

Research Article

The Impact of Modern Information Systems On Decision-Making Within Commercial Institutions

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Abstract

The issue of information systems is one of the most important topics that researchers are interested in, as it is a topic that is consistent with the requirements of the modern era, where the need for data and information collection and processing has increased, and its effective use has become a prerequisite for the success of organizations in their various forms in our time, especially commercial institutions, which is characterized by changes The continuous and complex environment, which has become mandatory for organizations to use information systems to benefit from them in making decisions related to all aspects of the organization. Through the foregoing, we will try in this research to assess the extent of the impact of the information system on commercial enterprises and knows the extent of their role in decision-making. The research found that the information systems in place in the trading company are of great importance in reaching the right decisions, as they provide the decision-maker with correct and accurate indicators at the lowest cost to continue working well and reach the set goals. The research also recommended a set of recommendations related to the design of information systems for each administration in commercial enterprises, which is required by the e-government project, taking advantage of the available experiences in this field. As well as paying attention to issues of confidentiality of information and protection from tampering, sabotage, theft, forgery and other issues of security and protection in automated information systems.

Keywords: *Decision-Making, Information Systems, Commercial Institutions, Management Information Systems*

Introduction

Business organizations under these conditions seek to survive and continue, and this depends on the correctness and accuracy of the decisions taken, and, consequently, the extent to which

the correct goals are set and effectively achieved. This requires the use of all human, material, and informational resources of organizations, because the decision-making process, although it's the main function of the manager, cannot do it in isolation from the employees and specialists of the business enterprise in order to ensure its success [1].

No two disagree on the importance of information in the decision-making process, which is neither new nor is it new to use this information within a system. What is new is that the decision-maker requests information of a high degree of quality, accuracy, up-to-date, and appropriate to make his decision purposeful and distinctive, and creates advanced computer systems to facilitate access to it [2].

Technological developments have revolutionized the business world, and have proven successful in many aspects. This is more evident in developed countries than in developing countries [3]. Among its most prominent influences is its contribution to the formation and development of information systems, in light of the complexity of the business environment and the increasing need of business administrations to take quick and accurate decisions, the need to take advantage of technological developments in building advanced methods to make more rational decisions.

Hence, this research focused on the subject of (information in decision-making) and considering (information system) a basic resource and preserver of information and a provider of information in large quantities, accuracy, and flexibility in dealing with it. This information facilitates life, social and economic matters in human life, to deal with different circumstances and challenges within scientific frameworks and methods based on accurate information to make sound decisions as a basic technology in modern institutions [4]. Work has been done on previous studies with a number of global databases to know the role of information and information system in decision-making in many commercial institutions and its role in activating administrative decision-making, speed, and accuracy in a timely manner, with less effort and at a lower cost, in order to meet any challenge that challenges those institutions that provide services miscellaneously.

Information Processing and Decision Making

The information processing process goes through several stages [5], [6]:

- i. Information collection: Information gathering requires obtaining it from outside and within the organization, and the organization can obtain this information either from primary sources such as interviews with individuals, observations or sent

questionnaires, and the organization can also obtain information from secondary sources such as statistics or reports on the industry-specific, or prepared reports within the organization for other purposes. When collecting information, attention should be paid to the concepts of validity and reliability. These two concepts are important because of the multiplicity of sources of information collection, which can be collected from interviews, questionnaires, tests, or other sources.

- ii. Route information: You must ensure that the information is sent to the appropriate person or entity. Regarding environmental information, it should reach the unit or individuals involved in making decisions. The problem here is coordination, and the organization has to know how to send information to the appropriate units quickly enough in order to ensure integration between the different organizational units in the organization.
- iii. Analysis: The important point in the analysis is impartiality. Bias may be intentional or unintended, and any time information is analyzed, there is potential for bias. The problem of bias increases if the information is analyzed at every stage the organization goes through. Every time the information is analyzed, it is reinterpreted and eventually, the information becomes very muddled. Therefore, the organization should establish guidelines for the individuals who analyze the information.
- iv. Receipt of information: Information becomes useless if it is not received by the individuals to whom it is sent. There must be some type of follow-up to the receipt (such as a phone call to confirm or return the receipt) to indicate that the information has been received.
- v. Storage: Information can be used directly but is stored in most cases. Factors considered when storing are cost, the time required for information, and how to access it. Not only does storing information cost the people who store it, but there are also devices and tools used for storing it. As well as the costs of retrieving information when needed.
- vi. Information retrieval: The use of an electronic computer has facilitated the process of retrieval of information and, accordingly, the process of accessing it. In fact, the decision to retrieve information is made when the information is stored, since ease and time of retrieval are considered. It must be preserved and the information is kept out of the archive if the company expects to retrieve the information soon. There is no doubt that using a computer has facilitated this process.

