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Q.1

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:

Systems: A set of detailed methods, procedures and routines created to carry out a specific activity, perform a duty, or solve a problem.

OR

An organized, purposeful structure that consists of interrelated and interdependent elements (components, entities, factors, members, parts etc.). These elements continually influence one another (directly or indirectly) to maintain their activity and the existence of the system, in order to achieve the goal of the system.

Explanation: All systems have inputs, outputs and feedback mechanisms, maintain an internal steady-state (called homeostasis) despite a changing external environment, display properties that are different than the whole (called emergent properties) but are not possessed by any of the individual elements, and have boundaries that are usually defined by the system observer.

Systems underlie every phenomenon and all are part of a larger system. Systems stop functioning when an element is removed or changed significantly. Together, they allow understanding and interpretation of the universe as a meta-system of interlinked wholes, and organize our thoughts about the world. Although different types of systems (from a cell to the human body, soap bubbles to galaxies, ant colonies to nations) look very different on the surface, they have remarkable similarities. At the most basic level, systems Types:

- (1) **Closed systems:** theoretical systems that do not interact with the environment and are not influenced by its surroundings. Only the components within the system are significant.

Example: a sealed jar--nothing enters or exits the jar, but whatever is inside can interact.

- (2) **Open systems:** real-world systems whose boundaries allow exchanges of energy, material and information with the larger external environment or system in which they exist.

Example2: a company--even if there are separate departments in one organization, the workers share data and interact with each other on a daily basis. Different systems methodologies (such as systems dynamics and systems thinking) classify systems differently.

Closed-loop systems:

Closed-loop systems add some type of feedback that allows the control system to make changes to its processes. The input, feedback, and output are constantly monitored and compared. The output is updated, often at defined a periodic rate. The amplification phase essentially runs over and over again to produce a constantly changing output.

Two very common examples of closed loop systems people use frequently are temperature control systems (house thermostat) and cruise control systems (in vehicles). Both rely on feedback and a closed-loop system to make automatic adjustments without input from a user, other than creating a set point.

Example 1:

When the temperature of a room changes, the actual temperature is fed back into the closed-loop system and compared to the set point temperature, and the controller then controls the mechanisms and processes that manage the output (hot or cold air generation and flow).

Example2:

Similarly, in a vehicle cruise control system, the feedback input is the actual velocity of the vehicle. After comparison to the desired set point velocity, amplification controls the rate of change in velocity command (acceleration) to make the vehicle travel smoothly and consistently at the set point speed.

Open Loop System: In an open-loop system, topology is similar to the typical control system (as described above – input, amplification, output); an input starts the system resulting in a desired output. Once the task is started, the task typically continues to run until completion. It is a one-way system that has no feedback to alter the machine's operation.

Example: example of this type of system is a timer-based toaster. Bread is put into the toaster, a timer is set, and a lever is pushed down acting as a switch to start the process. The toaster coils heat and stay heated for the time set on the timer, then the toast pops up, coils turn off, and the process ends.

. Take a daily life example of system (any organization or company) and its component one by one in detail:

POS (Point of sale) system:

Many retail stores, restaurants and nightclubs rely on point of sale (POS) systems to assist in keeping business transactions running smoothly. POS systems provide computerized efficiency and record-keeping when executing sales procedures. There are many different components that can be used with a point of sale system, and some types of businesses will require more components than others. Depending on what the system is being used for, or what types of features are desired, most business owners can create the ideal POS system to suit their needs with the components of their choice.



Components of this System:

Back Office Server

The back-office server is essentially the main computer where pertinent company information, such as bar codes, prices and sales reports, are programmed and stored. This component also acts as the main information source for the network if multiple units are in use throughout the establishment. No matter how many computers are included in the business network, the back-office server will be the component where all applicable software is downloaded.



