Information System Strategy and IT Governance

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Information Systems Strategy & IT Governance

Introduction:

The Role of Information Systems in Business Today

Source

Keri Pearlson & Carol Saunders, Strategic Management of Information Systems, 5th Edition, 2013

PowerPoint® Files by Michelle M. Ramim
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The Role of Information Systems in Business Today

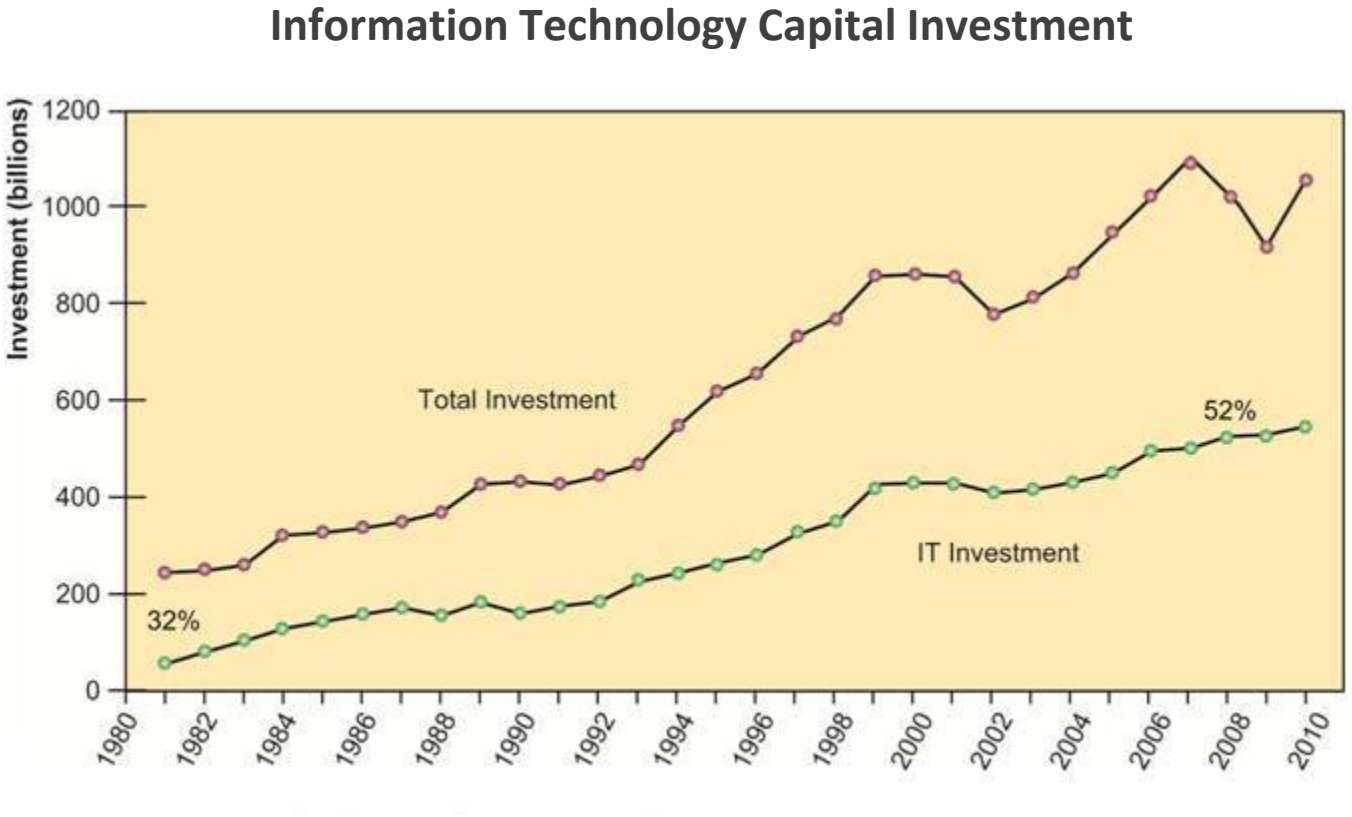
How information systems are transforming business

