MANAGEMENT INFORMATION SYSTEM
Unit 1
Strategic View of Management Information System

➢ **Introduction to MIS:**

❖ **Concept:** A Management Information System is an integrated user-machine system, for providing information, to support the operations, management, analysis &> decision-making functions in an organization. In Other Words the System utilizes computer hardware & software, manual procedures, models for analysis, planning, control & decision making and a database. MIS provides information to the users in the form of reports and output from simulations by mathematical models.

❖ **Definition:** Management information system is a system consisting of people, machines, procedures, databases and data models, as its elements. The system gathers data from the internal and external sources of an organization.

Management information system is an acronym of three words, viz., Management, information, system in order to fully understand the term MIS, let us try to understand these three words.

Management: Management is the art of getting things done through and with the people in formally organized groups.

Managerial function:

Planning
Organizing
Staffing
Directing and
Controlling

Information: Information is data that is processed and is presented in a form which assists decisionmaking.it may contain an element of surprise, reduce uncertainty or provoke a manager to initiate an action. Data usually take the form of historical records. In contrast to information, raw data may not be able to surprise us, may not be organized and may not add anything to our knowledge.

DATA-------→PROCESSING-------→INFORMATION

System: The term system is the most loosely held term in management literature because of its use in different contexts. However, a system may be defined as a set of elements which are joined together to achieve a common objective. The elements are interrelated and interdependent. The set of elements for a system may be understood us input, process and output. A system has one are multiple inputs; these inputs are processed through a transformation process to convert these input into outputs. The three elements of a system are

INPUT------→PROCESS--------→OUTPUT

- **Role of MIS:**

One of the mostly widely used bases for organizing activities in almost every organization is the business function. Business activities are grouped around functions such as production, marketing, finance and personnel etc... Resulting in the respective department or an area of the business organization. These departments or functional areas are commonly known as the functional areas of business. There is no standard classification of such sub-system in an organization, but a typical set of functions in a manufacturing organization includes:

- ✓ Production
- ✓ Marketing
- ✓ Finance and accounting
- ✓ Materials and
- ✓ Personnel systems

Production:

- Production planning and control
- Engineering standards
- Quality control
- R & D etc

Marketing:

- Sales order
- Forecasting
- Sales analysis
- Billing
- Distribution
- Stock availability

- Sales quota control
- Pricing
- Product promotion

Finance and accounting:

- Financial planning
- Budgeting
- Cost accounting
- Asset accounting
- Accounts receivable
- Payroll
- Accounts payable, etc...

Materials:

- Material planning
- Bill of material
- Cost estimate
- Warehousing planning etc...

Personnel:

- Employee recruitment
- Employee selection
- Employee development
- Employee transfers
- Employee retirements etc

The role of the MIS in an organization can be compared to the role of heart in the body. The information is the blood and MIS is the heart. In the body the heart plays the role of supplying pure blood to all the elements of the body including the brain. The heart work faster and supplies more blood when needed. It regulates and controls the incoming impure blood, processed it and sends it to the destination in the quantity needed. It fulfills the needs of blood supply to human body in normal course and also in crisis.

The MIS plays exactly the same role in the organization. The system ensures that an appropriate data is collected from the various sources, processed and send further to all the needy destinations. The system is expected to fulfill the information needs of an individual, a group of individuals, the management functionaries: the managers and top management.

Here are some of the important roles of the MIS:

i. The MIS satisfies the diverse needs through variety of systems such as query system, analysis system, modeling system and decision support system.

ii. The MIS helps in strategic planning, management control, operational control and transaction processing. The MIS helps in the clerical personal in the transaction processing and answers the queries on the data pertaining to the transaction, the status of a particular record and reference on a variety of documents.

iii. The MIS helps the junior management personnel by providing the operational data for planning, scheduling and control , and helps them further in decision-making at the operation level to correct an out of control situation.

iv. The MIS helps the middle management in short term planning, target setting and controlling the business functions. It is supported by the use of the management tools of planning and control.

v. The MIS helps the top level management in goal setting, strategic planning and evolving the business plans and their implementation.

vi. The MIS plays the role of information generation, communication, problem identification and helps in the process of decision-making. The MIS, therefore, plays a vital role in the management, administration and operation of an organization.

