

## The relationship of information and communications technology in improving the quality and flexibility of the labor market

علاقة تقنية المعلومات والاتصالات بتحسين جودة ومرونة سوق العمل

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### Abstract:

the study aims through this research paper is to know the role of ICT's in economic institutions by observing their functions and the methods of making the best use of them.

In addition to highlighting the most important reasons for the prosperity of information and communication technology in the 21 st century. Then access to the role of information and communication technology ICT on the performance of institutions, both through the impact of ICT on the institution and its impact on the labor market, in addition to addressing the impact of the use of information and communication technology and the orientation of small and medium enterprises to export to international activity.

Key words: information and communication technology, enterprise, labor market; international activity.

### ملخص:

تهدف الدراسة من خلال هذه الورقة البحثية إلى معرفة دور تكنولوجيا المعلومات والاتصالات في المؤسسات الاقتصادية، من خلال ملاحظة وظائفها ومعرفة أساليب الاستفادة القصوى منها، إضافة إلى الوقوف على أهم أسباب ازدهار تكنولوجيا المعلومات والاتصالات في القرن الواحد والعشرين. تم التطرق إلى دور تكنولوجيا المعلومات والاتصال على أداء المؤسسات، سواء من خلال آثار تكنولوجيا المعلومات

# The relationship of information and communications technology in improving the quality and flexibility of the labor market

والاتصالات على المؤسسة، أو من حيث آثارها على سوق العمل. إضافة إلى التطرق لأثر استخدام تكنولوجيا المعلومات والاتصال وتوجه المؤسسات الصغيرة والمتوسطة من التصدير إلى النشاط الدولي، وفي الأخير استخلاص مجموعة من التوصيات.

**الكلمات المفتاحية:** تكنولوجيا المعلومات والاتصالات، المؤسسة، سوق عمل، النشاط الدولي.

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## 1. INTRODUCTION

Institutions at the end of the last century and the beginning of the twenty-first century are experiencing great progress and deep, rapid and profound transformations in their rhythm history has never been seen at all levels, which has led to an increase in the institutions' need for information, as the latter has become the strength of those who possessed it, This is an important resource for doing business and exercise it effectively.

That is why there is an increasing interest in providing information to all decision makers in a timely manner, to make rational decisions, as this need has proven the necessity of introducing modern communication technology in the management and organization department of these institutions.

Accordingly, information and communications technology has become providing tools that accelerate development and increase the success of the organization. Therefore, it has become necessary to introduce modern information and communication technology into the activity of the institution, which particularly affects the communication process that helps to adapt.

### **The problem of the study:**

The importance of information and communication technology stems from the support provided by organizations that help in achieving the desired

goals, and the impact of modern communication technology has not only depended on the institution's communication, but has gone beyond that to create a new method of modern management, different from the previous method, as it is available on the means And tools and assistive technologies in this field, information and communications technology is one of the most important strengths of any organization today, given its strategic role in the possibility of increasing its returns and improving its performance.

From this standpoint, the problem that we will try to answer in this study revolves around the following main question:

**"What is the role of information and communication technology in the work of economic institutions, and what are the effects on the labor market?"**

**research aims:**

The research aims to achieve the following:

- ✓ Introduce the basic concepts of information and communications technology;
- ✓ Highlighting the important role that ICT plays, as a key component of the organization;
- ✓ Explain the implications of information and communications technology for the organization and the labor market

**research assumes:**

The research seeks to test the following hypotheses:

- ❖ The employment of information and communications technology contributes to improving the work of the organization;
- ❖ Information and communications technology has significantly affected the performance of enterprises;
- ❖ ICT contributes to the labor market.

**Structure of the study:**

In this research paper, we will address the following axes:

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The first axis: what is information and communication technology

The second axis: the second axis: the reasons for the prosperity of information and communication technology and its advantages

The third axis: the role of information and communication technology in the economic institution

## **2. what is information and communication technology**

### **2.1 What is technology**

**2.1.1 Definition of Technology:** Technology is defined as consisting of two parts, one of which (Techno), which means application or practical method, and the second (Logy)<sup>1</sup>, i.e. science or methodology, so it is in one word that is the science of industrial operation<sup>2</sup>.

