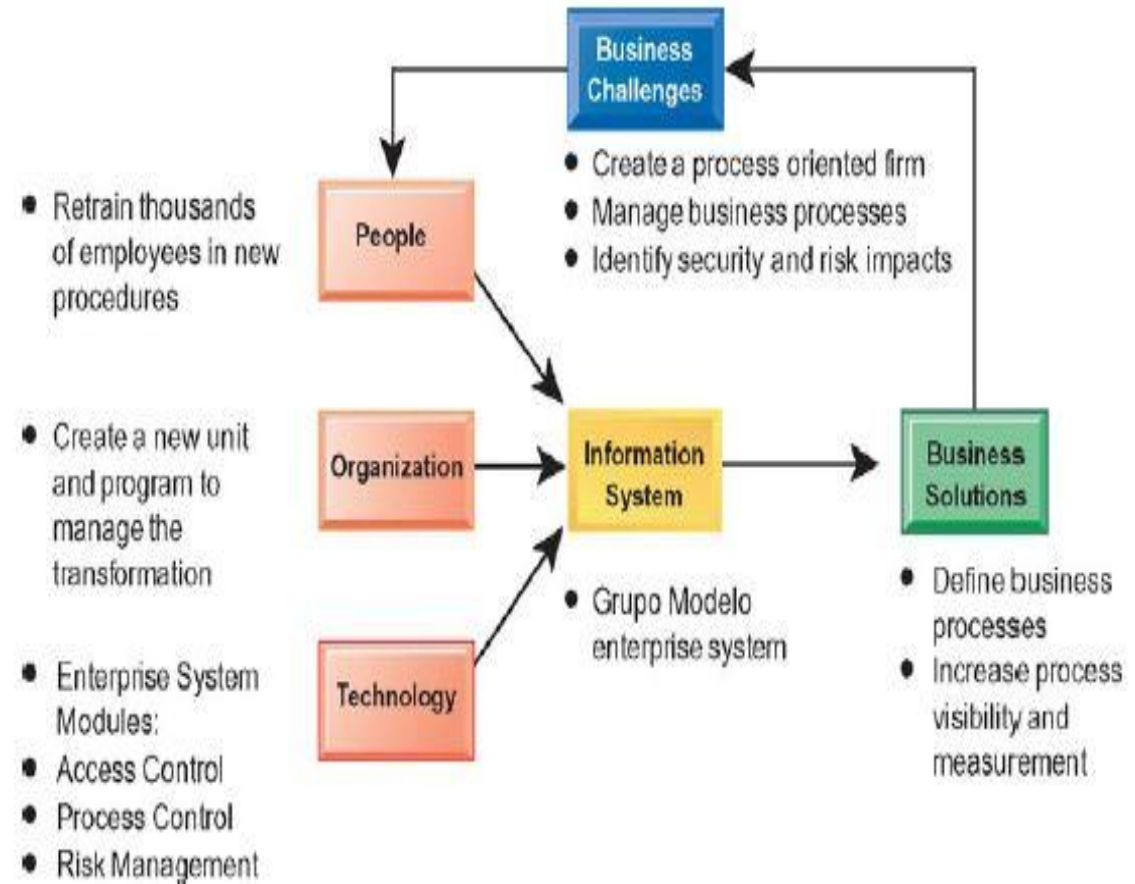
WHICH FEATURES OF ORGANIZATIONS DO MANAGERS NEED TO KNOW ABOUT TO BUILD AND USE INFORMATION SYSTEMS SUCCESSFULLY?

- 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.

- The interaction between information technology and organizations is complex and is influenced by many mediating factors, including the organization's structure, business processes, politics, culture, surrounding environment, and management decisions.

  → **You will not be able to design new systems successfully or understand existing systems without understanding your own business organization.**

✓ As a manager, you will be the one to decide which systems will be built, what they will do, and how they will be implemented.

✓ Some of the changes that occur in business firms because of new information technology (IT) investments cannot be foreseen and have results that may or may not meet your expectations.

