

# Lecture 1: Introduction to Management Information Systems

**SIT400: MANAGEMENT  
INFORMATION SYSTEMS**

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**Pete Kimemiah**

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# Learning Objectives

- How are information systems transforming business, and why are they so essential for running and managing a business today?
- What is an information system?
- How does it work?
- What are its management, organization, and technology components?
- Why are complementary assets essential for ensuring that information systems provide genuine value for organizations?

# Terminologies

- **Management** – directing and controlling a group of people or an organization to reach a goal. Management often means the deployment and manipulation of human resources, financial resources, technological resources, and natural resources.
- **Enterprise** – A business, Company or Organization
- Firm - **a commercial enterprise**, a company that buys and sells products and/or services to consumers with the aim of making a profit.
- **Business Strategy** - A business strategy is **an outline of the actions and decisions a company plans to take to reach its goals and objectives.**
- **Supply Chain** - a series of steps involved to get a product or service to the customer.
- **Business Processes** - a collection of linked tasks that find their end in the delivery of a service or product to a client

# Terminologies

- **Business Assets** - A business asset is **an item of value owned by a company**. And include physical, tangible goods, such as vehicles, real estate, computers, office furniture, and other fixtures, or intangible items, such as intellectual property.
- **Capital Investment** - **the acquisition of physical assets by a company** for use in furthering its long-term business goals and objectives.
- **Return on Investment** - **Return on investment (ROI)** is calculated by dividing the profit earned on an investment by the cost of that investment.
- **Share Holders** - A shareholder, also referred to as a stockholder, is **a person, company, or institution that owns at least one share of a company's stock**, known as equity
- **Capital Expenses** (Capex) – Is an Expenditure (**outflow of money, or any form of fortune in general**) , to create a benefit in the future. They are long-term in nature and are generally used to acquire things like property.
- **Operating Expense** (OpPex) - an expense required for the day-to-day functioning of a business. This means a business incurs an operating expense on a recurring basis. Operating expenses include things like insurance, payroll, and marketing

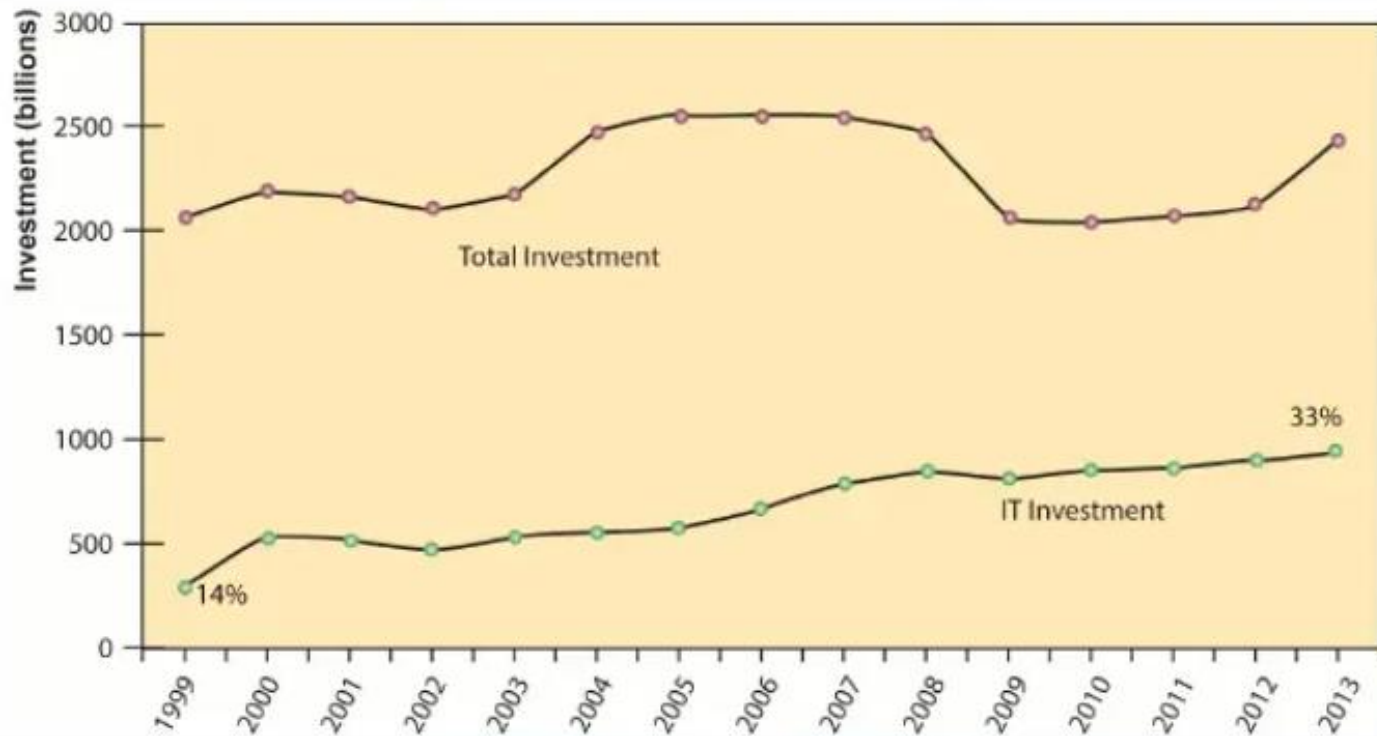
## Intro to Business Information Systems

