

UDC 005.334:931.1:658.589
JEL Classification: L 74, M 11, O 33

*Bozhanova Viktoriia, Kononova Oleksandra, Cherchata Anzhela,
Liubushkin Valerii, Dykun Dmytro*

MANAGEMENT OF PRODUCTION ACTIVITIES OF SOCIO-ECONOMIC SYSTEMS UNDER WARTIME CONDITIONS

Ukrainian State University of Science and Technology “Prydniprovsk State Academy of Civil Engineering
and Architecture” Educational and Research Institute, Dnipro, Ukraine

The focus of structural changes in the economy, politics, business, and society caused by long-term war events as a result of the escalation of the military conflict in Ukraine over the past three years has become a prerequisite for choosing the purpose of this scientific study: the analysis of the current state of the socio-economic system using the example of the VUD LLC (Dnipro, Ukraine), which produces construction products, and the development of measures to improve the management of its production activities and reputation under conditions of high-level uncertainty of the external environment in the context of military events. The scientific novelty was the suggestion of a comprehensive application of methods and tools of production and reputation management to organize and govern the socio-economic systems in the context of wartime events. Practical value: the suggested management tools, the theory of constraints of systems, the concept of lean production, tools and methods of reputation management and within them, practical measures will enable socio-economic systems to form ways of prospective development, to adapt to the conditions of high-level uncertainty in the external environment and unstable demand due to military events. Therefore, the sequence of analysis of the state of socio-economic systems, the search for causal dependencies of problems and management decision-making should be practice-oriented and take into account a comprehensive approach to solve them. The results of this approach will be the efficient use of resources within socio-economic systems, increasing their profits and clientele, and restoring business reputation in the market.

Keywords: socio-economic system, enterprise management, theory of constraints of systems, concept of lean production, production management, reputation management, production of building materials.

DOI: 10.32434/2415-3974-2025-21-1-17-25

Introduction and formation of the problem

As of today, during the wartime that began in February 2022, major changes are taking place in all industries in Ukraine. External environmental factors of indirect influence, in particular economic, technological, political, and socio-cultural, have a considerable impact on entrepreneurial activities, especially in the manufacturing sector of the economy,

during this challenging period for the country.

Undoubtedly, the changes in the political course of Ukraine amid the escalation of the military conflict requires the adaptation and reorientation of the production processes management within socio-economic systems to develop new managerial decisions. Under such conditions, the stable functioning of the socio-economic systems of the construction industry,

© Bozhanova Viktoriia, Kononova Oleksandra, Cherchata Anzhela, Liubushkin Valerii, Dykun Dmytro, 2025



This article is licensed under Creative Commons Attribution 4.0 International License (CC-BY)

Management of production activities of socio-economic systems under wartime conditions

which remain in the market, is of particular importance today due to the sudden need to restore the urban infrastructure, which periodically suffers destruction due to the escalation of the military and political conflict.

During the years of occupation of part of Ukraine and proximity to the frontline territories, a large number of socio-economic systems have had to cease operations, have suffered damage or lost their fixed assets. At the same time, the demand for products of construction enterprises has increased dramatically among the population and local authorities to restore affected territories. This has led to a significant rise in the production load on enterprises, which has increased several times. In such conditions, the equipment often fails, which directly reduces the organizational and technological reliability of the production process. As a result, the execution of orders is often delayed and the terms stipulated by the contracts concluded with partners are violated.

Currently, a significant part of Ukrainians of working age (25-60 years old) serves in the Armed Forces due to the need to defend and liberate the country. This has led to outflows and significant labour force losses in many production facilities. Those employees who stay and work at the enterprises have to work not only for themselves, but also for their colleagues who have been conscripted, with the growing demand for construction products.

Engagement of new production personnel has become more difficult due to the conscription of a large number of employable citizens. New employees who are still available in the labour market often do not have the necessary experience, knowledge and skills that have been formed over the years. Their training can take a long time, and mistakes during the work can cause significant losses for the enterprises. In such conditions, the production activities of enterprises have become extremely challenging and tense, which makes it impossible to operate in the pre-war mode. Moreover, the irregularity of consumer orders due to the unstable situation in the country where military events are taking place, impacts the operation of enterprises.