➔ **Who would have imagined fifteen years ago, <u>for instance</u>, that e-mail and instant messaging would become a dominant form of businesscommunication and that many managers would be inundated with more than 200 e-mail messages each day?**
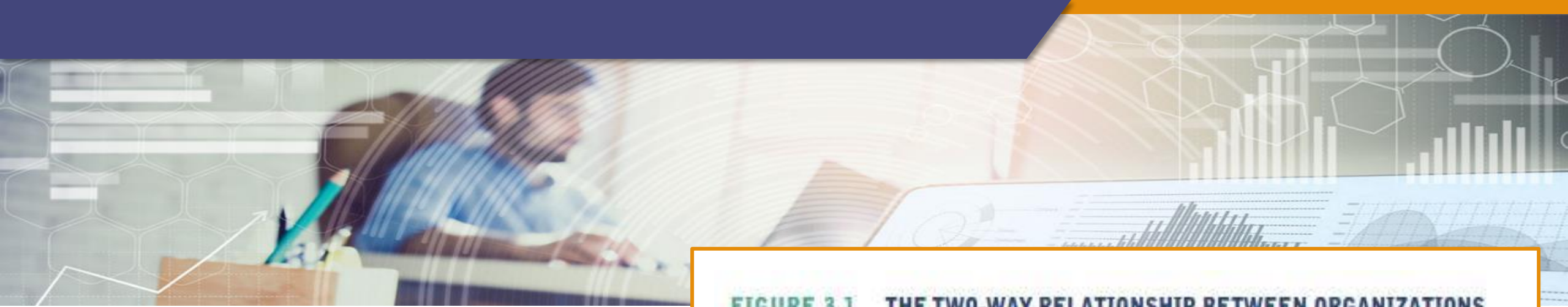
❖ This complex two-way relationship is mediated by many factors, **not the least of which are the decisions made—or not made—by managers.**

❖ Other factors mediating the relationship **include** the organizational culture, structure, politics, business processes, and environment.

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

Organizations

Mediating Factors
Environment
Culture
Structure
Business Processes
Politics
Managment Decisions

Information Technology

WHAT IS AN ORGANIZATION?

✓ An organization is a stable, formal social structure that takes resources from the environment and processes them to produce outputs.

✓ This technical definition focuses on three elements of an organization : **Capital** and **labor** are primary production factors provided by **the environment**.

✓ The organization (the firm) transforms these inputs into products and services in a productionfunction; The products and services are consumed by environments in return for supply inputs.
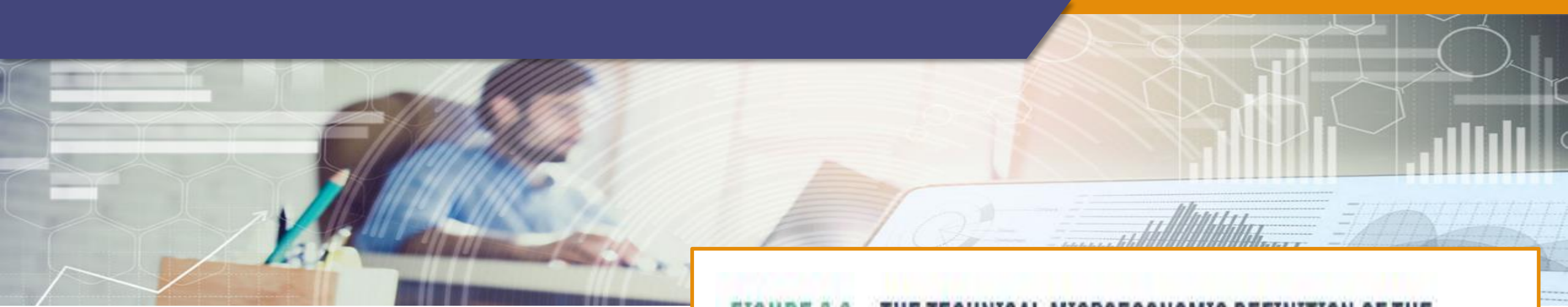
❖ In the microeconomic definition of organizations, capital and labor (the primary production factors provided by the environment) are transformed by the firm through the production process into products and services (outputs to the environment).

❖ The products and services are consumed by the environment, which supplies additional capital and labor as inputs in the feedback loop.

