

Digital Transformation is an Essential Lever to Support the National Economy

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Abstract

The world is witnessing a comprehensive digital revolution that has brought about radical changes in all aspects of life, from the economy and society to government and education, the study of digital transformation helps to understand these changes and how they affect individuals, institutions and countries, in addition to knowing the most important skills necessary for success in the digital age, and the results of this study highlighted the great importance of the digital transformation process in various sectors and this was reflected in the continuous and increasing development in spending in everything related to digital transformation such as communication technology and electronic security Add to the evolution of the volume of investment in financial technology.

Keywords: Communication Technology, Cyber Security, financial Technology, Internet

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Introduction

In a world that is changing at a rapid pace, digitization and digital transformation have become an inevitable and indispensable necessity to keep pace with developments and prosperity in various fields, so that digitization and digital transformation provide great benefits to individuals, societies and economies as a whole, starting from enhancing the efficiency of operations and improving services to creating new job opportunities and empowering individuals.

On the economic level, digitization stimulates innovation and the opening of new markets, which leads to increased productivity and economic growth. It also helps reduce costs and improve the efficiency of using resources. On the social level, digitization contributes to improving the quality of life by providing better services to citizens such as education, health care, and electronic government services. It also provides new opportunities for communication and interaction between individuals from different parts of the world, and on the individual level, digitization enables individuals to access information and services easily and affords them new opportunities for learning and development. It also helps improve their skills and abilities,

which better qualifies them for success in the labor market. Investing in Digitization and digital transformation is an investment in the future. By embracing digital technology and harnessing its potential, we can build a better, more prosperous world for all.

From the above, the following main problem can be raised:

Has digital transformation contributed to the transition from traditional management to digital management in global economies?

Through the main problem, the following sub-problems can be raised:

- What are the most important forms of digital transformation?
- What are the ways in which digital transformation contributes to supporting the national economy?

2.The concept of digital transformation:

Investing in thought and behavior change to bring about a radical transformation in the way we work by taking advantage of the great technical development that has occurred to serve beneficiaries faster and better. Digital transformation provides huge potential for building effective, competitive and sustainable societies by achieving a radical change in the services of various parties, including consumers, employees and beneficiaries, while improving their experiences. And their productivity through a series of proportional operations accompanied by reformulating the necessary procedures for activation and implementation.

Digital transformation has become a necessity for all institutions and bodies that seek to develop and improve their services and facilitate their access to beneficiaries. Digital transformation does not only mean applying technology within the institution or any administrative or economic body, but rather it is a comprehensive program whose goal is how to provide services to the target audience and achieve excellence in performance. Enhancing competitiveness by facilitating the process of implementing strategic business plans. (maki, 2023)

The process of digital transformation begins with converting materials, paper documents, images, and sounds from the physical or physical form into a digital format that is valid for circulation on digital devices and the Internet, and can be stored on modern media of hard and flexible disks. This process is called digitization or digital conversion, and perhaps the simplest example of the process. Digitization is the process of scanning a paper image and converting it into a digital electronic file. (maki, 2023)

As for digitization, it means the use of technologies and data for the purpose of improving performance and productivity by creating a digital business environment, in which digital information is primarily used. The digitization process also symbolizes the procedures for

transitioning to digital business, or the use of digital technology to improve the quality of work and obtain opportunities to maximize value and profitability.

Examples that illustrate the meaning of the digitization process include the processes of analyzing data collected from a group of devices connected to the Internet for the purpose of finding the best ways to maximize profits, or using digital technology to transform the processes of preparing reports, collecting and analyzing their data in real time and using the results to mitigate risks and maximize efficiency in Future projects.

The difference between digitization and digitalization can be described as that the term digitization refers to information while digitalization refers to processes, and that digitalization is the way to reach the digital business application, and that digitization cannot be achieved without digitalization of papers, documents, and processes. (Gartne, 2023)

2.1. Forms of digital transformation and its impact on the world

As we mentioned previously, digital transformation refers to the process of integrating digital technology into all aspects of work with the aim of improving production efficiency, creating new opportunities, and enhancing innovation, and all of this includes the use of a wide range of technologies that take the following forms: (Supreme Committee for Digital, 2023)

- Cloud computing: storing data and running applications over the Internet.
- Artificial Intelligence: Using advanced algorithms to analyze data and make decisions.
- Internet of Things: Connecting devices and tools to the Internet to collect and analyze data.
- E-commerce: buying and selling products and services over the Internet.
- Social Media: Using social media platforms to communicate with customers, employees and partners.

