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DOI <https://doi.org/10.26661/2414-0287-2025-1-65-18>**DIGITALIZATION OF UKRAINE IN THE POST-WAR PERIOD AND ITS IMPACT ON JOBS****Cherep O.H., Shcheblykina I.O., Hul Ya.V.***Zaporizhzhia National University**Ukraine, 69011, Zaporizhzhia, Universytetska str., 66**cherep.av.znu@gmail.com, innasheblykina@gmail.com, hul.yaroslav@gmail.com**ORCID: 0000-0002-3098-0105, 0000-0002-3214-8478, 0009-0001-6579-2358***Key words:**

digital economy, digitalization, AI, information technology, Ministry of Digital Transformation.

This article examines the topic of Ukraine's digitalization in the postwar period and identifies its impact on job creation in the field of technology and innovation. It should be noted that Ukraine is the only European country that has sufficient human resources to be involved in the development of the digital economy. The coronavirus pandemic and the war in Ukraine have forced our country to integrate technology more intensively into the economy and adapt to new environmental changes, which in fact demonstrates the relevance of a more detailed consideration of the development of digitalization in the postwar period as one of the main tools for economic recovery. To begin with, the essence of digitalization as an economic phenomenon was investigated and the vision and understanding of this concept by scholars was analyzed. Next, the level of digitalization of the Ukrainian economy was studied in detail by analyzing its innovation potential and determining that Ukraine's strengths are the high level of knowledge and the availability of specialists who are ready to work for the development of innovation. It should be noted that during the period of martial law in the country, the volume of the artificial intelligence market and technology exports have grown, which are positive indicators of the deepening digitalization of the Ukrainian economy. Having studied the level of digitalization of Ukrainian regions, it was determined that it is mostly positively growing, with the exception of regions located close to the military action zone. As a promising direction for the development of digitalization in Ukraine and job growth, it was proposed to create a digital platform aimed at attracting foreign companies to Ukrainian business. Therefore, in the context of post-war recovery, it is proposed to create an information platform for innovative start-ups which will not only expand their activities in foreign markets but also contribute to increasing the level of digitalization and increasing the number of jobs.

ЦИФРОВІЗАЦІЯ УКРАЇНИ У ПОВОЄННИЙ ПЕРІОД ТА ЇЇ ВПЛИВ НА РОБОЧІ МІСЦЯ**Череп О.Г., Щєблїкіна І.О., Гуль Я.В.***Запорізький національний університет**Україна, 69011, м. Запоріжжя, вул. Університетська, 66***Ключові слова:**

цифрова економіка, цифровізації, штучний інтелект (ШІ), інформаційні технології, Міністерство цифрової трансформації.

При написанні статті була розглянута тема цифровізації України у повоєнний період та визначено її вплив на формування робочих місць саме в сфері технологій та інновацій. Слід зазначити, що Україна є єдиною європейською країною, яка має достатньо кадрових ресурсів, які можна задіювати у розвитку цифрової економіки. Пандемія коронавірусу та війна в Україні змусила нашу країну більш інтенсивніше інтегрувати технології в економіку та підлаштовуватись під нові зміни середовища, що власне засвідчує актуальність більш детального розгляду розвитку цифровізації у повоєнний період як одного із основних інструментів відновлення економіки. Для початку було досліджено сутність цифровізації як економічного явища та проаналізовано бачення та розуміння цього поняття науковцями. Наступним було детально досліджено рівень цифровізації української економіки через аналіз її інноваційного потенціалу та визначено, що сильними сторонами України є високий рівень знань та наявність спеціалістів, які готові працювати на розвиток інноваційної діяльності.