- **Impact of MIS:** MIS plays a very important role in the organization; it creates an impact on the organization's functions, performance and productivity.

The impact of MIS on the functions is in its management with a good MIS supports the management of marketing, finance, production and personnel becomes more efficient. The tracking and monitoring of the functional targets becomes easy. The functional managers are informed about the progress, achievements and shortfalls in the activity and the targets. The manager is kept alert by providing certain information indicating and probable trends in the various aspects of business. This helps in forecasting and long-term perspective planning. The manager's attention is bought to a situation which is expected in nature, inducing him to take an action or a decision in the matter. Disciplined information reporting system creates structure database and a knowledge base for all the people in the organization. The information is available in such a form that it can be used straight away by blending and analysis, saving the manager's valuable time.

The MIS creates another impact in the organization which relates to the understanding of the business itself. The MIS begins with the definition of data, entity and its attributes. It uses a dictionary of data, entity and attributes, respectively, designed for information generation in the organization. Since all the information systems use the dictionary, there is common understanding of terms and terminology in the organization bringing clarity in the communication and a similar understanding of an event in the organization.

The MIS calls for a systematization of the business operations for an effective system design. This leads to streaming of the operations which complicates the system design. It improves the administration of the business by bringing a discipline in its operations as everybody is required to follow and use systems and procedures. This process brings a high degree of professionalism in the business operations.

The goals and objectives of the MIS are the products of business goals and objectives. It helps indirectly to pull the entire organization in one direction towards the corporate goals and objectives by providing the relevant information to the organization.

A well designed system with a focus on the manager makes an impact on the managerial efficiency. The fund of information motivates an enlightened manager to use a variety of tools of the management. It helps him to resort to such exercises as experimentation and modeling. The use of computers enables him to use the tools and techniques which are impossible to use manually. The ready-made packages make this task simple. The impact is on the managerial ability to perform. It improves decision-making ability considerably high.

Since, the MIS work on the basic system such as transaction processing and database, the drudgery of the clerical work is transferred to the computerized system, relieving the human mind for better work. It will be observed that lot of manpower is engaged in this activity in the organization. Seventy (70) percent of the time is spent in recording, searching, processing and communicating. This MIS has a direct impact on this overhead. It creates information – based working culture in the organization.

- **Importance of MIS:** It goes without saying that all managerial functions are performed through decision-making; for taking rational decision, timely and reliable information is essential and is procured through a logical and well-structured method of information collecting, processing and disseminating to decision makers. Such a method in the field of management is widely known as MIS. In today’s world of ever increasing complexities of business as well as business organization, in order to service and grow , must have a properly planned, analyzed, designed and maintained MIS so that it provides timely, reliable and useful information to enable the management to take speedy and rational decisions.

  MIS has assumed all the more important role in today’s environment because a manager has to take decisions under two main challenges:

  First, because of the liberalization and globalization, in which organizations are required to compete not locally but globally, a manager has to take quick decisions, otherwise his business will be taken away by his competitors. This has further enhanced the necessity for such a system.

Second, in this information age wherein information is doubling up every two or three years, a manager has to process a large voluminous data; failing which he may end up taking a strong decision that may prove to be very costly to the company.

In such a situation managers must be equipped with some tools or a system, which can assist them in their challenging role of decision-making. It is because of the above cited reasons, that today MIS is considered to be of permanent importance, sometimes regarded as the name center of an organization. Such system assist decision makers in organizations by providing information at various stages of decision making and thus greatly help the organizations to achieve their predetermined goals and objectives. On the other hand, the MIS which is not adequately planned for analyzed, designed, implemented or is poorly maintained may provide developed inaccurate, irrelevant or obsolete information which may prove fatal for the organization. In other words, organizations today just cannot survive and grow without properly planned, designed, implemented and maintained MIS. It has been well understood that MIS enables even small organizations to more than offset the economies of scale enjoyed by their bigger competitors and thus helps in providing a competitive edge over other organizations.

