

Manifestations of Digital Transformation in the Telecommunications and Postal Sectors and its Role in Fostering Sustainable Development

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Abstract Amidst rapid and evolving global technological advancements, and the urgent necessity imposed by the COVID-19 pandemic, Algeria was compelled to move towards digitalization. This led to a swift acceleration of its widespread implementation, the creation of a Ministry of Digitalization and Statistics, and the adoption of a national digital transformation strategy as a driving force for economic takeoff and the achievement of sustainable development goals in line with the 2030 agenda. Digital transformation is a key step towards effectively achieving sustainable development, as the digitalization of various economic, social, environmental, and institutional sectors enhances their progress and efficiency. It allows for superior and distinguished performance in less time, with less effort, and at a lower cost. This study aims to shed light on the manifestations and features of digital transformation in the telecommunications and postal sectors and its role in achieving sustainable development.

Keywords:

Digital Transformation
Sustainable Development.

JEL Classification Codes: o39; o31 .

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1. INTRODUCTION

Digital transformation is a crucial and essential topic of interest to both developed and developing countries. It is one of the key drivers that help nations increase their economic growth and achieve sustainable development. Sustainable development is a major challenge for many countries, including Algeria, which has made significant progress in certain sectors, ministries, and administrations. This progress serves as a solid foundation for future initiatives. Consequently, it requires the establishment of a national digital strategy and the provision of necessary conditions, including infrastructure, digital sovereignty, and scientifically and practically qualified human resources.

In another context, the telecommunications sector is primarily a service sector. It strives to achieve customer satisfaction and loyalty by meeting their needs and demands with high quality. This can only be achieved through continuous development and keeping pace with the latest technological advancements, which rely on smart devices and flexible, fast applications. Therefore, digital transformation enhances the service and makes it easily accessible to citizens. The telecommunications sector is no longer limited to traditional functions; it has become the backbone for using data, digital content, and applications, ensuring the continuity of economic and social activities. This shift represents a new management strategy aimed at ensuring a competitive edge, which requires fulfilling a set of digital requirements to improve the level and quality of service. For this reason, digital transformation has become a primary strategy today, with the goal of fostering a digital culture, particularly within service-oriented institutions.

Research Problem

Based on the preceding introduction, the relationship between digital transformation and sustainable development in the

telecommunications sector becomes clear. This leads to the following central research question:

What is the role of digital transformation in fostering sustainable development in the telecommunications sector in Algeria?

To answer this question, the following sub-questions are posed:

- What is digital transformation and what are its main challenges?
- What are the dimensions of sustainable development?
- What are the manifestations of digital transformation in the telecommunications and postal sectors?

Research Hypotheses:

- ✓ Digital transformation is the process of converting data into a digital format for processing by a computer.
- ✓ The telecommunications sector plays a significant role in connecting different sectors.
- ✓ Digital transformation improves information and communication technology by strengthening and developing this sector.

Research Objectives:

This research aims to build a theoretical and analytical framework on the manifestations of digital transformation in the telecommunications and postal sectors and its role in fostering sustainable development. This will be achieved through an analysis of data from the telecommunications sector in Algeria and an investigation into the key factors upon which Algeria relies for the success of its digital transformation project.

2. Digital Transformation - A Conceptual Framework

Digital transformation is one of the most important topics of our current era, with the widespread use of the Internet and information and communication technologies.

2.1 The Concept of Digital Transformation:

There is no consensus in the available literature on a single, agreed-upon definition of digital transformation due to the newness of the concept. It is viewed as a driver of change in all contexts, especially in a business context, influencing all aspects of human life through the use of technology.

Accordingly, digital transformation is defined as a process, supported by digital technologies, that brings about change within organizations and has a tremendous impact on organizational evaluation through the Internet of Things, big data analytics, cloud computing, mobile technologies, and artificial intelligence (Feroz & Chiravuri , 2021)

As a system, it is defined as the transition from a traditional system to one based on information and communication technology in all areas of work, through a set of strategic, cultural, physical, financial, human, security, and legislative requirements. (Mohamed Mostafa , 2018)

It is also defined as a sophisticated duplication process that allows for the conversion of any document into a digital series. It is also the process of converting data into a digital format for processing by a computer. It is the transition of institutions from a traditional business model to one that relies on digital technologies for

innovation in products, services, management, and marketing methods, while providing new revenue streams through a digital strategy. This can only happen through an evaluation of digital capabilities and a study of the requirements for digital investment in light of digital marketing activities, along with a willingness from management to embrace digital transformation.(Al-Barr , 2018)

2.2 The Importance of Digital Transformation:

The importance of digital transformation is demonstrated through a set of elements:

- ✓ Providing services more easily and quickly without the need for long waiting periods.
- ✓ Contributing to the connection between government and private sectors through cooperation and coordination via the Internet.
- ✓ The necessity for institutions to keep pace with the times and move towards using technology to implement digital transformation in their services.
- ✓ Overcoming the pressure from segments of society on institutions, agencies, and companies to improve their services and make technological programs available online.
- ✓ Transformation enables institutions to compete for modernization, maintain their competitiveness, and create value.