[https://www.youtube.com/watch?v=idbc!fp"#\\$](https://www.youtube.com/watch?v=idbc!fp)

# The Role of Information systems

- How information systems are transforming, business
  - Role of mobile digital platform
  - Business use of big, data
  - Role cloud computing
- Globalization opportunities
  - Impact of the internet in costs reduction
  - Operating on global scale
  - Increasing foreign trade
  - outsourcing
- Presents both challenges and opportunities

# Information Technology Capital Investment (-2013)

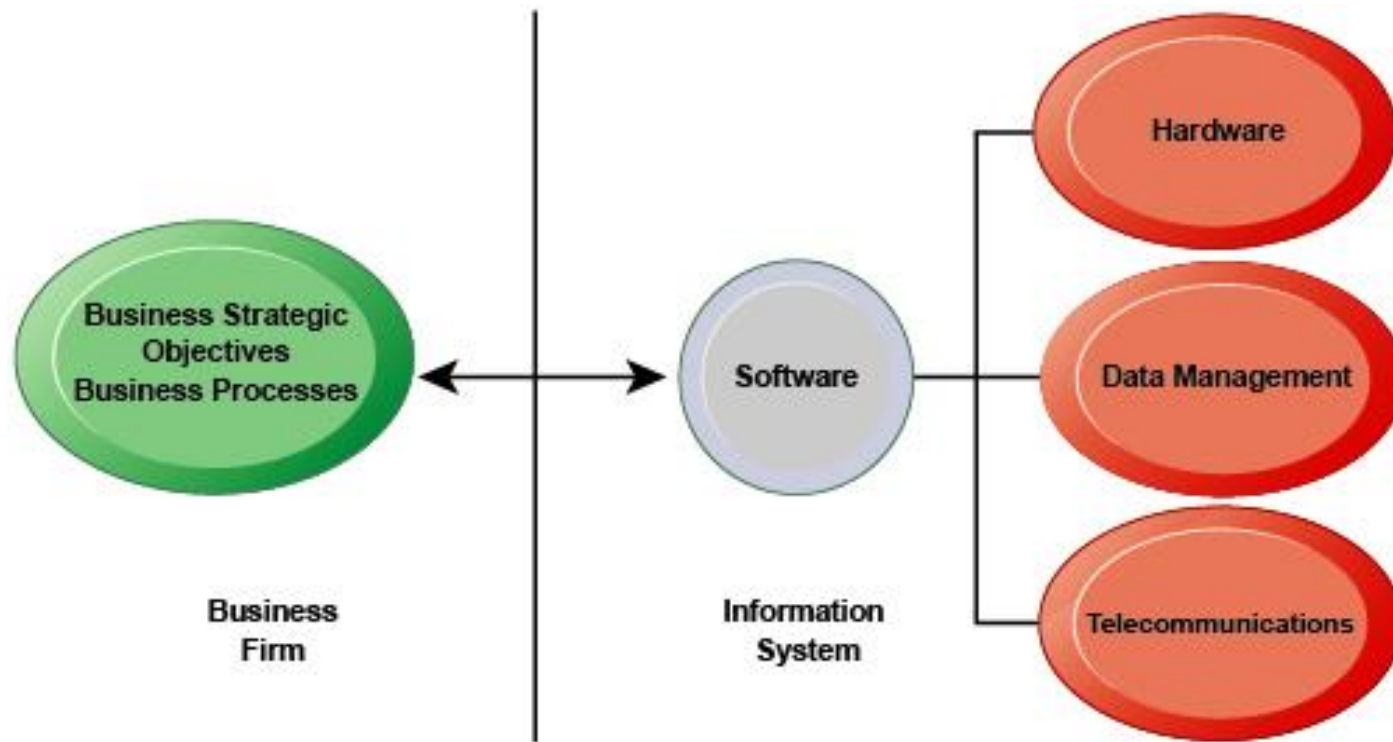


# Information Technology Impact

- We have seen the emergence of the digital firm, a firm in which:
  - Firm's significant business **relationships with customers, suppliers, and employees** are digitally enabled and mediated
  - Core **business processes**, or logically related business tasks, are **accomplished through digital networks**
  - Key corporate **assets** (intellectual property, core competencies, and financial and human assets) **managed through digital means**
  - Business responses to changes in their environment are enhanced through digital communications, allowing for **time shifting** (business being conducted 24x7) and **space shifting** (business being conducted globally or beyond traditional geographic boundaries).



