

Covid-19 and the Evolution of the Digital Economy: Impacts and Challenges

كوفيد 19 وتطور الاقتصاد الرقمي: اثار وتحديات

Pr. Nadir TROUBIA

Ahmad Draïa University - Adrar (Algeria), nad.troubia@univ-adrar.edu.dz

Received: 07/03/2024**Accepted:** 30/03/2024**Published:** 31/03/2024**Abstract:**

It is believed that the invention of internet with the large spread of unlimited sophisticated technological tools has paved the way toward the birth of the digital economy. This new born seems reliable in improving the productivity and promoting the comfort of human beings. Many questions have been asked about the digital economy era during the corona-19 crisis when everything looked stopped due to the strict quarantine. Therefore, this research paper aimed to highlight the impact of coronavirus on the status of the digital economy. The results have showed that the digital economy has considerably increased as the major solution to mitigate the socio-economic losses even though the consequences of the pandemic were quite severe.

Keywords: digital economy, coronavirus epidemic, internet, technology, digitalization.**JEL Classification Codes:** O3, Q5**ملخص:**

من اليقين ان اختراع الانترنت الى جانب الانتشار اللامحدود للوسائل التكنولوجية المذهلة قد مهد الطريق نحو ميلاد الاقتصاد الرقمي. ويعتبر هذا المولود الجديد كرافدة لتحسين الانتاجية وترقية الراحة البشرية. وقد طرحت الكثير من التساؤلات حول وضعية الاقتصاد الرقمي عقب اكتشاف فيروس كورونا والتوقف الشبه كلي لكل شيء بسبب الحجر الصحي الصارم. لذا تهدف هذه الورقة البحثية الى القاء الضوء على تداعيات فيروس كورونا على واقع الاقتصاد الرقمي. وقد اظهرت النتائج اتسارع رقة الاقتصاد الرقمي اكثر لكونه الحل الامثل للخفيف من الاثار الاجتماعية والاقتصادية للجائحة على الرغم من شدتها.

كلمات مفتاحية: اقتصاد رقمي، جائحة كورونا، انترنت، تكنولوجية، رقمنة.**تصنيفات JEL:** O3, Q5**Corresponding author:** Nadir TROUBIA, e-mail: nadirt21@yahoo.fr

Introduction:

The world keeps changing today thanks to technological evolution. The significant transformations have been occurred into social-economic domains under the wide use of technology tools which actually contribute to improve the people life as well as their connection to each other. Multiple innovations continuously emerge in order to respond to modern needs and establish convenient conditions for a best, effective and efficient productivity that might mainly leads to a sustainable development within countries.

One of the most important sectors influenced by that technological revolution over several decades is the entire economy around the world. All financial institutions, banks, financial markets, investments, chops, and any area involving the use of money became very dependent on the various advances in monetary technology. The whole economy has been digitalized to give birth of the digital economy, especially since the appearance of internet. This new change brought a lot of opportunities to support the pillars of development within our societies by reducing the costs of different transactions regardless its origin, which means that even simple costumers are able to reach any product in the world without paying a lot of money.

The digital economy simply means how to use information technology to access numerous international markets and purchase what is desired from goods and services. Both entities and individuals are more and more interested in it this economy and they are still looking for effective investment strategies to augment their benefits from its use.

At the end of 2019, the world became no longer as it was before due to significant and severe events. The coronavirus 19 that hit the world have negatively affect humankind, which made decision makers think of effective ways, the digital economy in particular, to respond to this crisis. Thus, the study will discuss the impact of the covid-19 on the evolution of the digital economy.

The main question can be divided into following sub questions:

What does the digital economy mean?

Why is the digital economy use important?

How to define coronavirus epidemic and what are its causes?

How does the covid-19 affect the digital economy?

The study will try to achieve the following:

Identify the common meaning of the digital economy

Determine the real importance of the digital economy.

To highlight the essential elements which are driving to understand the coronavirus epidemic.

Analyze how the pandemic influenced the progress of the digital economy.

