

The digital economy in Algeria - prospects and challenges

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Received: 27/06/2023

Accepted: 14/07/2023

Published: 20/07/2023

Abstract:

The digital economy, after nearly twenty years of evolution, has become a driver of growth, productivity and competitiveness of companies and countries.

Algeria, like so many other countries in the world, has opted for digital as a solution to diversify and boost its economy. Indeed, the bases of a digital economy in Algeria were made from the 2000s, with the adoption of law n ° 2000-03 of August 05, 2000, which defines the general rules relating to the post and telecommunications with the major objective of introducing competition into the telecommunications sector.

We will present the content of the research by following an analytical descriptive approach, where the concepts will be listed according to the descriptive approach, and then analyzed.

Which is the desired goal of this study ,by shedding light on the theoretical and empirical aspects of the topic, which is the evaluation of integrating digitization into economic activities In Algeria, in order to catch up with emerging and developed countries in terms of achieving the technological development of information and communications.

Keywords : Digitization, E-commerce, E-marketing, Digital Technologies.

I- Introduction:

The global economy is also undergoing a digital transformation, and it is happening at breakneck speed. So the biggest companies in the world – Microsoft, Google, Facebook and Amazon come from the digital world.

Therefore, the digital economy is a real source of creativity and the creation of diversity in the methods of commerce, as the use of the Internet and its related activities, including information and communication technologies, led to the emergence of new products, services, jobs, companies and even markets. Through the data of the times and the shift from the economy of industries to the economy of information and from the production of goods to the production of information.

In this research, we address the concept of this economy, and find out the extent of its absorption by the Algerian state, through which we will try to answer the main problem raised by the research.

What are the prospects for the transition to the digital economy in Algeria and its obstacles?

To answer the question, we summarize the presentation in the following axes:

- ♦ The Digital economy / concepts and theories.
- ♦ The digital economy in Algeria: digital payment and Big Data as the first pillars of the digital revolution

First of all : The Digital economy : concepts and theories:

The digital economy helps the country's economy integrate into the global economy, increase international trade opportunities, and access to global markets and market sectors

1- Definition of the digital economy:

“Economics can be defined as a discipline of the social sciences whose object of study is the allocation of scarce (or limited) human resources to the satisfaction of his multiple and competing needs. It is essentially interested in the activities of production, distribution and consumption of goods as well as the institutions, the regulatory frameworks and the environment facilitating these activities”¹

The new digital economy means that economy resulting from new technologies, which was reflected in the establishment and development of economic institutions in the sectors of new technologies for information and communication, and the use of institutions affiliated with the old economy for these technologies, which allowed for an increase in their effectiveness, productivity and growth.²

¹ Alexandre Nshue Mbo Mokime : Modèles de croissance économique, (Version préliminaire) Kinshasa, Juillet 2012

² . Amin Shafir : the new economy and youth employment ,the First Arab Conference for Youth Employment, University of Algiers 3, (15-17)November 2009, p. 2.

The digital economy involves conducting or facilitating economic activities electronically, based on electronic processing, storage and transmission of information, including activities that provide enabling physical infrastructure and software³

2- Characteristics of the digital economy:

The digital economy is characterized by a set of characteristics, the most important of which are:

- ♦ Ease of access to information, as the success and growth of the digital economy depends on the ability of individuals and institutions to participate in information networks and various Internet sites, and it also requires active participation in that network, and the need for the availability of infrastructure in the economy;
- ♦ In the digital economy, the market structure varies according to the degree of application of information and communication technology at the local and international levels; ⁴
- ♦ Openness: It is an open economy, meaning that there are no obstacles for anyone to enter and deal with in it. All that a person needs is scientific knowledge and full awareness of the dimensions and aspects of this economy.⁵
- ♦ It is the borderless economy, where traditional economic restrictions and borders have fallen, and the usefulness of current laws and legislation has diminished;
- ♦ The end of the phenomenon of lifelong employment while the need for lifelong learning in light of the age of knowledge;
- ♦ The digital economy is the economy of high speed, rapid movement, and its means are satellites and e-mail; ⁶

Components of the digital economy

The digital economy as a new system includes a set of interacting elements in a way that makes the latter effective. The following describes the constituent elements of this system:

Digital products: It is the basic characteristic that distinguishes the digital economy and does not include electronic programs, music and video only, but rather extends it to include digital books, newspapers and magazines, as well as digital services that are provided such as: booking travel tickets, banking services, and even the emergence of electronic currency and government services, all of which led to the emergence of Digital societies What distinguishes digital products is the possibility of producing them according to the desire of customers. Its marginal cost is considered zero, so that the bulk of its costs are fixed costs, while the variable costs are very few, and it is considered one of the most profitable products.⁷

- ♦ Consumers: The digital economy is characterized by the presence of a large number of consumers. Anyone who accesses the Internet is considered a potential customer to consume the existing commodity, as they can search, choose, and even bargain due to the

³ Hashim Al-Shammari, Nadia Al-Laithi, Knowledge Economy, Dar Al-Safaa for Publishing and Distribution, Amman, Jordan, 1st edition, 2008 AD, p. 15

⁴ . Farid Ragheb Al-Najjar, Investing in Digital Systems, Digital Economy and Digital Economy, University Youth Publisher, Alexandria, Egypt, 2004, p

⁵ Muhammad Jabbar Taher Al-Shammari: The role of the knowledge economy in achieving economic growth. aEgypt as a model, 2008, university of el koufa, p 16.

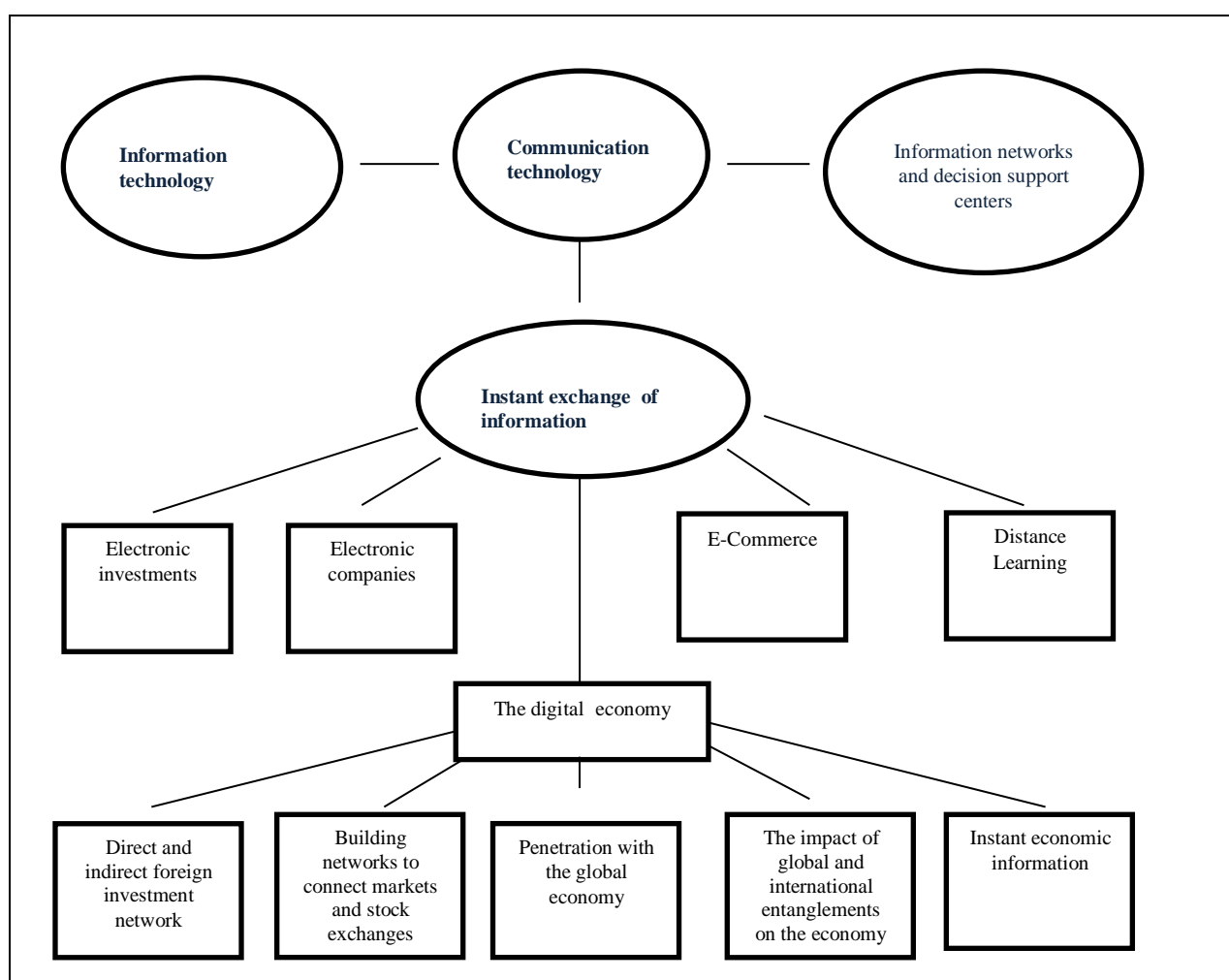
⁶: Safaa Abdul-Jabbar Al-Musawi, Digital Economy, Dar Al-Ayyam for Publishing and Distribution, Jordan, 2013, p 182