vii. Use of information: Information must be collected if it is to be used again. In many cases, companies collect information without knowing when and why it is being used, which leads to excessive and excessive information collection. This means that the expected use of the information must be clearly defined before the collection process. If the information is collected accordingly, the information is described as prepared on the basis of the use of the information. Because users of information have a key role in deciding what kind of information to collect and how it will be directed and distributed. Although this is obvious, it is not adhered to in practice. In many cases, it is the individual or department that collects, analyzes, and stores information as well as determines the quality, form, and purpose of that information.

Information Verification Process

An information audit is a useful tool for testing how information is used in practice. An audit involves reviewing reports and memos to determine how they were prepared, to whom they were directed, and how they were used [7]. The goal is to simplify and direct the flow of information and to ensure that the information collected is used as intended.

The audit also aims to determine whether there was an unmet need for information, and was it cost-effective to meet those needs? The audit can be conducted by conducting interviews with managers and using questionnaires or by process analysis, this includes examining the operations of the organization, making a workflow map of the information flow, the following Figure 1 shows the simple processes to verify the information quality [8].

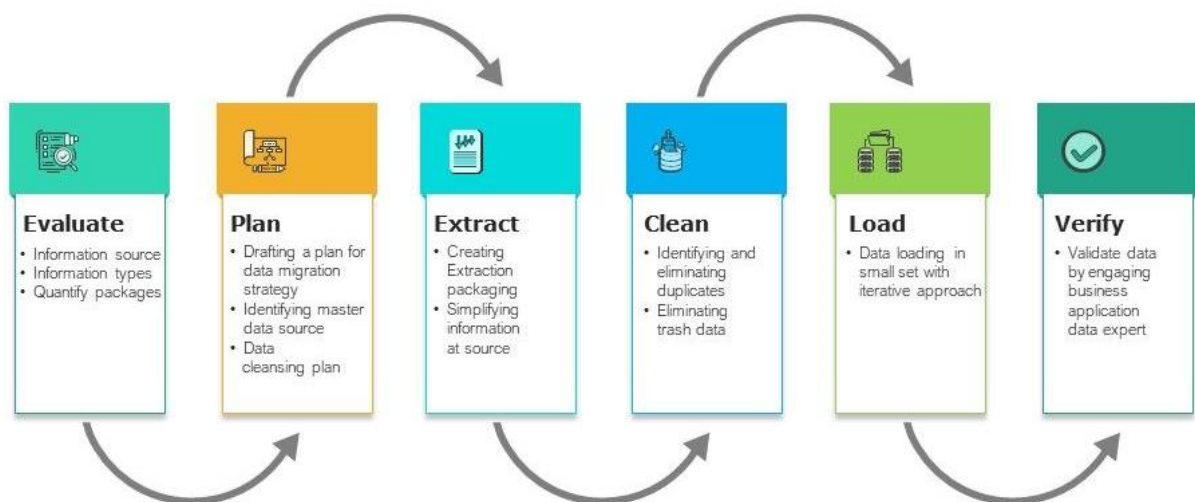


Figure 1. Information Verification Processes

Process analysis is concerned with answering the following questions [9]:

- i. Where did the information come from?

- ii. What are the prepared reports?
- iii. Where is the information going?
- iv. How do you use it?
- v. Can the system be simplified?

The goal of the process is to track the flow of information and figure out how to simplify its system.

Management Information System (MIS)

MIS is a system designed to provide accurate, relevant, and timely information to managers for use in the decision-making process. It is a system designed and programmed in an orderly manner to provide the organization with past, present, and future information in order to support the organization's planning and its organizational, directive, and control functions and assist it in making appropriate management decisions, MIS covers the all business entities [10], see Figure 2 [11].