2.3 Objectives of Digital Transformation:

The implementation of digital transformation in institutions aims to achieve several goals at the level of customers, organizations, and stakeholders. The objectives of digital transformation include: (Mohamadin Kamel Allam , 2021)

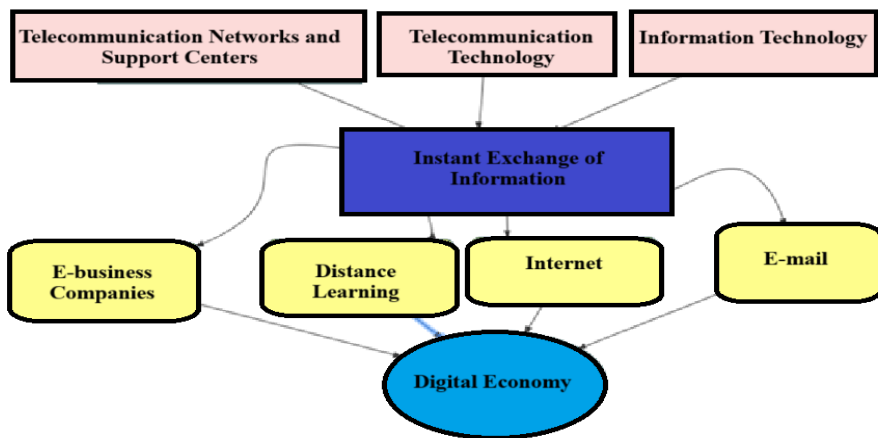
- ✓ Reducing operational costs by minimizing the effort based on traditional processes and moving towards technology.
- ✓ Improving quality and simplifying procedures to provide distinguished service to customers.
- ✓ Activating creativity and innovation in providing services to beneficiaries. Digital transformation and modern technology provide an opportunity for creativity and innovation in customer service.
- ✓ Transformation helps institutions and companies expand and spread widely, in addition to targeting multiple segments and locations, due to the ease of reaching the public and the ease of dealing with the services provided through technology.
- ✓ Strengthening control and follow-up and reducing the chances of human error. Digital transformation relies on electronic means such as electronic archiving, e-mail, electronic applications for carrying out operations, voice messages, and electronic control and follow-up systems.

2.4. Structure of Digital transformation Elements:

Digital transformation has contributed to the emergence of a new type of institution based on an electronic foundation, where institutions integrate with each other through a large base on the basis of internal and external information networks, websites, and

e-mail. Various companies and institutions launch their own websites to display their products and services in an electronic format in order to gain wider access to global markets. The following figure illustrates the various elements of the digital economy. (Siraa , 2014)

Fig.1. Elements of Digital Transformation



Source: Prepared by the researcher based on “Siraa , K.,(2014). p30.”

2.5. Requirements for Digital Transformation:

Digital transformation requires the following:

- ✓ Continued leadership and management support for transformation efforts, through a focus on technology-related management practices and the provision of necessary human, financial, physical, and legislative resources.

- ✓ Striving to create flexible organizational structures and focusing on effective work teams.
- ✓ Continuous review of the digital transformation plan.
- ✓ Precise definition of the vision, which is the necessity of clarifying what we want to be in the future.
- ✓ Developing existing organizational structures by moving away from complex structures.
- ✓ Developing the skills and capabilities of all young people through training and self-development programs.
- ✓ Providing diverse hardware and software to renew the basic information technology infrastructure.
- ✓ The necessity of analyzing the market and its needs, analyzing strengths and weaknesses, and scanning for opportunities and threats in the external environment.
- ✓ The success of the transformation process requires capabilities, skills, and personal characteristics of leaders and all members of society that reflect their belief in and commitment to the digital transformation process and its stages.
- ✓ Spreading a culture of using technology and the Internet requires a change in culture management as a competitive advantage.
- ✓ Strategies for building the capabilities of leaders and individuals should be developed to support and endorse change in light of the concepts of integrating information and communication technology into all areas and activities of society.