And when the two parts are combined together, the concept of technology is applied science or the technical way to achieve a practical purpose. Technology was also known to indicate the practical application of advanced and modern scientific methods, given that these scientific methods often relate to new developments in processes or production, in addition to the scientific progress affecting the various activities in which they may be used.

It was defined as improvements in technical technological methods of production to enable economic units to increase production units with the fewest resources<sup>3</sup>.

**2.1.2 Types of technology:** Technology is classified according to several aspects, including the following:

**- Based on the degree of control, we find the following:**

- ✓ Basic Technology: It is the technology that most industrial establishments possess and is recognized for. It is characterized by a very large degree of control.
- ✓ Differentiation technology: It is owned by one institution or a limited number of industrial establishments, which is the technology that distinguishes it from other competitors.

- **On the basis of its subject :**

- ✓ Routing technology: It is used to run resource flows, for example examples of running programs and applications.
- ✓ Design Technology: It is used in design activities in the organization, such as computer aided design.
- ✓ Production method technology: These are used in manufacturing, installation and control operations.
- ✓ Information and Communication Technology: It is used to process and transfer information and data.

- **On the basis of the degree of complexity we find:**

- **High-grade technology:** It is a very complex technology, which is difficult for national institutions in developing countries to achieve its exploitation, except at the request of the patent owner.
- **Regular technology:** It is less complicated than its predecessor, as local specialists in developing countries can absorb it, but it is also distinguished by the huge investment costs.<sup>4</sup>

## 2.2 What is the information:

2.2.1 **Definition of information:** While the information is a product of processing information, an analysis or synthesis to extract what it contains, and the application of mathematical operations, budgets, equations, and statistical, mathematical and logical methods<sup>5</sup>. Gelinas et Al believes that information is a set of meaningful data that is collected into a task that can be used to make decisions. Information is simply defined as the arrangement of data into useful forms<sup>6</sup>.

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## **2.2.2 Sources of information:**

There are two types of sources:

- ✓ Internal sources: It is made up of people such as supervisors, department heads and managers at various levels within the organization, information is gathered here either on an official basis according to the events that have already occurred, or on an informal basis through informal contacts and discussions<sup>7</sup>.
- ✓ External sources: It is carried out through the Foundation's ongoing relationships with its external environment, to which it transmits information without interruption, with various and multiple sources, including public, national and international ones.
  - Direct partners from suppliers, contractors and banks;
  - Various types of written, audio and visual media;
  - All public institutions, departments and ministries;
  - Institutions and libraries specialized in providing various information;
  - Studies, research and scientific reports;
  - Participating in the shareholders' general assemblies;
  - Participation in local, national and international exhibitions.<sup>8</sup>

## **2.3 What is the connection:**

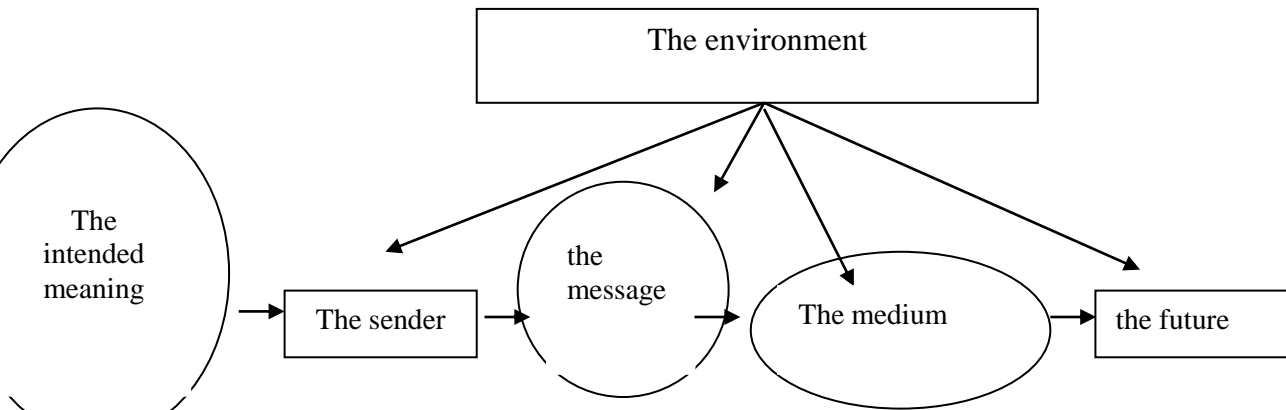
Communication is a complex and complex process; This is because several interacting factors interfere with the communication process, and this is what we will look at in addition to knowing the goals achieved by his results.

