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MIDOCEAN  
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# Principles of Management Information Systems

## MGM331

**Lecture 2**  
**Information Systems in Organizations**

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# Chapter 2

- Information systems (IS) continue to have a major impact on the role of workers and on how organizations as a whole function.
- While information systems were once used primarily to automate manual processes, today they are transforming the nature of work itself and, in many cases, the nature of the products and services offered.
- Organizational leaders have an essential role in preparing the organization to not just accept but to embrace the changes necessary for success.
- In this chapter you will explore the benefits and issues associated with the use of information systems in today's organizations around the globe.

# Principles

- Organizations are open systems that affect and are affected by their surrounding environment.
- Positive change is a key ingredient for any successful organization.
- Information systems must be implemented in such a manner that they are accepted and work well within the context of an organization and support its fundamental business goals and strategies.
- The information system worker functions at the intersection of business and technology and designs, builds, and implements solutions that allow organizations to effectively leverage information technology systems.

# Learning Objectives

- Sketch a general model of an organization showing how information systems support and work within the automated portions of an organizational process.
- Define the term value chain and identify several examples within a typical manufacturing or service organization.
- Define the term innovation - reengineering and continuous improvement and explain how they are different.
- Discuss the pros and cons of outsourcing, offshoring, and downsizing.

# Learning Objectives

- Define the term “the soft side of implementing change,” and explain why it is a critical factor in the successful adoption of any major change.
- Identify and briefly describe change models that can be used to increase the chances of successfully introducing a new information system into an organization.

## **Chapter 2 Information Systems In Organizations**

Organizations And  
Information Systems

Value Chain

Supply Chain

Supply Chain Management

Virtual Teams and Collaborative Work

Change In The  
Organization

Innovation

Reengineering

Continuous Improvement

Outsourcing

Offshoring

Downsizing

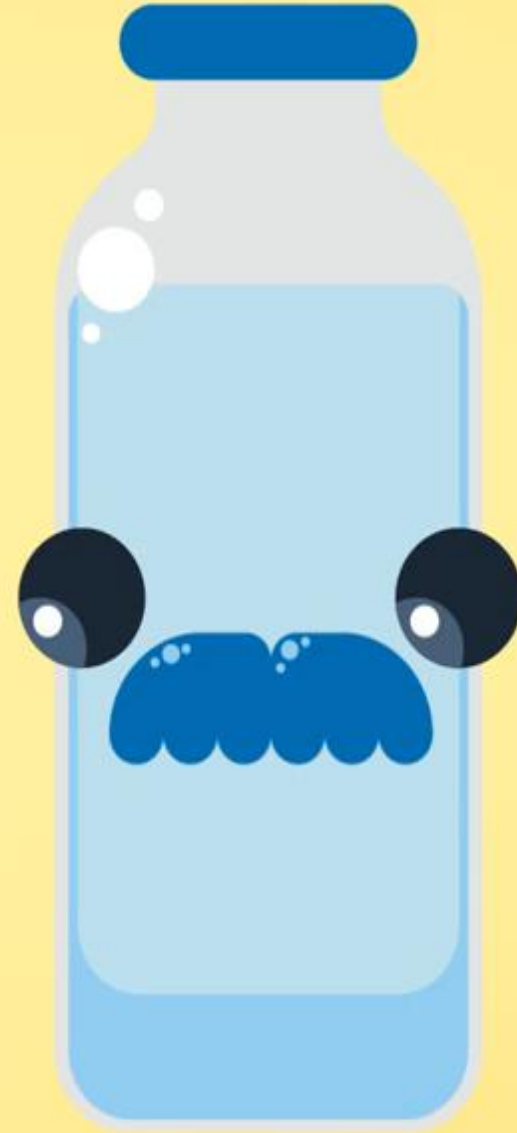
Organizational Culture  
And Change

Soft Side Of Implementing Change

Lewin's Change Model

# Organizations and Information Systems

- An **organization** is a group of people that is structured and managed to meet its mission or set of group goals.
- “Structured” means that there are defined relationships between members of the organization and their various activities, and that processes are defined that assign roles, responsibilities, and authority to complete the various activities.
- In many cases, the processes are automated using well-defined information systems. Organizations are considered to be open systems, meaning that they affect and are affected by their surrounding environment.



