DIGITAL TECHNOLOGY AS A KEY TOOL FOR DIGITAL TRANSFORMATION

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The article reveals the transformative impact of the digital revolution and Industry 4.0 on the global economy. It highlights the integration of major technologies. These technologies enable data collection and analysis, automation and process optimization, innovation and quality of life. The abstract emphasizes the importance of adopting technology in all areas of business, as well as for increasing the competitiveness of the economy and improving business processes.

Keywords: digital revolution; Industry 4.0; technologies; digital transformation; digitalisation.

The digital revolution has transformed the global economy by integrating technology into productive activities and driving technological progress. Industry 4.0, a European approach based on previous industrial revolutions, is founded on technologies such as IoT, AI, big data, blockchain, robotics, virtual reality, cloud computing, and cyber-physical systems [2].

The Internet of Things (IoT) is a globally developing Internet technology consisting of small networks and uniquely identifiable things that greatly expand and simplify data collection, analysis and distribution, and facilitate interaction with each other without human intervention.

The number of businesses using IoT technologies has increased from 13% in 2014 to around 25% in 2019. And the number of devices connected to the IoT globally is projected to increase to 43 billion by 2023 [5].

IIoT (Industrial Internet of Things) is a rapidly growing segment of IoT that is useful for manufacturing and enterprise automation. It serves as the operational and technological backbone. According to Gartner analysts, the number of local IIoT platforms in industrial enterprises will increase by 30% by 2023. Leaders of global industrial IoT platforms are Microsoft, Software AG. And North America dominates the market with a 32% share in 2022, thanks to its early adoption of IIoT technologies and emergence as an innovation hub [8].

Artificial Intelligence (AI) is a term that encompasses various smart technologies capable of self-learning and creativity, with the goal of developing systems with human-like intelligence such as reasoning, generalisation, and learning from past experiences. The most significant advantage of AI is its analytical capabilities. Three main types of AI are limited/weak, strong/general, and super AI. McKinsey's technology council has identified and interpreted 14

important technology trends, assessing innovation, interest, investments, and adoption levels by organisations.

Based on the survey, it was found that the most important technology trend for 2021 was applied AI technology. The significant potential impact of applied AI is reflected in the high estimates of innovation and investment associated with this technology.

Robots are computer-controlled devices that mimic or enhance human actions and are used in various industries, including manufacturing, medicine, security, logistics, transportation, construction, education, and entertainment. They automate processes, improve efficiency and safety, and perform complex tasks that are difficult or impossible to perform manually. The use of robots is becoming more widespread, and it is an important trend in the development of industry and the economy.

The International Federation of Robotics (IFR) reports that 373,000 industrial robots were sold worldwide in 2020. And also more than 2.7 million industrial robots were in use worldwide at the end of 2020. The global industrial robot fleet is expected to reach 3.3 million units by 2022.

The automotive industry leads in the use of industrial robots with a share of 38%, followed by electronics and electrical engineering (15%), food processing (8%), other industies are less robotised.

Asia remains the largest market for industrial robots, led by China (over 140,000 robots), Japan (over 30,000), and South Korea (over 24,000).

Cloud Computing is the technology of providing computing resources such as processing power, network resources, storage and applications over the Internet. Cloud systems can be classified by delivery model (Infrastructure as a Service - IaaS, Platform as a Service - PaaS, Software as a Service - SaaS), deployment type (public, private, hybrid) and storage location (public, private).

The global cloud services market was worth $409.3 billion in 2022 according to Gartner and is projected to grow to $591.8 billion in 2023. IDC forecasts a compound annual growth rate of 12% for cloud infrastructure spending over the forecast period 2021-2026. AWS, Microsoft, Google Cloud and Alibaba Cloud are the biggest players in the cloud services market according to Synergy Research Group's research in 2022.

Big Data is an approach to processing and analysing large volumes of data that cannot be analysed using traditional methods. This includes three main parameters known as Big Data V's: Volume, Velocity and Variety. Big Data is widely used in areas such as marketing, finance, healthcare, science, education and transportation to make data-driven decisions and create new business models.

The big data and analytics market has grown significantly over the past few years and is currently estimated to be worth $274 billion, with a projected

revenue of $103 billion by 2027. Currently, the biggest market for big data is the US, followed by Japan and China in terms of spending.

In conclusion, various technologies such as IoT, AI, robots, cloud computing, and big data play a vital role in the digital transformation of industries. They enable data collection and analysis, process automation and optimization, new product and service creation, and enhanced quality of life. Combining these technologies can result in significant business process improvements and increased competitiveness. However, ensuring high levels of data security and staff training is essential for their effective use.

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