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THE KEY GLOBAL TRENDS IN THE DEVELOPMENT OF DIGITAL TECHNOLOGIES IN 2025

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КЛЮЧОВІ СВІТОВІ ТРЕНДИ РОЗВИТКУ ЦИФРОВИХ ТЕХНОЛОГІЙ У 2025 РОЦІ

Узагальнено основні світові тренди розвитку цифрових технологій у 2025 році. До таких, зокрема, віднесено: Швидкісне підключення (6G); Хмарні обчислення; Розумні чатботи; ШІ в сфері охорони здоров'я; Безпілотні транспортні засоби; Цифрові технології в освіті (віртуальна реальність, хмарні технології, ШІ); Кібербезпека (Захист даних); Машинне навчання. Зроблено висновок, що за останні 5-10 років з'явилися інновації, які змінюють цифровий ландшафт. 2020 рік і пандемія в самому розпалі запам'ятаються прискоренням цифрової трансформації, від урядів до компаній усіх типів, які хочуть залишатися актуальними. Незважаючи на те, що основні технології залишаються ті самі — штучний інтелект, 6G тощо, ми бачимо багато з них у новому світлі. У 2020-2023 рр. більшість чудових технологій, які колись були відомі лише в концепції та тестуванні, були належним чином реалізовані. До них належать телефони 6G, підключена хмара, квантові обчислення та інші. У постпандемічному середовищі ці технології стали більш поширеними. Освіта, фінанси, автомобілебудування та інші галузі впроваджують цифрову трансформацію, щоб залишатися конкурентоспроможними та актуальними. Модернізація також дає їм переваги, яких не може отримати традиційний підхід. Але більше того, це показує, що йти в ногу з новітніми технологіями є необхідністю, а не розкішшю, для багатьох секторів економіки.

Визначено основні проблеми, з якими стикаються підприємства під час впровадження цифрових трансформацій: опір змінам, неузгодженість стратегії, реалізація – контроль програми, управління бюджетом і обмеження, відсутність аналізу даних, ресурси та можливості. Запропоновано підхід для розв'язання цих проблем на основі використання чотирьох принципів управління, що дозволять адаптувати всіх до широкомасштабних трансформацій із безперервною стратегією та моделлю реалізації.

Зроблено висновок, що технологія є потужним інструментом, але, незважаючи на її здатність сприяти спілкуванню та з'єднанню, технологія не може замінити людське судження та не може замінити багатство взаємодії

віч-на-віч. Отже, оскільки ми все більше покладаємося на цифрові інструменти, важливо надавати пріоритет зв'язкам у реальному світі та розвитку навичок критичного мислення та міцних соціальних зв'язків.

Summary. *The key global trends in the development of digital technologies in 2025 are summarized. These include, in particular: High-speed connection (6G); Cloud computing; Smart chatbots; AI in the field of Health care; Unmanned vehicles; Digital technologies in education (virtual reality, cloud technologies, AI); Cybersecurity (Data protection); Machine learning. It is concluded that over the past 5-10 years, innovations have appeared that are changing the digital landscape. 2020 and the Covid pandemic period will be remembered for the acceleration of digital transformation, from governments to companies of all types who want to stay relevant. Although the core technologies remain the same — artificial intelligence, 6G, etc. — we see many of them in a new light. In 2020-2023, most of the great technologies that were once known only in concept and testing have been properly implemented. These include 6G phones, connected cloud, quantum computing, and more. In the post-pandemic environment, these technologies have become more common. Education, finance, automotive and other industries are implementing digital transformation to stay competitive and relevant. Modernization also gives them advantages that the traditional approach cannot. But more than that, it shows that keeping up with the latest technology is a necessity, not a luxury, for many sectors of the economy.*

It is concluded that a technology is a powerful tool, but in spite of it's ability to facilitate communication and connection technology is not a substitute for human judgement and it can't replace the richness of face-to-face interactions. So as we become increasingly reliant on digital tools, it's important to prioritise real-world connections and developing critical thinking skills and strong social bonds. The development and implementation of new technologies raise important ethical matters. Issues like privacy, data security, and the impact of automation on the workforce require careful consideration. Open discussions and collaboration between diverse

stakeholders are essential to ensuring the responsible and ethical development of technology.

