SNS COLLEGE OF TECHNOLOGY

Coimbatore-35
An Autonomous Institution

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DEPARTMENT OF MCA

23CAT604– PRINCIPLES OF MANAGEMENT

I YEAR II SEM

UNIT5 –CONTROLLING

TOPIC 5– MIS

Information is critical

The information we have
is not what we want,
The information we want
is not the information we need,
The information we need
is not available.

Information is a Resource

- ☐ It is scarce
- ☐ It has a cost
- ☐ It has alternative uses
- ☐ There is an opportunity cost factor involved if one does not process information

Why need Information?

To ensure effective and efficient decision - leading to prosperity of the Organization.

Data and Information

Data vs. Information

- Data
  - A "given," or fact; a number, a statement, or an image
  - Represents something (quantities, actions and objects) in the real world
  - The raw materials in the production of information
- Information
  - Data that have meaning within a context
  - Data that has been processed into a form that is meaningful to the recipient and is of real or perceived value in the current or in the prospective actions or decisions of the recipient.
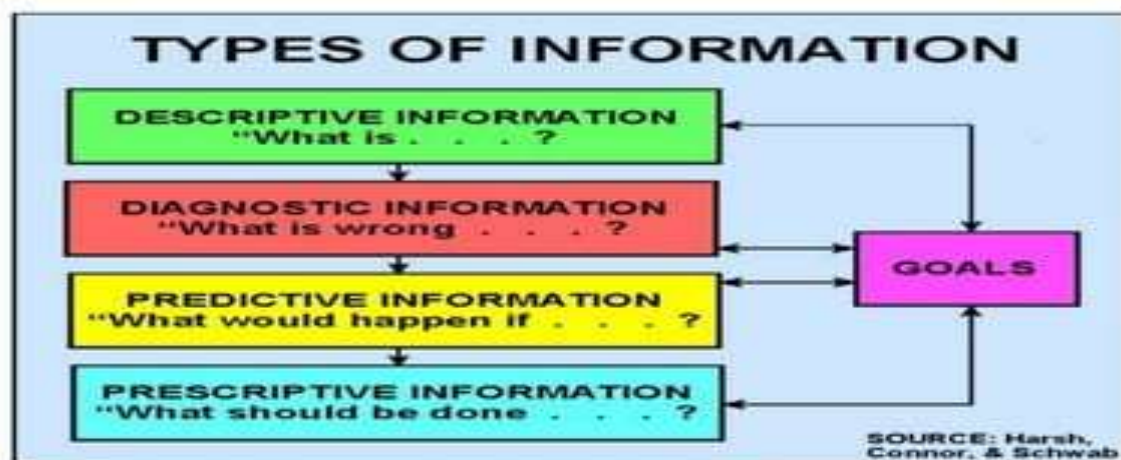
Data Manipulation

Example: customer survey

- Reading through data collected from a customer survey with questions in various categories would be time-consuming and not very helpful.
- When manipulated, the surveys may provide useful information.

Types and classification of Information

TYPES OF INFORMATION

DESCRIPTIVE INFORMATION
"What is . . . ?"

DIAGNOSTIC INFORMATION
"What is wrong . . . ?"

PREDICTIVE INFORMATION
"What would happen if . . . ?"

PRESCRIPTIVE INFORMATION
"What should be done . . . ?"

GOALS

SOURCE: Harsh, Connor, & Schwab

Information classification
- Action v/s no-action
- Recurring v/s non recurring
- Internal v/s external
- Planning Information: standards, norms, specifications
- Control information – reporting the status of an activity thru feedback mechanism
- Knowledge information – library reports, research studies

Characteristics of Useful Information

	Relevant	Information must pertain to the problem at hand. For example, the total number of years of education may not be relevant to a person's qualifications for a new job. Relevant information might be that the person has so many years of education in mechanical engineering, and so many years of experience. The information must also be presented in a way that helps a person understand it in a specific context.
	Complete	Partial information is often worse than no information. For example, marketing data about household incomes may lead to bad decisions if not accompanied by vital information on the consumption habits of the targeted population.
	Accurate	Erroneous information may lead to disastrous decisions. For example, an inaccurate record of a patient's reaction to penicillin may lead a doctor to harm the patient while believing that she is helping him.
	Current	Decisions are often based upon the latest information available, but what was a fact yesterday may no longer be one today. For example, a short-term investment decision to purchase a stock today based on yesterday's stock prices may be a costly mistake if the stock's price has risen in the interim.
	Economical	In a business setting, the cost of obtaining information must be considered as one cost element involved in any decision. For example, demand for a new product must be researched to reduce risk of marketing failure, but if market research is too expensive, the cost of obtaining the information may diminish profit from sales.

