

The impact of digitalization through new technologies in the global economy

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Abstract: Digitization has recently had a considerable impact on the global economy, considered the fourth industrial revolution, the digital economy has a great potential for solutions to the challenges facing the world. In this paper, the authors aim to make a comprehensive analysis of new trends in the digital economy that will accelerate the transformation of the world economy. The COVID-19 pandemic has accelerated the digital transition by launching new programs such as the Next Generation program launched by the European Union but also the review of monetary policy strategies by US central banks and the EURO area.

Keywords: Digitization, global economy, digital technology

Introduction

Digital technology plays an important role in transforming the world economy from changing the way we communicate with people to the way they live and work. IT solutions contribute to the creation of new jobs, the development of education, the stimulation of innovation and the improvement of daily life (Dima, I.C., Radu, V. et altera, 2011; Radu, V. and Tăbîrcă, A.I., 2019).

In order to stimulate economic growth on May 6, 2015, the European Commission adopted the Digital Single Market Strategy, and on February 19, 2020 it launched the “Digital Package” and by 2050 digital technology will transform the European economy and society into a neutral EUROPEAN UNION. climatically.

"The Commission proposes a revised EU budget of around € 1.1 trillion for the period 2021-2027 for each project to be funded by the NextGenerationEU program or the European Union budget and will have one main objective, to contribute with every euro to build a fair stubbornness that will make the transition to a “green” and digitized future as efficient as possible (Bańkowski, K., Ferdinandusse, M. et altera, 2021.).

Analytic approaches to the concepts

The digital transformation has already led to extensive changes in the business world, and we have drawn up an overview of the technologies that I believe will have the greatest impact in the future (Radu, V., 2009; Radu, V., Florea, N.V. et altera, 2020).

With the digital transformations we see great changes in the entire business world through the use of the following technologies:

- Artificial intelligence
- Virtual and augmented reality
- Blockchain
- 3D printing
- Drones
- RPA - Robotics Process Automation

Artificial intelligence

Artificial intelligence is the ability of computers to perform tasks and tasks commonly associated with humans and to improve the database by gathering information. Artificial intelligence is developing rapidly so that it will change our lives favorably by improving healthcare and ensuring better disease prevention.

It contributes to slowing down climate change, increasing efficiency in agriculture, improving production systems, artificial intelligence can also involve risks such as use for criminal purposes. "Commission President Ursula von der Leyen announced in her Policy Guidelines the adoption of a coordinated European approach to the human and ethical implications of AI, as well as a reflection process on better use of large volumes of data to support innovation" (https://ec.europa.eu/info/sites/default/files/commission-white-paper-artificial-intelligence-feb2020_ro.pdf).

Virtual and augmented reality

Augmented Reality (AR) is one of the newest technologies that is beginning to invade the IT and Business fields. The general scheme of creating augmented reality in all cases is as follows: the camera of a computer device captures an image of a real object, the software scans and identifies the resulting image, creates its virtual model, and based on it using various sensors and databases - builds a visual addition to the real object, combining the real image of the object with its visual addition on the screen of the viewing device (smart glasses, smartphones, etc.), depending on the change of the completed visual image - a digital "add-on" from changes in the characteristics of a physical object in real-time (Innocenti, A., 2017; Jolink, A. and Niesten, E., 2021).

Unlike virtual reality, which requires a complete immersion in the virtual world, augmented reality uses the physical environment around us and superimposes only on it a certain part of the virtual information, such as graphics, sounds and touch reaction.

Currently, the progress in the field of augmented reality technologies is reflected in commercial products - augmented reality glasses and headphones, equipped with voice recognition and user movements. Moreover, almost any modern smartphone or tablet can become an augmented reality device, you just need to install the appropriate application that allows you to recognize objects using both QR markers, generated points, logos, and with the help of computer vision and of facial recognition.