To solve such production problems, there are management approaches including the modernization of production processes and equipment, the introduction of innovative technologies, etc. The implementation of effective production management practices, contributing to the adaptation of socio-economic systems to the new economic conditions, plays the key role in this context. This approach to addressing the problem usually involves the formulation of appropriate managerial decisions aimed at solving local

challenges faced by the enterprises. In this case, it is particularly important to consider enterprises as socio-economic systems in order to take into account all internal and external factors and adapt to practice-oriented approaches to their management.

Analysis and research of publications

The functioning and development of socio-economic systems under current conditions is the object of research of domestic scientists. Thus, the author has conducted an analytical review of the concept of socio-economic system and the level of effectiveness of its interaction with financial instruments of the market in modern conditions [1].

The research of other authors involves a thorough analysis of the management of socio-economic systems under crisis conditions and reveals the organizational, economic, information, theoretical and methodological mechanisms supporting them, based on the models of multidimensional analysis [2]. However, their research paper reflects the development of the regional socio-economic systems only, while individual enterprises have not been considered.

It is well-known that enterprises are also socio-economic systems. For many years, scientists and entrepreneurs have been studying the manufacturing enterprises that are operating in a rapidly changing environment. The authors investigated and analysed the relationships between the productivity of manufacturing enterprises, innovation management and product/production quality [3]. The results of their research allowed them to establish a positive relationship between radical and gradual production processes, which led to improved operational and financial performance of enterprises. But in their studies, the authors have not considered in the aggregate sample the enterprises operating under conditions of rapid changes in the external environment, military events, unpredictable redistribution of the market, a sharp increase in orders, which leads to long-term peak production loads without the possibility of ensuring preventive maintenance of equipment, failure of parts of working units, faults, etc.

Equipment operation in the management of production enterprises manufacturing various products have been considered by the author, who has investigated the multi-purpose optimization of the reliability of a multi-type production system [4]. However, the factors considered by this author imply a large production with many workshops or branches where standard equipment is operated and the enterprise operates normally without overload. And when one tool fails, the production process to complete the order can be performed using another tool. In

turn, such production requires substantial financial resources, which will be a great restriction for a Ukrainian enterprise.

The effect of the methods of production personnel management on the production efficiency of enterprises was the subject of research by foreign scientists [5]. Their research considered the high level of involvement of production workers, which is typical for the countries with high competition among the employees. Instead, Ukraine is currently experiencing the opposite situation – a shortage of qualified personnel, particularly in production due to increased rates of conscription in the context of military events.

The provision of enterprises with production personnel during crisis is studied in the research paper by scientists [6], but the research and the relevant recommendations have been formulated for the conditions when the labour market has enough supply of labour force, and the demand for it can be met within a relatively short period of time. In the context of military events and socio-political tensions in society due to the intensified conscription, the shortage of production personnel is a big problem, the solution of which can be delayed for a relatively long period.

Under the wartime conditions in Ukraine, enterprises faced numerous difficulties. The rapid negative impact of the external environment due to the military events has changed and introduced limitations in their work. Such changes have led to the difficulties that are manifested in the emergence of new problem situations, constraints and states, called "bottlenecks" in the theory of constraints of systems (TCS). Thus, in their research paper, the authors have studied the reliability of approaches to considering a throughput capacity when making decisions on the range of products, as well as identifying restrictions in companies with dynamic scenarios that are characterized by high variability [7]. The introduction of theoretical and methodological TCSs into practice is studied in the researches of well-known modern consultants [8].

Any enterprise, while adapting to new market circumstances, adjusts its internal activities to the requirements of the external environment. And here, the theoretical and practical aspects of cooperation of partners in the supply chain are very important to ensure production and innovation efficiency, as well as compliance with strategic commitments, which have been analysed in the research paper of a foreign scientist [9]. However, the recommendations suggested by the author are focused on the specifics of the economic environment of countries with stable and steady development, which does not correspond to the current realities of Ukraine.

But in the context of rapid changes and the impact of the external environment (military events), it is difficult for enterprises to quickly adapt to the market requirements. Such adaptation becomes a higher priority than the organization of clear and systematic operation of production facilities. At the same time, the execution of orders can be in practice sometimes chaotic and unjustifiable in terms of costs. As a result, at such enterprises, the production cost increases, which leads to lower profits. Therefore, the relevance of the aspect of creating lean production increases. Today, in the leading countries of the world, even with stable economic conditions, there are non-profit institutional organizations providing assistance for the enterprises in making their operation as cost-effective as possible [10, 11]. Therefore, the issue of lean production is relevant for Ukrainian enterprises operating in conditions of uncertainty.