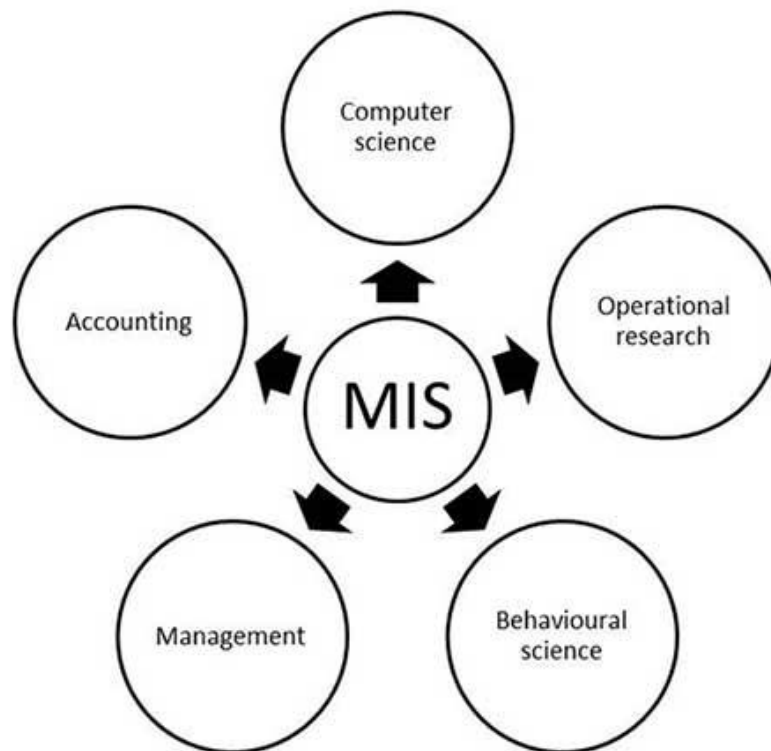


Figure 2. Management Information System

The organization has two primary alternatives now while managing information, which is: either increase or decrease the operational capacity of information. Electronic computer systems have proliferated for information as they increase this capacity [12]. Computers are

no longer auxiliary devices, but rather become necessary due to the increasing requirements of information in the business world, both from the internal environment and the external environment.

The Impact of Information Technology on Administrative Systems

Information technology has provided great and tremendous potential to improve the performance of administrative systems and develop all its components, including people, the organizational structure of the company, management methods, and management technology [13]. It can be said that information technology has radically changed management systems. Thanks to the great advantages of this technology and the services it provides in how companies are managed, such as the versatility and diversity, the relatively low cost, and the severe and growing needs for its applications in the administrative environment, which in recent years has become the most widespread of our time, and it holds great promises and possibilities for developing administrative systems and taking the decision and making it more flexible and responsive as well as the ability to adapt to the rapid changes experienced by the contemporary world.

The most important trends in the impact of information technology on administrative systems can be summarized as follows [14], [15]:

- i. Information technology is an effective tool for reducing (resources and expenditures) and reorganizing.
- ii. The use of information technology helps to expand the scope of senior management's control and at the same time expand and distribute the decision-making process in the executive management, and this trend means central control and decentralization in decision-making. It is a method that combines the advantages of centralization and decentralization at the same time and achieves flexibility and a high degree of responsiveness. in the administrative system.
- iii. Information technology has helped to find new channels of communication through computers and communication networks, whether at the level of the organization or at the national or global level. this is possible
- iv. Increasing the speed of flow, processing and exchanging information, and developing modern administrative methods such as meeting, negotiating, and making deals remotely and others.

- v. Information technology helped relieve managers from the burdens of boring routine tasks. This allows them to use their spare time in strategic planning and policy-making, and this was clearly reflected in policy-making and raising the efficiency of senior management.
- vi. Information technology has contributed to increasing the ability of administrative systems to quickly adapt to the administrative work environment in organizations, by providing effective economic means to store, retrieve and process data and present it to decision-makers in a timely manner. This was clearly reflected in the efficiency of administrative systems and allowed them to have great flexibility in dealing with and responding to rapid changes.
- vii. Information technology has created new opportunities for administrative systems that we have not seen before. The rapid advancement of information technology has made it possible to introduce new products into the commercial market, such as the following systems [16]:
 - Expert systems.
 - Teamwork systems.
 - Artificial intelligence systems.
 - Decision support systems.
 - Organizing meetings remotely.
 - Automated brainstorming systems.
 - Negotiation programs.
 - And other important applications in the field of administration and secretarial.