- **E-business Enterprise :**
  - **Introduction:** e-Business (sometimes eBusiness) is a term to indicate electronic business, i.e. the using of information and communication technologies (ICT) and the benefits of the Internet in an entrepreneurship. The term is associated with the commencement of the so-called "new economy" in the 80ths and 90ths of the last century, which brought massive development of enterprise information systems and the Internet. The expression "e-business" was first used by IBM in the marketing campaign in 1996. The concept is actively used up to now. The aim of e-Business is to improve business processes or service quality or customers thanks to the use of ICT and the Internet. e-Business includes improved communication between businesses and communication with customers, suppliers, banks or public administration. It also indicates solutions to increase efficiency operation of enterprises themselves, thus improving the administration of the organization, improving their processes, sales, purchase, financial management, human resources and other.

  - **E-Business:** e-Business is the broadest term for the use of ICT in business. E-business, encompasses all business processes taking place on the internet. Therefore, it's not limited to monetary transactions. Its primary components include but are not limited to:
    - Enterprise resource management

- Supply chain management
- Customer relationship management
- Business intelligence
- Online collaboration
- Online recruiting and other HR processes
- E-commerce

❖ **E-Commerce:** E-commerce is a subset of electronic business. E-Commerce or Electronic Commerce means buying and selling of goods, products, or services over the internet. E-commerce is also known as electronic commerce or internet commerce. These services provided online over the internet network. Transaction of money, funds, and data are also considered as E-commerce.

These business transactions can be done in four ways:

- Business to Business (B2B)
- Business to Customer (B2C)
- Customer to Customer (C2C)
- Customer to Business (C2B).

The standard definition of E-commerce is a commercial transaction which is happened over the internet. Online stores like Amazon, Flipkart, Shopify, Myntra, Ebay, Quikr, Olx are examples of E-commerce websites. By 2020, global retail e-commerce can reach up to $27 Trillion. Let us learn in detail about what is the advantages and disadvantages of E-commerce and its types.

❖ **E-Communication:** Electronic communication can be defined as, the communication which uses electronic media to transmit the information or message using computers, e-mail, telephone, video calling, FAX machine, etc. This type of communication can be developed by sharing data like images, graphics, sound, pictures, maps, software, and many things. There are many different types of electronic communication including but not limited to: email, social media newsgroups, chat rooms, video conferencing, instant messaging, phone and fax.

❖ **E-Collaboration**: E-collaboration defined as "collaboration, which is conducted without face-to-face interaction among individuals or members of virtual teams engaged in a common task using information and communication technologies. E-collaboration is the use of internet and related technologies to assist distant clients in exchanging information for interactions between suppliers and customers, and everyone in between to move trade forward.

- **Strategic Management of Business :**

  Strategic management involves setting objectives, analyzing the competitive environment, analyzing the internal organization, evaluating strategies, and ensuring that management rolls out the strategies across the organization.

  - **Corporate Planning:** Corporate planning is the act of creating a long-term plan to improve your business. A corporate plan examines a business's internal capabilities and lays out strategies for how to use those capabilities to improve the company and meet goals. Think of a corporate plan as a roadmap laying out everything you need to do to achieve your future goals and reach new levels of success. The plan looks at each sector of a business and makes sure that all parts are aligned, working towards similar goals. Corporate planning is often looked at through a SWOT analysis (strengths, weaknesses, opportunities, threats). Further, it usually starts with broad goals and works its way towards a much more detailed analysis, laying out exactly how objectives will be reached.