When carrying out their economic activities under the rapidly changing conditions of the external environment, particularly in wartime, the enterprises often overlook partnerships, which contributes to their business reputational damage. The reputation management is the object of research of many authors, which is of particular importance with the development of Internet technologies, digitalization, etc. [13].

The availability of scientific research and analysed publications of the scientists mentioned above and management practitioners is the evidence of the relevance of the area of focus of this paper. However, any modern enterprise is considered as a socio-economic system with many different elements, objects, subjects interacting on the basis of resources, economic relations, personal and common economic interests, etc. Therefore, addressing the problems of socio-economic systems should be based on the search for their cause-and-effect relationships. The development of modern management solutions to address the problems of socio-economic systems, the formation of strategies and tactics for their economic activities and business partnership practices should take into account the prism of management, which requires the systematization of theoretical and methodological provisions of management science and considers practice-oriented approach in order to achieve new scientific and practical results. Therefore, the articulation of the objective of this research paper will be as follows.

Purpose of the article

The purpose of the article is to analyse the current state of the socio-economic system using the example of an enterprise that produces construction products and to develop practical measures to improve its production activities and its public image in a highly uncertain external environment due to military events.

Presentation of the main material

Analysis of the functioning of enterprises as socio-economic systems in the context of the war in Ukraine allows the identification of their vulnerabilities, new prospects and opportunities for dynamic growth. The occupation of certain territories of the state created the conditions under which a significant number of enterprises ceased their activities for various reasons: the seizure of local authorities, the expropriation of assets by the occupiers, the destruction of production facilities and infrastructure, the evacuation of equipment from the frontline areas or its preparation for the long-term storage. These circumstances caused the violation of established partnerships. At the same time, the enterprises that are still operating in these challenging conditions face increased demand for their products.

The study of the redistribution of the market of manufacturers – the industrial enterprises leads to the search for the ways of their adaptation to new working conditions. Sometimes there are such options for further development as the need to take advantage of new opportunities in the market. Political changes of a military nature can expose weaknesses of the enterprises, or new opportunities, or the potential for rapid growth, etc.

The data of the report of the NGO "Institute for Economic Research and Policy Consulting", which reflects the data on the Ukrainian business status during the war, indicates that the enterprises of the construction industry of the Dnipropetrovsk region have been affected the most. The difficulty index for finding

qualified workers is 0.56 (earlier, the value was 0.49 for two consecutive months). At the same time, in terms of the regional distribution across the country, the Dnipropetrovsk, Poltava, Zhytomyr, and Chernihiv regions are the regions, where qualified workers are most difficult to find (the coefficient is 1.00 for each region). Labour shortage due to intensified conscription or employees' moving abroad is particularly noticeable in construction materials production: more than 50% of the surveyed enterprises throughout Ukraine and in particular all the surveyed enterprises of the Dnipropetrovsk region (100%) [14].

The occupation of part of the country's territory created conditions where many enterprises were forced to leave the market for a number of reasons. Among the main factors are the cessation of activities due to the seizure of local authorities, the expropriation of property by the occupation administrations, the destruction of the infrastructure of enterprises and factories, as well as the relocation of production facilities from the frontline and adjacent territories and their further conservation. These events have led to the breakdown of stable partnerships. At the same time, the companies that continue their activities are now facing an increasing demand for their products.

Thus, the military events in Ukraine created for VUD LLC the need to intensify all efforts for the development and expansion of production. Such changes led to the modernization of production and renewal of its fixed assets. In Fig., the growing indicators of the financial statements of VUD LLC confirm the feasibility of expanding production.

