Final-Term – Semester Assignment

- Subject : Information System and Data processing

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Q1) What are systems? Explain in detail. Take a daily life example of system (any organization or company) and explain its component one by one in detail.

Answer:

System:

A system is a group of elements that are integrated with the common purpose of achieving an objective. Organization having common goal for the achievement are functionally interactive units. All systems have inputs, outputs, and feedback, and maintain a basic level of equilibrium. For example, in the human body the heart functions to support the circulatory system, which is vital to the survival of the entire body.

Components of a system:

Every system comprises of basic components which in a coordination formulate a system. These are as follows.

• **Input elements**

The information entered into a system. For instance raw data input to the computer system.

• **Process**

Any specific treatment defined in the system to be performed on the data entered into the system, for instance, computation, analysis, application of any model.

• Output elements

The results given by the system after the process has been performed on the data being input to the system.

• Control mechanism

Every system is expected to generate some sort of standardized output. Hence actual output needs to be compared with what it is supposed to generate. This comparison of actual with expected output is done with the help of control mechanism.

• Feedback system

Once the control mechanism has been devised, it needs to a reporting mechanism, which should respond with a corrective action, if required.

• Objectives

We just mentioned that a control mechanism should compare actual output with expected/Ideal output. But before this is being done, there needs to be a list of specific objectives which define expected output.

Types of Systems

Open-Loop System

The determinant factor is in an open loop system is that the information from the system not used for control purpose. This is done by using the output to generate feedback for control purposes.

• The output is not coupled to the input for measurement.

• Hence the components of open loop system do not include control and feedback mechanism due to non-existence of internally defined objectives. That is, input, process, output.

Example An information system that automatically generates report on regular basis and are not used to monitor input or activities.

Closed Loop System

Is a system where part of the output is fed back to the system to initiate control to change Either the activities of the system or input of the system Has the ability to control the output due to existence of.

Information System

- Control Mechanism
- Feedback System
- Objectives

Example

Budgetary control system in a company by which

- The results are communicated through feedback system o Results are compared with the objectives/budget through controls mechanism

Open Systems

A system that is connected to its environment by means of resource flows is called an open system. The environment exerts influence on the system and the system also influences the environment.

Example

- Business is a system where management decisions are influenced by or have an influence on suppliers, customers, society as a whole.
- Computerized system of a manufacturing entity, that takes influence from the society.

Closed Systems

A system that is not connected with its environment. Neither environment exerts any influence on the system nor does system influence the environment.

Examples

- An information system designed to control data in a research laboratory is a closed system.
- An information system designed to record highly sensitive information is a closed system
- To accept no input for amendment
- To give no output for disclosure

Quality Management system of Coca-Cola.

Coca-Cola uses KORE Quality Management System

- KORE is the framework of governance and management system around which the Coca-Cola system enables sustainable performance, meets customer and consumer demands, drives continuous improvement, manages risk and enhances the Company's reputation.
- It provides a management system foundation that combines discipline toward producing the highest quality product while allowing flexibility to achieve global implementation.
- It brings an increased focus to the area of Food Safety and encourages alignment with the highest international manufacturing standards while recognizing the need to meet applicable government, legal and local regulations.
- It enforces necessary requirements to ensure product integrity and quality and to protect their trademark while supporting strategies toward its 2020 Vision.
- It enforces requirements not only to protect their products, but also to ensure the safety and well-being of their associates and partners and to be environmentally responsible.

It is designed to create a dialogue of honest information sharing between the Company and the stakeholders.

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Q2) What is Management information system? Take an example of MIS of any organization and elaborate in your   own words.

Answer: Management Information Systems:

A management information system (MIS) is a computer system consisting of hardware and software that serves as the backbone of an organization's operations. An MIS gathers data from multiple online systems, analyzes the information, and reports data to aid in management decision-making.

MIS is also the study of how such systems work.

Improved Decision-Making

The purpose of an MIS is improved decision-making, by providing up-to-date, accurate data on a variety of organizational assets, including:

- Financials
- Inventory
- Personnel
- Project timelines
- Manufacturing
- Real estate
- Marketing
- Raw materials
- R&D

The MIS collects the data, stores it, and makes it accessible to managers who want to analyze the data by running reports.