# Strategic Role of Information Systems



# Strategic Role of Information Systems

- Essential for conducting **day-to-day business** to achieving **strategic business objectives**.
- Some firms, such as Amazon, Taxify, Safaricom-MPESA and Jumia, could be non-existent without information systems.
- Some service industries, such as finance, insurance, and real estate industries, could not operate without information systems such as Mobile Money, Mobile Banking, Web Presence.
- The ability of a firm has become intertwined with the firm's ability to implement strategy.

# Impact of Information Technology and System

- Identify the problems that businesses may solve by using, mobile devices
- Identify businesses that have benefited from equipping, their employees with mobile phone devices
- Discuss the implications of this statement:  
“The Mobile Phone is not a game changer it is an industry changer”

# Impact of Information Technology and System

- Growing, interdependence between:
  - Ability to use information technology and
  - Ability to implement corporate strategies and achieve corporate goals

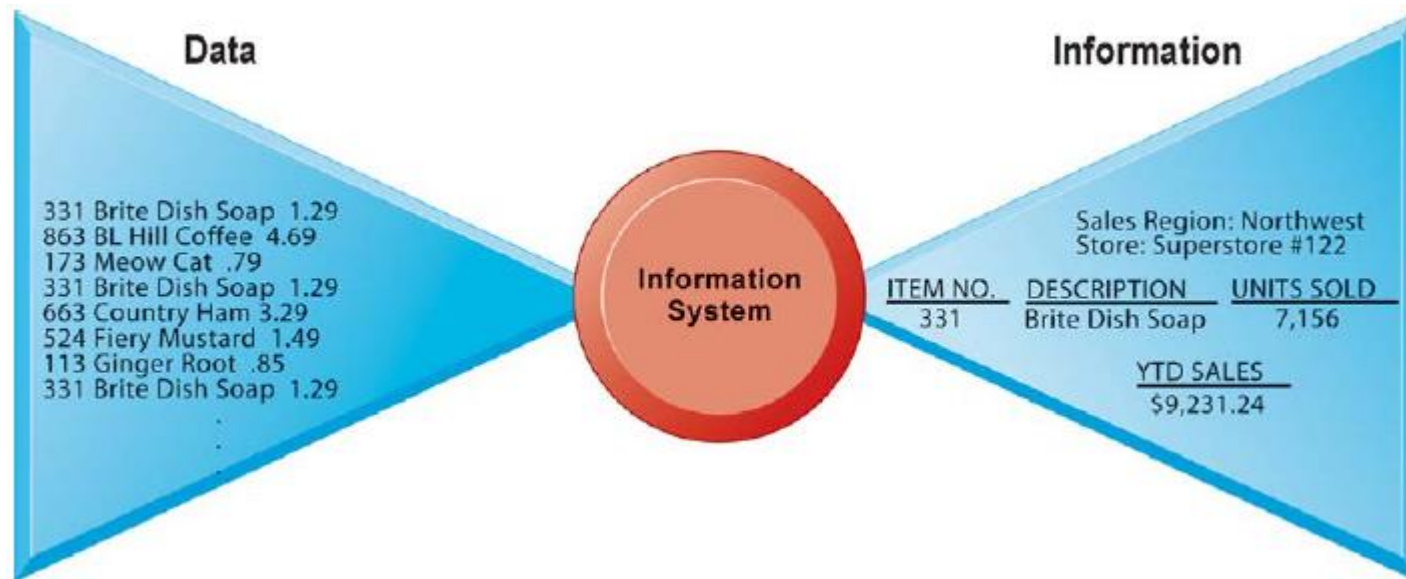
# Impact of Information Technology and System