Information Presentation (An Art)

Data may be collected in the best possible way and processed analytically, however, if not presented properly, it may fail to communicate any value to recipient. Communication of Information is affected by the methods of transmission, the manner of information handling and the limitations & constraints of recipients.

The methods used to improve communication are:

a) Summarization: Too much information causes noise and distortion i.e confusion, misunderstanding and missing of purpose. Summarization suppresses the noise and distortion.

b) Message routing: The principal here is to distribute information to all those who are accountable for the subsequent actions in any manner. This is achieved by sending the copies of the reports or documents to all the concerned people or users.

System

System: A set of components that work together to achieve a common goal. Computer-based Information Systems take data as raw material, process it, and produce information as output.
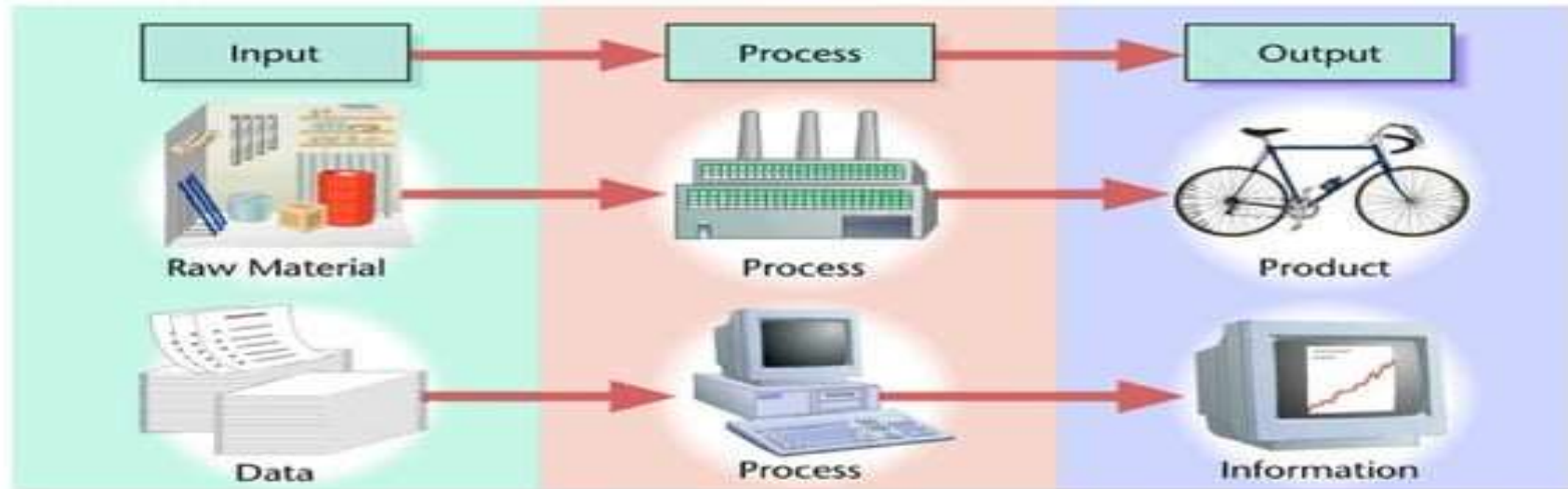
Contents

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  - **Components of an IS**
  - **Types of IS**
  - **Interrelationship among systems**
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- MIS Planning and Development
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  - Pointers for MIS Design
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  - Software Development Life Cycle
 - Software Development Methodologies: Approaches

Components of an Information System

Data	Input that the system takes to produce information.
Hardware	A computer and its peripheral equipment: input, output, and storage devices. Hardware also includes data communication equipment.
Software	Sets of instructions that tell the computer how to take data in, how to process it, how to display information, and how to store data and information.
Telecommunications	Hardware and software that facilitate fast transmission and reception of text, pictures, sound, and animation in the form of electronic data.
People	Information systems professionals and users who analyze organizational information needs, design and construct information systems, write computer programs, operate the hardware, and maintain software.
Procedures	Rules for achieving optimal and secure operations in data processing. Procedures include priorities in running different applications on the computer and security measures.