- Increase in wireless technology use, Web sites
- Increased business use of Web 2.0 technologies
- Cloud computing, mobile digital platform allow more distributed work, decision-making, and collaboration
- IOT - taking all the things in the world and connecting them to the internet.
- AI, Big data

Globalization opportunities

- Internet has drastically reduced costs of operating on global scale
- Presents both challenges and opportunities

The Role of Information Systems in Business Today



IT capital investment, defined as grew from 32 percent to 52 percent of all invested capital between 1980 and 2009.

Why would firms increase IT investment faster than machinery and buildings?

The Role of Information Systems in Business Today

In the emerging, fully digital firm

- **Significant business relationships** are digitally enabled and mediated
- **Core business processes** are accomplished through digital networks
- Key **corporate assets** are managed digitally

Digital firms offer greater flexibility in organization and management

- **Time** shifting, **space** shifting
  - Business can be conducted at any time and any place
  - Digital forms are ideally suited for global operations which take place in remote locations and very different time zones

The Role of Information Systems in Business Today

MIS IN YOUR POCKET

- What are the advantages of using mobile handheld devices? What are the disadvantages?
- What features are needed in a mobile to make it a business solution?
- What business functions can be performed by using handhelds alone? How have companies utilized handhelds?

Strategic Business Objectives

Why organizations invest heavily on IT ?

Strategic Business Objectives

Growing interdependence between ability to use IT and **ability to implement corporate strategies** and achieve corporate goals

Business firms invest heavily in information systems to achieve six strategic business objectives:

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy/relationships
4. Improved decision making
5. Competitive advantage
6. Survival

Operational excellence

- Improvement of efficiency to **attain higher profitability**
- Information systems, technology an important tool in achieving greater **efficiency and productivity**
  - Example
    - Some organizations system links suppliers to stores for superior replacement system

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

New products, services, and business models:

- **Business model:** describes how company produces, delivers, and sells product or service to create wealth
- **Information systems and technology a major enabling tool for new products, services, business models**
  - Examples: Apple's iPod, iPhone, iPad, Google's Android OS etc
  - Fully automatic vehicles
  - AI-based application and tools

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

Customer and supplier intimacy:

- **Serving customers well lead to customers returning, which raises revenues and profits**
  - Example: High-end hotels that use computers to track customer preferences and use to monitor and customize environment
- **Intimacy with suppliers allows them to provide vital inputs, which lowers costs**
  - Example: Some organizations' information system which links sales records to contract manufacturer

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

Improved decision making

- **Without accurate information:**
  - Managers must use forecasts, best guesses, luck
  - Leads to:
    - Overproduction/underproduction of goods and services
    - Misallocation of resources
    - Poor response times
  - Poor outcomes raise costs, lose customers
- Example: Web-based digital dashboards to provide managers with real-time data on customer complaints, network performance, etc.

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

Competitive advantage

- Delivering better performance
- Charging less for superior products
- Responding to customers and suppliers in real time
- Examples: Pickme

Achieving any of the previous four business objectives represents the achievement of a competitive advantage as well.

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
4. Improved decision making
5. Competitive advantage
6. Survival

Survival

Discuss?