2.6. Obstacles to Digital Transformation:

There are many obstacles that hinder the digital transformation process within institutions and companies, which stand as a stumbling block to digital transformation, including:

- ✓ Digital transformation requires an infrastructure that is relatively expensive, and thus the lack of budgets allocated for these programs is one of the challenges facing digital transformation.
- ✓ Lack of trained and skilled human competencies capable of dealing with information and communication technology, and there is also a deficiency in Internet connectivity in many rural areas.
- ✓ Excessive bureaucracy or rigid internal regulations, as well as the issue of intellectual property rights, as there are no clear and strong laws regarding intellectual property rights for digital information sources. This can pose a major challenge for information institutions.
- ✓ Changing customer needs and the difficulty of convincing them of the advantages of digital transformation are among the major challenges organizations face. In addition, there are challenges to the organization's operational process, as digital transformation requires fundamental changes in the infrastructure, organizational structure, and organizational philosophy of the organization, and their modernization in line with evolving technological developments.
- ✓ Lack of proficient competencies and capabilities within the institution who are able to lead digital transformation and change programs within the institution.
- ✓ Fear of information security risks as a result of using technological means.(Belkadi , 2024)

3. Theoretical Framework of Sustainable Development

3.1. The Concept of Sustainable Development:

Many concepts and definitions of sustainable development have been presented. Some define it as: development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. It has also been defined as an attempt to limit the conflict that leads to environmental degradation by finding a way to integrate the environment and the economy.

The World Commission on Sustainable Development defines it as follows: It is meeting the needs of the present without destroying the ability of future generations to meet their own needs.

Therefore, it can be said that sustainable development is genuine development with the ability to continue and endure from the perspective of its use of natural resources, which can occur through a strategy that adopts environmental balance as its guiding principle.

Among the definitions is also that it is the idea that human societies have a duty to live and meet their needs without sacrificing or risking the ability of future generations to meet their own needs. This definition is a summary presented by the first International Committee for Environmental Protection and Development by the United Nations Assembly. Consequently, sustainable development is a global term issued by the United Nations, which aims to develop the planet's natural and human resources and improve economic and social interaction with them, provided that it meets the needs of the present without prejudice

to the ability of future generations to meet their own needs. (Sarkali , 2024)

3.2. Characteristics of Sustainable Development:

Sustainable development is characterized by a set of features:

- ✓ The time dimension is its foundation; it is long-term development, as it relies on an assessment of present capabilities and is planned for the longest possible future period.
- ✓ It respects the right of future generations to various natural resources.
- ✓ It respects the preservation of the biosphere in the natural environment through its basic elements such as air and various natural resources.
- ✓ It places meeting the needs of individuals first. Its priorities are to meet basic and essential needs for food, clothing, and so on, and everything related to improving the material and social quality of human life.
- ✓ It works to coordinate and integrate policies for resource use, investment trends, technological choices, and institutional form.

3.3. Objectives of Sustainable Development:

Sustainable development seeks to achieve a number of goals:

- ✓ Achieving a better quality of life for the population.
- ✓ Respecting the natural environment.

- ✓ Promoting public awareness of existing environmental problems.
- ✓ Achieving rational exploitation and use of resources.
- ✓ Connecting modern technologies with community goals.
- ✓ Creating continuous and appropriate change in the needs and priorities of society.
- ✓ Achieving economic and technical growth.(Attia & Mahjoub, 2022)

3.4. Principles of Sustainable Development:

The integrative relationship between the environment and growth is a strong and harmonious one, as achieving development requires a protected and clean environment and the existence of resources with their rational exploitation. This led to the emergence of basic principles upon which sustainable development is based, which are as follows: (Ghoneim & Abu Zant, 2010)

Principle 1: Using the systems principle in preparing and implementing sustainable development plans.

Principle 2: The principle of shared responsibility: This means that the responsibility for sustainable development is the responsibility of all countries alike.

Principle 3: The principle of environmental precaution: This means that if there is doubt that a certain substance has a negative impact and no evidence has emerged, its circulation is not allowed until evidence of its safety is found.

Principle 4: The principle of optimal employment of economic resources: This is by exploiting resources in an ideal way and employing them appropriately.

Principle 5: The principle of continuity of the life of economic resources and strategic planning for these resources.

Principle 6: The principle of environmental balance and ideological diversity.

Principle 7: The principle of reconciling the needs of current and future generations, which means meeting the needs of the present without neglecting the needs of future generations.

Principle 8: The principle of preserving the features and characteristics of nature while identifying and developing production, investment, and consumption structures.

