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DIGITALISATION OF THE UKRAINIAN INDUSTRIAL PARKS SECTOR

ДИДЖИТАЛІЗАЦІЯ УКРАЇНСЬКОГО СЕКТОРУ ІНДУСТРІАЛЬНИХ ПАРКІВ

The article studies the problem of digitization and developing the concept of an IT tool aimed at registration, monitoring and reporting by industrial parks (IPs). The research methodology is to develop a continuous monitoring of the activities and performance of IPs. The result of the study is the optimal allocation of resources and informed decision-making based on data analysis. The practical significance of the research results lies in creating favourable conditions for small and medium-sized enterprises to join the IP, transparently searching for partners or places with infrastructure, compensation of interest rates, obtaining funds for park development, and obtaining preferential land tax rates. Promoting compliance with national norms and standards to ensure that SEs operate within the legal framework. Encouraging the transition of IPs to Eco-industrial parks in order to meet global sustainable development goals and improve Ukraine's environmental reputation.

Keywords: industrial park, eco-industrial park, IT tool, digitalisation.

У статті досліджується проблема діджиталізації та розробки концепції ІТ-інструменту, спрямованого на реєстрацію, моніторинг та можливості надання звітності індустриальними парками. ІТ-інструмент має на меті спростити реєстрацію, моніторинг та верифікацію Індустриальних парків (ІП) в Україні. Діджиталізація буде сприяти швидкому аналізу технічної та економічної діяльності індустриальних парків. Було запропоновано спрощений процес реєстрації ІП та надання їм доступу до державних послуг. Методика дослідження полягає в розробці проведення безперервного моніторингу діяльності та результатів роботи ІП. Діджиталізація процесів знижує ризик помилок та значно підвищує продуктивність. Результатом дослідження є оптимальний розподіл ресурсів та прийняття обґрунтованих рішень на основі аналізу даних. Цифрові канали зв'язку забезпечать швидке реагування на запити та вирішення проблем. Забезпечення гнучкості та адаптивності, дозволить ІП швидко реагувати на зміни ринку та галузеві тенденції. Збір та аналіз великих обсягів даних допоможуть отримувати цінні інсайти, які будуть сприяти прийняттю обґрунтованих рішень. Запропонований ІТ-інструмент збільшить захищеність бізнесу забезпечуючи захист даних від кібератак. Цифровізація зменшує використання паперу та інших фізичних ресурсів, підтримуючи екологічність та соціальну відповідальність ІП. Практична значущість результатів досліджень полягає в створенні сприятливих умов по приєднанню до Індустриальних парків малих та середніх підприємств, прозорому пошуку партнерів або місць з облаштованою інфраструктурою, де можна розмістити свої виробничі потужності, з можливістю залучення міжнародних та внутрішніх інвесторів, отриманні пільг за місцевими податками, компенсації

відсоткових ставок за кредитами, отриманні коштів на облаштування парку (дороги, комунікаційні лінії, системи енергопостачання), отриманні пільгових ставок податків на землю та нерухомість та інші стимули. Також, це сприяння дотриманню національних норм і стандартів щодо забезпечення діяльності ІП в межах правового поля. Сприяння сталому розвитку, щодо заохочення переходу Індустріальних парків до Еко-індустріальних парків з метою відповідності глобальним цілям сталого розвитку та підвищенням екологічної репутації України.

Ключові слова: індустріальний парк, еко-індустріальний парк, ІТ-інструмент, діджиталізація.

Problem statement. The digital transformation of Ukraine's economy is aimed at increasing the resilience of the economy, ensuring rapid response to needs and expanding the ability to manage daily in priority areas. Therefore, the relevance of developing the Concept of the IT tool and digitization for Industrial Parks is very necessary and important.

Today, the Mineconomy has a needs to create an IT tools platform that will be used to register industrial parks, create a personal IP account and provide reports.

The created platform will enable the Mineconomy to work openly, quickly and conveniently with the data array provided by the Industrial Parks. It will also enable the Ministry to create registers, tables, graphs and provide public access.

