DIGITAL AND INFORMATION TECHNOLOGIES IN THE MANAGEMENT OF FINANCIAL ACTIVITIES IN UKRAINE IN THE CONDITIONS OF THE DIGITALIZATION OF THE ECONOMY

[a]ANZHELA NIKOLAEVA, [b]IRYNA VORONENKO, [c]OLHA SHULHA, [d]IVAN BONDARENKO, [e]MAKSYM PALCHYK

[a]Lutsk National Technical University, 75, Lvivska Str., 43018, Lutsk, Ukraine
[b]National University of Life and Environmental Sciences of Ukraine, 16a, Heroyiv Oborony Str., 03041, Kyiv, Ukraine
[c]State University of Intelligent Technologies and Telecommunications, 1, Kuznechna Str., 65023, Odesa, Ukraine
[d,e]National Academy of the Security Service of Ukraine, 22, Mykhaila Maksymovycha Str., 03066 Kyiv, Ukraine
email: [a]anzheli@ukr.net, [b]irynav@nubip.edu.ua, [c]shulga_olga_a@ukr.net, [d]shtojtiza@gmail.com, [e]plcmclp@gmail.com

Abstract: The article examines the modern specifics of the transformation of the financial activity principles, which occurs under the influence of the wide introduction of modern information technologies in the field of financial management in the process of forming a digital economy. The specifics of the functioning of FinTech companies in Ukraine were considered and the main directions of applying innovations in the financial sphere were considered. The main principles of the formation of the financial management system based on the application of digital software solutions and information technologies have been determined. The peculiarities of digitalization of the financial market are considered and the principles of reorientation of the financial management system to the latest digital software solutions in the field of financial management are determined.

Keywords: Digital economy, Digitization, Financial activity, FinTech, Information technology.

1 Introduction

The specificity of the formation of financial activity management systems in conditions of intensive development of information technologies and their introduction into business processes at all levels largely depends on the speed of transition of this system to the principles of the digital economy. At the same time, the essence of the digital economy is defined as an economic activity, where the key factor of production is data in digital form, the processing of large volumes of this data, and the use of the results of the analysis of which, compared to traditional forms of business, allow to significantly increase the efficiency of the functioning of various sectors of the national economy. In today`s conditions, without introducing the principles of the digital economy into the national economic system, it is impossible to ensure the proper level of the country`s competitiveness on the world market, which is the reason for including it among the priority areas of socio-economic development.

In addition, digital and information technologies are gaining importance in the field of financial management, because the significant deepening of the financialization of economic systems and the transition to the functioning of global financial networks cause an objective need to develop a new financial management strategy based on the principles of the digital economy. At the same time, the characteristic features of such financial management are the growth of productivity and quality of processing information about financial markets; the transition of consumers of financial services to the field of information activities; a significant transformation of the organization of business processes, which involves the formation of horizontal network interaction between various divisions of corporations; as well as global technological changes throughout the world economic system.

Thus, the digital transformation of the financial management system provides opportunities for a significant economic and social effect and also contributes to the discovery of new opportunities for economic entities and the state in the field of ensuring the effectiveness of the functioning of the national economy. That is why, taking into account the significant impact of digital and information technologies on this field, the relevance of research on the influence of the principles of the digital economy on the functioning of the financial management system is increasing.

2 Literature Review

The study of the problems of effective management of financial activities in the conditions of the digitization of the economy and the growing intensity of the use of information technologies in business processes is marked by the need for a practical assessment of the specifics of the functioning of such systems. Therefore, the study of this issue, although not new to economic science, requires a combination of theoretical assessments with real experience of the integration of economic activity into the information space. In this aspect of research, significant attention is paid to the study of practical approaches to the functioning of digital and information systems in the global economy. These issues are sufficiently widely discussed in the works of such researchers as O. Agres [1], I. Balaniuk [4], A. Boiar [6], L. Burdonos [15], M. Dziamulych [17-25], N. Gavrylenko [26], N. Kraus [29], T. Kravchenko [30], O. Liubich [31], M. Maksimova [32], R. Ribeiro [35], T. Shmatkovska [36-39], O. Stashchuk [45-47], I. Yakoviyk [48], O. Yatsukh [50] and others. In addition, it is also worth highlighting the significant contribution that was made to the study of financial management problems using modern digital software solutions and information technologies implemented in the process of intensification of scientific and technical development. In particular, in this case, it is worth noting the works of such scientists and practitioners as O. Apostolyuk [2], V. Baidala [3], O. Binert [5], O. Bondarenko [7], I. Britchenko [8-14], Y. Chaliuk [16], I. Gryshova [27], A. Holoborodko [28], V. Nahornyi [33], J. Reitšpís [34], R. Sodoma [41-44], Ya. Yanyshyn [49], A. Zielińska [51] and many others.