3.5. Dimensions of Sustainable Development:

Sustainable development includes three interconnected and intertwined dimensions in an interactive framework characterized by control, regulation, and rationalization. Each dimension includes sub-systems or elements. These dimensions are as follows:

- ❖ **The Economic Dimension:** Sustainability means achieving continuity by generating high income that can be partially reinvested to allow for the replacement, renewal, and maintenance of resources, as well as the continuous production of goods and services, and maintaining a certain level of balance. It includes the following elements: sustainable economic growth, meeting basic needs, capital

efficiency, economic justice, and providing and meeting basic needs.

- ❖ **The Social Dimension:** The social dimension of sustainable development focuses on the idea that humans are the core and ultimate goal of development by paying attention to social justice, combating poverty, and providing social services to all those in need. This is in addition to ensuring democracy through the participation of people in decision-making in a transparent manner, institutional sustainability, and cultural diversity.
- ❖ **The Environmental Dimension:** This is through observing environmental limits, as each environmental system has specific limits that cannot be exceeded in terms of consumption and depletion. Exceeding those limits leads to the degradation of the ecosystem. On this basis, limits must be placed on consumption, population growth, pollution, bad production patterns, water depletion, and soil erosion. It focuses on the rule of the stability of natural resources, avoiding irrational exploitation of non-renewable resources, preserving biological diversity, and using clean technology. The ability to adapt and achieve environmental balance requires preserving the environment in a way that ensures a healthy nature and ensuring the production of renewable resources while not depleting non-renewable resources. Environmental balance is a guiding principle for natural resources with the aim of raising the standard of living across all aspects and organizing environmental resources so that they constitute a fundamental element within any development activity, affecting the directions of development and the choice of

its activities and project locations to preserve the integrity of the environment.(Nasser , 2010)

4. Analysis of Key Infrastructure Indicators for Telecommunications and Postal Services in Algeria

The Algerian economy has shown a great response to the inevitability of the COVID-19 pandemic in the extent of its application of digital and information and communication technology as a strategy capable of enhancing economic flexibility and maintaining the continuity of the economic engine, especially in times of crisis. Many countries, especially developed ones, have rushed to increase their reliance on digital tools during the COVID-19 crisis. Algeria, like other countries, cannot remain isolated from these developments, especially since it is also seeking to give a new impetus to its economy, reduce its dependence on the hydrocarbons sector, bring administration closer to the citizen, and limit the problem of bureaucracy. Below we review the most important manifestations of the digital transformation that Algeria has witnessed in information and communication technology.

4.1. Fixed Telephony in Algeria:

The following table shows the evolution of the number of fixed telephone subscribers in Algeria during the period (2018-2024).

Table 1. Evolution of the number of fixed telephone subscribers in Algeria from 2018 to 2024

	2018	2019	2020	2021	2022	2023	2024
Residential Subscriptions	3711765	4190162	4347326	4646659	5126100	5474526	6141544
Professional Subscriptions	452274	445055	438437	450400	450093	459868	494860
Total	4164039	4635217	4785763	5097059	5576193	5934394	6636404
Total Capacity of Fixed Telephone Network Connection	7272466	7542246	7618799	7709344	7952885	8913003	9766561

Source: Report on the Evolution of Telecommunications and Postal Services Indicators.(2024), Ministry of Post and Telecommunications, Directorate of Statistics, Studies and Forecasting.,

The table shows a remarkable development in the number of fixed telephone subscribers during the period 2018-2024. After reaching 4.16 million subscribers in 2018, it reached 5.57 million subscribers in 2022, with an increase of 1.41 million subscribers in only 4 years. It increased further by 2024, reaching 6.63 million subscribers, a difference of 2.47 million subscribers in 6 years. The increase in the percentage of subscribers during the period 2020-2024 is estimated at 6.42%, which indicates an increase in citizens' awareness of the importance of this service.

The fixed telephone penetration rate per household reached 67%, an increase of 16% over 2018, as shown in the following table:

Table 2: Fixed telephone penetration rate per Algerian household from 2018 to 2023

	2018	2019	2020	2021	2022	2023
Fixed Telephone Penetration Rate	51%	56 %	57 %	59 %	64 %	67 %

Source: Report on the Evolution of Telecommunications and Postal Services Indicators. (2024) , Ministry of Post and Telecommunications, p.7.