Literature review:

The digital economy is the main frequent subject that has been debated in many recent studies. Among them; there is the one in which the writer discussed the case of digital economy in developing countries (Semyachkov, 2019). He concluded his paper with the fact that developing counties have taken all necessary procedure to succeed the introduction of the digital economy. On the other side, studies affirm that there an important gap between countries in term of digitalization which means that the development is still stocked in very lower rates.

Research methodology:

In order to deal with the problematic of the study, we have relay on the analytical and descriptive approach using books, articles and reports that interested in the topic.

1. Digital economy, definition and background:

The digital economy generally means the use of internet to deal with production, distribution, marketing, and trade after they were performed traditionally or manually. In other words, having digital economy mainly requires the construction of a new work practices, sophisticated markets, and advanced industries based on technology and computer science. The huge availability of ICT's means helped perfectly the evolution of digital economy and its implementations within the whole body of business sectors to increase enormously the productivity in term both quantity and quality. Then, during the last decade, official statistics showed that about 70% of the international economy became digitalized as the majority of people are now interested in online services more than classical ones.

The digital economy can be defined as a convergence of communications, computing and information in addition to existence of some elements that constitute its center like coordination, innovation, selection and learning (Harbhajan S. Kehal, 2005, p3). From the previous meaning, it is obvious that the essential factor in digital economy is the new path toward how to exploit the information which the reason for coining a list of closer terms to this new economy such as networked economy and knowledge-based economy. This new form of economy present other ways of interactions between government, individuals and companies.

The concentration on the knowledge is in the center of computing business services because all the activities of production, distribution and deliverance should be handled through highest techniques which are based on the type and quality of information, so it would be easy to find a real way toward not only the digitalization of economy but also the understanding it. The digital economy is necessary associated with the combination of multiple components that are considered as the solid deck for it. These factors are fundamentally the acquisition of knowledge, the exploitation of communication's technologies, the building of information's sources, and, of course, the creation of creative ways to produce goods and services.

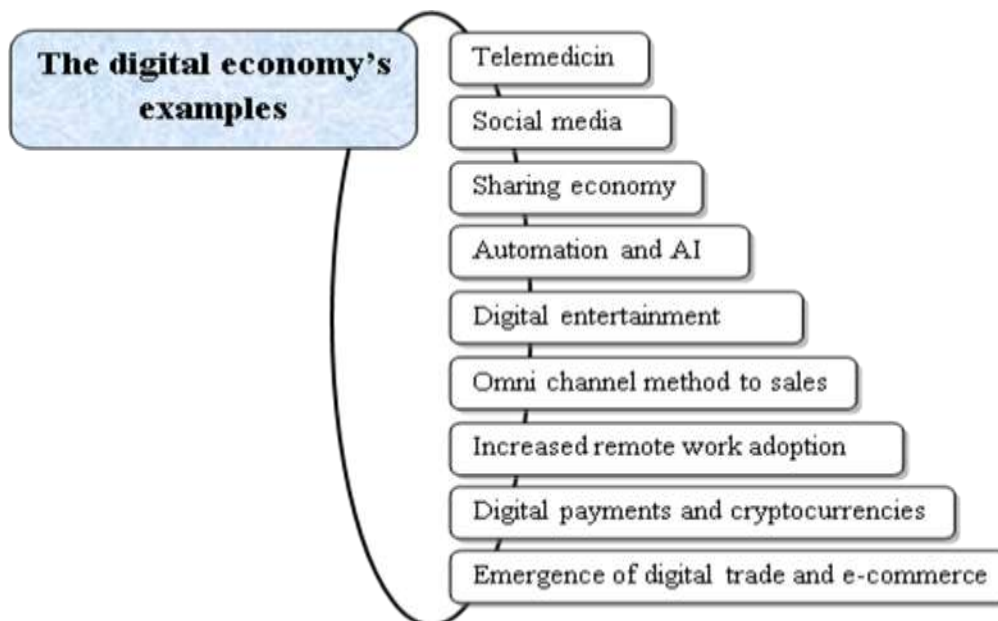
It is important to mention that digital economy may have many other definitions based on the variety of viewpoints, but all of them approximately share common ideas that generally describe digital economy as the strong relationship digitally founded between individuals, business, dada, and actions. Furthermore, the process of this new economy inevitably includes the utilization of AI, blockchain, the internet of thing, smartphones, and all kinds of automatic machines. As a matter of fact, they have strongly contributed to the growth of it till nowadays.