However, the dynamic changes taking place in the field of information technologies under the influence of their increasing complexity and the wide implementation of the principles of the digital economy in the activities of enterprises force us to look for new approaches to improving the management of financial activities based on the latest digital software solutions.

3 Materials and Methods

World experience shows that the evaluation of the effectiveness of financial activity management with the help of modern information and digital technologies is carried out on the basis of the application of a set of universal methods and models: statistical, expert evaluation methods, the method of analogies, the method of the decision tree; sensitivity analysis, simulation modelling, etc. However, due to the fact that digital economy technologies represent a complex and non-linear system, the following methodological approaches are used in practice to analyze financial management models formed on the basis of digitalization:

Systemic – makes it possible to analyze objects of different nature and complexity from a single point of view, to identify the most important characteristics of the functioning of the system, and to take into account the most significant factors affecting its development. At the same time, subordination of goals and results of subsystems to the general system goal is assumed.

Parametric-diagnostic – analysis and assessment of financial and non-financial indicators, cost indicators, financial sustainability, and indicators characterizing the level of development of the economic system or its individual elements (business entities, banks, etc.) using methods of performance analysis, point, and rating evaluation.

Statistical – in the field of digitalization, it is possible to estimate the magnitude of undesirable consequences expressed under

various conditions of its implementation, and the probability of their occurrence, then the risk can be assessed as the magnitude of the risk of expected failure in current financial transactions.

Institutional – when the state is considered as a management entity that ensures the organization and functioning of all elements of the socio-economic structure. Acting as a representative of society as a whole, it establishes the rules of functioning and interaction of economic agents within a certain economic "order" and exercises control over their observance.

Differentiated – offers new services, ideas, products, and shapes, and stimulates new consumer needs for digital financial services.

Synergistic – implies a compatible cooperative effect, which is achieved through the interaction of various systems, most complex, consisting of a large number of elements, between which there is a significant number of relationships. At the same time, in simple systems, there is a single cause-and-effect relationship, and in complex systems, the causes are separated from the consequences both in time and in space [38].

4 Results and Discussion

Modern trends in the development of the world economy are determined by the active use of information and intellectual and digital technologies that ensure the full realization of human potential and artificial intelligence. The prevalence of these processes determines the existence of the digital economy, which is characterized by the active implementation of digital technologies for storing, processing, and transmitting information in all spheres of society. At the same time, a characteristic feature of the digital economy is its connection with the on-demand economy, which involves obtaining access to goods and services at the moment when it is needed. Orders are received online and fulfilled offline. The main advantages of the digital economy are the high speed of obtaining the necessary product, the reduction of costs for the end-user due to the reduction of the number of intermediaries, and the simplification of the exit of suppliers to consumers. It is believed that technological changes have a significant impact on the economic development of the country.

It should be noted that all these rules and laws equally apply to both traditional business processes and financial activities and financial management in particular. At the same time, in the field of financial technologies, radical changes are currently taking place, which affect the infrastructure (related to the increase in the level of automation), openness, and customer orientation. The development of such technologies as big data, cloud services, artificial intelligence, new analytical tools, etc., contribute to the transition of the quality of customer service to a higher level. At the same time, the intensive development of the financial market under the influence of information technologies and modern digital software solutions led to the structural restructuring of financial management systems, which manifested itself in:

- Computerization of the internal structure of the financial market and creation of a modern financial telecommunications environment;
- Orientation of financial activities to the introduction of advanced digital technologies;
- The creation of basic standards regulating the form of presentation, methods of data processing, and forwarding of information (exchange protocols, interfaces);
- The creation of the main components of informatization of the financial market infrastructure;
- Formation of a global computer network for the use of accumulated databases on financial market participants;
- Large-scale application of integrated information processing systems;
- Tracking the growing possibilities of using digital technologies.

