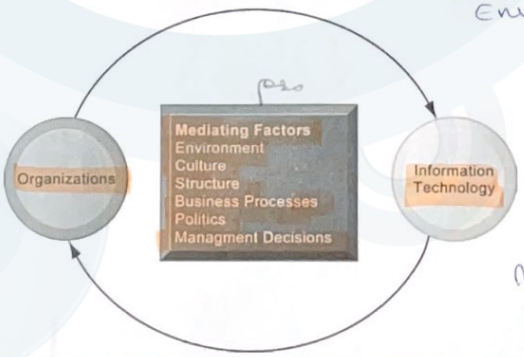
# Information System Management (MIS)

## Chapter Three:
## Information Systems Organization and Strategy

Dr. Baha'eddin Alhaj Hasan
Department of Industrial Engineering

## Information Systems and Organizations

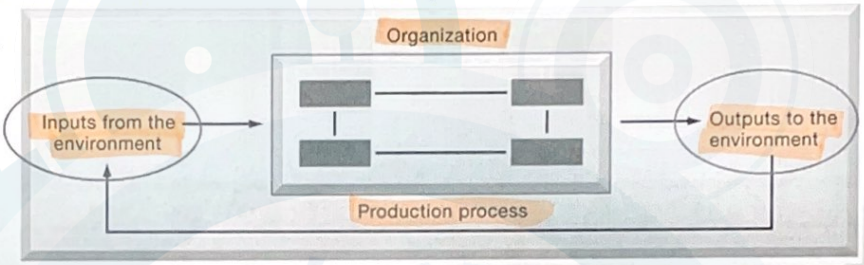
- The interaction between information technology and organizations is complex and is influenced by many mediating factors.




The Two-Way Relationship between Organizations and Information Technology

# What Is an Organization?

- **Technical definition**
  - Formal social structure that processes resource from environment to produce outputs
  - A formal legal entity with internal rules and procedures, as well as a social structure




# Figure 3.3 The Behavioral View of Organizations

**Behavioral definition**

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



# Common Features of Organizations

- All organizations have some similar "structural" features:

  ↳ should have internal rules & procedures.

- ✓ Clear division of labour
- ✓ Hierarchy ← بناء هرمي
- ✓ Explicit rules and procedures
- ✓ Impartial judgments → قانون عمل يتم تطبيقه بعدل → HR's.
- ✓ Technical qualifications for positions
- ✓ Maximum organizational efficiency → كم ممكن أحقق من هاي الـ efficiency بالوضع الراهن

كم بشفت عدد الموظفين وكفاءتهم

# Routines and Business Processes

Business firms/orgs
↓
Business Process
↓
Routines

- Routines are patterns of individual behavior.
- Business processes are a collection of routines.

لو مثلاً إعطاء القروض أو رفضها → sub process.

- Business firms are a collection of business processes.
- Business processes enable organizations to cope with all recurring expected situations.

جزء من العمليات التي يتم إنجازها داخل أي org.

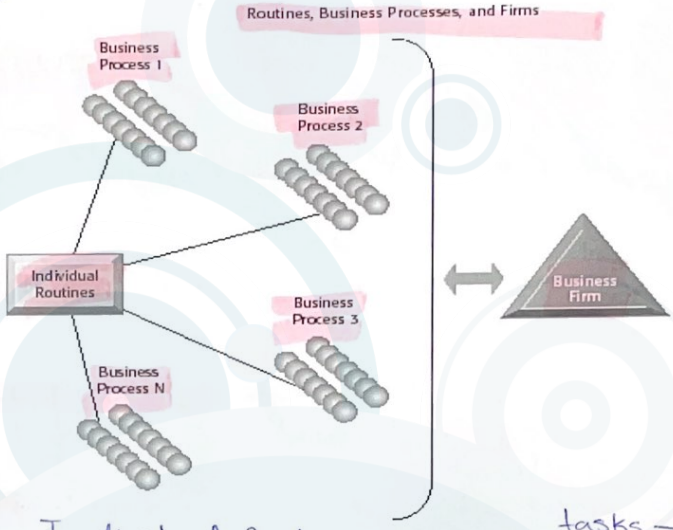
→ Can be sub Business Process or work behaviors or actions.

it's efficiency to cope w/ جميع التغيرات non-expected و expected

# Routines, Business Processes, and Firms

في عملية التدريب للاكثر
في عملية التسجيل
Individual behavior

تغيرات بال




Individual Routines.
Social structure = humans.

tasks → actions.