⁷ Safaa Abdul-Jabbar Al-Musawi , Ibid, p 183

presence of a large number of digital commodities offered that allow him the freedom of choice.

- ♦ Sellers: They are every institution or organization that displays its products on the Internet. Promotion, advertising and advertisement are done electronically, especially in goods that are not tangible but rather virtual, such as: Amazon.com and Yahoo. The virtual market is a market. It is characterized by freedom of entry and exit to it because there are no obstacles preventing entry.
- ♦ Organizations responsible for the basic structures: These are the organizations and entities responsible for providing programs, computers, communication networks, and providing investment bodies in order to ensure the progress of the process with high quality and efficiency.
- ♦ Regulations and laws: that is, the enactment of regulations and laws that support the digital economy in order to reduce the negative effects and protect consumers and workers in the broadband space.

The following figure shows the most important components of the digital economy:⁸



Source: Farid Ragheb Al-Najjar, Investing in Digital Systems, Digital Economy and Digital Economy, University Youth Publisher, Egypt, 2004,p 16

⁸ Safaa Abdul-Jabbar Al-Musawi and others, ibid, p. 186.

4- The difference between the digital economy and the traditional economy:

The fundamental and most obvious difference between the traditional economy and the digital economy is the mechanism of harnessing technology, as the latter relies entirely on information technology and advanced means of communication, while the former remains largely preserving its routine and complex features.

There are many characteristics that formed the core of the digital economy and made it superior to its traditional competitor, such as:⁹

Speed and flexibility: The digital economy is distinguished from the traditional one in that it is not subject to the rules of time or place. Thanks to it, anyone can conduct any commercial transaction, regardless of the location or timing of the transaction. Deals are done here in a very smooth and fast way.

- ♦ **Digital:** In contrast to the traditional economy, information is circulated here in a completely digital form, as all transactions take place in a non-material form and are transformed into codes and digital information that software understands and translates instantly.
- ♦ **Knowledge:** The digital economy is based entirely on knowledge. Unlike the traditional economy, no person, regardless of his level of education, can establish a good economic activity in it. He must first be familiar with the basics of dealing with digital technology, then move on to learning the basics of electronic commerce and the basics of establishing successful electronic projects.
- ♦ **An open market:** The digital economy is characterized by being an open market, in which you can know competitors with ease and clarity. You can also learn about the methods and methods that major companies use to attract consumers. You can also find out about new services and new offers. Unlike the traditional economy, you will not become isolated from what is happening in the world, but rather every small and large you will know about it with one click of a button in your search engine.

Secondly: Benefits of the digital economy

The benefits of the digital economy for emerging economies are potentially significant. This is due to the fact that it offers significant competitiveness and productivity improvement opportunities in terms of access to digital products and services to optimize processes and production, reduce transaction costs and transform supply chains. Falling information and communication technology (ICT) prices are encouraging investment and adoption of digital technologies in emerging economies, providing their businesses with cutting-edge services at competitive prices.

All this allows companies to participate in global value chains and directly access customers in foreign markets, which was only possible for large companies established in advanced economies.¹⁰

⁹ The future opens its arms to the digital economy at : <https://saday.qa/the-future-opens-its-arms-to-the-digital-economy/> the 24/5/2023.

1- Marketing benefits of the digital economy:

On the other hand, other authors have cited the other advantages of the digital economy related to the “e-marketing” function, as well as to the “e-commerce” function:

Marketing and managerial costs : The cost of the marketing strategy is reduced. This strategy often extends over a long period of time to reach thousands of cyber euphoria and “e-shoppers”. Here, the consumer is no longer passive but hedonic insofar as he becomes “actor in his consumption and appreciates being involved. » Internet having become a tool which gives the possibility to the Net surfer to see, judge and buy a product.