- Why firms are invest heavily in information systems?
  - Operational excellence:
  - New products, services, and business models
  - Customer and supplier intimacy
  - Improved decision making
  - Competitive advantage
  - Survival



# **Perspectives on Information Systems**

# What is information?



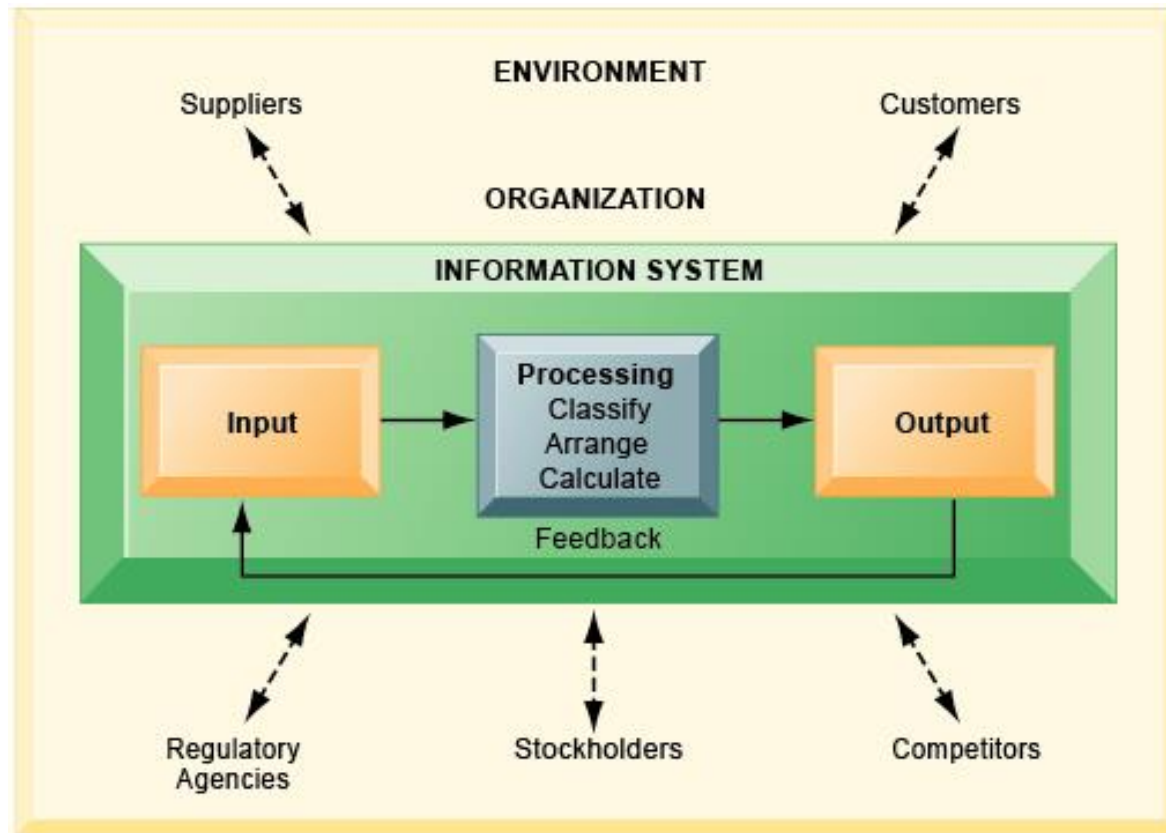
Raw data from a supermarket

# What is an Information System?

- An **information system** is a set of interrelated components that
  - collect or retrieve
  - Process
  - store, and distribute information
- Used to support **decision making and control** in an organization
- Information systems can also be used to
  - analyze problems
  - visualize complex subjects
  - create new products.
- **Information** is **data**, or raw facts, shaped into useful form for humans.



