

## DIGITAL INNOVATION NETWORKS FORMATION

**O. Y. Zhukovskaya**

*PhD in economics, associate professor, Belarusian State University, faculty of economics,  
Minsk, Republic of Belarus, e-mail: oyzhukovskaya@gmail.com*

The article considers some of the most important features of digital innovation networks. The key factors influencing digital innovation networks under contemporary conditions are identified. The features of definition and functioning as well as the role of modern digital innovation networks are discussed.

**Keywords:** innovation networks; digital innovation networks; innovations; collaboration; digital innovations; digital transformation.

## ФОРМИРОВАНИЕ ЦИФРОВЫХ ИННОВАЦИОННЫХ СЕТЕЙ

**О. Ю. Жуковская**

*кандидат экономических наук, доцент, Белорусский государственный университет,  
экономический факультет, г. Минск, Республика Беларусь,  
e-mail: oyzhukovskaya@gmail.com*

В статье рассматриваются некоторые важнейшие особенности формирования цифровых инновационных сетей. Определяются ключевые факторы, оказывающие влияние на цифровые инновационные сети в современных условиях. Анализируются особенности определения и функционирования, а также роль современных цифровых инновационных сетей.

**Ключевые слова:** инновационные сети; цифровые инновационные сети; инновации; сотрудничество; цифровые инновации; цифровая трансформация.

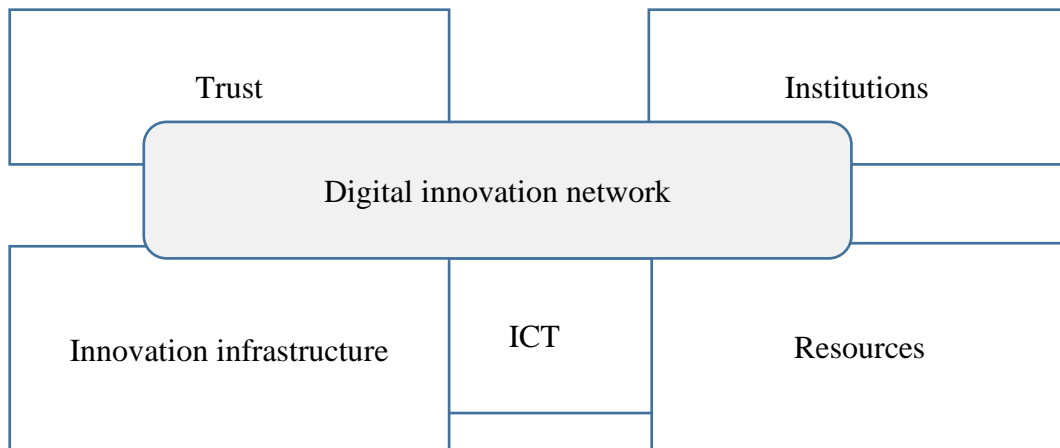
Under contemporary conditions innovation networks play an ever-increasing role in promoting innovations by connecting stakeholders, creating a platform for collaboration as well as exchanging ideas and knowledge. Companies are able to identify new ideas and approaches, drive new technologies, products and services as well as develop new markets. By bringing together stakeholders in a collaborative environment, innovation networks can help increase the speed and efficiency of innovations.

It is possible to define an innovation network as the formation and maintenance of vertical and horizontal interactions between innovation actors and infrastructure as well as participants in innovation processes to implement innovation objectives by reducing transaction costs based on strong and weak as well as formal and informal connections [1, p. 17].

Digital innovation networks are networks of organizations and people who collaborate to create digital products and services. At the same time, these networks are to be implemented through the means of digital technologies, sophisticated ways of communication and therefore fostered by the rapid development of information and communication technologies (ICT). Thus, digital innovation networks are created

through the combination of market forces, social and economic connections as well as technological advances. Digital innovation networks could also be considered as multi-disciplinary and multi-sector networks of people, technologies and organizations aiming to advance Internet technology and innovation processes to address key social and economic challenges as well as opportunities [2].

The formation and evolution of these networks are driven by the need for collaboration to create, implement and diffuse innovations under the conditions of scarce resources. The level and quality of social and economic institutions as well as innovation infrastructure together with the level of trust are important factors that influence the formation of digital innovation networks (figure).



Main factors determining the formation of digital innovation networks

Source: developed by the author.

The first step in forming a digital innovation network is for organizations and individuals is to identify the need for collaboration. This might include evaluating a specific problem or opportunity that can be addressed through the collaboration of multiple stakeholders. As soon as the need for collaboration has been identified, the next step is to form a network of stakeholders who have the necessary skills, resources, and knowledge to address the designated need. This might include various types of organizations, such as technology companies, universities, venture capital firms, and government structures.

Once the network is formed, it is necessary for the stakeholders to define the goals and objectives of the network, as well as the rules and regulations for collaboration. This includes defining the roles and responsibilities as well as outlining the process for communication and decision-making.

The network should also be able to evolve in order to remain effective. This might include introducing new technologies or tools, expanding the network to comprise different types of stakeholders, or refining the rules and regulations for collaboration. As the network develops, it is important for the stakeholders to re-consider their roles and responsibilities as well as the goals and objectives of the network.

In order for digital innovation networks to be successful, it is important for the stakeholders to have a shared vision for the network and a commitment to collaboration. This includes establishing trust between stakeholders, as well as having a clear understanding of the roles and responsibilities of each stakeholder. Additionally, it is

vital for the stakeholders to be open to new ideas, technologies, and tools, in order to ensure the continued success of the network.

Digital innovation networks formation is fostered by the processes of digital transformation and accompanied by the creation of digital innovations, such as Artificial Intelligence (AI), Everything as a Service (XaaS), Augmented Reality Cloud (AR Cloud), 5G, Internet of Things (IoT), etc.

Today it is possible to observe a shift in the emphasis from the diffusion of innovations through networks to the creation of innovations by networking: thus, new types of connections are created based on non-linear processes with no single innovator (there is a multitude of innovators) [3, p. 509].

As stated above, the formation of digital innovation networks is highly dependent on ICT, namely Internet. Therefore, it is vital to pay special attention to its improvement. For example, the overall mission of the Next Generation Internet (NGI) initiative is to re-imagine and re-engineer the Internet for the third millennium and beyond [4]. NGI states that Internet should be designed for humans, so that it can meet its full potential for both the society and the economy and seen as an interoperable platform ecosystem [4].

Digital innovation networks play a crucial role in helping innovators exploit new resources, knowledge and expertise. They provide a platform for collaboration and exchange of ideas, helping to bring together different perspectives and resources for innovations. Such networks help build relationships with key stakeholders, create new business opportunities and provide access to knowledge and resources. They can also provide access to funding, mentoring and help keep up with the latest trends. By leveraging the power of digital innovation networks, organizations can develop creative solutions to complex problems, create new products and services as well as drive growth.

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