Marketing and Customers: In addition, the internet offers permanent and unlimited access to the product thanks to its eternity character. A company or product present on the web has a thousand chances of being seen by Internet users 24 hours a day. With this advantage, there are many companies that no longer hesitate to converge on the net. Since this tool gives great visibility to products or companies and therefore created a relationship of trust between Internet users. Just as it contributes to the increase in the number of potential customers. The advantage of the digital economy is also that it breaks down physical and geographical borders.

Marketing and product evaluation: The other advantage of the digital economy is that we can objectively assess the impact of a product placed on the market (cyber market); unlike a traditional campaign whose impact is generally measured through turnover. To do this, marketers use tools allowing them to have statistics such as: unique visits, repeat visits, click-through rate on ads;

Wealth strategy and development: Information technologies bring considerable productivity gains to industry and services. Some economists affirm on this subject that "the pooling of knowledge, its capitalization in the company through the development of networks, the identification, collection, processing of information on customers and for customers, are now heart of the wealth creation process..."

2- Economic Benefits of the Digital Economy

The vast majority of businesses are users of digital products, and thus as actors who participate in defining the standards and platforms on which digital products and cross-border trade are operated and used.

The countries in which companies act as platform developers and managers of digital technologies are those which reap the most benefits from the digital economy, namely better long-term growth prospects, effects on productivity and competitiveness. Their populations and businesses are the ones that benefit the most from the indirect effects of their richer, more open and innovative environment.

Indeed, companies such as Google, Amazon, Apple, Microsoft, Facebook, Baidu, Alibaba, SAP, PayPal, AT&T, Uber, Tencent, Cisco, Oracle, Huawei, Siemens and others are

¹⁰ Nassima Bouri : the challenge of the digital economy-what future for Algeria? Revue of Advanced Economic Research V: 04 (ISSN 01) ;2019; p 170-172

developing platforms and devices digital. These companies operate according to predefined standards within a given framework. Shortening technology lifecycles and network and platform effects establishes a highly asymmetric “win-win” model in which “superstars” retain competitive advantages, keeping them well ahead of users of digital products.

Third: The digital economy in Algeria.

The concept “digital economy” tries to cover the sectors of economic activities related to digital. The digital economy refers to the interrelation between all economic activities linked to the economic circuit; passing through the production, distribution, intermediation and consumption of goods and services of an informational nature, digitized and therefore reproducible or transmissible at often almost zero costs.

The digital economy is not limited to any particular or unique industry sector. All of the economic, social, cultural and technological sectors that rely on the use of ICTs, producers and users, should be taken into account. In this regard, all nations, including “Algeria” must develop the application of the various digital tools and techniques by deploying appropriate solutions to their socio-economic conditions in order to protect the quantitative explosion of data; it is a question of storing an indescribable amount of information on a digital database, what is called: "Big Data", as well as implementing the various regulatory and political measures to generalize the application of "electronic payment which marks the current global situation. for this purpose.

Before entering into the various uses of the digital economy in ALGERIA, we will first discuss the classification of the digital economy of ALGERIA according to the indexes (N.R) report The Global Information Technology.

1- Digitization of the economy in strategic sectors:

Digitization of the economy in strategic sectors the digitization of the economy is a long process. In a country struggling with a very present bureaucracy, where the reflexes of information retention combine with those of clientelism.

Digitization, which is its number one enemy, has gained importance in many strategic sectors over the past two or three years. This was possible thanks to a proactive policy carried out without warning, directly by at least three ministerial departments and indirectly by all the others.

According to figures from Gie Monétique 5, approximately 99% of payment transactions by means of mobile are carried out for the benefit of the telecommunications sector on the payment platforms of Algérie Poste and on those of fixed and mobile telephone operators.

However, there are signs that this may change in the future. The Algerian government has adopted a series of measures to encourage the development of e-commerce and online payment, in particular by providing tax incentives and supporting the creation of e-commerce platforms on the basis of Law 15-05 of the May 10, 2018.

In addition, Algerian consumers are beginning to increasingly adopt electronic payment technologies. According to a report published at the end of 2020 by the consulting firm McKinsey & Company, around 16% of retail transactions in Algeria were carried out online. This is partly due to the COVID-19 pandemic, which has caused consumers to turn to online shopping.