# Functions of an information system



# Functions of an information system

- **Input, processing, and output** are the three activities in an information system that produce the information an organization needs.
- **Input:** captures or collects raw data from within the organization or from its external environment.
- **Processing:** converts this raw input into a meaningful form.
- **Output:** transfers the processed information **to the people who will use it or to the activities for which it will be used.**
- Information systems also require **feedback**, which is output that is returned to appropriate members of the organization to help them evaluate or correct the input stage.

# What is the difference?

Information Systems

Versus

Computer Technology

# Information Technology versus Computer Technology

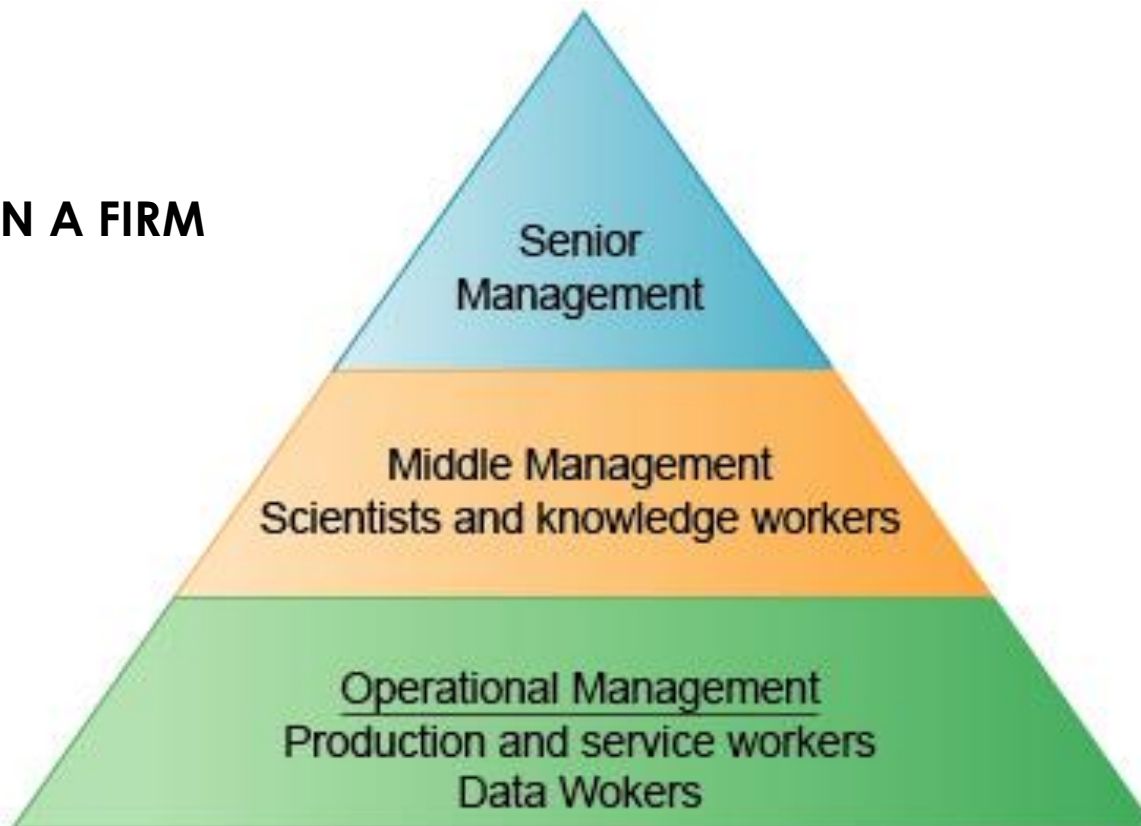
- **Computer literacy** focuses primarily on knowledge of information technology.
- **Information systems literacy**, the understanding of information systems, includes a behavioral and technical approach to understanding the broader organization, management, and information technology dimension of systems and their power to provide solutions.
- The field of **management information systems (MIS)** tries to achieve this broader information systems literacy.