    The following elements tend to be in a corporate plan:

    - **Vision statement:** You company's vision statement broadly defines what goals you are working to achieve. This statement is where you hone in on your business's focus and what you want to accomplish over the next three-to-five years. Think big, but remember that you will have to create a strategic plan to back these goals up. So always make sure that your goals can be defined as SMART goals (strategic, measurable, achievable, realistic and time-based).
    - **Mission statement:** A good mission statement lays out how you will achieve your vision statement in a few sentences. It should illustrate what you plan to offer or sell, the market you are in, and what makes your company unique. A mission statement is like an elevator pitch for your entire strategy. It effectively communicates who you are and what you want to do in a few lines.
    - **Resources and scope:** Part of corporate planning is taking stock of everything you currently have going on in your organization. You'll look at your systems, products, employees, assets, programs, divisions, accounting, finance and anything else that is critical to meeting your vision. This part is almost like making a map of your current organization. It gives you a bird's eye view of everything your company has going on, which helps you create a plan for moving towards the future.
    - **Objectives**: Next, you need to lay out your business objectives and how you plan to measure success. This is a good time to hone in on that SMART

planning to ensure that your objectives are strategic, measurable, achievable, realistic and time-based. A vague goal such as "improve brand reputation" is meaningless without a solid measure of success in place. A SMART goal would instead be **"**improve brand reputation by placing the product in five positive media stories by the end of Q1**."**

- **Strategies:** Now, it's time to illustrate the strategies you plan to use to meet the objectives of your company. These strategies could be anything from introducing new products to reducing labor costs by 25 percent, depending on the goal. Your strategies should directly address the objectives you have laid out in your corporate plan, and include a plan of action for how you will implement them. These are the nitty-gritty plan details.

❖ **Strategic Planning:** Strategic planning is the art of formulating business strategies, implementing them, and evaluating their impact based on organizational objectives. The concept focuses on integrating various business departments (accounting and finance, research and development, production, marketing, information systems, management) to achieve organizational goals. The term strategic planning is synonymous with strategic management, only that the former is used in the corporate world and the latter in the academic setting.

Strategic Planning Process

The application of strategic planning in business is a result of difficult managerial decisions that comprise good and less desirable courses of action. The development and execution of strategic plans is a well-thought-out plan performed in three critical steps:

- **Strategy Formulation**: In the formulation of strategies, the business assesses its current situation by performing an internal and external audit. Strategy formulation also involves identifying the organization's strengths and weaknesses, as well as opportunities and threats (SWOT Analysis). As a result, managers get to decide which new markets they can venture or abandon, how to allocate the required resources, and whether to expand its operations through a joint venture or mergers. Business strategies result in long-term effects on organizational success; only top business executives understand their impact and are authorized to assign the resources necessary for their implementation.
- **Strategy Implementation:** After the strategy formulation, the company needs to establish short-term goals (usually one-year goals), devise policies, and allocate resources for their execution. It is also referred to as the action stage and is the most important phase of strategic planning. The success of the implementation

stage is determined by the firm's ability to nurture an environment and a culture that motivates employees to work. A manager's interpersonal skills are critical during this stage. Effective strategy implementation also involves developing a functional organizational structure, maximum utilization of information systems, and redirecting marketing efforts.

- **Strategy Evaluation:** Any savvy business person knows that success today does not guarantee success tomorrow. As such, it is important for managers to evaluate the performance of various strategies after the implementation phase. Strategy evaluation involves three crucial activities: reviewing the internal and external factors affecting the implementation of the strategies, measuring performance, and taking corrective steps.

All the three steps in strategic planning occur in three hierarchical levels: the corporate, middle, and operational levels. Thus, it is imperative to foster communication and interaction among the employees and managers in all the levels so as to help the firm to operate as a functional team.

❖ **Development of Business Strategies:** The development of business strategies doesn't have to be a long-term, labor- or staff-intensive process that results in a plan that sits on a shelf gathering dust. Business strategies can be developed very efficiently by following a standard process focusing on the development of goals, objectives, strategies and tactics based on factual data.

