

## Chapter 13

### Decision Support Systems

- | Decision making and DSS
- | Objectives and Definitions
- | Groupware

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## Decision Support Systems

**Definition:** DSS supports a single manager or a relatively small group of managers working as a problem-solving team in the solution of a semi-structured problem

**Method:** Provides information or makes suggestions concerning specific decisions.

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## Decision Making

- **Simon's types of decisions**
  - Programmed
  - Nonprogrammed
- **Simon's phases of decision making**
  - Intelligence activity = Seek out problems
  - Design activity = Invent, develop, and analyze possible courses of action.
  - Choice activity - Selecting an action.
  - Review activity - Assessing past choices.

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## The Decision Support System Concept

- Gory and Scott-Morton coined the phrase 'DSS' in 1971, about ten years after MIS became popular
- Structured problems could be solved by algorithms and decision rules
- Unstructured problems have no structure in Simon's phases
- Semistructured problems have structured and unstructured phases

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## Alter's DSS Types

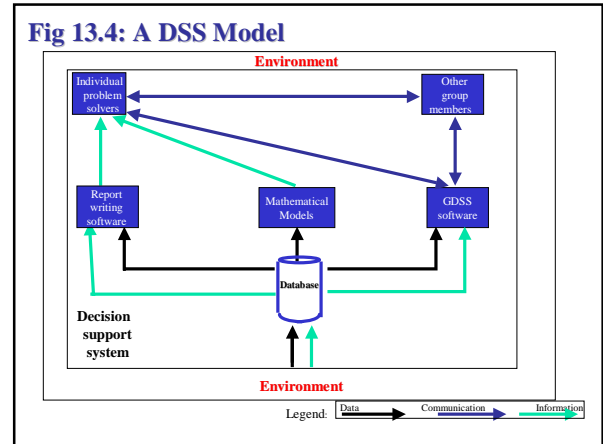
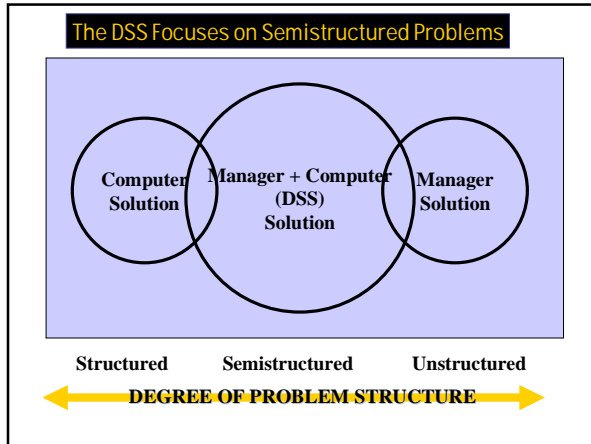
- The least degree of problem-solving support comes from retrieval of information *elements*
- More support comes from analyzing entire *files*
- Still more support comes from reports from *multiple files*

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## Alter's DSS Types (continued)

- Even more support from systems that can *estimate decision consequences*
- More support from systems that can *propose decisions*
- And the most support comes from systems that can *make decisions*

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- Contents of the Database are Used by Three Software Subsystems**
- **Report writers (including COBOL)**
    - Periodic = Scheduled
    - Special = Unanticipated needs
  - **Mathematical models = Simulations**
  - **GDSS -- contributes to communications effectiveness**

- Group Decision Support Systems**
- **Definition - a computer-based system that supports groups of people engaged in a common task (or goal) and that provides an interface to a shared environment.**
  - **GDSS is used in problem solving**
  - **Electronic meeting system (EMS) is used for group interaction of all kinds. Example JAD session.**

- GDSS Environmental Settings**
- **Asynchronous exchange as well as synchronous exchange of information**
  - **There is less wasted time.**
  - **There is more balanced participation.**

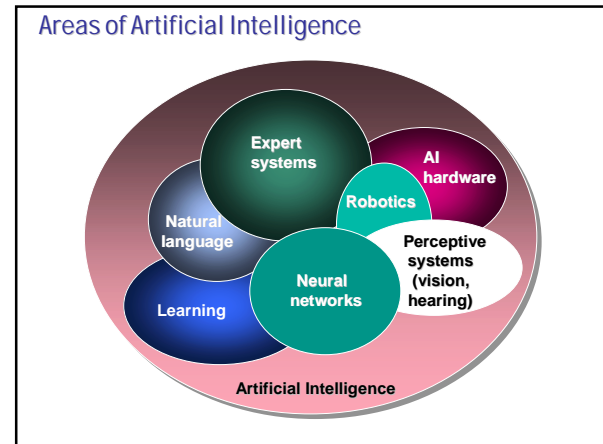
- Groupware**
- **Functions - electronic mail, FAX, voice messaging, internet access, and others**
  - **Lotus Notes has been a particularly popular groupware product**

## Artificial Intelligence

**Definition:**

- The activity of providing such machines as computers with the ability to display behavior that would be regarded as intelligent if it were observed in humans.

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## Expert Systems

- A computer program that attempts to code the knowledge of human experts in the form of heuristics (i.e. a rule of thumb)
- Two distinctions from DSS
  - 1. has the potential to extend the manager's problem-solving ability beyond his or her normal capabilities
  - 2. the ability to explain how the solution was reached

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