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Subjective disposition of smart economy

Abstract

The article deals with the topical issue of modern economic development – the formation of Smart economy. The purpose of the article is to determine the subjective disposition and identify the characteristics of the main subjects of Smart economy. To achieve this goal, the article uses the method of system-structural analysis to identify the main subjects and characterize their properties in the context of the formation of Smart economy. The phenomenon of smart economy is associated with the growth of its reasonable nature, increasing attention to social and environmental issues, the priority of the principles of sustainable development. The changes taking place in the activity of the main actors (households, business, state) under the influence of the processes of digitalization, socialization, greening, urbanization, institutionalization are studied. Under the influence of digitalization, relations between actors in the process of economic activity are significantly accelerated, changed, and acquire new forms of manifestation. Sustainable development goals become a priority for any entity. New institutions and management mechanisms are being formed at various levels with the involvement of a wide range of new agents. The formation of smart economy is characterized by the following features: the spread of socially responsible business; penetration of smart technologies in all spheres of business, life and management; responsibility for the environment; priority of sustainable development goals in management at different levels; formation of smart living conditions for individuals and communities.

Keywords

Globalization, information and communication technologies (ICT), digitalization, institutionalization, urbanization, greening, socialization, Smart-city.

JEL: F63, L86, O32, Q01

DOI: https://doi.org/10.30525/2500-946X/2021-2-2

1 Introduction

A new milestone at the beginning of the XXI century is caharcaterized by the emergence of the concept of Smart-economy, which is associated with the spread of new smart technologies in the field of management of economic, social and environmental processes. The concept of Smart economy is considered as a result of synergistic action, a consistent combination of processes of intellectualization, digitalization, socialization and greening of the economy. The comprehensive penetration of ICT strengthens the role of information-rich capital resources, goods, technologies, highly qualified human resources, which not only have large amounts of modern knowledge but manage to work with them and thus produce qualitatively new knowledge.

In general, smart economy means strengthening the reasonable nature of economic activity, which is associated with increasing attention to social and environmental problems of human development. And the latest information and communication technologies not only help to perform certain important functions but also become important elements of process management and relationships between various elements and actors. Sound process management a priori involves the implementation of an ecosystem approach, as it creates opportunities to take into account the values and principles of sustainable development. Finding out the essence of smart economy, its forms of manifestation at different levels is a topical issue and leaves a lot of room for research.

Research review. The study of the formation of smart economy is the basis of a significant number of works by the following scientists: J. Brunekiene, J. Sinikiene (Cited by: Galperina, 2016); L. Halperina (Galperina, 2016); V. Maximova (Maximova, 2011); V. Mazurenko (Mazurenko, 2014); R. Novotny (Novotny, 2014); D. Held, A. McGray (Held, 1999); M. Heylin (Heylin, 2006), D. Kellner (Kellner, 2002) and others. Research is devoted to the problems of smart cities and the success of their functioning: R. Giffinger (Giffinger, 2007); M. Angelidou (Angelidou, 2016); A. Caragliou (Caragliou, 2011); P. Lombardi, S. Giordano, H. Faruch, W. Joseph (Lombardi, 2012); V. Kumar (Kumar, 2017); K. Adiyarta (Adiyarta, 2019); M. Eremia (Eremia, 2016). At the same time, there is a lack of research of a systemic, complex nature, which would be devoted to the study of the essence and forms of manifestation of smart economy at different levels.

The purpose of the article is to determine the subjective disposition and identify the features of the main subjects of smart economy.

To achieve this goal, the article uses the method of system-structural analysis to identify the main subjects and characterize their features in the context of the formation of smart economy.

2 Results and discussions

Understanding smart economy in a broad sense allows us to define it as a system of economic relations based on the use of modern smart technologies, implementation of the principles of sustainable development and social responsibility and subordinated to the goals of creating comfortable and safe living conditions. In the narrow

sense, smart economy is considered within a certain locality.