Strategic business objectives

1. Operational excellence
2. New products, services, and business models
3. Customer and supplier intimacy
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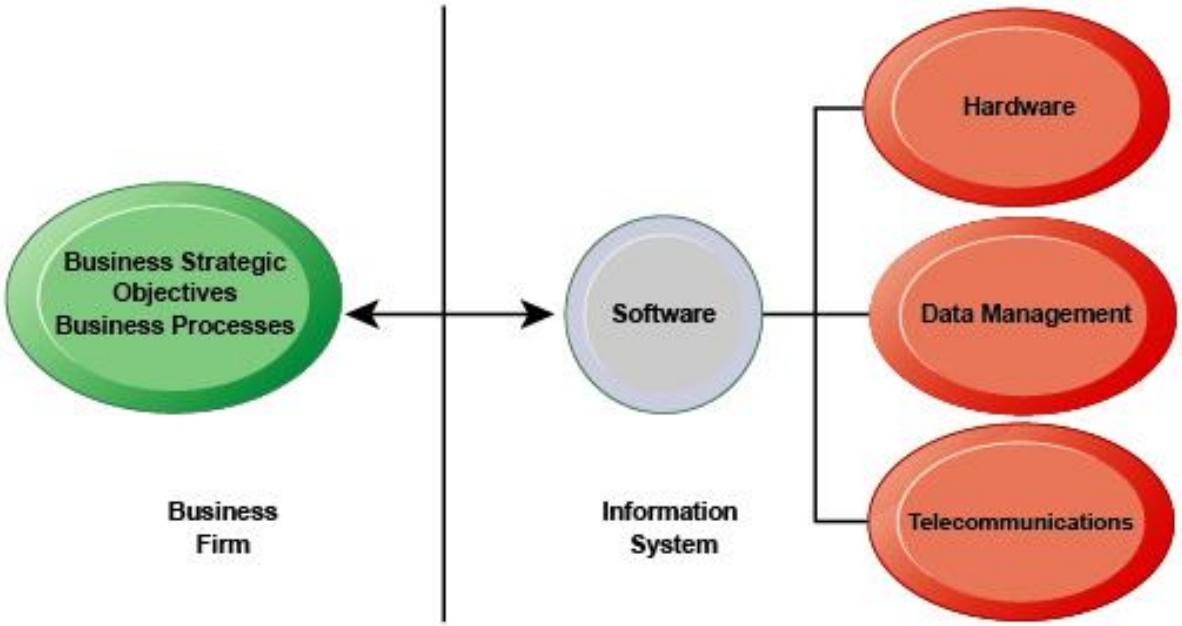
5. Competitive advantage
6. Survival

The Interdependence between Organizations and IT



In modern systems there is a growing interdependence between a firm's information systems and its business capabilities**. Changes in strategy, rules, and business processes increasingly require changes in hardware, software, databases, and telecommunications**. Often, **what the organization would like to do depends on what its systems will permit it to do**.