### **2.3.1 Contact definition:**

Mahmoud defined the return of communication as: "The process or method by which ideas and information are transmitted between people within a particular social system, differs in terms of size, and in terms of the relationships involved in it in the sense that the social pattern is merely a typical bilateral relationship between two people or a small group or a local community Or national, or even the human community as a whole. "

It was also defined as: "an organized, systematic and spontaneous process that involves the transmission and transmission of information and data from one side to another, provided that the data and information transferred are understood and palatable by the targets.

**Fig. 01: Communication Elements**



Is the meaning understood, the intended meaning itself?

**Source:** Ibrahim Bakhti, Lessons from the Scale of "Information Technology and Systems in Small and Medium Enterprises", from the MA program: Small and Medium Enterprises Management, Qasidi Merbah University - Ouargla, 2004/2005, p.10. (Written in Arabic ).

As the communication process is a complex process, because it has multiple parties and elements: Russell, message, receiver, in addition to the environment and the resulting reaction, so the integrity of the communication process lies in the equality between the intended meaning and the meaning understood.<sup>9</sup>

### 2.3.2 Contact objectives:

Adopting the communication process gains the institution, regardless of its type of activity, with many advantages. It aspires through a number of goals, perhaps the most important of which are:

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Achieving coordination between actions and behaviors; The contact coordinates the actions and actions of the various departments of the institution.

- Share information.

Reducing the negative role the rumor plays in the labor and student milieus alike.

Make sound decisions; Information plays a new role in the institution's decision-making process, whether it is quantitative or qualitative.<sup>10</sup>

### **2.4 What is information and communication technology**

#### **2.4.1 Definition of information and communication technology**

According to the developments taking place, information and communication technology is a new form of keeping pace with the many developments and paths; It can be defined on several grounds, including:

As for Jane Laudon and Kenneth Laudon, they define information and communication technology in light of the new changes and the digital world as a management tool used which consists of five components, namely<sup>11</sup>:

It was also known as a major development closely related to electronic developments (memory cards, storage, wireless communication technology). Therefore, information and communication technology on the use and useful and optimal investment of various types of knowledge is considered to search for the best means and ways that facilitate access to information that leads us to knowledge, as well as making such information available to beneficiaries, exchanging it and communicating it with the required speed, effectiveness and accuracy required by the work and duties of contemporary man ".<sup>12</sup>

In addition to being defined as a set of computers, supporting equipment, programs, services, and related resources applied to support the business phases, which makes the digital information generated and stored easy to use and share. It is also known as new methods and methods with high