Example:

Honda – A manufacturing organization

Honda is the world largest producer of the motorcycles and internal combustion engines that are measurable by volume mainly producing more than fourteen million internal combustion engines each year.

With the progress of Honda in the manufacturing sector, it has also generated astounding amount of data. Even though IT departments have an advantage over the improvement in the hardware components for storing large amount of data, but still the "fact gap" exists in the Honda to met the needs of useful data at aright time to make effective and efficient decisions.

For Honda, getting right kind of information is important in today's environment which it was not required before, therefore reducing costs, enhanced productivity and maximization of profits.

Managers of Honda have to administer the intricacy of the supply chain, internal control and manufacturing as well as meeting the customer and distribution demands. In today's business environment manufacturers are forced to make effective decisions on a regular basis with the limited information system. Honda has to face mounting globalization, increased competition than before and customers whose needs are reflected in their own facts and opportunities of a global market.

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Q3) Explain Marketing Information system and its types in detail.
 Note: You should make your answer understandable by taking a proper example.

Answer: Marketing Information System

Definition: The **Marketing Information System** refers to the systematic collection, analysis, interpretation, storage and dissemination of the market information, from both the internal and external sources, to the marketers on a regular, continuous basis.

The marketing information system distributes the relevant information to the marketers who can make the efficient decisions related to the marketing operations viz. pricing, packaging, new product development, distribution, media, promotion, etc.

Every marketing operation works in unison with the conditions prevailing both inside and outside the organization, and, therefore, there are several sources (viz. Internal, Marketing Intelligence, Marketing Research) through which the relevant information about the market can be obtained.

Components of Marketing Information System
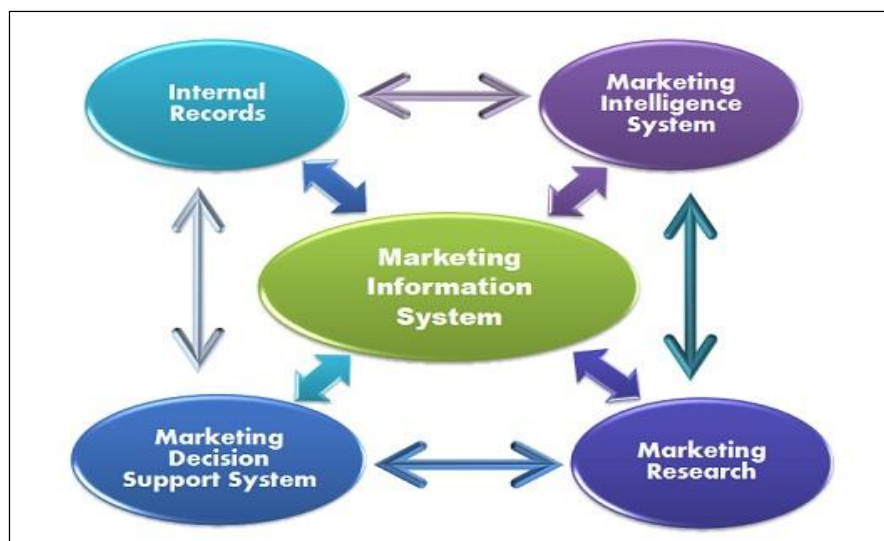
1. **Internal Records:** The Company can collect information through its internal records comprising of sales data, customer database, product database, financial data, operations data, etc. The detailed explanation of the internal sources of data is given below:

   - The information can be collected from the documents such as invoices, transmit copies, billing documents prepared by the firms once they receive the order for the goods and services from the customers, dealers or the sales representatives.

   - The current sales data should be maintained on a regular basis that serves as an aide to a the Marketing Information System. The reports on current sales and the inventory levels help the management to decide on its objectives, and the marketers can make use of this information to design their future sales strategy.

   - The Companies maintain several databases such as*Customer Database- wherein the complete information about the customer's name, address, phone number, the frequency of purchase, financial position, etc. is saved.

     *Product Database- wherein the complete information about the product's price, features, variants, is stored.

     *Salesperson database, wherein the complete information about the salesperson, his name, address, phone number, sales target, etc. is saved.

   - The companies store their data in the data warehouse from where the data can be retrieved anytime the need arises. Once the data is stored, the statistical experts mine it by applying several computer software and techniques to convert it into meaningful information that gives facts and figures.

