

Chapter 12



Management Decision Support and Intelligent Systems

Information Technology For Management 6th Edition

Turban, Leidner, McLean, Wetherbe

Lecture Slides by L. Beaubien, Providence College

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Chapter 12



Management

Management is a process by which organizational goals (*outputs*) are achieved through the use of corporate resources (*inputs*). These organizational decisions (*processes*) are typically made by managers.

- A manager's role can be categorized into:
 - **Interpersonal** - figurehead, leader, liaison
 - **Informational** - monitor, disseminator, spokesperson
 - **Decisional** - entrepreneur, problem solver, resource coordinator, and negotiator

Information systems support all three roles especially decisional.

Managers and Decision Making

A **decision** refers to a choice made between alternatives. Decision making in organizations can be classified into two broad categories: **problem solving** and **opportunity exploitation**.

- Why Managers Need the Support of Information Technology. It is very difficult to make good decisions without valid, timely and relevant information.
 - Number of **alternatives** to be considered is increasing
 - Many decisions are made under **time** pressure.
 - Due to **uncertainty** in the decision environment, it is frequently necessary to conduct a sophisticated analysis.
 - It is often necessary to rapidly access **remote** information.

Can we make better decisions?

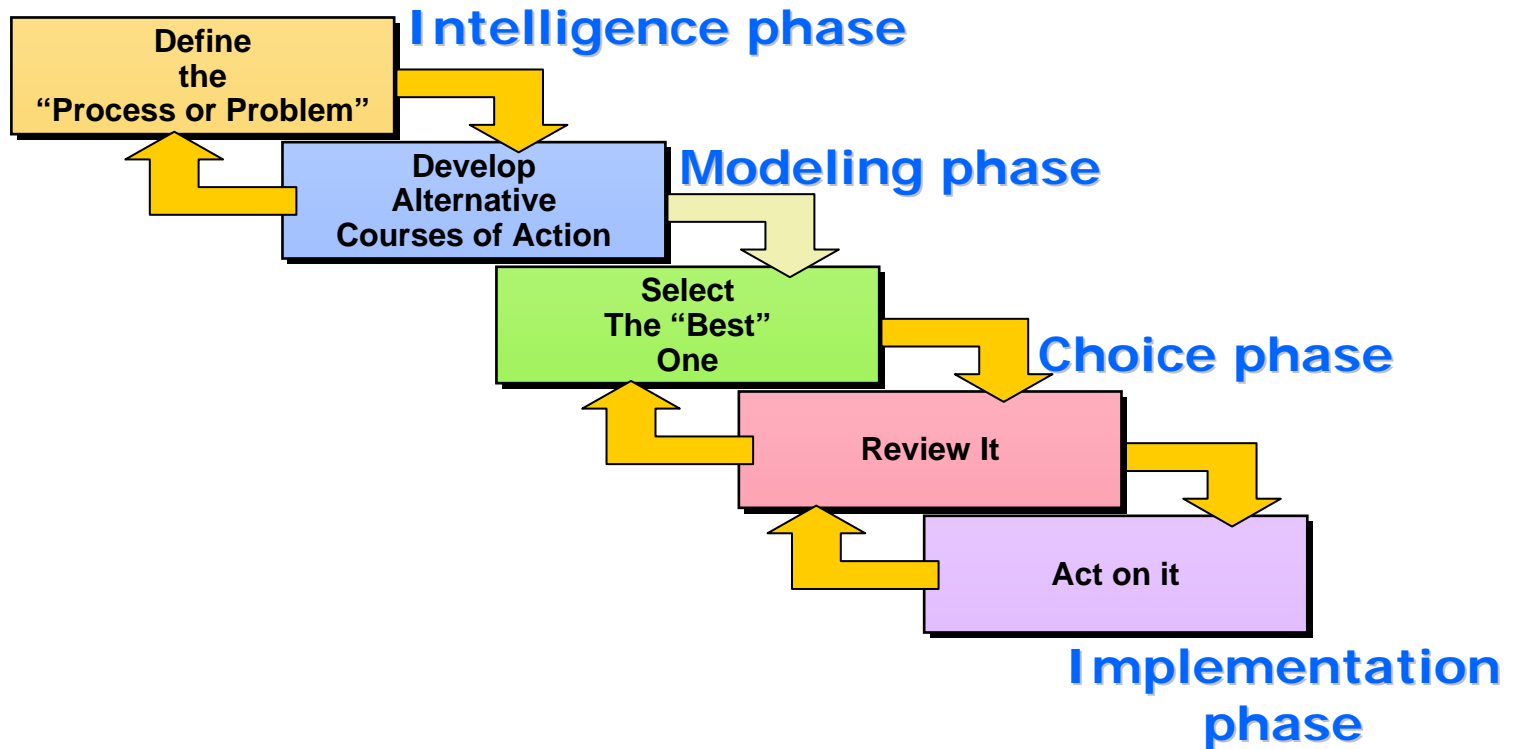
Management Support Systems

Discovery, communication and collaboration tools provide indirect support to decision making, however there are several other information technologies used to directly support decision making.