Ключові слова: *цифрові технології, цифрові трансформації, світові тренди, розвиток, економіка, конкурентоспроможність.*
Keywords: *digital technologies, digital transformations, world trends, development, economy, competitiveness.*

Introduction. Digitization is thoroughly transforming our wellbeing into something that seemed unbelievable in the past. Besides, improvings are not only changing our personal lives. Businesses also take what they can when it comes to technological and other advantages. Since the beginning of the pandemic, they have had to use digital technologies much more actively to stay properly in the new epic. The digital transformation brought better customer service, more productive staff, automatization and increased efficiency as the benefits for business. The speed of technological development in combination with the need for digitization, navigation in management, achieving profit from investments pose many problematic questions to many organizations. To keep competitiveness, it's important to identify and understand key trends and challenges in order to leverage them to your business advantage.

The covid pandemic through the quarantines and social distancing that came with it, has accelerated the transition to the digital economy, choosing which businesses survive and which don't. Where contactless and social distancing are the norm, companies that embrace digital transformation at an early stage are better positioned and have successfully weathered the economic challenges brought on by the pandemic. First, companies that had already arranged remote work for a certain part of their employees before the pandemic did not have to work as long as non-adopters or late adopters, who often had to rush to set up remote work in exchange for costly mistakes. Thus, companies that have been convinced of the benefits of cashless transactions, especially with the help of mobile phones, have not only been

able to withstand the pandemic, but also thrived in it. By moving early to digital payments, they were best able to weather the harsh economic effects of the pandemic. Post-covid digital transformation is on the way, and business survivors have learned valuable lessons. From digital medicare solutions, virtual classrooms, virtual events, streaming and consumption of digital content to multi-channel and remote working, the full digitization is realy moving fast.

An important trend for organizations looking to expand their digital capabilities is diversification into new markets, which requires the creation of new business models, such as for banking and insurance. Organizations must explore new and innovative avenues for growth as technology fundamentally transforms (or disrupts) future business models, existing products and services, and internal operations. Another important trend is the use of global technological supply chains for new skills or cost-effectiveness, which is increasingly important for competitiveness. More than half of successful international organizations include outsourcers in their business model and have adopted digital transformation as a strategic plan, and have a single enterprise platform such as ERP3 or SAP/4HANA. In addition, there is an increased focus on financial planning and the need to maximize operational efficiency, reduce labor costs and leverage data and analytics.

Analysis of recent research and publications. The IT sector is becoming increasingly important for the economy in most countries that prioritize its development. Since 2017, the share of IT services exports in the global economy has grown significantly. For such countries as Ukraine and India, it has become one of the strategic industries, accounting for almost 5% of GDP and up to half of all exports of services.[1] IT is not limited to the world of computer technology. It permeates all areas of the economy, from industry and agriculture to health care and commerce. The application of IT innovations in non-computer industries opens up opportunities for improving operations and solving complex problems, which leads to general economic progress and development (Table 1).

Table 1. Digital technologies used in various sectors of the economy

Sectors of the economy	Digital technologies used
Industry and production	Automation of production processes (robots, platforms) IoT for monitoring and optimization (digital twins) 3D printing Drones
Agriculture	Sensors for crop monitoring Analytics for process optimization Development of agricultural applications Platforms
Education	Augmented and virtual reality (AR, XR, VR) Robots Machine Learning (Chat GPT, etc.)
Health care	Electronic medical records Robotic systems in pharmaceuticals Brain-Computer Interfaces
Finance and the banking system	Electronic payments Mobile applications Blockchain Cloud computing cobots
Transport and Logistics	GPS systems Systems for monitoring the serviceability and technical characteristics of vehicles Unmanned vehicles
Trade	E-commerce E-custom E-delivery POS systems

Source: developed by the authors according to [1-12]

Given the importance of digitization in the economy, **the aim of this article** is to substantiate and summarize the latest world trends in digital technologies.