Analysis of recent research and publications. Today, the development of digitalization technologies has a significant impact on all aspects of enterprise development and industrial symbioses. The foreign and domestic literature presents works on various aspects of the development of industrial parks and eco-industrial parks. Among the scientists dealing with the topic of industrial parks, it is worth noting the works of such scientists as: I. Yegorova, S. Tulchynska, N. Solikha [4; 6]. The United Nations Industrial Development Organisation (UNIDO) also conducts research [7], etc. The problem of implementation and use of IT tools was studied by N. Chopko, V. Sabolta, S. Honcharenko, M. Zhaldak, Y. Mashbyts, I. Robert and others [5].

Formulating the purposes of the article. The purpose of the article is to develop the concept of an IT tool aimed at registering, monitoring and reporting by industrial parks (IP) in Ukraine. In order to achieve this goal, the following tasks were solved:

- identification of the main factors that will facilitate the procedure for registering an individual entrepreneur with access to public services;
- on the basis of the proposed IT platform, strengthen the continuous monitoring of the activities and performance of the IP;
- provide mechanisms for verification of IP reports and compliance with applicable laws;
- providing recommendations on how to promote the development of eco-industrial parks, support and promote IP that switch to eco-industrial models.

Presentation of the main research material. The history of industrial parks in Ukraine began in 2014. To date, 87 industrial parks have been registered, and even more industrial zones are operating without been registered. To monitor promote the available industrial areas/zones/parks (registered and not registered), the GEIPP Ukraine is providing the free online platform “Map of Industrial Parks” (see figure 1).

The creation of an industrial park and its inclusion into the Register of Industrial Parks is defined in the main Law on Industrial Parks (hereinafter, IP Law) [1]. The purpose of the IP Law is to ensure economic development and

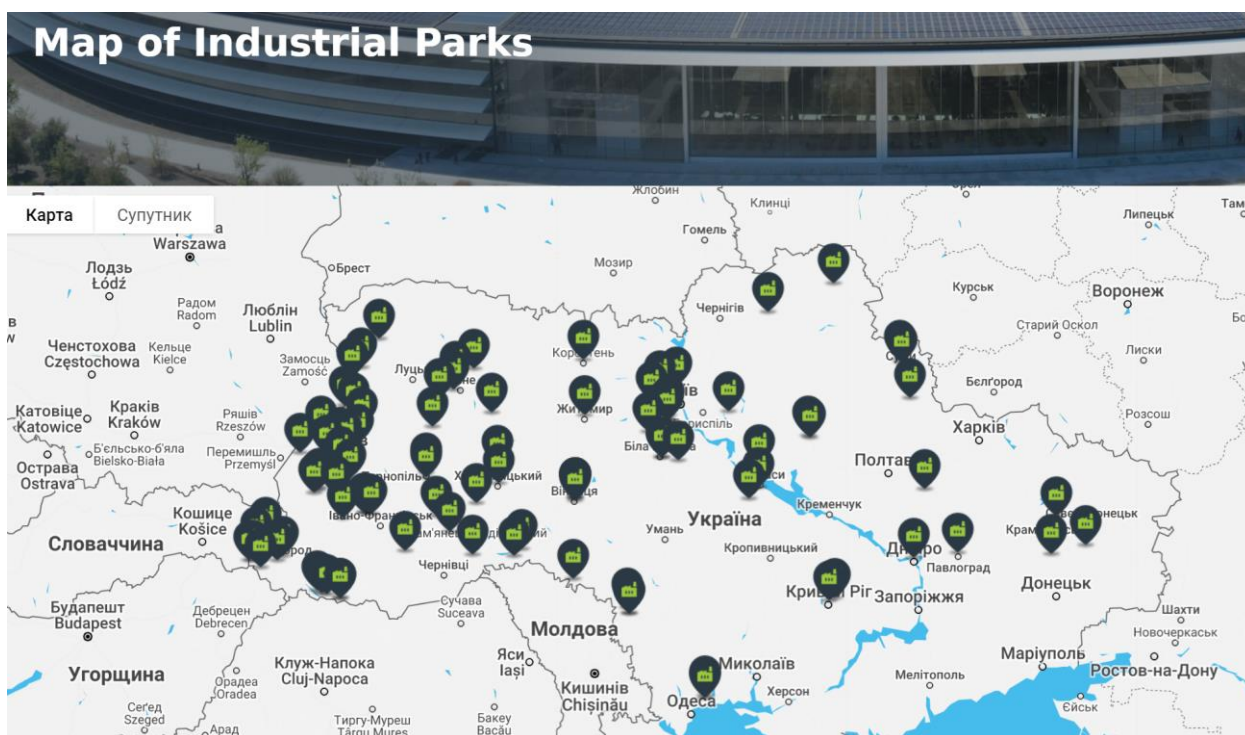


Figure 1. The GEIPP Ukraine free online platform “Map of Industrial Parks”

