

DEVELOPMENT OF THE SMART ECONOMY AS THE MAIN SOURCE OF COMPETITIVENESS AND SUSTAINABLE DEVELOPMENT

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Abstract. The development of the smart economy is a topic of great relevance in the contemporary world, particularly in the context of rapid technological advancement and digital transformation. The smart economy is predicated upon the utilisation of sophisticated technologies, including artificial intelligence, the Internet of Things, data analytics, blockchain, and others, with the objective of optimising processes across a multitude of domains, including production, transportation, healthcare, education, energy, trade, and others. The principal advantages of the advancement of the smart economy are that the utilisation of the most recent technologies permits the automation of processes, the optimisation of resources and the enhancement of production efficiency. Those countries and companies that adopt smart technologies proactively can secure a competitive advantage in the market through innovation supported by digital solutions. The objective of this article is to conceptualise the development of the smart economy as the primary source of competitiveness and sustainability. The successful development of the smart economy requires the right management strategy, investment in innovation and education, and partnership between public authorities, the private sector and the public. The growing role of the smart economy defines it as a key factor of competitiveness and sustainability for countries and companies in the modern world. The research methodology includes the integration of different philosophical methods (axiological, systemic, synergistic) with the Agile methodology, which has made it possible to comprehensively analyse the development of the smart economy as the main source of competitiveness and sustainability. Agile methodology, as a methodology of complex adaptive systems, flexible management and innovative components, has allowed to show the practical levers of using mechanisms to ensure sustainable growth, the role of information technologies in the development of a smart economy to achieve the goals of ESG (environmental, social and corporate management) of sustainable development. Research results. The emergence and development of the smart economy as an economy of knowledge, innovation, science and progress, based on intelligent machines and information networks, platforms and tools, which is an integral part of the innovative economy, is presented; the criteria and advantages of the smart economy are defined. The directions of development of the smart economy, its potential impact on competitiveness and sustainability are identified. Among the directions of development of the smart economy, the symmetric economy is distinguished, which is based on symmetric relations between economic subjects and objects, which are the driving force of economic development. The symmetry of the economic structure is a model for the development of a smart economy, a source of economic development, a subject-centred smart economy. It turns out that the smart economy includes the development of the main trends of the latest technologies, such as artificial intelligence, the Internet of Things (IoT), blockchain and data analytics, to optimise production, manage resources and create effective business models.

Keywords: smart economy, competitiveness, sustainability, knowledge economy, innovation economy, symmetrical economy, smart economy trends.

JEL Classification: 030, 033, 038

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1. Introduction

The development of the smart economy as the main source of competitiveness and sustainability is relevant because in the modern world digital technologies are becoming a driver of economic development. The development of the smart economy reflects this trend and opens up new opportunities to increase productivity, efficiency and innovation in all areas of activity. The ability to use modern technologies and create intelligent solutions is a competitive advantage in the marketplace. The development of the smart economy helps companies and countries to increase their competitiveness by offering new products and services, optimised processes and effective management. Smart economy contributes to the creation of sustainable economic models that ensure the standard of living of current and future generations without harming the environment and resources. This is important to ensure stability and sustainable development for the future. Population growth, climate change, social and economic challenges require new approaches to economic development. A smart economy opens up ways to solve these problems and to seize new opportunities for sustainable development. Therefore, the development of a smart economy is a key task for many countries and companies, and the study of this topic helps to understand and solve the complex challenges of economic development in the modern world. This means reducing the use of resources, reducing emissions into the atmosphere and using energy rationally, which helps to preserve the environment and maintain environmental sustainability. The rapid development of technologies creates new opportunities for the creation and development of new business models and products. A smart economy requires the development of smart infrastructure, including fast access to the Internet, the development of digital platforms and services, and the support of innovative industries that contribute to the development and growth of businesses. The smart economy offers companies and countries access to new markets and opportunities through the expansion of global networks of cooperation and trade. This makes it possible to increase the competitiveness and stability of the economy in the context of globalisation. The potential impact of the smart economy on competitiveness and sustainability includes increasing productivity, reducing costs, improving the quality of products and services, attracting investment and stimulating innovative development. Such developments contribute to sustainable economic growth and raising the living standards of the population.

