

## **The Contribution of Information Technology to Enhancing Mobile Trade Infrastructure: - A Case Study of the United Arab Emirates-**

**Boudjaada Leyes<sup>1</sup>, Samir Ammari<sup>2</sup>, Raki Ahcene<sup>3</sup>, Abdallah Saib<sup>4</sup>**

<sup>1</sup>Laboratory of economics, finance and business Management (ECOFIMA), University of 20 August 1955 Skikda (Algeria), l.boudjaada@univ-skikda.dz

<sup>2</sup>Laboratory of Spatial Development Studies and Entrepreneurship Development (University of Adrar), University of 20 August 1955 Skikda (Algeria), s.ammari@univ-skikda.dz

<sup>3</sup>University of 20 August 1955 Skikda (Algeria), raki.ahcene@yahoo.fr

<sup>4</sup>Sustainable Development in Highland and Desert Areas laboratory, University Center of El Bayadh (Algeria), a.saib@cu-elbayadh.dz

### **Abstract:**

Mobile phones began to spread as a means of carrying out commercial operations, which is known as mobile commerce, or mobile e-commerce, which means carrying out commercial activities such as selling, buying and marketing products and services through smart mobile devices and using Internet networks, and that this type of trade has begun to spread in the Arab region, especially in the United Arab Emirates, which has begun to witness a great development, The study found that the UAE is working to develop the infrastructure for mobile commerce by developing the uses of the Internet and mobile phones, and that what facilitates the opportunities for the expansion of mobile trade is the fact that the mobile phone is moving towards its full integration with the Internet to become a single device, in addition to the fact that the mobile phone has become faster spread among customers than the speed of trading laptops.

The study recommends the need to provide the necessary infrastructure to benefit from mobile commerce by developing the uses of the Internet and mobile phone, in addition to the need to enact laws, regulations and legislation that facilitate the spread of e-commerce business to enhance confidence in mobile commerce.

**Keywords:** Information technology, mobile trade, UAE case study.

### **Introduction:**

Mobile commerce is one of the most growth areas in the new economy, and it also represents a fundamental shift in the methods of performance of institutions, mobile commerce is a new innovative method of work that benefits from the world of e-business, but surpasses it in unique areas, as this type of trade is more than just e-commerce, it adds to mobile commerce a new dimension to the traditional understanding of e-commerce represented in the independence of the site, as mobile commerce users benefit from services and information at any moment in time and anywhere, Therefore, mobile commerce represents a noticeable expansion in the function of electronic commerce and is not a substitute for it, since mobile commerce is the practice of electronic commerce via mobile phones, and mobile commerce is the implementation of business-

related transactions for financial value, via wireless communication networks, which is also known as mobile electronic commerce.

The infrastructure of mobile commerce has developed with the spread and development of information technology, which led to a rise in the percentage of Internet and mobile subscriptions, as mobile commerce witnessed a wide spread that allowed many consumers to always connect to the Internet, which helped them to shop through their mobile devices around the clock and thus increase the volume of mobile commerce.

This is what made countries interested in information technology in order to keep pace with the modern environment and the developments it imposes in mobile trade, as mobile trade greatly affects the competitive form of countries, which led the Arab countries to catch up with the developed countries in this field and the United Arab Emirates is considered one of the first Arab countries in terms of technological development and the use of the Internet and mobile phone, where the state paid great attention to technological development in an attempt to keep pace with developed countries in this field, and This contributed to the development of e-commerce in the UAE.

In light of the above, the following main question can be asked:

**To what extent does information technology contribute to enhancing the UAE's mobile commerce infrastructure?**

Under this problem, we include a set of sub-questions:

1. What is IT?
2. What is mobile commerce?
3. What are the technological pillars contributing to the development of the UAE's mobile trade infrastructure?

