



Project Approach to the Formation of Digital Communities in Ukraine in the Context of the EU-Ukraine Association Agreement

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Abstract

The peculiarities of the application of the project approach to the formation of digital communities in Ukraine in the context of the implementation of the Association Agreement between Ukraine and the EU have been studied. The European experience of digital transformation of local communities is analyzed and the key aspects of its adaptation in Ukrainian realities are identified. A model of project management of the development of digital communities taking into account European integration processes is proposed.

The study is based on a systematic analysis of the processes of digital transformation of territorial communities and the implementation of European project management practices. The methodological basis of the study is an integrated approach, including the analysis of the regulatory framework, statistical data and practical experience in the implementation of digital projects. The results of the study demonstrate that the effectiveness of the formation of digital communities largely depends on the quality of project management and the systematic implementation of digital innovations.

The paper presents an analysis of the key components of the project approach: digital transformation project management methodology, financing mechanisms, performance evaluation tools, and results monitoring systems. Particular attention is paid to the study of the success factors of digitalization projects, including the organizational capacity of communities, the level of digital competencies, the quality of infrastructure and the effectiveness of intermunicipal cooperation.

The practical significance of the results obtained lies in the development of recommendations for improving project management mechanisms in the process of forming digital communities. A model for assessing the readiness of communities for digital transformation and a methodology for prioritizing digitalization projects are proposed. Critical success factors and potential risks of implementing digital projects in the context of limited resources of territorial communities have been identified.

Keywords: digital communities, project approach, Association Agreement, digital transformation, digital governance, Europeanization of the judicial administration system, local self-government, European integration, Foresight

Проектний підхід у формуванні цифрових громад в Україні в контексті Угоди про асоціацію України та ЄС

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Анотація

Досліджено особливості застосування проектного підходу до формування цифрових громад в Україні в умовах реалізації Угоди про асоціацію України та ЄС. Проаналізовано європейський досвід цифрової трансформації місцевих громад та визначено ключові аспекти його адаптації в українських реаліях. Запропоновано модель проектного управління розвитком цифрових громад з урахуванням євроінтеграційних процесів.

Дослідження базується на системному аналізі процесів цифрової трансформації територіальних громад та імплементації європейських практик проектного управління. Методологічною основою дослідження є комплексний підхід, що включає аналіз нормативно-правової бази, статистичних даних та практичного досвіду впровадження цифрових проєктів. Результати дослідження демонструють, що ефективність формування цифрових громад значною мірою залежить від якості проектного управління та систематичності впровадження цифрових інновацій.

У роботі представлено аналіз ключових компонентів проектного підходу: методології управління проєктами цифрової трансформації, механізмів фінансування, інструментів оцінки ефективності та системи моніторингу результатів. Особливу увагу приділено дослідженню факторів успішності проєктів цифровізації, включаючи організаційну спроможність громад, рівень цифрових компетенцій, якість інфраструктури та ефективність міжмуніципальної співпраці.

Практичне значення отриманих результатів полягає у розробці рекомендацій щодо вдосконалення механізмів проектного управління в процесі формування цифрових громад. Запропоновано модель оцінки готовності громад до цифрової трансформації та методику пріоритизації проєктів цифровізації. Визначено критичні фактори успіху та потенційні ризики впровадження цифрових проєктів в умовах обмежених ресурсів територіальних громад.

Ключові слова: цифрові громади, проектний підхід, Угода про асоціацію, цифрова трансформація, цифрове врядування, європеїзація системи судового адміністрування, місцеве самоврядування, євроінтеграція, Форсайт

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Introduction.

Modern processes of digital transformation of society and the European integration course of Ukraine create new opportunities and challenges for the development of territorial communities (Kvitka, 2021). The Association Agreement between Ukraine and the EU defines important areas of cooperation in the field of digital society and digital economy, which requires a systematic approach to the implementation of appropriate changes at the local level (The Association Agreement, 2017).

Digital transformation of local communities is one of the priority directions of Ukraine's development in the context of European integration and implementation of the Association Agreement with the EU. Digitalization, which covers all spheres of public life, is one of the key trends of modern human development (Kvitka, 2020). In the context of global changes, digital technologies have become not only a tool for improving management efficiency, but also the basis for the formation of new social structures - digital communities. More and more countries are aware of the importance of introducing digital technologies in the processes of public administration, education, health care, entrepreneurship, etc. For Ukraine, which, despite full-scale military aggression, is on the way to integration into the European community, digitalization is not only a challenge, but also a unique opportunity to accelerate economic development and improve the quality of life of the population.

