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UNISA

TYPES OF INFORMATION SYSTEMS

- At present there are five main types:

TYPES OF INFORMATION SYSTEMS

- Transaction Processing Systems (TPS)
- Decision Support Systems (DSS)
- Expert Information Systems (EIS)
- Management Information Systems (MIS
- Office Automation Systems (OAS)
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Transaction processing system (TPS)

- A TPS collects and stores information about transactions, and controls some aspects of transactions.

- A transaction is an event of interest to the organisation. e.g. a sale at a store.

Transaction processing system (TPS)

- A TPS is a basic business system. It:

- is often tied to other systems such as the inventory system which tracks stock supplies and triggers reordering when stocks get low;

- serves the most elementary day-to-day activities of an organisation;

- need to be fault-tolerant.

(TPS)

- supports the operational level of the business;
- supplies data for higher-level management decisions (e.g. MIS, EIS);
- is often critical to survival of the organisation;
- mostly for predefined, structured tasks;

(TPS)

- can have strategic consequences (eg airline reservation system);
- usually has high volumes of input and output;
- provides data which is summarised into information by systems used by higher levels of management;

Transaction processing system (TPS)

- On-line transaction processing:
- A transaction processing mode in which transactions entered on-line are immediately processed by the CPU

Sub-species of TPS

- **Manufacturing and production systems:** Systems that supply data to operate, monitor and control the production process. e.g. purchasing, receiving, shipping, process control, robotics, inventory systems, scheduling, engineering, operations, quality control, resource management etc.

Sub-species of TPS

- **Sales and Marketing systems:**
- Systems that support the sales and marketing function by facilitating the movement of goods and services from producers to customers

Sub-species of TPS

- **Finance & Accounting Systems:**
- Systems that maintain records concerning the flow of funds in the firm and produce financial statements, such as balance sheets and income statements.

Sub-species of TPS

- **Human Resources System:** Systems that deal with recruitment, placement, performance evaluation, compensation, and career development of the firm's employees

Decision support system (DSS):

- Helps strategic management staff (often senior managers) make decisions by providing information, models, or analysis tools
- Used for analytical work, rather than general office support.
- The user controls inputs and outputs

Decision support system (DSS):

- They support the decision process and often are sophisticated modelling tools so managers can make simulations and predictions.

- Their inputs are aggregate data, and they produce projections.

- An example job for a DSS would be a 5 year operating plan.

Management information system (MIS)

- Condenses and converts TPS data into information for monitoring performance and managing an organisation.

- Transactions recorded in a TPS are analyzed and reported by an MIS.

- They have large quantities of input data and they produce summary reports as output. Used by middle managers. An example is an annual budgeting system

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Executive information system (EIS):

- Also known as an Executive Support System (ESS),

- it provides executives information in a readily accessible, interactive format.

- They are a form of MIS intended for top-level executive use

Executive information system (EIS):

- An EIS/ESS usually allows summary over the entire organisation and also allows drilling down to specific levels of detail.

- They also use data produced by the ground-level TPS so the executives can gain an overview of the entire organisation.

Executive information system (EIS):

- Used by top level (strategic) management. They are designed to the individual.
- They let the CEO of an organisation tie in to all levels of the organisation

Executive information system (EIS):

- They are very expensive to run and require extensive staff support to operate.

Office automation system (OAS) :

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- OAS provides individuals effective ways to process personal and organisational data, perform calculations, and create documents. e.g. word processing, spreadsheets, file managers, personal calendars, presentation packages

Office automation system (OAS) :

- They are used for increasing personal productivity and reducing "paper warfare". OAS software tools are often integrated (e.g. Word processor can import a graph from a spreadsheet) and designed for easy operation.

OAS Subspecies

- **Communication systems**:
- helps people work together by sharing information in many different forms

- Teleconferencing (including audioconferencing, computer conferencing, videoconferencing), electronic mail, voice mail, fax

OAS Subspecies

- **Groupware system:**
- helps teams work together by providing access to team data, structuring communication, and making it easier to schedule meetings.
- For sharing information, controlling work flows, communication/integration of work

KNOWLEDGE WORK SYSTEMS (KWS):

- used by technical staff.

- KWS use modelling functions to convert design specifications into graphical designs.

- They may include computer-aided design/manufacture (CAD/CAM).

Expert Systems

- *a computer system or program that uses artificial intelligence techniques to solve problems that ordinarily require a knowledgeable human.*

Expert Systems

- Expert systems imitate human experts in many different fields of expertise.

- Such systems contain rules (such as decision tables) that help a human answer expert questions.

- built with decision-making rules, and they can ask humans a series of questions to narrow down the correct answer.

Expert Systems

- *. Among some of the successful expert systems developed are :*

- *INTERNIST, a medical diagnosis tool that contains nearly 100,000 relationships between symptoms and diseases,*

- *and PROSPECTOR, an aid to geologists in interpreting mineral data."*

Advantages of expert systems

- The computer can store far more information than a human.

- The computer does not 'forget', make silly mistakes or get drunk when it is most needed.

- Data can be kept up-to-date.

Advantages of expert systems

- The expert system is always available 24 hours a day and will never 'retire'.
- The system can be used at a distance over a network.

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- THANK YOU