Monitor

The monitor is the screen where sales staff views sales information as a transaction is in progress. As items are added, staff (and sometimes patrons) can view the list of accumulated items, price, tax, savings, subtotals, totals and any other applicable information pertaining to the type of business being conducted. The monitor operates in conjunction with the back-office server and other components such as a mouse, cash drawer, printer and sometimes a keyboard (unless a touch-screen monitor is installed that allows for keyless entries).



Bar-Code Scanner

Bar code scanners retrieve coded pricing information using a laser beam for various items. These components are often flat glass at the base of the counter near the cash register, with a laser beam beneath the glass to capture the bar code. Some bar code scanners are hand-held, enabling salespeople to scan items that are too large or heavy to be lifted to a counter.



Cash Drawer

POS systems at retail stores will most often have an electronic cash drawer. Like a typical cash drawer, it is used to hold money collected for goods or services. These components are also controlled by the back-office server and are programmed to open after designated tasks or digital commands.



Keyboards

Keyboards are an essential component to be used with the back-office server. The keyboard is used to enter items, services, pricing information, updates and all other information essential to running the business. Point of sale systems that function without touch screens or bar-code scanners may require a keyboard as well. Even when touch-screen monitors are used at work-station terminals, keyboards may still be useful in entering any notes, details or modifications to the purchased goods or services.



Printer

At least one small printer is usually added to the POS system. This component can be programmed from the back-office server to produce customized receipts or invoices for customer use. The printer may also be used for printing sales reports or employee time cards.

MSRs & PIN Pads

Magnetic stripe readers (MSR) are used to capture credit or debit card information to process sales. An MSR component can be attached to the work station terminal to enable a customer to swipe a credit card at the time of payment. In instances when debit cards require personal identification numbers (PINs), a portable PIN pad may be incorporated into the POS system to allow the patron to privately enter her PIN. Some PIN pads and MSRs also have a signature capturing screen where customers can digitally sign credit transaction receipts.



Q.2

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

Answer: 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.

It is an information system which deals with the

- Planning, development and maintenance of production facilities
- Establishment of Production goals

- Availability of production materials
- Scheduling

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**

Example of MIS of any organization

BMW's Management Information Systems: Company Overview

BMW is a German vehicle and engine producing organization established in 1916. It also manages and creates the MINI brand, and is the mother organization of Rolls-Royce Motor Cars. Mainly, BMW Group Brands are MINI, BMW and Rolls-Royce (BMW Education Programme 2009a). BMW is famous for its efficient and durable cars. And its mission statement is being a leader in the world as premium product provider and also premium service provider (BMW Education Programme, 2009b).

Overview of MIS of BMW

The present automotive industry is classified by increasing product diversity and brief development periods. One of the important activities is to enter the market quicker by organizing the product development and production start-up procedures. One can attain this streamlining by doing a huge number of effectively coordinated procedures in parallel, utilizing a data structure that has all the data regarding the product and its types and is available at each phase to all people included in production planning (Clarke, 2007). This process, pertained to as integrated product and process engineering, is at available when one utilizes my SAP Automotive.

my SAP Automotive integrates SAP Business Suite programs with customized operations to aid BMW- as well as other manufacturers, vendors, sales, and service companies – attain substantial benefits by merging the whole engineering, production, marketing and service business sector.

With my SAP Automotive merged within the operations of BMW, the company is able to improve important business procedures – and attain important company objectives:

- * Competent staff and talent with effective procedures for workforce and talent acquisition
- * Financial stability with improved procedures for financial performance control

- * Operational effectiveness with improved procedures for operations control
- * Product and service dominance with improved procedures for product control
- * Excellent client value with improved procedures for sales and service

my SAP Automotive is particularly created to address the needs and challenges of the BMW and the automotive industry. It is a comprehensive and effective solution for BMW that encompasses business procedures from engineering design, preparation, manufacturing, purchasing, sales and service (SAP for Automotive Website, 2010). Created to be a comprehensive and holistic management information system, my SAP Automotive is organized based on various market sectors that create the foundations of automotive industry.