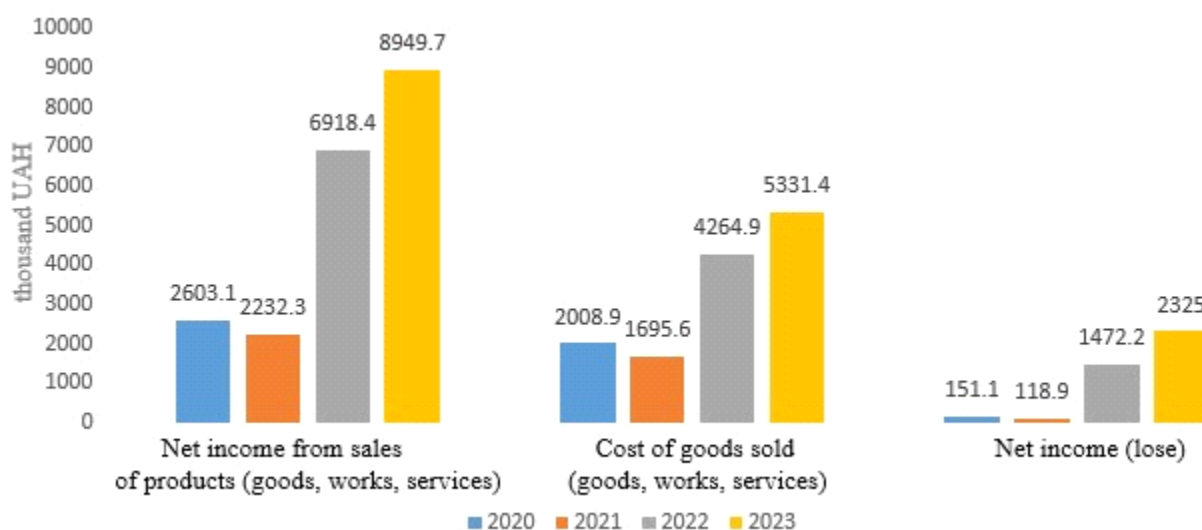


Fig. Performance indicators of VUD LLC. Net income from the sales of products, cost of sales and net profit for 2020–2023

Source: built by the authors on the basis of financial and accounting statements of VUD LLC

Previous research paper has proved the relevance of the TCS application for modern enterprises [14]. In this paper, VUD LLC that produces small-piece construction products (paving slabs, concrete blocks for fences, concrete formwork blocks, decorative cinder blocks, facing bricks, curbstones, wall and sectional construction and decorative crushed concrete blocks) was recommended to expand its production capacity in order to meet the rapidly growing consumer demand in the market. Then the theory of constraints (TCS) was applied, which solved the problem of expanding the "bottleneck" and allowed increasing production. TCS is an enterprise management tool, using which scientists and practitioners search for "bottlenecks" and consistently eliminate them.

The negative impact of external factors, especially in conditions of war, can create "bottlenecks" in various subsystems of enterprises. Manufacturing, human resources, marketing, organization, innovation, and logistics may face similar challenges. To ensure the effective operation of enterprises under such conditions, managers need to use effective management tools adapted to the challenges of wartime.

Therefore, the relevant necessary project calculations for the expansion of production facilities were carried out, according to which it was recommended to purchase Zenith-940SC – a powerful production facility for the manufacture of a popular paving slab product [15]. According to these project calculations, the estimated net present value was UAH 3.8 million for 5 years, with a return on initial investments of UAH 15,105 million in the year 4 [14]. As a result, in December 2023, the fixed assets were locally renewed through the purchase of a new powerful production complex Zenith-940SC for the manufacture of a popular paving slab product [14].

Theoretically, all design calculations may look optimistic, but in practice, a pessimistic scenario is most often implemented, which was confirmed by the results of equipment operation throughout 2024. This led to the conclusion that in the rapidly changing external environment, this enterprise had to be considered as a socio-economic system operating under conditions of war. Therefore, the weakness was taken into account and the scientific research was continued in the area.

VUD LLC production facilities are located at 3 Sites: Site A – old production (purchased in 2003): production site (semi-automated, with partially manual labour) and warehouses (raw materials and finished products); the territory is small. Site B – new production (purchased in 2016): relatively new equipment, warehouses (raw materials and finished products); the territory is large.

In December 2023, as a result of design work, Site B was divided into two: B and C. A new Zenith-940SC production facility was installed at Site C to manufacture a popular paving slab product [14]. However, the acquisition of a new powerful production facility created new problems for VUD LLC in production, organizational and marketing. Traditionally, there are "bottlenecks" in the production sector as follows: supply of raw materials and other materials, their processing into a finished product, quality (defects) of products, timing of consumer orders execution, organization of supplies and sales to consumers. Growing experience in the practical application of TCS has expanded to the marketing field in terms of sales management and marketing. But at VUD LLC, marketing problems have become a result of emerging practical problems in production.