In the beginning, there were several terms that people used to point to the digital economy such as the internet economy or the new economy. Up to some literature, the first person who announced the term "Digital Economy" was the economist Don Tapscott in his book "*The Digital Economy: Promise and Peril in the Age of Networked Intelligence*" in 1995 (Mehra, 2024). Even though that digital economy is extremely related to internet, it is different from web economy or internet economy because many economists believe that the digital economy is more special and complex than other types. It reflect the bridge for moving from third industrial revolution, which appeared at the end of the last century, to the fourth industrial revolution.

2. The different forms reflecting the digital economy today:

Currently, the digital economy invaded everywhere in our surrounding. It may impossible to listed all things that is economically digitalized; however, the following shape may display the well know of those forms.

Figure (01): the main fields of the digital economy's technology



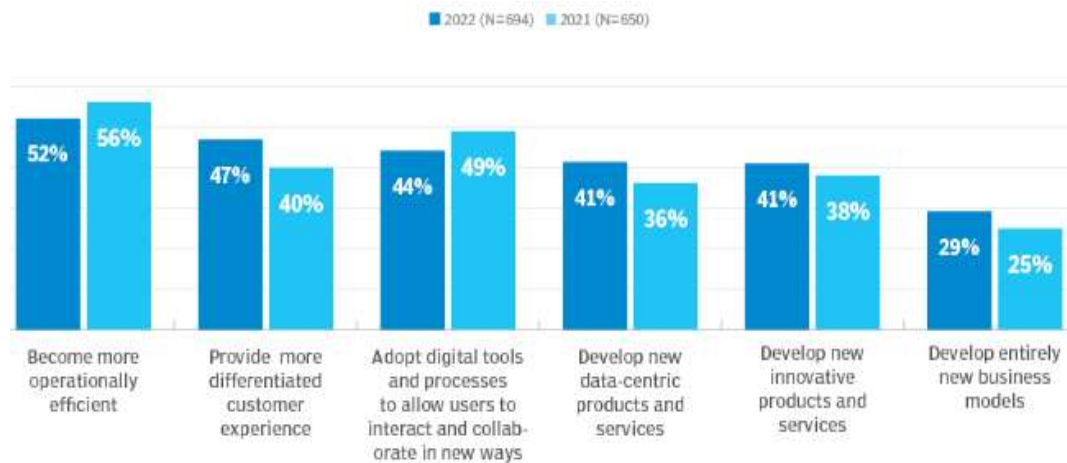
Source: by the researcher based on (Yaser, 2023)

Everybody can deal with digital economy through any angle presented in the image above. For instance, social media is the most space frequented today; therefore, it is very useful and helpful for people to present or command their products online anywhere and anytime by manipulating social media platforms. We have also e-commerce which knew a huge evolution around the world. On the other side, the creation of artificial intelligence support and facilitate the penetration of the digital economy. What important about sharing economy is that it provides opportunity to many people to have income in using multiple application available on internet.

3. The interest of the digital economy:

The digital economy has given unlimited benefits to humanity. It is a part of the highest and sophisticated technology. It allows the users to achieve tasks efficiently, to reduce costs, to save time, to spare effort, and to satisfy all their needs. The digital economy keeps providing the societies new best several ways to make daily life more easiest and comfortable. The purpose behind the invention of this new economy is to reach a set of goals like what is revealed in the following figure

Figure (02): digital transformation goals



Source: (Yaser, 2023)

In the figure, the data show the objectives that organizations managed to achieve from digital transformation between 2021 and 2022. The executions percentages vary from 25% to 56% which mean that almost 50 to 75% of organizations failed while switching to digital position.