As for the impact of digital transformation on the world, it is considered a major driving force for growth and change around the world, as it affects various sectors, including:

- Economy: Digital transformation contributes to stimulating economic growth by creating new job opportunities and increasing productivity.
- Business: Digital technology helps companies improve their operations, enhance their efficiency, and provide better services to customers.
- Government: Digital technology is used to improve the delivery of government services and enhance transparency and civic engagement.
- Education: Digital technology is used to provide better educational opportunities for students, improve their skills, and prepare them for the future of work.
- Healthcare: Digital technology is used to improve disease diagnosis, provide better patient care, and reduce healthcare costs.

2.2. Advantages and challenges of digital transformation

Among the advantages of digital transformation we mention: (Supreme Committee for Digital, 2023)

- Increasing production efficiency: Digital transformation can contribute to the automation of many tasks, which leads to reducing the time and effort spent on completing them. It can also help improve communication and exchange of information between the various departments of the organization, which enhances the efficiency of operations in general.
- Improving customer experience: Digital transformation can help provide better services to customers by facilitating access to information and services, offering multiple payment options, and improving after-sales service.
- Creating new job opportunities: Digital transformation can contribute to creating new job opportunities in areas such as information and communications technology, digital marketing, and data analysis.
- Fostering innovation: Digital transformation can help companies develop new products and services faster and more efficiently.
- Reaching new markets: Digital transformation can help companies reach new markets through e-commerce and online marketing.
- Reducing costs: Digital transformation can help companies and even administrative institutions reduce costs by automating tasks, improving the efficiency of operations, and reducing the use of paper.
- Environmental protection: Digital transformation can contribute to protecting the environment by reducing the use of paper and energy.

As for the challenges, we find the following : (Supreme Committee for Digital, 2023)

- High Cost: Implementing digital transformation can be expensive, especially for SMEs.
- Security Concerns: Businesses may face security risks when using digital technology, such as data theft and cyber attacks.
- Cultural change: Employees may have difficulty adapting to the changes brought about by digital transformation, which may lead to resistance to change.
- Digital Divide: Digital technology may exacerbate the digital divide between those who have access to technology and those who do not.
- Reliance on technology: Companies may become highly dependent on technology, which may expose them to great risk in the event of any malfunction or interruption in service.
- Job loss: Digital transformation may lead to the loss of some jobs, especially jobs that rely on manual tasks.

- Security and protection: These challenges include issues of electronic fraud and theft of personal and financial information, so companies and institutions must take strong security measures to protect data and ensure the safety of electronic transactions.
- Legislation and laws: Establishing laws and regulations that define the regulatory, legal and protective framework for all digitization and digital transformation processes.
- Technical transformation: The success of digitization requires the need to adapt to rapid technological developments, and therefore companies and countries must invest in digital infrastructure and keep pace with rapid developments.

3. Definition of the digital economy

The digital economy is defined as the type of economy that is based on the use of information and communication technology, which facilitates the flow of information, goods, services, and the movement of capital to and from any point in the world and at any time. (Khaled, 2018)

1.3 Characteristics of the digital economy:

- Provides information to decision makers;
- Information has become an element of power in the digital economy.
- Abolition of traditional economic borders and restrictions;
- The digital economy is based on the level of society's technological culture;
- The main reliance on the Internet in various operations and transactions;
- The emergence of electronic selling, electronic contract (e-commerce);
- The digital economy is constantly affected by changes occurring in the information and communication technology sector.
- The emergence of digital globalization;
- The emergence of digital institutions;
- The emergence of the Internet of Things.

4. Digital transformation indicators in the world during the period 2005-2023

To address the indicators of digital transformation in the world, we will present some numbers and statistics on the relevant elements.