Слід відміти, що за період військового стану в країні виріс обсяг ринку штучного інтелекту та експорт технологій, що є позитивними показниками поглиблення цифровізації української економіки. Дослідивши рівень цифровізації українських регіонів, визначено, що в основному він є позитивно зростаючий, за виключенням областей, які розміщені близько до зони військових дій. Як перспективний напрямок розвитку цифровізації в Україні та зростання кількості робочих місць було запропоновано створити цифрову платформу, яка має на меті залучити іноземні компанії в український бізнес. Отож, в контексті повоєнного відновлення пропонується створити інформаційну платформу для інноваційних стартапів, які не тільки розширюватимуть свою діяльність на зарубіжних ринках, але й сприятимуть підвищення рівня цифровізації та збільшенню кількості робочих місць.

Problem statement

In the era of the rapid spread of information and communication digital technologies, their role in economic growth and social development is indisputable. The introduction of these technologies in all countries of the world is happening at an extremely fast pace, which, unfortunately, cannot be said about Ukraine, which began to introduce technologies into the economy and management only at the beginning of 2019. It should be noted that Ukraine is the only European country that has enough human resources that can be used in the development of the digital economy. The Coronavirus pandemic and the war in Ukraine have forced our country to integrate technologies into the economy more intensively and adapt to new changes in the environment, which actually testifies to the relevance of a more detailed consideration of the development of digitalization in the post-war period as one of the main tools for economic recovery.

Analysis of recent research and publications

Studies of the digitalization of the economy were carried out by the following scientists and researchers, such as: Plakhotnik O. Pavlenko, A. [1], Rudenko, M. [2], Tokar, M., Kravtsov, Y., Shybirina, S., Khmarska, I. [4], and others. However, the study of the post-war development of the digital economy in Ukraine is not sufficiently studied in the scientific literature, which actualizes this study.

Formulation of the objectives of the article (statement of the task)

To investigate the essence of the digital economy and determine the features of digitalization of the Ukrainian economy under martial law to provide a post-war strategy for the development of digitalization.

Presentation of the main material of the study

One of the main directions of development of modern society is the digitalization of all areas of activity, from business to government agencies [1]. Modern technologies have become an integral part of our lives, which are fully integrated into both the business processes of global companies and the daily routine of each of us [2]. It has been determined that digital technologies play a vital role in the development of economic activity and security of national economies and, as a result, the formation and

rapid development of the digital economy is a global trend in the development of the world economy [3]. Analyzing the scientific literature, it should be noted that digitalization is defined as an integral part of the modern economy, which has a positive impact on the rational management of resources, optimizes costs and unifies approaches to change management.

That is why the digital development of Ukraine plays a significant role in accelerating the economic and social development of the country, directing its economic and innovation potential towards international competitiveness and increasing the efficiency of Ukrainian industry and agricultural business. So, in Fig. 1. it is proposed to give Ukraine's place in the overall ranking of digital well-being of the countries of the world.

Analyzing the data of Figure 1, it should be noted that the first positions in the ranking are occupied by the EU member states, which indicates a high indicator of digital goodness in these countries. As for Ukraine, as of 2023, it took 46th place, which indicates the high potential of our country for digital development. An important condition for the digitalization of the economy is the presence of innovative potential. The graphical model of the potential of the innovation index is designed to diagnose its development of innovations in the country (Fig. 2).

Thus, applying the graph-analytical method of assessing the innovation potential of countries, we can safely say that the main problem of Ukraine is the underdeveloped institutional environment, i.e. there are no created conditions for the development of innovations and the lack of market experience. The strengths in Ukraine include a high level of knowledge and the availability of specialists who are ready to work for the development of innovative activities and contribute to the development of the global high-tech sector. So, as we can see, Ukraine has a fairly high potential for the development of innovative technologies, which is also confirmed by the volume of exports of information technologies (Fig. 3).

