



The Impact of Communication Technology on Organizing Administrative Communication Tasks within the Institution: An Analytical Study

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Abstract:

This study aims to analyze the impact of communication technology on the organization of administrative communication tasks within institutions by highlighting its role in improving administrative efficiency, developing communication practices in public institutions, and strengthening the effectiveness of decision-making. The study adopts the descriptive-analytical method by presenting the conceptual framework of organization and communication technology, then analyzing the effects of this technology on job performance and organizational structures. The study concludes that communication technology constitutes a decisive factor in the modernization of public administration, despite the challenges it raises in relation to human qualification and digital infrastructure.

Keywords: Communication technology, administrative organization, administrative communication within the institution, electronic administration, job performance.

Introduction

Public administration has undergone profound transformations in recent decades as a result of the rapid development of communication technology. Administrative organization is no longer based solely on traditional methods; rather, it has increasingly come to rely on digital systems and the immediate flow of information. In this context, the importance of studying the impact of this technology on the organization of administrative communication tasks within institutions becomes evident, particularly in light of the growing shift toward electronic administration.

Research Problem:

To what extent does communication technology contribute to improving the organization of administrative communication tasks within institutions? What are the main challenges associated with its implementation?

Research Hypotheses:

- _ Communication technology contributes to enhancing the efficiency of administrative organization.
- _ It contributes to improving internal communication and accelerating decision-making.
- _ Its applications face human and technical challenges.

Research Methodology:



The descriptive-analytical method is considered one of the most widely used approaches in social and human sciences research, due to its clarity, the accessibility of its procedures, and the possibility of employing various statistical methods in analyzing collected data.

The descriptive-analytical method is also regarded as a central approach in developing and enriching the theoretical background of major topics such as authority, the state, systems, civil society, different analytical theories, media, and communication. It is useful to define the conceptual meanings of the term “descriptive method” and the way it is applied in subject analysis.

Methodology scholars have proposed several definitions, including those that consider the descriptive-analytical method as “a method of analysis and interpretation conducted in a scientifically organized manner in order to achieve specific objectives related to a social situation, a social problem, or a particular population.” Others define it as “a method for describing and representing the studied phenomenon quantitatively by collecting standardized information about the problem, classifying it, analyzing it, and subjecting it to careful study.” This conceptualization emphasizes the collection of information, the organization of analysis, and the attainment of scientific results that contribute to the development of topics across various sciences, particularly in relation to constructing the research problem and formulating appropriate questions. The existence of specific steps for conducting research reflects, in itself, a fundamental aspect of systematic analysis, as it explains and interprets the studied phenomenon and derives scientific results that may later serve as a theoretical foundation for new research, for raising further questions, and for formulating new hypotheses.

Axes of the Study:

First Axis: The Conceptual Approach to Organization

Second Axis: The Nature of Communication Technology

Third Axis: Uses of Communication Technology in Administrative Work within the Institution

First Axis: The Conceptual Approach to Organization

1. Definition of Organization

Linguistically:

The term organization is derived from the Arabic root *nazama*, which means to arrange or order. Accordingly, organizing work refers to arranging and managing it according to a specific method. In contrast, political organization refers to a group of individuals who share the same political principles and programs and are connected through organizational rules that define their relationships, as well as the means by which they conduct their work and activities.

Terminologically:

Organization is defined in the sense of an institution or entity. An organization may be industrial, educational, commercial, sports-related, or political. Accordingly, organization can be defined as a group of individuals linked by a formal relationship in order to achieve the objectives for which the organization was established. Several researchers in the field of



management have defined organization, and although each has provided a distinct definition, these definitions generally express similar meanings.

Professors Mooney and Reiley define organization as the form in which any group of individuals appears when they cooperate to achieve a specific objective.¹

2. The Importance of Organization:

Organization has become involved in all aspects of life and society. It contributes to preventing errors, delays, and the overlap of efforts among employees. Therefore, organization has significant benefits at the level of the company or institution, which may be outlined as follows:

Distribution and Allocation of Activities:

Different tasks and functions are distributed according to individuals' specializations in a fair manner in terms of time, effort, and the appropriate remuneration assigned to each task. This allocation of work contributes significantly to completing the largest possible amount of work in the shortest possible time and with the highest possible level of quality.

