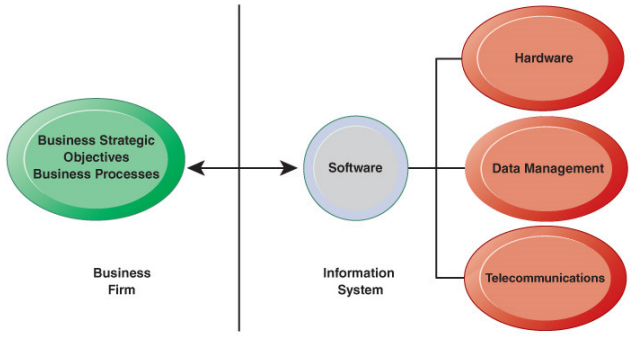
ITM 102 Fall 2015

Class 1

Information Systems in Business Today

adapted from
Laudon, Laudon and Brabston, *Managing Information Systems*, Seventh Canadian Edition

FIGURE 1-2 The interdependence between organizations and information systems.



In contemporary 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.

IT/IS & Major Business Functions

TABLE 1-2 Major business functions.

Function	Purpose
Sales and marketing	Selling the organization's products and services
Manufacturing and production	Producing and delivering products and services
Finance and accounting	Managing the organization's financial assets and maintaining the organization's financial records
Human resources	Attracting, developing, and maintaining the organization's labour force; maintaining employee records

How IT/IS may impact, support & enable other business functions?

The Role of Information Systems in Business Today

- **Operational excellence**:
  - Improvement of efficiency to attain higher profitability
  - Information systems/technology an important tool in achieving greater efficiency and productivity
  - Walmart's Retail Link system links suppliers to stores for superior replenishment system

The Role of Information Systems in Business Today

- **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 as a major enabling tool for new products, services, business models
    - Examples: Apple's iPad, Microsoft's software delivery mechanism, Amazon

The Role of Information Systems in Business Today

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

The Role of Information Systems in Business Today

- **Improved decision making**
  - Without accurate information:
    - Managers must use best guesses, luck
    - Results in:
      - Overproduction, underproduction
      - Misallocation of resources
      - Poor response times
    - Poor outcomes raise costs, lose customers

The Role of Information Systems in Business Today

- **Competitive advantage**
  - Delivering better performance
  - Charging less for superior products
  - Responding to customers and suppliers in real time
    - Examples: Apple, UPS

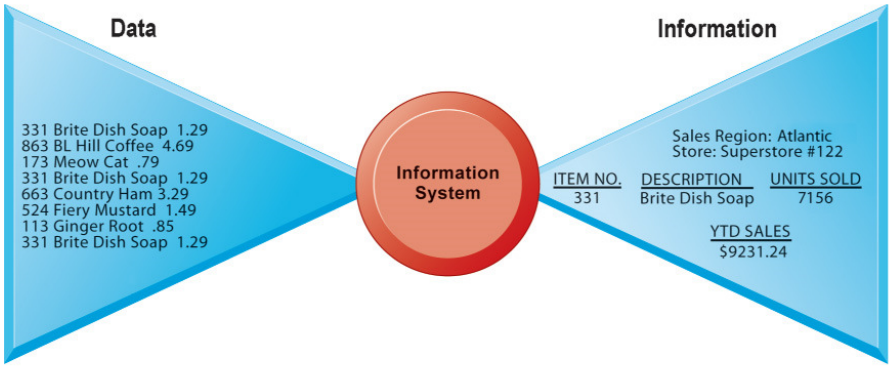
The Role of Information Systems in Business Today

- **Survival**
  - Information technologies as necessity of business
  - Industry-level changes
    - Example: Citibank's introduction of ATMs
  - Governmental regulations requiring record-keeping
    - Example: Canadian Sarbanes-Oxley Act

So what is an Information System?

- **Information system**:
  - Set of interrelated components that
    - Collect, process, store, and distribute information
    - Support decision making, coordination, and control
    - Relies on:
  - **Information technology**:
    - The hardware and software that a firm needs to achieve business objectives
    - Hardware and software are technical foundation and tools, similar to the material and tools used to build a house.

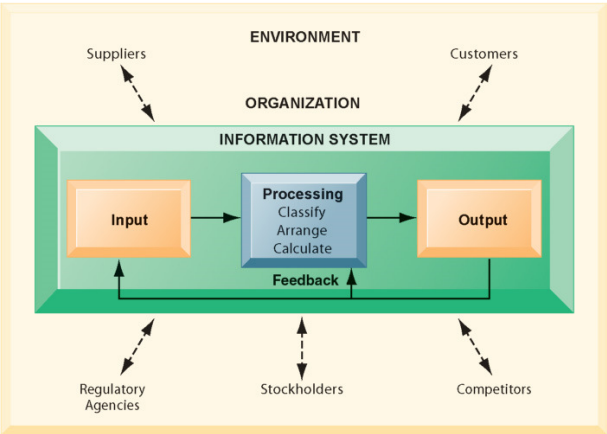
FIGURE 1-3 Data and information.