A Networked Information System: Three-Tier Architecture
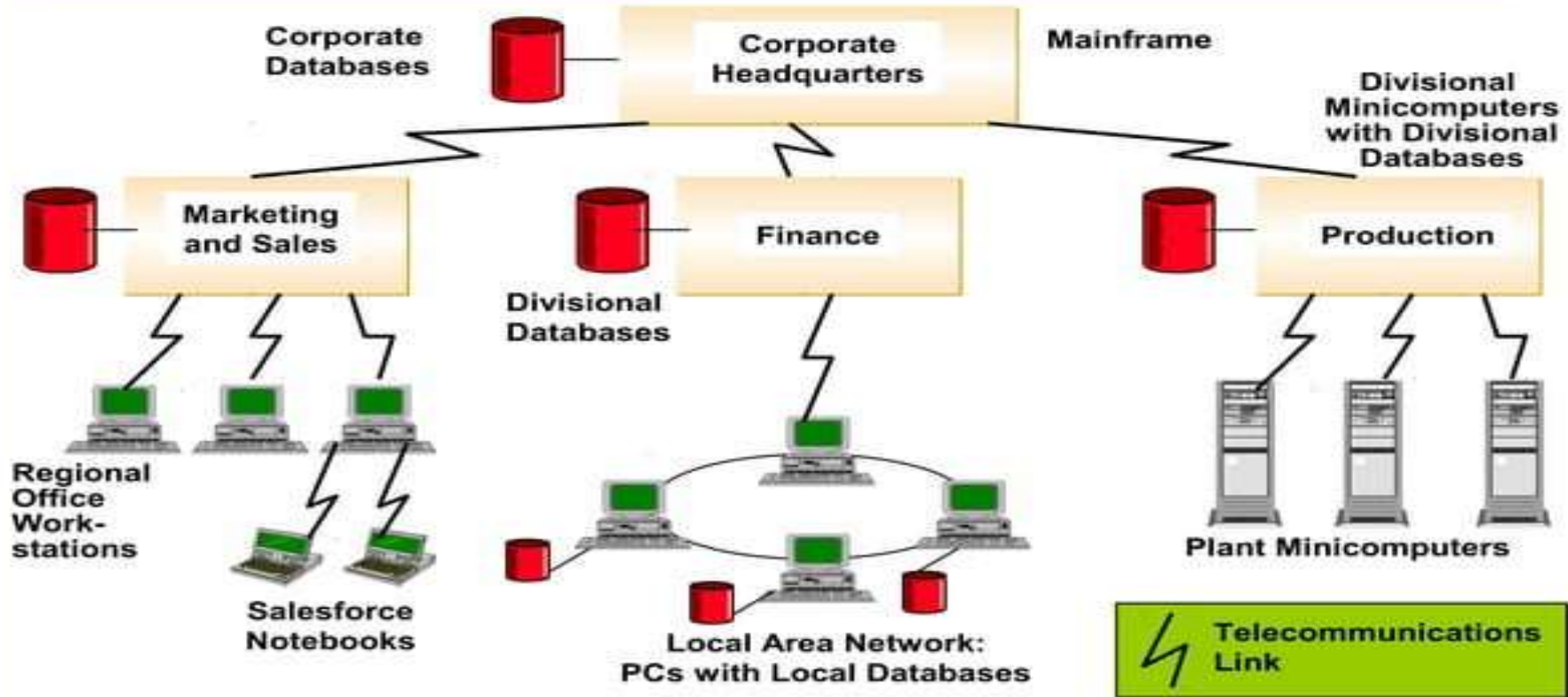
Types of Information Systems

Types of Information Systems

- **Operational-level systems** support operational managers by keeping track of the elementary activities and transactions of the organization, such as sales, receipts, cash deposits, payroll, credit decisions, and the flow of materials in a factory.

- **Management-level systems** serve the monitoring, controlling, decision-making, and administrative activities of middle managers. The principal question addressed by such systems is this: Are things working well?