2. Analysis of the Latest Research and Publications

The works of Oleksenko R. (*Homo Economicus in Futures Studies*, 2017) and Oleksenko R., Fedorova L. (*Homo Economicus as the Basis of "Asgardia" Nation State in Space: Perspective of Educational Technologies*, 2017) are central to this study, describing the development of the concept of "Homo Economicus" from a societal subject to a cultural ideal crucial for civilisation. Similarly, Brynjolfsson and McAfee's, "The Second Machine Age" provides insights into how digital technologies such as AI and robotics are impacting economies, labour markets and societies. Diamandis and Kotler's "Bold: How to Go Big, Create Wealth and Impact the World" emphasises the importance of technological innovation and bold ideas in fostering a smart economy and global impact.

The work of Kutsyk, Shevchyk, and Perepolkina (2021) offers strategies that empower entrepreneurs and leaders to make significant progress and global contributions. In addition, Nambisan, Zahra, and Luo (2019) highlight the transformative potential of digital platforms and ecosystems to create a smart economy, while Stiglitz (2012) explores how modern technologies shape employment, income distribution, and economic development. Kohli and Melville's (2019) research on the role of digital innovation in sustainable development, and Kelly's (2018) exploration of technologies shaping the future, further enrich the understanding of the smart economy and its implications for society.

3. Methodology

The article uses the integration of different philosophical methods (axiological, systemic, synergistic) with the Agile methodology, which allowed a comprehensive analysis of the development of the smart economy as the main source of competitiveness and sustainability. Agile methodology, as a methodology of complex adaptive systems, flexible management and innovative components, has allowed to show the practical levers of using mechanisms to ensure sustainable growth, the role of information technologies in the development of a smart economy to achieve the ESG (environmental, social and corporate management) goals of sustainable development. The application of agile methods contributed to a deep and flexible analysis of the issues related to big data, innovative opportunities to manage the global challenges of new problems offered by creative digital technologies (artificial intelligence, big data, robotics, biotechnology, etc.). This approach allowed to reconcile a variety of disparate empirical

data, transforming them into a single framework for understanding the dynamic landscape of the smart economy as a driver of economic development. This methodology enabled to navigate the complex field of big data, a field that has the potential to predict and shape the trajectory of a smart economy that aims to develop environmentally sustainable production. A flexible methodology can help address the challenges of big data and data mining, providing iterative and adaptive approaches to analysing the smart economy as a complex economic and social phenomenon. The integration of philosophical methods together with agile practices offers a holistic approach to understanding and designing a smart economy that stimulates the development of innovative entrepreneurship, supporting start-ups and small businesses. The methodology for analysing the smart economy is a systematic approach to studying and understanding the development and functioning of the economy, based on the use of the latest technologies and information tools to increase productivity, efficiency and competitiveness. The main principles of the smart economy analysis methodology include the following: 1) increase in the use of digital technologies in all sectors of the economy to automate processes and optimise production; 2) collection, analysis and use of Big Data to identify trends, forecast market development and make strategic decisions; 3) Internet of Things (IoT), which includes the use of connected devices to collect data and interact between objects, which helps to optimise management and production; 4) use of artificial intelligence (AI) and machine learning (ML) algorithms for data analysis, process automation and decision-making; 5) ensuring the security and reliability of blockchain transactions through decentralisation and distributed information storage. The Smart Economy analysis methodology aims at understanding and using modern technologies to ensure sustainable and innovative economic development, and involves the use of a combination of different data analysis methods, such as statistical methods, machine learning, econometrics, etc. Socio-economic modelling takes into account the relationships between economic and social factors, such as modelling the impact of economic changes on employment, living standards, social stability, etc. Surveys and expert assessments are used to gather information on public and professional attitudes to new technologies and their impact on the economy and society. The development of economic models and the analysis of possible scenarios for the development of the smart economy is possible on the basis of various parameters and conditions, which makes it possible to predict the possible consequences of the introduction of new technologies. The study of interrelations between different entities and components of the smart economy is carried out using methods of

network analysis, such as the analysis of social networks, technological networks, supply chains, etc. These methods can be used alone or in combination with other methods to obtain a more complete and objective understanding of the smart economy.

