

Software Engineering

Module CS5002NA

Week 2 - Information system



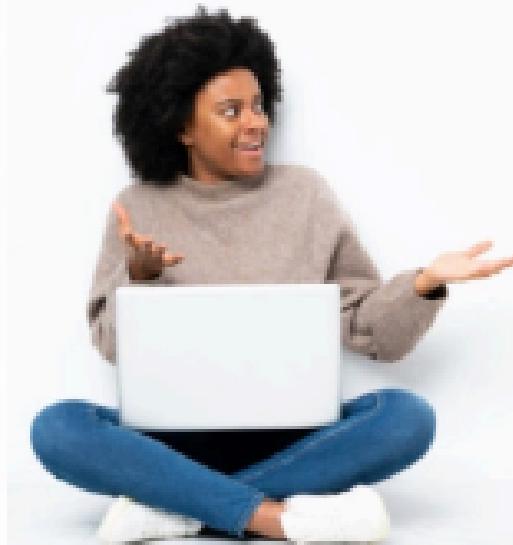
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Weekly Objective

- Becoming familiar with the information system and its components.
- Realizing the importance of information system to an organization.
- Understanding the types of information system and their importance.

System



What is System?

System

A system is a collection of elements or components that are organized for common purpose order to facilitate the flow of information.

A system is a set of elements joined together for a common objective.

A system can be also defined as a combination of people, device, process, and method interrelated in working towards a common goal. E.g. Business organization, school, college, water supply, electrical distribution, banking etc.



System Interacting Components or Function

- 1. Input :** It involves capturing and assembling elements that enter the system to be processed. For Eg - raw materials, energy, data, and human effort must be secured and organized for processing.
- 2. Process :** It involves transformation processes that convert input into output. Eg. Manufacturing process, Mathematical calculation.
- 3. Output :** It involves transferring elements that have been produced by a transformation process to their ultimate destination. Eg. Manufactured product.

Data and Information

Data are raw facts and figures that are set of isolated, unrelated, and uninterpreted.

Data can be collected from various sources obtained through interview, questionnaire, on-site observation, counting, measuring, weighing, sampling etc.

Data is processed or transformed into information, which is used in decision making process.

Information : is the processed data. It is a set of organized data. It is the processed data into form that is meaningful may take necessary actions.



Information System

Information System (IS) - is interrelated components working together to collect data, process it, gives output and store using the resources of hardware, software, people, procedure and controlling mechanism.

A set of interrelated components working together to collect, retrieve, process, store, and distribute information for the purpose of facilitating planning, control, coordination, analysis, and decision making in business organizations.

The system that accepts data as input processes it to generate the information and provides the information to the user as output is called as information system.

Information System

For instance –

Corporations use information systems to reach their potential customers with targeted messages over the Web, to process financial accounts, and to manage their human resources.

Governments deploy information systems to provide services cost-effectively to citizens. Digital goods, such as electronic books and software, and online services, such as auctions and social networking, are delivered with information systems.

Individuals rely on information systems, generally Internet-based, for conducting much of their personal lives: for socializing, study, shopping, banking, and entertainment.

