INNOVATIVE ACTIVITIES OF THE EVOLUTION OF DIGITAL PLATFORMS

Author: A.U.Kobilov [1]
Affiliation: Tashkent State University of Economics Professor of the Department of Digital Economics [1]
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ABSTRACT

With the development of informatization and digitalization, the joint use of IT infrastructure is increasingly carried out in order to expand innovative activities. Digital platforms (DP) are becoming a common mechanism of interaction. More and more small and medium-sized enterprises are developing innovative platforms and using the intermediary role of these innovations in various market segments and sectors. Global digitalization of economic activity makes the requirement for joint use of information resources and information infrastructure by market entities one of the key conditions for the development of innovative activities.

Keywords: evolution, digital platforms, development, innovation, innovation.

INTRODUCTION

Changes in the ways of doing business in the modern economy are due to the development of informatization and the subsequent digitalization processes. This leads to the fact that the activities of organizations are becoming increasingly saturated with information technology (IT) and services. The synergistic effect of digitalization occurs due to the interactions between economic entities that begin to jointly develop IT and related services, actively use them, which leads to the development of IT infrastructure. Digitalization, thus, through the use of the global IT infrastructure enables organizations to flexibly and much more quickly adapt to dynamic changes in the external environment. According to N.V. Dneprovskaya, "the use of IT in the economy allows economic entities to achieve new economic effects by adapting to the constantly changing external business environment" [1, p. 49]. The modern economy is characterized by changes in the adaptive mechanisms of communication activities of economic entities, ensuring the continuity of interactions with all stakeholders, which allows them to carry out both the provision and consumption of services in the electronic environment. Digitalization has changed the nature of business activity both in terms of business opportunities and the methods of implementing them.

Platforms provide a set of common methods, technologies and interfaces for a wide range of users, participants (e.g. third-party app developers) and spin-offs that, when rich enough, lead to the formation of an ecosystem [2]. The platform economy is characterized by modularity: many platforms operating in niche markets mostly remain so, while others grow, specialize further and develop, even absorbing other niche businesses until they themselves manage to become platform ones. By expanding and facilitating entrepreneurship, digital platforms play an important role

in stimulating and creating new opportunities for bottom-up innovation [3]. On the supply side, digital platforms promote new forms of entrepreneurship and innovation, allowing people to fully exploit technological opportunities and realize their own ambitions or achieve alternative goals.

In total, 2913.9 EB2 of information was transferred in the countries of the association in 2023. Three quarters of this volume came from China. Another 15% in total came from India and Russia. At the same time, the growth in Internet traffic in our country ensured an increase in its share among the BRICS+ countries from 4.7% in 2021 to 5.4% in 2023 (Fig. 1).

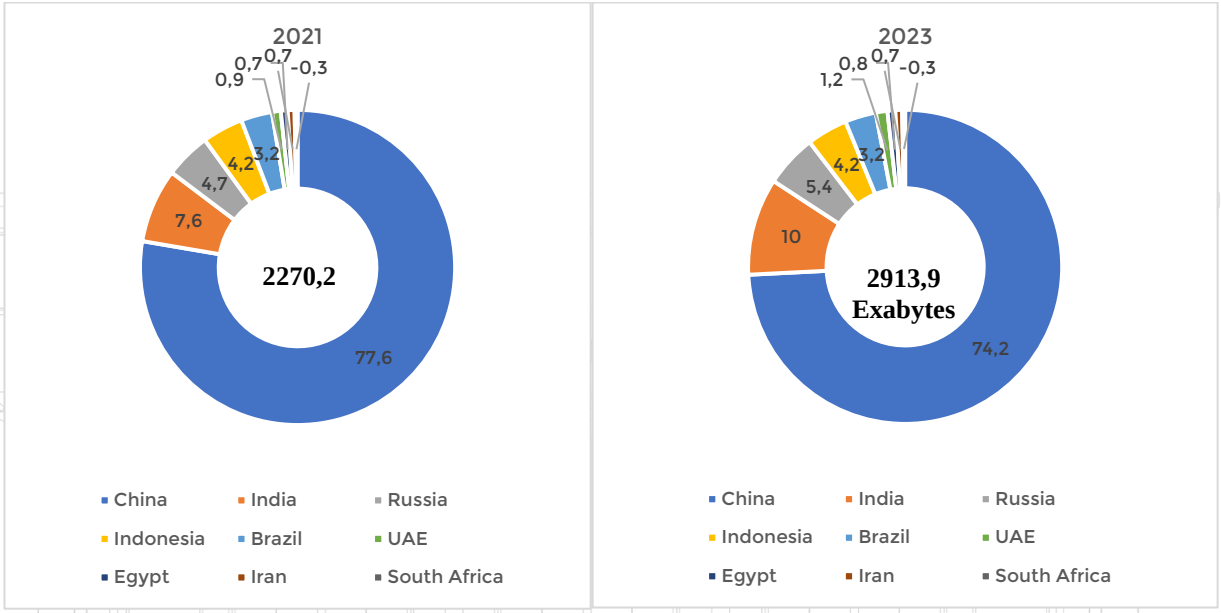

Fig. 1. Global Internet Protocol traffic, Gbps [1]