Once also someone looks at these goals, they quickly notice that a common point among them is to develop a product made for clients. The satisfaction of any customers with products and services is the key objective of companies. As a result, the latter are constantly working on digitalize their operations. Additionally, all governments aim, by introducing the digital economy, to enhance the quality of living conditions of their citizens and to reach what is called sustainable development.

4. The conditions of the digital transformation:

The process toward the digitalization of systems requires that the entities or individuals have to take into consideration the huge importance of the conditions of that change. A successful digital modification includes having new skills, establishing strong technological platforms, possessing a very large internet’s web, finding creative ways of production, and so on. Generally, the digital transformation is based on the coming demands.

Figure (03): The conditions of the digital transformation:



Source: by the researcher based on (Semyachkov, 2019)

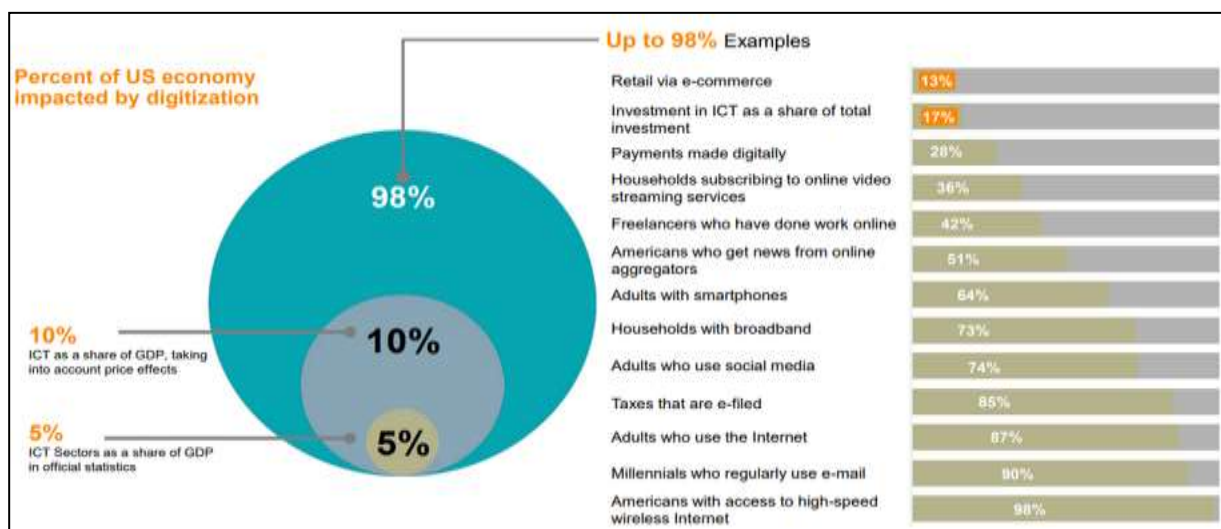
Because the resources are unlimited and insufficient, it is imperative to use them ideally. Introducing digital services may present some negative effects, so, the decision makers have to

set long and short goals in order to deal with any potential problem caused by digitalization. As we have seen before, this sophisticated technology assumes learning new skills for ever.

5. The volume of the digital economy in the world:

The overview of the international situation ensures that the digitalization is expanding from day to day. The speed of the expansion is fastest in the industrial states than the rest world. As a significant example, the USA is considered as the one of the advanced nation with a huge spread of the digital economy. The share of the latter augmented by 156% during the last seventeen years in the USA’s GDP. Indeed, it arrived more than 2569 billion dollars a year before after it was just about 1000 billion in the middle of 2000’s (figure).