Enhancing Communication:

Communication and organization are two complementary systems and two essential elements for achieving effective performance. Communication between managers and employees, as well as among employees themselves, contributes to improving institutional performance and achieving higher productivity. Therefore, it is necessary to understand the rules of communication, leadership skills, and coordination among work teams.

Organization Creates Transparency:

Organization defines responsibilities among employees by clearly specifying the functions and activities that must be performed within a work plan available to everyone. In this way, the plan contributes to establishing clarity and transparency within the organization.

Development and Growth:

When tasks are divided among departments and employees, and available resources are used optimally, production increases, enabling organizations to carry out more activities and expand their plans. This also strengthens their ability to face challenges more easily and in a more organized manner.

Improving Resources:

Organization contributes to coordinating roles among employees and avoiding confusion, delays, and the loss of efforts within the organization.²

3. Principles and Types of Organization

First: Principles of Organization

¹Dr. Hannachi Laâla, University of Batna, *Administrative Organization in Islam*, pp. 210–211.

²*Arab Journal for Scientific Publishing*, "Definition of Administrative Organization and Its Importance in Institutions," Fifth Issue, No. 50, publication date: December 2, 2022, p. 1470.



These are the foundations and guidelines that should be followed when designing the organizational structure of an institution and defining each administrative unit. Organization is based on several principles, which are as follows:

1. The Principle of Objective:

This means that the objective and purpose must be clearly defined, as this leads to the development of plans and the concentration of individuals' efforts.

2. The Principle of Function:

This means that organization must take into account the requirements, authority, and responsibilities of the position, regardless of the individual occupying that position.

3. The Principle of Specialization and Division of Labor:

This means assigning specific parts of a given task to a number of members within the organization, instead of having one person perform several tasks. Work is divided into sub-tasks, after which each function is assigned to a specific person, leading to more active and effective performance.

4. The Principle of Unity of Command:

Subordinates and employees must receive orders and instructions from one person, as this ensures the clear determination of responsibility and the unification of workers' efforts.

5. The Principle of Span of Supervision:

This refers to the number of employees supervised by one manager, and this number varies from one unit to another.

6. The Principle of Equality between Authority, Power, and Responsibility:

Authority is defined as the powers granted to the holder of a position. It includes the right to issue orders and instructions, as well as the right to make decisions within specific limits.

Responsibility is defined as holding others accountable for the performance of tasks and functions.

7. The Principle of Centralization and Decentralization:

Centralization refers to the concentration of decision-making authority, whereby the largest portion of power is placed in the hands of senior management.

Decentralization refers to the transfer and exercise of decision-making authority from higher administrative levels to lower ones.

8. The Principle of Delegation of Authority:

The authority delegated to an employee must be proportionate to the employee's capabilities.

9. The Principle of Coordination:

This refers to the process of harmonizing and ensuring coherence among the various administrative units in order to perform tasks and achieve objectives.

10. The Principle of Flexibility:

This means that the organization should be flexible and capable of adapting to the internal and external changes surrounding it.³

³Arab Journal for Scientific Publishing, same reference, p. 1471.



Second: Types of Organization:

There are two distinct types of organization:

A. Formal Organization:

Formal organization refers to the official structure that defines relationships, administrative levels, and the tasks performed by individuals, as well as the distribution of responsibilities and duties in a manner that enables each administrative unit or individual within the organization to perform the assigned tasks or functions.

This formal organization is easy to identify because it is represented by the organizational chart, which shows the reciprocal relationships among different functions and roles. This chart also illustrates the hierarchical chain of authority, the defined scope of responsibilities associated with each formal position, and the channels of communication among all levels of responsibility.

In order for formal organization to achieve its intended objectives, the following conditions must be met:

- _ Individuals should be able to communicate with one another easily.
- _ There should be a sound relationship that enables individuals to receive orders with acceptance, seriousness, and attention.
- _ The necessary resources and facilities required for work should be available, as they contribute to its execution and to the effective improvement of its efficiency.
- _ The organization's objectives should be achieved at the lowest possible cost, effort, and time, while seeking to ensure the optimal use of available resources, clarify all lines and channels of authority and responsibility, and develop individuals through the use of the necessary means.
- _ Tasks of a similar nature should be classified and grouped together in order to identify the individual skills required for each group of functions.
- _ The principle of equivalence between authority and responsibility should be achieved when holding each individual accountable and when reviewing their work by their direct superior.
- _ Specialists or consultants should be consulted when the volume of work increases, due to the difficulty faced by the head or manager in deciding on all issues presented to them.
- _ Narrowing the span of supervision—that is, the number of employees supervised by the manager—results from managers' limited capacity to fully comprehend all issues and from their inability to ensure complete follow-up and supervision.
- _ Emphasis should be placed on the importance of organizational simplicity and flexibility in response to conditions of change and development.