Despite the increase in exports in 2022 by 5.19%, in 2023 there is a decline of 7.43%, which is caused by the continuation of martial law and the fears of foreign companies to work with Ukraine due to hostilities on its territory. That is why the Ukrainian government needs to develop programs to support the development of Ukrainian exports of information technologies, which will contribute to the overall development of the level of digitalization of

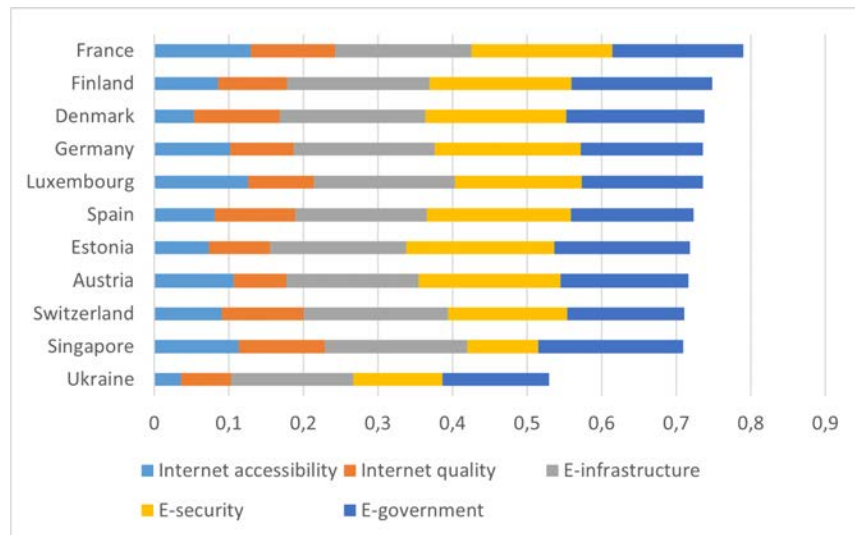


Fig. 1 – Ukraine's place in the ranking of countries in the world in terms of digital well-being for the period of 2023

Source: [4]

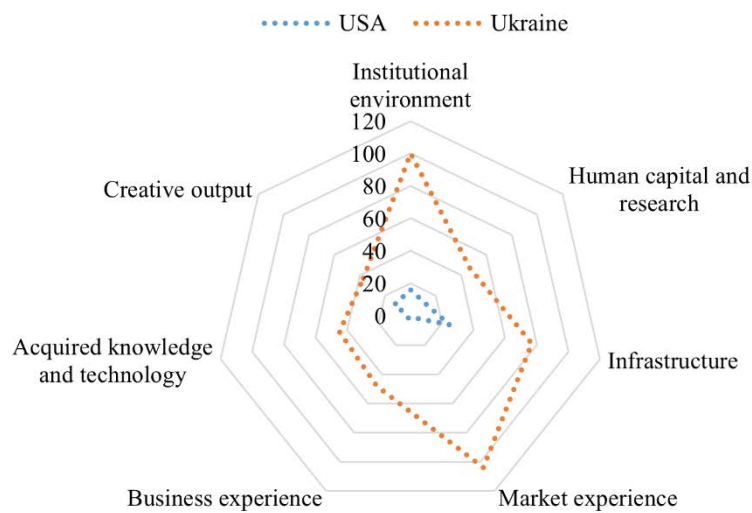


Fig. 2 – Square of Ukraine's innovation potential

Source: [5]