increase the competitiveness of territories, intensify investment activities, create new jobs and develop modern production and market infrastructure. The IP Law applies the "greenfield" approach to state supporting IPs included into the IP Register.

In 2021, the legal framework for IPs was updated and endorsed and formed the prerequisite for systematic support for the arrangement of IP infrastructure from the state budget.

For the first time, in 2022, the state budget allocated UAH 400 million to co-finance the development of IP infrastructure. Due to the circumstances of the military conflict, however, it appears that it will not be possible to provide these funds for the development of IP infrastructure.

The Government is actively involving local authorities with an interest in developing IPs in their community. IPs are expected to contribute to the modernization of the economy of communities and to the creation of new jobs.

The Government expects IPs to constitute development hubs for Ukraine's economy. Access to infrastructure, logistics, manpower, tax and customs benefits, which will be available at these facilities, will create opportunities for unhindered business activities, which are of particular importance in wartime. IP creation is expected to be important tool in overcoming the shortage of jobs.

In 2022, a package of incentives was adopted, which led to the desire of entrepreneurs to register and create Industrial Parks.

The adopted preferences for IPs are divided into two parts: the initiator and the management company. They can receive from the state from 60 to 150 million UAH (in the de-occupied territories) for the construction of networks. 100% reimbursement of all costs for designing technical specifications. Partial or full compensation of interest on loans for the relevant reconstruction of the industrial park. Tax and customs preferences have been introduced for participants or residents of the IP: exemption from income tax for 10 years and exemption from import VAT and import duties on new equipment imported to the IP.

According to the Resolution of the Cabinet of Ministers of 4 June 2024 No. 644 [2], a new procedure for state incentives is envisaged, with a maximum amount of support of 150 million UAH, where the state covers 50% of the estimated project cost, and 80% for the acquired territories.

The Mineconomy is in charge of the registration of industrial according to Law on Industrial Parks [1].

There is a need and interest to create a comprehensive IT tool that will not only register the Industrial Park, but also create an individual account after the registration procedure with the possibility of making changes and providing reports.

Strengthening the role and importance of digital development and digital transformation of the economy contributes to the resilience and flexibility of the Ukrainian state in times of war. Digital development and digital transformation have proven to be effective in ensuring the functioning of infrastructure, uninterrupted access to education and training, provision of healthcare services, improving cybersecurity, and maintaining the country's economic frontline in general. Accelerating Ukraine's integration into the European digital space and bringing Ukraine's digital sector closer to the European one will

determine the development of the Ukrainian economy in the future, the inflow of investments, the creation of new jobs, the development of small and medium-sized businesses, and Ukraine's involvement in joint European projects. The need for digital development and increasing its efficiency is extremely important for the development of Industrial parks in Ukraine and ensuring the sustainability and flexibility of our country in today's environment.

The recommendations regarding the develop the TOR Concept of IT tool for IPs in Ukraine are based on the Law of Ukraine "On Industrial Parks", Resolution of the Cabinet of Ministers of January 19, 2022 No. 27 "On Approval of the Procedure for Maintaining the Register of Industrial Parks".

According to the Resolution of the Cabinet of Ministers of Ukraine of 21 October 2015 № 835 «On Approval of the Regulation on Data Sets to be Disclosed in the Form of Open Data», the register of Industrial Parks must be open.

Resolution of the Cabinet of Ministers of Ukraine № 969 «On the Functioning of the Register of Public Electronic Registers» dated 1 September 2023 and Resolution of the Cabinet of Ministers of Ukraine № 236 «On Approval of the Procedure for the Use of Funds Provided for in the State Budget under the E-Governance Programme» dated 14 March 2012 provide for the digitalisation of open data sets.