# Information Systems are more than just computers



# Dimensions of information systems

## LEVELS IN A FIRM



# Key elements of an organization

- The key elements of an organization are
  - People
  - Structure
  - Business processes
  - Politics
  - Culture
- An organization coordinates work through a structured hierarchy and formal standard operating procedures.
- Managerial, professional, and technical employees form the upper levels of the organization's hierarchy while lower levels consist of operational personnel

# Levels in an organisation

- **Senior management** makes long-range strategic decisions and ensures the firm's financial performance
- **Middle management** carries out the plans of senior management and **operational management** monitors the firm's daily activities.
- **Knowledge workers** such as engineers and scientists design products and create and distribute new knowledge for the organization.
- **Data workers** such as secretaries process the organization's paperwork.
- **Production or service workers** produce the products or services.



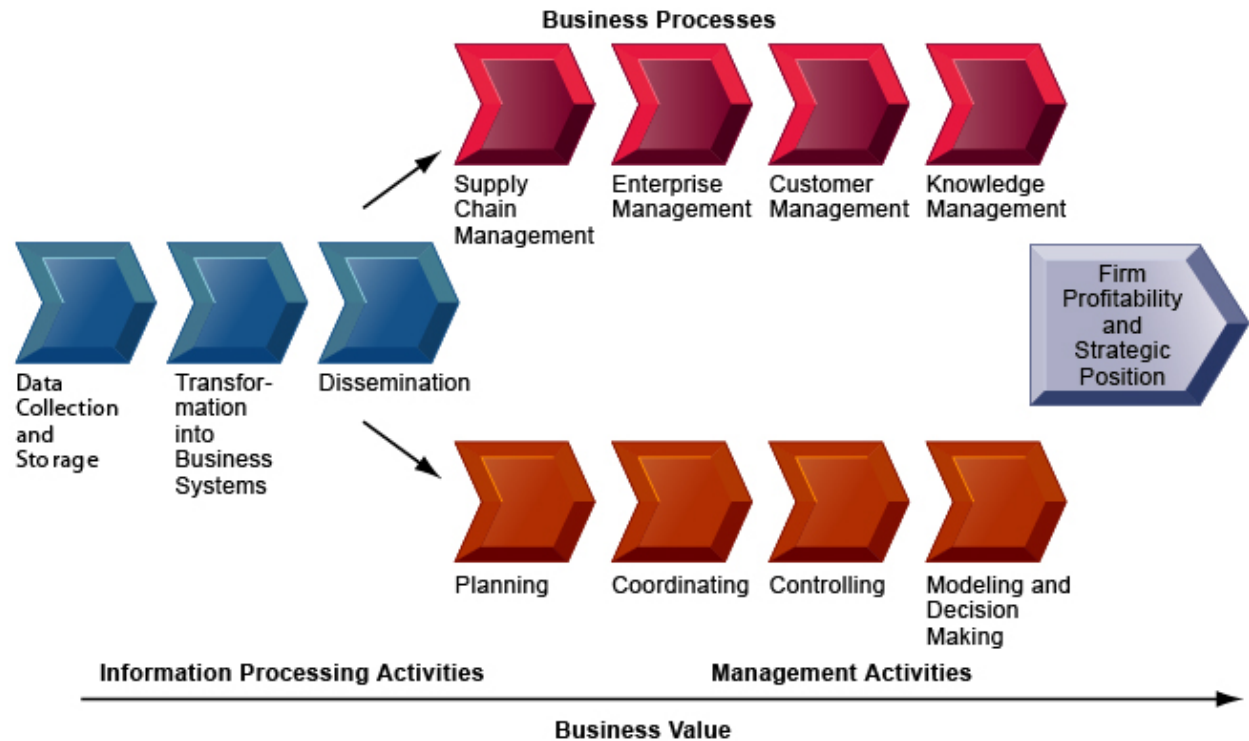
# Information System Components

- Information systems are also a key component
  - Improves ability of management to make sense of the challenges facing a company
  - In management's ability to create new products and services
  - To manage the company, and even re-create the organization from time to time.
- Information technology is one of the many tools used by management to cope with change.
- A firm's **information technology (IT) infrastructure** is a technology platform or foundation on which a firm can build its information systems. IT infrastructure consists of
  - **Computer hardware**
  - **Computer software**
  - **Data management software**
  - **Networking and telecommunications technology**

# Information System Components

- **Internet** - Global network of networks using universal standards to connect millions of different networks.
- **Intranet** - An internal network based on Internet and World Wide Web technology and standards.
- **Extranet** - Private intranet that is accessible to authorized outsiders.
- **World Wide Web (WWW)** - A system with universally accepted standards for storing, retrieving, formatting, and displaying information in a networked environment.