There are several patterns of formal organization, including the following:

1. Vertical Organization:

This type of organization is established when each superior holds absolute authority to direct subordinates. Subordinates, in turn, may also possess authority represented in directing the



individuals who report to them. This process continues until it reaches the lowest level of employees. Authority therefore moves vertically from the top downward in a continuous and direct manner. This type of organization is known as direct organization, executive organization, or military organization. It has several advantages, including the following:

- _ Providing good opportunities for training in operational processes that are carried out directly.
- _ Clearly defining the authority assigned to each level.
- _ Clearly defining the duties of each individual within the organization.
- _ Helping decisions to be made quickly.

This type of organization also has several disadvantages, including the following:

- _ It does not allow sufficient time for practicing important activities such as research, planning, and development.
- _ It places an excessive burden on managers beyond their capacity.
- _ This type of organization does not encourage the division of work, because the manager is the person who makes decisions regarding all matters related to their subordinates.

2. Functional Organization:

This type of organization is based on functional specialization within the organization. Each administrative unit within the organization specializes in a specific function and performs all aspects related to that function. Thus, organizations include several departments, such as the purchasing department, the marketing department, and the production department. This type of organization has several advantages, including the following:

- _ Achieving cooperation among employees across the various departments of the %organization.
- _ Promoting specialization in functions and tasks.

Among the disadvantages of this type of organization are the following:

- _ Ambiguity and insufficient clarity regarding authority and responsibility.
- _ Delays in completing some tasks, causing them to be completed later than their scheduled time.
- _ Concentration of authority in the hands of a limited number of experienced individuals, along with a lack of flexibility.

3. Vertical-Functional Organization:

This type of organization is based on two forms of authority: formal authority and advisory authority. It operates through the reliance of formal authority on consultants in order to benefit from their opinions before any decision is made. The role of consultants is limited to guidance, advice, and the expression of professional opinions. Decision-making, however, remains within the powers of those who possess formal authority. This type is also known as vertical-advisory organization. It includes several advantages, which may be summarized as follows:

- _ It helps managers focus on administrative tasks, while technical responsibilities are assigned to consultants.



- _ This type of organization is characterized by flexibility.
- Among the disadvantages of this type of organization are the following:
- _ The possibility of conflict arising between advisory authority and those who hold formal authority.
 - _ It may allow executive managers to evade responsibility, especially in cases of failure in decision-making, by placing blame on consultants.
 - _ It does not provide sufficient motivation for consultants to present their opinions effectively, because success is ultimately attributed to executive managers.

4. Matrix Organization:

This type of organization is characterized by a matrix or network structure, as it is based on combining both the functional foundation and the product-based foundation.

B. Informal Organization:

From the previous presentation of the concept of formal organization, it becomes clear that formal organization is merely a reflection of the organizational chart or organizational structure, which focuses on the tasks that the organization or institution must accomplish. It defines employees' responsibilities and duties in a manner expected to enable them to perform what is required with ease and clarity.

By contrast, informal organization is concerned with motives and needs that cannot be expressed formally. Therefore, informal organization does not necessarily correspond to the formal organizational structure, nor does it necessarily reflect it.

Accordingly, informal organization can be defined as a set of relationships that emerge and continue among employees as a result of their presence in the same workplace and their participation in similar objectives and problems. This type of organization appears as a result of spontaneous or voluntary relationships among individuals within the organization. It plays a major role in shaping the attitudes and behavior of workers or employees, and it also has a significant impact on determining levels of production, which may differ from the levels required by the formal organization, either by increasing or decreasing them.

The existence of informal organization in any institution may not be consistent or harmonious with the formal organization within that institution. This type of organization may require superiors, managers, and employees to bypass the official lines of relationships within the organization and replace them with informal communication channels. On the other hand, although this type of organization is informal, it does not operate in a disorganized manner. Members of an informal organizational group often tend to select one person among them who possesses a certain degree of experience, knowledge, influence, and strong interpersonal skills to act as its informal leader.