4. Results and Discussions

4.1. Formation and Development of the Smart Economy as an Economy of Knowledge, Innovation, Science, and Progress

It makes the unity of subject and object, subjectivity and objectivity, relative subject and relative object concrete and microscopic. Smart economy enhances the creativity of the subject, the harmony of subject-object relations, and the symmetry and unity of the subject as the centre and the object, and the relative subject as the centre and the relative object. The smart economy is an outgrowth of the knowledge economy, which is a form of economy in which knowledge prevails over the factors of production, and the knowledge industry becomes a leading branch of the social economy. Creativity, innovation, creativeness and entrepreneurship ensure the optimal allocation and regeneration of resources, which is the model of economic development and business in the knowledge economy. The knowledge economy is an economic form in which knowledge dominates the factors of production and the knowledge industry becomes the leading sector of the social economy. Creativity-innovation-creativeness-entrepreneurship ensures the optimal allocation and regeneration of resources, which is a model of economic development and a business model of the smart economy. The smart economy, since the smart economy is based on intelligent machines and information networks, platforms and tools, is an integral part of the innovation economy. It emphasises the status and role of intelligent machines and information networks in the smart economy and embodies a form of knowledge economy and information economy. The economic form of the smart economy is more comprehensive, systemic, and functional, transforming the knowledge economy into a new economic form. The innovation economy as a type of smart economy is an economic system that actively stimulates and promotes innovation in all areas of production and services. In such an economy, great emphasis is placed on the development of new ideas, technologies, products and processes that contribute to the productivity, competitiveness and quality of life of society. The main characteristics of the innovation economy are: 1) stimulating research and development in various fields, including science, technology, medicine, energy, and so forth; 2) supporting innovative enterprises and start-ups

through financial assistance, tax breaks, grants, and other measures; 3) developing an innovative ecosystem that brings together scientists, entrepreneurs, investors, government agencies, and other stakeholders; and 4) creating a favourable climate for commercialising and bringing new technologies and innovative products to market. An innovative economy promotes the creation of competitive industries and companies, which contributes to stable and sustainable economic development.

The smart economy consists of the national innovation system and the national entrepreneurship system, which translate the innovative impulse from the growth mode into an economic form. The smart economy is a sublimation of the existing knowledge economy, which transforms the knowledge economy into a real economic form. The new growth mode of the smart economy is the operation of knowledge. The smart economy, which is dominated by information technologies, innovative knowledge and creative industries, is a leading industry and a way of economic growth. Innovation – creativeness-entrepreneurship optimises the distribution and regeneration of

knowledge economy resources and transforms them into a smart economy, which is a model of economic development. The development of the smart economy is becoming a key factor in achieving the competitiveness and sustainability of modern economies, as it promotes the efficient use of resources, stimulates innovation and improves the quality of life of citizens. The development of a smart economy, based on the use of information technologies and digitalisation, is defined as one of the main factors contributing to the competitiveness and sustainability of modern economies. Consider the criteria and benefits of a smart economy, which represent the key aspects of this process.

A smart economy is an economy that uses modern information and communication technologies (ICT), artificial intelligence, data analytics, the Internet of Things (IoT) and other innovative means to increase the efficiency, productivity and competitiveness of the economy, with the aim of creating intelligent systems that connect different sectors of the economy and contribute to sustainable development. The emergence of the smart economy is a natural historical process

