



# Chapter Three

## **Basics of Management Information System**

# Basics of MIS

- The MIS is an idea which is associated with **man, machine** and
- Methods for **collecting information's** from the internal and external source and **processing this information**
- For the purpose of **facilitating** the process of **decision-making** of the business.

# Cont.

- MIS is **not** new, only the computerization is new ,
- Before computers MIS techniques existed to supply managers with the information that would **permit** them to **plan** and **control business operations**.
- Add on more dimensions such as **speed**, **accuracy** and **increased volume** of data that permit the consideration of more alternatives in decision-making process.

# Cont.

- **The actual MIS process** relates to:
  - Collection
  - Organization
  - Distribution
  - Storage of wide information
- Therefore **MIS focuses** on:
  - Organization-wide information
  - Decision-making process
  - Managerial control and analysis

# Information

- **Information:** Data must be distinguished from information and the distinction is clear and important for the purpose it intends.
- **Data** are facts and figures that are not currently being used in a decision-making process
- **Knowledge** that one derives from facts for effective functioning of systems

# Information Quality

- Information **consists** of data that have been **retrieved, processed** or
- Used for information or **interference purpose, argument** or as a **basis forecasting** or decision-making regarding any business unit.
- **Good information is good business**
- what constitutes “good,” or “quality,” information?
- **information quality (IQ)** is understood to be a **multidimensional** concept that encompasses critical relationships among **multiple attributes**, such as **timeliness**, accuracy, **relevancy**, and others

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## IQ Dimensions

- **Accessibility** : The extent to which data is **available** or easily and quickly retrievable.
- **Appropriate Amount of Data** : The extent to which the **volume** of data is appropriate for the task at hand.
- **Believability** : The extent to which data is regarded as **true** and credible.
- **Completeness** : The extent to which data is not missing and is of sufficient breadth and depth for the task at hand.
- **Concise Representation** : The extent to which data is compactly represented.
- **Consistent Representation** : The extent to which data is presented in the same format.
- **Ease of Manipulation** : The extent to which data is easy to manipulate and apply to different tasks.

# IQ Dimensions Cont.

- **Free of Error**: The extent to which data is correct and reliable.
- **Interpretability**: The extent to which data is in appropriate languages, symbols, and units and the definitions are clear.
- **Objectivity**: The extent to which data is unbiased, unprejudiced, and impartial.
- **Relevancy**: The extent to which data is applicable and helpful for the task at hand.
- **Reputation**: The extent to which data is **highly regarded** in terms of its source or content.
- **Security**: The extent to which access to data is restricted appropriately to maintain its security.
- **Timeliness**: The extent to which information is available in time to perform the task at hand.
- **Understandability**: The extent to which data is easily comprehended.
- **Value-Added**: The extent to which data is beneficial and provides advantages from its use.



# Factors to be considered to maintain IQ

## I. Make information quality a priority

- Make it clear that you and your **organization** are **committed** to **improving** and **controlling** **information quality**.
- Create awareness among **personnel** by **measuring** **the costs**, **missed opportunities**, and **decreased agency effectiveness** caused by poor IQ
- **Educate leaders** regarding their role in **implementing policies**, communicating their commitment to information quality, and providing resources to make it happen

# Cont.

## 2. Establish information quality as a program

- Commitment to IQ should be reflected in your organization's **vision**, **mission statements**, and **strategic plans**.
- **Achieving high-quality information** is the result of a **strategic** and **intentional process** an information quality program.
- Establishing an IQ program helps to **ensure on a continuous basis that information is accurate, timely, complete, and secure**



# Cont.

## 3. Assess the level of information quality in your organization

- proactively conduct **self-assessments** to **measure** information quality and **identify and address** areas that need **improvement**
- Such assessments should be part of a **continuous process**.

# Cont.

## 4. Move from “need to know” to “write to shares

- You and the employees in your organization **understand** and **acknowledge** that **any information** that is **written** or **entered** into your **system** has the potential to be accessed or **shared** in an **internal** or **external** agencies information sharing environment.
- You and your employees **should write or enter** the information according to the rule “**write to share.**”



# Cont.

## 5. Hold the entire organization accountable for information quality

- Build accountability mechanisms and processes into your routine business practices
- So that **every person** in the organization knows his or her responsibility and is held accountable for **ensuring** information quality

# Information overload

- **Information overload** represents a state of affairs where an individual's **efficiency in using information** in their work is **mired by the amount of relevant and potentially useful information available to them.**
- exposure to or provision of too much information or data.
- Occurs when information received **becomes a hindrance** rather than a help given that the information is potentially useful.