Perspectives on Information Systems

Information system

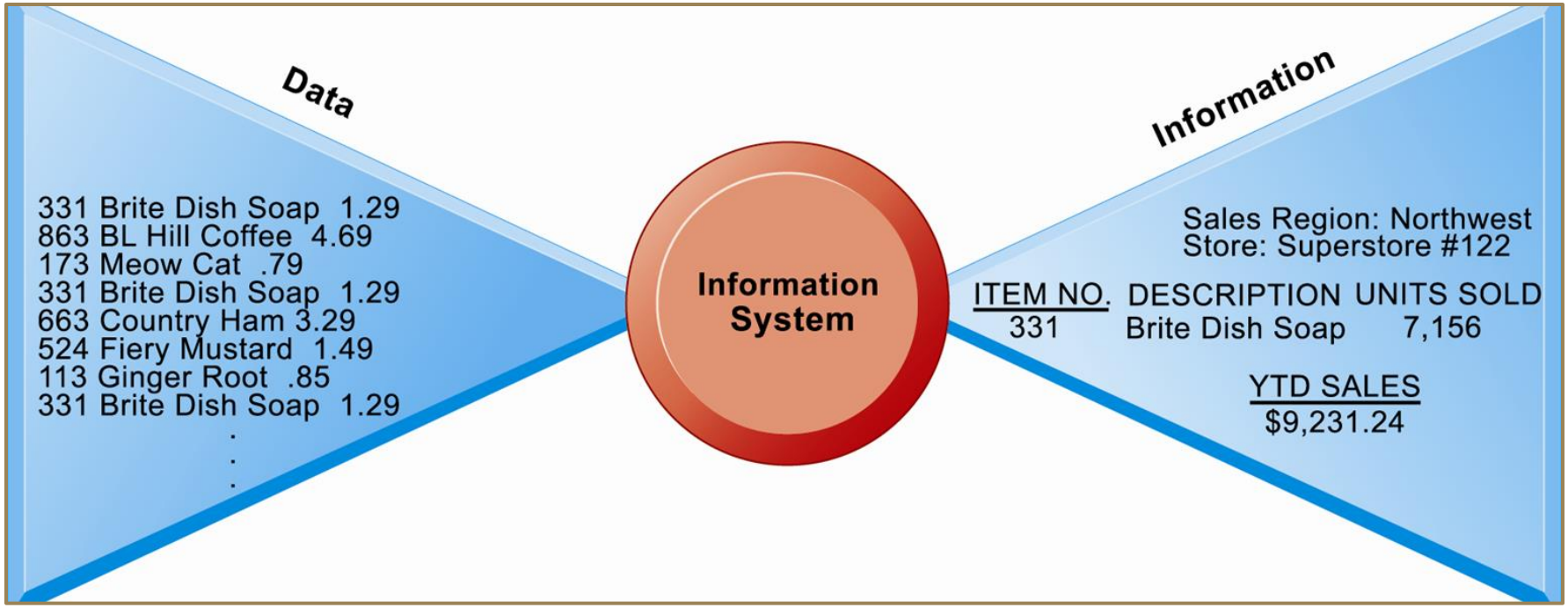
- *Set of interrelated components*
- *Collect, process, store, and distribute information*
- *Support decision making, coordination, and control*

Information vs. data

- Data are streams of raw facts
- Information is data shaped into meaningful form - **.**
  Information is an ordered set of data that you can understand and act on.

Perspectives on Information Systems

Data and Information



Raw data from a supermarket checkout counter can be processed and organized to produce meaningful information, such as the total unit sales of dish detergent or the total sales revenue from dish detergent for a specific store or sales territory.

Perspectives on Information Systems

Three activities of information systems produce information organizations need

1. **Input:** Captures raw data from organization or external environment
2. **Processing:** Converts raw data into meaningful form
3. **Output:** Transfers processed information to people or activities that use it

Perspectives on Information Systems

Feedback:

- Output returned to appropriate members of organization to help evaluate or correct input stage

Computer/Computer program vs. information system

- Computers and software are technical foundation and tools, similar to the material and tools used to build a house
- Computer and programs are the tools of information systems