In conclusion, informal organization represents a strong form of organization, despite not appearing in the organizational structure and despite the fact that it cannot be held accountable for shortcomings or rewarded for achievements.⁴

⁴Al-Najah website, <https://teb21.com21>, accessed on April 2, 2025, at 4:00 p.m.



The differences between formal and informal organization can be clarified through the following points:

Table 1: Illustrative Table Showing the Difference between Formal Organization and Informal Organization

No.	Informal Organization	Formal Organization
1	It results from the gathering of individuals within the organization and from their relationships with one another.	It results from official objectives and tasks.
2	The objectives of informal organization are to satisfy the needs of each individual or group of individuals within the organization.	The objectives of formal organization are to achieve goals efficiently and effectively.
3	The individual's objectives are to satisfy material and moral needs through joining work.	The individual's objectives are to perform the job.
4	The individual's relationships are social relationships and personal connections.	The individual's relationships are the official administrative relationships of the job.
5	Communication takes place through influence and power according to the balance of social relationships.	Communication takes place according to the hierarchical chain of command.

4. Objectives and Advantages of Organization

First: Objectives of Organization:

1. Good organization helps define the relationships among employees within the organization, as each member knows their position and their organizational relationship with their superiors or subordinates.
2. It enables employees to clearly understand the activities they are required to perform.
3. Organization helps unify employees' efforts and direct them toward common objectives and goals.
4. It prevents duplication of work while carrying out the activities necessary to achieve specific objectives.
5. Organization contributes to work accomplishment by granting individuals the authority required to perform their job duties.
6. Good organization ensures the optimal use of human and material resources.
7. It achieves harmony among individuals and employees within the organization, allowing functional and social relationships to proceed with the least possible degree of friction and misunderstanding among members of the organization, which may otherwise occur as a result of conflict over authority and responsibility.
8. It ensures effective administrative control.



9. It defines the powers granted to superiors and employees so that they can perform their work efficiently and effectively.⁵

It is worth noting that throughout different historical eras, human beings have never been able to dispense with organization as a means of achieving what satisfies them materially, socially, and psychologically. Therefore, a fixed fact may be affirmed: organization has not been limited only to large-scale productive activities, governments, churches, universities, hospitals, or similar institutions. Rather, it includes all people, since it forms part of human existence, through which purposes are achieved and desires and needs are satisfied.⁶

Second: Advantages of Organization:

Organization is an important element of the administrative process. It is a means that helps achieve the objectives of the organization. Good organization provides the following advantages:

1. A clear definition of specializations and responsibilities among administrative units and the positions that constitute them. Each administration or department is assigned its own specializations and its relationship with other administrations and departments within the organization. Likewise, each position, and the employee occupying it, is clearly defined in relation to other employees working in the administrative units. As a result, there is no overlap in specializations either among administrative units or among the employees working within them, thereby eliminating duplication and interference in tasks.
2. A clear definition of the powers granted to superiors and to employees occupying positions within the administrative units of the organization, in order to avoid any conflict or contradiction in authority.
3. The establishment of effective coordination among the administrative units that make up the organization and among the employees working within them, so that all employees in the organization work as one team, rather than as a group of individuals or as separate units disconnected from one another.
4. The achievement of effective administrative control over the performance of work within the organization.
5. The provision of an appropriate work environment within the organization, in which voluntary cooperation develops among administrative units and among the employees working within them.

⁵<https://hrdiscussion.com>, accessed on March 8, at 10:40 a.m.

⁶Hasim Majid, *Studies in Public Administration*, University Youth Foundation, Alexandria, 2005 edition, pp. 31–32.



6. The regular flow of work within the organization, the maximum utilization of the organization's available resources, and the achievement of objectives with a high degree of efficiency and effectiveness.⁷
7. Organization ensures the establishment of formal and informal communication channels among the different parts of the administrative units.⁸

Organization is therefore a means through which the material and intellectual capacities of people are directed through specific paths and channels in order to accomplish established objectives or achieve defined results.

This means that any objectives exceeding the physical and intellectual capacities of a single individual must be assigned to others so that the responsibilities arising from them can be accepted. In other words, this again points to organization as a means of achieving objectives. In order to accept this idea, it may be stated that organization is fundamentally established when there is an objective capable of mobilizing human activity toward its achievement.