Concepts of IT tools include the four most basic and primary elements involving information technology: information security, computer technical support, business software development and database and network management. Taking this into account the IT tool for the IPs in Ukraine should follow the principals:

IT tools are specialised computer software tools that help specialists to perform various tasks, including registration of Industrial Parks, monitoring and reporting.

IT tools are essential for easy registration and monitoring of Industrial Parks. The main advantages of using IT tools:

- automation – IT tools automate repetitive tasks and processes, allowing professionals to focus on the more strategic and complex aspects of their work.

- time management – get valuable insights and diagnostics to quickly identify and resolve issues.

- security – Protect sensitive data and safeguard your business from malicious activity by continuously monitoring and detecting threats with IT tools.

- scalability – IT tools facilitate scalability, ensuring that systems can expand to meet growing demands without compromising performance.

The IT tool aims to streamline the registration, monitoring, and verification of industrial parks (IPs) in Ukraine. After successful registration, each Industrial Park receives its own individual electronic cabinet on the platform "Industrial Parks of Ukraine". In the personal account, participants can make any changes that will take place in the course of their business activities. One of the requirements of working in a personal account is to submit reports twice a year. Currently, Industrial Parks submit reports to the Mineconomy in paper form. This is time-consuming and does not allow for an analysis of the technical and economic components. There is a need to transfer the reporting form to an electronic form with a mandatory digital signature. In the near future, legislation on Eco-Industrial Parks

and the National Standard will be adopted. It is advisable to add an option for the Industrial Park to comply with the Eco-Industrial Park Standard and criteria. This will allow to automatically transfer Industrial Parks to the status of Eco-Industrial Parks.

Inspired by the functionality and user experience of DIIA City services, this tool will offer a centralized, efficient, and secure platform. It will cater to the needs of IPs, government bodies, and other stakeholders, ensuring compliance with the Law on Industrial Parks in Ukraine and promoting the transition to eco-industrial parks. The published data on the Industrial Parks will be available in the public domain. This will provide opportunities:

- joining the Industrial Parks of small and medium-sized enterprises;
- search for partners or places with well-equipped infrastructure where you can locate your production facilities;
- attracting international and domestic investors;
- compensation of interest rates on loans for the implementation of projects within industrial parks;
- obtaining non-refundable funds for the development of the park and ancillary infrastructure facilities, such as roads, communication lines, power supply systems, etc;
- compensation of expenses for connection to engineering and transport networks, etc.
- exemption from income tax for a some types of activities for 10 years;
- receipt of local tax benefits;
- exemption from import VAT and customs duties on equipment intended for activities within the industrial park;
- preferential rates of land and real estate taxes and other incentives.

Conclusions. The article examines the main factors of an IT tool that will allow IP to remain competitive and efficient in the modern world. Implementation of digitalization technologies for registration and reporting IPs will help:

- automatization processes, reducing the need for manual labour and reducing the risk of errors, which significantly increases productivity. This allows you to optimally

allocate resources and make informed decisions based on data analysis.

- will significantly improve the exchange of information. Digital communication channels ensure quick response to requests and problem resolution.

- ensure flexibility and adaptability that will allow the IPs to respond quickly to market changes and industry trends.

- improve data management. Collecting and analysing large volumes of data will help IPs gain valuable insights that help IPs make informed decisions.

- increase business security. Cybersecurity is another important aspect, as modern technologies protect data from cyberattacks and intruders.

promote sustainable development IPs. Digitalisation reduces the use of paper and other physical resources, supporting the environmental and social responsibility of IPs.

The scientific novelty of the work lies in the study of the main factors necessary for the creation of a platform that will allow for a faster registration process for Industrial Parks, as well as provide an opportunity for easy reporting and transparency for existing Industrial Parks. This will allow the Industrial Parks to conduct business in an open, profitable and convenient manner. They will combine comfortable conditions with effective tools that will allow companies to build a transparent corporate structure, attract foreign investment more easily, and use additional mechanisms to protect intangible assets.

The practical significance of the study is that the created platform will enable the Ministry of Economy to work openly, quickly and conveniently with the data provided by the Industrial Parks. It will allow to create registers, tables, graphs and provide public access.