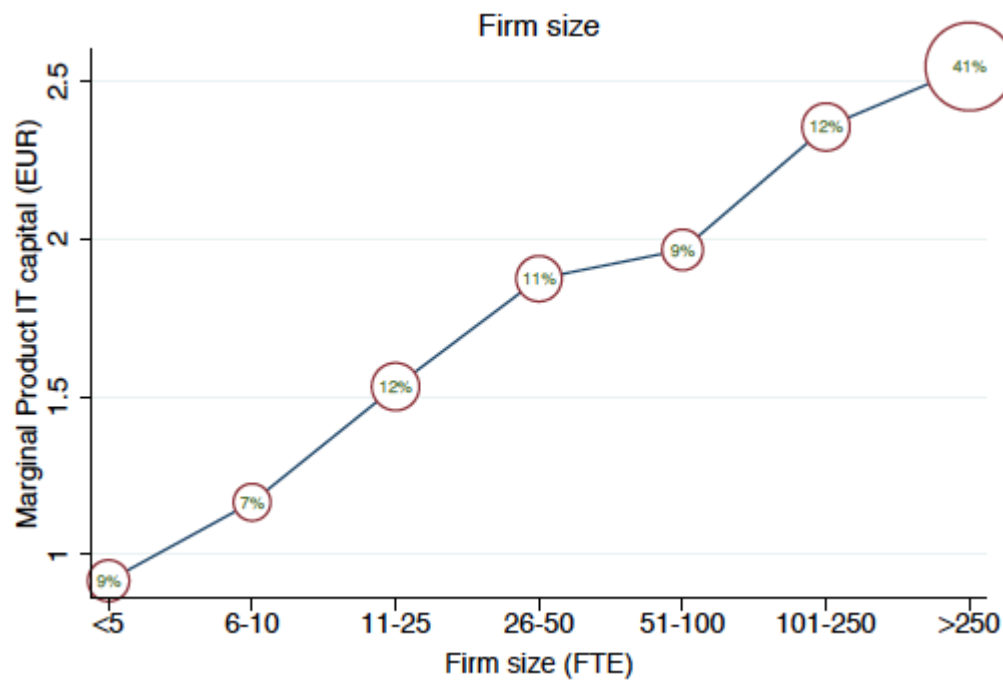
# Information Value Chain



## What Value?

- ☐ better management decisions
- ☐ more efficient business processes
- ☐ higher profitability

# Return on information technology investment (ROITI)



Study on ROITI for Belgium Firms Dhyne E. et al. ( 07 January 2019)

# Return on information technology investment (ROITI)

- Information technology investments cannot make organizations and managers more effective unless they are accompanied by **complementary assets**:

# ROIT - complementary assets

- **Organizational assets** - business culture values on efficiency and effectiveness, business model, business processes, centralization/Decentralization of authority, Quality of IS team
- **Managerial assets** - management support for change, Incentives/Rewards, teamwork and collaboration, Training, Flexibility Culture.
- **Social assets** - Internet, educational systems, network and computing standards, regulations and laws, and the presence of technology and service firms.

# ROIT - complementary assets

- **Organizational assets** - business culture values on efficiency and effectiveness, business model, business processes, centralization/Decentralization of authority, Quality Management, etc.
- **Managerial capital** are investments in organization and management such as new business processes, management behavior, organizational culture, or training.
- **Social capital** are investments in social systems, network and computing standards, regulations and laws, and the presence of technology and service firms.

# Summary and Conclusion

- We have seen how information systems transform business and their importance in running and managing a business today?
- We have identified the difference between Data and information and between Information Technology and information Systems?
- We have identified the management, organization, and technology components of an Information System?
- Identified complementary assets essential for ensuring that information systems provide genuine value for organizations?