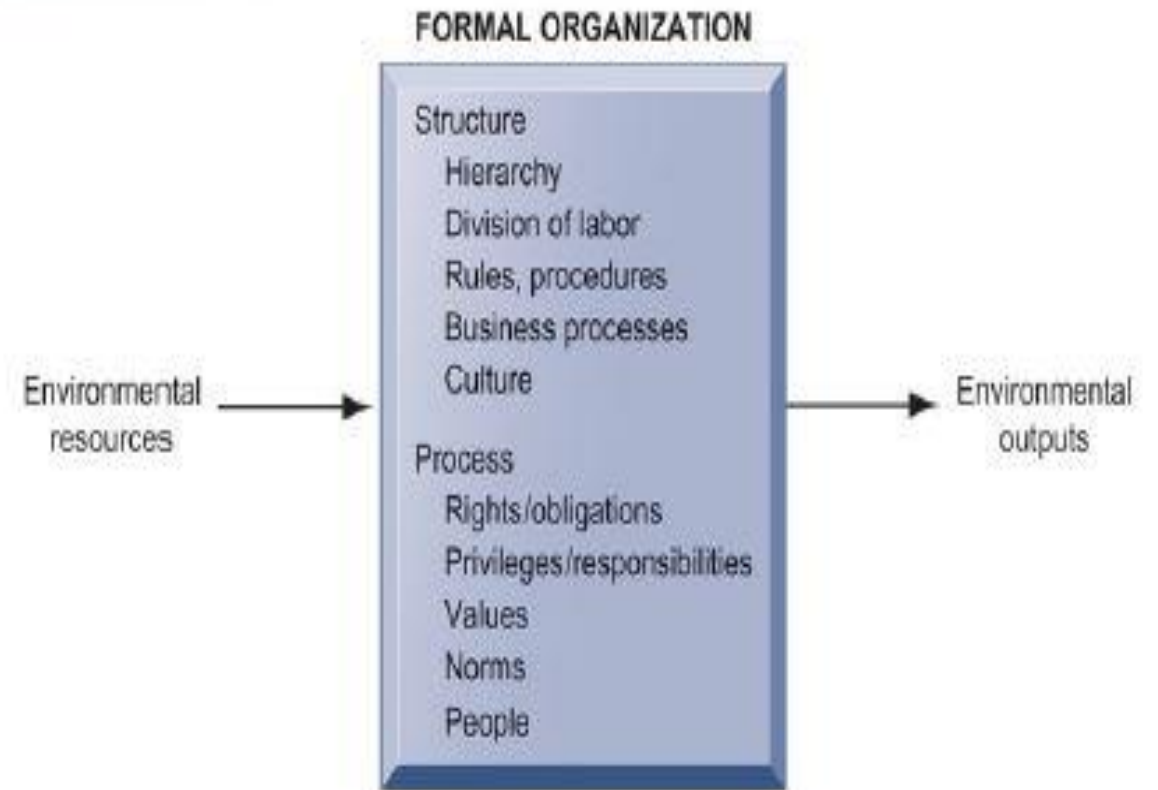FIGURE 3.2 THE TECHNICAL MICROECONOMIC DEFINITION OF THE ORGANIZATION
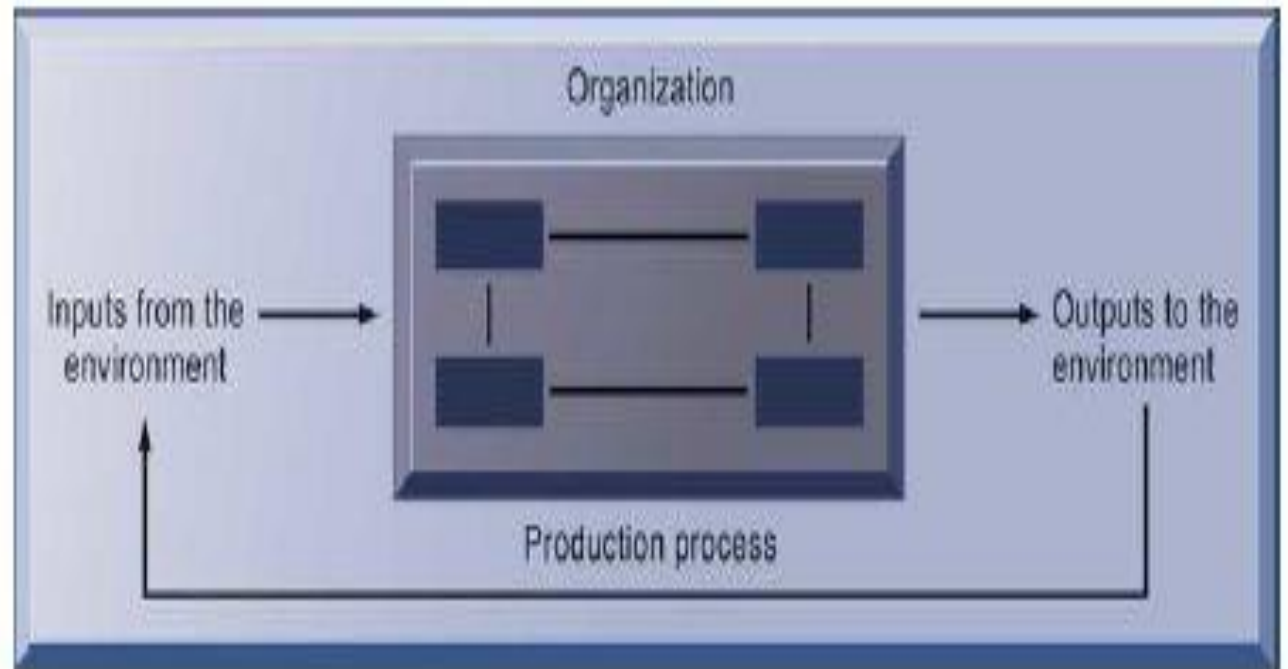
➢ **An organization is a collection of rights, privileges, obligations, and responsibilities delicately balanced over a period of time through conflict and conflict resolution.**