- **Goals:** The first step in the development of any business strategy is the determination of the goal, its desired endpoint. The goal sets the stage for the development of measures and specific actions that the company takes to achieve these goals. So, for instance, the goal might be to "increase market share" or to "improve customer satisfaction."
- **Situation Analysis:** Once a goal has been established and the planning team knows what to do, information needs to be gathered so that the decisions are based on solid facts and data. The situation analysis involves a review of information internal to the organization (about employees, sales, customers) as well as external information (about competitors, the industry, the economic climate).
- **SWOT Analysis:** A SWOT analysis is a brainstorming process used by strategic planning teams to identify the organization's strengths and weaknesses, which are internal; and opportunities and threats, which are external. Based on the data gathered during the situation analysis and by brainstorming and prioritizing these items, the team gets a better sense of the most important areas to focus on.

- **Objectives:** Objectives are the measurable element of a strategy. Objectives indicate, specifically, what outcomes are desired. While goals set a broad direction ("increase market share"), objectives will provide the detail that ensures the team knows when it achieves success, says Linda Pophal, a strategic planning consultant with Strategic Communications. An objective related to "increase market share" might be: "Grow market share in XYZ city by 25 percent among women age 25-55 by the end of the year." That's an objective that the entire team can agree upon.
- **Strategies and Tactics:** Strategies and tactics indicate how and what a company will do to achieve its goals and objectives. Strategies provide general guidance, such as "engage in social media activities," while tactics outline specific tasks that will be done, such as "set up Facebook fan page, set up Twitter account." Ultimately all of the strategies and tactics work together for planning success.

❖ **Types of Strategies:** Strategy formulation is a complex task based on the strength and the weakness of the organization and the mission and goals it wishes to achieve. Strategy formulation is the responsibility of the top management and the top management relies on the MIS for information. There are various business strategies such as overall company growth, product, market, financing and so on. MIS should provide the relevant information that would help the management in deciding the type of strategies the business needs. Every business may not require all the strategies all the time. The type of strategy is directly related to the current status of business and the goals it wishes to achieve. The MIS is supposed to provide current information on the status of the business vis-à-vis the goals. MIS is supposed to give a status with regard to whether the business is on a growth path or is stagnant or is likely to decline, and the reasons thereof. If the status of the business shows a declining trend, the strategy should be of growth. If business is losing in a particular market segment, then the strategy should be a market or a product strategy. The continuous assessment of business progress in terms of sales, market, quality, profit and its direction becomes the major role of MIS. It should further aid the top management in strategy formulation at each stage of business. The business does not survive on a single strategy but it requires a mix of strategy operating at different levels of the management. For example, when a business is on the growth path, it would require a mix of price, product and market strategies. If a business is showing a decline, it would need a mix of price-discount, sales promotion and advertising strategies. The MIS is supposed to evaluate the strategies in terms of the impact they have on business and provide an optimum mix. The MIS is supposed to provide a strategy-pay off matrix for such an evaluation.

A strategy means a specific decision (S) usually but not always regarding the deployment of the resources to achieve the mission or goals of the organization The right strategy beats competition and ensures the attainment of goals while a wrong strategy fails to achieve the goals Correction and improvement in case of a wrong strategy is possible at a very high cost .such a situation is described as a strategic failure. If a strategy considers a single point of attack by a specific method it is a mixed strategy. If a strategy acts on many fronts by different means then it is a mixed strategy the business strategy could be series of pure strategies handling several external forces simultaneously. Hence the strategy may fall in any area of the business and may deal with any aspects of the business It could be aspects like price market product technology process quality service finance management strength and so on when the management decides to fight the external forces of a single area by choice it becomes a pure strategy if it uses or operates in more then one area then it becomes a mixed strategy. The success of an organization in spite of its strength depends on the strategic moves or planning the management pursues. The strategy may be pure or mixed.

It can be classified into four broad classes

1. Overall Company Strategy
2. Growth Strategy
3. Product Strategy and
4. Marketing Strategy.

These strategies are applicable to all the types of businesses and industries.