“The wider use of augmented reality (AR) and virtual reality (VR) in areas such as trade, health and services will add \$ 1.5 trillion to global GDP by 2030, and will transform 23 million jobs, according to PwC's "Seeing is believing" report (CECCAR Magazine).

Blockchain

Blockchain is a digital, decentralized and evenly distributed database. Blockchain technology first appeared in 1991 when Stuart Haber and W. Scott Stornetta wanted to implement a system in which documents could not be modified and was first introduced as a core technology in Bitcoin virtual currency transactions (Figure 1).

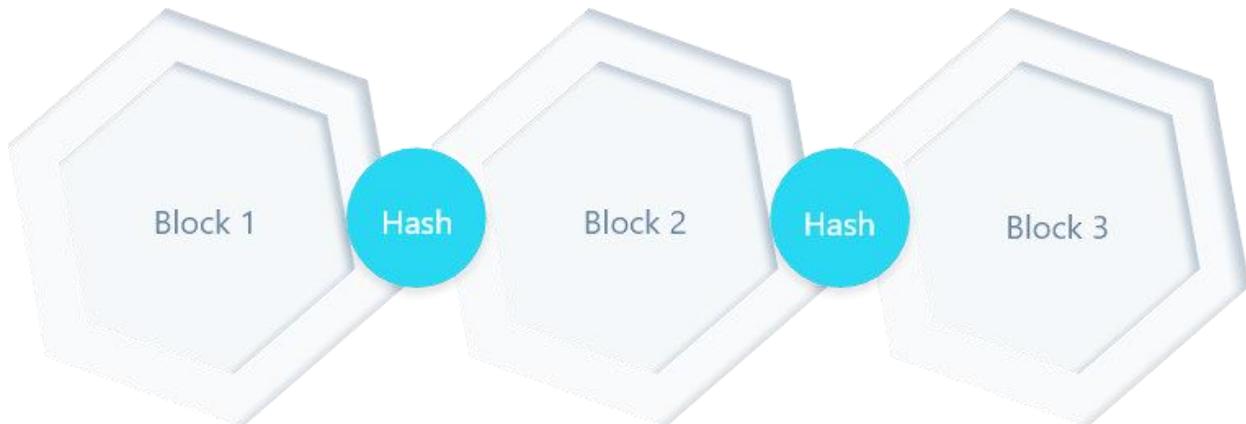


Figure 1. Distributed-ledger-technology

Source: <https://www.marcopolonetwork.com/articles/distributed-ledger-technology/>

Blockchain technology will revolutionize the market segments according to those presented by IBM:

- Blockchain - supply chain solutions
- Blockchain solutions for health and life sciences
- Blockchain for government
- Blockchain for industries

In the supply chain solution, IBM is helping supply chain leaders build resilience for the future. The "state-of-the-art supply chains with blockchain" allows the transparency of data to several partners in the supply chain, data sharing on the blockchain platform is even better because the admin decides who will be able to see the data (Sunyaev, A., 2020).

With IBM Blockchain Transparent Supply, IBM provides users with a platform that enables companies to build their own data-sharing ecosystem with trusted partners. Also, IBM through the IBM Food Trust shows us the benefits of procurement through an intelligent procedure for authorized registration of participants in food supply. The result is that it will increase the safety and freshness of food, minimize waste, and know where the ingredients that are in the finished product come from (Zheng, Z., Xie, S. et altera, 2018).

RPA - Robotics Process Automation

RPA is a business automation technology based on software robots or artificial intelligence (Figure 2). The main users of automation and robotics systems are mainly the banking industry, healthcare, production, retail, and telecommunications (Van der Aalst, W.M., Bichler, M. et altera, 2018).

In the medical industry, automation with the help of RPA robots helps to enter patient data, process requests, generate appointments and invoices, etc. For the retail industry, RAP robots help to update orders and send notifications to partners, track orders and shipments, ship products, etc. In the production industry, RPA automation helps generate invoices, customer support, helps supply chain processes, etc.