Roles of mySAP Automotive in BMW

Provide information across various departments

a) Operations

More than any operational aspect, operations of BMW have been affected by significant developments in technology. As a consequence, production processes have evolved. For example, inventories are given just in time in order that huge sums of funds are not used for storing large inventories (Kiley, 2004).

my SAP Automotive offers solutions for BMW in terms of vehicle and procedure modeling, preparation and manufacturing implementation. mySAP Automotive helps BMW ins terms of the improvement of the planning of the manufacturing process.

Consolidated product and process modeling is attained within BMW through mySAP Automotive, where the modeling of every vehicular model and production procedures from the initial prototyping stage to the manufacturing stage is accomplished in one framework (Kidd, 2000). This minimizes information redundancy and the necessity for interfaces as information is saved in a solitary system. Cooperative engineering with suppliers provides new opportunities for more effective and quicker product development with suppliers online.

Versatility and effectiveness in manufacturing within BMW is attained through the Model-mix preparation and immediate needs preparation feature of mySAP Automotive. Model-mix preparation enables BMW to improve the manufacturing sequence particularly essential for the company. Immediate needs preparation allows quicker processing of assembly and parts requirements of make-to-order setting as against the basic MRP.

b) Accounting

In BMW, all accounting documents are managed by all accounting managers (Laudon, 2007). In this case, mySAP Automotive offers solutions that improve the accounting procedures and policies of BMW. mySAP Automotive offers solutions that improve the accounting activities of the company, enabling them to respond more quickly and effectively to the industry demands.

c) Finance

mySAP Automotive offers financial data to all financial managers within BMW including the head of the finance department. The head of the finance department of BMW studies historical and present

financial outputs, predicts long term financial necessities, and tracks and manages the usage of money over time utilizing the data produced by the mySAP Automotive (Buxmann, 2004).

mySAP Automotive offers solutions that allow sales and pricing of cars through configuration, status monitoring of cars, sales and allocation of available components. Car customization and pricing online improved car sales of BMW by providing clients with the alternative of customizing their cars (Seese, 2008). Once the car is customized, car customization and pricing will identify the price of the car according to the customization. Car search and locator allows BMW to look and find cars that satisfy the particular configurations, attaining quicker delivery to clients.

d) Marketing

mySAP Automotive aids the marketing initiatives of BMW in the aspect of product development, dissemination, pricing choices, advertising, and sales prediction (Forquer, 2005). More than any other operational aspect, mySAP Automotive depends on outer sources of information. These references include rivalry and clients, for instance.

e) Human Resource

mySAP Automotive also helps with BMW's initiatives connected to employees, leaders, and other staff working within the company. Due to the fact that the role of the human resources is important to all other aspects of the operations of BMW, mySAP Automotive has an important responsibility in guaranteeing company development for BMW (Sankar, 2006).

2) Facilitate decision making at the three tiers of management

a) Operational Level Systems

To make the operational level decision making within BMW very simple and effective, mySAP Automotive helps in offering and disseminating updated data to proper users. mySAP Automotive is created to improve the reporting of data that will be critical in the correct decision making within the operational level of BMW. mySAP Automotive is able to immediately gather and edit information, summarize outcomes, and able to cope and correct mistakes immediately.

b) Management Level Systems

mySAP Automotive has automated and manual internal controls that help in the management level decision making activities in BMW (Kogent, 2009). Data is obtained through proper editing and inner control checks. A detailed inner and outer audit program is used within BMW through mySAP Automotive.

c) Strategic Level Systems

To have an improved strategic level decision making, information within BMW is analyzed and organized effectively and uniformly through mySAP Automotive. Gaps in the manner data is gathered and documented can alter data and trend analysis. Aside from this, since information gathering and documentation procedures will alter over time, so BMW management has created effective processes to enable systems developments through mySAP Automotive. These processes are always well defined and noted, effectively communicated to proper workers and has a monitoring system that aids in the strategic level decision making of BMW.