At the same time, in the scientific literature there is no single position in determining the forms of manifestation and the main components of the ecosystem of smart economy. The vast majority of scientists consider the concept of smart economy in a rather narrow sense, as part of a system – Smart-city. In this sense, the term first appeared. This is a definition of a system of a certain locality, all parts of which are connected by intelligent technologies, operate and are managed following the principles of economic expediency, sustainability and social responsibility.

Vinod Kumar considers the Smart-city system as follows: Smart People, Smart Economy, Smart Mobility, Smart Environment, Smart Living, Smart Management (Kumar, 2017). The International Telecommunication Union (ITU) considers the ecosystem as a set of the following components: business, finance, business support, the public sector, academia and the private sector (ITU-D).

Lithuanian scientists J. Bruneckiene and J. Sinkiene include the following in the main components of Smart-economy: innovation and knowledge economy; learning economy; digital economy; competitive economy; green economy; network economy; socially responsible economy (Cited by: Galperina, 2016). The main players in ecosystems include entrepreneurs, business support networks, corporations, financiers and governments that integrate ICT / telecommunications innovation into their national development agendas.

R. Novotny et al. consider the structure of Smart-city in a rather applied way: general municipal and business services; intelligent, sustainable buildings and (smart construction); education, health care and social protection (smart education); energy production and energy efficiency (smart energy, smart lighting); gas, electricity and water smart supply metering (smart grad); smart water and waste management (smart utility); public safety and crime prevention; real- time locating services and geographic (Novotny, 2014).

A similar approach is declared by Romanian scientists M. Eremia, L. Toma, M. Sanduleac, who consider Smart-city in the set of the following components: smart buildings; education, medical and social care; smart energy; smart grid; metering of natural gas, water, electrical energy; smart utilities – smart water distribution and smart waste management; smart parking; integrated supply systems; smart and integrated transport (Eremia, 2016).

Thus, even at the level of a smart city there is no unity in defining the main components of the smart economy. Thus, we consider it necessary to define first the structure of smart economy in a broad sense, and then on this basis – to structure the concept of smart economy in a narrow sense, at the city level. As defined earlier, smart economy is the result of the interconnected action of the following processes: digitalization; greening; socialization; institutionalization. Moreover, the processes of greening and socialization determine the main goals, orientation, direction of development of various actors. Digitalization processes determine the technologies and tools of communication and relationships of various actors. Institutionalization – means the emergence of new mechanisms for managing various actors and their relationships.

The implementation of smart-economy takes place at all levels of economic relations – from the individual to the state as a participant and regulator of such activities. According to the foundations of economic theory, the main subjects of the economy are: households, business and the state. These are, of course, the most generalized subjects, as there are separate types of subjects for each of them. Individuals, consumers, households, etc. are also distinguished in relation to the first subject. In addition to the actual entrepreneurs, small and medium-sized businesses, large businesses, financial entities (banks and other financial institutions), etc. can be distinguished. The state is also a complex entity, often including the public sector. In addition, given that the smart economy can be considered at different levels, the subjects can also be localities, cities; regions; countries; global cities. Understanding the complexity and diversity of the manifestation of the main actors, however, in the context of the study of the formation of the smart economy, we will consider the following as the main: households, business and government.

Smart economy is formed by a set of different subjects and their interaction, a system of relations and connections. Under the influence of modern new processes, these relations reach a new level – the level of networks and platforms, thus creating a favorable environment. These foundations form such a vector of social development which is focused on improving the quality, safety of people's lives and innovation.

It should be noted that for each subject, there are several main trends, forms of manifestation of Smart-economy, which are expressed in the formation of the activities of these entities and their economic efficiency. As mentioned above, the following trends are: digitalization; institutionalization; greening; socialization; urbanization.

The economy itself is also a complex phenomenon that has many forms of manifestation. In order to carefully analyze changes which, it experiences under the sign of "smart", it is necessary to identify the main components that have common characteristics and features. In our opinion, the following structure is justified: business; living conditions; society; environment. According to the subject of smart economics, the following components are: smart business; reasonable living conditions of the population; smart community; smart environment.