Perspectives on Information Systems

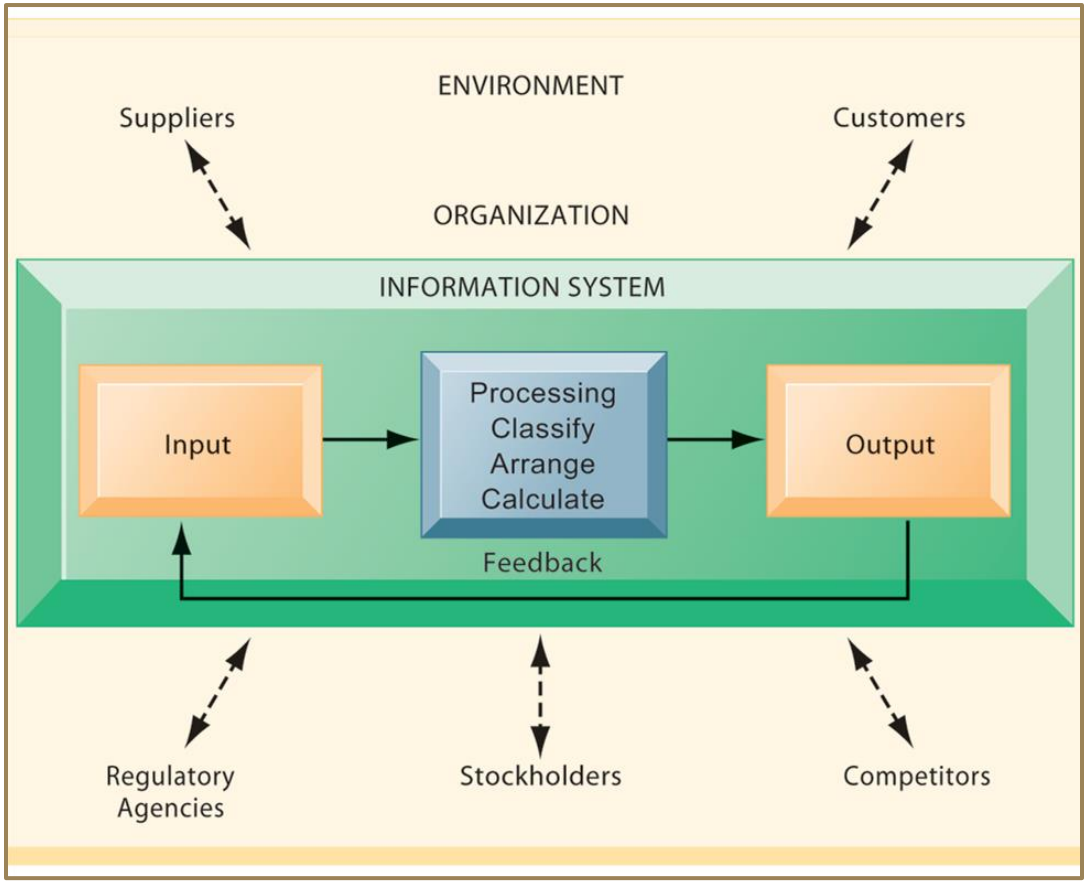
Functions of an Information System

An information system contains information about an organization and its surrounding environment.

Three basic activities - **input, processing, and output**—produce the information organizations need.

Feedback is output returned to appropriate people or activities in the organization to evaluate and refine the input.

Environmental actors, such as customers, suppliers, competitors, shareholders, and regulatory agencies, interact with the organization and its information systems.