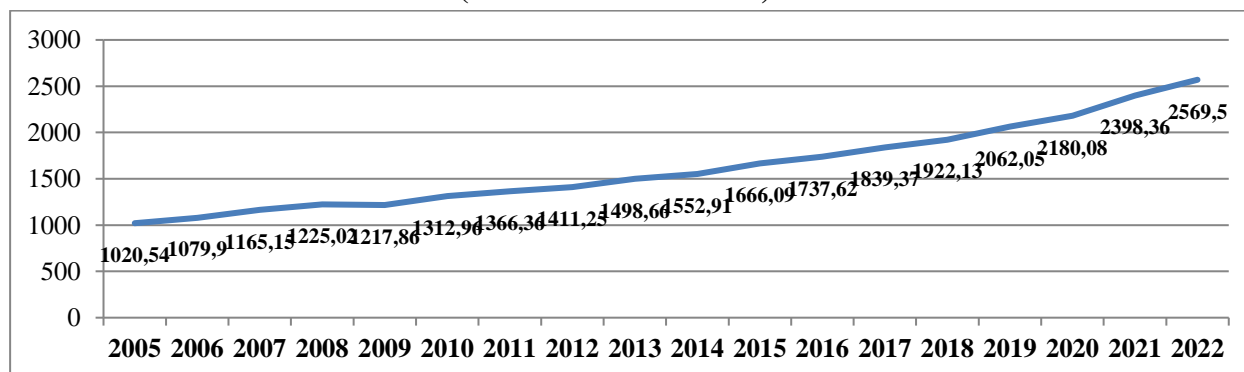
Figure (04): the digital economy’s case in the US



Source: <https://www.ir.com/guides/the-importance-of-the-digital-economy>, seen on 15/01/2024

Over 98% of the US economy is digitalized which reflect the incredible growth of it and highlight how it maintain the US position as a leader of the globe. The majority of highest technological companies are located there. The USA is mainly the home of the major digital organization such as Facebook, Google, twitter, amazon, and so on. the statistics assert that everything is implemented through internet devices or applications.

Figure (05): the part of the digital economy in the US GDP 2005-2022 (In billion U.S. dollars)



Source: by the researcher referring to [statista.com](https://www.statista.com)

The acceleration of digital economy is not only the case of America, but it is a universal phenomenon. The internet lets people to live in a motivated atmosphere. The population are

now starting to think how create a new world which is totally virtual. We used to watch unbelievable and imaginary scenes on TV, but they became true. According to official data, more than 50% of the world's population is normally able to access the internet; whereas, 30% of people are connecting on social media. Furthermore, the budget conducted to cover the spending of digitalization has reached 2.9 trillion US dollars (Gada, 2016).

6. Coronavirus pandemic (covid-2019), an overview:

At the end of 2019 the globe woke up on the worst sinister that it had never met before a very long years. Facing corona-19 was an enormous challenges and a huge modification for the entire nations. The degree of its danger was so highest that the whole states got in quarantine. Coronavirus is mainly exploded from a virus named SARS-CoV-2 and affected people when they connect each other.

Its Symptoms were quite known at that time. Anyone suffered fever, difficult breathing, trouble in either movement or speech, pain in the chest, or any of other symptoms was usually a victim of coronavirus. Scientifically, there is no special treatment against this virus, and the patient can recover without medicines.

However, the critical situation had obliged many scientific labs and medical experts to work hard in order to produce corona vaccine to protect humankind against that diabolical epidemic. Under the surveillance of WHO, the organization that took in charge the responsibility of sponsorship, development, production and distribution of the vaccines, a series of researches have been undertook with member countries to provides different effective vaccine like COVAX. Fortunately, it is announced the ongoing of the pandemic on May 4th, 2023.

The corona-19 had very heavy consequences on the whole planet. As matter of fact, that epidemic deeply affected the developing counties more than developed ones. In addition, the negative affectation was greatest on the weak families and groups because they were already encountering difficult situations like unemployment, lowest savings, disadvantaged jobs and social crises. Consequently, they had no ability to adapt with the pandemic.

In this respect, many international organizations took into consideration the poorest groups that had dived more and more into poverty. At that moment, it was noticed that the extreme poverty got exploding in parallel with the lack of nutrition. The daily work is the unique source for the majority of family especially in Africa, south America and south-west Asia. When they lost their work exactly means no money for afford food or any other necessary needs. The official data provided by entities were scared. In 2020, more than 255 million full-time jobs were lost. It made four times bigger than what caused by financial crisis 10 years before. Let's take a look at the next shape:

Figure (06): Working-hour, employment and labor income losses in 2020



Source: (ILO Monitor, 2021)

It is clear that the employment loss hit 114 million, which made a half of total working-hour losses. These damages included 33 million jumping to unemployment market; besides, about 81 million entering inactivity situations. The most categories dropped under this tough position were essentially informal workers, the youth and women. The pandemic was also the reason to expand the inequality between men and women. When the low income nations were able to react against the pandemic, the richest ones had the opportunity to spend until 9.8 trillion US dollars. Actually, the budget equals 83.76% of the global spending in 2020.