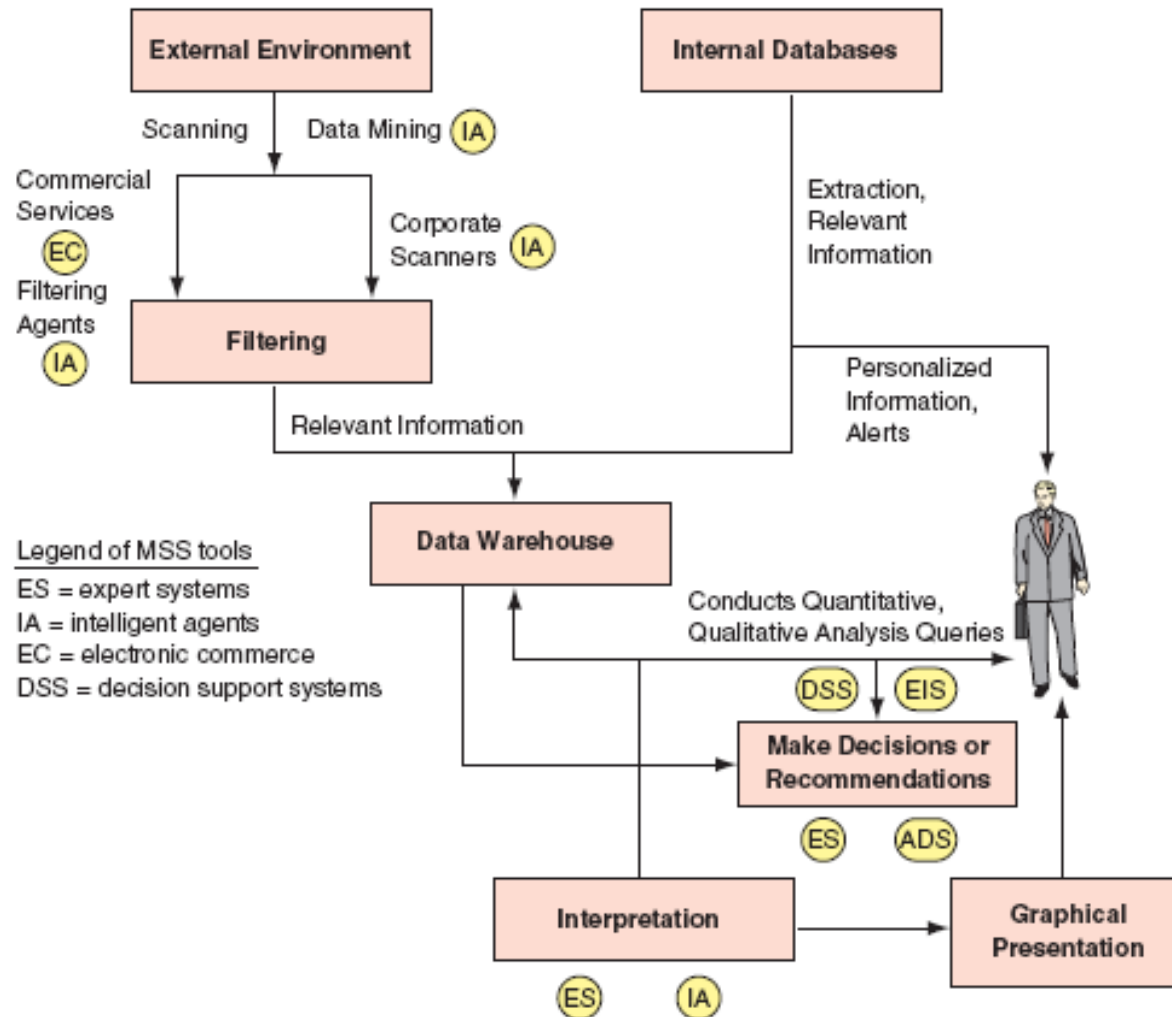
- **Decision Support Systems (DSS)** provide support primarily to analytical, quantitative types of decisions.
- **Executive (Enterprise) Support Systems (ESS)** support the informational roles of executives.
- **Group Decision Support Systems** supports managers and staff working in groups.
- **Intelligent Systems**