Table 1

Criteria and advantages of smart economy

Criterion of smart economy	Advantages of smart economy
1. Effective data management	The smart economy is based on the ability to collect, analyse and use large amounts of data to make strategic decisions in all areas of the economy, from business to government.
2. Development of innovations	Digital technologies are creating a favourable environment for stimulating innovation. They allow businesses to develop and introduce new products and services faster, which increases their competitiveness.
3. Increase of labour productivity	The introduction of modern technologies, such as artificial intelligence, automation and robotics, allows to increase labour productivity, reduce costs and improve product quality.
4. Creation of new markets and services	The smart economy promotes the development of new markets and services in the digital economy, e-commerce, financial technologies, etc., which expands opportunities for businesses and consumers.
5. Improvement of living standards	The smart economy helps to improve the availability and quality of services for citizens in the areas of education, healthcare, transport, etc., which has a positive impact on their overall standard of living.
6. Sustainable development and resource efficiency	The use of digital technologies makes it possible to optimise the use of resources and reduce the negative impact on the environment, contributing to the sustainable development of the economy.
7. Creation of new jobs and changes in the labour market	The development of the smart economy requires new skills and competences from employees. This opens up new employment opportunities, in particular in information technology, digital marketing, data analytics and other related fields. At the same time, this may lead to changes in the structure of the labour market and the need to train and retrain workers.
8. Improving the country's competitiveness in the international market	Countries that actively integrate digital technologies into their economies have an advantage in the international market due to more efficient use of resources, innovation, and improved quality of products and services.
9. Stimulating entrepreneurship and innovative start-ups	The smart economy creates favourable conditions for the development of small and medium-sized enterprises and stimulates the emergence of innovative start-ups through the availability of technology and resources.
10. Reduction of inequality	By providing access to digital technologies and skills, the smart economy can help reduce inequality by providing greater access to development and employment opportunities for all segments of the population.
11. Ensuring cybersecurity and privacy	In the context of the transition to a digital economy, it is important to protect against cyber threats and preserve user privacy. Effective cybersecurity measures and legal frameworks are essential to ensure trust in digital technologies.
12. Creating smart cities and infrastructure	The smart economy contributes to the development of smart cities, where innovative technologies are being introduced to improve transport system management, energy efficiency, water supply and other aspects of citizens' lives.

Source: compiled by the authors

of social development and an inevitable result of the development of the traditional economy – information economy – knowledge economy, based on creativity-innovation- creativeness-entrepreneurship, which is determined by the development of the "knowledge era". Achieving the goals of sustainable development in the smart economy therefore requires an integrated approach that takes into account technological, environmental, social and economic aspects. The emergence and development of the smart economy is the result of the intersection and interaction of several key factors, such as knowledge, innovation, science and technological progress. The smart economy is based on the active use of knowledge as a key resource. This means that companies, countries and regions that actively invest in education, research and technological development tend to be more successful in today's world. Smart economies actively promote innovation and scientific research. It stimulates companies and scientific institutions to develop innovative products, services and technologies, enabling them to gain a favourable position in the market. The smart economy is characterised by the rapid development of technology and digitalisation. It covers areas such as artificial intelligence, the Internet of Things, blockchain, big data and other innovative technologies that are changing the way goods and services are produced, exchanged and consumed. Smart economy requires companies, countries and society in general to be flexible and adapt quickly to change. It emphasises an agile approach to managing and responding to new challenges and opportunities. The smart economy also emphasises the importance of cooperation and interaction between different industries, sectors and countries. This maximises potential opportunities and creates synergies between different innovation projects. The smart economy is the result of the interaction of various fields such as education, science, technology and innovation, and it creates a favourable environment for sustainable development and prosperity of society.

4.2. Smart Economy Development Areas, its Potential Impact on Competitiveness and Sustainable Development

Among the areas of development of the smart economy, one should highlight the **symmetrical economy**, which is based on symmetrical relations between economic actors and objects, which is the driving force of economic development. The symmetry of the economic structure is a model for the development of a smart economy, a source of economic development of a subject-centred smart economy. A symmetric economy is used to describe a system in which different groups or sectors of the