4.2. Mobile Telephony in Algeria:

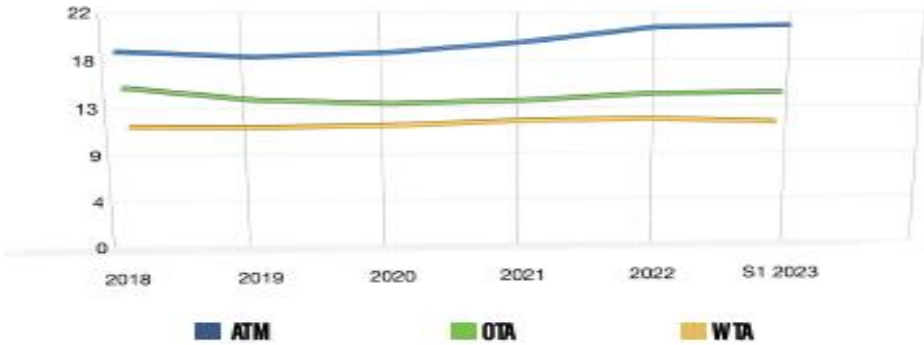
Recent years have witnessed a huge demand for mobile phone services in Algeria, especially with the diversity of services provided by the three mobile operators in Algeria.

Table 3: Evolution of mobile subscriptions by operator

	2018	2019	2020	2021	2022	2023	2024
ATM mobilis	19106401	18633371	18974678	19829935	21098772	21252647	22996731
OTA djezzy	15848104	14707625	14363102	14593618	15177875	15272197	16235287
WTA	12199759	12084537	12217893	12592204	12742119	12390640	14222887
ooredoo							
Total	47154264	45425533	45555673	47015757	49018766	48915484	53454905

Source: Report on the Evolution of Telecommunications and Postal Services Indicators. (2024), Ministry of Post and Telecommunications, Directorate of Statistics, Studies and Forecasting.

In terms of development, Algeria Telecom Mobile (Mobilis) recorded the best increase in the number of mobile subscriptions in 2023, with a rate of 0.73%, followed by Orascom Telecom Algeria (Djezzy) with an increase of 0.62%. Meanwhile, Wataniya Telecom Algeria (Ooredoo) experienced a decrease of 2.76%, which it recovered with a remarkable increase in 2024.

Fig.2. Evolution of mobile subscriptions by operator

Source: Mobile Market Observatory in Algeria, Regulatory Authority for Post and Electronic Communications, Third Quarter 2024.

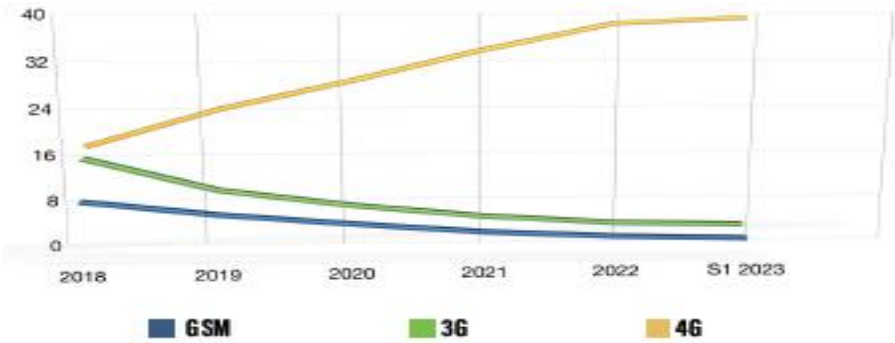
The GSM (2G) subscription base has been in continuous decline since the beginning of the operation of 3G and 4G mobile phone technology, as is the case for 3G after the use of 4G technology at the end of 2016, following the transition to new technology subscriptions that provide a better internet speed.

Table 4: Evolution of mobile subscriptions by technology

	2018	2019	2020	2021	2022	2023
GSM	10811663	8514105	6783111	4260261	5235558	3770875
3G	17422312	11989157	9265682	5961291	7272657	5464880
4G	18920289	24922271	29506880	38797214	34507542	39679729
Total	47154264	45425533	45555673	49018766	47015757	48915484

Source: Mobile Market Observatory in Algeria, Regulatory Authority for Post and Electronic Communications, Third Quarter 2024.

Fig.3. Evolution of mobile subscriptions by technology



Source: Mobile Market Observatory in Algeria, Regulatory Authority for Post and Electronic Communications, Third Quarter 2024.

The mobile network coverage density has been relatively stable since 2017 due to the saturation of the mobile market, as shown in the following table:

Table 5: Mobile network coverage density during the period 2018-2023

	2018	2019	2020	2021	2022	2023
Mobile Network Coverage Density	109.08%	104.7%	103%	104.4%	107.03%	105.07%

Source: Report on the Evolution of Telecommunications and Postal Services Indicators. (2024), Ministry of Post and Telecommunications, p.13.