World trends in the development of digital technologies are constantly researched and discussed at various international events - forums, conferences, etc. Among the leading organizations that annually publish these trends are Gartner, WEF, Deloitte, Boston Consulting Group and others. Each of the trends addresses one or more key business areas: protecting and preserving past and future

investments, developing the right solutions for the right stakeholders at the right time, and delivering value to a changing environment for both internal and external customers. Thus, the Gartner company highlights the following trends for 2024: AI for trust, risk and security management; Continuous Threat Detection Management; Sustainable technologies; Platform engineering; Developments are supplemented by AI; Industry cloud platforms; Intelligent Applications; Democratized generative AI; Added connected workforce; Machine clients [2]. The World Economic Forum (WEF) considers the leading trends this year: Digital professions; Impact of AI; Impact of global climate change; Digitization of healthcare systems; Development of digital platforms; Virtual and augmented reality; Cyber security technologies and skills (blockchain, etc.); Energy efficiency [3]. The Boston Consulting Group (BCG) in the study of trends in the digital economy focuses mainly on: Cloud computing; Intelligent chatbots; AI in the field of health care; Unmanned vehicles; Digital technologies in education (virtual reality, cloud technologies, AI); Green course; Data protection; Machine learning [4].

Summarizing these and other scientific studies by leading organizations and scientists, ten main trends in the development of digital technologies in the world can be identified:

1. High-speed connection.

Nowadays there are many technologies which cannot be used to their whole power due to limited connectivity. As an example, autonomous vehicles have to constantly interact with other vehicles on the road and they also need exchange a lot of information at the same time. Thus, they need faster connections than are currently accessible. Already this year, we can expect to solve these problems, because the center of attention is on the two largest trends of digitization - 6G and Wi-Fi 8 in the world. As for Ukraine the fifth generation network (5G) is forecasted to either oust or expand 4G LTE communication, which works today to increase mobile communication. An exponential raise in speed is on offer, faster than the previous generation could ever hope to achieve. However, there is more to 5G than fast upload, download and streaming speeds. 5G also proposes low latency, facilitates

dense deployment, and improves cellular technology at all. This will make incorporating the Internet of Things (IoT) and cloud systems into your workflow easier and more affordable. In 2025 this new connection hope to be implemented in select cities of Ukraine. Although this is part of the implementation test, some areas may now rely on the new connection. By the end of 2019, manufacturers have started building 5G chips into phones and other compatible devices. From 2020 to 2021, 5G phones have become ubiquitous in the market. 5G phones should become standard offerings among mobile phone vendors. In addition to the deployment of 5G devices, there is also constant improvement in removing the limitations of the technology. At this time there is no 5G in Ukraine, although, for example, 6G is already working in China, and 10G is also being developed [5]. The Wi-Fi Alliance, the organization responsible for creating standards in Wi-Fi technology, has changed the labeling scheme to something less technical. Now this also applies to previous versions. So instead of 802.11n, 802.11ac and 802.11ax, they called Wi-Fi 4, Wi-Fi 5 and Wi-Fi 6. However, from a more technical perspective, Wi-Fi 7 brings many improvements. It is capable of providing much higher download speeds than the current one offers - at least 4 times faster. In addition, it can also support more devices. This is important because the Wi-Fi network is predicted to grow approximately fivefold in the next few years. This load exceeds what Wi-Fi 7 can currently handle. Thus, the new Wi-Fi technology will preserve our connection both in terms of speed and the amount of data consumed. First introduced in 2022 Wi-Fi 8 is currently supported by some flagship products from major companies. Among them are iPhone 15 and Samsung Galaxy S24. 6G network coverage Faster connection.

2 - *Multi-cloud or connected cloud solutions*

Due to the continuous development of cloud technologies, the number of organizations that will adopt them will only increase. Proof of this is the steady growth in sales of cloud management software. This growth means several things. One of them is that the cloud will be more closely monitored. Companies will realize that they don't want to become overly reliant on a single cloud provider. In addition, the type of "adoption" should be considered. Many organizations will find that