Decision Process

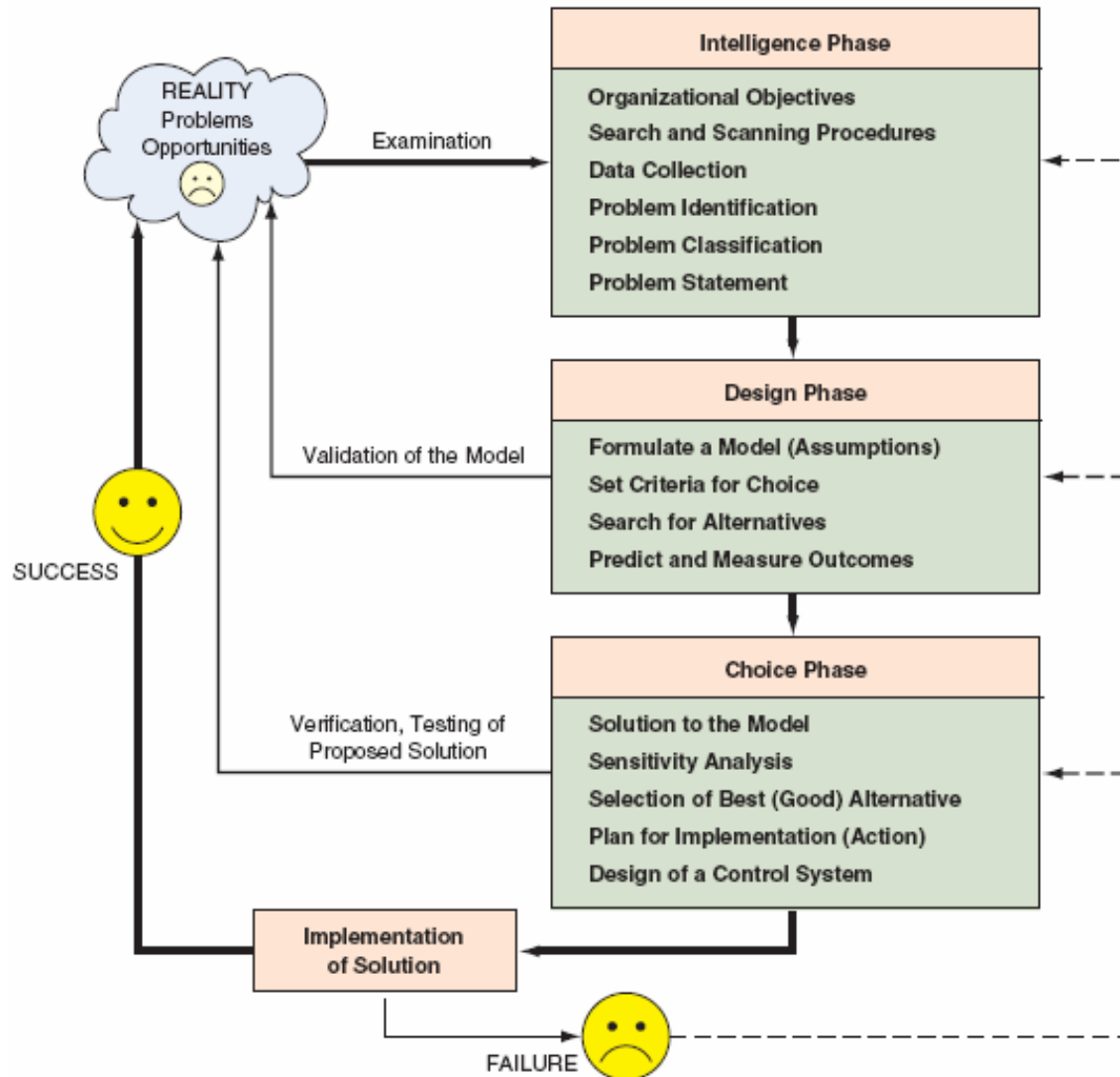
Decision makers goes through a fairly systematic process.