In this process, the Association Agreement between Ukraine and the European Union plays a significant role, which establishes standards aimed at harmonizing Ukrainian legislation with the European legislation. The fulfillment of these obligations involves the introduction of the latest approaches to management, including the project approach. Digital communities are a complex phenomenon that covers not only technological dimension, but also social, cultural and economic aspects. On the one hand, digitalization contributes to democratization of access to public information, providing citizens with the opportunity to participate in decision-making. On the other hand, digital transformation processes require considerable resources, knowledge and skills, which creates certain challenges for communities, especially in economic and social instability. This requires the search for innovative solutions that will effectively overcome existing barriers and ensure sustainable development.

The project approach in this context is an effective tool for planning and implementing digital innovations at the local level, which allows you to

use the existing resources as efficiently as possible to achieve the set goals. This approach is widely used in world practice and is an effective tool for the introduction of digital technologies at the local level. It allows you to structure the digitalization process, define clear goals, optimally allocate resources and ensure control over the task. The use of a project approach contributes not only to improving the efficiency of management, but also for involvement of citizens in active participation in community development processes. In the context of the Association Agreement, the project approach opens new opportunities to harmonize Ukrainian digitalization practices with European standards, which, in turn, promotes Ukraine's integration into a single digital EU digital market. The relevance of the study is due to the need to develop scientifically sound approaches to the introduction of digital innovations in the territorial communities of Ukraine, taking into account European standards and practices.

To do this, you need to consider a number of factors. First, the processes of digitalization of local self-government in Ukraine have accelerated significantly after the signing of the Association Agreement with the EU, which requires systematic scientific understanding and methodological support. Secondly, the success of the digital transformation of communities depends directly on the quality of project management, taking into account the European experience of its implementation. Third, community digitalization is a prerequisite for Ukraine's competitiveness in globalization. Fourth, the implementation of the project approach allows you to organize digital transformation processes, increasing their performance and transparency. Fifth, the Association Agreement defines clear guidelines for the development of digital communities, which creates a regulatory and organizational basis for their formation (Karpenko, 2020).

However, despite significant progress in this area, there are still many challenges in Ukraine related to uneven access to digital services, low digital literacy and limited financial resources that need analysis and comprehension.

The purpose of the study is to determine the role of the project approach in the formation of digital communities in Ukraine, to analyze the existing challenges and opportunities in this process and to offer certain features of the community digitalization model.

Analysis of Research and Publications. Scientific analysis indicates significant scholarly interest in Ukraine's Europeanization and community digitalization issues.

The majority of scholars view community digitalization based on the project approach as



a key factor in their sustainable development. S. Kovalchuk (2020), focuses on the need to increase digital literacy among the population for the effective implementation of digital initiatives. T. Kozachenko (2018) explores the features of project management in the context of digital transformation of public administration and considers innovative approaches to the management of digitalization projects. N. Petrenko and L. Mashkovskaya (2020) drew attention to the normative legal aspects of community digitalization. G. Makota (2015) considered the main directions of improvement of state administration of international technical cooperation between Ukraine and the EU.

The European experience of forming digital communities is covered in detail in World Bank (2023) research, which emphasizes the importance of a systematic approach to the introduction of digital technologies at the local level and is noted that the direct transfer of European practices to Ukrainian realities may not always be effective and needs to be adaptable context.

An important factor in the path of Europeanization of Ukraine is the imperfect judicial system, which prevents not only the attraction of investments and the formation of an innovative economy, but also the digital development of the country and communities. This aspect of European integration was paid to A. Belova (2022), which dedicated its article to the analysis of the current state and the definition of perspective directions of Europeanization of the judicial administration system in Ukraine in the conditions of digital development of justice. It, in particular, is substantiated that the digitalization of justice is a challenge of time and the objective need of today. It envisages the introduction of modern digital technologies, digital innovations in all areas of activity of courts, bodies and institutions of justice system in order to ensure the accessibility, quality and efficiency of justice, its unity, improvement of judicial administration, improving the level of public confidence in court, strengthening the authority of the judicial branch.

Within the framework of the same topics, N. Goncharuk and A. Belova (2022) devoted their work to the study of the current state of organizational-legal and personnel support of the activity of local courts, as the main link of the system of justice, in the conditions of Europeanization of the judicial administration system in Ukraine. The authors summarized the domestic experience of formation and development of judicial administration, its transformation within the framework of previously conducted judicial reforms and identified priority directions of improvement of organizational and legal and personnel support

Research Results.