4.1 Evolution of global spending on communications technology : Communications technology is one of the most important economic sectors in the world, as it plays a vital role in connecting people, businesses, and companies, this sector has witnessed tremendous growth in

recent decades, driven by rapid technological developments and the increasing demand for communications services, the development of spending on this sector can be illustrated through the following table:

Table 1: Evolution of global spending on communications technology

Years	Global spending on communications technology (US\$1 trillion)	(%)Growth rate
2005	1.7	-
2010	2.2	30
2015	3.1	40
2020	4.3	39
2023	4.8	11

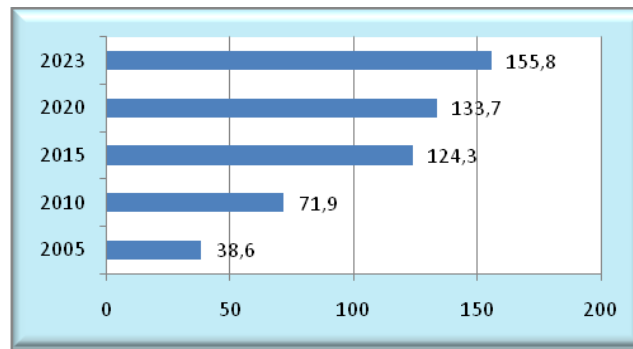
Source: www.statista.com

The table above shows that global spending on communications technology amounted to 1.7 trillion US dollars in 2005. In 2010, global spending on communications technology rose to 2.2 trillion US dollars, an increase of 30% over the year 2005. In 2015, global spending on communications technology reached 3.1 trillion dollars. American, with a growth rate estimated at 40%. Global spending on communications technology in 2020 reached a value of 4.3 trillion US dollars, with a growth rate estimated at 39%. As for the year 2023, global spending on communications technology reached 4.8 trillion US dollars despite the global health crisis, especially the repercussions of Covid-19. And the resulting global economic impacts. Perhaps the most important factor for continued spending on communications technology is the spread of mobile phones. The number of mobile phone users has witnessed tremendous growth in recent decades, which has led to an increase in demand for mobile communications services. In addition to this, the use of the Internet has increased, as the Internet has become an integral part. of daily life, which has led to an increase in demand for broadband Internet services. In addition, the emergence of new technologies such as the fifth generation and the Internet of Things has led to an increase in demand for investments in communications technology.

4.2 Evolution of global spending on cybersecurity for the period 2005-2023:

Spending on cybersecurity has witnessed tremendous growth in recent decades, driven by increased reliance on technology and increasing cybersecurity threats. The following table shows this development:

Figure 01: Evolution of global spending on cybersecurity



Source: www.statista.com

The figure above shows that spending on cyber security in 2005 amounted to 38.6 billion US dollars. In 2010, global spending on cyber security rose to 71.9 billion US dollars, with a growth rate of 86%. In 2015, global spending on cyber security reached 124.3 billion US dollars, with a growth rate of 72%. In 2020, global spending on cyber security reached 133.7 billion US dollars and finally in 2023 it reached 155.8 billion US dollars. Perhaps one of the most important factors for continued spending on cyber security is:

- Entering the stage of the Fourth Industrial Revolution, which is known as the stage of digital transformation and cybernetic systems.
- Increased reliance on technology: Reliance on technology has become an integral part of daily life, which has increased potential vulnerabilities that can be exploited by hackers.
- Increase in the number of cyber attacks: Recent years have witnessed a significant increase in the number of cyber attacks, which has led to increased awareness of the importance of cyber security.
- Increased cost of security breaches: Security breaches can lead to significant financial losses for companies, requiring increased investment in cyber security solutions.
- Spending on cyber security is expected to continue to grow in the coming years, driven by the most important factor, which is continued reliance on technology and digital transformation.

4.3 Development of the number of computers and use of the Internet for the period 2005-2023

Below we review some numbers for the most important digitization tools through the following tables:

Table 2: Development in the number of computers and smart phone

years	Growth (%)rate	n of smart (phones (billion	Growth (%)rate	Number of computers	years

				(billion)	
2005	-	0.1	-	1	2005
2010	250	0.35	50	1.5	2010
2015	500	2.1	26	1.9	2015
2020	147	5.2	26	2.3	2020
2023	27	6.6	9	2.5	2023

Source: www.statista.com

The table shows the great development in the production of computers and smart phones, as they are the most important tools for digitization, digital transformation, and use. We notice the great development, especially in smart phones, which witnessed a growth rate that reached 500%, that is, a five-fold growth during the five-year period. Also, Table No. 04 shows the close connection in production. Computers and smartphones using the Internet, so that we note that 67% of the world’s population in 2023 was using the Internet.

