Chapter-3

☰ Tags	Assignment

Unit 3: Introduction to Management Information System: Data, information, computer based information system (CBIS), Information System Resources, Management information system, Transaction processing (TPS) system, decision support system (DSS), and executive information system (EIS), *SCM, CRMS and International Systems:* Introduction, Supply Chain Management Systems, Customer Relationships Management Systems, enterprise systems and Challenges of Enterprise Systems Implementations- Managing the implementation, International Information Systems-Outsourcing and off-shoring.   8LH

Introduction to Management Information System

Data

- **Data** is raw, unprocessed facts and figures.

- It appears in the form of text, number, video, audio etc.
- Collection of data :
    - Survey
    - interview

Information

- Data that has been processed that is usful for decision making
- Information is essentially the answer you get after processing the data.

Characteristic of information

   - **Accuracy:** (Free from error)
   - **Accessibility:** (Accessable any time)
   - **Completeness:** (Whole details)
   - **Relevance:** (Relatable)
   - **Understandability:** (Clear)
   - **Timeliness:** (No outdated info)

Converting Data into Information

Converting data into information is a crucial process in our information age, and it involves a number of steps:

[collect garxhau ani error huna sakxha clean garxhau ani organize garxhau so that analysis garnako lagi then presentation banauxhau]

1. **Data Collection:**
   This is the first step, where you gather the raw data from various sources. This data could be numerical (sales figures, temperatures), textual (social media posts,

articles), visual (images, videos), or even audio recordings.

2. **Data Cleaning and Preparation:**
   Raw data often contains errors, inconsistencies, or missing values. This step involves cleaning the data to ensure its accuracy and completeness. You might remove duplicates, fix errors, and format the data consistently.

3. **Data Organization:**
   Once cleaned, the data needs to be structured in a way that facilitates analysis. This could involve sorting the data, creating categories, or building databases. Spreadsheets and data management software are commonly used tools for this purpose.

4. **Data Analysis:**
   This is where the magic happens! You apply various techniques to extract patterns, trends, and insights from the data. This might involve calculations, statistical analysis, data visualization tools (charts, graphs), or even machine learning algorithms.

5. **Interpretation and Contextualization:**
   After analyzing the data, you need to interpret the results and put them into context. What do the patterns mean? How do they relate to the bigger picture? This step often involves domain expertise and critical thinking skills to draw meaningful conclusions.

6. **Presentation:**
   Finally, the information you've extracted needs to be communicated effectively. This could involve reports, dashboards, presentations, or even interactive visualizations.

Computer based information system (CBIS)

A CBIS is essentially a system that uses computers to:

- **Input (Collect) data:** This can involve manual input, automated sensors, or even scraping data from the web.

- **Process data:** The system manipulates the data according to its design, performing calculations, sorting, or organizing it in a meaningful way.

- **Store data:** CBIS use databases and storage solutions to keep information readily available for future use.

- **Analyze data:** Many CBIS have built-in analytics tools or can export data for further analysis, helping users identify patterns and trends.

- **Output (Disseminate) information:** The system provides users with the processed information through reports, dashboards, or user interfaces.

Examples of CBIS

- **Enterprise Resource Planning (ERP):** Manages core business functions like accounting, inventory, and human resources.

- **Customer Relationship Management (CRM):** Tracks customer interactions and helps build relationships.

- **E-commerce platforms:** Facilitate online shopping experiences.

- **Library information systems:** Manage library catalogs and resources.

Components / Resources

1. *Hardware*

   The physical components like computers, servers, storage devices, and networking equipment.

2. *Software*

   Collection of program and document to perform specific task

3. *Data*

   It is the raw,unprocessed facts

4. *People*

   End user, Technical users, System administrator

5. *Network*

   Interconnectivity of computer

Types of Information System

Collect, process, store, and disseminate information.

These systems can be broadly classified into several types based on their function and purpose.

▼ 9." **In the world we live in now, information system like Transaction Processing System, Management Information System , Decision Support System, and Executive Support System are a most for any organization." Explain why the statement is true, including what these information systems are and how they help the organization**

{ICCC}

1. **Increased Data Volume and Complexity:**

   - In today's information-driven world, organizations generate and manage massive amounts of data from various sources.