Digital communities can be defined as social associations existing in a specific territory that actively use digital technologies to provide citizens with digital services, promote civic activity, and improve community residents' quality of life. According to European Commission recommendations (2020), main digital community characteristics include: providing access to high-speed internet, population digital literacy, and using digital platforms for citizen-government interaction. Also, a digital community can be defined as a territorial community that systematically uses digital technologies to improve life quality, management efficiency, and sustainable development (Kuibida, Karpenko, & Namestnik, 2018).

The conceptual concept of «digital community» covers a complex of technological, organizational and social aspects of the introduction of digital technologies in the life of the territorial community. Theoretical and methodological analysis of the concept of digital communities allows you to distinguish three key dimensions of their functioning: technological, social and management. The technological dimension includes infrastructure elements and technical solutions that provide digital transformation. The social dimension covers the processes of adaptation of the population to digital innovations and the formation of new models of social interaction. The management dimension concerns the transformation of decision-making processes and public services (Shveda et al, 2024).

Digital community effectiveness largely depends on these three dimensions' integration level and ability to create synergistic effects. One can speak of a direct correlation between community digital maturity level and socio-economic development indicators.

This is evidenced by the European experience of forming digital communities. From this experience it is possible to distinguish a number of key elements of effective digital success of communities. First, it concerns planning and design based on Foresight Technology. European communities are developing longterm digital transformation programs that integrate with general territorial development plans. Particular attention is paid to ensuring the sustainability of the projects and their compliance with the needs of the local population (Feliciano-Cestero et al, 2023).

Second, considerable attention is paid to the development of partnership and cooperation. It should be noted that all successful digitalization projects are based on active cooperation between different stakeholders: local authorities, business, public organizations and scientific institutions (Mossberger, Lacombe, & Tolbert, 2022).



Third, the role of innovative digital technologies is emphasized—the use of modern digital solutions, including artificial intelligence technologies, blockchain and Internet things, to optimize municipal services and improve the quality of life of citizens (Nadkarni, & Prügl, 2021).

There are various approaches to the implementation of project management in the formation of digital communities in EU countries. According to the study of the European Commission (2023A), the success of digital transformation at the local level correlates with the systematic design approach and the level of institutional capacity of communities.

Comparative analysis of digitalization models in EU countries reveals three main project management archetypes:

1. The Northern European model has a high level of centralization of project management, standardized methodologies, integrated digital platforms.

2. The Central European model is inherent in a mixed coordination system, regional autonomy, industry specialization.

3. The Southern European Model is related to the use of a decentralized approach, flexible methodologies, inter-municipal cooperation (European Commission, 2020; Hilchenko, & Vieriutina, 2016).

There are some examples of specific cases that demonstrate successful digitalization practices.

The X-Road was introduced in Estonia as a single data exchange platform between different information systems (e-Estonia, 2023).

Sweden has introduced the Smart City Sweden (2023) project, which demonstrates an integrated approach to the introduction of digital technologies, in particular, reducing energy consumption, optimizing transport flows, improving the quality of public services.

Impact of the EU Association Agreement.

The EU-Ukraine Association Agreement (2017) provides for, among other things, implementation of EU standards in digitalization, including digital governance development, ensuring cybersecurity, and expanding access to digital services. This creates additional incentives for communities to implement innovative solutions.

The Agreement defines the key areas of cooperation between Ukraine and the EU in the field of digital transformation of society. The analysis of this document, conducted by foreign and domestic scientists allows to determine the directions of implementation of the agreement in the field of digitalization.

The development of digital communications involves the harmonization of national legislation

with EU norms, the implementation of European standards of digital communications, ensuring technological neutrality and compatibility of networks. The introduction of digital government is to develop digital identification systems, create uniform registers and databases, ensure the interoperability of information systems

In the development of digital skills and knowledge, a key role should play the integration of digital competences into educational programs, creating a system of certification of digital skills, branched system of advanced training of public servants (Rudik, 2014; Ukraine 2030e, 2019).

The quantitative analysis of the fulfillment of obligations, conducted by the methodology of the European Commission, shows different levels of progress in individual areas. As of 2023, the highest level of implementation is observed in the field of digital communications, while in the field of cybersecurity this figure is much lower (European Commission, 2023b).