4.4 Statistics on financial technology for the period 2005-2023

Statistics about financial technology can be presented through the following table numbers:

Table 3: FinTech statistics

Years	Global financial technology market size (\$1 billion)	Number of financial technology companies	Investment in financial technology companies (\$ billion)
2005	10	100	1.5
2010	50	500	2.5
2015	250	10000	12
2020	1200	20000	87
2023	1800	30000	125

Source: www.statista.com

From the above, it can be said that investment in financial technology has moved from \$1.5 billion in 2005 to \$125 billion in 2023, i.e. a very large transition that demonstrates the trend towards an almost total transition to the digitization of financial transactions across the world, and this is confirmed by the number of financial technology companies. Which moved from 100

companies in 2005 to 30,000 companies in 2023, and the size of the global financial technology market moved from \$10 billion in 2005 to \$1,800 billion. Perhaps the most important areas of financial technology are mobile payment, lending, financial transfers, wealth management, and insurance.

We can point out that the distribution of financial technology companies by region is as follows : (Sofien Qaloul, 2020)

- North America: 38%
- Europe: 22%
- Asia Pacific: 20%
- Latin America: 10%
- Middle East and Africa: 10%

As for the areas of work of financial technology companies, we find them in:

- Payment: 35%
- Lending: 25%
- Money transfers: 15%
- Wealth management: 10%
- Insurance: 5%

The most important financial technology companies are:

- Stripe (USA)
- Ant Group (China)
- PayPal (USA)
- Square (USA)
- Klarna (Sweden)

5. Forms of digital transformation:

Digital transformation takes many forms that vary depending on the nature of the institution or bodies of an administrative and economic nature and their needs and goals in general. The forms of digital transformation can be classified into the following categories:

5.1. Digital transformation of operations:

- Automating manual tasks: Using software and robots to perform repetitive tasks automatically, saving time, reducing errors and improving efficiency.
- Improving supply chains: Using technologies such as the Internet of Things (IOT) and Blockchain to improve product tracking and improve the efficiency of supply chains.
- Enhancing customer experience: Using digital channels such as websites and mobile applications to provide better and more convenient customer service.

5.2. Digital transformation of products and services:

- Developing new digital products and services: such as mobile applications, e-commerce platforms or streaming services.
 - Digitizing existing products and services: such as converting paper books into e-books or providing financial services over the Internet.
- Using data to improve products and services: Analyzing customer data to develop products and services that better meet their needs.

5.3. Digital transformation of business models:

- Using new channels to reach customers: such as selling through social media or e-commerce.
- Develop new sources of revenue: such as selling data or offering subscription services.
- Building new relationships with partners: such as cooperation with technology companies or startups.

5.4. Digital transformation of culture:

- Promoting a culture of innovation: encouraging employees to try new ideas and provide innovative solutions.
- Developing employees' digital skills: Training employees to use digital technologies effectively.
- Creating a flexible work environment: enabling employees to work from anywhere and at any time.

5.5. Digital platforms and applications: (Sofien Qaloul, 2020)

With the growth of digital transformations, digital platforms have become one of the most important pillars on which the digital economy is based, and their number has become increasing, reflecting the tendency of the government sector and the business sector to establish more digital platforms to provide and provide information, goods, services and information in an easy and appropriate way to the needs of users. Hence, the spread of these Digital platforms and applications are one of the most prominent indicators of the growth of the digital economy,

which depends on the level of availability and progress of the digital economy infrastructure represented in digital economy networks. There are different types of digital platforms, some of which are linked to interaction between governments and citizens, similar to the platforms on which e-governments are based. Other platforms link the government with the business sector, or link.

6. Digital transformation as a tool to confront urgent global crises: (Sofien Qaloul, 2020)

One of the most important crises facing the world is the outbreak of the Corona phenomenon (Covid 19), which has been classified as a global pandemic. Many companies began adopting a culture of remote work in response to the repercussions of the pandemic and the accompanying complete and partial closures of educational institutions and business institutions, and turned to a culture of distance education, in In this context, many international companies began amending their operational policies to allow the largest number of subscribers to benefit from their provided services, which contributed to framing the process of education and remote work. In recognition of the major role that digital technologies play in helping countries confront the pandemic, major international technology companies began, Google, Facebook, Amazon, Microsoft Windows, Twitter, IBM) (which is considered the backbone and link between all active groups in society in consultation, dialogue, and coming together about the needs of this stage and how to respond to the pandemic and determine the necessary solutions for a risk-free present. Statistics indicated that the pandemic was accompanied by an increase In the use of mobile phones by 50% and the increase in the use of online data by about 40%, Italy was the first country to witness an increase in data flow over the Internet by the household sector, which increased by about 75%, due to it being the first country to enter the complete lockdown phase in the world and in response to the requirements of the phase.