Recommendations have been established that will help small and medium-sized enterprises to join the Industrial Parks, transparently search for partners or places with infrastructure to locate their production facilities, attract international and domestic investors, receive local tax benefits, compensation for interest rates on loans, obtain funds for IP facilities (roads, communication lines, power supply systems), receive preferential rates of land and real estate taxes, and other incentives.

References:

1. Zakon Ukrainy Pro Industrialni parky [The Law of Ukraine on Industrial Parks]. Available at: <https://zakon.rada.gov.ua/laws/show/5018-17#Text> (accessed September 11, 2024).
2. Kabinet Ministriv Ukrayiny. Postanova vid 4 chervnya 2024 r. № 644 Deyaki pytannya derzhavnoho stymulyuvannya stvorennya ta funktsionuvannya industrial'nykh parkiv. [Cabinet of Ministers of Ukraine. Resolution of 4 June 2024 No. 644 Some issues of state incentives for the creation and operation of industrial parks]. Available at: <https://zakon.rada.gov.ua/laws/show/644-2024-%D0%BF#Text> (accessed September 11, 2024).
3. Stratehiya rozvytku industrial'nykh parkiv na 2023-2030 roky. Kabinet Ministriv Ukrayiny. [Strategy for the development of industrial parks for 2023-2030. Cabinet of Ministers of Ukraine]. Available at: https://zakon.rada.gov.ua/laws/show/176-2023-%D1%80?find=1&text=%D0%B5%D0%BD%D0%B5%D1%80%D0%B3%D0%BE#w1_1 (accessed September 11, 2024). (in Ukrainian)
4. Shevchuk N. A., Tulchynska S. O. and Pohrebniak A. Yu. (2021) Napriamy zmin rehuliatornykh aktiv shchodo rozvytku industrialnykh parkiv v ukraini [Directions of changes in regulatory acts on the development of industrial parks in Ukraine]. *Ekonomichniy visnyk Natsionalnoho tekhnichnoho universytetu Ukrainy «Kyivskiyi politekhnichnyi instytut»*, no. 20, pp. 25–30. (in Ukrainian)
5. Chopko N., & Sobolva V. (2023) IT-instrumenty v stratehichnomu upravlinni potentsialom pidpryyemstva. [IT tools in strategic management of enterprise potential]. *Tsyfrova ekonomika ta ekonomichna bezpeka*, no. 8 (08), pp. 256–260. DOI: <https://doi.org/10.32782/dees.8-42> (accessed September 11, 2024).
6. UNIDO (2019) International recommendations for Industrial Parks. Vienna. Available at: <https://geipp-ukraine.org/en/library/> (accessed September 11, 2024).

Література:

1. Закон України Про Індустріальні парки. 2012. URL: <https://zakon.rada.gov.ua/laws/show/5018-17#Text> (дата звернення: 11.09.2024).
2. Кабінет Міністрів України. Постанова від 4 червня 2024 р. № 644 Деякі питання державного стимулювання створення та функціонування індустріальних парків. URL: <https://zakon.rada.gov.ua/laws/show/644-2024-%D0%BF#Text> (дата звернення: 11.09.2024).
3. Стратегія розвитку індустріальних парків на 2023-2030 роки. Кабінет Міністрів України. URL: https://zakon.rada.gov.ua/laws/show/176-2023-%D1%80?find=1&text=%D0%B5%D0%BD%D0%B5%D1%80%D0%B3%D0%BE#w1_1 (дата звернення: 11.09.2024).
4. Шевчук Н.А., Тульчинська С.О., Погребняк А.Ю. Напрями змін регуляторних актів щодо розвитку індустріальних парків в Україні. *Економічний вісник Національного технічного університету України «Київський політехнічний інститут»*. 2021. № 20. С. 25–30.
5. Чопко Н., & Соболта В. IT-інструменти в стратегічному управлінні потенціалом підприємства. *Цифрова економіка та економічна безпека*. 2023. № 8 (08). С. 256–260. DOI: <https://doi.org/10.32782/dees.8-42> (дата звернення: 11.09.2024).
6. UNIDO. International recommendations for Industrial Parks. Vienna, 2019. URL: <https://geipp-ukraine.org/en/library/> (дата звернення: 11.09.2024).

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