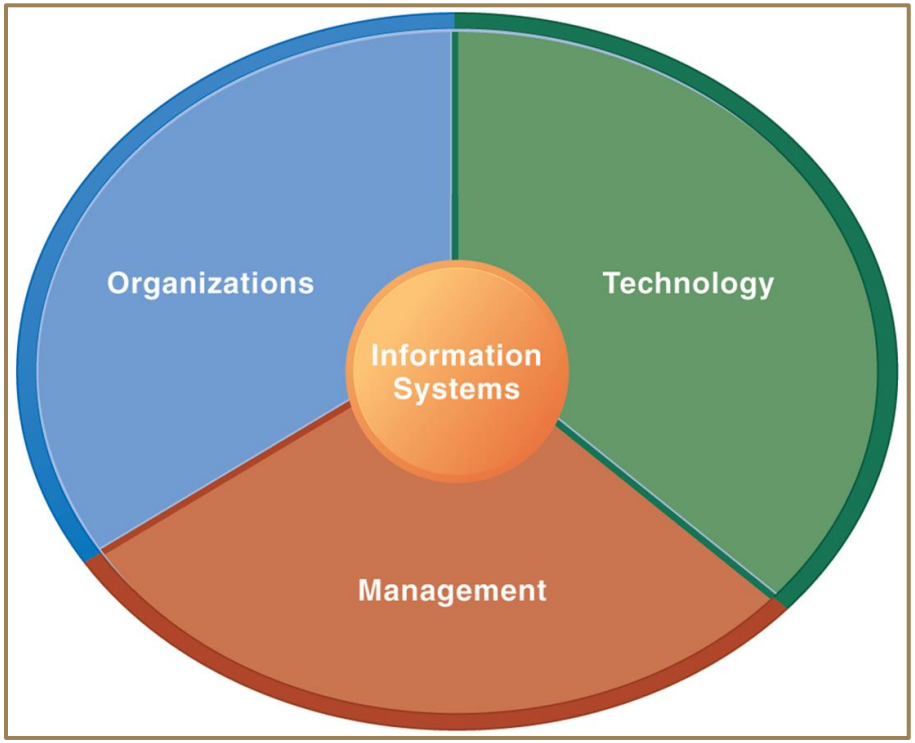


Perspectives on Information Systems

Information Systems are more than Computers

Using information systems effectively requires an understanding of the organization, management, and information technology shaping the systems.

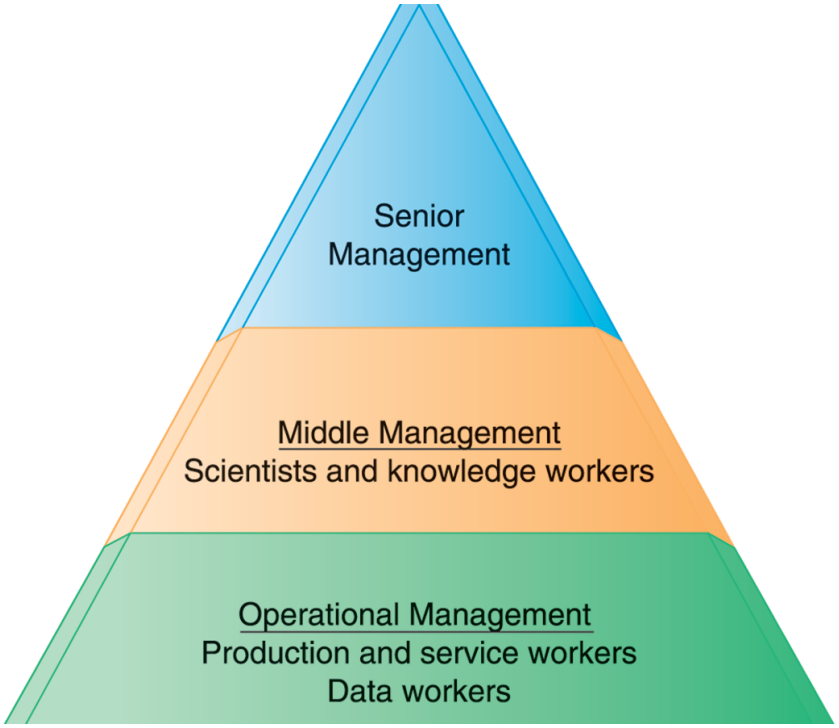
An information system **creates values** for the firm as an **organizational and management solution** to challenges posed by the environment.



Perspectives on Information Systems

Organizational dimension of information systems

- **Hierarchy of authority, responsibility**
  - Senior management
  - Middle management
  - Operational management
  - Knowledge workers
  - Data workers
  - Production or service workers



Levels in a Firm

Business organizations are hierarchies consisting of three principal levels: **senior management, middle management, and operational management**.

Information systems serve each of these levels. Scientists and knowledge workers often work with middle management.

Perspectives on Information Systems

- Management perspective
- Technology perspective
- Business perspective

- Management
- Technology
- Business

Management dimension of information systems

- **Managers set organizational strategy for responding to business challenges**
- Organizations become obsolete unless they continue to change
- In addition, managers must act creatively:
  - Creation of new products and services
  - Occasionally re-creating the organization

- Management
- Technology
- Business

Technology dimension of information systems

- **Computer hardware and software**
- **Data management technology**
- **Networking and telecommunications technology**
- Networks, the Internet, intranets and extranets, World Wide Web
- **IT infrastructure: provides a platform that the system is built on**
- **AI and other related technologies**

- Management
- Technology
- Business

Perspectives on Information Systems

Business perspective on information systems:

- An information system **is an instrument for creating value**
- Investments in IT will result in superior returns:
  - Productivity increases
  - Revenue increases
  - Superior long-term strategic positioning

Perspectives on Information Systems

Investing in information technology **does not guarantee good returns**

Considerable variation in the returns are received by firms from systems investments

Factors:

- Adopting the right business model
- Investing in complementary assets (organizational and management capital)

…..Contd……

Perspectives on Information Systems

Complementary assets:

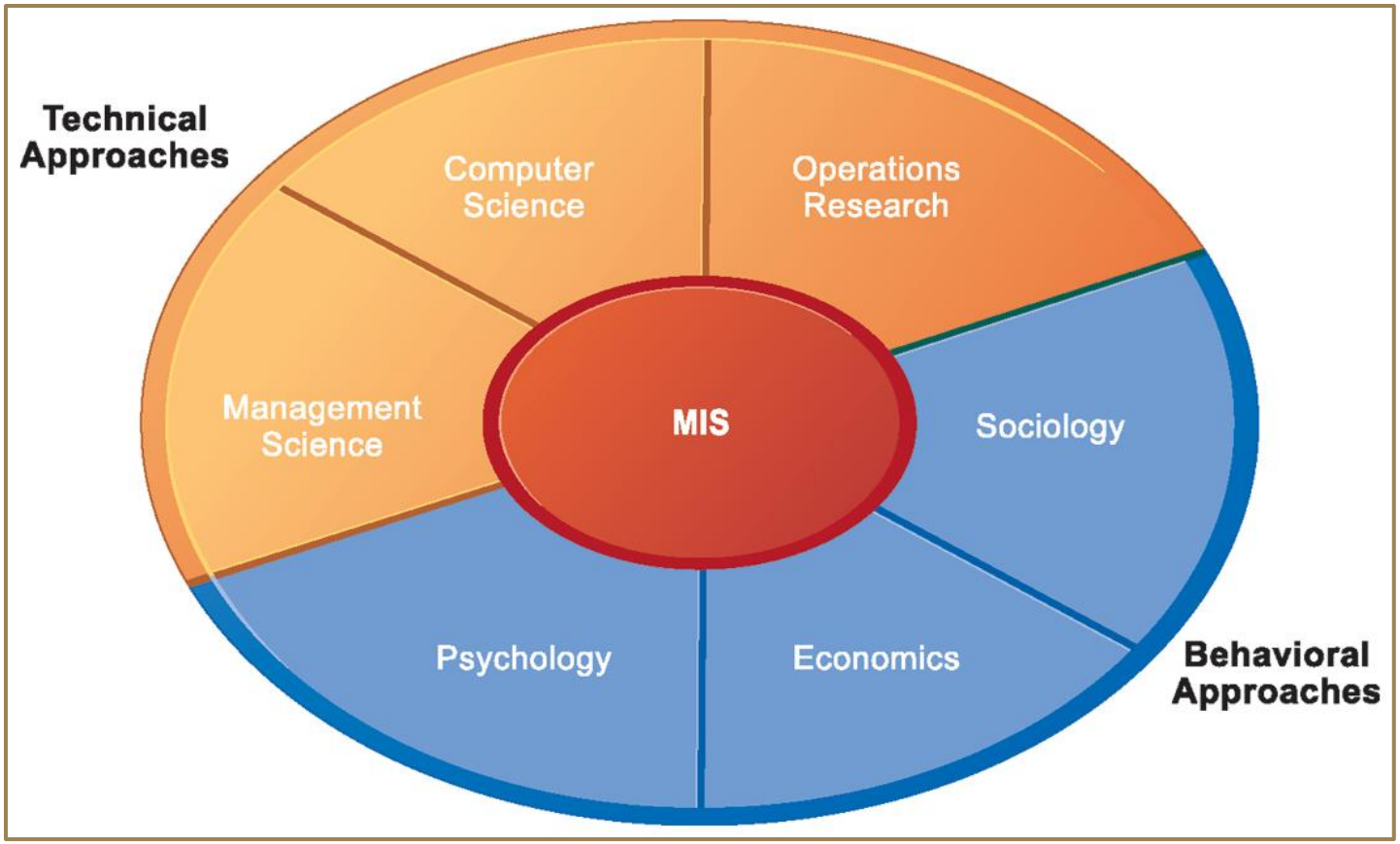
- Assets required to derive value from a primary investment
- Firms supporting **technology investments with investment in complementary assets** receive superior returns
- E.g.: Invest in technology and the people to make it work properly
- Complementary assets for automobile companies: these companies rely on investments in highways, other roads, gas stations, repair facilities, and so on to maximize the value of their primary investment.