population have similar levels of access to economic opportunities, resources and benefits. In a symmetric economy, there is a more equal distribution of wealth, opportunities and access to resources between different social groups. A symmetric economy can reflect economic justice and contribute to a greater degree of social stability. It supports the idea that economic development and success should be available to all sections of society, not just a limited group of people or regions. Various policies such as social support, education, infrastructure development, tax reform, etc. can be applied to achieve a symmetrical economy. These policies aim to reduce inequality and create a level playing field for all citizens in the development of the economy. A symmetric economy can also include a level playing field for different actors in the economy, for example by creating an environment where both small and large enterprises have equal opportunities to access markets, financial resources and technological innovation. It is also important to consider aspects of regional symmetry, where different regions of the country can have the same conditions for development and ensuring economic well-being. This can include equal access to infrastructure, education and health care, as well as equal conditions for the development of small and medium-sized enterprises. A symmetric economy helps to create a stable and open economic environment that encourages interaction and cooperation between different sectors and groups of society. This reflects not only economic, but also social justice, which is an important aspect of ensuring the sustainable development of society based on economic laws, relationships between business entities and business objects of mass entrepreneurship and innovation. The development of the smart economy includes the following areas, which have the potential to influence the competitiveness and sustainability of economic development.

The development of a smart economy involves a large-scale digital transformation in all sectors of the economy, including manufacturing, trade, services and administration. This includes the introduction of the latest technologies, such as artificial intelligence, data analytics, the Internet of Things and blockchain, to optimise processes and increase productivity. It should be noted that the development of the smart economy has great potential to increase the competitiveness and sustainability of the economy through the active implementation of digital technologies, innovations and improving the quality of human capital. This approach makes it possible to build a more stable and efficient economic environment that is able to adapt to changes in the modern world. In general, the smart economy contributes to the creation of a more competitive and sustainable economic environment that takes into account modern

Table 2

Directions for the development of the smart economy

Smart economy development direction	Content and characteristics of the smart economy development area
1. Digitisation	The introduction of digital technologies in all sectors of the economy, including manufacturing, services, governance, education and trade. This can facilitate access to information, increase the efficiency of production and services, and provide new opportunities for business development.
2. Innovations and research	Promoting scientific and technological progress, the creation of new products, technologies and services that increase economic competitiveness and stability.
3. Development of the startup ecosystem	Stimulating entrepreneurship and innovation by creating a favourable environment for the development of start-ups and small businesses, allowing for the rapid introduction of new ideas and technologies.
4. Education and personnel	Developing an education system that promotes the development of digital and technological skills among the population, which meets the labour market's need for highly skilled personnel.
5. Infrastructure and management	Improving infrastructure and management systems to increase the efficiency and resilience of the economy to external influences.
6. Increase productivity	The use of digital technologies and innovations allows to increase the productivity of production and service delivery, which provides a competitive advantage in the market.
7. Cost reduction	The efficient use of technology can help reduce the cost of products and services, which helps to increase the competitiveness of enterprises.
8. Stimulation of innovations	Creating favourable conditions for the development of innovative technologies and products contributes to the sustainable development and competitiveness of the economy.
9. Human capital development	Investments in education and training ensure the availability of skilled workers, which is a key factor in competitiveness and sustainable development.
10. Improved market access	The use of digital technologies can increase access to markets for both small and large enterprises, which can help them grow and compete.
11. Creating new business models	The smart economy can foster the emergence of new business models based on digital technologies and innovation, allowing businesses to adapt to changing consumer preferences and market conditions.
12. Improving living standards	Through the more efficient use of resources and the development of new technologies, the smart economy can help improve living standards through access to quality goods and services at affordable prices.
13. Reduced footprint on the environment	The development of a smart economy can also help reduce the negative impact on the environment through the rational use of resources and the development of environmentally friendly technologies.
14. Increasing the level of security	The use of digital technologies to manage infrastructure, communications, and services can help improve the security of economic processes and protect against potential threats.

Source: compiled by the authors

technological and socio-economic challenges. However, natural ecosystems can be pushed to their limits and become something fundamentally new, as systemic shifts are also occurring in other areas: geostrategic, demographic and technological. It is against the backdrop of these "structural forces", and the tectonic collisions between them, that global risks are growing. The next set of global conditions will not necessarily be better or worse than the previous ones, but the transition to sustainability will not be easy.