Information System Components

Hardware: Physical device

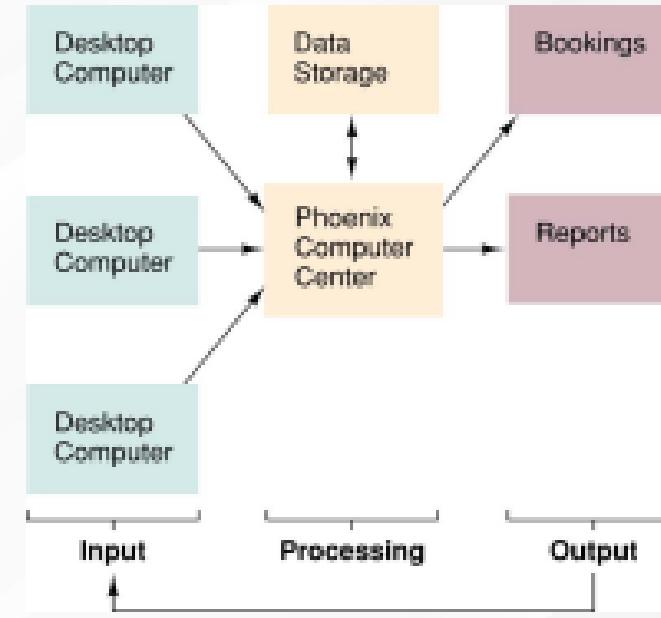
Software: Tells hardware what to do

Data: Info manipulated by software

People: All people involved

Process: Steps to accomplish a goal

Hotel Reservation System Example



Functional units of Business Organizations

Production

Sales / Marketing

Finance / Accounting

Human Resources



Functional units of Business Organizations

Production

The manufacturing and production function is responsible for producing the firm's goods and services. There are three stages of the manufacturing/ production process:

- Inbound logistics
- Production
- Outbound logistics



Functional units of Business Organizations

Sales / Marketing

The sales and marketing function is responsible for finding customers for the firm's product or service and selling the firm's product or service to those customers. The sales and marketing process consists of

- identifying and creating markets
- developing markets
- maintaining markets



Functional units of Business Organizations

Finance / Accounting

The finance and accounting function is responsible for managing the firm's financial assets and maintaining the firm's financial records. The finance process involves managing the firm's financial assets, whereas the accounting process is involved primarily in financial record keeping.



Functional units of Business Organizations

Human Resources

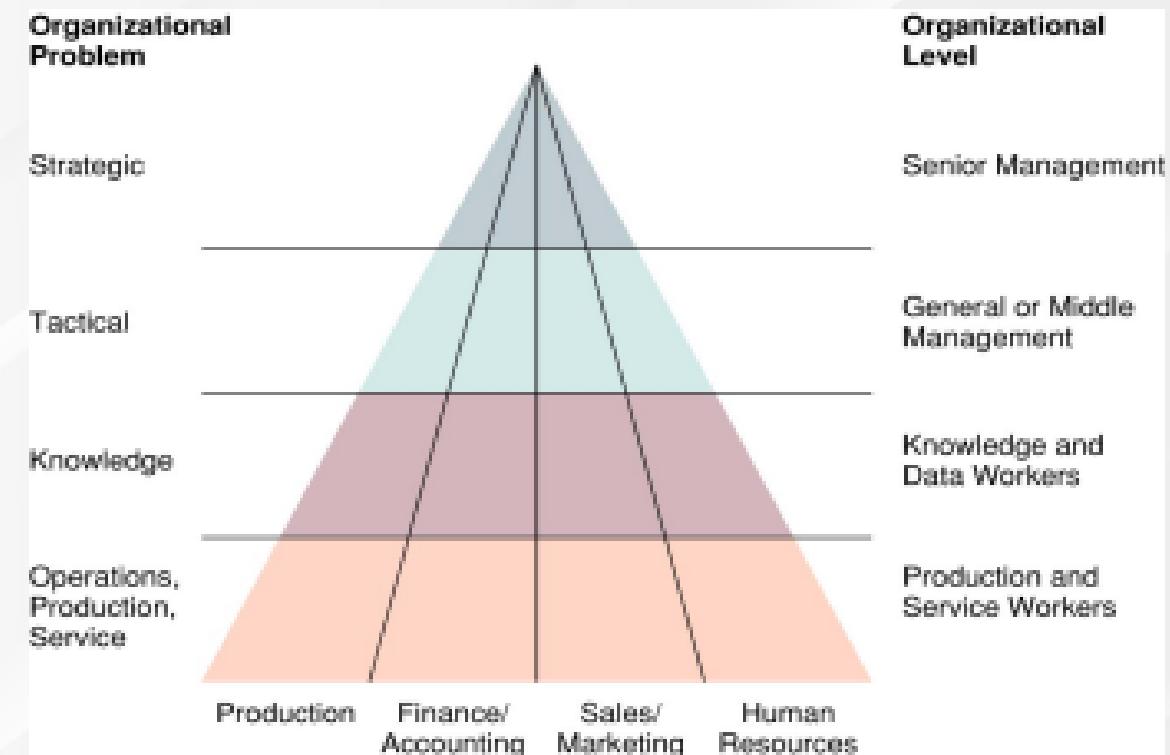
The human resource function is responsible for attracting and maintaining an appropriate work force for the firm. The human resources process entails