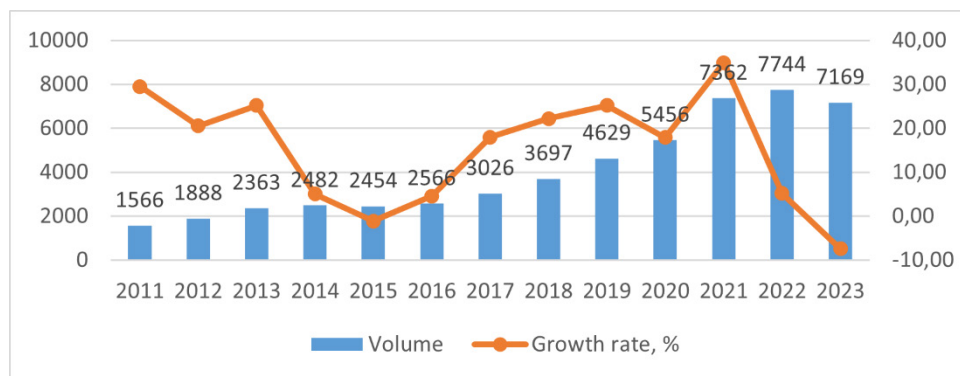


Fig. 3 – Dynamics of exports of technological services in Ukraine for the period 2011-2023, million tons USD. United State

Source: [6]

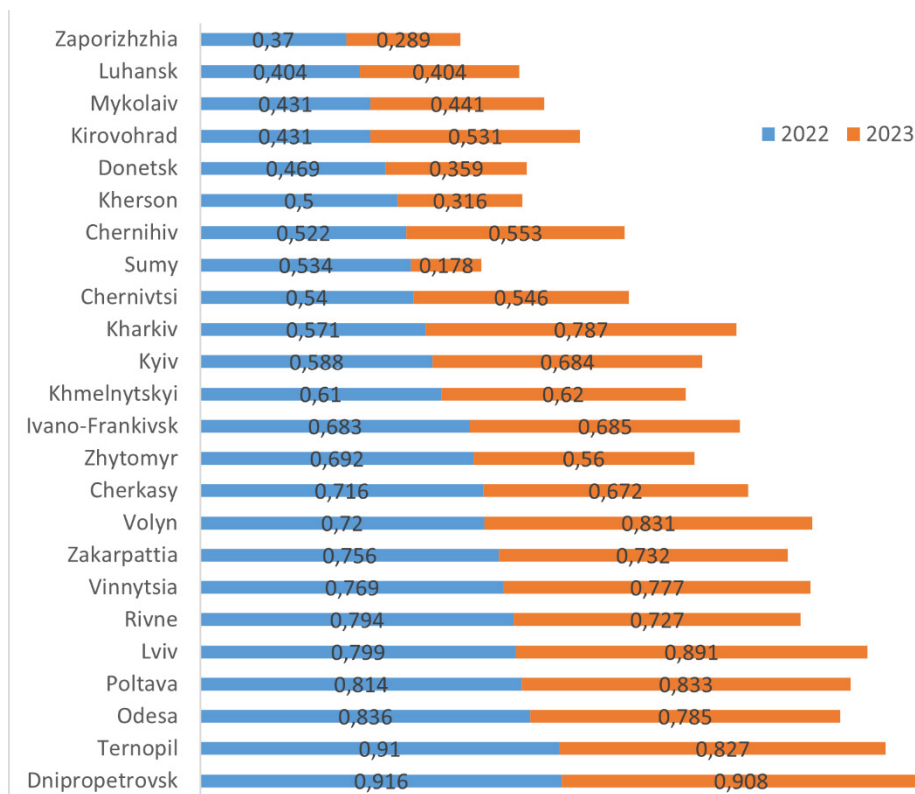


Fig. 4 – Dynamics of the index of digital transformation of the regions of Ukraine in 2022-2023, %

Source: [7-8]