# Organizations and Information Systems

- The *value chain* is a series (chain) of activities that an organization performs to transform inputs into outputs in such a way that the value of the input is increased.
- An organization may have many value chains, and different organizations in different industries will have different value chains.

# Organizations and Information Systems

- In a manufacturing organization, the supply chain is a key value chain whose primary activities include logistics, marketing, sales, and service.
- These primary activities are directly concerned with the creation and/or delivery of the product or service.
- The supply chain also includes secondary activities, including technology infrastructure, human resource management, accounting and finance.



# Organizations and Information Systems

- *Supply chain management* (SCM) encompasses all the activities required to get the right product into the right consumer's hands in the right quantity at the right time and at the right cost from the identification of suppliers and the acquisition of raw materials through manufacture and customer delivery.
- The organizations that compose the supply chain are “linked” together through both physical flows and information flows.
- Physical flows involve the transformation, movement, and storage of supplies and raw materials.
- Information flows allow participants in the supply chain to communicate their plans, coordinate their work, and manage the efficient flow of goods and material up and down the supply chain

# Organizations and Information Systems

- Organizations are constantly fine-tuning and adjusting their supply chain.
- For example, many companies are increasing their use of free shipping to customers in hopes of increasing sales and profits.
- Amazon posed a new drive-up store concept that will allow consumers to order grocery items online and then schedule a pickup at a dedicated facility.
- Many organizations are also outsourcing much of their outbound distribution activities, including the storage and shipping of finished products to customers and the return of items from customers.

# Organizations and Information Systems

- What role do information systems play in supply chain management activities and other organizational activities?
- A traditional view of information systems holds that organizations use them to control and monitor processes and to ensure effectiveness and efficiency.
- In this view, information systems are external to the supply chain management process and serve to monitor or control it.

# Organizations and Information Systems

- A more modern view, however, holds that information systems are often so intimately involved that they are *part of* the process itself.
- From this perspective, the information system plays an integral role in the process, whether providing input, aiding product transformation, or producing output.

# Virtual Teams and Collaborative Work



# Virtual Teams and Collaborative Work

- A *virtual team* is a group of individuals whose members are distributed geographically, but who collaborate and complete work through the use of information systems.
- One benefit of virtual teams is that they enable organizations to enlist the best people in different geographical regions to solve important organizational problems.
- Another benefit is that they provide the ability to staff a team with people who have a range of experience and knowledge that stems from a variety of professional experiences and cultural backgrounds.

# Virtual Teams and Collaborative Work

- Often, it is difficult for members of a large virtual organization to meet at a time that is convenient for everyone on the team due to the time zone differences in their various geographic locations.
- Virtual team members may need to continually monitor their email, instant messages and be prepared to participate in meeting on short notice.
- Virtual team members must be prepared to do work anywhere, anytime. As a result, members of a virtual team may feel that their work day never ends.

# Virtual Teams and Collaborative Work

- Communications are greatly improved when participants can see one another and pick up facial expressions and body language.
- Thus, even with sophisticated information system tools, virtual teams still benefit from occasional face-to-face meetings.
- This is particularly true at the beginning of new projects when the team is just forming and defining goals, roles, and expectations on how its members will work together.

# Virtual Teams and Collaborative Work

- Virtual organization members must also be sensitive to the different cultures and practices of the various team members to avoid misunderstandings that can destroy team chemistry.
- It helps if virtual team members take the time to get to know one another by sharing experiences and personal background information.