4.3. The Latest Trends in the Development of the Smart Economy as a Factor of Competitiveness and Sustainable Development

The smart economy includes the development of key trends in the latest technologies, such as artificial intelligence, the Internet of Things (IoT), blockchain and data analytics, to optimise production, manage resources and create effective business models. Using the latest technologies, the smart economy improves competitiveness, which is considered as the ability of an

economic entity (country, company, economic sector, etc.) to compete effectively in the market, offer high-quality products or services, innovations, low prices, etc., allowing to gain a certain market share or the ability to withstand competition by offering unique products or services, building relevant consumer values and using effective marketing and management strategies.

Sustainability is the ability of an economic entity to develop and function in a way that is sustainable in the long term, without harming the environment, society or economic stability. Sustainability means taking into account social and environmental aspects as well as ensuring economic sustainability. It includes sustainable economic growth, ensuring equal opportunities for present and future generations, and meeting social and environmental needs. This is the ability of the subject to maintain sustainable development and functioning in the long term. These concepts are interrelated and are used to analyse and develop the economy in the context of modern challenges and opportunities of the latest trends in the development of the smart economy.

Table 3

Areas of development of the main trends of the smart economy

Development direction of the main trends of the smart economy	Content and characteristics of the main trends of the smart economy
1. Expanded use of artificial intelligence (AI)	Artificial intelligence systems are becoming increasingly important for the development of a smart economy. They are used to forecast demand, optimise production, manage supply chains and improve automation processes.
2. Internet of Things (IoT)	Connecting various devices via IoT allows to collect huge amounts of data to analyse and optimise processes in real time. In manufacturing, transport, healthcare and other areas, IoT plays an important role in creating effective management systems.
3. Blockchain technology for security and trust	Blockchain allows for secure and reliable data exchange systems, which is a critical aspect of the smart economy. Supply chain tracking, digital contracts and personal data protection are just some of the applications of blockchain in this context.
4. Using blockchain technologies to optimise resource management	Blockchain technology can bring transparency and efficiency to the management of resources, from energy to water, helping to track their use and environmental impact.
5. Focus on sustainable development and environmental friendliness	The smart economy also pays attention to sustainability and environmental friendliness. Technologies that reduce resource use and emissions are becoming increasingly popular. The use of renewable energy sources, optimisation of transport and production to reduce environmental impact are key areas.
6. Consumption habits with consideration of environmental aspects	Further growth in demand for environmentally friendly goods and services. This could include everything from organic food to the use of recycled materials in production.
7. Digital transformation of urbanisation	Smart cities are becoming more and more common, where the use of technology to optimise infrastructure, transport, energy and utilities improves the quality of life and the efficiency of governance.
8. Digital platforms and ecosystems	New digital platforms are emerging that bring together different industries and companies to share resources and data. This creates new opportunities for innovation and the development of new business models.
9. Smart technologies to optimise energy consumption	The development of the Internet of Things (IoT) and sensors is making it possible to create smart energy management systems in homes, offices and industrial complexes. This helps to use energy more efficiently and reduce utility costs.
10. Development of the renewable energy market	The gradual reduction in the use of coal fuels and the increased use of renewable energy sources such as solar and wind power are contributing to a more sustainable and environmentally friendly energy infrastructure.
11. Development of the exchange and recycling market	Platforms for the exchange of goods and services, as well as second-hand markets where people can buy, sell and exchange used goods, help reduce waste and resource consumption.
12. Saving resources through community and collectivity	Shared forms of consumption, such as carpooling or coworking, save resources and reduce environmental impact.
13. Development of public transport and mobility	The growing demand for efficient and environmentally friendly public transport systems and alternative modes of mobility, such as bicycles and e-scooters, is helping to reduce private car use and CO ₂ emissions.

Source: compiled by the authors

Smart economy trends continue to evolve, reflecting changes in consumer habits, technological advances and the economic landscape created by digital transformation and innovative technologies. They reflect trends in consumer preferences, technological innovation and trends towards sustainable development. These trends point to the continued development of the smart economy, where advanced technologies play a key role in creating efficient and sustainable economic systems. They contribute to the development of the smart economy, have potential impacts on competitiveness and sustainability, and develop in the context of possible challenges and barriers to achieving these goals. According to the Next Generation Survey 2022, business leaders believe that the pursuit

of growth remains a top priority. 72% of respondents said they would continue to increase business investment in sustainable development.