…Contd…

Complementary assets include:

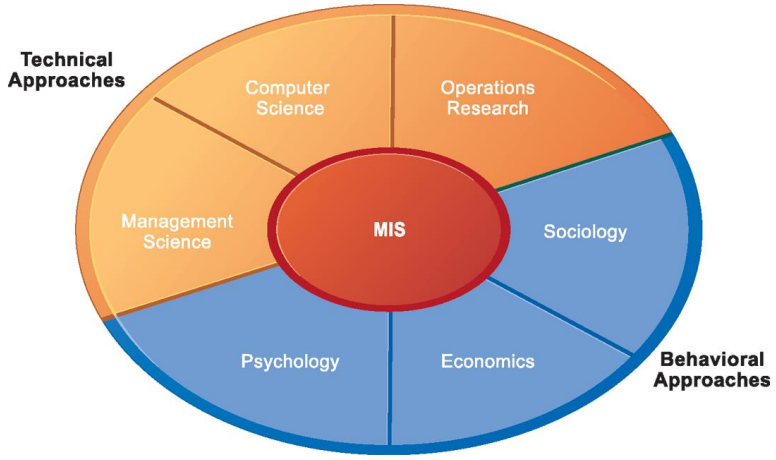
- **Organizational assets, e.g.**
  - Appropriate business model
  - Efficient business processes
- **Managerial assets, e.g.**
  - Incentives for management innovation
  - Teamwork and collaborative work environments
- **Social assets, e.g.**
  - The Internet and telecommunications infrastructure
  - Technology standards

Modern Approaches to Information Systems



The study of information systems deals with issues and insights contributed from technical and behavioral disciplines.

Contemporary Approaches to Information Systems



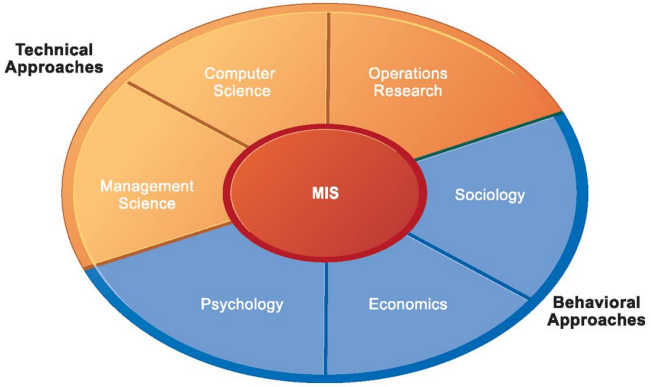
Technical approach

- Emphasizes mathematically based models
- Computer science, management science, operations research

Behavioral approach

- Behavioral issues (strategic business integration, implementation, etc.)
- Psychology, economics, sociology

Contemporary Approaches to Information Systems



Management Information Systems

- Combines computer science, management science, operations research and practical orientation with behavioral issues

Four main actors

- Suppliers of hardware and software
- Business firms
- Managers and employees
- Firm's environment (legal, social, cultural, political, economical context)

For example, business firms look to acquire the components of their information systems from suppliers of hardware and software. The firm's environment may dictate the type of software a company uses as well as the kind of employees that work there.


Q&A
Questions
Answers


THANK
YOU