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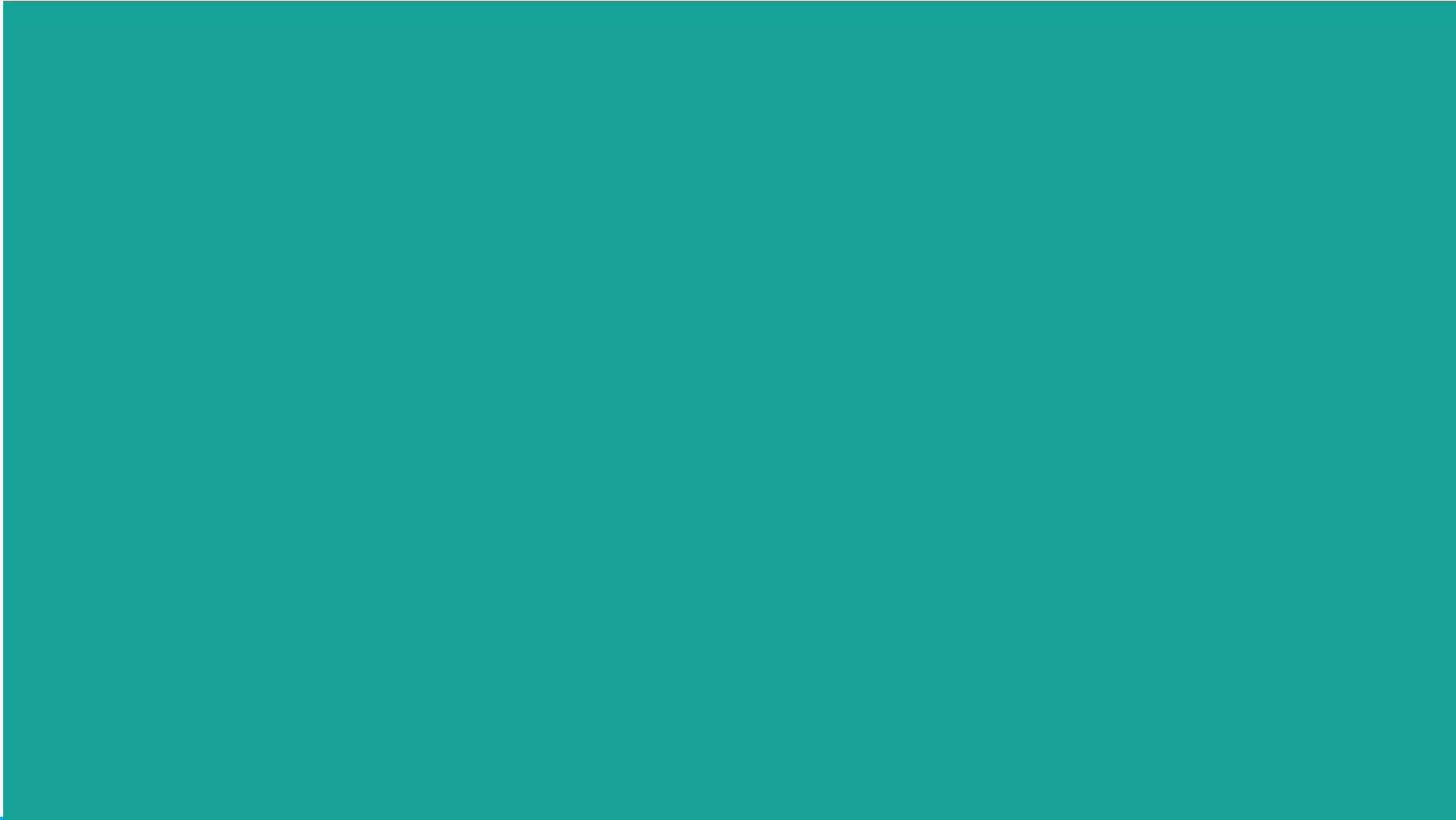
Soft Side Of Implementing Change

Lewin's Change Model

# Change in the Organization

- Your organization's current products, services, and ways of accomplishing work are doomed to obsolescence.
- Fail to change and your competition will take away your customers and your profits.
- Positive change is a key ingredient for any successful organization.
- This section will discuss important topics related to change, including innovation, reengineering, continuous improvement, outsourcing, offshoring, and downsizing.