→ In this behavioral view of the firm, people who work in organizations develop customary ways of working; they gain attachments to existing relationships; and they make arrangements with subordinates and superiors about how work will be done, the amount of work that will be done, and under what conditions work will be done.

The Behavioral View Of Organizations Emphasizes Group Relationships, Values, And Structures.

FIGURE 3.3   THE BEHAVIORAL VIEW OF ORGANIZATIONS

FORMAL ORGANIZATION

Structure
- Hierarchy
- Division of labor
- Rules, procedures
- Business processes
- Culture

Process
- Rights/obligations
- Privileges/responsibilities
- Values
- Norms
- People

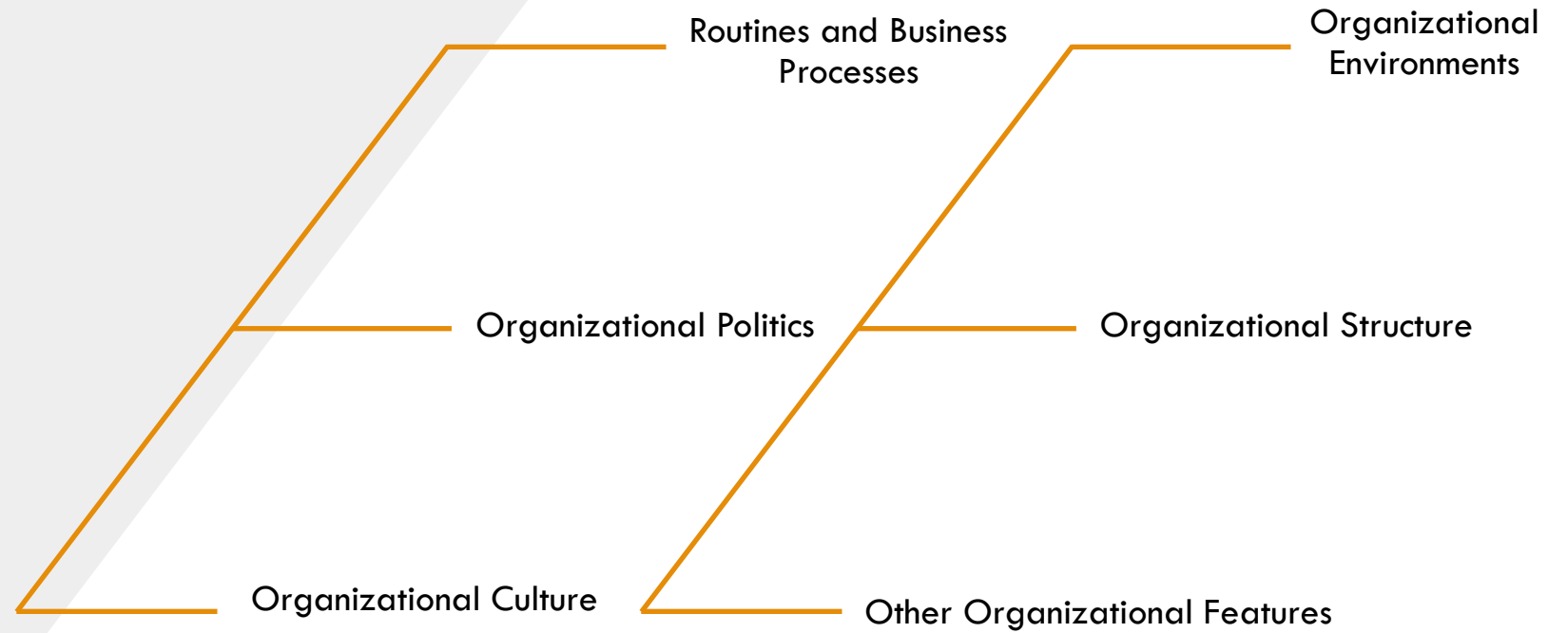Environmental resources → → Environmental outputs

➤ **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.