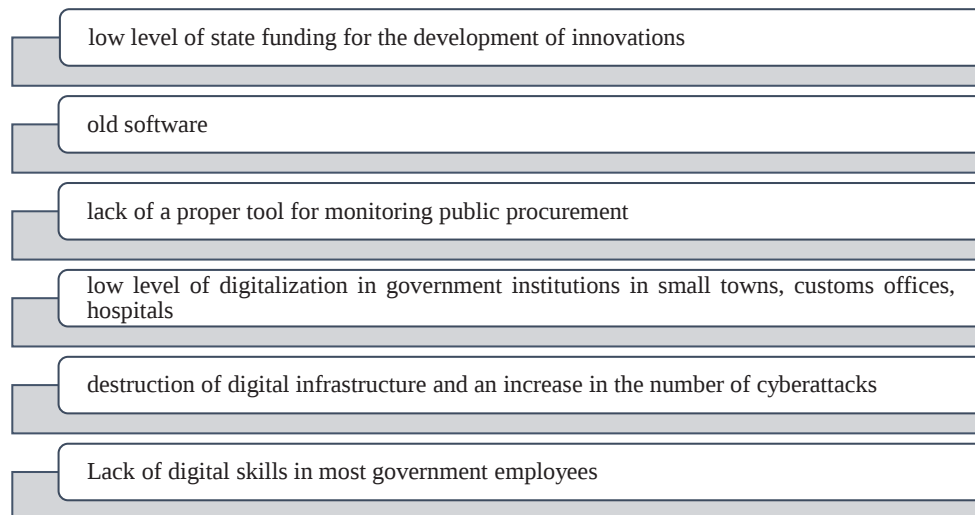


Fig. 5 – Key problems of digitalization development in Ukraine

Source: created by the author

Ukraine. Next, it is proposed to study the level of digitalization of Ukrainian regions (Fig. 4). and in more detail the main problems of the implementation of digitalization at the state level.

Therefore, analyzing the data of Fig. 4, it should be noted that the leading regions in digital transformation in Ukraine are Dnipropetrovsk, Odesa and Ternopil and

regions, which actually testifies to the effectiveness of local authorities. Negative trends in the direction of decreasing the index are observed in Sumy, Zhytomyr, Kherson, Zaporizhzhia and Donetsk regions, the reason for this decrease is the intensification of missile strikes on these territories and, accordingly, a decrease in funding for the development of innovations by local authorities.

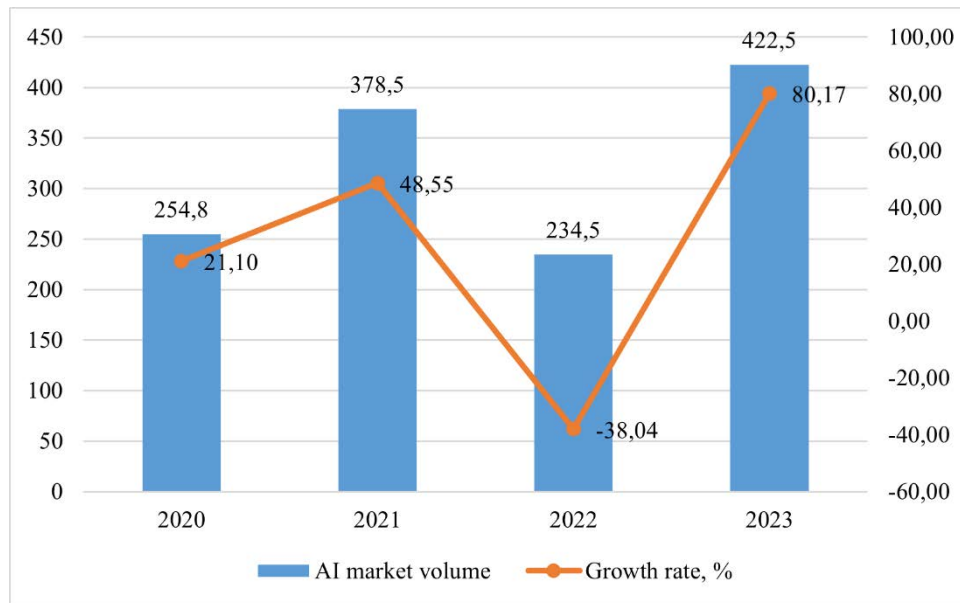


Fig. 6 – Dynamics of the development of the AI market in Ukraine for the period 2020-2023, mln. USD.