- attracting the work force
- developing the firm's work force to meet the firm's personnel needs
- maintaining the work force



Information System in Business

- Business functions
- Business processes
 - A series of interrelated activities through which work is organized and focused to produce a product or service
- Business levels
 - Strategic (long range planning)
 - Tactical (co-ordinate & supervise)
 - Operational (produce product & service)



Type of Information System

Now, that we know, the importance of Information system for an organization.



Let's get familiar with the types of Information System.

Type of Information System

Transaction Processing Systems

Management Information Systems

Executive Information Systems

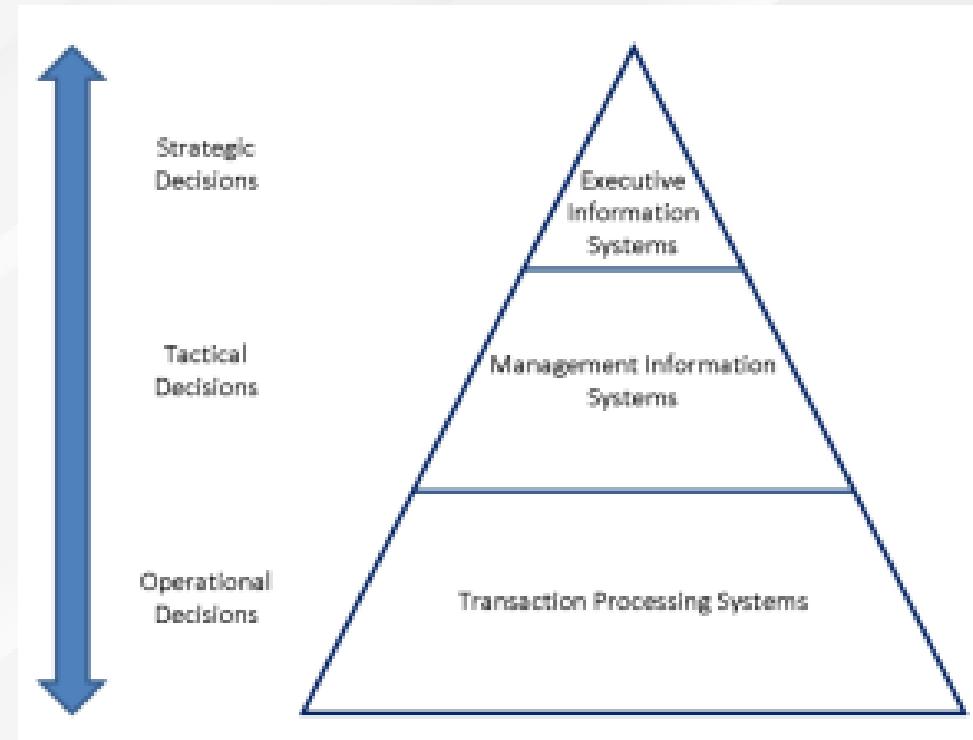


Type of Information System

Transaction Processing Systems

Every firm carry out various business operations on a daily basis. These operations type depend upon the types of business.