The outbreak of the Corona pandemic, A number of global digitization companies have made improvements to their digital services to keep pace with this critical stage by focusing on providing vital information and cooperating with country governments to fight rumor mongers for the purpose of controlling misleading information. They have begun to modify their business models by making content more accessible and making it available to the largest number of subscribers. Media organizations worked to cover developments related to the virus and make them available as much as possible to non-subscribers. The period of the outbreak of the Corona pandemic also witnessed activity in issuing applications and digital platforms that would reduce the risk of infection with the virus, in addition to enhancing the use of existing applications that were created before the outbreak of the pandemic. For example, Arab countries made efforts to Appreciated efforts have been made in issuing digital applications that work to identify people who have been in contact with infected people and thus reduce the possibility of infection by taking the necessary precautionary measures such as home quarantine and others. Applications have also been issued that help track individuals who have been subjected to home isolation procedures in the event of violating these procedures, for example. The “Tatamman” application

was launched in Saudi Arabia, which aims to provide protection and health care to citizens and residents who have been subject to home or health quarantine and isolation procedures in a way that guarantees their safety and enhances their recovery procedures, as the application provides a number of services, including results and daily follow-up of health conditions, in addition to Other services such as providing a quarantine countdown indicator.

7. Digital transformation as a tool to combat the parallel economy (Bank ,2023)

The parallel economy is a dangerous phenomenon that threatens national economies and hinders sustainable development. Digital transformation can play an important role in combating this phenomenon through:

7.1 Enhancing transparency and accountability:

- Developing electronic systems for value-added tax: These systems allow accurate tracking of the movement of goods and services, which helps in combating tax evasion.
- Digitization of government procedures: Digitization of government services contributes to reducing bureaucracy and corruption, which encourages conducting business legally.
- Publishing open government data: Open data allows citizens and oversight institutions to monitor government performance and hold it accountable, which enhances transparency and accountability.

7.2 Supporting small and medium enterprises:

- Providing electronic platforms for marketing and promotion: These platforms allow small and medium-sized companies to access new markets and sell their products and services more easily.
- Facilitating access to finance: Financial technology enables SMEs to obtain loans and financing easily and at lower costs.
- Providing training and qualification services: These services help small and medium-sized companies develop their capabilities and skills, which enhances their ability to compete.

7.3 Consumer protection:

- Developing applications to verify the authenticity of products: These applications allow consumers to verify the authenticity of the products they purchase before purchasing.
- Anti-commercial fraud: Technology makes it possible to monitor advertisements and prevent the publication of misleading or false advertisements.
- Providing channels for communicating with consumers: Electronic communication channels allow consumers to report any violations or complaints.

.4.7 Strengthening confidence in the economy:

- Creating a safe digital environment: Technology contributes to protecting personal and financial data, which enhances confidence in electronic transactions.

- Spreading a culture of digital awareness: Awareness campaigns help increase citizens' awareness of the importance of digital transformation and the dangers of the parallel economy.

- Effective participation of the private sector: The private sector can play an important role in supporting efforts to combat the parallel economy by investing in technology and developing innovative solutions.

Digital transformation is not a magic solution to combat the parallel economy, but it is a powerful tool that can contribute significantly to reducing this phenomenon and protecting the national economy.

.8 International experiences in digital transformation:

Digital transformation is an effective tool to protect and support the national economy by enhancing the efficiency of operations, stimulating innovation, increasing productivity, and expanding business opportunities. We will present some pioneering experiences in digital transformation to protect the national economy.