The modern market has long been characterized by a value chain that includes data collection, processing, analysis, storage, and, of course, modeling. Firms create value by transforming data into analytics and monetizing it. Digital data as a new economic resource creates and retains value, allowing economic entities to increase their strategic importance by controlling it. This leads to the formation of new competitive advantages and the growth of market power for such firms. It is data that underlies the rapid development of information and digital technologies: Internet services, blockchain, the Internet of Things, AI, and cloud computing.

Secondly, the process of platformization, which significantly changes industries and markets. The effectiveness of the CP is indicated by the use of business models based on them by the largest companies by capitalization. CPs become a mechanism for interactions between many economic entities through communications via the Internet. Companies focused on platform interactions gain more advantages in the data-driven economy. Significant amounts of information related to the business activity of platform users are extracted and recorded.

Thus, the global digitalization of economic activity makes one of the key conditions for the development of innovative activity the requirement for the joint use of information resources and information infrastructure by market entities, and, consequently, the capabilities of the digital platform.

The essence and nature of digital platforms. In the text of the Program "Digital Economy of the Russian Federation", the DP is understood as "a system of algorithmic mutually beneficial relationships of a significant number of independent participants in an economic sector (or sphere of activity), carried out in a single information environment, leading to a reduction in transaction costs due to the use of an IT package for working with data and changes in the division of labor system" [8].

One of the distinctive features of the CPU is the virtually unlimited number of users that can function together with its help.

A significant number of studies have been devoted to the nature of digital platforms, their categorization, and issues of their impact on the economy. Figure 2 shows the categories of digital platforms according to the typology of M. Kenney and J. Zysman [2].

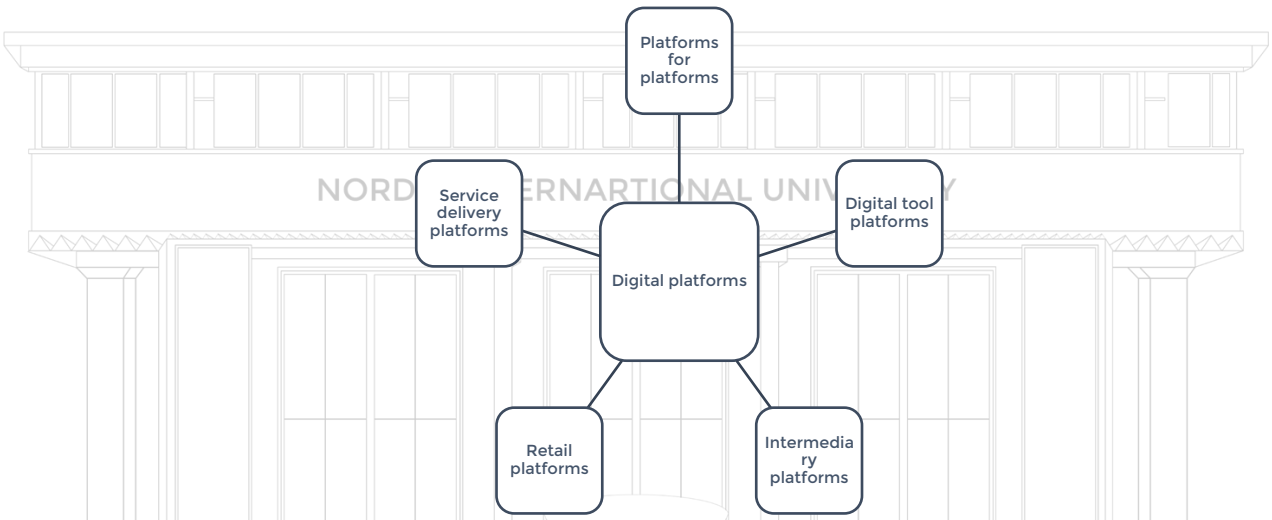

Fig. 2. Categories of digital platforms

According to M. Jacobides et al., “the coming era of digital platforms provides the opportunity for various types of economic entities, service and manufacturing, small and medium, domestic and foreign, to extract competitive advantages from the processing of digital data” [9].