# Organizational Culture

what? How? where? For whom?

يعتمد بالدرجة الأولى على الـ Products

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

كثير بحدد الـ culture إلي بدي ياها

for an org to be called an organization it has to have Chique features & Aims, Goals & objectives

## Unique Features of Organizations

- Structures ✓
- Goals ✓ & Aims & Objectives.
- Constituencies → قوانين وتشريعات — Privilages. أتعهد بواجباتي وحقوقي
- Leadership styles → نوع من القيادة إلي الجميع بينطاع إلها غصباً أو رغبًا
- Tasks →
- Surrounding environments

## Organizations and Environments

الـ org بتتأثر من Socially و Culturally الـ Physical enviroment إلي حوالين
Org → People Structure.

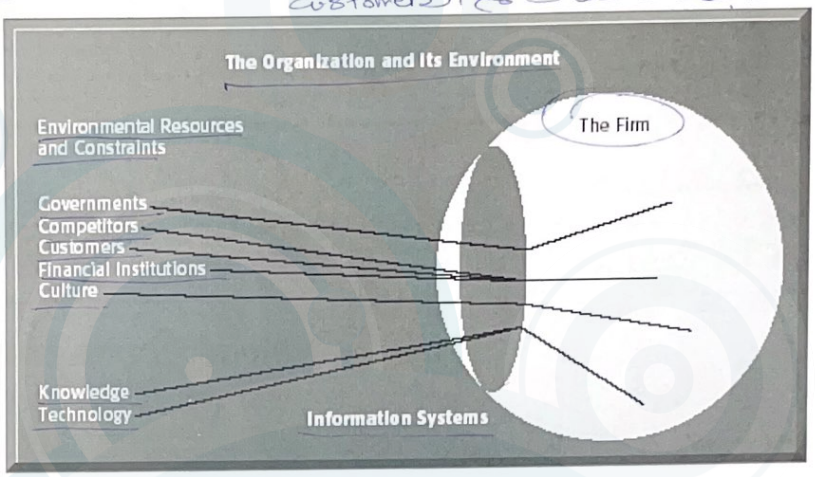
- Organizations and environments have a reciprocal relationship.

org ↔ environ.

- Organizations are open to, and dependent on, the social and physical environment.
- Organizations can influence their environments.

* رعاية طبية ورياضة أطفال و Gym * بناء مناطق وبيوت للعمال

# Organizations and Environments




Knowledge adaptation.

Mac germany doesn't serve the same menu as Jo.
Like they serve pork we don't
You can't serve beef in india because they bow to the cow

# Organizations and Environments

* Mutual effects between environ & orgs.

- 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.

## Other Differences Among Organizations

- Ultimate goals
- Different groups and constituencies
- Nature of leadership
- Tasks and technology

## Organizing the IT Function

The information systems department is responsible for maintaining:

- Hardware
- Software
- Data storage
- Networks

# Information Technology Services

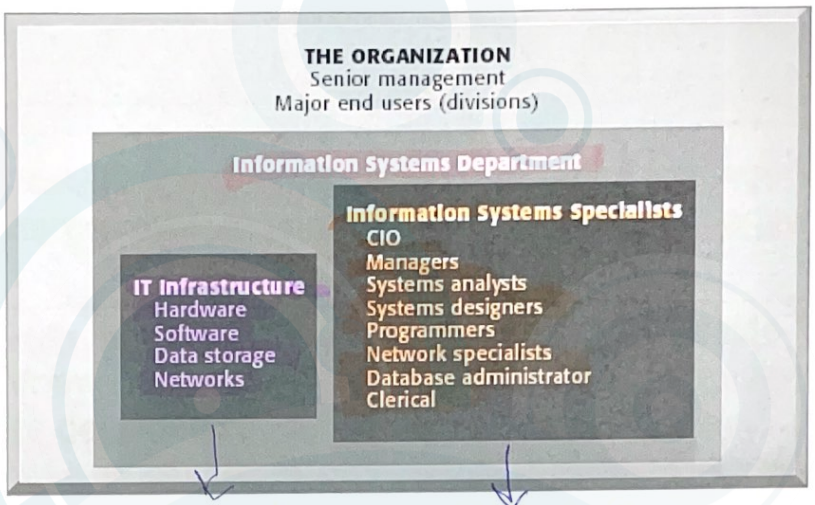



Figure 3-6

# Information Technology Services

Includes Specialists:

- Programmers: Highly trained, writers of the software instructions for computers
- Systems analysts: Translate business problems into solutions, act as liaisons between the information systems department and rest of the organization
- Information system managers: Leaders of various specialists

# Information Technology Services

Includes Specialists: (Continued)

- 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

→ مجرد عاملين زي الموظفين بالجامعة ⇐ بعرفوا يستخدموا الكمبيوتر لكن مش هيعملوا طوروا

# Economic Impacts

- IT changes both the relative costs of capital and the costs of information.

جزء أساسي من عملية الإنتاج

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

** essential factor of Production

عوامل

End of Rec
Oct 30, 2023

# Economic Impacts

- Transaction cost theory: Firms seek to economize on the cost of participating in markets (transaction costs). → تكلفة التشغيل
- IT lowers market transaction costs for firm, making it worthwhile for firms to transact with other firms rather than grow the number of employees.

IT بطرح حلول ممكن يتم من خلالها تقليل أو المحافظة على transaction costs بسيطة عن طريق إستثمار بموظفين للعمل معها مثل كموظفين أساسيين عن طريق التعاون مع other firms.

BY THE NUMBERS

## Transform How Data Drives Decisions

Dynamic Workplace Intelligence is designed to empower a businesses' digital transformation. Why is this critical for you and your customers?

**87%**

87% of companies believe that **digital transformation is a competitive opportunity.** *(CapGemini)*

**85%**

85% of enterprise decision makers feel they have **two years to make significant inroads on their digital transformation** before falling behind their competitors. *(LinkedIn)*

**88%**

88% of firms are using **third-party providers** for at least one component of their digital transformation. *(Accenture)*

**$17.3B**

Worldwide business workflow **automation and optimization market** is expected to grow to $17.3B by 2022 at 11.1% CAGR.

*(Worldwide Business Workflow Automation and Optimization Forecast, 2018-2022)*

**30%**

The biggest **competitive advantage** for 30% of organizations will be the ability to creativity **exploit digital technologies.**

*(Gartner MarketGuide for Managed Print Services in the Digital Marketplace)*

لما أشتغل عن بعد هاي نوع من أنواع الـ automation

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

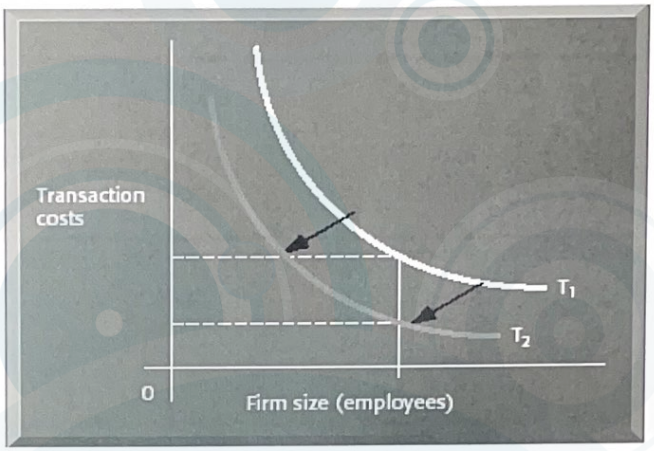



**Figure 3-7**

ITممكن تقليل الـ Transaction cost عن طريق
ممكن أختصر من الـ Firm size. وأقلل من عدد الموظفين
أزيد الكفاءة بدون عدد موظفين كبير!