The UAE is considered one of the leading countries in the field of digital transformation and can be provided through the following:

8. Algeria's experience in digital transformation (Algeria, 2023)

The national authorities in Algeria have sought to make tremendous efforts to embody a comprehensive digitization process that affects all strategic and important sectors related to supporting the national economy and fighting bureaucracy and corruption.” This was embodied in the directives provided by the hierarchy of power to immediately begin accelerating the process of digitization and accurate statistics as a basic work system In all sectors, especially state property, taxes, customs, and the budget, in addition to establishing an updated digital platform that “provides correct data and indicators that lead to making appropriate decisions and combating bureaucracy.” In this context, several sectors recorded a qualitative leap in the digitization process, such as the Ministry of Higher Education and Scientific Research. Which has developed 51 platforms that provide 54 digital services, including the pedagogical and service aspects as well as research, with the aim of reaching 54 digital platforms to completely dispense with the paper nature.

For its part, the Ministry of Justice has adopted digitization in several processes, including extracting a number of documents and the National Electronic Window Service, which allows

litigants, their lawyers, and their clients to have remote access to the outcome of their cases, as well as video trials remotely.

The Ministry of the Interior, Local Governments and Urban Planning, in turn, worked to modernize the public facility and raise the quality of public service by digitizing all services provided by civil status services, starting with the transition to producing biometric documents that include the passport, national ID card, and driver's license, in addition to linking all The headquarters of the states, departments and municipalities of the Ministry of Guardianship via optical fibers.

9. Analysis of results:

Digital transformation has become a comprehensive global phenomenon that revolutionizes various aspects of life, including the economy, society, and government. We have seen the most important positives and advantages of the digital transformation path, and finally the most important conclusions can be drawn as follows:

Improving process efficiency and increasing productivity:

- Automation of repetitive tasks: The use of artificial intelligence and robotics has automated many repetitive tasks in various sectors, which has contributed to improving the efficiency of operations and significantly increasing productivity.
- Improving communication and information exchange: Digital technology has facilitated communication and information exchange between various stakeholders, which has accelerated the decision-making process and improved coordination between various departments and divisions.
- Improving customer experience: Digital technology has enabled companies to provide better and more efficient services to their customers, by facilitating communication with them and providing them with support 24 hours a day, 7 days a week.
- Creating new business opportunities: Digital transformation has provided new opportunities for businesses in various sectors, including e-commerce, the digital economy, and ICT.
- Encouraging innovation: Easy access to information and technology has encouraged innovation and the emergence of new ideas, innovative products and services.
- Supporting SMEs: Digital technology has helped SMEs grow and compete with larger companies by providing affordable tools and services.
- Providing electronic government services: Digital governments have facilitated access to government services by providing them electronically, saving citizens time, effort and cost.

- Improving transparency and accountability: Digital technology has improved transparency and accountability in the public sector by facilitating access to government information.
- Enhancing civic participation: Digital technology has enabled citizens to participate in decision-making more effectively by providing platforms for communication and interaction with the government.
- Improving education and health: Digital technology has improved the quality of education and health by providing better educational opportunities and broader health care services.
- Environmental protection: Digital technology has helped protect the environment by reducing dependence on natural resources and improving energy efficiency.
- Supporting comprehensive economic development: Digital transformation has contributed to supporting comprehensive economic development by creating new job opportunities and improving the standard of living.

However, it is important to note that digital transformation also faces some challenges such as:

- Digital Divide: There are still many people around the world who do not have access to the Internet or digital technology, creating a digital divide that hinders their full participation in society and the economy.
- Data security and privacy: Digital technology raises concerns about data security and privacy, as personal data becomes more vulnerable to theft or misuse.
- Impact on the labor market: Digital transformation may lead to the loss of some jobs, as many tasks previously performed by humans are automated.

10. Conclusion:

Digital transformation has become a comprehensive global phenomenon that has revolutionized various aspects of life, leaving its mark on all sectors and societies. The world has witnessed multiple positive results as a result of adopting the path of digital transformation, which included improving the efficiency of operations, enhancing innovation, providing new business opportunities, improving access to government services, and driving development. However, digital transformation is not without some challenges, such as the digital divide, data security, privacy, and its impact on the labor market. Therefore, its success requires addressing these challenges by following thoughtful policies and strategies that ensure everyone's participation in its fruits and achieving sustainable development for all. We should also point out that The responsibility for seizing the opportunities of digital transformation and overcoming its challenges falls on everyone: governments, peoples, institutions, and individuals. Cooperation and solidarity are the only way to build an important digital future.

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