Source: [9]

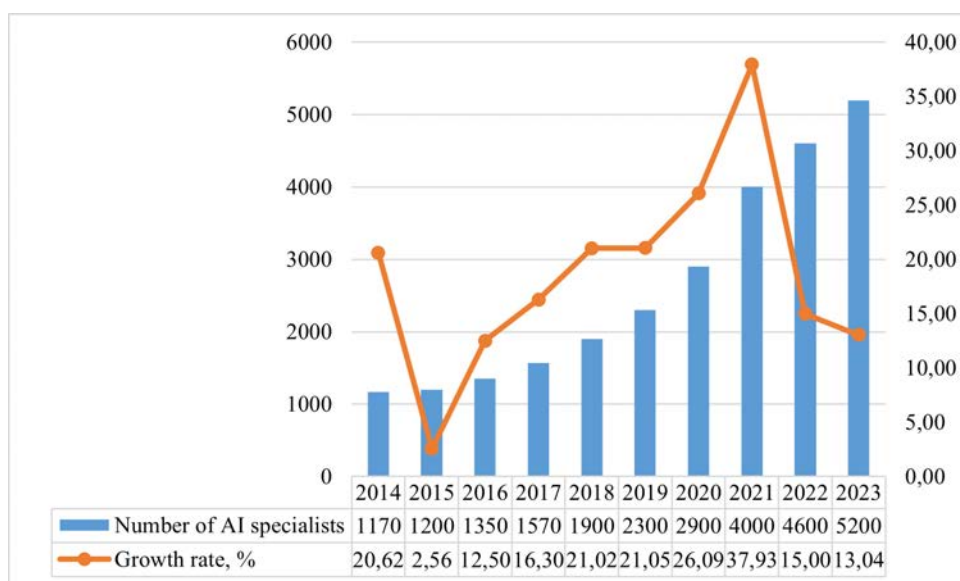


Fig. 7 – Dynamics of the number of specialists in the field of innovation and technology development in Ukraine for the period 2014-2023

Source: [10]

Then it is proposed to cite the problems of digitalization of the economy in Ukraine (Fig. 5.).

Analyzing the main problems that negatively affect the digitalization of the economy, it is proposed to distinguish such two key ones as the lack of proper state funding and outdated equipment, which actually hinders. Of course, under martial law. All budget funds are aimed at supporting the army, which is why, after the victory, we propose to create innovative platforms for business cooperation with foreign clients who will be interested in the development of technologies in Ukraine. It is

planned to choose AI technologies as a promising direction, the development of which is growing rapidly in Ukraine (Fig. 6).

So, having studied the development of AI, we see its growth in 2021, which was 48.55%, in 2022 there was a decline of 38.04%, but already in 2023 the market grew by 80.17% and is one of the most promising areas for startups, the number of which is growing in Ukraine. In Ukraine, the number of qualified specialists working in the field of AI and developing new ideas for the modernization and digitalization of business and the economy as a whole is

growing. So, based on Figure 7, we see that over 9 years in Ukraine the number of specialists has increased by 4.5 times, which indicates the popularization of the profession in the field of innovative services and, in fact, the development of the high-tech sector market as a promising direction for the work and growth of specialists.

Ukraine has a significant share in the AI market in Eastern Europe in terms of the number of companies working in this direction (Fig. 8). So, we see that Ukraine's market share is 20%, which makes it the second largest country in Eastern Europe that has the greatest potential in the development of AI. As of 2023, there are 243 companies in Ukraine, which is actually an update on the proposal to create a digital platform to attract foreign partners to Ukraine. This platform is proposed to be created by the Ministry of Digital Transformation so that a foreign company has state guarantees. It is proposed to create something like a crowd-funding platform only on a national scale.