Decision Process



Decision Complexity



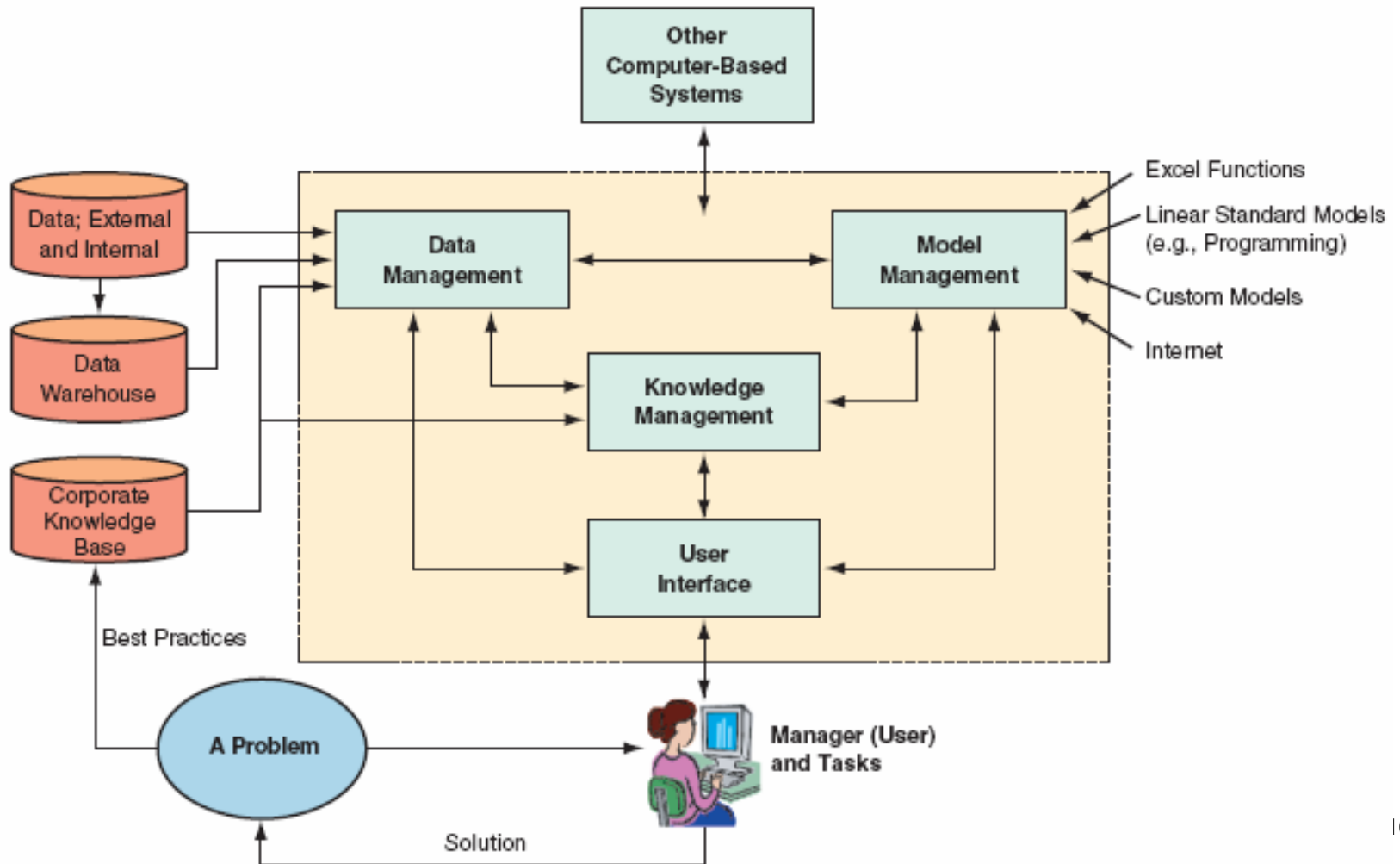
Characteristics and Capabilities of DSSs

- **Sensitivity analysis** is the study of the impact that changes in one (or more) parts of a model have on other parts.
- **What-if analysis** is the study of the impact of a change in the assumptions (input data) on the proposed solution.
- **Goal-seeking analysis** is the study that attempts to find the value of the inputs necessary to achieve a desired level of output.

Structure and Components of DSSs

- **Data management subsystem** contain all the data that flow from several sources.
- **Model management subsystem** contains completed models and the building blocks necessary to develop DSS applications.
- **User interface** covers all aspects of the communications between a user and the DSS.
- **Users** are the persons faced with the problem or decision that the DSS is designed to support.
- **Knowledge-based subsystems** provide the required expertise for solving some aspects of the problem.

DSS Process



Organizational Decision Support System (ODSS)

- **Organizational Decision Support System (ODSS)** is a DSS that focuses on an *organizational* task or activity involving a *sequence* of operations and decision makers and provides the following:
 - It affects several organizational units or corporate problems;
 - It cuts across organizational functions or hierarchical layers;
 - It involves computer-based and (usually) communications technologies.

Executive Information (Support) Systems

- **Executive information system (EIS)** also known as an **executive support system (ESS)**, is a computer-based technology designed specifically for the information needs of top executives and provides for:
 - Rapid access to timely information;
 - Direct access to management reports;
 - Very user friendly and supported by graphics.
 - **Exception reporting** – reporting of only the results that deviate from a set of standards.
 - **Drill down reporting** – investigating information in increasing detail.
 - Easily connected within online information services and e-mail.
 - Include analysis support, communications, office automation and intelligence support.