- **Strategic-level systems** help senior management tackle and address strategic issues and long-term trends, both in the firm and in the external environment.
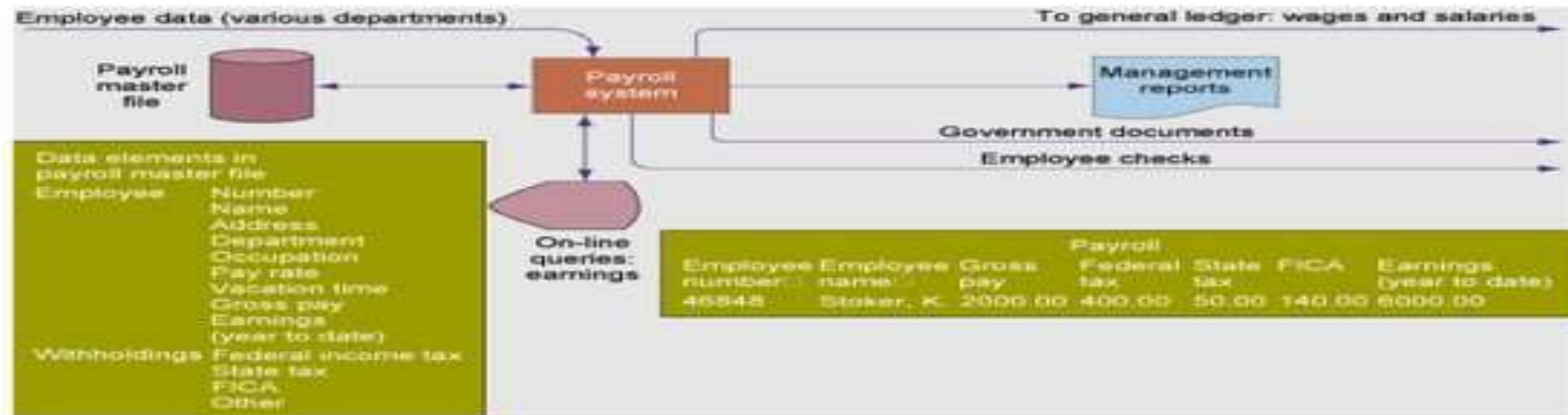
Types of Information Systems
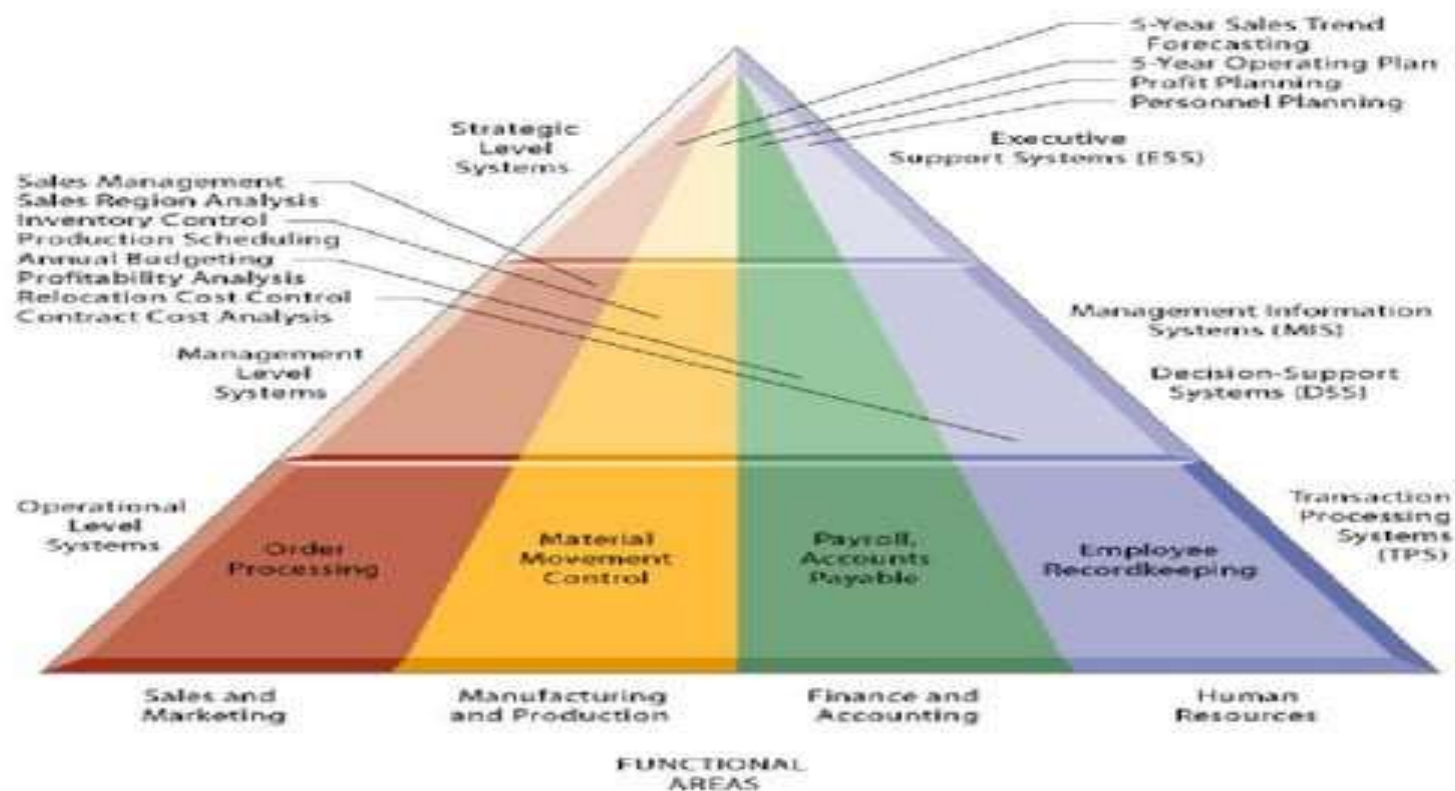
Transaction Processing System