The digitization of the economy can offer many advantages for all sectors and particularly those classified as strategic such as energy, health, transport and defence. It is important to apply a digitization strategy ¹¹.

2- Aspects of using the digital economy in Algeria:

Digital economy statistics:

In addition to its strategic scope, the ICT and digital sector is characterized by its rapid evolution. Also, the production of statistics and indicators for measuring and monitoring the integration of these technologies proves to be a priority and of crucial importance for the Algerian State which gives more and more interest to statistical data in order to be able to self-assess and thus improve on the one hand, its services to the citizen and on the other hand, its ranking on an international scale according to various indicators.

As such, it should be noted that two types of data source are distinguished, on one side the data providers and on the other the data producers.

Regarding the data providers, they represent the Algerian administration and companies in the ICT sector. Several statistical indicators are provided periodically from these sources cited above, namely:¹²

- Turnover and investments of telecom operators
- Evolution of the ICT Infrastructure;
- Access to ICT by households and businesses;
- use of ICT by households;
- Number of ICT companies and start-ups;
- Foreign trade in ICT goods;
- Employment in the ICT sector.

Several of these statistics are available to the general public on the websites of the Ministry of Post, Telecommunications, Technologies and Digitization (<https://www.mpttn.gov.dz/>), and on the website of the Post and Electronic Communications Regulatory Authority (<https://www.arpce.dz/>).

In addition, the data producers are represented by the National Statistics Office (ONS) as the main player, but also the administration which, for its needs, calls either on the ONS or on specific consultancies to carry out sample surveys.

The Ministry of Post, Telecommunications, Technologies and Digital had carried out surveys

¹¹ <https://giemonetique.dz/qui-sommes-nous/activite-paiement-sur-internet>

¹² Measuring the digital economy in Algeria: Meeting of the working group on the measurement of e-commerce and the digital economy ; UNCTAD December 3-4, 2019 - Geneva (Switzerland). P 4

on access and use of ICTs in 2008 among households and among the administration (the Ministries); and this, within the framework of the preparation of the "e-Algeria" strategy, and also to a census of ICT companies which covered the entire national territory, in 2010.

In 2011, the National Office of Statistics carried out a first economic census in Algeria which involved all establishments carrying out an activity in a fixed location. Part of the questionnaire for this census was devoted to questions relating to ICT.

1- Electronic payment in Algeria

“Electronic payment is a means of payment for the various commercial and economic transactions of goods or services via the various digital tools and techniques. These payments are in fact based on the Internet, respecting the rules of security and eligibility as well as the procedures put in place for each mode used in order to satisfy all the stakeholders”.

The payment methods on the Internet are as follows:

- Bank cards (Visa, MasterCard, Euro Card, etc.);
- Electronic checks;
- Electronic currencies (E-cash, Digicash, Millicent, etc.);
- Payment by intermediary account (KLELine: Klebox, etc.);
- The new generation of Internet payment services.

The involvement of digital payment in Algeria first took shape through the development of monetics and the creation of the technical operator of monetics see; SATIM “Company for the Automation of Interbank Transactions and Electronic Banking”. Thus, the first electronic payment terminals dated back to 2005, after creating the first ticket "vending machines" in 1997. Sophisticated electronic payment is still in its infancy, since the various electronic payment methods mentioned above do not are not yet designed in the field.

Among other things, "the bank card" is the best used in commercial transactions recently, as well as the integration of online payment in 2015 which now prepares the environment for the digitization of economic activities in Algeria. The bank card is considered as a new potential commercial means that can be used in particular with the 2018 finance law, which has 'stated its obligation.

In turn, the electronic payment "ePaye.dz" is a first-rate online payment, i.e. a platform which plays the role of an intermediary with a bank account which will supply the virtual account of its user by a simple transfer from the account. bank of the user on the condition of having only created an account by filling in a telephone number, an e-mail address, and a password, then the prepaid cards on sale at the national level will thus be able to feed the account of the user. The latter will be able to use all commercial sites contracted with this platform. Despite the importance of integrating digitization into the various monetary transactions, and in particular electronic payments which contribute to the acceleration of the various financial and economic operations, the development of electronic payment in Algeria still encounters several

obstacles to its evolution and development, namely: the informal economy, the culture of cash, which corresponds to the psychological feelings of Algerian citizens linked mainly to the use of money, the infrastructure: insufficient policy solutions and technical resources and means to support the e-commerce platform. Indeed, legal anchoring is a major issue, since; "the absence of a legal arsenal governing e-commerce in "Algeria", especially the protection of users in this platform, the problem of lack of confidence in the Algerian banking system, as well as traceability, which allows the detection of 'money and the fight against evasion and fraud and tax evasion'.