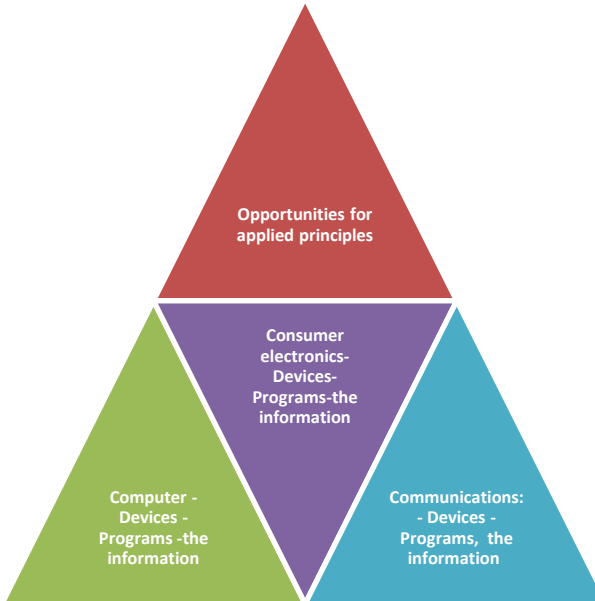
efficiency for exchanging information between all users, using computers, fax, wired phones and the Internet.<sup>13</sup>

- Informational equipment / It is the physical equipment for processing
- Software
- Storage technology: It is represented by the physical bearers for storing data such as hard and optical disks and software for organizing the data on the physical holders.
- Communication technology: It consists of equipment, physical media, and software that connect different hardware accessories and transfer data from one place to another, so that computers and communication equipment can be connected to form networks for the exchange and sharing of sounds, pictures and video.
- Networks: Connect computers to exchange data or resources.

(Haag et peter) defined information technology as: "a set of tools that help its users to deal with information and accomplish activities or activities related to information processing"<sup>14</sup>, in addition to what was mentioned by Alaa Abdel-Razek Salmi; That information technology extends its concept to include not only computers and communications, but also a third component, consumer electronics.<sup>15</sup>

### **Figure 02: ICT components**

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**Source:** Alaa Abdul-Razzaq Al-Salmi, Information Technology, Dar Al-Manahij for Publishing and Distribution, Amman - Jordan, 2nd ed., 1422 AH / 2002 AD, p.19 (written in Arabic).

### 2.4.2 The importance of information and communication technology:

Information technology is not only a technical issue, but a civilizational and cultural issue as it is related to changing values, concepts and customs prevalent in society. Any attempt to prove the importance of information technology must be preceded by an acknowledgment that information is more important than technology in a large way and there is no need here to prove the benefits of information, as it has become known to the far and near, and that decision makers around the world frequently repeat the word information in every Once they talk about development and development in different sectors, perhaps the most important information is those modern technological means that gave information another dimension, and with the technical development in the field of processing, storing and communicating information, the separation of information and technology became impossible.<sup>16</sup>

### **3. the reasons for the prosperity of information and communication technology and its advantages**

#### **3.1 The causes of information and communication technology boom**

In addition to the areas driving the adoption of information and communication technology, there are several reasons that justify its prosperity. They are represented in<sup>17</sup>:

- ✓ Enter activities interactivité: Thanks to information and communication technology, information sources are quickly entered into activities; It also facilitates the immediate feedback process between the parties by allowing them to ask other questions and quick judgment.
- ✓ Frequency and multiplicity of signals and channels: The information and communication technology has increased the number of used signals and channels.
- ✓ Diversity of methods: The diversity of methods structure the source of the information according to different protocols and multiple methods; This diversity allows to ascertain the information according to many languages and methods, "words, movements, etc."
- ✓ Degree of Diagnosis: The degree of diagnosis indicates the status of the transferred message thanks to modern technologies, and gives the right to submit any petition, either individually or collectively.

#### **3.2 The advantages of information and communication technology: represented in:**<sup>18</sup>

- ✓ Speed: through the speed of information processing, which allowed the processing time to be significantly reduced;
- ✓ Distance approximation: it is now possible to instantly access information from anywhere in the world;
- ✓ Capacity: Thanks to the continuous development of electronic technologies used to store information, we can quickly access a large amount of information;

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- ✓ Flexibility of use: through the possibility of using it in very wide areas.