The Association Agreement between Ukraine and the EU has opened new opportunities for digital transformation of Ukrainian communities in cooperation of Ukrainian communities with European projects and funds. Such cooperation takes place in clearly defined priorities, which include harmonization of national legislation with European standards, development of digital government, providing cybersecurity and creating a single digital market. This stimulates local communities to introduce modern technologies and adapt to European practices (Rudik, 2016).

One of the key achievements in fulfilling the obligations under the Association Agreement is the introduction of digital document circulation and digital services. For example, many communities are actively using the Open City platform that allows residents to apply to local authorities in digital format, monitor their consideration and receive feedback. This contributes not only to enhancing the transparency of management, but also for the involvement of citizens in active participation in the development of their community (OECD, 2022).

However, the fulfillment of the obligations stipulated by the Association Agreement also creates additional challenges. For example, cybersecurity requirements require significant investment in protecting information systems, which is a serious financial burden for many communities. In addition, harmonization of legislation requires constant training of local personnel, which often do not have access to the necessary resources (Global Innovation Index, 2022).

The speed of implementation of obligations by agreement depends largely on the level of institutional capacity, the amount of funding and



the availability of technical assistance of the EU (Kotelevets, 2022). According to the results of surveys of Ukrainian experts, the main challenges in the process of fulfillment of the obligations accepted by Ukraine are insufficient coordination between authorities, limited financing, lack of qualified personnel, technological restrictions (Polissya Fund of International and Regional Studies, 2020).

Project approach in the formation of digital communities.

The project approach in the context of the Association Agreement is considered as a management system that allows you to clearly define the goals, resources, stages and expected results of digital transformation. It is based on the use of project management tools such as Prince2, PMBok and Agile, which allows you to adapt the processes to the specific conditions of the community (Kvitka, Mazur, & Korsun, 2024).

Among the areas of formation of digital communities within the project approach are development of digital infrastructure, introduction of digital administrative services, development of creation of systems of digital democracy, introduction of Smart decision, smart specialization, creative industries (Mazur, Kvitka, & Mirgorodskaya, 2024).

Since digital development involves conducting Forsythe, the methodology of effective management of digital community transformation projects should provide a clear definition of goals and expected results, detailed planning of resources and terms, risk management, stakeholder attraction, monitoring and evaluation of project execution.

The project approach involves the use of specific management methods and tools to achieve unique results in limited resources and time. In general, it is considered an effective mechanism for innovation implementation and changes in the public sector.

Analysis of the project approach in public administration demonstrates its multidimensionality and systemic nature (Lada, 2021). The methodological base of the project management in the public sector is based on the synthesis of classical approaches of project management and specific principles of public administration (Khadzhrayraraeva, 2018; Kuibida et al, 2019; Kozachenko, 2018).

Therefore, Ukraine is at the stage of large-scale digital transformation, which covers both national and local levels. In recent years, a number of strategic initiatives have been implemented aimed at creating conditions for the development of digital communities. In particular, the Ministry of Digital Transformation of Ukraine has determined one of its key priorities for ensuring citizens' access to digital services, the development of digital infrastructure and increasing digital literacy (Shtal, & Plie Khanov, 2023).

According to the Ministry of Digital Transformation of Ukraine (2024), as of the beginning of 2024:

- 67% of territorial communities have approved digital transformation strategies;
- 82% provide basic administrative services in electronic form;
- 45% use geoinformation resource management systems;
- 73% provide access to broadband Internet in administrative centers.

However, despite the progress made, the state of community digitalization remains uneven. According to the Minister (2023) report, about 70% of territorial communities have launched digital transformation processes, but only a quarter of them have a developed digital infrastructure, which includes high-speed Internet, access to modern information platforms and automated management systems. The most gaps are between millionaire cities and rural areas where the lack of technical resources and insufficient digital literacy is created by serious barriers (Kvitka, Titarenko, & Mazur, 2019).

The formation of digital communities in Ukraine faces many challenges that are both objective and subjective. Among the key problems is the following.

Uneven access to digital infrastructure. Despite the government's efforts to provide access to high-speed Internet, much of the rural areas remain outside the digital coverage. This limits the ability of residents of such communities to use digital services and participate in digital government processes.

Low digital literacy. According to polls, only 40% of Ukrainians have basic digital skills necessary to work with online services. This indicator is particularly low among the elderly and rural residents, which requires systematic learning programs and raising (Polissya Fund of International and Regional Research, 2020).