Second Axis: The Nature of Communication Technology

Communication technology is important because it is used in all areas of practical life. When reflecting on daily routines and identifying all the technological tools used within a single day, the importance of technology becomes evident, whether through using the phone, watching television, driving a car, using a computer, or operating any electrical device. In fact, day after day, dependence on technology continues to increase, whether in communication, transportation, information search, or even entertainment.

Communication technology is considered both an important resource and a significant activity. Through the application of this technology and the manner in which it is used, its contribution becomes evident in achieving distinguished performance and improving the quality of work. This confirms that institutions are keeping pace with technological changes. It should also be noted that placing communication technology within the scope of practical application by the institution requires considerable effort, distinguished performance, and training. Accordingly, access to any technology often requires highly costly investment.

1. The Emergence and Definition of Communication Technology

The Emergence of Communication Technology

Since ancient times, human beings have continuously invented means and tools to facilitate and improve their lives. Over time, communication technology developed significantly,

⁷Mohammed Shaker Asfour, *Principles of Organization and Methods*, Dar Al-Masirah for Publishing and Distribution, Amman, 6th edition, 2009, p. 126.

⁸Zaid Munir Abbawi and Sami "Mohammed Hisham" Hariz, *Introduction to Public Administration: Between Theory and Practice*, Dar Al-Shorouk for Publishing and Distribution, Amman, 1st edition, 2006, p. 244.



leading to the emergence of new inventions and discoveries that radically transformed life. In the modern era, the pace of technological development accelerated remarkably, resulting in a genuine technological revolution.

The first technological tools appeared in the seventeenth century with the invention of machines, as a result of the changes brought about by the Industrial Revolution in the fields of production and development. However, communication technology developed very rapidly. At each stage of its development, researchers examined the possibilities and strengths available during that period and applied communication technology to them, integrating it into all areas of life. Thus, the development of communication technology progressed across successive civilizations and was shaped by three fundamental factors: social need, social resources, and social solidarity, which ultimately led to success and development.⁹

Definition of Communication Technology:

There are several definitions that have addressed the meaning of communication technology.

Linguistically: The *New Student Dictionary* defines communication technology as technique, that is, the science of arts and professions.

Terminologically: Professor Abu Zaid defines it as the scientific application of scientific discoveries, or the application of scientific knowledge in practical life.¹⁰

Communication technology is also defined as the set of various means produced by scientific developments to facilitate both physical and intellectual work. It is a phenomenon as old as humanity itself, while its modern aspect lies mainly in the term. The word *technology* is an Arabized term that corresponds in Arabic to the word *technique*. The word *technology* consists of two parts: *technique*, which means method or means, and *logy*, which means science. Thus, the full meaning of the word is “the science of means.”

The Soviet Philosophical Encyclopedia defined communication technology as the totality of machines, mechanisms, systems, and means of control, collection, storage, and transmission of energy and information. The term communication technology is considered one of the most widely used terms in the present era. However, the more common its use becomes, the greater the ambiguity and confusion surrounding it. The subject of communication technology still raises many questions regarding the determination of a precise concept by economists. Accordingly, perspectives have multiplied and concepts have differed. Among these definitions are the following:

From the perspective of its Arabic meaning, the origin of the word *technology* goes back to a Greek word composed of two parts: the first part, *techno*, means craft, skill, or art, while the second part, *logy*, means science or study. Therefore, the word *technology* means the science of performance, the science of application, or the technical method used to achieve a practical

⁹“History of Technology,” *Britannica*, retrieved September 9, 2021. Edited.

¹⁰Farouk Abu Zaid, *Introduction to the World of Journalism*, Alam Al-Kutub, Cairo, 2nd edition, 1998, p. 45.