4.3. Fixed Internet in Algeria:

The following table shows the distribution of Internet subscribers by technology.

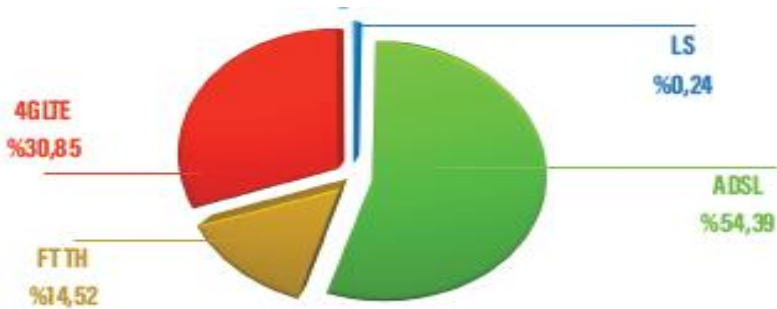
Table 6: Distribution of Internet subscribers by technology during the period 2018-2024

	2018	2019	2020	2021	2022	2023	2024
ADSL Subscribers	2179096	2334005	2500080	2656942	2792695	2771460	2626479
4G Fixed Internet Subscribers	861235	1191612	1204931	1340957	1423425	1571912	1801686
FTTH Fiber Internet Subscribers	11369	43115	72314	165244	478172	740109	1474219
Internet/LS Internet Subscribers	10781	11280	11360	11786	11554	12231	3861
WIMAX	619	444	443	443	0	0	0
Total	3063100	3580456	3789128	4175372	4705846	5095712	5906200

Source: Report on the Evolution of Telecommunications and Postal Services Indicators.(2024), Ministry of Post and Telecommunications, p. 15.

The table shows an increase in Internet subscribers, with the exception of the WiMAX service, which disappeared since 2021. The increase in subscribers in 2023 over 2022 was 389,866 subscribers in a single year, an increase of 8.28%. This jumped to an increase of 812,330 subscriptions from 2023 to 2024. In every year, ADSL subscribers had the largest share of subscriptions, with a value of 54.39% of the total subscriptions in 2023 alone, as shown in the following figure:

Fig.4. Distribution of fixed Internet subscriptions by technology type for 2023



Source: Report on the Evolution of Telecommunications and Postal Services Indicators. (2023), Ministry of Post and Telecommunications, p.16.

The following shows the distribution of fixed Internet subscriptions by speed. By the end of 2022, subscriptions exceeding 18 Mbps accounted for 99.8% of the total subscriptions, in line with the sectoral policy aimed at providing high-speed internet that meets citizens' aspirations.

Table 7: Distribution of fixed Internet subscriptions by speed

	2018	2019	2020	2021	2022	2023
Subscriptions less than 18 Mbps	2199194	2385257	2576105	68577	10321	10629
Subscriptions from 18 to less than 20 Mbps	861301	1191875	1205611	3621969	4204916	4559261
Subscriptions greater than 20 Mbps	2605	3324	7412	484826	490609	525822
Total	3063100	3580456	3789128	4175372	4705846	5095712

Source: Mobile Market Observatory in Algeria. (2023), Regulatory Authority for Post and Electronic Communications, p.16.

4.4. Postal Infrastructure Indicators:

Algeria Post is committed to providing a high-quality public service and getting closer to citizens. The number of its offices continues to increase, as shown in the following table:

Table 8: Number of post offices for the period 2018-2023

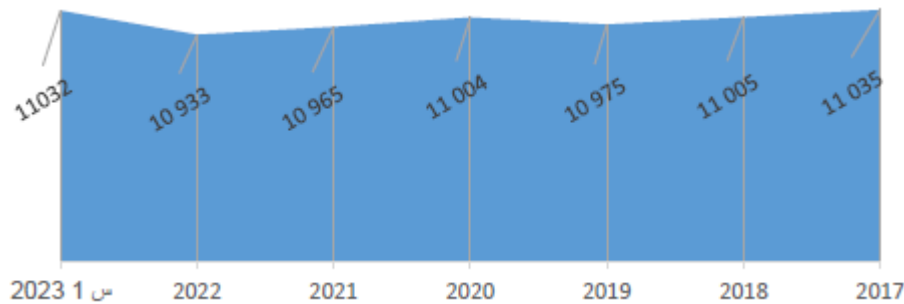
	2018	2019	2020	2021	2022	2023
Number of existing post offices	3907	4000	4057	4106	4189	4220
Number of post offices in service	3811	3862	3984	4055	4143	4170
Number of rehabilitated post offices	545	279	143	149	137	88
Population density (pop./post office)	11005	10950	11004	10965	10933	11023

Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting, p.5.