2. **Marketing Intelligence System:** The marketing intelligence system provides the data about the happenings in the market, i.e. data related to the marketing environment which is external to the organization. It includes the information about the changing market trends, competitor's pricing strategy, change in the customer's tastes and preferences, new products launched in the market, promotion strategy of the competitor, etc.

   In order to have an efficient marketing Information System, the companies should work aggressively to improve the marketing intelligence system by taking the following steps:

   - Providing the proper training and motivating the sales force to keep a check on the market trends, i.e. the change in the tastes and preferences of customers and give suggestions on the improvements, if any.

   - Motivating the channel partners viz. Dealer, distributors, retailers who are in the actual market to provide the relevant and necessary information about the customers and the competitors.

   - The companies can also improve their marketing intelligence system by getting more and more information about the competitors. This can be done either by purchasing the competitor's product, attending the trade shows, reading the competitor's published articles in magazines, journals, financial reports.

   - The companies can have an efficient marketing information system by involving the loyal customers in the customer advisory panel who can share their experiences and give advice to the new potential customers.

   - The companies can make use of the government data to improve its marketing Information system. The data can be related to the population trends, demographic characteristics, agricultural

production, etc. that help an organization to plan its marketing operations accordingly.

- Also, the companies can purchase the information about the marketing environment from the research companies who carry out the researches on all the players in the market.

- The Marketing Intelligence system can be further improved by asking the customers directly about their experience with the product or service via feedback forms that can be filled online.

3. **Marketing Research**: The Marketing Research is the systematic collection, organization, analysis and interpretation of the primary or the secondary data to find out the solutions to the marketing problems.Several Companies conduct marketing research to analyze the marketing environment comprising of changes in the customer's tastes and preferences, competitor's strategies, the scope of new product launch, etc. by applying several statistical tools. In order to conduct the market research, the data is to be collected that can be either primary data (the first-hand data) or the secondary data (second-hand data, available in books, magazines, research reports, journals, etc.)

The secondary data are publicly available, but the primary data is to be collected by the researcher through certain methods such as questionnaires, personal interviews, surveys, seminars, etc.

A marketing research contributes a lot in the marketing information system as it provides the factual data that has been tested several times by the researchers.

4. **Marketing Decision Support System**: It includes several software programs that can be used by the marketers to analyze the data, collected so far, to take better marketing decisions.With the use of computers, the marking managers can save the huge data in a tabular

form and can apply statistical programs to analyze the data and make the decisions in line with the findings.

Thus, the marketers need to keep a check on the marketing environment, i.e. both the internal (within the organization) and the external (outside the organization, so that marketing policies, procedures, strategies can be designed accordingly.

Example:

DATABASE MARKETING

Data-base marketing may be defined as a computerized technique that compiles, sorts, and stores relevant information about customers and potential customers; uses that information to highlight opportunities and prioritize market segments; and enables the firm to profitably tailor marketing efforts for specific customers or customer groups.

Data-base marketing works like this:

1. It creates a bank of information about individual customers.
2. It uses that information to analyze buying and inquiry patterns, thereby creating the ability to target goods and services more accurately.
3. It can be used to promote the benefits of brand loyalty to customers at risk from competition.
4. It can fuel sales growth by identifying customers most apt to buy new goods and services.
5. It can increase sales effectiveness.
6. It can support low-cost alternatives to traditional sales methods, which can be of strategic importance in markets where margins are being eroded.

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Q4)Why Decision Making is an important factor to run an organization. Explain your answer with the help of a proper example.

Answer:

Decision making has a very huge role in an organization there for, the organizations created a system for such decision taking purposes known as decision support system (DSS) where the system is used to support managerial decisions. Usually DSS involves the analysis of many

units of data in a heuristic fashion. As a rule, DSS processing does not involve the update of data.

For any scenario all the related factors with their ranges of variability are entered into DSS, which helps guide managers for any new scenario that emerges. DSS can stimulate innovation in decision making by helping managers to existing decision-making procedures.

Example

An outfit store maintains readymade garments and stitched clothes for various classes of society. Due to fluctuating changes in fashion trends, pre-seasonal planning becomes critical.

- A Planning and forecasting software can be used by management to
- Measure customer reactions to re-pricing
- When to initiate clearance sales for old stock
- Deciding about discount percentages
- When to order new stock for the season

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