← The **technical** and **behavioral** definitions of organizations are not contradictory.

FEATURES OF ORGANIZATIONS

Routines and Business Processes

Organizational Environments

Organizational Politics

Organizational Structure

Organizational Culture

Other Organizational Features

Routines and Business Processes

> All organizations are composed of individual routines and behaviors, a collection of which make up a business process.

> All organizations are composed of individual routines and behaviors, a collection of which make up a business process.

FIGURE 3.4   ROUTINES, BUSINESS PROCESSES, AND FIRMS

Routines, Business Processes, and Firms

Business Process 1

Business Process 2

Individual Routines

Business Process 3

Business Process N

Business Firm
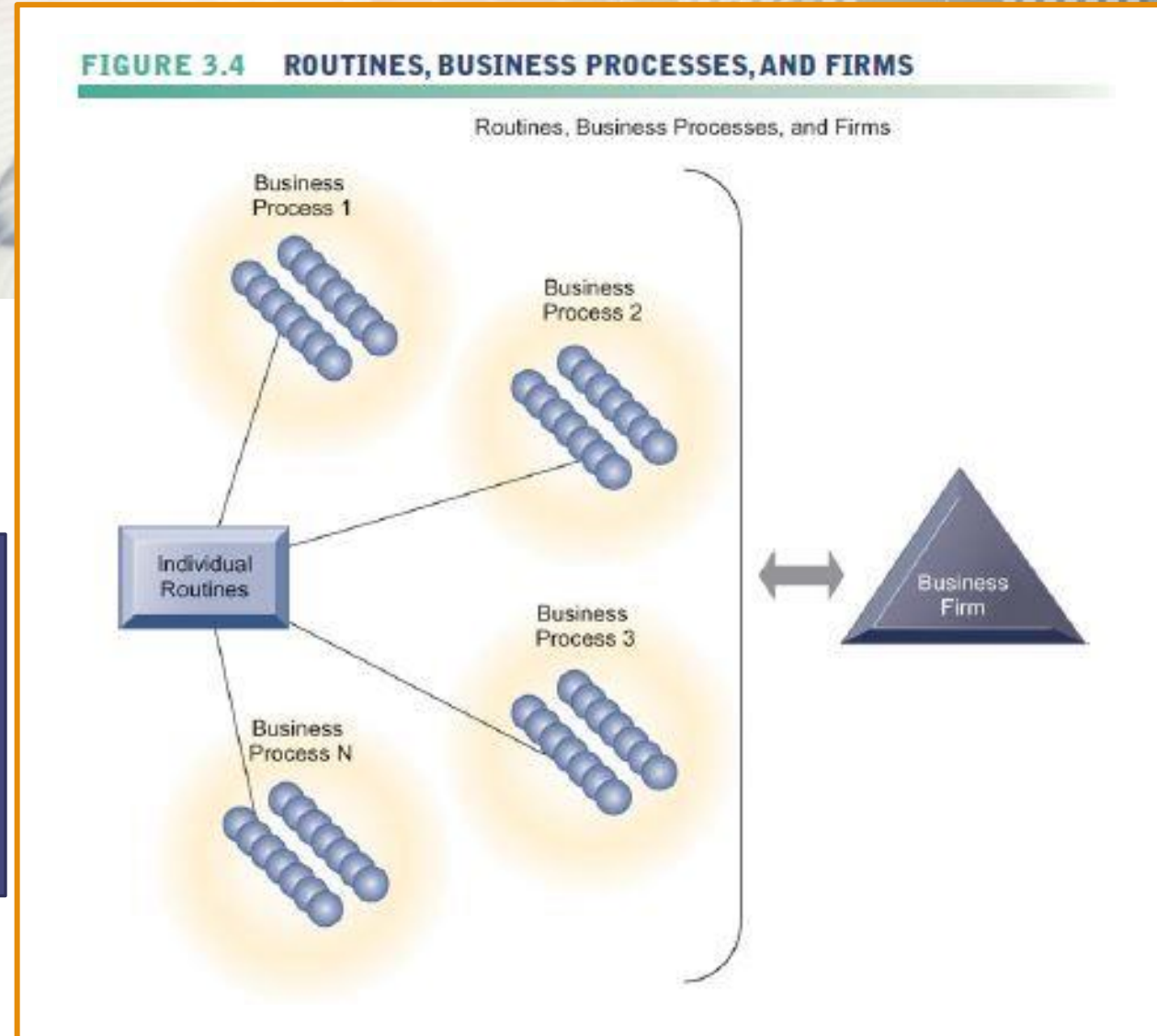
❖ Organizational Politics :

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

These differences matter to both managers and employees, and they result in political struggle for resources, competition, and conflict within every organization.