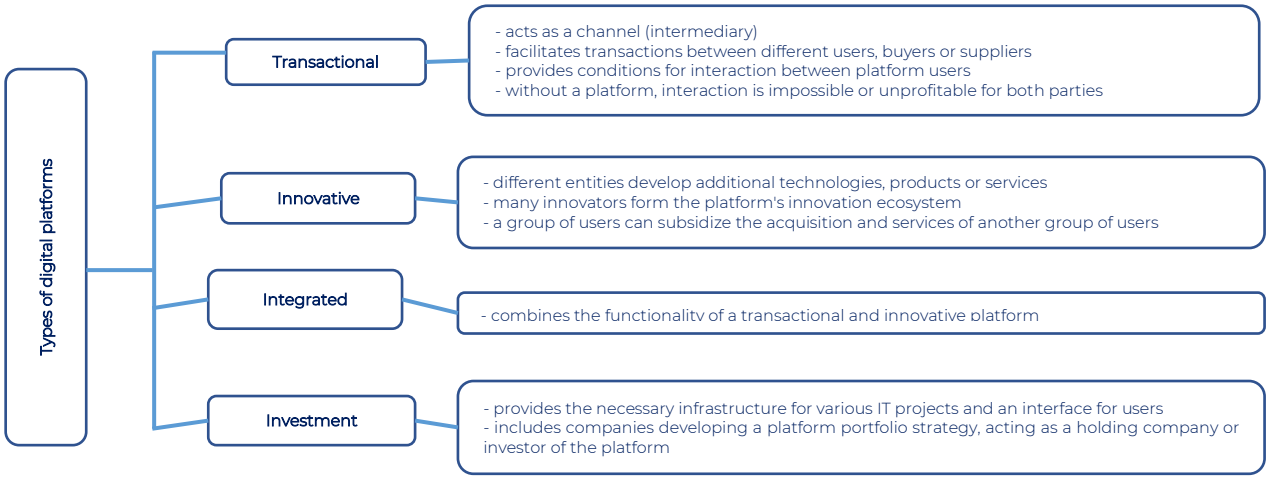

Fig. 3. Typology of digital platforms according to P. Evans

Economic entities actively use the digital platform when conducting joint business activities. Thus, the methods and techniques of using IT in economic activities are becoming one of the priority areas in strategic planning [11]. The process of transition to a digital economy is based, therefore, on the use of information and digital technologies, the availability and convenience of IT infrastructure and flexible digital business models. This article examines innovative platforms, since it is through them that economic entities have the opportunity to quickly bring innovations to the market and form an effective innovative ecosystem.

RESEARCH METHODOLOGY

The premises described in the previous section highlight the need to understand how and to what extent digital platforms differ in function and structure in order to develop an understanding of how they may influence the development of innovative activities of economic entities. Although the literature on the platform economy is quite diverse, a clear theory of the impact of different types of platforms on the economy as a whole has not yet been developed.

When studying DP in scientific literature, issues of pricing principles [12, 13], formation of platform strategies and innovations [14, 15], management and architecture of platforms [16, 17] are considered, and an analysis of platform competition [18, 19] and network effects [20, 21] is also carried out. However, it should be noted that there is no unified approach to studying the evolution of DP.

Thus, the aim of this study was to determine the factors influencing the transition of economic entities to the use of DP, and to form on this basis an evolutionary classification of DP.

During the study, systems analysis, systematization, formalization and other general scientific and special methods of scientific research were used.

RESULTS AND DISCUSSION

For any type of economic activity, the transition from automation to informatization to digitalization occurs progressively (evolutionarily). Therefore, it is necessary to take into account a significant number of factors that play a role in the transition of an economic entity to DP when implementing innovative activities.

The innovative environment emerging in the digital economy is based on information resources, the development and use of which leads to a change in the directions of their application in innovative activities. Expansion of the information environment is possible only with an evolutionary transition from one stage of application of information technologies to the next. This, in turn, gives economic entities access to new, innovative types of resources (Fig. 4).