### **3.3 Information Technology Jobs:**

The optimal use of information technology and knowing the methods to make maximum use of it, makes it able to perform a set of functions that can be summed up in the most commonly used, which is the collection of information, and is by collecting data and data in the form of files arranged and preserved to the time of need, which can be used later This information can take many forms such as: text voices, numbers, pictures, graphics, statistics, data ... etc. The processing comes in the second stage, after collecting the information we can process it, for processing requires the conversion of data and symbols into information that can be consumed, and it is indicated that the term information processing is a general term to express any activity of the computer that transforms any type of information into another type. The jobs include:

1. Word processing: allows us to enter data and text and shapes and attractive output, given the capabilities provided by computers in this regard.
2. Forms processing: By this we mean the possibility of converting existing data and information into graphs and images that can be read to increase our awareness and understanding.
3. Voice processing: Modern information technology has made it possible to enter sounds into computers via the phone or by talking to a computer directly.
4. Storage and retrieval: One of the functions provided by information technology, which is the most important thing that is characterized by its ability to store and save data and information and retrieve it upon request, and there are various media storage areas, whether this is in computer memory or on magnetic disks or optical disks, it is possible Keep information as little as possible and retrieve it when you need it.

5. Transfer and transmission: The simultaneous use of computer and communication technology has led to its use at any point in the world, through the use of information networks and modern communication networks, and the emergence of what is known as the rapid information methods, and the global information network.

Information and communication technology has made it possible for people to roam in this global village without borders and to send information wherever they want. Perhaps the Internet users, and rather Al-Bareei in their use, are well aware of that. One of the most common types of transmission and transmission of information, the most commonly used we find: electronic voice mail, and regular email.<sup>19</sup>

#### **4. the role of information and communications technology:**

##### **4.1 The role of information and communication technology on the performance of institutions**

We can realize the role of information and communication technology in the organization through the functions that information and communications technology perform in institutions in general, namely: The fields in providing general, modern and important information.

They can be limited to six basic roles, as follows<sup>20</sup>:

- Improving employee productivity and productivity: This role is considered one of the most important roles of information technology, the latter is characterized by speed and a large capacity to store and process large amounts of data and information, by reducing errors and time, and thus reducing the costs associated with information processing.
- Supporting the decision-making process: Information technology plays a significant role in supporting the decision-making process, by providing appropriate and appropriate information for managers and decision makers (decision support systems and

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information technology that belong to the field of artificial intelligence).

- Improving teamwork: Information and communication technology, such as teamwork support systems, can improve the cost-effectiveness and effectiveness of work teams within institutions by facilitating and improving the communication process and information flow between team members.
- Creating alliances and business partnerships: The use of information technology enables institutions to work and interact with other institutions in an effective way to provide the best products and services in a short period of time.
- Facilitating access to global markets: Information technology helps organizations market their products and services around the world, and forge partnerships in multiple countries.
- Facilitating organizational change: Information technology helps organizations cope with the environment in which they are present, and respond to the growing and changing desires of consumers. This change may be comprehensive or partial, such as changing the presentation and distribution of its products and services.

### **4.2 The modern information and communication technology strategy in the economic establishment:**

The success of the institution today has become largely dependent on the extent of its ability to keep pace with the continuous changes in the work environment in which it operates in light of the intense competition that institutions have been exposed to, following the global economic openness, especially in front of technological changes that include the use of modern methods in production processes from In order to reduce costs and improve the quality of production, which necessitated attention to technological development, so that it became a prerequisite for the rise in light of the rapid changes in the work environment.

## 1- Effects of modern communication technology on the economic institution:

What is characterized by modern information and communication technology in terms of speed in achievement, accuracy and high efficiency in performance and flexibility in the exchange of information and its circulation, made the economic institutions of different activities, adopt them as an input from their inputs, but this entrance contributed to a fundamental change in the patterns of work, organization and communication, where we will try Find out the most important implications of adopting this new innovator.

1-1 Shifts in the field of employment and organization of work: The communications and information revolution has resulted in important shifts in employment patterns, the structure of professions and the way labor markets are performed.