The table shows the development of the total number of post offices, which has achieved positive growth since 2010. It increased from 4,189 in 2022 to 4,220 in 2023, representing 31 new offices in a single year. It should be noted that the number of post offices in service was 4,170, or 98.81% of the total, taking into account that the post offices out of service are either newly received offices that have not yet been opened or post offices that are closed for rehabilitation and modernization.

Regarding postal density, it is relatively stable, ranging between 1,900 and 11,050 people per post office.

Fig.5. Postal density for the period 2017-2023



Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting , p. 6.

Furthermore, the digitalization of postal services has contributed to the operation of more than 1,980 ATMs, and Algeria Post's accession to the automatic cash payment system has improved postal services 24 hours a day. The number of ATMs has increased steadily in recent years since 2010, thanks to the efforts of Algeria Post to create and enrich these financial services, thereby ensuring a better quality of service, especially in the field of digitalization of financial services.

Table 9: Evolution of the number of ATMs for the period "2018-2023"

	2018	2019	2020	2021	2022	2023
Number of ATMs (Automated Teller Machine) and cash windows	1378	1403	1407	1409	1920	1984

Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting, p.7.

The table shows a significant increase in the number of ATMs. The number of ATMs in service reached 1,984 in 2023, compared to 1,920 in 2022, an addition of more than 64 devices spread across the country by 2023.

Regarding current postal accounts, they reached more than 27.5 million accounts by the end of June 2023, an increase of 1.76% compared to 2022. The number of CNEP accounts reached more than 4.4 million by the end of June 2023.

Table 10: Evolution of the number of current postal accounts and CNEP accounts for the period "2018-2023"

	2018	2019	2020	2021	2022	2023
Number of current postal accounts (CCP)	21374419	22629707	23613552	24714867	27039740	27516097
Number of CNEP accounts	4304569	4335743	4335991	4377213	4400231	4413196
Number of electronic card accounts, including the "Golden Card"	5781104	5602864	6766383	8841339	10124456	11379056

Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting, p. 11.

Transactions on current postal accounts (CCP) are carried out through several means: post office counter, ATM, electronic payment terminals, and via the Internet. The number of credit transactions/withdrawal and payment operations on current postal accounts (CCP) reached more than 198 million transactions in 2023.

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Table 11: Number of credit transactions in the first half of 2023

Indicators	2023	%
Number of transactions at post office counters (payment/withdrawal)	88955464	44.88
Number of ATM transactions (GAB)	77801725	39.26
Number of payment terminal transactions (TPE)	3393036	1.71
Number of online payment transactions	4376421	2.21
Number of BaridiMob transactions	23667278	11.94
Total number of CCP transactions (payment/withdrawal)	198193924	100

Source: Report on the Evolution of Postal Indicators in Algeria.(2023), Directorate of Statistics, Studies and Forecasting, p. 13.

In addition to withdrawal and deposit operations from current postal accounts, many other services are available through the Algeria Post platform, and their use is expanding.

Table 12: Other services via the Algeria Post platform during the period "2018-2023"

Indicators	2018	2019	2020	2021	2022	2023
Number of "Golden Card" applications via the Internet	892	677764	1368182	1368620	1775336	1494942
Number of transfers from one account to another	22778	67661	1171965	3601083	7784090	6708071

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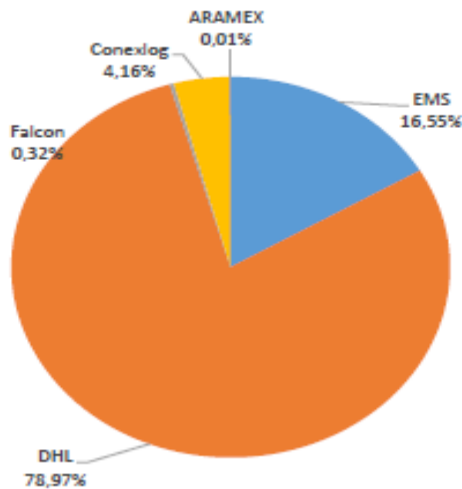
Number of current postal account inquiries via the Internet	23945301	28907165	34395769	36842045	37885627	18462590
Number of current postal account statement requests via the Internet	5756729	5540498	7155191	7542109	9590144	4799152
Number of members of the SMS notification service	684122	733241	973808	1060622	1127086	1132685
Number of SMS notifications ("financial transactions")	48381602	67787580	86999626	127293933	172141085	117426627
Number of requests to open a current postal account via the Internet	25476	35784	47329	67758	184432	42351
Number of CNEP account inquiries via the Internet	1500	1050	2125	5353	7217	3883

Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting, p.15.