Transaction Processing Systems (TPS):

- Basic business systems that serve the operational level
- A computerized system that performs and records the daily routine transactions necessary to the conduct of the business

Management Information System

- Serve middle management
- Structured and semi-structured decisions
- Provide reports on firm's current performance, based on data from TPS
- Past and Present Data
- Internal Orientation
- Provide answers to routine questions with predefined procedure for answering them
- Typically have little analytic capability

Decision Support System

- Serve middle management
- Support non-routine decision making
  - E.g. What is impact on production schedule if December sales doubled?
- Often use external information as well as information from TPS and MIS
- Processing is interactive in nature
- Output in form of Decision analysis
- Example: Contract Cost Analysis

Executive Support Systems

- Support senior management – Strategic Level
- Address non-routine decisions requiring judgment, evaluation, and insight
- Incorporate data about external events (e.g. new tax laws or competitors) as well as summarized information from internal MIS and DSS
- User "seductive" interfaces; Users' time is a premium
- What if capabilities abound
- Input in form of Aggregate data
- Processing is interactive and output in form of projections
- Examples
  - ESS that provides minute-to-minute view of firm's financial performance as measured by working capital, accounts receivable, accounts payable, cash flow, and inventory.
  - 5-year operating plan

Interrelationship Among Systems
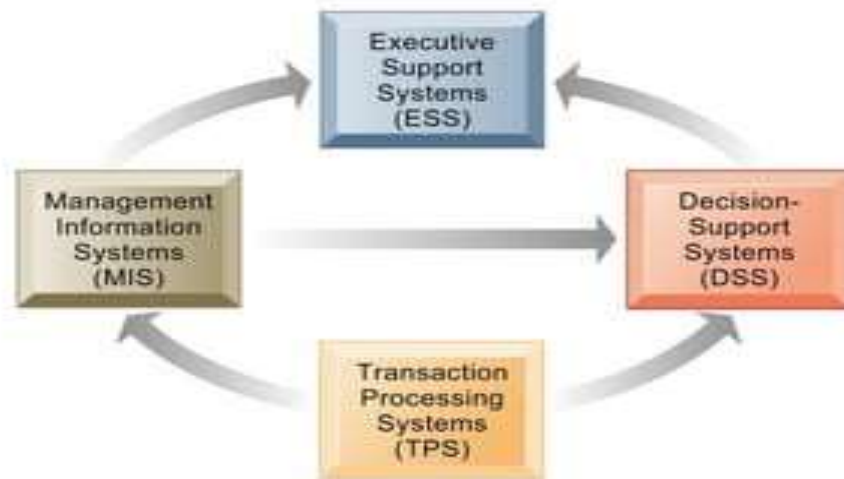
The various types of systems in the organization have interdependencies. TPS are major producers of information that is required by many other systems in the firm, which, in turn, produce information for other systems. These different types of systems are loosely coupled in most business firms, but increasingly firms are using new technologies to integrate information that resides in many different systems.

Thank You