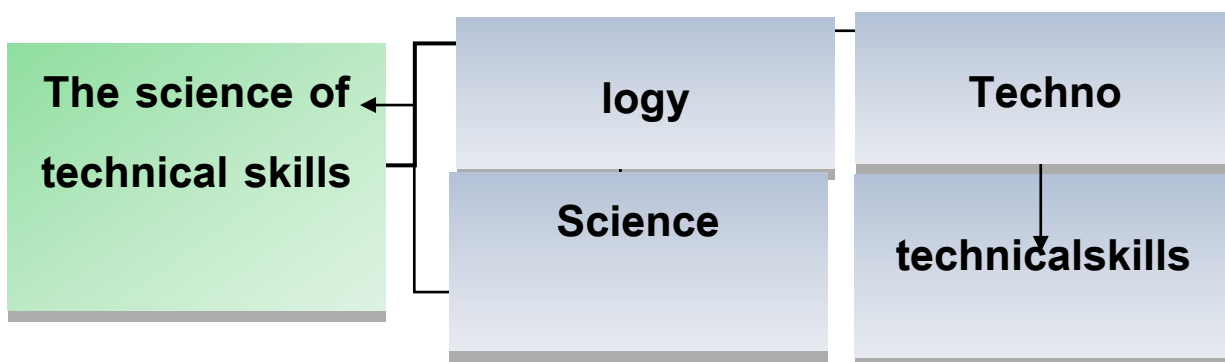


purpose.¹¹ It is also the science of industrial operation, as well as the science of arts and professions.¹²

Communication technology is defined as “the tools or means used for scientific and applied purposes, which human beings rely on in their work to complement their strengths and capacities, and to meet the needs that arise within the framework of their social as well as historical conditions.”¹³

Communication technology is also “the outcome of the continuous interaction between human beings and nature; an outcome that increases the efficiency of this interaction with the aim of expanding it, improving its quality, or reducing the effort expended.”

There are also those who define communication technology as the total body of scientific knowledge used in the industrial field, particularly that devoted to the study, realization, production, and marketing of goods and services, in order to replace manual labor with modern and advanced machines.¹⁴



Illustrative Diagram of the Concept of Technology

2. Importance and Types of Communication Technology

Importance of Communication Technology

¹¹Mohammed Al-Sairafi, *Information Technology Management*, 1st edition, Dar Al-Fikr Al-Jami'i, Alexandria, 2009, p. 13.

¹²Mahmoud Alam El-Din, *Information Technology and the Mass Communication Industry*, Al-Arabi for Publishing and Distribution, Cairo, 1990, p. 16.

¹³Abduh Samir, *The Arabs and Communication Technology*, Dar Al-Afaq Al-Jadida, Beirut, 1980, p. 120.

¹⁴Mohammed Al-Sairafi, *Information Technology Management*, previously cited, pp. 41–42.



The importance of modern communication technology is not limited to one era rather than another; instead, its significance increases day after day. In this regard, several points may be mentioned that illustrate this importance:

- _ Improving the quality of work performance.
- _ Reducing costs.
- _ Ensuring accuracy and speed in performing tasks.
- _ Improving methods of communication among administrative organizations.
- _ Increasing the level of work productivity.
- _ Facilitating the process of obtaining information.

Types of Communication Technology:

The definition of communication technology includes a wide range of fields, which are referred to as types of this technology. The entry of communication technology into a specific field to bring about change and contribute to its technical development indicates the emergence of a new type of communication technology. It refers to all technologies, tools, means of transport, and other skills invented and used by human beings to facilitate life. Among the most prominent types are the following:¹⁵

Biotechnology:

Biotechnology is a type of communication technology that uses biological systems and living organisms to create and develop products or processes. One of its simplest examples is the use of yeast, which is considered a living organism, in the production of bread. It is also involved in the modification of biological systems related to the genetic material (DNA) of living organisms. This technology is concerned with several laboratory and medical sciences, biochemistry, genetic engineering, and genetics, through the production of medicines and treatments that respond to diseases affecting organisms. It is also used in agriculture, human medicine, plants, and in the production of chemicals and food products.¹⁶

Medical Technology:

Medical technology includes all technologies and services that aim to save human life and develop devices that benefit human health. Among its most important examples are examination devices using ultrasound, fetal health examination inside the womb, magnetic resonance imaging for detecting diseases, providing medical care to patients during surgical operations, devices for monitoring human health and its changes, diagnosing various diseases, treating and caring for patients, preventing diseases that become difficult to treat at advanced stages, and detecting them early.¹⁷

¹⁵“Different Types of Technology in 2021 [With Examples],” *RankRed*, retrieved September 9, 2021. Edited.

¹⁶“What Is Biotechnology?,” *NTNU*, retrieved September 9, 2021. Edited.

¹⁷“What Is Medical Technology?,” *MedTech Europe*, retrieved September 9, 2021. Edited.