As for domestic express mail shipments, there was a significant increase of 117.76% during the 2021-2022 period. At the international level, the international express mail market recorded

1,000,457 shipments in 2022. DHL holds the market leadership in international traffic, followed by EMS Champion Post.

Fig.6. domestic express mail shipments



Source: Report on the Evolution of Postal Indicators in Algeria. (2023), Directorate of Statistics, Studies and Forecasting.

5.The Role of Digitalization in the Telecommunications and Postal Sectors in Fostering Sustainable Development

One of the most important reasons for the growing interest in the digital economy is its ability to create comprehensive and sustainable development. Technological advancements have made it possible for everyone to connect with people who were previously out of reach. Many individuals and institutions can now compete, communicate, cooperate, and form partnerships easily, at a lower cost, and with greater equality than ever before. The opportunities offered by modern technological developments

are available to all, and their positive effects can include all individuals, institutions, sectors, and various economic and social activities. Therefore, the development of the digital economy helps achieve the goals of sustainable development.

The strategies adopted by the Algerian telecommunications and postal sectors contribute to achieving the economic dimension of sustainable development by supporting economic institutions with all digitalization technologies. This encourages innovation, reduces effort and time, and thus lowers costs, which in turn creates a surplus. Additionally, it helps achieve the principle of equal opportunity, revitalizes the economic sector, and achieves comprehensive economic development. All research conducted by the World Bank shows that for every 10% increase in mobile phone subscribers, there is a direct 0.8% increase in economic growth in Algeria. The telecommunications sector contributed 4% to the GDP, amounting to approximately 456 billion dinars in 2021, and is expected to reach 8% in the coming years, employing 140,000 people, according to the Algerian Investment Development Agency. The strategies adopted by the Algerian telecommunications and postal sectors also contribute to achieving the social dimension of sustainable development by eliminating unemployment through the creation of jobs for those with technical specializations, in addition to promoting justice and improving the quality of health and public services. This is thanks to the digitalization of these services and the speed of communication with specialists when necessary, as well as achieving quality in education at its various levels, especially higher education, by promoting distance learning. All of the above will eliminate many manual, paper-based transactions and services, which will in turn reduce the costly annual import bill

for paper. This will also reduce environmental damage, thus achieving the environmental dimension of sustainable development.

6. CONCLUSION

There has been a recent increase in interest in the topic of digital transformation due to its importance in relation to information and communication technology and globalization. Digital transformation has changed the way services are provided to customers and citizens, and everything has become linked to the Internet. The telecommunications sector has witnessed great development with the emergence of new generations of smartphones and the expansion of broadband Internet access through fixed and mobile networks. This is evidenced by the volume of investments governments have allocated to this sector. Since the appearance of the Internet and mobile phones on the market, each has seen a remarkable increase in penetration. The smartphone services market is a strong element in the infrastructure and in the information technology sector, which has become one of the driving forces relied upon for the success of sustainable development programs.

Research Findings:

- Digital transformation encourages the building of a resilient infrastructure, promotes comprehensive and sustainable industrialization, and fosters innovation.
- Digital transformation contributes to enabling the efficient infrastructure of information and communication technology and its services to participate in the digital

economy and increase its well-being and economic competitiveness.

- Countries, including Algeria, are striving with all available means and human and material capabilities for digital transformation and the development of the telecommunications sector.
- The telecommunications sector has witnessed significant development in recent years.
- The digitalization of various economic, social, environmental, and institutional fields enhances their development and makes their performance better and more distinguished in less time, with less effort, and at a lower cost.
- Digital transformation contributes to sustainable development.
- Indicators of the telecommunications sector and postal infrastructure are among the most important indicators of sustainable development.

Research Recommendations:

- Working to train and educate employees in most sectors in the field of digitalization to keep pace with modern developments.
- Overcoming difficulties for all groups to adopt and use telecommunications means, which enhances social development.
- Working to establish a strong digital infrastructure.
- Developing cybersecurity enhancement strategies to protect data and ensure electronic security.

- Giving great importance to supporting the telecommunications sector to support sustainable development.

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