2- Big Data in the Algerian electronic system

Based on several sources; we can present Big Data as a strategic issue of the first rank, a source of profound upheaval of nations, as well as real raw material for the "marketing" manager. It thus consists of examining the set of considerable, voluminous and varied data, unknown correlations, market trends, customer preferences and other useful information to help companies make relevant decisions. This concept became popular in 2012 to reflect the confrontation of companies faced with increasingly large volumes of data (data) to be processed in the context of the management of their managerial, commercial and marketing activities.

Faced with the proliferation of big data, companies are looking for skilled employees with the technical skills to transform large amounts of data into useful information. Data analysts will need to play a more active role in initiatives key commercials.

In the United States, there are an estimated 2.7 million job advertisements for data analysis and scientific roles by 2020 (New Horizons Worldwide, LLC, January, [2018]). Today, 59% of demand comes from the finance and insurance, professional services and IT sectors.

"Algeria" addressed the theme of Big Data in the regulatory texts which make it possible to protect all confidential, personal and interpersonal information with the help of the law relating to the protection of natural persons in the processing of Personal data has entered into force. Article 3 of the law bearing n ° 18-07 of June 10, 2018 of the official journal has stated and defined "personal data". According to the text, this is any information whatever its medium concerning a person whose personal data; are thus subject to processing, in particular, by reference to an identification number or to one or more specific elements of his identity: physical, physiological, genetic, biometric, psychological, economic, cultural or social.

Considering the evolution of technologies, Big Data has become a necessity of processing and storing data more deeply, together with recent technological and digital applications. Algerian companies must necessarily face the constraints offierce competition now and especially in the future. The government also looks at the question through open data.

3- The Algerian digital economy according to the Indexes proposed in the report The Global Information Technology (2016)

On July 6, the World Economic Forum (WEF) released its 2016 report "The Global Information Technology" whose theme chosen for this new edition is "Innovation in the digital economy". Algeria gains three places in the general classification, moving from 120th (2015) to

117th (2016), but not among the top ten African countries. You should know that Algeria occupied the 129th and 131st place respectively in 2014 and 2013.

In the 2016 edition of the report “The Global Information Technology” Algeria obtains a score of 3.2 in the “Networked Readiness Index (NRI)”. Launched in 2001, and extended in 2012, the NRI index “aggregates data from 53 indicators” to reflect “the growing importance of technology and innovation in

worldwide “. The 53 indicators are divided into four sub-indices and around ten "pillars": "environment" (pillars: "policy and regulation" and "business and innovation", "suitability" ("infrastructure", "affordability", and "skills"), "use" ("individual" "business", "government") and "impact" ("economic" and "social").

Algeria's economy is in the group of "upper-middle-income" countries. But in terms of impact social and economic aspects of ICT, Algeria's performance is below the average for this group of countries, except in two "pillars" out of ten: "skills" and "infrastructure".¹³

4- The process of development and dissemination of information and communication technology in Algeria

The development and spread of Information and Communication Technology (TIC) has witnessed a great growth in recent years in our country. There is no doubt that all the numbers, whether those published by the National Postal and Electronic Communications Regulatory Authority and the Ministry of Post, Communications and Technology at the end of 2022, or those published by international organizations at the beginning of this year, have a generally positive trend in favor of our country.

We are now promising a higher number of Internet connections with a penetration rate of more than 70%, as well as continuously improving Internet speed from year to year. Mobile population density also exceeds 107%, and Algeria ranks 30th globally as one of the countries that exhibits the “lowest mobile internet consumption cost in Africa at \$0.48 GB.