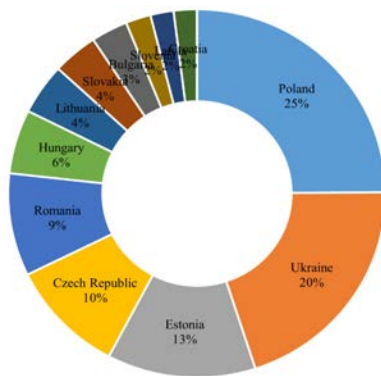


Fig. 8 – Ukraine's share in the Eastern European AI market in 2023, %

Source: [10]

Ukrainian companies working in the field of innovation and technology will exhibit their projects with a detailed description and business plan, thus creating an opportunity for small companies to enter foreign markets and develop their activities in working with foreign companies. As for the opportunity to be a member of this platform, it can be obtained by all interested startup companies that are officially registered in Ukraine. In fact, such cooperation between business and the state will have a positive impact on the level of digitalization and increase the number of jobs. A more detailed scheme of the digital platform is shown in Fig. 9.

In our opinion, every technology company should have such an algorithm for cooperation with foreign partners, where everything will be transparent and understandable. It is proposed to entrust the creation of the platform to the Ministry of Digital Transformation, which will also monitor the feasibility of innovative projects and their delivery. A foreign partner must be sure that in addition to the company, the project is controlled by state authorities, which will actually strengthen its trust.

Strengthening digitalization is one of the most important steps in Ukraine's post-war recovery, and it is necessary to start with innovative and technological startup companies on an international scale. Conclusions. Therefore, analyzing the level of digitalization of the Ukrainian economy, it should be noted that despite the military actions of the Russian Federation on the territory of our country, information technologies are being developed and the volume of exports and the number of specialists in the technological field are increasing. It was investigated that since the war in Ukraine, business in the field of artificial intelligence technologies has developed, and it is in the context of post-war recovery that it is proposed to create an information platform for innovative startups that will not only expand their activities in foreign markets, but also contribute to increasing the level of digitalization and increasing the number of jobs.

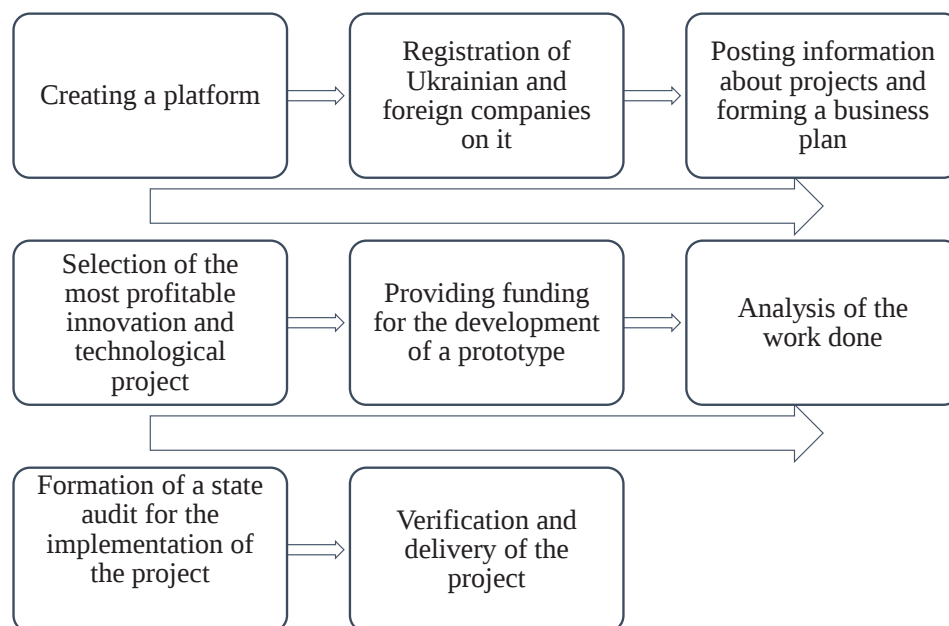


Fig. 9 – Flowchart of the innovative platform for digital transformation of Ukrainian business Source: created by the author

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