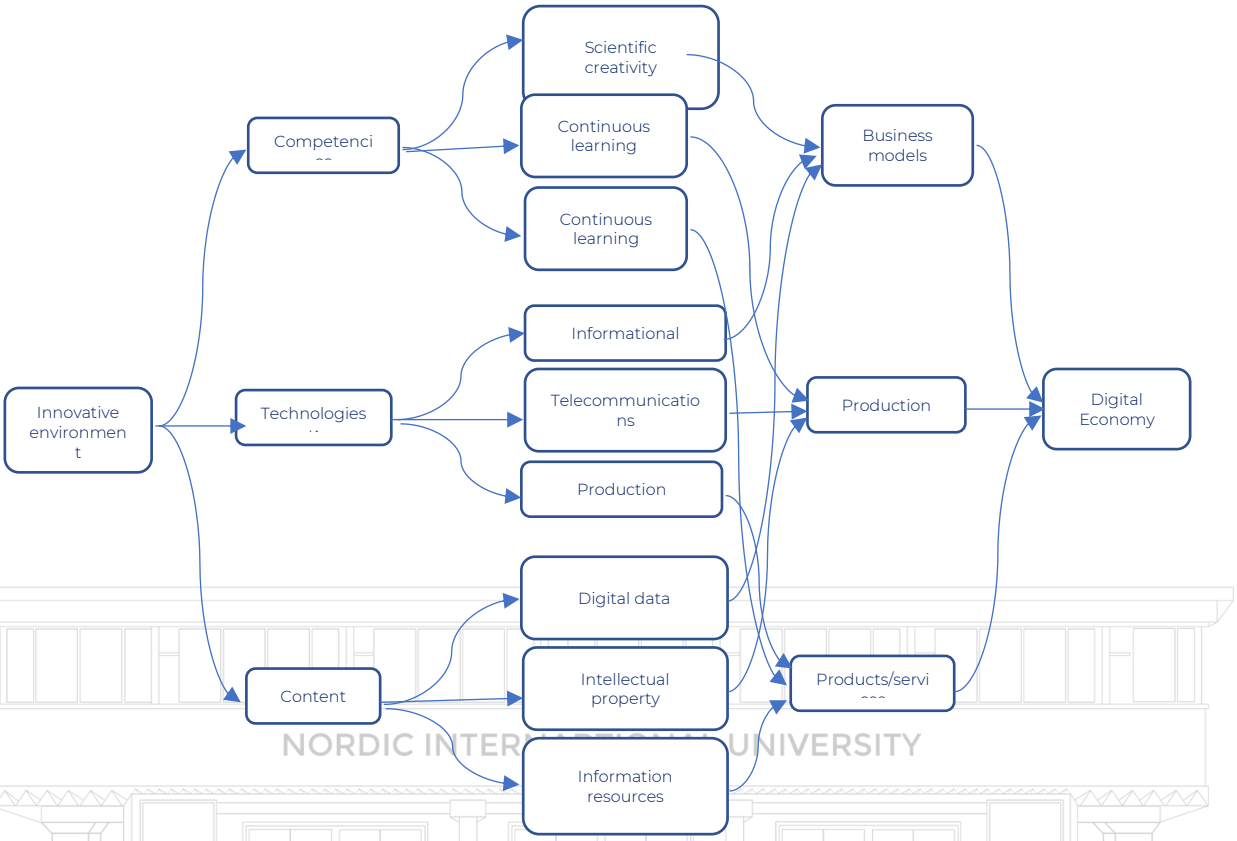

Fig. 4. Scheme of innovation creation through interaction of different types of resources [22]

Based on the literature reviewed, the authors propose an evolutionary classification of DPs used in the transition to the implementation of innovative activities (Fig. 6).

At the first stage of IT use within the framework of innovation activities, software and hardware-software solutions are developed on the basis of the CP. The product/tool for information processing and the transaction for the exchange of goods and/or services become the result of innovation activities. The beneficiary is considered to be the developer of software and hardware-software solutions. He sets the technical requirements.

The second stage is characterized by the need to process and analyze incoming data to make optimal management decisions for the economic entity. The beneficiary imposes requirements both on the functionality of the services and on the composition of the information.

During the transition to the third stage, a full-fledged digital market infrastructure is formed based on ecosystems, allowing for the implementation of innovative business models and the management of innovative activities based on the results of big data processing.

Thus, although the digital era began several decades ago with the Internet and the transformation of IT-based services, significant improvements in the processing, transmission and access to data are pushing economic actors towards a new techno-economic paradigm: the “platform economy” or “digital platform economy”. Digitalization and cloud technologies are the infrastructures on which new economic activities and organizational models operate, i.e. platform markets and

business/commercial/institutional ecosystems. Digital platforms are therefore the core of this innovative reorganization of the economy: they are the hinges and mediators of the actions and development of software, hardware, operations and networks.

CONCLUSION

The growing number of economic entities, the development of the digital environment, the rapid transformation of forms of interaction in it, the creation of new goods and services determine the growth of competition in innovative activities [23].

The replacement of old channels of business interactions with information technologies and DP leads to the fact that one of the key advantages for economic entities in the process of implementing innovative activities is online relations in real time [22]. The development of digitalization processes enables economic entities to automate expensive and labor-intensive communication stages of innovative activities when searching for strategic partners.

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