In general, IT applications are more prevalent in administrative fields compared to other fields. It directly affects the main elements of management systems. In information processing, human resources, communication, and decision-making systems [17]. Modern technologies have been used in operations, offices, market analysis, and the use of computers in design, engineering, manufacturing, training, and others. However, realizing the inherent benefits of this technology, especially in the managerial field, is not achieved by simply owning or acquiring it, but by linking factors including [18], [19]:

- Acceptance of information technology at the national level, which means the necessity of having national policies for the transfer and absorption of this technology and the dissemination of the culture of assistive technology.

- Organizations' ability to take full advantage of technology and absorb it within their organizational structure and operations.
 - Planning for information technology at the strategic level to link technology use plans to the organizations' strategic goals.
 - Work to train employees, administrators, and workers on such modern technologies, through specialized programs and continuous workshops.
- viii. The ability of organizations to confront and avoid the risks that may accompany the use of this technology. The successful change of this technology is largely related to finding appropriate solutions to important issues such as maintaining the confidentiality of information, privacy and protection issues, vandalism, tampering, theft, falsification of records, and other security and protection issues in automated information systems.

Objectives of the Information System

The main objective of the information systems contained in its complete form is that the information provided is considered the basic information that includes all relevant information and is presented after processing it technically and analytically to become complete and useful information [20]. This basic objective of information systems can be divided into the following objectives [21]:

- i. Add revised information and reports to maintain information accuracy.
- ii. Preparing and filtering information that reaches managers, and on which they rely in making decisions or building strategic plans.
- iii. Display the tasks and work related to the information provided and the entity that you use and work on.
- iv. Maximizing the managers' time and not being preoccupied with the process of extracting information through a large number of data and documents.

Information properties [22], [23]:

- i. **Relevance:** The information is relevant only to it.
- ii. **Comprehensiveness:** comprehensive information that provides the beneficiaries with everything they need to know a particular case in all aspects.
- iii. **The right timing:** It is about retrieving the right information at the specified time.
- iv. **Clarity:** Choose to have the information clear and unambiguous.
- v. **Accuracy:** It means that the information is taken from the data log without any errors.
- vi. **Flexibility:** Flexibility in understanding information and ease of working with it.

vii. Measurability: The information should be quantifiable.

Conclusions and Recommendations

The research reached a set of conclusions on which a set of recommendations were built, which are as follows:

conclusions

- i. There is a conviction among those working in commercial establishments that the newly used information systems and technologies play an effective role in the decision-making process in those institutions.
- ii. Most of the workers in commercial establishments believe that the use of modern computer technologies for information systems and the speed of data entry in them leads to the speed of obtaining valuable information, and thus speed in making decisions.
- iii. The information provided by information systems and the effectiveness of administrative decision-making in commercial enterprises had a significant impact on the advancement of the sector, achieving the desired development, eliminating administrative bureaucracy, as well as speeding up operations and processing inputs, and then obtaining mature outputs in less time.
- iv. The research revealed that the use of information systems provides the decision-maker with the correct information at the right time. More information increases its value, and this has a significant impact on increasing the gross domestic product, meeting the demands and needs of citizens, and achieving public benefit.
- v. There is a consensus on the necessity of having an information system in every commercial institution, but the use of this system faces difficulty and resistance because it sometimes conflicts with private interests.

Recommendations

- i. Commercial establishments should pay attention to designing an information system for each department, and expedite the e-government project and link it with commercial establishments.
- ii. Appropriate training and preparation for workers in commercial establishments on these technologies to enable them to benefit from them in developing themselves and their ways of thinking and at the same time working to obtain effective administrative decisions that correspond to reality.

- iii. Studying, importing, and developing Arab and international experiences in the field of management information technology to enrich the work of commercial institutions.
- iv. Work to follow up the data collection periodically, provided that it is updated on each topic or problem.
- v. Conducting more studies in this field so that the concerned parties are informed and covered.
- vi. Urging the establishment of an information system for each department, provided that it is linked to the director or head of the department or commercial establishment.

Work to support and enhance external parties to provide commercial institutions with information related to the institution and its surrounding environment.

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