**Information Systems for Effective Decision Making**

# **Session 1 – Module Overview**

* Session 2: Introduction to Information Systems
  + Importance of Information Systems for Managers.
    - Raw Data vs Information
    - IPO Model
  + Components of Information System.
    - People
    - Hardware
    - Software
    - Data resources
    - Network
  + Guidelines for Developing Information Systems.
    - Business Objectives
    - User requirement
    - Feasibility
    - Usability
* Session 3: Types of Information Systems
  + Hierarchical Information Systems
    - Transaction Processing Systems
    - Management Information Systems
    - Decision Support Systems
    - Executive Support Systems
  + Functional Information Systems
    - Marketing Information Systems
    - Financial Information Systems
    - Production Information Systems
  + Enterprise Systems
    - Enterprise Resource Planning
    - Supply Chain Management
    - Customer Relationship Management
* Session 4: Information Systems Security and Control
* Session 5: Emerging Technologies
  + Artificial Intelligence
  + Cloud Computing
  + Big Data
  + IoT (Internet of Things)

# **Session 2 – Introduction to the Information Systems**

## Importance of Information Systems

Raw Facts: Raw facts represent data about different events and occurrences in an organisation.

Data: is then organised and arranged into a comprehensible form of decision making.

Information: Raw data when cleaned and transformed into a form which can be analysed/visualized, it is called Information.

*Data when organised and given a context to, becomes information.*

Systems: Systems are a set of interrelated elements working towards a common objective.

In conventional systems, operations are carried out in three stages (**IPO Model**) to attain objective of a system:

* Input
* Process
* Output

Input: These set of system operations are responsible for capturing and collecting raw data from within the organization or from its external environment.

Process: These set of system operations primarily work on the raw input data and transform them into a meaningful form.

Output: These set of system operations transfer the processed data or information to the specific set of people who will use it for making business decisions, or where it will be used as input data for another set of processes.

Information system is an umbrella term which typically denotes three components:

* People
* Process
* Technology

These information systems work together to

* Collect data
* Store data
* Transform data into information
* Use information for effective decision making

Factors determining Complexity of Information Systems

* Size of the Organization
* Number of business functions
* Number of products and services
* Scale of sales
* Customer Profile
* Business environment

Managers are interested in this because:

* They want to process large volume of information.
* Take quick decisions.

Advantages of Information Systems

* Record Keeping
* Increased efficiency
* Seamless communication
* Customisation of information
* Strategic competitive advantages
* Establishing new Business models

## Components of Information Systems

Information system is an umbrella term which typically denotes three components:

* People
  + Information system specialists: Software Developers, System engineers, Managerial and Operational professionals
  + End users: CXOs, Managers or Supervisors. Also, Customers sometimes.
* Process
  + Business Process: Set of activities carried out to produce a product or a service. May be series or parallel activities. May be Function specific or multi-functional.
* Technology
  + Hardware: Physical and tangible things that are a part of an information system.
    - Computer systems
    - Computer peripherals
      * Input Devices:
        + Keyboard
        + Mouse
        + Touch Screen
        + Barcode Scanner
        + Voice Recognition
      * Processing Unit:
        + CPU
        + Decodes input data
        + Performs operation on raw data
        + Generates comprehensible output
      * Output Devices:
        + Monitors, LCDs
        + Text output from printers
        + Audio output from speakers
      * Data Storage:
        + Primary Storage:

RAM: Volatile memory meaning - Only stores data till it is connected to a power source. This data can be read and re-written.

ROM: Non-volatile – meaning it can store data even without a power source.

* + - * + Secondary Storage

Hard Disk Drive:

Non-volatile

Connected to computer systems and used to store applications and the user’s personal data.

USB Thumb Drive:

Portable storage

SD card:

Portable

High usage

Magnetic Tape:

* + Software:
    - System Software – OS, GUIs
      * Manages and controls other components of the system.
      * Keeps track of the computer functions and memory.
      * Accesses device operations.
      * Instructs other components to perform tasks.
      * Streamlines tasks to be performed by the system.
    - Application Software –
      * Web browsing
      * E-mails
      * Word processing
      * Photo editing
      * Numerous such applications
  + Data
  + Communication Network
    - Internet
    - Intranet
    - Extranet:
      * Coordination between various intranets
      * Used by large organisations to allow coordination amongst companies during joint projects or information sharing initiatives.

## Data Resources