## Economic Impacts

- Agency theory: Firm is nexus of contracts among self-interested parties requiring supervision.
- Firms experience agency costs (the cost of managing and supervising).
- IT can reduce agency costs, making it possible for firms to grow without adding to the costs of supervising, and without adding employees.

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

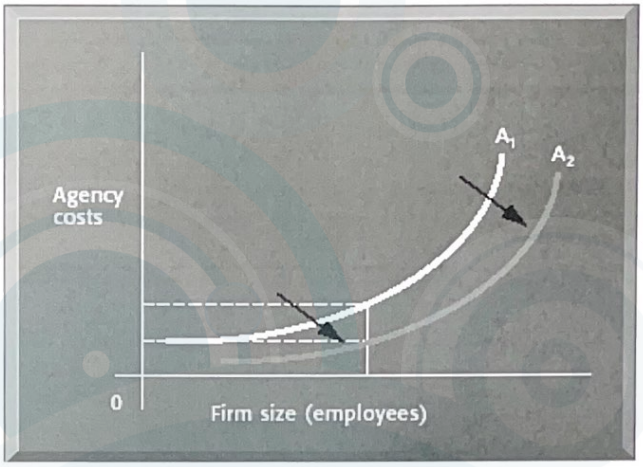



**Figure 3-8**

* كون قللت Agency cost وعدد الموظفين عن طريق الإستثمار بالـ IT

# Organizational and Behavioral Impacts

## IT Flattens Organizations:

وح أطول تقليل الـ Hierarchy وتوزيع أفضل للعمل

- Facilitates flattening of hierarchies
- Broadens the distribution of timely information
- Increases the speed of decision making
- Empowers lower-level employees to make decisions without supervision and increase management efficiency
- Management span of control (the number of employees supervised by each manager) will also grow.

معلومات سريعة من الموظف

## Flattening Organizations

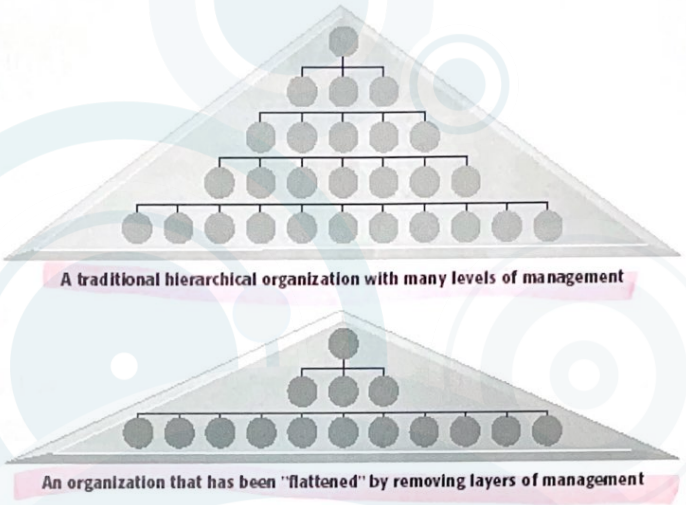



Figure 3-9

## Postindustrial Organizations and Virtual Firms

### Postindustrial Organizations:

- Authority increasingly relies on knowledge and competence.
- Information technology encourages task force-networked organizations.