In addition, the result of intensive digitalization in the system of financial services was the formation of a new direction of activity in this area, which was called FinTech business. FinTech represents significant value for the spread of financial services and products into new areas and among different segments of the population. Also, the implementation of digital technologies in financial activities significantly increases the efficiency of the financial market, contributes to the formation of consumer preferences, and reduces the cost of entering the market for new enterprises. In general, FinTech exerts competitive pressure on traditional business models of financial organizations, eliminating the need to involve additional intermediaries, and stimulating the emergence of new ways of providing financial services. Given the large percentage of people who are unbanked or underserved, as well as the difficulties for banks to serve micro and small enterprises and people living in remote areas, there is an unfilled financial niche in the market. This creates significant investment opportunities for the FinTech sector. In addition, investments are needed due to the emergence of electronic commerce and the need for cheap payments and money transfer services (especially expensive small sum transfer services). At the same time, according to experts in Ukraine, the development of FinTech is taking place quite intensively in several key directions (Figure 1).

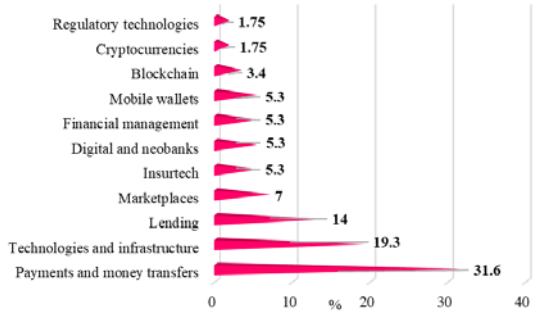

Figure 1 – Directions of FinTech business functioning in the economic system of Ukraine, %
Source: [27].

Thus, it can be argued that digitalization in the financial market contributes to the coordinated management of all processes based on the creation of a highly organized environment that encompasses and unites information, telecommunications, software, information technologies, networks, knowledge databases, and other means of information. It identifies opportunities for effective implementation of various digital technologies, development of Big Data, "smart" technology, "smart" industries and cities, digital finance (FinTech), design technologies (BIM), and public services (E-Gov). At the same time, specialized cloud technologies based on the principles of Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS) have become particularly relevant in the field of financial services.

At the same time, in the field of financial activity, Platform as a Service, the model which provides for data management using application programs, has become the most common in practice. With the use of this technology, the user can place in the cloud infrastructure a wide variety of services, applications, or tools that are supported by a specific provider of cloud services. Thus, there is no need to control the actual cloud infrastructure, the provider`s server network, or data storage. However, the user is given the opportunity to control the placement of applications, as well as the configuration parameters of the specific hosting environment.

The application of digital and information technologies is also gaining special relevance in the field of financial management. At the same time, its main goal does not undergo significant transformations and consists in ensuring the effective financial activity of the enterprise, the growth of its market value, and the well-being of all participants in the market and corporate relations in the current and prospective periods. However, taking into account the significant increase in the volume of data that is processed using modern digital methods and models, the financial management system integrates the system of its goals

and objectives with the systematic application of information and communication technologies in a digital format at all levels of management specifically to achieve the main goal of financial management

In practice, the information system of financial management is a process of continuous purposeful selection of relevant informative indicators necessary for analysis, planning, and preparation of effective management decisions regarding the financial activities of the enterprise. According to experts` forecasts, by 2024, 90% of organizations will use hybrid cloud technologies and tools and create their own digital IT environments for further development in the digital economy [15]. The content of the financial management information support system, its breadth and depth are determined by the sectoral features of the enterprise, the organizational and legal form of management, and the scope, and degree of diversification of financial activities.

The main advantages of the information support system for management decisions, based on the application of the latest information technologies and digital software solutions, include: improving the quality of financial information, ensuring its reality, and greater suitability for economic justification of decisions and risk prevention in financial activities; the ability to independently choose the company`s accounting policy and present information in the most user-friendly form; adaptation of the reporting system of Ukraine to international standards, the possibility of presenting information about the results of financial and economic activity in the form of econometric models with a set of ready-made solutions based on programmed goals, etc.