moving to a fully public or fully private cloud is not the optimal path. Each has its pros and cons, and companies may simply need what one offers and the other doesn't. With this in mind, the number of users who will immerse themselves in multi-cloud will increase. This means that the company's workloads will run in an environment that consists of a combination of public and private cloud. After all, business requirements for the cloud are changing rapidly. These include security, application deployment, network storage, cloud storage, and more. Meeting them with a pure public or private cloud can be a challenge. Multicloud can be just the solution to this problem. As of 2020, more software vendors are offering this option. Many big players now offer private and public clouds as part of their services. The top five vendors include Amazon Web Service (AWS), Microsoft Azure, IBM, Google, and Alibaba. Not surprisingly, most of them offer ways—directly or indirectly—to leverage a multicloud architecture. IBM has Multicloud Manager [6], Google offers Anthos [7], and Alibaba Cloud [8] provides several tools to facilitate multicloud management. Azure and AWS, on the other hand, offer users virtual machines to connect cloud services to their workstations. Most Popular Cloud Management Software: IBM Cloud Orchestrator is a leading cloud management solution that is easy to use, yet powerful. Apache CloudStack is a widely used open source cloud management tool with extensive scalability and integration. Wrike is an extension for Adobe Creative Cloud, making this cloud-based management and project management platform suitable for office and distributed workgroups. Symantec Web & Cloud Security is a reliable cloud management software that provides a high level of security for any device. AppFormix - Monitors and automates the cloud applications used by companies.

3. Use of blockchain

Blockchain has been promoted for quite some time, but there are still many problems with its usability. Specifically, a combination of everyone who wants to use it but doesn't have a standard way to do it. Currently, the solution being developed to solve this problem is to create a plug-and-play version. Blockchain will therefore be easy for most people to understand, deploy and use. Being closely related to

cryptocurrency, Blockchain is also one of the most innovative areas of digital transformation in financial services. Its transparency provides a virtually foolproof security measure that can change the way payment transactions are made. However, as great as it is, Blockchain is actually breaking away from its roots. It's still incredible technology for cryptocurrency, but more use cases are emerging. These include areas such as asset or real estate management, healthcare, intellectual property, supply chain management, food safety and voting systems. Blockchain enhances supply chain efficiency and transparency, ensures the authenticity of products, improves record-keeping in healthcare. It also could enhance voting system security and fosters greater trust in democratic processes. Companies are developing a way to make the technology available to everyone in such a way as Blockchain-as-a-Service platform. Alibaba, IBM, Samsung and other global players are also following suit.

4. Increased investment in machine learning (ML) and artificial intelligence (AI)

Companies generate a bulk of data every day, and many experts constantly emphasize its importance. However, many argue that we use only 1% of the data at our disposal. This is despite the fact that there is a lot of good data analysis software on the market. This is unfortunate because data-driven decision making is one of the key elements of building a successful business. Useful information is necessary for developing correct solutions to problems. Data is also very valuable for turning information into knowledge, optimizing workloads, and more. For these reasons, many companies are investing in the development of tools to accurately process huge amounts of data in real time. One way to do this is through machine learning (ML) and artificial intelligence (AI). These two technologies will be integrated into services, infrastructures and applications that can enhance data processing. Three main factors make ML and AI great force multipliers when it comes to data analysis. The first is the speed at which AI can process massive amounts of data, no matter how complex. Next is the way in which ML can automate many process-related tasks. And third is the fact that AI and ML are getting better at what they do with each iteration. Improvements in computing power are also encouraging digital leaders

to invest more in this trend. There is also another thing besides the above mentioned, but connected to them. It is Brain-Computer Interfaces - devices allow direct communication between the human brain and computers. In 2025, we probably will see early applications of such a devices in fields like prosthetic control, rehabilitation, and augmented reality experiences.

5. Edge Computing

Although cloud adoption is strong, it has its drawbacks. For example, the Internet of Things (IoT) is a technology that proves that relying on one central cloud platform can be problematic. Our collection of IoT statistics shows the huge growth potential of this industry. For example, Zion Market Research expects the global value of IoT Healthcare to reach US$140 billion by 2024 [9]. With so much net worth, IoT is one of the most influential digital transformation trends in healthcare. But if this becomes clear and the network infrastructure cannot adapt, all sorts of logistical problems will arise. These include security issues, more frequent downtime and delays. This is because users are at the edge of the network. This means that with each transaction, you must first go through the central platform and then return to the device. This is where peripheral computing shines. By placing the required data closer to the edge where the users are, latency issues are reduced. This will also solve the other problems mentioned. In the next couple of years, it will become a compelling solution. The spread of 6G will also lead to exponential growth in edge computing. More devices will be deployed at the edge and sensors will be everywhere. The development of more efficient and powerful lithium-sulphur or solid-state batteries in 2025 could significantly improve the performance of electric vehicles, accelerating the transition towards a more sustainable transportation system. Autonomous vehicles, smart cities and more will also require new infrastructure. Thus, we can expect more efforts in the development of peripheral computing from large companies. In 2024, the market value of peripheral computing is expected to exceed 9 billion US dollars [10].