   - Manual processing of this data becomes inefficient and impractical, leading to errors and slow decision-making.

2. **Competitive Advantage:**

   - Effectively using information for strategic planning, operational optimization, and customer insights provides a significant competitive edge.

   - Information systems enable data analysis, trend identification, and informed decision-making, differentiating organizations from those reliant on outdated methods.

3. **Cost-Effectiveness & Improved Efficiency**

   - Automation of basic tasks through TPS streamlines operations, reduces errors, and saves time and resources.

   - MIS provides readily available reports and summaries, minimizing manual data manipulation and freeing up employees for more strategic tasks

4. **Customer Experience Enhanced :**

   Organizations can leverage (support) data from DSS and ESS to personalize customer interactions, optimize service delivery, and anticipate needs, leading to improved customer satisfaction and loyalty.

Here's a breakdown of the mentioned information systems and their contributions:

1. **Transaction Processing Systems (TPS):**

   - Handle routine (daily) tasks like eg:KFC

     - order processing,

     - inventory management

     - financial transactions

   - They ensure data accuracy, maintain data, and automate essential daily operations.

2. **Management Information Systems (MIS):**

   - managers organizes data through generate

     - reports

     - dashboards

     - visualizations.

   - They facilitate

     - monitoring performance

     - identifying trends

     - making informed decisions based on real-time data.

3. **Decision Support Systems (DSS):**

- Support complex decision-making processes by

    - analyzing large data

    - identifying patterns

    - presenting options with outcomes.

- They enable data-driven choices beyond routine situations.

- **Data Visualization:**
  DSS provides graphical representations and data visualization tools for better understanding complex information.

- **Interactivity:**
  Decision-makers can interact with the system to explore data, conduct
  "what-if" analyses, and gain insights into decision alternatives.

Business intelligence is type of software applications used for organizing, analyze current and historical data to find patterns and trends and aid decision-making. It support middle and senior management.

4. **Executive Support Systems (ESS):**

- Used by top level management

- They help executives make

    - strategic decisions
      (unique, non-repetitive and future oriented)

    - long term planning

    - monitor overall organizational performance.

- To make effective decisions and steer your organization towards success in a complex and ever-evolving business landscape.

While the specific needs of each organization might differ, the functionalities of these information systems offer undeniable benefits in today's data-driven world.

Implementing them doesn't necessarily require replacing existing systems, but rather integrating them for a more comprehensive and efficient information management framework.

It's important to note that the statement might not hold true for every single organization, particularly small businesses or those operating in less digitalized sectors. However, the vast majority of organizations can benefit significantly from adopting these information systems to remain competitive, efficient, and customer-centric in the modern business landscape.

Difference between IS's types

|	TPS	MIS	DSS	EIS
Targeted Audience	Operational management	Operational /Middle management	Middle management	Top management
Primary purpose	Capture transaction data	Generate summary and exception report	Facilitate decision making	Generate clear, concise, enterprise-wide information
Nature of tasks	Highly structured	Highly structured	Semi or unstructured	Semi or unstructured
Kind of data	internal	Internal	Internal and externals	Internal and external

Enterprice Resource Planning

ERP systems are used to manage all of the core business processes of a company, including

- supply chain management

- financial management

- human resource management

They help businesses integrate their data and processes across multiple departments.

Examples of popular ERP systems include SAP ERP, Oracle ERP Cloud, and Microsoft Dynamics AX.