# Postindustrial Organizations and Virtual Firms

Virtual Firms: → شغلها بتم عبر الـInternet كلياً أو جزئياً

- Use networks to link people, assets, and ideas
- Can ally with suppliers, customers to create and distribute new products and services
- Not limited to traditional organizational boundaries or physical locations

بتوصلني للعالمية

# How Information Systems Impact Organizations and Business Firms

Increasing Flexibility of Organizations:

قدرة الشركة على التكيف مع التغييرات

- Information systems give both large and small organizations additional flexibility to overcome the limitations posed by their size.
- Small organizations use information systems to acquire some of the muscle and reach of larger organizations.

الـ Virtual part تكلفته قليلة وممكن يضاعف من قدرة الـ Firm

# How Information Systems Impact Organizations and Business Firms

① Increasing Flexibility of Organizations: (Continued)

رشاقة والقدرة على رد الفعل السريع

- Large organizations use information technology to achieve some of the agility and responsiveness of small organizations. تتغلب على البيروقراطية Beaurocracy

- Customization and personalization: IT makes it possible to tailor products and services to individuals.

عن طريق الـ Websites ممكن
To customize products depending on the orders.

# How Information Systems Impact Organizations and Business Firms

② Understanding Organizational Resistance to Change:

ممكن يكون في مقاومة للتغيير

- Information systems become bound up in organizational politics because they influence access to a key resource.

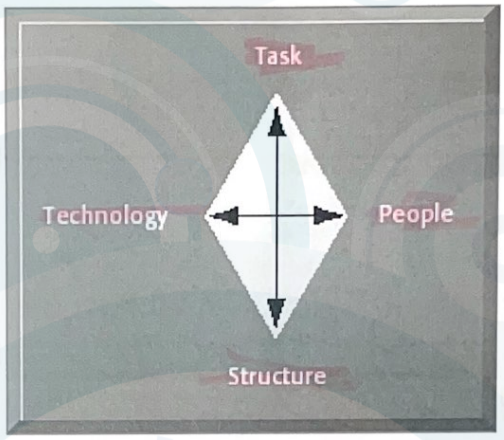
- Information systems potentially change an organization's structure, culture, politics, and work.

- Most common reason for failure of large projects is due to organizational and political resistance to change.

① ②

# How Information Systems Impact Organizations and Business Firms

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



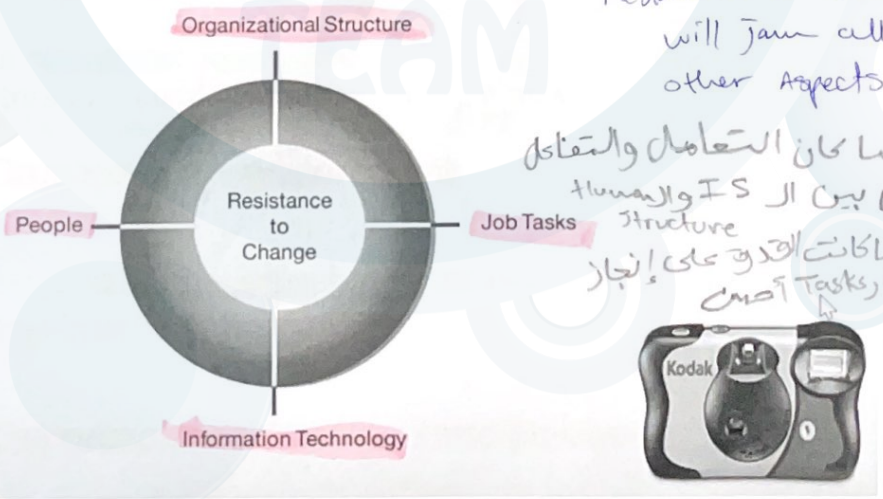

هل إدارة الشركة مع التغيير أو لا؟
Kodak - ما واجهت التغييرات وخسرت عشان الإدارة ما تخسرت

**Source:** Reprinted by permission of James G. March.

**Figure 3-10**


# How Information Systems Impact Organizations and Business Firms


تغيير الإدارة والقيادة




Resistance to changes will jam all the other Aspects.