# Innovation



# Change in the Organization

## Innovation

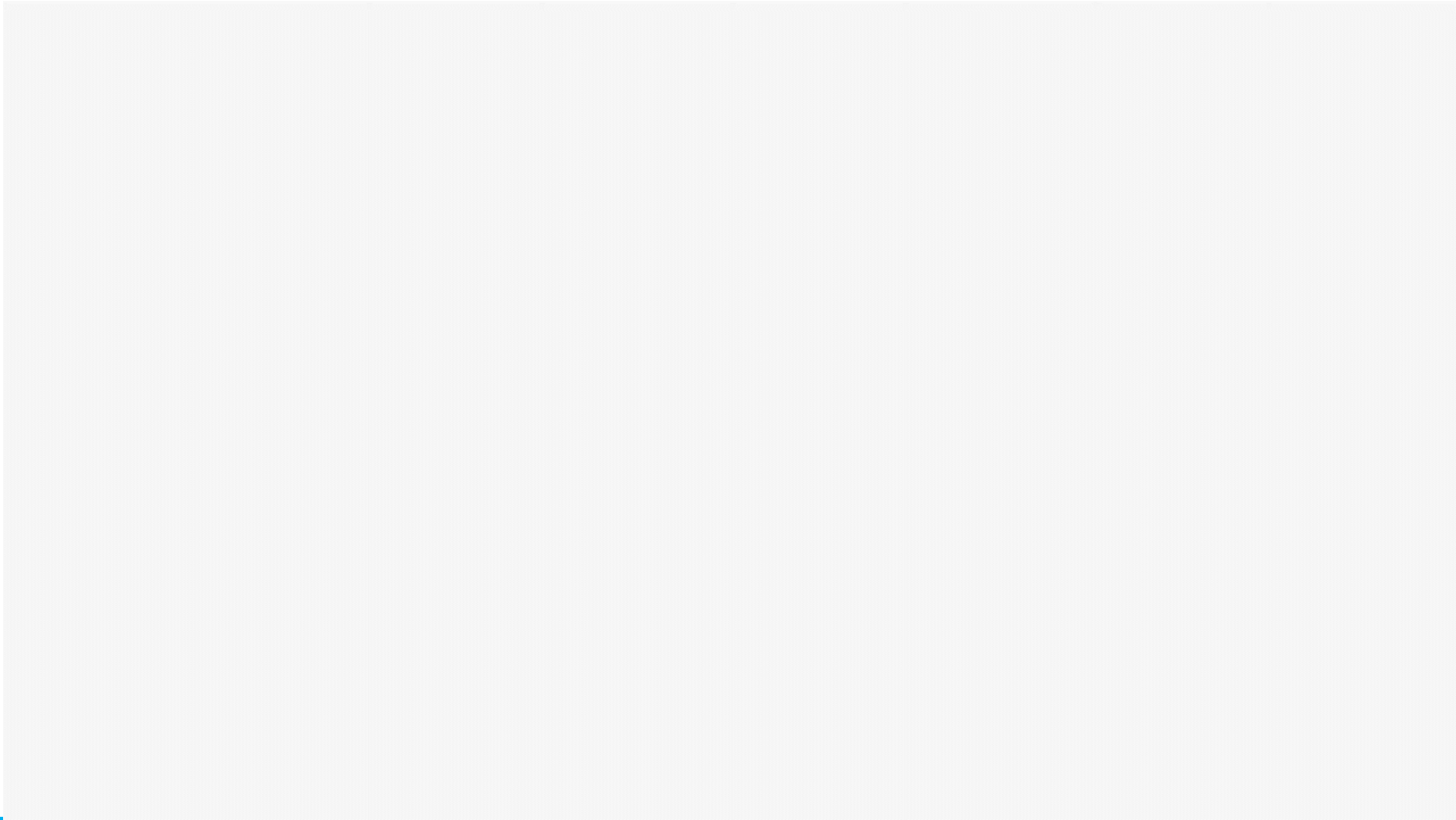
- *Innovation* is the application of new ideas to the products, processes, and activities of a firm, leading to increased value.
- Innovation is the catalyst for the growth and success of any organization.
- It can build and sustain profits, create new challenges for the competition, and provide added value for customers.
- Innovation and change are absolutely required in today's highly competitive global environment; without both, the organization is at risk of losing its competitiveness and becoming obsolete.