HOW ENTERPRISE SYSTEMS WORK
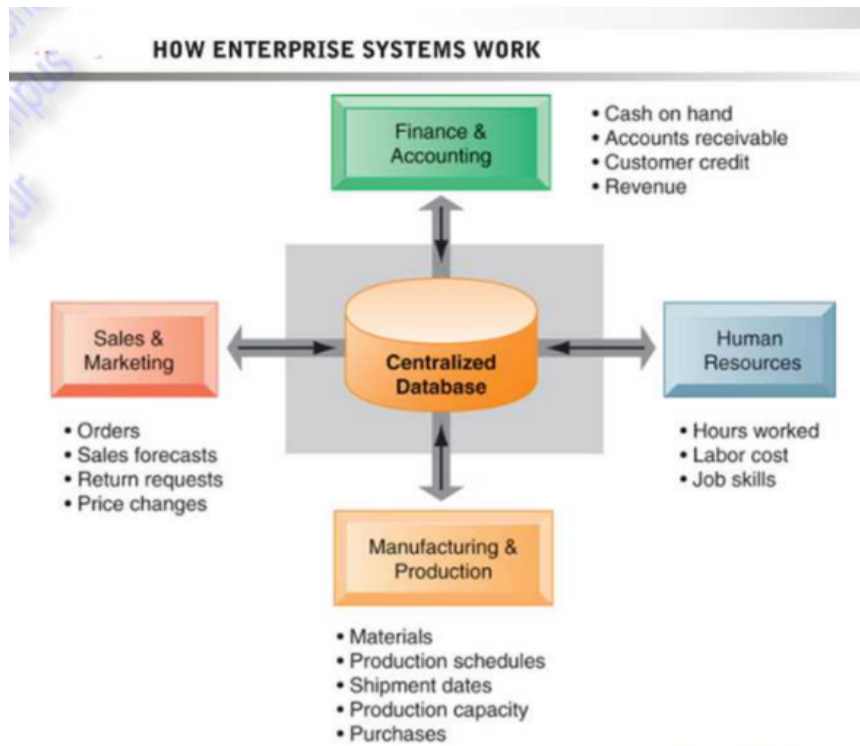
{central database hunxha jasle data haru share garxha between different process haru ma like: finance, sales, hr}

Suply chain management (SCM) System

SCM systems are used to manage the flow of goods and information from suppliers to customers.

They help businesses optimize their

- production
- inventroy management
- supply chains
- reduce costs
- improve customer service.

Examples of popular SCM systems include JDA Supply Chain Management, Oracle Supply Chain Management Cloud, and SAP Supply Chain Management.

Customer Relationship Management (CRM)

- It helps to manage relationhip with customer.

CRM systems are used to manage all interactions between a business and its customers.

They help businesses track

- customer data

- identify sales opportunities

- provide customer support

Examples of popular CRM systems include Salesforce, Microsoft Dynamics 365, and Oracle Siebel CRM.

Knowledge management system (KMS)

It is a software system or a set of practices that helps organizations capture, store, share, and apply their collective knowledge.

Types of KMS:

- **Document Management Systems:** These systems focus on storing, organizing, and sharing electronic documents.

- **Enterprise Wikis:** These are collaborative platforms where employees can create, edit, and share content.

- **Expert Systems:** These systems capture and codify the knowledge of human experts, making it available to others.

Enterprise system

It is a large-scale software system designed to integrate and manage all the core business processes of an organization.

Imagine it as the central nervous system of a company, connecting and streamlining various departments and functions.

Here's a deeper dive into what ES does and its key characteristics:

Key Characteristics of an ES:

- **Modular Design:** An ES is typically built with modular components that can be customized to fit the specific needs of an organization. This allows for scalability and easier integration with existing systems.

- **Real-time Processing:** Ideally, an ES operates on real-time data, providing users with up-to-date information to make informed decisions.

- **Security:** Robust security measures are essential to protect sensitive data and ensure the system is not vulnerable to cyberattacks.

- **Scalability:** An ES should be able to scale and grow as the organization's needs evolve.

Challenges of Enterprise System Implementation

1. Trying to omplement eveything at once will lead to confusion and chaos

2. Appropriate training is very essetial during and after implementaiton. Staff's should be confident about the using of application.

3. Lack of analysis of requirements will lead to non-availability of important functionalities. It will affect operations in long run and reduce productivity and profitability.

4. Lack of support from senior management will lead to unnecessary frustrations in work place. so, its necessary that senior support in transformation

5. Compatibility issue with ERP modules, as different organization will have different modules.

6. Cost overheads

7. Investment in infrastructure.

Internaltional Information System Architecture

- **Understanding the Global Environment:** An IISA needs to consider the various factors that influence international business, such as cultural differences, legal regulations,

data privacy laws, and technological infrastructure variations across different countries.

- **Corporate Global Strategies:** The IISA should align with the organization's overall global strategy. This includes factors like whether the company operates in a centralized or decentralized manner, the level of standardization desired across different locations, and the specific needs of each market.