كل ما كان التعامل والتفاعل سلس بين الـ IS والـ Human Structure كل ما كانت القدرة على إنجاز الـ Tasks أحسن

# How Information Systems Impact Organizations and Business Firms

## The Internet and Organizations

- The Internet increases the accessibility, storage, distribution of information and knowledge for business firms.
- The Internet lowers the transaction and agency costs of firms.
- Businesses are rapidly rebuilding their key business processes based on Internet technology. Example: online order entry, customer service, and fulfillment of orders.

# The Impact of IT on Management Decision Making

## Implications for the Design and Understanding of Information Systems

### Factors to consider while planning a new system:

- Organizational environment
- Organizational structure, hierarchy, specialization, routines, and business processes
- The organization's culture and politics

# The Impact of IT on Management Decision Making

- The type of organization and its style of leadership
- 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

★ طبيعة تأثير الIT على management Decision Making.

* MIS is an interface between business & IT

★ كفاءة العنصر الإنساني بتحدد كفاءة الـ sys.

# The Impact of IT on Management Decision Making

Characteristics to be kept in mind while Designing Systems:

★ أي sys بيعتمد على طبيعة الناس إلي رح تحلل المعلومات

- Flexibility and multiple options for handling data and evaluating information
- Capability to support a variety of management styles, skills, and knowledge
- Capability to keep track of many alternatives and consequences
- Sensitivity to the organization's bureaucratic and political requirements

★ على أي مستوى بدي أساعد في إتخاذ القرار ؟

أي IS لازم يكون عبارة عن قرون باستشعار الـ org ← يطرح Alternatives ويعطي Consequences

End of Nov 1 Lec.

# The Impact of IT on Management Decision Making

Business strategy decisions of the firms will determine the following:

- The products and services a firm produces
- The industries in which the firm competes
- Competitors, suppliers, and customers of the firm
- Long-term goals of the firm

Start Rec lec
Nov 5/6, 2023

# Information Systems and Business Strategy

## Business-Level Strategy: The Value Chain Model

The most common generic business level strategies are:

أهداف الـ Business
1. أقل يكون سعري
2. أنوع البضائع غيري
3. القدرة والـ flexibility كي تغير المنافسة

أختص بنوع أو جزء إلي بعمله

- Become the low-cost producer
- Differentiate your product from competitors' products
- Change the scope of competition by enlarging the market or narrowing it to a specialized niche

enlarge or narrow your market or niche.

الهدف أقل تكاليف الإنتاج وزيادة الـ Profit margin

# Information Systems and Business Strategy

**Value Chain Model:**

- Highlights the primary or support activities that add business value

- A good tool for understanding strategy at the business firm level

**Primary Activities:**

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

Ex: Marketing & Sales

# Information Systems and Business Strategy

**Support Activities:**

- Make the delivery of primary activities possible

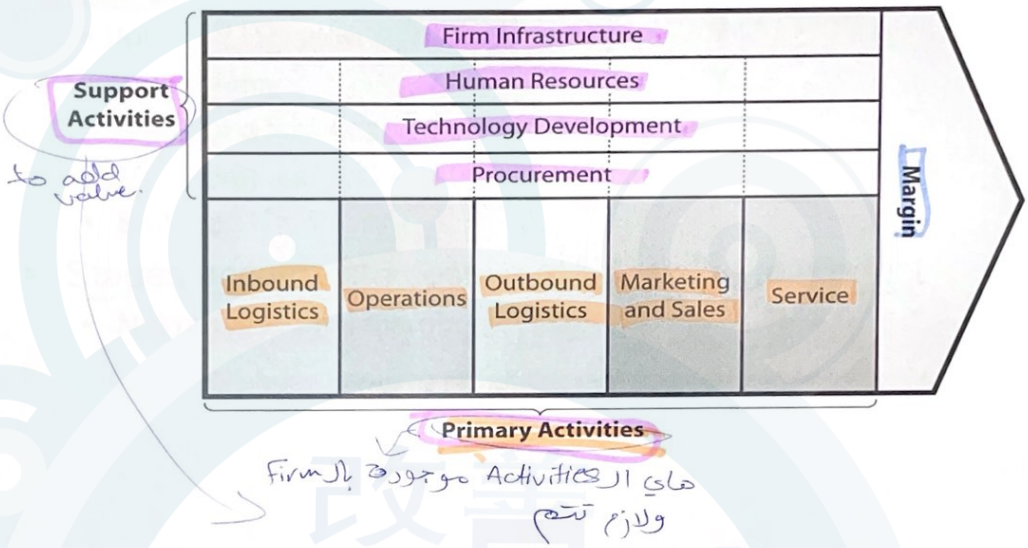
- Consist of the organization's infrastructure, human resources, technology, and procurement