# Change in the Organization

## Reengineering and Continuous Improvement

- To stay competitive, organizations must occasionally make fundamental changes in the way they do business.
- In other words, they must innovate and change the activities, tasks, or processes they use to achieve their goals.
- *Reengineering*, also called process redesign and business process reengineering (BPR), involves the radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in business results.
- Successful reengineering can reduce delivery time, increase product and service quality, enhance customer satisfaction, and increase revenues and profitability.

# Change in the Organization



# Change in the Organization

## Reengineering and Continuous Improvement

- In contrast to reengineering, the idea of *continuous improvement* (often referred to by the Japanese word “Kaizen”) is a form of innovation that constantly seeks ways to improve business processes and add value to products and services.
- This continual change will increase customer satisfaction and loyalty and ensure long-term profitability. Manufacturing companies make continual product changes and improvements.
- Service organizations find ways to provide faster and more effective assistance to customers. By doing so, organizations increase customer loyalty, minimize the chance of customer dissatisfaction, and diminish the opportunity for competitive inroads.

# *Outsourcing*

BBC

# Change in the Organization

- A significant portion of expenses for most organizations goes toward hiring, training, and compensating employees.
- Naturally, organizations try to control costs by determining the number of employees they need to maintain high quality goods and services without being overstaffed.
- Strategies to contain these personnel costs include outsourcing, offshoring, and downsizing.
- **Outsourcing** is a long-term business arrangement in which a company contracts for services with an outside organization that has expertise in providing a specific function.

# Change in the Organization

- Organizations often outsource a process so they can focus more closely on their core business and target their limited resources to meet strategic goals.
- Typically, the outsourcing firm has expertise and other resources that enable it to perform the service better, faster, and/or more cheaply.
- As a result, many companies now outsource jobs such as call center services, payroll activities, information system operations, computer support services, and security services.

# Change in the Organization

- **Offshore** outsourcing (also called offshoring) is an outsourcing arrangement in which the organization providing the service is located in a country different from the firm obtaining the services.
- Offshoring of tasks that require significant customer interaction has led to problems due to culture and language differences for some companies.
- As a result, many companies are reevaluating their decision to offshore their call center and customer support services, as well as the outsourcing of other activities.

# Change in the Organization

Companies considering outsourcing need to take into account many factors:

- A growing number of organizations are finding that outsourcing does not necessarily lead to reduced costs.
- One of the primary reasons for cost increases is poorly written contracts that allow the service provider to tack on unexpected charges.

# Change in the Organization

- Other potential drawbacks of outsourcing include loss of control and flexibility, the potential for data breaches of information stored on the service provider's computer hardware, overlooked opportunities to strengthen core competencies of the firm's own employees, and low employee morale.
- In addition, organizations often find that it takes years of ongoing effort and a large up-front investment to develop a good working relationship with an outsourcing firm.
- Finding a reputable outsourcing partner can be especially difficult for a small or mid-sized firm that lacks experience in identifying and vetting contractors.

# Change in the Organization

- *Downsizing*, a term frequently associated with outsourcing, involves reducing the number of employees to cut costs. The term “rightsizing” is sometimes also used.
- When downsizing, companies usually look to downsize across the entire company, rather than picking a specific business process to downsize.
- Downsizing clearly reduces total payroll costs, although the quality of products and services and employee morale can suffer.

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# Organizational Culture and Change



# Organizational Culture and Change

- *Culture* is a set of major understandings and assumptions shared by a group
- *Organizational culture* consists of the major understandings and assumptions for an organization. The understandings, which can include common beliefs, values, and approaches to decision making, are often not stated or documented as goals or formal policies.

# Organizational Culture and Change

- Organizational change deals with how organizations successfully plan for, implement, and handle change.
- Change can be caused by internal factors, such as those initiated by employees at all levels, or by external factors, such as competitors, stockholders, community regulations, natural disasters, and general economic conditions.
- Implementing change, such as a new information system introduces conflict, confusion, and disruption.
- People must stop doing things the way they are accustomed to and begin doing them differently.

