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INNOVATIVE TECHNOLOGIES AS A FACTOR OF ECONOMIC GROWTH

The rapid advancement of innovative technologies has become a defining feature of the modern global economy. Digitalization, artificial intelligence, automation, and data-driven solutions are transforming traditional economic systems, creating new opportunities for growth while simultaneously posing significant challenges. In this context, innovative technologies act as a key driver of economic development, influencing productivity, competitiveness, and structural changes in national and global economies.

One of the primary ways in which innovative technologies contribute to economic growth is through increasing labor productivity. The integration of automation systems, robotics, and artificial intelligence into production processes allows enterprises to optimize operations, reduce costs, and improve product quality. These improvements lead to higher efficiency and enable firms to produce more output with fewer resources. As a result, productivity growth remains one of the fundamental determinants of long-term economic development (Aghion & Howitt, 2020, 25-30). Furthermore, digital technologies enable real-time data analysis and decision-making, which enhances operational efficiency and reduces uncertainty in business processes.

Another important dimension is the role of digital transformation in business development. The emergence of digital platforms, cloud computing, and e-commerce has significantly lowered barriers to entry for businesses, especially for small and medium-sized enterprises (SMEs). Companies can now access global markets, reach wider audiences, and scale their operations more efficiently. This has intensified competition and encouraged innovation across industries. Digital ecosystems also

facilitate collaboration between firms, fostering knowledge exchange and technological advancement (Brynjolfsson & McAfee, 2017, 45-52).

Innovative technologies also play a crucial role in shaping the labor market. Automation and artificial intelligence are transforming the nature of work by replacing routine and repetitive tasks while simultaneously creating demand for new skills and occupations. Jobs related to data analysis, software development, cybersecurity, and digital marketing are becoming increasingly important. However, this transformation also leads to structural unemployment in certain sectors, requiring workers to adapt through continuous learning and reskilling. Therefore, education systems must evolve to meet the demands of the digital economy (Autor, 2015, 10-18).

Investment dynamics are also significantly influenced by technological innovation. Countries and companies that actively invest in research and development (R&D) tend to achieve higher levels of economic growth. Innovative technologies attract both domestic and foreign investment, particularly in high-tech sectors such as information technology, biotechnology, and renewable energy. Venture capital plays a key role in supporting startups and innovative enterprises, contributing to the development of new industries and economic diversification (Romer, 2018, 98-105). In addition, public-private partnerships are increasingly important in financing large-scale technological projects.

The relationship between innovative technologies and sustainable development is another critical aspect. Green technologies, renewable energy solutions, and energy-efficient systems contribute to reducing environmental impact while supporting economic growth. Digital technologies enable more effective resource management, environmental monitoring, and climate change mitigation strategies. The integration of sustainability and innovation is essential for achieving long-term economic stability and addressing global environmental challenges (OECD, 2021, 60-75).

Despite their numerous advantages, innovative technologies also present significant challenges. One of the most pressing issues is digital inequality. Access to modern technologies is unevenly distributed both within and between countries, leading to disparities in economic opportunities and social development. Bridging the digital divide requires investments in infrastructure, education, and inclusive policies aimed at ensuring equal access to digital resources.

Cybersecurity is another major concern in the digital era. As economic activities become increasingly dependent on digital systems, the risks associated with cyber threats, data breaches, and information security grow. Ensuring robust cybersecurity measures is essential for maintaining trust in digital technologies and protecting economic interests (Kshetri, 2021, 50-55). Governments and organizations must adopt comprehensive strategies to address these risks, including the development of regulatory frameworks and international cooperation.

Ethical considerations related to the use of innovative technologies, particularly artificial intelligence, are also becoming increasingly important. Issues such as data privacy, algorithmic bias, and transparency in decision-making processes raise concerns about the social implications of technological advancement. It is necessary to establish ethical standards and regulatory mechanisms that ensure the responsible use of technology while promoting innovation.

In the context of Ukraine, innovative technologies play a vital role in economic development and modernization. The IT sector has emerged as one of the leading industries, contributing significantly to export revenues and economic growth. The digitalization of public administration and the development of electronic services improve governance efficiency and transparency. Moreover, innovative technologies are crucial for post-crisis recovery and integration into the global digital economy.

Furthermore, the war conditions have accelerated the adoption of digital solutions in Ukraine, particularly in areas such as remote work, digital services, and cybersecurity. This demonstrates the resilience of the digital economy and its ability to adapt to

challenging circumstances. At the same time, it highlights the importance of continued investment in technological infrastructure and human capital.

In conclusion, innovative technologies are a powerful driver of economic growth in the modern world. They enhance productivity, stimulate business development, transform labor markets, and contribute to sustainable development. However, their effective implementation requires addressing challenges related to digital inequality, cybersecurity, and ethical concerns. A balanced approach that combines technological innovation with appropriate policies and institutional support is essential for ensuring inclusive and sustainable economic growth.

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CHALLENGES OF UNDERSTANDING TECHNICAL ENGLISH

Technical English is now an essential part of higher education and professional communication across engineering, information technology, economics, logistics, and related fields. Students encounter it in manuals, standards, research papers, software documentation, technical reports, and presentations. For this reason, understanding technical English is not an optional skill but a practical requirement for study and employment. Yet many learners find technical texts far more demanding than general