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.

FIGURE 1-4 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 factors, such as customers, suppliers, competitors, stockholders, and regulatory agencies, interact with the organization and its information systems.



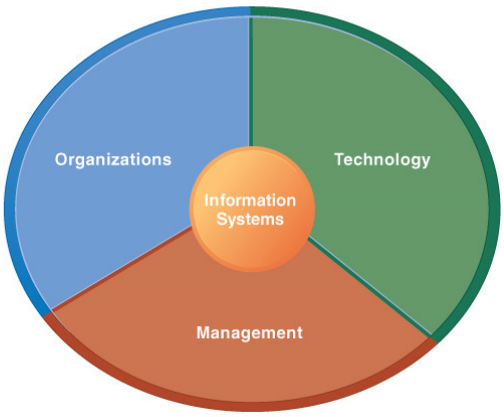
Perspectives on Information Systems

Four activities of information systems:

- **Input**: Raw data or information from organization, external environment or other IS
- **Processing**: Converts raw data (or one form of information) into more meaningful information
- **Output**: Information to be supplied to people, activities (or other IS) that use it
- **Feedback**: output returned to members of the organization to help them evaluate or correct the input and/or processing

FIGURE 1-5 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 value for the firm as an organizational and management solution to challenges posed by the environment.



What is New in Management Information Systems

Change	Business Impact
Technology	
Cloud computing platform emerges as a major business area of innovation	A flexible collection of computers on the Internet begins to perform tasks traditionally performed on corporate computers. Major business applications are delivered online as an Internet service (Software as a Service, or SaaS).
Big data	Businesses look for insights from huge volumes of data from Web traffic, e-mail messages, social media content, and machines (sensors) that require new data management tools to capture, store, and analyze.
A mobile digital platform emerges to compete with the PC as a business system	The Apple iPhone, Android, Blackberry, and other mobile devices are able to download hundreds of thousands of applications to support collaboration, location-based services, and communication with colleagues. Small tablet computers, including the iPad, Google Nexus, and Kindle Fire, challenge conventional laptops as platforms for consumer and corporate computing.
Management	
Managers adopt online collaboration and social networking software to improve coordination, collaboration, and knowledge sharing	Google Apps, Google Sites, Microsoft Windows SharePoint Services, and IBM Lotus Connections are used by more than 100 million business professionals worldwide to support blogs, project management, online meetings, personal profiles, social bookmarks, and online communities.
Business intelligence applications accelerate	More powerful data analytics and interactive dashboards provide real-time performance information to managers to enhance decision making.
Virtual meetings proliferate	Managers adopt telepresence videoconferencing and Web conferencing technologies to reduce travel time and cost while improving collaboration and decision making.
Organizations	
Social business	Businesses use social networking platforms, including Facebook, Twitter, and internal corporate social tools, to deepen interactions with employees, customers, and suppliers. Employees use blogs, wikis, e-mail texting, and messaging to interact in online communities.
Telework gains momentum in the workplace	The Internet, wireless laptops, smartphones, and tablet computers make it possible for a growing number of people to work away from the traditional office. Twenty-three percent of Canadian businesses have some form of remote work program (Marotte, 2013).
Co-creation of business value	Sources of business value shift from products to solutions and experiences, and from internal sources to networks of suppliers and collaboration with customers. Supply chains and product development become more global and collaborative; customer interactions help firms define new products and services.

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 context)

Contemporary Approaches to Information Systems

- Approach of our book: **Sociotechnical view**
  - Optimal organizational performance achieved by jointly optimizing both social and technical systems used in production
  - Helps avoid purely technological approach

FIGURE 1-9 Contemporary approaches to information systems.

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

Group Discussions: UPS Competes Globally With IT

Read the Window on Technology and answer the following questions:

- What are the inputs, processing, and outputs of UPS's package tracking system?
- What technologies does UPS used? How are these technologies related to UPS's business strategy?
- What strategic business objectives do UPS's information systems address?
- What would happen if UPS's information systems were not available?

Dimensions of UPS's tracking systems

- **Organizational**:
  - Procedures for tracking packages and managing inventory and provide information
- **Managerial**:
  - Monitor service levels and costs
- **Technological**:
  - Handheld computers, bar-code scanners, networks, desktop computers, and so on

Contemporary issues

- Increased e-commerce
- Emerging mobile digital platform
- Growing business use of "big data"
- Growth in cloud computing
- New government regulations affect business responsibilities
- Shifts in media: more news delivered online

Contemporary issues

Globalization challenges and opportunities

- A “flattened” world
- Internet has drastically reduced costs of operating on global scale

Contemporary issues

- 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