1-2 Decision-making process: Administrative decisions indicate the ability of the economic institution to manage its affairs and its future, and the decision-making process has been defined as: "the process of optimal selection between alternatives available to solve a problem, or to achieve a specific goal." The decision-making process needs an important element, which is the correct information, which modern technology has provided tremendously, especially what the Internet plays in providing information, as a result of its openness to many individuals and institutions.<sup>21</sup>

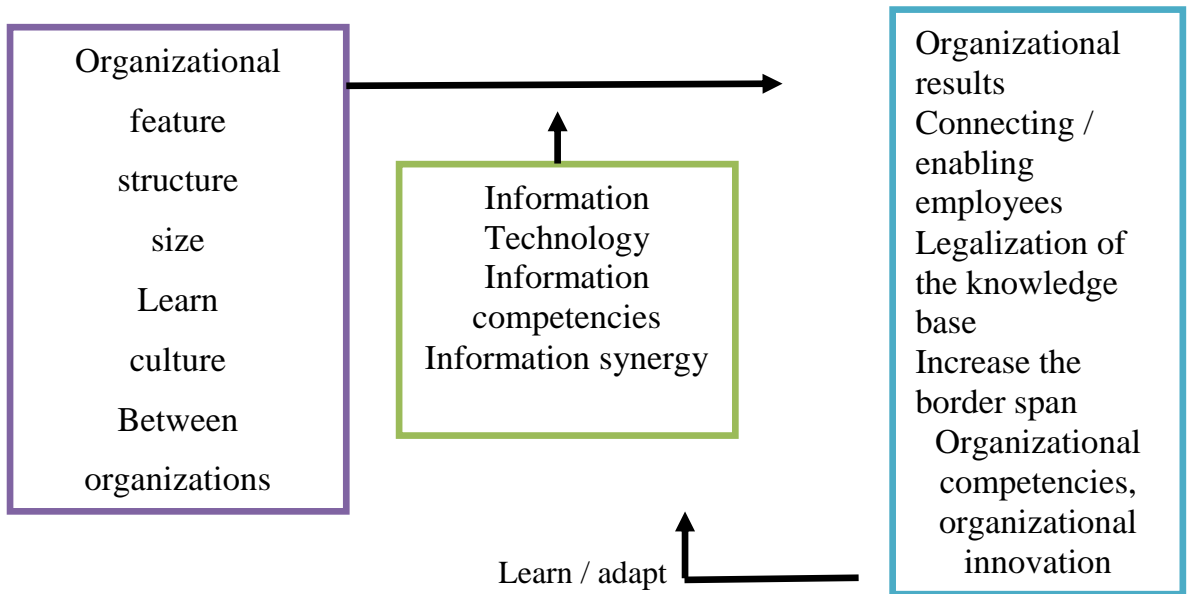
### **4.3 Orienting institutions towards the use of information and communication technology**

There are many indicators that indicate the gradual trend of the use of information and communication technology, similarly to institutions, and the adoption of the digital economy, among them the emergence of the information and communication technology sector, as an important productive and service sector, as economists divided the economic activity in general into three sectors, namely agriculture, Industry and services, this division has become traditional, with economists adding a fourth sector, the

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information and communication technology sector, defined in a group of activities, whether services or goods, in addition to intense competition between telecommunications companies and Internet service providers, and some major institutions are directed to investing in the field of communications , Which led to a reduction in prices and the spread of telephone services in a very large way in all its forms, from a fixed phone to a mobile phone and the multiplicity of different applications for these phones that provide many applications, including access to the Internet, and this has led institutions across the world to use information and communication technology in its various forms And at different levels of density.

**Figure 03: The role of information technology in the organization**



Source :Todd Dewett, Gareth R. Jones , The role of information technology in the organization : a review, model, and assessment, journal of Management 27 (2001) ,p314



Modern scientific and popular literature has examined the role that information technology plays in promoting cooperation and information exchange within and across organizational boundaries, for example<sup>22</sup>: Barua, Sophie Lee & Whinston, 1995; Lind & Zmud, 1995; Pickering & King, 1995; Quinn, Anderson & Finkelstein, 1996), where we conclude from this literature that information technology is a variable that can be used to improve the quality of work of these organizations and thus to enhance the effectiveness of institutions in an effective and tangible way, through efficiency and innovation as a result of relying on information technology in the organization.