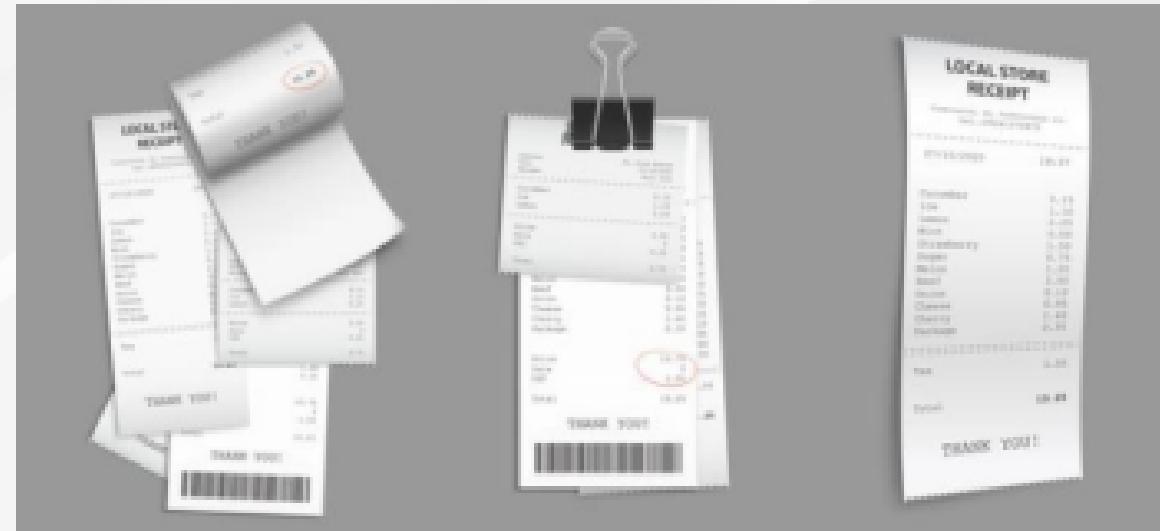
To support the processing of business transactions, transaction processing systems (TPS) are used in organization.



Type of Information System

Transaction Processing Systems

TPS serves at the operational level of organization to record those transactions made on a daily basis. For eg. The sales transactions, shipping done, order entry etc.

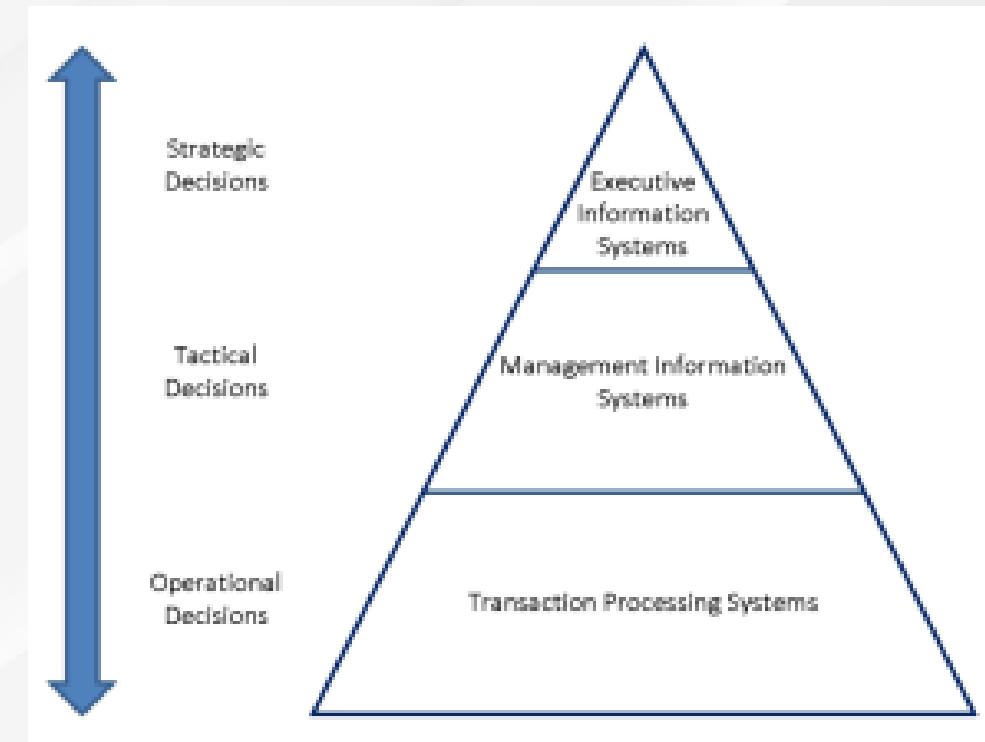


Type of Information System

Management Information Systems

Management Information Systems (MIS) are developed to facilitate planning, controlling, and decision making for middle level managers.