**The hypothesis of the study:**

Based on the problem of the study, we formulated the following hypothesis:

The UAE is working within a set of measures to enhance the infrastructure of mobile trade, by developing the uses of information technology in commercial transactions and by ranking first globally and in the Arab world in covering the Internet and mobile phones.

The importance and objectives of the study: The study gains its importance through its endeavor to achieve a set of objectives, the most important of which are:

1. Rooting theoretical concepts related to information technology and mobile commerce.
2. Benefiting from the experiences of Arab countries, including the UAE, in the field of exploiting information technology to develop mobile trade infrastructure.
3. Coming up with a set of recommendations that help Algeria in the effective use of information technology to develop its mobile trade infrastructure.

## **Study Methodology:**

In order to give the study the character of objectivity and compatibility with its nature and in an effort to reach her to answer her problem and questions, the descriptive analytical approach was relied upon, by describing the concepts contained in the study in a scientifically accurate description, with the aim of identifying their own features and qualities and interpreting them from In order to reach the results of the study and come up with appropriate recommendations.

## **Divisions of the study:**

In order to achieve the objectives of the study, it was decided to divide it into the following axes:

**The first axis:** is the nature of information technology.

**The second axis:** is the contribution of information technology in enhancing the infrastructure of mobile trade.

**The third theme:** Information technology and its contribution to enhancing the infrastructure of mobile trade in the UAE.

**The first axis:** the nature of information technology

### **1. Definition of Information Technology:**

Information technology has evolved spectacularly over the past decades and has rapidly combined with connectivity to become what is now known as information and communication technology.

Communication technology means the new channels through which the information revolution can be transmitted and broadcast from one place to another, and thus storage and retrieval technology constitutes with modern communication technology information technology in its broad sense.

The phrase "information and communication technologies" (**ICT**) merges information and communication in the same movement, and this approach, which focuses on the dual system "man and machine", specifically the relationship between the individual and technology, does not consider these two subsystems separated from each other, but rather interactive..

ICT also refers to: "technical knowledge and tools that help collect, store, process and transmit information"(1).

From the previous definitions, we can say that information technology has two main dimensions: technological machines (including networks) Hardware, and the software necessary to operate these machines.

### **2. The importance of information technology:**

In recent years, the world has witnessed an amazing development in the means and technology of communications, and the term information and communication technology is now circulating, and the widespread use of information technology and the network system has contributed to the emergence of so-called virtual institutions, which do not rely on fixed physical locations, but rather work and communicate with their customers through networks (2). Where technological development in the field of communications and information since the last quarter of the twentieth century until now has facilitated a serious change in the way decision-makers manage their business, we find that communication technology cannot be separated from information

technology, ICT represents an opportunity for many countries to grow and develop their capabilities to improve their economy, raise incomes and catch up with developed countries.

ICT has the following importance (3):

- Good use of technological methods enables the good flow of information from where it is located to the places where this information is needed.
- The explosion of information and the multiplicity of information and communication technology means has led to very high flexibility in the use and selection of the appropriate means and information in form, size, and content.

## **Second Theme: The Contribution of Information Technology in Enhancing Mobile Trade Infrastructure**

### **1. Concepts about mobile commerce:**

There are different views or schools about what is specifically meant by mobile commerce, some consider it an integral part of the field of e-commerce, or a branch of its branches, while others see it as a unique business strategy along with e-commerce, and it is certain that mobile commerce represents electronic business and it is a mobile business, but the services provided under the umbrella of mobile commerce are rarely found in the portfolio of any product in e-business, and mobile commerce should not be an exact copy of e-commerce, Or to try to compete with e-commerce of a fixed nature, i.e. non-mobile or mobile, the fact that should be emphasized in this regard is that the consumer, customer or end user of an offered service tends in most cases to use the easiest and most convenient way, and optimal for him in terms of ease of access, and perhaps cost, to purchase the service (4).

### **2. The difference between e-commerce and mobile commerce:**

Despite the wide spread of the concepts of (e-commerce) and (mobile commerce), there is a great similarity between the two concepts and both have the same goals in buying and selling via the Internet.