- **Short-Range Planning:** Short-range plans generally apply to a specific time frame in which a specific series of operations will be carried out, assessed, and measured. The standard short-range plan will represent annual or semiannual operations with a short-term deliverable. These short-term plans cover the specifics of each day-to-day operation.

- **Business Planning:** A business plan is a formal statement of a set of business goals. It may also contain background information about the organization or team attempting to reach those goals. Business plans may also target changes in perception and branding by the customer, client, taxpayer, or larger community. When the existing business is to assume a major change or when planning a new venture, a 3 to 5 year business plan is required, since investors will look for their annual return in that timeframe. The most common issues that are considered with business plans are as follows.

- **Too vague:** Some business plans like ―capture significant market share. How will you capture the share? Are the competitors going away? How is the product quality, is it better or significantly differentiated? Do customers care enough to switch? How the difference in product is communicated? Have the product undergone testing for marketing and reaching yourassumptions and requirements?
- **Justifies a foregone conclusion:** Sometimes the creation of a business plan leads to the conclusion that a better plan or model is needed. Done right, a business plan should force the creator to think critically about all aspects of the business. Done wrong, it‗s just words on paper leading to the inevitable conclusion that this business is a great idea in all regards.
- **Too much SWAG:** Particularly in the sales projections, many business plans have too much guessing. Sometimes we cannot accurately predict sales for a future offering. In many markets, a one percent share would be great and difficult to come by. The plan cannot simply assume facts and figures, some form of study or scientific bases should be used to back up all assumptions. If possible, every income and expense line in the projections should have a footnote with the logic, reasoning and facts used to create it.
- **Not enough meat on the bones:** A great business plan must go into great detail as well as cover multiple scenarios, both good and bad. Too many business plans touch all the bases in the business plan template and then move onto the next section.
- **Too much reliance on business plan templates:** Business plan templates are great for creating a structure for the document. However, the standard canned language will get you a standard, canned business plan. Using the template for the structure and example of the content is required. Then erase everything but the headings and create the plan from scratch.
- **Having someone else write your plan:** Anyone who has written a great business plan and then executed it well can tell you that it‗s not the final document which has value. It‗s the process of creating it. You could almost throw the business plan away if you do it right. Business planning is about the process, not the document. This is why templates are dangerous. If you are just filling in the blanks, you really are not getting 90% of the benefit of a business plan.
- **Ignoring the business model:** Many business plans indirectly touch on the business model in the marketing sections. However, there are eight areas to a business model. Many of these areas are completely missed in many

business plans. We recommend a large, separate section detailing the business model. You could make the argument that if you complete the business model portion of the business plan, the financial analysis is the only other significant portion.

- **Information Security Challenges in E-enterprises:** For any organization, big or small, information security is the topmost priority. There exists a precarious situation where data protection from hackers and cybercriminal is the biggest challenge and concern. And to mitigate that, all the big IT firms, software infrastructure vendors, network operators, application developers and countless research organizations have joined hands together and working really hard to fight this vulnerability of information, its theft and breach.

  Security products, like firewalls and virus scanners are all outdated now. They are redundant and no longer give satisfactory protection against unknown threats and the thousands of mutations and variations of Spyware and viruses. And so to alleviate from this situation, what the technologies and new applications require is nothing but an entirely new archetype with a more robust infrastructure.

  Let us now deliberate over some of the biggest information security challenges that the organizations are facing today and what could be the plausible solutions.

  Challenges:

  - Confidentiality and Privacy is the biggest challenge faced. To ensure that only the intended addressees can access and read the information, lacks a well-rounded protection system. Hackers are pocketing login information and using those details to access sensitive information and application.

  - Second is Integrity of the data or information is another big challenge. Original information or material can easily be altered, tampered and changed.

  - Third is authentication. There is a lot of obscurity with the source, to know if the information shared or sent by the stated sender is authentic or reliable is a big challenge.

  - And lastly, it is the availability. That is, assuring that crucial information can be accessed or retrieved at all times and from all the places is quite challenging.