Nuclear Technology:

Nuclear technology refers to the technologies concerned with developing electricity production using nuclear energy, which is classified as environmentally friendly and sustainable. It is also used in improving food production and sustainable agriculture, as well as in mutation breeding in plants. This is done by exposing plant seeds or stems to radiation, such as gamma rays, and then inducing mutations to produce plants with specific traits. In addition, nuclear technology is used in attempts to reduce reliance on insecticides by breeding large numbers of insects, rendering them sterile through radiation, and releasing them to mate with normal insects without producing offspring.¹⁸

Information Technology:

Information technology includes all tools and technologies used to build communication networks, protect data and information, and create and manage large databases. Examples include phones, computers, networking devices, and other tools that have become an essential part of company operations. Information technology is used to control machines and production robots in factories, as well as to store data and information related to employees and products on computers.¹⁹

Communication Technologies:

This term falls under information technology, but it specifically refers to the means of communication between devices and the technologies used to store information. Examples include the Internet, wireless networks, software, video conferencing, social networking sites, and applications. This form of communication technology is concerned with all means that allow information to be exchanged and transmitted between these devices through digital processing. It is used in several fields, such as electronic agriculture and the development of information and communication technology in the agricultural sector.²⁰

Technology in Education:

Educational technology includes all technologies used in schools and universities to enhance the learning process and deliver information to students easily and effectively. This contributes to developing the educational process and improving teaching tools. Examples include distance learning through computers and the Internet, which relies on educational

¹⁸“The Many Uses of Nuclear Technology,” *World Nuclear*, retrieved September 9, 2021. Edited.

¹⁹Dale Stokdyk, “What Is Information Technology (IT)?”, *SNHU*, October 29, 2019, retrieved September 9, 2021. Edited.

²⁰“Information and Communication Technologies (ICT),” *FAO*, retrieved September 9, 2021. Edited.



technologies, platforms, and programs that help students identify their strengths and weaknesses and focus on improving them.²¹

Business Technology:

Business technology refers to the tools and organizational structures that coordinate the work of companies and institutions in order to meet customers' needs, improve operations, continuously develop performance, and enhance competitiveness. It also contributes to cost control, profit estimation, and the management of product marketing. In other words, it is the form of communication technology concerned with organizing and managing business activities as a whole and improving their capabilities. Among its most important examples are product technology, customer communication technology, and operational and business process technology.²²

Transportation Technology:

Transportation technology refers to the skills, inventions, and innovations that have brought about developments and changes in the field of transportation and airline companies. It aims to achieve efficiency, safety, and ease of use in these means of transport, enabling users to reach their desired destinations in less time and under safer conditions. Examples include modern high-speed trains that are safer, large low-cost airplanes, and the revolution taking place in the automobile sector through the replacement of fuel-powered vehicles with electric cars.²³

Entertainment Technology:

This type of communication technology includes media, television, Internet networks, and films, in addition to the arts, acting skills, theater, and radio. It is concerned with the development of production companies and many entertainment-related fields, such as fashion design, media and content production, photography, singing, and all areas that enable individuals to build an audience and create job opportunities for themselves.²⁴

3. Advantages and Disadvantages of Communication Technology

Advantages of Communication Technology:

The proper use of technology enables individuals to recognize the advantages it provides in every application. Among these advantages are the following:

²¹Benjamin Herold, "Technology in Education: An Overview," *EdWeek*, February 5, 2016, retrieved September 9, 2021. Edited.

²²"Introduction to Business Technology," *ManageBT*, retrieved September 9, 2021. Edited.

²³"Transportation Technology," *Built In*, retrieved September 9, 2021. Edited.

²⁴"Entertainment Technology," *Millersville*, retrieved September 9, 2021. Edited.



1. Speed: Speed refers to the performance of functions and commands. Technology has become known for providing services with a high degree of speed, in addition to its ability to execute commands and carry out complex operations within an exceptionally short time, with continuous improvement over time. With the press of a button, it allows several operations and functions to be performed simultaneously.

2. Accuracy: In addition to being faster, technology operates with a high degree of accuracy, or rather with exceptional precision. Modern electronic devices are able to detect errors and differences that human beings may be unable to identify or manage.

3. Reliability: Along with speed and accuracy, communication technology reduces areas of uncertainty by producing results that are more reliable and credible. This is always linked to the method used for entering data and information.

4. Consistency: Communication technology is characterized by its ability to perform the same tasks and functions at the same pace and to repeat the same operations. The computer, for example, is distinguished by its capacity to repeat work consistently; that is, to perform the same procedure repeatedly using the same method and producing the same results.