(E-commerce) is defined as: "an integrated information system that provides the opportunity to complete business operations between related parties using global communications (5):

It is also defined as: "the implementation of everything related to the purchase and sale of goods, services and information via the Internet and other global networks"(6).

Mobile commerce is defined as: "the ability to deliver the product to the customer anywhere and pay and receive electronically using Internet networks and is characterized by speed, ease and low cost"(7).

Mobile commerce also involves the use of wireless and mobile devices supported by the Internet to conduct transactions between the business establishments themselves and between businesses and customers via wired and wireless networks, and others describe it as any activity that includes communication, Internet access, buying and selling goods and services via wireless devices, where mobile phones represent the most wireless devices used in the field of mobile trade (8).

With the development of technology and information, the two concepts have spread widely and continuously, and for this, we had to address the clarification of the difference between the two concepts, as follows:

**Mobility:** E-commerce in which shopping is done online, and e-commerce activities are usually conducted by using smart devices so that users have to search for a place to carry out their transactions, as for M-commerce People can conduct their business transactions wherever they go

as long as they have access to the internet on their smartphones and can make transactions with a few taps on the screen (9).

**Means of communication:** Because of the mobility of mobile phones from one place to another and their widespread, retailers can reach users almost everywhere, and this gives a strong factor to M-commerce due to its wide audience..

**Convenient transactions:** In M-commerce, people can conduct their business transactions wherever they go, as long as they can access the Internet on their smartphones which allows transactions to be made with a few clicks on the screen, unlike E-commerce users have to conduct their transactions on the computer.

**Security:** The smart card within the terminal, called the diagnostic card, provides a high degree of proof of the owner's identity, making dealing safe and secure(10). and in e-commerce, Credit cards are the most popular payment method, however, consumers are still somewhat afraid to send their credit card numbers online.

### **3. Contribution of information technology in enhancing mobile commerce infrastructure:**

Entering the world of mobile commerce requires the presence of advanced technologies, the most important of which is the Internet, the mobile phone, and all these physical and software elements are in a constant state of change and development, and any business activity associated with mobile commerce and hopes to compete in the future must adapt quickly to Internet technology whenever it is available, and the very fast pace of the web and technology requires that business projects be vigilant and accept changes that cannot be avoided.

Inflexible businesses will quickly lose their web-based blindness to flexible ones, and a poorly performing website such as a slow response to consumer means leads consumers to abandon some e-commerce sites for faster response websites.

### **Third Theme: Information Technology and its Contribution to Enhancing Mobile Trade Infrastructure in the UAE:**

#### **1. The reality of information technology in the UAE:**

One of the efforts to regulate information and communication technology in the UAE is the establishment of the Telecommunications Regulatory Authority (TRA), which regulates the telecommunications market, thus contributing to the strengthening and development of the mobile trade infrastructure.

#### **1.1. UAE Telecommunications Regulatory Authority:**

This authority was established in the UAE in accordance with Federal Decree-Law N. 03 of 2003 Telecommunications Law, and since its establishment, the Authority has exceeded expectations by achieving the objectives set for it, which are as follows (11):

- Ensure that communication services reach all parts to ensure that the needs of those wishing to benefit from these services are met.
- Restricting licensees to quality standards in performance and adhering to the conditions specified in the licenses granted to them.
- Work on developing and modernizing the telecommunications system in the country through training and qualification, establishing relevant educational institutions and obtaining the latest devices, equipment and facilities reached by communication technology.
- Encouraging the development of the telecommunications and information systems industry in the country.

### **1.2 Investing in IT in the UAE:**

With the development and growth of mobile commerce and the spread of its uses in commercial transactions, there are investment opportunities to direct capital to invest in the development, improvement and modernization of electronic infrastructure, and investment in services associated with the ICT sector, which leads to the creation or localization of advanced technological sectors that support the economy in this country, where spending on communications and information technology has reached (ICT) in the UAE to AED 62 billion in 2018 compared to AED 60 billion in 2017, a growth of 3%.