Limited financial resources. Most territorial communities in Ukraine have a limited budget, which does not allow to invest in the development of digital infrastructure or the implementation of innovative projects. The lack of funding also complicates the involvement of qualified specialists to implement digital initiatives.

Personnel shortage. The development of digital communities requires highly qualified specialists in the field of information and communication technologies, project management and cybersecurity. However, most communities face the problem of such personnel, which significantly slows down the digitalization process.

Lack of coordination between management levels. Despite the existence of a state digitalization



strategy, the interaction between central and local authorities is often weak. This leads to duplication of functions, loss of resources and reducing the efficiency of project implementation (Samoilenko, 2023). According to the Ministry of Digital Transformation of Ukraine (2023), 70% of Ukrainian communities have launched digitalization processes, but only 25% have access to high-speed Internet in all settlements.

However, given the above prospects and problems, within the framework of the project approach it is possible to offer certain proposals for the model of digital development of communities.

Model of project management of digital development of communities.

The development of an appropriate model of development of a particular territory or community requires separate deep research (Ivanova et al, 2021). As part of this work, we will limit some of the project approach parameters, which, in our opinion, should be taken into account when introduced by community digitalization policies in Ukraine.

1. Programming (Foresight) of digital development includes the analysis of the current state, determining priority areas of development, taking into account stakeholders' positions, development of roadmap implementation.

2. The organizational structure involves the creation of a project office, the formation of project teams, a clear distribution of responsibility and authority.

3. Project management methodology should be developed on the basis of adaptation of international standards, development of local techniques and monitoring systems that take into account local specificity

4. An important aspect is to identify the sources of financing of digitalization projects. These include state and local budgets; International technical assistance, public-private partnership, various EU grant programs. Despite the variety of community development conditions and the initial circumstances of the beginning of the digitalization process, there are several main aspects of the project approach to the management of community development.

An important initial condition of community digitalization is the legal support of the process, which is related to the need to improve the legal framework for regulating digital transformation-providing information security, protecting personal data and standardization of digital services.

An important area is the development of digital competences and advanced training of local government workers and community members through curricula, exchange of experience, mentoring, professional internships. This practice is

not enough and often depending on the availability of appropriate grant programs.

The technological basis of digital development is the expansion of broadband access to the Internet, modernization of hardware, introduction of cloud technologies, providing appropriate technical support (Kvitka, & Mazur, 2019).

Conclusions.

The analysis allows you to formulate a number of conclusions on the implementation of the project approach in the formation of digital communities in Ukraine.

First, the success of digital transformation of territorial communities is directly related to the quality of project management. The experience of communities that have implemented programs of Digital development showed a strong positive relationship between these factors. In practice, this means that the better organized project management, the higher the chances of a successful digitalization of the community. The implementation of a system project approach increases the efficiency of digital innovations and provides investments in the community economy.

Second, the experience of European countries shows the presence of different digital transformation management models, each with its own characteristics and advantages. The most effective, in our opinion, is the North European or Scandinavian model, which is characterized by a high level of centralization and standardization of processes. This experience is especially interesting for Ukraine, given the similarity of the scale and challenges of digitalization.

A key factor in the success of digital transformation projects is not so much a technological component as organizational factors: community institutional capacity, staff competence and financial support. This refutes the widespread opinion that only modern equipment and software are sufficient for successful digitalization.

Ukraine's fulfillment of obligations under the Association Agreement shows a positive impact on the processes of digital transformation in the country and, however, different directions develop unevenly. The best results are observed in the field of digital communications of citizens with the authorities, while cybersecurity requires much more attention.

The project approach in the formation and development of digital communities in Ukraine is an effective tool for implementing European integration aspirations at the local level. Its use allows you to optimize digitalization processes, involve communities in active participation and promote sustainable development. Successful implementation of the digital community formation model requires a system project approach,



coordination of efforts of all stakeholders and proper resource support. Considering the terms of the Association Agreement for Digital Community Development on the basis of the project approach, it is important to invest in digital infrastructure, to conduct systematic training of digital literacy, to involve community residents in the development and implementation of digital projects, to use international experience and standards.

Further research in this sphere should focus on studying digital transformation's long-term effects, developing community digital maturity assessment methods, and analyzing digitalization's socio-economic consequences. An especially interesting direction could be studying digital technologies' impact, especially artificial intelligence, on community life quality and local digital democracy development.

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