6. Smart chatbots

The development of chatbots is closely related to the current level of machine learning and natural language processing. These areas have quiet developed over the past several years. We've often use smarter chatbots that are better at conversations and other tasks. They still continue increasing their level to natural discussion with human becoming one of the main trends in digital transformation in the retail and banking activities. Conversational assistants, lead generators, and 24/7 availability are just a few of the ways chatbots are helping e-commerce and other businesses. Of course, their use goes far beyond the retail and banking fields. Some of the most popular chatbots, Siri and Google Assistant work great as virtual assistants for consumers. Companies of all sizes and different spheres are using them to improve the customer experience. This technology is also well known in social networks. Big players are taking decisive action to significantly improve this innovation. Take, for example, MS Conversational AI which performs on a platform that allows robots to perceive more correctly. It also aims to improve chatbots to the level where they can identify the nuances of emotions and adapt to them. In addition, developing companies aims to empower their conversational bots to have complex discussions.

7. Fully autonomous vehicle

The rapid development of technology, as well as the expansion of communication in the form of the 5G and 6G networks, has caused a disruptive transition in the automotive industry. This is because customers also want modernization. They expect the industry to meet their expectations and needs. Customers love seamless connectivity combined with the most comfortable driving experience. The result is that the big players are turning their attention to connected vehicles. This is perhaps one of the most ambitious digital transformation trends in the automotive industry in a long time. One of the prerequisites for large-scale adoption of autonomous vehicles is rapid connectivity. This is why the boom in unmanned vehicles can be attributed primarily to the global deployment of the 6G network. AI, another requirement for said technology, is also experiencing a series of breakthroughs. Perhaps the most prominent icon of this innovation is Elon Musk, CEO of Tesla and other promising startups. However, Tesla is not moving towards

this innovation alone. The race for the best fully autonomous car is now underway between many well-known companies. The most important characteristics are safety, range without recharging and price.

8. AI and RPA for Insurance

The insurance industry has traditionally been slow when it comes to innovation or adoption. This is understandable given the number of regulations they have to follow and the risks they have to bear. But over the past few years, the industry seems to be gradually embracing changes in technology. Major insurance companies are investing heavily in insurance technology (InsurTech) to compete with other service providers in the industry. In fact, according to CB Insights, InsurTech funding has grown significantly by 60% in the US. And in Asia - it has tripled. [11] The number is impressive, and there is a reason for it. Insurers are investing in technology because of the lack of qualified personnel. In the US, only 2% of university graduates consider working in the insurance industry. One of the trends of digital transformation in the insurance industry is the use of artificial intelligence and robotic process automation (RPA). AI and RPA can help insurance companies run smoothly and make their processes more efficient. Leading enterprises have already started using these technologies. For example, Tyche has deployed an AI-powered claims probability model in its underwriting business. This initiative aims to accurately identify associated risks and achieve higher returns. Lemonade Insurance, on the other hand, uses artificial intelligence as well as behavioral economics as a central element. AI and RPA certainly offer a lot of help to insurance companies. The deployment of these technologies can lead to improved underwriting and reduced malicious activity in payment systems, etc. AI or ML can help identify billing anomalies. They can also find flaws in policies, make more personalized offers, come up with reasonable prices, expedite claims triage, and more. As such, we can predict that the deployment of AI and RPA will be one of the hottest digital transformation trends in insurance in 2025 and beyond.

9. Strengthening data protection

Cybersecurity continues to be a major external concern for companies in all industries and individuals around the world. Every year, the number of cybercriminals trying to break into computers is increasing. And there have been a number of horrific data breaches in recent years. Due to the data privacy crisis and other similar issues, governments have become more cautious. Yes, the EU has the General Data Protection Regulation (GDPR), which entered into force in 2018. Its aim is to establish a uniform data security law for all EU members. In the US, the requirements for control over technology companies and data protection are also increasing. On July 26, 2023, the Securities and Exchange Commission (SEC) adopted a final rule designed to expand and standardize disclosures regarding cybersecurity risk management, incident management, and reporting: "Disclose material cybersecurity incidents on Form 8-K within four business days of identifying incident as material, and disclose any material updates on an ongoing basis."[12] The new rule imposes additional disclosure requirements on reporting U.S. issuers and foreign private issuers, including all publicly traded companies USA (public companies). In the UK, the Online Safety and Security Act (OSB) was passed in November 2023 to regulate online content, including social media and large tech companies. With these laws in place, we're seeing more companies finally take data security more seriously.