# Information Overload cont.

- Different meanings are given to the term information overload by different writers that include:
  - **Loss of control** over information /inability to use information effectively
  - An information **pollution**
  - A cause for information anxiety (a feeling of being overwhelmed)

# Historical Development

- Overload was acknowledged explicitly as a problem in **1948** (at the Royal Society's Influential Scientific Information Conference)
- There was an expressed fear that scientists will be overwhelmed by the vast amounts of potentially relevant materials that **required having a technique of controlled selectiveness.**



- Late 1950's & 1960's was characterized by:
- Exponential **growth of publications** (especially in science & Technology)
  - Increased **computer based information handling**. 1970s & 1980s – characterized by: -
  - Increase in the volume of **primary literature** (overload in the areas of academic & professional publications) ... **research outputs**, journals, **books**, etc.
  - 1990s – Information overload became a **major problem in business world** especially due to the **new technology: e-mail, Internet and digitization of everything**.
  - The problems created include:
    - **On individuals:** (i.e. business managers)- affected their **efficiency and health**.
    - **On organizations:** resulted in a decrease in **efficiency and productivity**

# Causes of information overload

## I. Availability of information

- (a) Too Much Information (TMI)

- If there is too much information it is so difficult to find useful and relevant information.
- Too much information, if badly organized, impedes knowledge.
- Too much information no longer adds to our quality of life rather causes stress, confusion, and even ignorance

- (b) Diversity of Information

- I. from the nature of the information itself
- Information on a given topic may come from varying perspectives.
- II. from the format aspect: the same information can be presented using different media:

# Cont.

## 2. Information & Communication Technologies

- ICT provides **rapid** and **convenient** access to information.
- Information overload is mainly **caused by technologies related to information sharing:**
  - e-mail
  - Internet \Intranet\ Extranet
  - Group ware Technologies
  - Push Technologies

# Cont.

- **3. Changing Nature of work**
  - **Interdisciplinary work**
  - **Collaborative work**
  - **Trends in working environment**
    - increased globalization
    - increased competition



Cont.

#### 4. Dis- intermediation

A greater proportion of information searching is done by **end-users** rather than **information professionals**

Users feel more **overloaded** since they are **unable to identify core** of valuable material

# Effects of Information Overload

## I. Cost

- **Time:** - wasting **substantial amount of time** by looking for information.
  - Scientists claim that **it takes less time** to an **experiment than to find out whether or not it has been done before.**
  - In western countries an average worker spends more than **1/2 day by processing a document.**
  - Office workers spend hours of reading & answering mail.
  - Additional **efforts** and **resources** need also be committed



# Cont.

## 2. Delayed decision

➤ developed countries most managers delay decision as a result of too much information

- according to the Reuter's survey of 1996 1/2 of the managers surveyed believed that important decisions were delayed and adversely affected as a result of having too much information (TMI)
- Due to the large # of choices managers could be confused

# Cont.

**3.Health Problem:** It has a damaging effect on health (e.g. mental stress)

**4.Loss of job satisfaction:** due to the stress

**5.Information anxiety**

- A feeling of being **overwhelmed** by TMI.  
Resulted from: -
  - Gap between what we **understand and what we think and we should understand.**
  - Discrepancy between what is **available and what is needed.**
  - **Inability to extract a meaning** from the available too much information.





# Cont.

## 6. Dependence on others

- To have **pre-packaged** information (Reduced into manageable size)
- Accepting the **opinion of others**

## Solution to overcome Information overload

- Managerial
- Technical

# I. Managerial Side

- **Control**

- As the **loss of control** over information is the single **major symptom of overload**,
- **restoring control** is the major stem towards its remedy.
- It can be exercised at both **individual and organizational** levels.

- **At the individual level**

## I. Time management

- An explicit **prioritization** of information seeking related to work **goals** and **objectives**, as opposed to surfing randomly among peripherally relevant material on the web & reading of all incoming e-mails.
- **Joining** news groups and mailing lists very **selectively**
- **Deleting** many messages **unread** and only keeping materials that would be very difficult to find again.

# Cont.

## 2. Information Literacy

- Developing **information handling skills** that include the ability to **access**, **evaluate**, **organize** and **use** of information from a variety of source
  - Recognizing the **need** for information
  - **Identifying** what information **would address** a **particular problem**
  - **Finding** the needed information
  - **Evaluating** the information found
  - **Organizing** the information



# Cont.

## 3. Personal information management training

- Some training in **classification** and **indexing** is necessary for those who need to keep large amounts of information

## 4. Knowledge Organization

- Reduces overload by providing relevant information
  - the traditional intellectual tools of classification and thesaurus,
  - automatically generated term lists

## 2. The Technical Side

- New ICT is responsible for a large part of information overload. It also provides a solution to the problem in two ways:-
  - **Intelligent search** agents
  - **Intelligent interfaces.**