As a scientific novelty, we suggest a comprehensive application of the theory of constraints tool, the concept of lean production and reputation management tools and methods to improve the production system of enterprise management in the context of war.

The sequence of application of the TCS tool at the enterprises is a common practice, since project calculations in practice often show imperfect outcome. This can be manifested in the inefficiency of production, namely the unreasonable operations organization, which leads to an increase in intra-factory costs. Therefore, we suggest applying the concept of lean production, which was developed at the Japanese Toyota car factory in the 1950s and based on a relentless pursuit of elimination of all losses.

Proposed measures: construction of a reserve production block for Site B. Such continuous improvement of business processes at VUD LLC will reduce labor costs, terms of production, will guarantee timely delivery of orders to consumers.

Late execution of orders has damaged the company's image in the market. Today, the information and communication aspect in the work of enterprises is very important due to the rates of digitalization in the social communication space. In addition, in Ukraine, the consumers' mentality is based mainly on the opinion and feedback of acquaintances, friends and social network users or online community members that have already had a similar experience of cooperation or communication.

During 2024, the enterprise had some cases of misunderstanding with customers due to delayed deliveries; some of the customers even cancelled their orders. Negative feedback of dissatisfied consumers spreads very quickly in the modern Ukrainian information and media space. The business reputation

of an enterprise affects its market value and profitability of the business itself and the risks of consumers. Therefore, we suggest introducing tools and methods of reputation management in order to restore and save the business image of VUD LLC.

As a means of reputation management, it is proposed to apply the "We take pride in our products (services)" strategy, focusing not only on the existing high quality, but also on the delivery and customer feedback in the after-sales period. This will be supported by the methods of reputation management

– online reputation management of the enterprise, which will form the information basis for the reputation in the enterprise management in the context of military events. We suggest creating a company website page with customer reviews, based on which a decision will be made on the amount of bonuses for production personnel involved in the production and delivery of the order.

Table systematizes problems of an enterprise and suggests appropriate ways to solve them using modern management methods.

Table

Systematization of VUD LLC problems and ways to solve them using modern management methods

Influence factors	Enterprise problems	Conclusions and proposals	Name of the proposed practice-oriented activities	Perspectives of solved problems
Redistribution of the producer market and increase in the number of orders	Production problems: 1. Lack of production capacity of the existing concrete batch plant 2. Increased costs for in-house logistics due to overloaded forklift.	Found a "bottleneck" – a technological process of manufacturing and delivery of concrete mixtures to Site B, which involves concrete batch plant and forklift from Site B.	Within the framework of the theory of constraints systems (TCS): Construction of a new concrete batch plant for Site C. Within the framework of the concept of lean production:	1. Execution of orders, partnership agreements. 2. Saving the cost of intra-factory transportation of ready-made concrete mortar by an autonavigator.
Production problems	Organizational problems: 1. No receipt of deadlines for the execution of orders. 2. Instability of sales.	The application of the management tool – the theory of limitations of systems and the concept of lean production.	Designing a scheme for the operation of a forklift truck separately for Sites B and C.	
Organizational problems	Marketing problems: 1. Deterioration of the company's reputation in the market due to untimely delivery of orders. 2. Loss of customers due to deterioration of reputation.	Decreased reputation among consumers. The application of the tool and method of reputation management is proposed.	Within reputation management: Tool: strategy "Products (services) are our pride." Method: management of the on-line reputation of the enterprise: create on the site of the enterprise pages with customer reviews, the content of which will be a decision on the amount of bonuses to production personnel involved in the manufacture and delivery of the order.	1. Improving the business reputation of the enterprise in the market. 2. Increase in the number of satisfied consumers.

Source: built by the authors

Thus, it can be argued that the application of the theory of constraints (TCS) tool, the concept of lean production and the tools and methods of reputation management for an enterprise in conditions of war is appropriate, can be applied under the circumstances at any production enterprise to solve problems of any nature when exposed to environmental factors that contribute to the expansion and modernization of production.