In initiatives to solve the problem of climate change, the concept of "degrowth" has emerged – from considering "economic growth" as a political priority to "accepting a reduction in GDP" as a precondition for saving the planet. The only way to grow is to decouple GDP growth from a production model that "relies on resource consumption and pollutes the environment" and to find a path to sustainable growth through innovation. In the digital age, companies can apply various innovative business models to gain competitive advantage while achieving sustainability. Google uses artificial intelligence (AI) and machine learning (ML)

technologies to optimise energy consumption in data centres. Thanks to the new carbon-smart computing platform, Google Cloud responds flexibly to the load, performing cross-regional tasks in a greener time and in a greener place. The move to the digital economy is taking place through digital management of the supply chain, with the convergence of IT (Information Technology) and VAR (Virtual and Augmented Reality) opening up vast opportunities for the development of innovative technologies and applications. IT and VAR can be used together to create games, simulations, training in virtual environments, data visualisation, augmented reality for education, medicine, architecture, marketing and other fields. It allows for interactive, engaging and innovative experiences for users, expanding the use of technology in various areas of life. It is necessary to view sustainable development as an opportunity for business transformation, moving away from the traditional OEM (Original Equipment Manufacturer) focus and actively developing innovative approaches in the supply chain. Instead of simply manufacturing products for other companies (OEM), companies need to actively innovate in their own products and processes. Businesses should consider not only economic, but also social and environmental aspects. This means developing products and processes that are not only profitable but also contribute to sustainable development. Companies can encourage innovation by introducing bonuses or awards for employees who propose and implement innovative ideas. This shows the need to move from the traditional OEM Transform approach to a more innovative approach that promotes sustainable development. In general, the idea is for companies to actively promote innovation and sustainable development in their activities to meet the modern demands of the market and society. Companies need to pay attention to today's global environmental, social and governance trends, prioritise the sustainability issues most relevant to their own business and decide on practical actions to address these issues.

5. Conclusions

Achieving sustainable development goals in the context of the smart economy may face various challenges and obstacles. Some new technologies used in the smart economy may be expensive or inefficient in terms of energy efficiency or resource use.

The development of resource-efficient technologies is a key challenge. The increased use of internet-connected devices and data sharing in the smart economy creates new threats to cybersecurity and privacy. It is necessary to ensure a high level of data protection and information security. Inequality in access to technology and information can lead to a widening of the digital divide between different population groups. Strategies need to be developed to ensure widespread access to digital technologies and knowledge. Increased use of technology and internet-connected devices can lead to increased consumption of electricity and other resources. There is a need to develop technologies that promote energy efficiency and reduce the negative impact on the environment. The introduction of smart technologies may change jobs and require new skills from workers. It is necessary to develop programmes for the professional development and retraining of workers to enable them to work successfully in the smart economy. The smart economy is based on the use of advanced technologies to improve efficiency and quality of life. This includes the use of artificial intelligence, data analytics, the Internet of Things, blockchain and other innovative technologies. The smart economy aims to optimise the use of resources such as energy, time, labour and materials through technologies that enable the efficient management of these resources. The development of the smart economy fosters innovation in all sectors of the economy, enabling companies and countries to secure a competitive advantage in the marketplace. Smart technologies contribute to the creation of intelligent environments that enhance the convenience and comfort of citizens' lives, thereby contributing to sustainable development. Many cities are implementing smart city programmes, which include the implementation of intelligent management systems for transport, education, healthcare, energy and other industries. Companies are actively investing in creating digital platforms that connect different areas of business and life to ensure efficient exchange of data and services. Many companies are using artificial intelligence to automate processes, analyse data and improve productivity. The development of the smart economy also aims to create and implement innovative green energy technologies to reduce emissions and increase sustainability. These practical measures help to implement the theoretical concepts of the smart economy and contribute to ensuring the competitiveness and sustainability of society.

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Received on: 10th of March, 2024

Accepted on: 16th of May, 2024

Published on: 10th of June, 2024