In addition, the development and spread of new technologies open up new prospects for the development of financial management, which involve the use of artificial intelligence systems. In particular, it allows you to form a complex information system for managing the financial activities of the enterprise based on innovative solutions that use a comprehensive approach to business management, the best international methods, and practices, which guarantees flexibility of settings, ease of use and a significant economic effect.

If we talk about the financial market, then it has a fairly significant potential for the use of modern digital technologies. Researchers have proven that with the proper level of information technologies, instant transfer of information from one financial market entity to another is ensured which significantly improves the work of financial institutions and contributes to the development of the economy as a whole. Based on this, financial market participants must constantly use the experience of developed countries to ensure the effectiveness of their development [7]. Currently, in the financial market, positive changes related to the practical application of digital technologies are the emergence of new companies, simplification of access to financial services, improvement of the attraction of new customers by sellers of financial services; improvement of accounting, analysis and assessment procedures, dynamic management of financial resources of financial intermediaries, improvement of the interaction of sellers of financial services with regulators, stimulation of development of financial services and improvement of their quality, etc.

If we consider the specifics of the functioning of the financial services system in B2B and B2C directions, the world experience shows that the majority of FinTech business is implemented according to the B2B principle. At the same time, the sphere of payments occupies the first place among all spheres of activity of FinTech companies and is a key direction of investments. This is due to the fact that in this field there is no need to make significant financial investments or implement the functioning of complex organizational structures. It is only necessary to establish a connection between the recipient and the sender of the translation. According to statistics, about a third of all FinTech providers in Ukraine work in the field of payments between legal entities and are aimed at serving small and medium-sized enterprises (Figure 2).

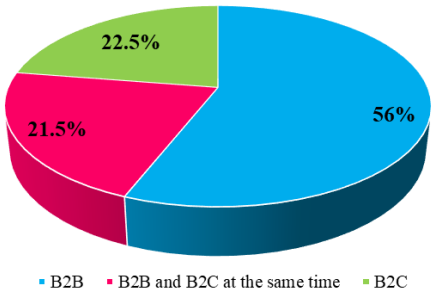

Figure 2 – Market segments of FinTech business in Ukraine
Source: [27]

As we can see, the majority of FinTech business models in Ukraine are currently based on the principles of functioning due to interaction with large corporate clients, and B2C systems, which are oriented toward the mass market, currently occupy a smaller share of the total number of FinTech companies. However, it is worth noting that in recent years, the field of retail trade has also begun to systematically use FinTech in its analytics. More and more companies in this sector of the economy are creating divisions for working with data that analyze information received from promotions, marketing companies, data on purchases, credit and discount cards, buyer activity in social networks, etc., and on its basis carry out a practical transformation of their financial activities.

Thus, it can be argued that positive trends in the functioning of the financial market in the economy of Ukraine are possible due to the implementation of a whole set of measures and tasks, the priority among which is the testing of digital technologies and platforms by various financial institutions. Improving trends in the development of the financial market in the context of the development of the digital economy determine the need to develop and implement a set of measures for the implementation of specialized regulatory and legal regulation of FinTech activities. Therefore, further research in this field should focus on the formation of FinTech institutional regulation mechanisms, as a form of interaction between financial market subjects. At the same time, its effective institutional regulation will guarantee safety for users and determine the possibilities of further successful implementation of the latest digital technologies in the financial market in general.

5 Conclusion

Therefore, it can be argued that a properly formed financial management system based on the systematic application of modern information technologies and digital software solutions will contribute to stable functioning, dynamic development, and improvement of the efficiency of financial management in general. At the same time, taking into account the modern trends of digital transformation of the economy, it is advisable for business entities to regularly supplement and update the main elements of the financial management system with modern information and communication technologies since technological trends require constant improvement not only of the organizational component of financial management but also of its technological base. The effectiveness of the choice of financial methods and tools, investment volumes, or other aspects of the financial activity of enterprises depends on this.

In addition, the overall efficiency of the financial management system of any economic entity is determined by its ability to function effectively in the current conditions of the dynamic external economic environment. Therefore, the issue of building an effective financial management system, taking into account the features of the modern economy and the trends of digital transformation of the entire society, is gaining special relevance.

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