Algeria has witnessed remarkable progress in this field. Investments have increased and basic infrastructure, such as communication networks and Internet access, have improved, especially with the acceleration of FTTH installation, of which the number of subscribers increased by nearly 40% at the end of January 2023, reaching more than 520,000 subscribers.¹⁴

A table showing the evolution of the use of digitization according to a set of indicators in Algeria:

¹³ Measuring the digital economy in Algeria: Meeting of the working group on the measurement of e-commerce and the digital economy; UNCTAD December 3-4, 2019 - Geneva (Switzerland). P 5

¹⁴ <https://care.dz/ar/espace-presse/la-transformation-numerique-en-algerie-et-liens-avec-lafrique-un-etat-des-lieux-le-26/5/2023>

Table (1) : Indicators of the development and dissemination of information and communication technology in Algeria

Total population	45,6 million
The population is less than 44 years old	70% of total
Educational institutions	More than 115 institutions
The number of students in all academic levels	13 million/ 96%
young people using the Internet	100%
Mobile phone use	1,8 million / 48,53%
Fixed and mobile internet	32,9 million/ 70,9%
Social networks	Facebook 20,8 million: Messenger 13,6 M Instagram 8,4 Million , Twitter 1,15 M
Fixed and mobile internet speed: 250 GB per month	Oreedoo 21,91 GB per second Mobillis 12,18 GB per second

Source: Ali Kehlene ; numbers Information and communication technology In Algeria, March 2023

However, we still need to make more efforts to improve our website regarding stable internet speed. Despite the progress compared to 2022, the average constant internet speed of 10.82 Mbps puts us in 148th place globally and we are losing a position. Note that the African average is 7.45 megabytes per second.

Our potential is undoubtedly in the field of telecommunications, and it is evident every day, while the pace of our development is still very average compared to other countries, which have similar capabilities to us.

There are many challenges to be overcome to mainstream the use of ICTs throughout Algerian society. Levels of digital illiteracy and skills in using basic computer technologies remain moderate to weak in some areas of the country. This limits the ability of institutions, businesses, and citizens to use these technologies efficiently.

5- Expectations of the measures announced by the government to develop the movement of start-ups

The expectations regarding the measures announced by the government to develop the start-up movement are indeed significant. Recently announced initiatives aim to accelerate the digital transformation of the economy, including strengthening vital sectors such as financial services, health, agriculture and education to promote innovation and learning digital technology skills, which are real keys. The financial sector has witnessed great progress with the launch of new digital financial services and the adoption of their uses and tools. Thus, the number of

online financial transactions increased by 95% in 2022, with revenues of more than 16 billion DZD, an increase of 3,200% compared to before the Covid pandemic.

In terms of electronic payment usage, the number of TPE (Electronic Payment Device) devices doubled after the pandemic, reaching 47,500 TPE, which were installed across the country. Transactions made through this medium exceeded 21 billion DZD, which is an increase of 71% compared to the year before the Covid pandemic.

As for mobile payment, which is currently only within banks and is available to customers of some banks at the present time, it officially started in November 2022, and has already achieved more than 7 million transactions and revenues of more than 6.5 billion DZD.¹⁵

Conclusion:

We conclude by noting on the international level that digital and computer networking technologies not only improve the economic efficiency of financial institutions and companies, but thus present a new type of fictitious and digital market which could be an example of a perfect market requiring a more vigorous re-examination of the assumptions and economic results provided by studies carried out on traditional markets.

In addition, at the national level, "Algeria" has significant development potential in the digital sector in future years, it nevertheless represents a weak dynamic in the digital field, which is in fact mainly due to a lack large number of support and financing mechanisms, as well as a weak development of activities of innovation. Finally, we hope that our country will be led to make up a large part of its delay compared to emerging and developed countries in terms of added value achieved by ICT.

According to these results, we can recommend the following suggestions:

- ♦ Encouraging the establishment of institutions in the information and communication technology sector;
- ♦ The transformation of the institutions operating in the sector to the international market;
- ♦ Generalizing the use of the Internet with a review of prices for ADSL 4G and 3G
- ♦ Expanding the use of e-learning;
- ♦ Regulate the legislation that governs the sector;
- ♦ Liberalization of the telecommunications market + the Internet market;
- ♦ Attempting to raise technological awareness;
- ♦ Developing a strategic plan to move towards the Internet of Things (Objets des Internet);
- ♦ Accelerate the realization of the e-government project in all its aspects (not only limited to public service);
- ♦ Orientation towards electronic commerce;
- ♦ Encouraging the banking sector to move towards electronic payments and transfers, while providing an effective electronic security system;

¹⁵ <https://care.dz/ar/espace-presse/la-transformation-numerique-en-algerie-et-liens-avec-lafrique-un-etat-des-lieux->

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