# Organizational Culture and Change

- Successful implementation of change only happens when people accept the need for change and believe that the change will improve their productivity and enable them to better meet their customers' needs.
- The so-called *soft side of implementing change* involves work designed to help employees embrace a new information system and way of working.
- The dynamics of how change is implemented can be viewed in terms of a change management model.
- A *change management model* describes the phases an individual or organization goes through in making a change and provides principles for successful implementation of change.

# Soft Side of Implementing Change

## Lewin's Change Model

- The first stage, unfreezing, is ceasing old habits and creating a climate that is receptive to change.
- Moving, the second stage, involves learning new work methods, behaviors, and systems.
- The final stage, refreezing, involves reinforcing changes to make the new process second nature, accepted, and part of the job.

# Lewin's Change Model



# User Satisfaction and Technology Acceptance



# User Satisfaction and Technology Acceptance

- Reengineering and continuous improvement efforts (including implementation of new information systems) must be adopted and used to achieve the defined business objectives by targeted users.
- The *technology acceptance model* (TAM) specifies the factors that can lead to better attitudes about the use of a new information system, along with its higher acceptance and usage.
- In this model, “perceived usefulness” is defined as the degree to which individuals believe that use of the system will improve their performance.
- The “perceived ease of use” is the degree to which individuals believe that the system will be easy to learn and use.

# User Satisfaction and Technology Acceptance

- Both the perceived usefulness and ease of use can be strongly influenced by the expressed opinions of others who have used the system and the degree to which the organization supports use of the system (e.g., providing incentives and offering training and coaching from key users).
- Perceived usefulness and ease of use in turn influence an individual's attitude toward the system, which affect their behavioral intention to use the system.

