كلية المنصور الجامعة

Al – Mansour University College

Computer Science and Information System Department

4th Stage / Information System

Course 1

Management Information System

Lecture_10

Enhancing Decision Making

By

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7.1 Business value of improved decision making

Decision-making can be regarded as a problem-solving activity yielding a solution deemed to be optimal, or at least satisfactory. It is therefore a process which can be more or less rational or irrational and can be based on explicit or tacit knowledge and beliefs.

7.2 Decision-Maker's Environment Environment

The decision-maker's environment can play a part in the decision-making process. For example, environmental complexity is a factor that influences cognitive function. A complex environment is an environment with a large number of different possible states which come and go over time.[6] Studies done at the University of Colorado have shown that more complex environments correlate with higher cognitive function, which means that a decision can be influenced by the location. One experiment measured complexity in a room by the number of small objects and appliances present; a simple room had less of those things. Cognitive function was greatly affected by the higher measure of environmental complexity making it easier to think about the situation and make a better decision.

7.3 Characteristics of decision-making

- Objectives must first be established
- Objectives must be classified and placed in order of importance
- Alternative actions must be developed
- The alternatives must be evaluated against all the objectives
- The alternative that is able to achieve all the objectives is the tentative decision
- The tentative decision is evaluated for more possible consequences

- The decisive actions are taken, and additional actions are taken to prevent any adverse consequences from becoming problems and starting both systems (problem analysis and decision-making) all over again
- There are steps that are generally followed that result in a decision model that can be used to determine an optimal production plan
- In a situation featuring conflict, role-playing may be helpful for predicting decisions to be made by involved parties

7.4 Types of Decisions

– **Unstructured:** Decision maker must provide judgment, evaluation, and insight to solve problem.

– **Structured:** Repetitive and routine; involve definite procedure for handling so they do not have to be treated each time as new.

– **Semistructured:** Only part of problem has clear-cut answer provided by accepted procedure.As shown in figure(7.1).

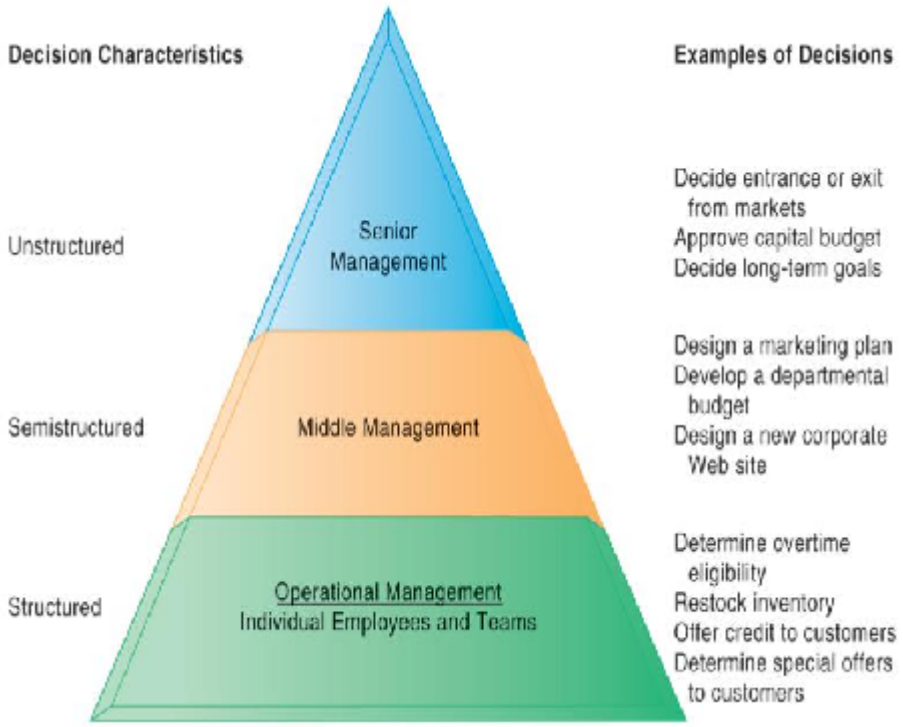

Figure (7.1): Types of Decisions

Three main reasons why investments in information echnology do not always produce positive results

1. **Information quality**
   - High-quality decisions require high-quality information
2. **Management filters**
   - Managers have selective attention and have variety of biases that reject information that does not conform to prior conceptions
3. **Organizational inertia and politics**
   - Strong forces within organizations resist making decisions calling for major change

7.5 What Is Business Intelligence

Business intelligence (**BI**) comprises the strategies and technologies used by enterprises for the data analysis of business information.[1] BI technologies provide historical, current, and predictive views of business operations. Common functions of business intelligence technologies include reporting, online analytical processing, analytics, data mining, process mining, complex event processing, business performance management, benchmarking, text mining, predictive analytics, and prescriptive analytics. BI technologies can handle large amounts of structured and sometimes unstructured data to help identify, develop, and otherwise create new strategic business opportunities. They aim to allow for the easy interpretation of these big data. Identifying new opportunities and implementing an effective strategy based on insights can provide businesses with a competitive market advantage and long-term stability.

Six elements in the business intelligence environment

1. **Data from the business environment**
2. **Business intelligence infrastructure**
3. **Business analytics toolset**
4. **Managerial users and methods**
5. **Delivery platform—MIS, DSS, ESS**
6. **User interface**

7.6 Business intelligence application

Business intelligence can be applied to the following business purposes:[23]

- Performance metrics and benchmarking inform business leaders of progress towards business goals (business process management).
- Analytics quantify processes for a business to arrive at optimal decisions, and to perform business knowledge discovery. Analytics may variously involve data mining, process mining, statistical analysis, predictive analytics, predictive modeling, business process modeling, data lineage, complex event processing, and prescriptive analytics.
- Business reporting can use BI data to inform strategy. Business reporting may involve data visualization, executive information system, and/or OLAP
- BI can facilitate collaboration both inside and outside the business by enabling data sharing and electronic data interchange
- Knowledge management is concerned with the creation, distribution, use, and management of business intelligence, and of business knowledge in general. Knowledge management leads to learning management and regulatory compliance.