Q.3

Explain Marketing Information system and its types in detail.

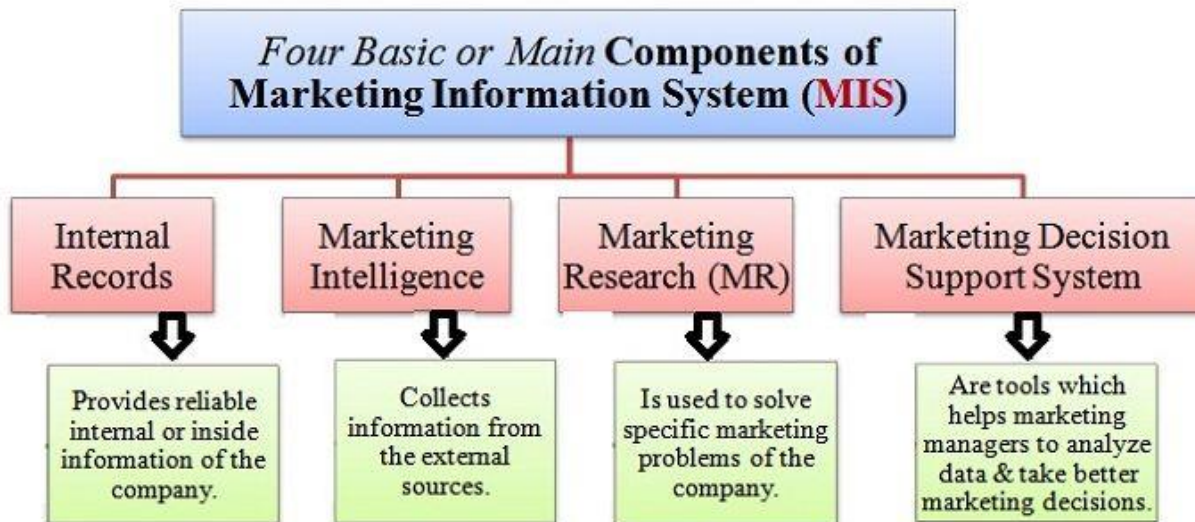
Note: You should make your answer understandable by taking a proper example.

Answer:

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.



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 marketing 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.

Benefits of Marketing information system:

- **Organized Data collection** – MkIS can help the managers to organize loads of data collected from the market, thus results in an increment in the productivity.
- **A broad perspective** – With a proper MkIS in place, the organization can be tracked which can be used to analyze independent processes. This helps in establishing a broader perspective which helps us know which steps can be taken to facilitate improvement.
- **Storage of Important Data** – The storage of important data is essential in execution and thus proves again that MkIS is not important only for information but also for execution.
- **Avoidance of Crisis** – The best way to analyze a stock (share market) is to see its past performance. Top websites like money control thrive on MIS. Similarly, MIS helps you keep tracks of margins and profits. With an amazing information system established, an organizations direction can be analysed and probably crises averted before they place.
- **Co-ordination** – **Consumer durables** and FMCG companies have huge number of processes which needs to be co-ordinated. These companies depend completely on MIS for the proper running of the organization.
- **Analysis and Planning** – MkIS plays a crucial role in the planning process, considering the planning procedure requires information. For planning, the first thing which is needed is the organizations capabilities, then the business environment and finally competitor analysis. In a proper MkIS, all these are present by default and are continuously updated. Therefore, MkIS is very important for planning and analysis.
- **Control** – Just like MkIS can help in a crisis, in normal times it provides control as you have information of the various processes going on and what is happening across the company.

Example of an MIS: A marketing information system supports the decision-making process in marketing.