HR dept

1 infrastructure
2 Human Resources
3. technology
4. Procurement

# Value Chain

Activities تساعد على إتمام ال
وزيادة ال Profit Margin.




هاي ال Activities موجودة بال Firm
ولازم تتم

# What Is a Value Chain?

- Network of value-creating activities
- Primary activities
- Support activities
- Linkages

## Primary Activities

- Five activities
  - Inbound logistics
  - Operations
  - Outbound logistics
  - Marketing and sales
  - Service
- Stages accumulate costs and add value to product
  - Net result is total margin of chain

## Support Activities

- Four activities
  - Firm infrastructure
  - Human resources
  - Technological development
  - Procurement
- Contribute indirectly to production, sale, and service
- Add value and costs
  - Produce margin that is difficult to calculate

## Linkages →

العمليات
cross functional/ between different activities
Primary or support.

* Linkages للتحسين وصل
Cross functional بين الأقسام
Business Process

- Interactions across value activities
- Sources of efficiencies
- Readily supported by information systems
- Reduce inventory costs

يعزز ← the flow of the value-added products.

## Benefits of value chains

- Support decisions for various business activities.
- Diagnose points of ineffectiveness for corrective action.
- Understand linkages and dependencies between different activities and areas in the business. For example, issues in human resources management and technology can permeate nearly all business activities.
- Optimize activities to maximize output and minimize organizational expenses.
- Potentially create a cost advantage over competitors.
- Understand core competencies and areas of improvement.

# Information Systems and Business Strategy

## The Firm Value Chain and the Industry Value Chain

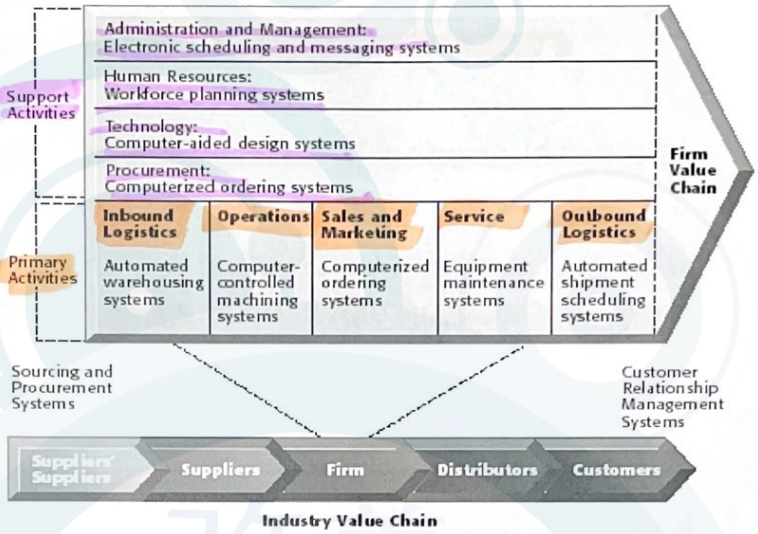



**Figure 3-11**

# Information Systems and Business Strategy

Strategic question:

- How can IT be used at each point in the value chain to lower costs, differentiate products, and change the scope of competition?

إلى حد الأهداف الثلاثة
إلى حكينا عنها