Where information and communications technology with its various applications plays an important vital role in improving organizational performance. As this technology helped to find new communication channels, both at the level of the organization and at the general economic level, which contributed to increasing the speed of flow, processing and exchange of information, and the development of modern administrative methods, such as meetings, negotiation and contract deals remotely. The effects on the generalization of electronic communications, the expansion of the spread of the Internet, the multiplicity of information programs related to management on the one hand, and the flow of information on the other hand, has led to an increase in the efficiency of the organization in using its various resources to generate the required outputs at the lowest possible cost, by automating its operations and activities, which contributes to It has a great deal in developing the organizational performance of the organization, through improving knowledge and information management using hardware and software that facilitates the process of collecting, processing, storing and retrieving large amounts of information and data, as well as developing technical, marketing, financial and technological knowledge, used in creating the competitive advantage.<sup>23</sup>

**4.4** Information and communication technology and its economic effects on the labor market:

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The effective use of information and communication technology in institutions has become vital to achieving success in the business world, which is characterized by rapid change and high competition, and the use of this technology is one of the biggest challenges facing most institutions today. If any organization is looking for a competitive advantage, then the main requirement is to understand the role that information and communication technology plays and how to make the best use of this technology.<sup>24</sup>

### **4.5 The effects of information and communication technology on the degree of export of SMEs**

Martine Boutary, in a study on the impact of information technology on the degree of export of small and medium enterprises and the transition to international activity, concluded that: Information and communication technology is working on the expansion of small and medium enterprises, and this shift from simple expansion that is based on export to international small and medium enterprises, It has branches in the world, but this transformation that leads the organization to achieve good performance will only be achieved by developing a strategic program, with intensive use of information and communication technology, where it is not limited to some simple uses, some people and some jobs, as it sets a form in which to show this effect.<sup>25</sup>

Consequently, the use of these technologies will lead to the expansion of markets, the constant trend towards greater openness, and the growth of trade beyond national markets, which changes the environment in which economic institutions operate. Creativity and investment in these technologies are among the basic steps that help them in making decisions, and increasing its production operations, and this is to withstand its competitors, and to ensure a significant market share in light of the expansion of the market size in the virtual group, which results by reducing transaction costs that lead to an increase in demand, while the reduction in

marketing and distribution costs leads to an increase in supply, thus expanding the size of market.<sup>26</sup>

## **5. Conclusion :**

The rapid and tremendous progress in information and communication technology has led to fundamental changes in the patterns of conduct of the economic institution, as well as a shift in the methods of collecting and analyzing information and resulting in a shift in the mechanisms of management and organization, which in turn leads to the formation of an information technology space, which greatly contributes to facilitating the method of management. By providing all the requirements for this, which lead to overcoming the difficulties that hinder it.

In light of the acceleration of these developments in the world of information and communication technology and their sweeping the global arena, which affected all sectors and organizations, due to their positive effects on improving the performance of institutions and organizations, it became necessary to activate them and keep pace with their developments in all sectors.

### **-Recommendations:**

1. The necessity for all economic enterprises to use information and communication technology, because it saves time, effort and information accuracy;
2. Using information and communication technology in developing some departments in economic institutions, such as the accounting and finance department;
3. The necessity of merging economic institutions with private companies in the field of software to achieve competitive advantage locally and globally;
4. There must be reliance on information and communication technology in investment decisions, especially for electronic auditing of information and data;

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5. Working on developing communication networks and new electronic technologies in line with global development,
6. The necessity of training workers in economic institutions on modern technologies and developing their technical capabilities and personal skills;
- .7Infrastructure development for the information and communication ;

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<sup>1</sup> Kholoud Assem, The Role of Information and Communication Technology in Improving Information Quality and Its Implications for Economic Development, an article published in the Baghdad Journal of Economic Sciences, Special Issue of the College Conference, Iraq, 2013, p. 232 (written in Arabic).

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