Jobber (2007) defines it as a “system in which marketing data is formally gathered, stored, analyzed and distributed to managers in accordance with their informational needs on a regular basis”

Example of MKIS

Most platforms (social media sites like Facebook, LinkedIn and Instagram and advertising options like Google Adwords) provide information on usage so these are also examples of marketing information systems. However, unlike Google Analytics their primary purpose is for raising awareness and not reporting

McDonalds Marketing Information System:

The driving forces behind the urgency to have quality marketing research and marketing information are hinged on the two factors. The continued decline in the unit cost of computer hardware and steady improvement in the flexibility and power of computer software, (Vitale, Ives, and Beath, 1989) and the quick pace in which environment changes, (Miles and Snow, 1987).

The purpose of marketing research is to assist and improve marketing decision. Market research narrows the gap between producer and consumer, and increase the chance of successful decisions. In any field, the basis of decision making is having effective information available and using it. Processed, analyzed and correctly used, market information can reduce risk, time and waste by providing the best basis for decision, (Tinniswood, 1986). Naturally, it seems, this leads to well defined marketing strategy.

However, (Assad, 1990) posited “marketing research must be conducted vigorously and systematically to fulfil its intended role, which is only vigorously when data collected are valid, reliable and representative”.

The Quality of Marketing Research and Marketing Information

What is Quality Marketing Research and Marketing Information?

We will tackle this question by first collecting related framework, model and system and then discuss the issues of accuracy, reliability, amount of information required and data analysis complication that affect the quality of marketing research and marketing information.

Q.4

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

Answer: Management is essentially a bundle of decision-making process. The managers of an enterprise are responsible for making decisions and ascertaining that the decisions made are carried out in accordance with defined objectives or goals.

Decision-making plays a vital role in management. Decision-making is perhaps the most important component of a manager’s activities. It plays the most important role in the planning process. When the

managers plan, they decide on many matters as what goals their organization will pursue, what resources they will use, and who will perform each required task.

When plans go wrong or out of track, the managers have to decide what to do to correct the deviation.

In fact, the whole planning process involves the managers constantly in a series of decision-making situations. The quality of managerial decisions largely affects the effectiveness of the plans made by them. In organizing process, the manager is to decide upon the structure, division of work, nature of responsibility and relationships, the procedure of establishing such responsibility and relationship and so on.

Types of Decision-Making Skills

Ethical decision-making skills. Can you pick from tough choices while upholding ethics? A central skill for healthcare, the financial industry, and more.

Consumer decision making process. Understanding how consumers make decisions is key for marketing and sales specialists.

Team decision-making skills. Also called *group decision making* or *collaborative decision making*. Important in business and managerial jobs.

Executive decision making. The opposite of *group decision making*. Executives must gather input, then make difficult decisions on their own.

Consensus decision making skills. This rare team skill finds a solution *all* members can support. Valued in government and nonprofit jobs.

Shared decision-making skills. Similar to *team decision making*, but generally has a healthcare focus.

Medical decision-making skills. Crucial for doctors, nurses, and other healthcare professionals.

Rational decision making. The rational model of decision-making is a necessary skill in managerial and business jobs.

Data driven decision-making skills. Are you adept at data collection and analysis? This is crucial in data-heavy fields like marketing or healthcare.

Intuitive decision-making ability. Can you go with your gut to make decisions? Valued in action-oriented fields like the military, firefighting, and police work.

Evidence-based decision making. The opposite of intuitive decision-making. Vital in the healthcare field.

Programmed decision making. Can you make policies and procedures? Good skill for high-level management jobs.

Military decision-making process. The US Army uses this distinct seven-step plan to make operational decisions

Such examples are as follow

Problem-solving.

Leadership.

Reasoning.

Intuition.

Teamwork.

Emotional Intelligence.

Creativity.

Time management.

Example1

when choosing a place to establish a new business, the criteria might include rental costs, availability of skilled labor, access to transportation and means of distribution, and proximity to customers. Based on the relative importance of these factors, a business owner makes a decision that best meets the criteria.

Example2

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