The above structure is general and does not preclude other approaches to identifying key areas important for the formation of the smart economy. For example, researchers at the University of Alicante (Spain) base their developments on the fact that the Europe 2020 strategy proposed by the European Union includes three economic priorities that will enhance the use of IT to advance such economic priorities:

- smart growth: economic development based on knowledge and innovation;
- sustainable growth: promoting more efficient use of resources to ensure a more competitive economy;
- intensive growth: the formation of an economy with high employment rates in order to develop social and territorial cohesion.

Consequently, they identify the following key areas of smart economy, which require smart solutions through ICT:

- entrepreneurship / productivity / competitiveness – parameters that are aimed at improving the quality of life in communities, society;
- development of science and technology that can produce solutions to existing problems, the creation of

innovative services and systems, a network of laboratories or institutions;
- tourist attractiveness and internationalization, which consists in the formation of a national brand that provides national and international prospects for the development of the tourism industry, which will have positive social and economic consequences.
- training, first of all, raising the level of education of the population, its development and education of creative and entrepreneurial abilities;
- creating a comfortable living environment that includes smart construction, environmental standards, general welfare parameters (Smart Economy ...).

A smart economy is defined by the Spanish researchers as the main basis for urban development in a smart community. This model relies on a deal of concepts that promote development, sustainability and attractiveness for new investments, the main of which are: e-business, e-commerce, productivity, employment and innovation and the creation of new products and services, new models and business opportunities and entrepreneurship (Smart Economy...). Thus, smart economy in general is not a separate sector of the economy, it covers all key areas of management and opportunities to increase welfare in society. Particularly important elements are the fields of science and education as a basis for the production and dissemination of knowledge and innovation. At the same time, the key links are the mechanisms of transforming the spheres of innovation activity (science and education) into real intellectual solutions that will promote economic development.

We will consistently analyze the changes that occur under the influence of digitalization, greening, socialization of the main actors and their economic relations. Business: under the influence of digitalization, there are sweeping changes in the economic activity, its maintenance, ways and mechanisms of interaction of economic subjects. Networking is reflected in the emergence of global supply chains and value creation. Such network connections and interactions connect business entities of different forms, levels, countries and regions into a single global system, interconnected and managed by modern technologies.

The tendency of socialization of business – socially responsible business has arisen since the end of the XIX century under the influence of aggravation of social and labor relations. Over the past century, there has been a further spread of it both in business practice and in understanding this phenomenon in scientific circles. Since the end of the twentieth century, with the intensification of globalization, digitalization, the popularity of the concept of sustainable development, social responsibility has become an unalterable direction of development. The principles of social responsibility are becoming an integral part of the strategic management of companies, and the reports of social responsibility companies are a common practice of modern business. An important step in the dissemination of this concept was the emergence of the international standard on social responsibility ISO-26000 in 2010 "Guide to Social Responsibility" (International standart...). According to the standard, "social responsibility" is seen as the responsibility of an enterprise for the impact of its decisions and activities on society and the environment through transparent and ethical behavior that promotes sustainable development, health and well-being of society; takes into account the expectations of stakeholders; complies with existing legislation and complies with international standards of conduct; integrated into the activities of the entire enterprise and implemented by it in the practice of relationships.

The spread of the concept of corporate social responsibility is to increase attention to the social problems of consumers, company staff and other stakeholders. It is becoming a common practice of modern business to carry out economic activities without harming people, nature and society, as well as to participate in solving important socio-economic issues. Achieving the main goal of entrepreneurial activity – making a profit – is based on its compliance with the principles of social responsibility. Corporate social responsibility is becoming an integral feature of managing all the leading and successful companies in the world.

The actualization of sustainable development ideas in politics and practice has contributed to the fact that in the modern sense, social responsibility necessarily includes not only social obligations but also environmental ones. This is due to the rapid spread of the next major trend of modernity – the so-called greening – the increasing penetration of environmental goals and principles in all areas of economic activity. Environmental imperatives are becoming a priority for all projects, all activities, for any business, in management at different levels. The most popular trend in the development of modern business is the emergence of green business, which means the production of environmentally friendly, organic products. To supply such products to the market already means to have certain competitive advantages, as modern consumers clearly prefer such products.