Figure 2. Robot-Process-Automation

Source: <https://www.configuratori.com/solutions/robot-process-automation/>

RPA actual use:

- Automation of banking and financial processes
- The mortgage lending process
- Customer support automation
- E-commerce marketing operation

- OCR application
- The data extraction process
- Fixed automation process

Drones' technology

Drones are those powerful industrial tools capable of running on a wide range of applications. Automatic drones are valuable robots used in many industrial sectors because they can collect data and analyze them, they are used to improve and optimize industrial processes and to increase operational efficiency (Irizarry, J., Gheisari, M. et altera, 2012; Esposito, M., Crimaldi, M. et altera, 2021).

Drones have a significant impact in all areas due to the following features:

- Interoperability - IoT devices mounted on these robots called drones can connect to other machines, devices, and people and communicate with them
- Virtualization - drones can monitor physical processes with sensors and use 3D models to inspect certain objects
- Real-time capabilities - drones can respond in real-time
- Service orientation - currently drones as a service offer several business opportunities
- Decentralization - artificial intelligence allows the drone to make independent decisions
- Modularity - drone-based solutions can be configured to act as a plug-and-play mode that can be added to processes

The fourth industrial revolution will change not only our lives but also ourselves, says Klaus Schwab. Soon, Blockchain technologies will have a strong impact on the banking sector and will reduce operating costs. The use of the "Internet" (IoT) is growing rapidly, especially in industry, energy, and transport, as well as in the construction of "smart cities" (Stokenberga, A. and Ochoa, M.C., 2021).

The European Commission for Smart Cities and Communities considers the 'smart city' to be a community of people who interact with each other through new technologies that optimize this process, helping to increase opportunities for citizens and the economy. The British Institute defines the Smart City as the effective integration of physical, digital, and human systems into an artificially created environment to provide sustainable development for future citizens (Andrei, G., Gâlmeanu, R. et altera, 2018).

Conclusions

The article deals with the expected effects of the "digital revolution" from an economic perspective. The global economy is currently facing a number of economic challenges facing economic policy. Analyzing the above technologies, we notice that almost all areas of the economy and society and therefore people's living conditions will change. Familiar forms of employment (40-hour week or permanent jobs) will give way to more flexible

forms, and lifelong learning will become necessary. A more flexible organization of work will create a new freedom for privacy, but it will also cost jobs for the low-skilled. Reforms of economic and labor legislation, as well as social systems and education, must take into account changes. As digitization is global, it will intensify international competition through growing countries and strengthen socially motivated migration through greater transparency and mobility. In the digital age, the use of innovative information technologies is leading to significant changes in the corporate world. These developments affect not only all companies in industries, but also all functions within an organization. Thus, the related challenges appear in marketing and in the communication market. At the same time, digital innovations offer new possibilities and opportunities in this area. This article focuses on the digitalization of marketing.

The forms, means and opportunities of communication are remarkably diverse, consequently, modern marketing shows in all the perfection of the world, the immeasurable opportunities that include the cycle from product creation, in parallel with the birth of the brand, its establishment and subsequent development (Tăbîrcă, A.I., Tănase, L.C. et altera, 2021). Such a pace has brought other challenges, such as an active, massive, and continuous cycle of marketing and PR activities, leading to a significant increase in financial costs, as well as an increase in risks in the management of various marketing processes, responsibilities, work dynamics, rapid action and in turn, marketing has added a new and very strong direction in the last 15 years, such as digital marketing, which offers endless opportunities for direct communication.

Consequently, one of the main challenges of modern marketing is to study better, to know your customers, to be close to them, to analyze their behavior and expectations and, most importantly, to communicate continuously with these. On the other hand, the main challenge for marketers themselves is that modern marketing does not forgive the slightest mistake of the professionals who work in it, which can lead to irreparable consequences. It requires high qualification, professionalism, maximum attention to detail, creativity, and a constant attitude towards modern trends.

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