7. The coronavirus influences on the digital economy:

Since the digitalization of services, the economic growth has positively increased and that widely contributed to improve the levels of productivity and revenue. The digital economy allows individuals to choose among unlimited alternatives regardless their social positions or income. After covid-19 had hit the world, the societies got isolated from each other; as a result, they tried to search for new ways of living to overcome that hard period. Thanks to the digital economy, the economic life kept moving by finding out creative supports such as e-commerce, zoom, e-marketing, Google meet, telemedicine, and a lot of other online choices.

The digital economy strongly aided to minimize the socio-economic losses and offered various methods and strategies to save business and industries. It is necessary to note that the digital economy is composed of two essential branches: the industrial digitalization and the digital industrialization. Both have played a great role while the pandemic was getting spread. The first one was the major reason to modify an industry from traditional status to digital one; whereas, the second type includes all ICT devices, telecommunication, computing technology, and the internet domains.

Thus, the industrial digitalization deeply helped scientists to deal with the pandemic by having the last digital technology that permitted to carry on several complicated experiments and unify efforts despite the isolation. It would be hard, if not impossible, to succeed in producing effective vaccines in very short period without a digital industrialization. Moreover, many factories tend to hire robots to replace humans in order to continue their production of very important products, like masks and sanitizers, which are devoted for prevention and protection against the pandemic.

A million individuals lost their regular jobs, but they managed to survive by performing multiple tasks online. They needed just to have a cellphone or pc and good access to web in order to offer or receive all what they want. The digital economy wins to fix the disruption produced by that healthy crisis. The image below summarizes a set of new digitalized forms throughout some sectors.

Figure (07): digital suggestions for the future generation



Source: COVIDf19 IS ACCELERATING THE RI SE OF THE DIGITAL ECONOMY, BDO USA, P5

Moving to work totally online was challenging for governments due to what is called the internet traffic. The use of it significantly went up by 35% in 2020. T indicated the largest growth since 2013. Before the epidemic, the number of employees working 100% online didn't exceed 30% in USA, but the rate jumped up owing to the crisis. The age of Omni channel commerce appeared as bridge to tie digitally between consumers and their wants. The client had to command online and he/she would get goods whether through contactless method or curbside pickup.

In healthcare field, patients have relied on telemedicine to get advice or diagnosis. They had basically no need to head hospitals or private doctors' location. The pandemic era was the key period where many platforms have been established by entities and institutions. Whether in education system or work, the information was shared virtually. The students attained online courses. The meetings are being held through zoom or Google meet. In addition, many people found that period as a perfect chance to save money because of removing some excessive services and stop paying taxes.

Conclusion:

Based on what we have seen in this research paper, it is clear that the pandemic has emphasized the role of digital economy in saving the social economic and political life of

humanity. While the connection between people totally seemed over due to critical situation, digital economy took initiative ways to give hope to societies. All people, firms and governments possessing an excellent digital economy means were able to overcome obstacles built by the coronavirus pandemic. It is sure that the digitalization of economies existed even before the crisis, but covid-19 accelerated the evolution of that system.

The ability of response to the epidemic has differed from developed to developing countries. The low-income countries have been strongly affected. Therefore, the pandemic was costing much which reflected in several bad results such as losing jobs, lack of product and expanding of the extreme poverty. Despite its weakness, the digital economy was the right available for many poor individuals to survive.

In wealthy countries, it was faster to react owing to the biggest and largest use of the digital economy. While the epidemic got higher dangerous levels, they were trying to mitigate the losses through investing in the digital economy. Everything has been transformed from traditional method to the digital one. Some companies believed that is more profitable to conduct their operations digitally even after Covid-19 went up.

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