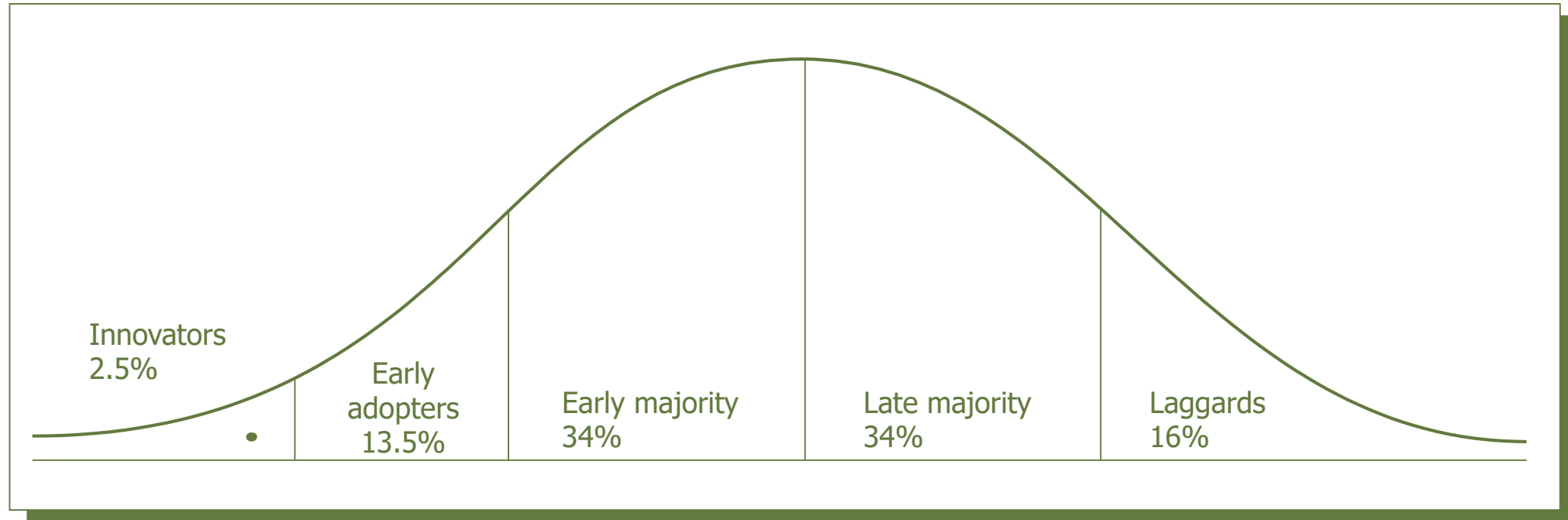
# Diffusion of Innovation Theory



# Diffusion of Innovation Theory

- The *diffusion of innovation theory* was developed by E.M. Rogers to explain how a new idea or product gains acceptance and diffuses (or spreads) through a specific population or subset of an organization.
- A key point of this theory is that adoption of any innovation does not happen all at once for all members of the targeted population; rather, it is a drawn-out process, with some people quicker to adopt the innovation than others.
- See Figure 2.11. Rogers defined five categories of adopters, shown in Table 2.2, each with different attitudes toward innovation.

Figure 2.11



# Diffusion of Innovation Theory

- When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation and then to apply the appropriate strategy. This theory can be useful in planning the roll-out of a new information system.

**TABLE 2.2** Five categories of innovation adopters

| Adopter Category | Characteristics                                                                | Strategy to Use                                                                                             |
|------------------|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Innovator        | Risk takers; always the first to try new products and ideas                    | Simply provide them with access to the new system and get out of their way                                  |
| Early adopter    | Opinion leaders whom others listen to and follow; aware of the need for change | Provide them assistance getting started                                                                     |
| Early majority   | Listen to and follow the opinion leaders                                       | Provide them with evidence of the system's effectiveness and success stories                                |
| Late majority    | Skeptical of change and new ideas                                              | Provide them data on how many others have tried this and have used it successfully                          |
| Laggards         | Very conservative and highly skeptical of change                               | Have their peers demonstrate how this change has helped them and bring pressure to bear from other adopters |

# Summary

- Organizations are open systems that affect and are affected by their surrounding environment.
- An organization is a group of people that is structured and managed to meet its mission or set of group goals.
- The value chain is a series of activities that an organization performs to transform inputs into outputs in such a way that the value of the input is increased.
- The supply chain is a key value chain whose primary activities include inbound logistics, operations, outbound logistics, marketing and sales, and service.
- Supply chain management encompasses all the activities required to get the right product into the right consumer's hands in the right quantity at the right time and at the right cost.

# Summary

- Information systems have transformed the nature of work and the shape of organizations themselves. They are often so intimately involved in the activities of the value chain that they are a part of the process itself.
- A virtual team is a group of individuals whose members are distributed geographically, but who collaborate and complete work through the use of information systems.

# Summary

- Positive change is a key ingredient for any successful organization.
- Innovation is the application of new ideas to the products, processes, and activities of a firm, leading to increased value
- Business process reengineering is a form of innovation that involves the radical redesign of business processes, organizational structures, information systems, and values of the organization to achieve a breakthrough in results.
- Continuous improvement is a form of innovation that continually improves business processes to add value to products and services.

# Summary

- Outsourcing is a long-term business arrangement in which a company contracts for services with an outside organization that has expertise in providing a specific function.
- Offshore outsourcing is an outsourcing arrangement in which the organization providing the service is located in a country different from the firm obtaining the services.
- Downsizing involves reducing the number of employees to cut costs.

# Summary

- Information systems must be implemented in such a manner that they are accepted and work well within the context of an organization and support its fundamental business goals and strategies.
- Organizational culture consists of the major understandings and assumptions for a business, a corporation, or an organization.

# Summary

- Organizational change deals with how organizations successfully plan for, implement, and handle change.
- The ability to introduce change effectively is critical to the success of any information system project.
- Lewin's three-stage organization change model divides the change implementation process into three stages: unfreezing, moving, and refreezing. The model also identifies key tasks that need to be performed during each stage.

# Summary

- The user satisfaction and technology acceptance model specifies the factors that can lead to better attitudes about the use of a new information system, along with higher acceptance and use of it.
- The diffusion of innovation theory explains how a new idea or product gains acceptance and diffuses through a specific population or subset of an organization.
- A key point of this theory is that adoption of any innovation does not happen all at once for all people; rather, it is a drawn-out process, with some people quicker to adopt the innovation than others. The theory groups adopters into five categories and recommends a different adoption strategy for each category.

# Reference