It is also noteworthy that this trend is becoming more widespread in the financial business. There are examples of classification of all financial products depending on the level of social and environmental responsibility. The ESG (Environmental, Social and Corporate Governance) criteria meet the UN Sustainable Development Goals and become an integral part of both company reports and financial product characteristics. For example, in Germany, as a result of consultations, it was proposed to classify all financial products according to the level of social and environmental responsibility into four groups: non-ESG, ESG, Basic and ESG-Impact (ESG-investing...).

No less important and interesting are the manifestations of the next trend – institutionalization. In the field of business, the main management processes are related to market forces such as competition, supply and demand, the existence of monopolies, oligopolies, oligarchic entities and their relationship with small and medium-sized businesses. In modern conditions, rapid and comprehensive digitalization has led to the emergence of a new type of business relationship – platforms, which at the same time take on the functions of the subject of management.

The so-called platform business is formed when platforms are created that manage the processes of connection and interaction of different parties (sellers and buyers). Amazon, Uber, AliExpress are examples of companies that have almost no capital resources of their own, but receive multibillion-dollar revenues from providing platforms and transaction opportunities for numerous agents around the world.

The operation of the platforms is possible due to a set of standardized rules and procedures that create

an algorithm for transactions between suppliers and consumers of goods and services. There are obvious advantages for any business entity from coming to the platform: low entry price, reduced risks, reduced costs for promotion and storage of goods, software, etc. For consumers, the real benefits are: reduced time to search for a product or service, expanding the choice, speeding up the buying process, etc. Thus, it is created an environment with almost perfect competition, a large number of agents, a significant acceleration of all transactions within the platform. It is clear that the implementation of the platform becomes possible only with modern technical support, the use of ICT.

The penetration of the latest digital technologies is also changing the financial business sector. The platform gradually covers the financial sector, creating standardized customer service procedures. Client assets can be managed through robots, and large platform companies increasingly include financial transactions: payments, mobile or e-wallets, lending (not only to consumers, but also to startups, as Amazon does), trust management services, and more.

All of the above key trends in modern development are also causing drastic changes in the activities of the next entity – *households*. Both individuals and households are experiencing significant changes in the structure of demand under the influence of digitalization. An increasing proportion of consumer goods are electronic goods, gadgets, communications and communications. Home appliances are not just being improved: new types of appliances are being created with qualitatively new energy-saving and safety properties, and smart products are appearing that can be controlled remotely.

Greening also has a significant impact on the structure of consumer demand, as modern consumers prefer organic, environmentally friendly goods. Gradually, a culture of frugal treatment of all consumed resources is being formed, which, in turn, intensifies the transition to energy-saving consumption technologies.

Under the influence of digitalization and the changes taking place in modern business, the technologies of purchasing goods and services by individuals and households are also changing. Online shopping has become ordinary, including through large Internet platforms. In addition to well-known world leaders, we should mention those that are formed at the national level: Rozetka, OLX and others. The spread of web-banking and mobile banking, which are now used by almost all consumers, significantly simplifies the process of purchasing goods and services. These technologies essentially speed up the process of selling goods, which reduces consumers' time spend on the search, selection and purchase transactions.

The local environment of living households is changing. Utilities and public transport management begin to incorporate smart technologies that save resources and are aimed at ensuring a sustainable community life. ICTs provide data collection and transmission for all urban management services, traffic and safety monitoring, online administrative services, and feedback between the city administration and residents. Moreover, there is a constant expansion of the areas into which information technology penetrates to create comfortable quality living conditions for citizens: health care, discussion of various urban development projects, cultural space and more.