10. AR, XR & VR for Education

Businesses and consumers are not the only sectors enjoying the rapid advancement of technology. There are also different trends in digital transformation in education. One of the newest among them is the integration of Augmented Reality (AR), Augmented Reality (XR), and Virtual Reality (VR). Augmented, augmented and virtual reality can bring life to life in education. They can make learning more interesting, informative and exciting. These technologies can revolutionize learning. Therefore, it is not surprising that large companies are paying attention to this trend. There is already a requisite number of VR/AR/XR related services for education. These include Google Expedition, Unimersiv, Lifeliqe and Cospaces, among others.

To take full advantage of any of these trends, business leaders must first understand the challenges their organizations face. There are external factors that influence large-scale technological transformations. Organizations are facing record cuts due to the current economic climate and increased use of AI. The growing use of artificial intelligence is driving investment in this area, with the largest companies spending $32 billion in just 3 months of 2023, and cloud-related spending will grow even more in 2024 [13]. This points to the need for better data-driven decision-making, multidisciplinary teams, including cross-collaboration with external organizations, to reimagine customer and employee experiences. These key challenges, disrupting large-scale technological transformations, can be seen as opportunities for growth and innovation. By meeting these challenges, organizations can become stronger and more resilient than ever before. We can identify six key challenges that organizations face when trying to transform the technologies they use on a large scale:

1) Resistance to change. Resistance to change comes in two forms: organizational resistance - caused by traditional thinking and conflicting interests between different functions, and human resistance - changes are uncomfortable and create uncertainty, which causes employee resistance.

2) Strategy inconsistency. Large-scale technological transformation often leads to significant organizational change, but organizations often overlook the importance of aligning its implementation with the overall strategy. Instead, they tend to operate in isolation, resulting in misalignment with the organization's overall strategy.

3) Implementation – Control of the program. Achieving successful implementation requires finding the right balance between pace, tools and methodology, especially when undertaking a large-scale technological transformation.

4) Budget management and restrictions. The costs of large-scale technological transformation are significant and often underestimated, highlighting the need for more effective assessment and management.

5) Lack of data analysis. An effective data analysis and analytics function can enable organizations to move from reactive to proactive decision-making, enabling them to anticipate and respond to market changes. This can lead to benefits such as the ability to predict future trends, simulate different scenarios, and re-strategize the overall roadmap as new information becomes available.

6) Resources and opportunities. Large-scale technological transformations are complex and volatile, so success requires expertise. This requires collaboration to facilitate alignment between strategy and business model. However, a lack of talent can slow down the transformation process, and in extreme cases, lead to its failure.

These challenges of technological transformation can be solved by applying four guiding principles that should be key during large-scale transformations. The first principle is the implementation of transformations to achieve both operational and technological business growth. Readiness for change should be reviewed regularly throughout the program with the end goal in mind. The second principle is to set yourself up for success through leadership involvement and support. Leaders must support transformation. It makes sense to appoint a Chief Transformation Officer who can bring the technology and business elements together to address some of the integration, data and functionality challenges and drive business buy-in and enthusiasm for the multi-year program. The third principle is to know your purpose, clearly understanding where the transformation will take your organization. The importance of having a transformation strategy cannot be overstated. The fourth principle is to have a flexible resource request mechanism. It is important to ensure the presence of qualified teams throughout the program at various stages of its implementation. It is necessary to create teams that can improve skills and transfer knowledge, with the need for flexibility and agreement in advance. This will enable everyone to adapt to large-scale transformations with a continuous strategy and delivery model.