Political resistance is one of the great difficulties of bringing about organizational change—especially the development of new information systems.

❖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.

Organizational culture is a powerful unifying force that restrains political conflict and promotes common understanding, agreement on procedures, and common practices.
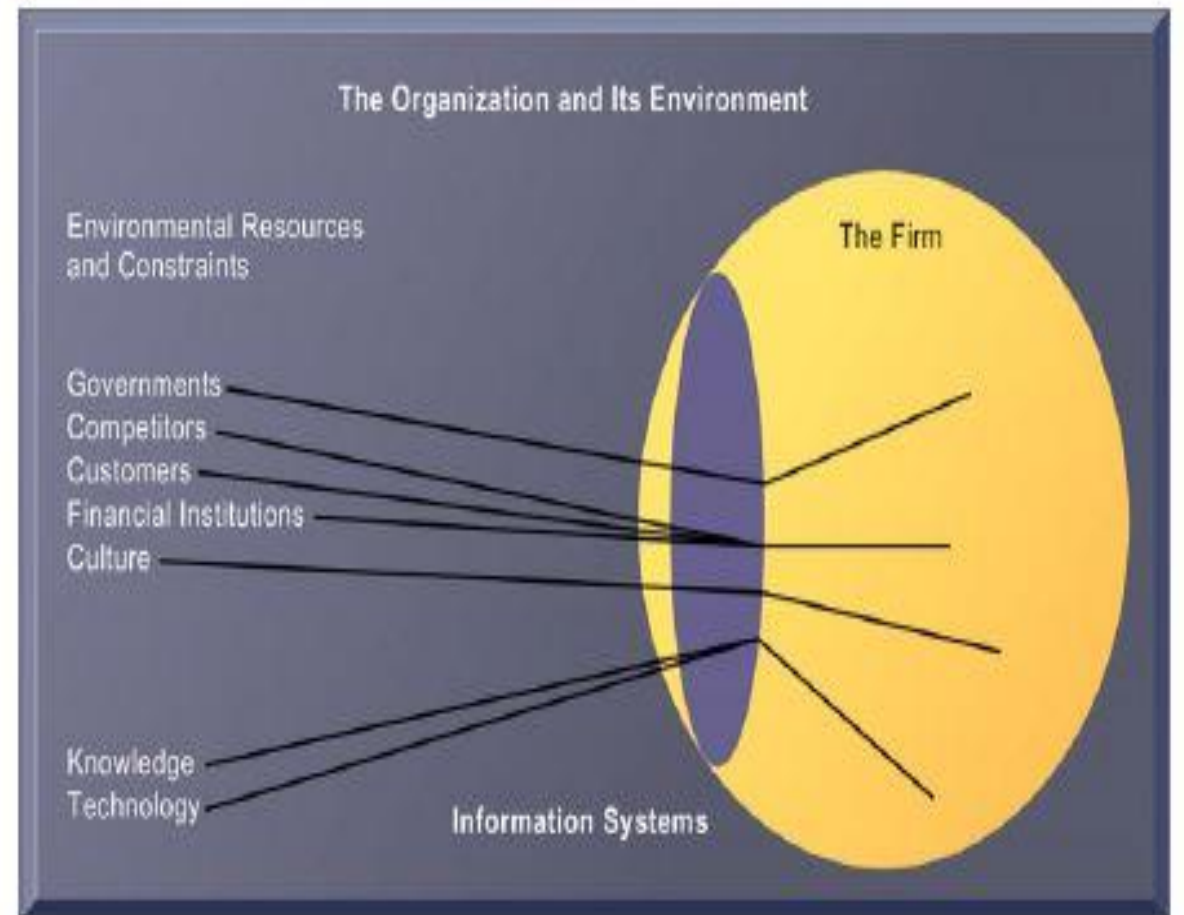
At the same time, organizational culture is a powerful restraint on change, especially technological change.

Organizational Environments

> Organizations reside in environments from which they draw resources and to which they supply goods and services.

> Organizations and environments have a reciprocal relationship.