The UAE accounts for 27% of the total spending on communications and information technology in the Gulf Cooperation Council countries, worth about 235 billion dirhams, equivalent to 64 billion dollars, and the country accounts for a fifth of the Middle East's spending on technology in 2017, and the UAE is expected to lead the countries of the region in terms of the growth rate of spending on technology in 2018, supported by the growth of the IT services sector as a result of the acceleration of the pace of digital transformation, and with the increase in investments in Artificial Intelligence Total spending on communications and information technology (ICT) in the UAE will increase in 2019(12)

IT spending in 2018 was AED 10 billion (USD 2.76 billion) for hardware, AED 3.67 billion (USD 1 billion) for technology infrastructure, AED 9.5 billion (USD 2.6 billion) for IT services, AED 4.58 billion (USD 1.25 billion) for software, and AED 31.7 billion (USD 8.66 billion). These figures are expected to increase in the UAE in 2019 to reach AED 10.2 billion for devices, about AED 3.89 billion for technological infrastructure, AED 10.6 billion for IT services, AED 4.8 billion for software, and AED 32.2 billion for telecommunications services..

The UAE seeks to enhance the work of the ICT sector by adopting the best international policies and practices in this field, whether at the level of infrastructure or legislation regulating the work of the sector.

### **1.3 Use of the Internet and mobile phone (smart) in the UAE:**

The UAE ranks first in the world in terms of the number of Internet users relative to the total population, as the number of Internet users in January 2018 reached about 9.38 million people, and this number is equivalent to about 99% of the total UAE population of 9.47 million people, which indicates that it includes users who own more than one mobile phone line, and the number of Internet users recorded an increase of 2% compared to January 2017, where 2017 witnessed the accession of 176,000 new people to the list of Internet users in the country(13).

3% of the UAE population connects to the Internet most of the time via regular computers or tablets, while 52% of the UAE population connects to the Internet most of the time via smartphones, and the UAE population who connect to the Internet through both media - computers (regular or tablet) and smartphones - reached 41%. The share of tablets was 3%, down 27% from January 2017, while smartphones accounted for nearly 61%, up 6% compared to January 2017, and online sales reached \$ 2.1 trillion in 2017, while the value of commercial advertisements on the World Wide Web reached \$ 205 billion.

## **2. Efficiency of information technology in the development of mobile commerce in the UAE:**

The Gulf region is qualified to lead the process of transformation towards e-commerce using mobile phones, given the purchasing power enjoyed by individuals and the rapid development of laws, in addition to the adoption by the countries of this region of modern means in applications,

and the chances of success of mobile trade in the Arab region are very large, but it is related to the need to have huge volumes of transactions on the ground to ensure the acceleration of the growth of this type of trade and there are initiatives in some Gulf countries such as bill payment, shipping services and money transfer. via mobile, but still limited.

The UAE is witnessing a distinct commercial renaissance, as consumers are increasingly interested in obtaining their desired products and services, thanks to the support of trade from the diversity of the country's population and their belonging to different international nationalities, and advanced logistics, and with the high penetration rates of mobile devices in the United Arab Emirates, online shoppers are increasingly choosing to shop through these devices, and spending on mobile devices is expected to grow by 26% between 2018-2019. to reach around AED 20 billion, with this figure expected to continue into 2020, when it will achieve a further growth of 25%.

Shoppers in the UAE who bought goods online from abroad in 2017 indicated that they relied on their mobile devices such as smartphones or tablets for an average of 49% of their overseas purchases, with the United States of America being the most popular e-shopping destination, where 22% of e-shoppers in the UAE bought products from at least one website in America, and spent an estimated AED 2.1 billion, followed by India at 16%. China ranked third among the largest overseas e-commerce markets (15% ) (14) and searching for the best prices is one of the most prominent reasons for shopping through websites, along with the affordable shipping cost, and the main motives for choosing the preferred payment method for external online shoppers include security, convenience, and speed of processing payments.