There are many other advantages that communication technology seeks to provide, including the following:

- _ Facilitating access to information and enabling people to follow world news.
- _ Providing easy access to a wide variety of books, films, and series through the Internet.
- _ Facilitating the acquisition of knowledge and information in various fields of life.
- _ Facilitating movement and travel between different locations and countries.
- _ Providing effective and rapid means of communication.
- _ Using the latest technologies to enable communication among individuals.
- _ Facilitating the exchange of correspondence and the sharing of files and multimedia materials, including video, audio, and images, with ease and convenience.

Disadvantages of Communication Technology:

Despite its many advantages, communication technology also has certain disadvantages, the most important of which may be summarized as follows:

1. It may eliminate the artistic or personal touch of the worker or secretary, as their work becomes entirely dependent on machines and electronic programs.

2. Computers, compact discs, or other storage-based media may be exposed to viruses or damage, which may lead to the loss of some or all stored information and data.

3. Data and sent e-mails may be exposed to piracy and hacking, in addition to the risks associated with hackers and cyberattacks.

4. Characteristics of Communication Technology

Communication technology is characterized by several features, the most important of which are as follows:

- _ Communication technology is an independent science with its own foundations, objectives, and theories.
- _ Communication technology is an applied science that seeks to translate knowledge into practical use.



- _ Communication technology is a comprehensive process that includes all operations related to design, development, and management.
- _ Communication technology is goal-oriented, as it seeks to provide solutions to problems.
- _ Communication technology is developmental, as it continues to evolve in parallel with human development.
- _ Communication technology is fast and effective.
- _ Technology is a dynamic process, meaning that it represents a state of continuous interaction and activity among its components.
- _ It is a process that affects human life.
- _ It is a process that includes inputs, operations, and outputs.
- _ It is self-developing, as it continuously undergoes processes of review, modification, and improvement.²⁵

Third Axis: Uses of Communication Technology in Administrative Work within the Institution

The relationship between administrative communication within the institution and modern communication technology has become highly significant. This relationship is expected to produce a fundamental transformation in the individual's relationship with work, performance, and even leisure time. This impact can be identified as follows:

- _ The creation of many jobs related to computers and automated systems, as the need has emerged for programmers, system designers, performance supervisors, and maintenance technicians.
- _ Skill obsolescence: rapid changes in communication technology lead to the obsolescence of employees' skills, which makes continuous updating necessary. A lack of skills among these specialized employees reduces the organization's ability to absorb and apply innovations in communication technology. Studies have shown that the inability to apply innovations is due to a lack of administrative skill. However, in an environment characterized by rapid change, a person may learn a particular skill, but it may quickly become obsolete and be replaced by new technologies.
- _ Enhancing the efficiency of the administrative employee: there is a relationship between communication technology and the administrative employee that has led to the emergence of new patterns of qualification and training for workers in order to improve their productive efficiency.
- _ It has influenced methods of forecasting future job requirements, as well as methods of job analysis used to evaluate the positions managed within the administrative structure of the institution.

²⁵Ammar Bouhouche and Mohammed Mahmoud Al-Dhunaybat, previously cited reference, p. 107.



- Communication technology has created a new atmosphere of relationships between the administrative employee and management by opening an information channel for discussing daily changes and their impact on administration.
- Communication technology has affected administrative work by creating new and constantly renewed needs as a result of its rapid development. These needs may be informational or service-related.
- Communication technology has extended its influence even to the sphere of social relations among individuals by creating unequal opportunities among them in the field of work. Consequently, dissatisfaction with work may arise, causing some individuals to feel that they are no longer needed because electronic machines have replaced them. This may lead to the emergence of a complex psychological state resulting in isolation, introversion, and separation from colleagues.

General Conclusion:

At the end of this chapter, it can be stated that communication technology has produced a promising future in parallel with its progress and development. It has introduced a new and advanced model of administration that differs radically from what is commonly known in other administrative systems. The study has reached an important conclusion concerning the major and effective role played by communication technology in preparing, organizing, and providing sufficient effort and the fastest possible time for administrative and office work within the institution, especially because the present era is characterized by speed, globalization, and technological development.

Technology is not limited to computers, devices, and phones only. Rather, it includes all developments, tools, and devices that have brought about a revolution in various fields of life, such as the biological, medical, industrial, business, educational, communication, information, entertainment, and even transportation fields. Communication technology is concerned with developing means that facilitate life in these fields, enhance skills, and create new and diverse job opportunities.

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