FIGURE 3.5 ENVIRONMENTS AND ORGANIZATIONS HAVE A RECIPROCAL RELATIONSHIP

The Organization and Its Environment

Environmental Resources and Constraints

Governments
Competitors
Customers
Financial Institutions
Culture

Knowledge
Technology

The Firm

Information Systems

❖ Organizational Structures :

All organizations have a structure or shape.

➔ Mintzberg's classification, described in Table 3.2, identifies five basic kinds of organizational structure (Mintzberg, 1979). **(Next Page)**

The kind of information systems you find in a business firm — and the nature of problems with these systems — often reflects the type of organizational structure.

❖ 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.

Some organizations perform primarily routine tasks that can be reduced to formal rules that require little judgment (such as manufacturing auto parts), whereas others (such as consulting firms) work primarily with nonroutine tasks.

TABLE 3.2

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

WHAT IS THE IMPACT OF INFORMATION SYSTEMS ON ORGANIZATIONS?

1. 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.

- Hence, information technology should result in a <u>decline</u> in the number of <u>middle managers</u> and <u>clerical workers</u> as information technology substitutes for their labor.

WHAT IS THE IMPACT OF INFORMATION SYSTEMS ON ORGANIZATIONS?

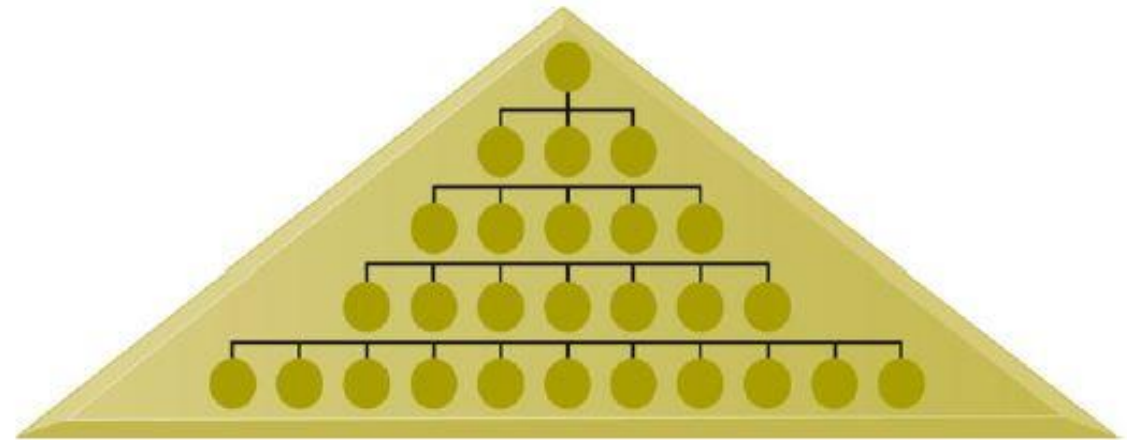2. ORGANIZATIONAL AND BEHAVIORAL IMPACTS

a. IT Flattens Organizations (Description on next page)

b. Postindustrial Organizations

- Postindustrial theories based more on history and sociology than economics also support the notion that **IT should flatten hierarchies**.

- In postindustrial societies, authority increasingly relies on **knowledge and competence**, and not merely on **formal positions**.

- Hence, the shape of organizations flattens because professional workers tend to be self-managing, and decision making should become more decentralized as knowledge and information become more widespread throughout the firm.

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.

FIGURE 3.6   FLATTENING ORGANIZATIONS

A traditional hierarchical organization with many levels of management
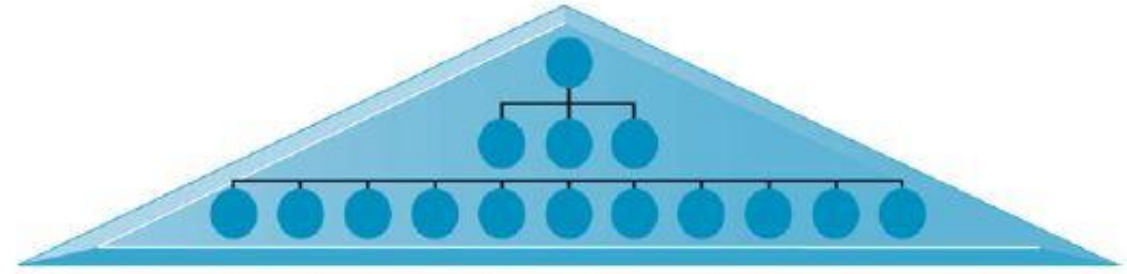
An organization that has been "flattened" by removing layers of management

IMPORTANT : 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.**

❑ **Because** information systems potentially change an organization's structure, culture, business processes, and strategy, there is often considerable resistance to them when they are introduced.