A MIS extracts transaction data from underlying TPSSs, complies them, and produces information products in the form of reports, displays, or responses.



Type of Information System

Management Information Systems

A typical MIS report is a summery report, such as a report on the quarterly sales made by each sales representative of the organization.



Type of Information System

Executive Information Systems

- Helps senior management make strategic decisions.
- The decisions taken are non-routine decisions that affect the entire organization and, thus, require judgement and sight.
- EISs offer more general computing capabilities.
- Use advance graphics software to display critical information in the form of charts or graphs that help senior executives to solve a wide range of problems.



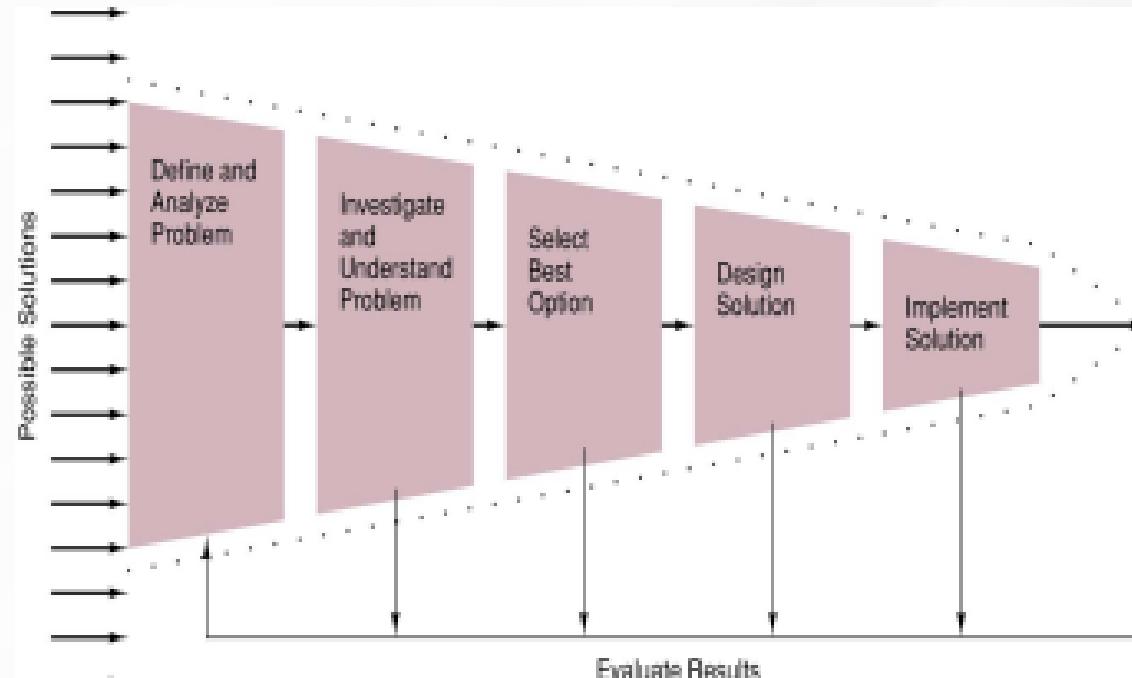
Type of Information System

Executive Information Systems

It helps in taking strategic decisions and the decisions that are not routine. For eg. Like decision to stop manufacturing a certain product.



IS approach to problem solving





Key points

- Information system is valuable asset for any organization especially in today's world where data is everything.
- There are different type of information systems like Transaction Processing Systems, management Information Systems, and Executive Information System.
- They have a different role to play and to solve a different problem and operate at different levels of the organization hierarchy.

Thank You



Next Lecture

Software Development Life Cycle SDLC