The study in 2018 showed a strong pace of growth for e-commerce in the United Arab Emirates, which became one of the two largest countries out of 31 countries that participated in the survey in terms of the percentage of foreign purchases via mobile devices, and this indicates the great adaptation to the use of mobile devices in the region, where the United States of America, India and China maintained their position in the top three places for online shopping abroad for consumers in the UAE, and holds the future of spending through The UAE's internet has great potential for growth and is expected to increase in the coming years (15) with online consumer spending in the UAE expected to rise to AED 36 billion by the end of 2018.

The fourth edition of the annual foreign trade report, which tracks the local and foreign e-shopping behaviors of about 34,000 consumers in 31 countries, showed that 81%% of adults in the UAE shopped online during 2017, a significant increase from 68% recorded in 2016, and the volume of online spending is expected to continue to rise, as about half of the adults participating in the study (49%) indicated their desire to increase online spending within 2019, and 65% of the Respondents feel comfortable shopping online, with 40% citing the high penetration of online platforms as a reason for the increase in online spending.

The report revealed the accelerated pace of the recovery of external online shopping in the UAE, where 61% of online shoppers in the country reported that they purchased goods from foreign sites, a growth of 33% over 2017, and 12% of the respondents confirmed that they shop online only from foreign stores outside the country, and since 2016, foreign e-shopping activities have witnessed a growth estimated at AED 1.6 billion, and electronic markets contribute to driving the growth of e-commerce in the country's markets. 37% of respondents indicated that they intend to increase or start shopping from online shopping sites.

Mobile phones remain an easier way than others to carry out commercial transactions, but he believes that the current weakness to the spread of mobile commerce is due to the reluctance of many financial institutions to risk disclosing the data and information of their customers, which calls for the importance of accelerating the provision of institutional legal structures that allow the spread of this type of trade, and that e-commerce in general and via mobile phone in particular, is taking increasing shares in the world of commerce when legal and procedural obstacles are overcome. This will help the spread of mobile trade." (16).

### **Conclusion:**

The United Arab Emirates is working to develop the infrastructure of mobile commerce through the development of the uses of the Internet and mobile phone, the opportunity for success and development of mobile commerce in the United Arab Emirates is great, as the latter has witnessed a distinct commercial renaissance as a result of the great expansion in the use of the Internet through smartphones, which led to the trend of online shoppers towards choosing shopping through these devices, and the study reached the following results:

- The use of the internet and smartphones in the UAE has helped take the e-commerce sector to new heights.
- The UAE is directing capital to invest in information technology for the purpose of developing and modernizing its mobile trade infrastructure.
  - The UAE has achieved record rates in providing information technology infrastructure, as the UAE leads the sector of smartphone use and Internet use, and the UAE ranks first in the world in terms of the number of Internet users relative to the total population.
  - The rapid growth of mobile commerce in the UAE is driven by the large number of e-commerce companies, technological development, as well as the large number of consumers and their high purchasing power.
  - Despite the UAE's efforts to adopt and develop mobile commerce, it still faces some legal obstacles.
  - The Arab world's steps in the field of mobile e-commerce are limited.

### **Study recommendations:**

The study recommends the following:

- The need to provide the necessary infrastructure to benefit from mobile commerce through the development of Internet and mobile phone uses.
- The need to enact laws, regulations and legislation that facilitate the spread of e-commerce business in order to enhance confidence in mobile commerce.
- Work to improve and develop the ICT infrastructure by providing fast and efficient communication networks in providing Internet services, providing smart devices, in addition to improving the quality of electronic services.
- Conducting advertising campaigns and training courses for individuals to encourage them to switch to mobile commerce and establish a culture of online shopping.
- The need for Arab countries to join the ranks of developed countries and enter e-commerce and thus mobile trade.

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