The lives of citizens and households are also affected by the socialization trend, which is manifested in the spread of ideas and principles of sustainable development in the functioning of communities, socially responsible attitude towards other people. In general, the public and human activity, peoples' participation in the life of the local community is growing. In recent years, the trend of development of social networks has become especially pronounced, and active participation in them concerns not only personal, but increasingly – public and political life of people. With the help of networks, virtual local communities are created, in which important projects are discussed, decisions are made, and topical issues of life are sharpened. Such processes are developing not only at the community level, but also at higher levels – industries, regions, the country as a whole. Citizens have the opportunity to submit electronic petitions, participate in the discussion of bills, defend their interests. Thus, virtual socialization contributes to the implementation of sustainable development goals in community management and generally becomes an element of institutionalization.

The key trends in the formation of the smart economy inevitably change such an entity as the state. Under the influence of digitalization is the formation of the so-called E-government, e-government, in which ICT creates the conditions to facilitate all government transactions. The concept of E-government includes four areas of relations: government – citizens; government – employees; government – business; government – government. The direction "Government – Citizens (G2C; organization of feedback with citizens)" is implemented in order to reduce the efforts of citizens to obtain information, certificates and documents. Conditions are being created for fewer citizens to stand in queues and be able to receive online services. This saves both budget funds and funds of citizens.

"Government – Business (Government 2 Business, G2B; relations between government agencies and business)": automation of business activities (tax payments, e-procurement, etc.). "Government to employees (G2E, government relations with officials or employees)" – refers to the management of internal processes of public administration. Digitalization of these processes also increases the efficiency of the civil service, and with proper organization of G2C and G2B can minimize this link. The system of relations "government – government (Government 2 Government, G2G; automation of relations and document flow between departments)" provides with the help of ICT management of the entire state apparatus, relations between different departments, regional offices, internal processes.

In the concept of E-government, an important issue is the transparency of government, which is aimed in some way at increasing the efficiency of its operation. In general, government services are becoming more accessible to citizens, which speeds up issues and increases the assessment of the effectiveness of government by the population. The government is called to develop a policy that promotes resilience for the benefit of the population, to promote the formation of services focused on meeting the needs of citizens.

In this aspect, the main parameters of the government within the smart economy are:

1. Transparency provided by the possibility for citizens to access information and processes carried out by the government, access to all projects and decisions.

2. E-government, which consists of e-voting, the use of common platforms, promoting the use of IT technologies, because the services of such system integrators are part of e-government. In addition, e-government can be implemented by facilitating the relationship between citizens and government, facilitating access to information (including updating databases, statistics, etc.), procedures, payment of fees and taxes, a single window (including electronic), electronic signatures, etc.

3. Open Data, which provides access to key data and indicators of government functioning, decision-making that will have a significant economic impact (Smart Government...).

It should be noted that the processes of socialization and greening are becoming integral aspects of e-government. In community management, the protection of local environmental projects becomes important; availability of information on the state of the environment, on projects planned to be implemented; analytical materials for assessing the state of the environment. Social goals also become a priority; ensuring the rights and support of people with different needs and disabilities. As a result of the synergistic action of all the above processes, the participation of the entire population in management processes at different levels increases, which generally means the consistent institutionalization of a smart economy.

3 Conclusions

The spread of smart economy is a characteristic feature of modern economic development. The phenomenon of smart economy is associated with the growth of its reasonable nature, increasing attention to social and environmental issues, the priority of the principles of sustainable development. The key driver of smart economy is the latest information and communication technologies that provide all the connections, relationships, management processes. The need to study the processes of formation of smart economy encourages a more in-depth study of its manifestations.

Consistent analysis of the changes taking place in the activities of major economic entities allows us to conclude that the synergistic action of digitalization, socialization, greening and institutionalization transforms and fills with new content the actions of major actors: business, households, the state. Under the influence of digitalization, relations in the process of economic activity are significantly accelerated, changed, and acquire new forms of manifestation. Sustainable development goals become a priority for any entity. New institutions and management mechanisms are being formed at various levels with the involvement of a wide range of new agents. In general, this confirms the great relevance of this issue and significant potential for its further development.

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