❑ Research on organizational resistance to innovation suggests that **four factors** are paramount: the nature of the IT innovation, the organization's structure, the culture of people in the organization, and the tasks impacted by the innovation (see Figure 3.7).

❑ In this model, the only way to bring about change is to change the technology, tasks, structure, and people **simultaneously.**

❑ Indeed, research on project implementation failures demonstrates that the most common reason for failure of large projects to reach their objectives is not the failure of the technology, but organizational and political resistance to change.

➢ **Therefore, as a manger involved in future IT investments, your ability to work with people and organizations is just as important as your technical awareness and knowledge.**

❖ Implementing information systems <u>has consequences for task arrangements, structures, and people</u>.

❖ According to this model, to implement change, <u>all four components must be changed **simultaneously**</u>.

FIGURE 3.7   ORGANIZATIONAL RESISTANCE TO INFORMATION SYSTEM INNOVATIONS

Implications For The Design And Understanding Of Information Systems

➢ the central organizational factors to consider when planning a new system are the following :

- 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.

- ✓ 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 3.8   PORTER'S COMPETITIVE FORCES MODEL

New market entrants

Substitute products

The Firm   Competitors

Suppliers

Customers
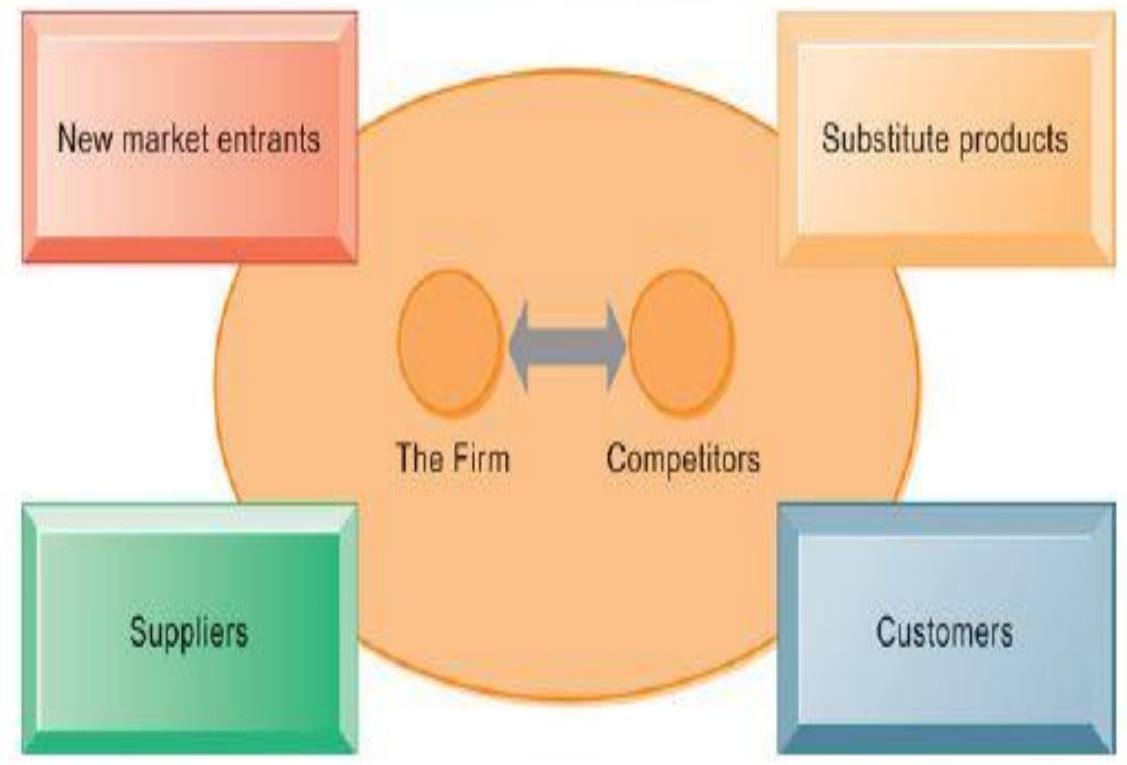
Source :

Management Information Systems Book

Fourteen Edition

Authors :

Kenneth C. Laudon

Jane P. Laudon

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➢ **Thanks for your time to Attention To Our Presentation**

Good Luck