- **Organizational Structure:** The IISA should reflect the organizational structure of the company. For instance, a highly centralized organization might have a more standardized IISA, while a decentralized company might allow for more flexibility at the local level.

- **Management and Business Processes:** The IISA should define how information systems will be used to support core business processes across different departments and locations. This may involve standardizing some processes while allowing for some customization to address local needs.

- **Technology Platform:** This refers to the hardware, software, and network infrastructure that supports the information systems. The IISA needs to consider factors like scalability, compatibility with local infrastructure, and security measures to ensure data protection across borders.

Difference between Outshoring and Outsourcing

	Offshoring	Outsourcing
Definition	Offshoring means getting work done in a different country.	Outsourcing refers to contracting work out to an external organization.
Risks and criticism	Offshoring is often criticized for transferring jobs to other countries. Other risks include geopolitical risk, language differences and poor communication etc.	Risks of outsourcing include misaligned interests of clients and vendors, increased reliance on third parties, lack of in-house knowledge of critical (though not necessarily core) business operations etc.
Benefits	Benefits of offshoring are usually lower costs, better availability of skilled people, and getting work done faster through a global talent pool.	Usually companies outsource to take advantage of specialized skills, cost efficiencies and labor flexibility.

Questions and Answers

▼ **What enterprise application should a busines install first: ERP, SCM or CRM?**

The best enterprise application to install first depends on the specific needs and priorities of your business. Here's a breakdown of factors to consider when choosing between ERP, SCM, and CRM:

ERP (Enterprise Resource Planning):

- **Ideal for:** Businesses that need to integrate and streamline core operations across multiple departments (finance, accounting, HR, inventory, etc.).

- **Benefits first:** Improves overall efficiency, data accuracy, and provides a central platform for managing resources.

SCM (Supply Chain Management):

- **Ideal for:** Businesses that heavily rely on managing the flow of goods and materials, like manufacturers, distributors, or retailers.

- **Benefits first:** Optimizes inventory levels, reduces costs, and improves delivery times.

CRM (Customer Relationship Management):

- **Ideal for:** Businesses that heavily focus on customer interactions and sales, like e-commerce companies, service providers, or marketing agencies.

- **Benefits first:** Improves customer service, personalizes marketing efforts, and helps manage sales pipelines.

Here's a possible decision path based on typical priorities:

1. **If your primary concern is internal efficiency and resource management, ERP might be the best first choice.** A strong foundation in core business processes can benefit other systems later.

2. **If your business is heavily product-driven and managing the flow of goods is critical, SCM could be a good starting point.** Optimizing your supply chain can have a significant impact on costs and customer satisfaction.

3. **If your focus is on customer acquisition, sales, and building strong customer relationships, CRM might be the most beneficial initial investment.** Understanding and managing customer interactions can lead to increased revenue.

Additional Considerations:

- **Company Size and Stage:** Smaller businesses might benefit from a more integrated suite that combines functionalities of these systems, rather than implementing them individually.

- **Scalability:** Consider the future growth of your business and choose a system that can scale to meet your

expanding needs.

- **Integration:** Ensure the chosen system can integrate with other applications you might use in the future.

Here's a helpful tip: It's not uncommon for companies to implement these systems in stages. You can start with the application that addresses your most pressing need and then integrate the others later on.

Ultimately, the best way to decide is to carefully assess your business goals, current challenges, and long-term vision.

▼ **what companies are most likey to adopt cloud based ERP and CRM software services? why? what companes might not be well suited for this type of software?**

Cloud ERP and CRM are great for:

- **Startups:** Easy to use, affordable, grows with the business.

- **Cost-conscious companies:** Saves money on upfront costs and IT maintenance.

- **Fast-growing companies:** Scales easily to add users and features.

- **Remote teams:** Accessible from anywhere with an internet connection.

- **Collaborative teams:** Enhances communication and data sharing.

Cloud ERP and CRM might not be ideal for:

- **Highly security-focused companies:** Might prefer on-premise storage for sensitive data.

- **Companies with unreliable internet:** Cloud systems rely on a strong connection.

- **Businesses with highly customized workflows:** On-premise might offer more flexibility.

- **Cloud-wary companies:** On-premise might be more comfortable for sensitive data.