Over the last 5-10 years, there have been innovations that are changing the digital landscape. 2020 and the pandemic in full swing will be remembered for the acceleration of digital transformation, from governments to companies of all types

who want to stay relevant. Although the core technologies remain the same — artificial intelligence, 5G, etc. — we see many of them in a new light. In 2020-2023, most of the great technologies that were once known only in concept and testing have been properly implemented. These include 5G phones, connected cloud, quantum computing and more. In the post-pandemic environment, these technologies have become more common. Education, finance, automotive and other industries are implementing digital transformation to stay competitive and relevant. Modernization also gives them advantages that the traditional approach cannot. But more than that, it shows that keeping up with the latest technology is a necessity, not a luxury, for many sectors of the economy.

Conclusions. Those who started digital transformation before the covid pandemic or in its early stages have better weathered the harsh economic consequences of the pandemic. This is clearly seen in the case of online businesses that have enabled cashless transactions through desktop or mobile POS applications. The rush to weather the storm or simply survive the pandemic has pushed businesses to digitize, accelerating the transition to a fully digital economy.

2022 saw great progress in the development and deployment of 6G and Wi-Fi 8. 6G will replace or augment LTE connections, offering better speeds and lower latency. This will power other technologies such as self-driving cars, wearable devices and smart cities in the future With the rapid global adoption of 6G, consumers can now choose mobile phone brands that offer 6G. Wi-Fi 8 is much faster and can serve many more devices than Wi-Fi 6. However, companies will be able to upgrade their use of the Internet for cloud services, IoT, and more.

The use of cloud technologies is constantly growing. This makes companies aware of the limitations of fully adopting a public or fully private cloud. Multi-cloud or connected cloud is becoming popular among companies from various sectors. The connected cloud allows companies to adapt to rapidly changing business requirements, including cloud storage, security and networking.

Developers are turning Blockchain into a plug-and-play technology, so expect more ways to use it beyond cryptocurrency. Other uses for Blockchain are emerging,

such as food safety, real estate management, supply chain streamlining, voting system security and intellectual property. World leaders are looking for a way to democratize Blockchain. They do this by offering it as a subscription-based Blockchain-as-a-Service platform.

Many organizations are looking to integrate artificial intelligence and machine learning into data analytics to significantly improve its effectiveness. By 2025, about 3% of the total amount of data will be available to more companies thanks to artificial intelligence and machine learning.

Edge computing can solve the problem of the lack of high-speed data processing in cloud computing for devices in peripheral networks. So, this might be something to pay attention to in order to prepare your operations in the future. 6G, autonomous vehicles, smart cities, the Internet of Things and other innovations will require the new infrastructure that edge computing brings. Edge computing will solve the logistical challenges caused by the slower response of cloud computing data, including latency, security, and downtime.

The development of chatbots is closely related to the modern progress of machine learning. Thus, their promotion also means the progress of this trend. Chatbots are integrated into many industries, including e-commerce and customer service. 2024 is the year where dramatic improvements can impact this trend. This is thanks to the efforts of big companies like Microsoft Conversational AI.

The deployment of the 6G network and the radical improvement of AI technology have contributed to the development of fully autonomous vehicles. Fully autonomous technology has already been completed, the race for the title of the best self-driving car based on the set of the most important characteristics continues.

Many insurance companies are investing in InsurTech to compete with other service providers. One of the important reasons why insurers invest in technology is the lack of skilled personnel. The insurance industry is using artificial intelligence and RPA to make their processes more efficient. These technologies can also allow them to find gaps in policies, triage claims faster, help identify billing anomalies, and more.

Several important developments have forced governments, companies and individuals to be more careful with their data. Over the past few years, the government has introduced new data security laws such as the well-known GDPR. Consequently, companies should be more careful about how they collect, use and store their data.

With the integration of AR, XR and VR, classroom learning can be more engaging, informative and fun. Many VR/AR/XR apps are designed for learning. The most famous among them are Google Expedition, Unimersiv, Lifeliqe and Cospaces.

When implementing digital transformations, organizations face key challenges such as: resistance to change, lack of strategy alignment, implementation – program control, budget management and constraints, lack of data analysis, resources and capabilities. An effective approach to solving these problems can be the use of the proposed four principles of management, which will allow everyone to adapt to large-scale transformations with a continuous strategy and implementation model.

Prospects for further research may be to determine the directions and advantages of using the considered global digitalization trends in the economy and society of Ukraine.

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