Conclusions

Taking into account the long-term military events, the drastic effect of environmental factors, it is advisable to consider enterprises as socio-economic systems. Therefore, the objective of the research paper is to analyze the current state of the socio-economic system using the example of an enterprise that produces construction products and to develop practical measures to improve its production activities and its public image in a highly uncertain external environment due to military events. As a scientific novelty, we suggest a comprehensive application of the theory of constraints tool, the concept of lean production and reputation management tools and methods to improve the production system of enterprise management in the context of war. It is proposed to build a reserve production block for Site B to reduce intra-plant costs. As a means of reputation management, it is proposed to apply the “We take pride in our products (services)” strategy, focusing not only on the existing high quality, but also on the delivery and customer feedback in the after-sales period. This will be supported by the methods of reputation management – online reputation management of the enterprise, which will form the information basis for the reputation in the enterprise management in the context of military events. We also suggest creating a company website page with customer reviews, based on which a decision will be made on the amount of bonuses for production personnel involved in the production and delivery of the order. According to these recommendations, considering an enterprise as a socio-economic system will therefore allow the development and implementation of effective practice-oriented measures.

REFERENCES

1. Troinikova, O. M. (2021). Funktsionuvannia sotsialno-ekonomichnykh system u suchasnykh umovakh [Functioning of socio-economic systems in modern conditions] *Infrastruktura rynku – Market Infrastructure*, 51, 279-282. DOI: <https://doi.org/10.32843/infrastruct51-45> [in Ukrainian].

2. Rudachenko, O. O. & Klebanov, T. S. (2012). Rozvytok rehionalnykh sotsialno-ekonomichnykh system v umovakh kryzy:

analiz, otsinka, prohnouzuvannia : monohrafiia [Development of regional socio-economic systems in crisis conditions: analysis, assessment, forecasting: monograph]. Kharkiv: FOP Rubashkin D.Iu. [in Ukrainian].

3. Garcia-Fernandez, M., Claver-Cortes, E., & Tari, J. J. (2022). Relationships between quality management, innovation and performance: a literature systematic review. *European Research on Management and Business Economics*, 28 (1). DOI: <https://doi.org/10.1016/j.iemeen.2021.100172> [in English].

4. Hsieh, T.-J. (2023). Performance indicator-based multi-objective reliability optimization for multi-type production systems with heterogeneous machines. *Reliability Engineering & System Safety*, 230. DOI: <https://doi.org/10.1016/j.res.2022.108970> [in English].

5. Gu, M., Zhang, Yan., Li, D., & Huo, B. (2023). The effect of high-involvement human resource management practices on supply chain resilience and operational performance. *Journal of Management Science and Engineering*, 8, 176-190. DOI: <https://doi.org/10.1016/j.jmse.2022.12.001> [in English].

6. Biletskyi, I. V., Kondratenko, N. O., & Rudachenko, O. O. (2024). Upravlinnia kadrovym zabezpechenniam budivelnnykh pidpriemstv v umovakh kryzy [Management of personnel support of construction enterprises in crisis conditions]. *Naukovi perspektyvy – Scientific Perspectives*, 10 (52), 385-395. DOI: [https://doi.org/10.52058/2708-7530-2024-10\(52\)-385-395](https://doi.org/10.52058/2708-7530-2024-10(52)-385-395) [in Ukrainian].

7. Machado, M. P., Abreu, J. L., Morandi, M. I. M., Piran, F. S., & Lacerda, D. P. (2023). Exploratory decision robustness analysis of the theory of constraints focusing process using system dynamics modeling. *International Journal of Production Economics*, 260. DOI: <https://doi.org/10.1016/j.ijspe.2023.108856> [in English].

8. Zosym, M. (2023). Teoriia obmezhen [Theory of constraints – TCS]. Retrieved from <https://www.maxzosim.com/teoriia-obmezhen/> [in Ukrainian].

9. Uddin, M. B. (2022). The effect of strategic commitment and supply chain collaboration on operational and innovation performance. *IIMB Management Review*, 34 (4), 364-377. DOI: <https://doi.org/10.1016/j.iimb.2022.12.002> [in English].

10. What is Lean? Lean Enterprise Academy. www.leanuk.org. Retrieved from <https://www.leanuk.org/> [in English].

11. About the Lean Enterprise Institute. Lean Enterprise Institute. www.lean.org. Retrieved from <https://www.lean.org/about-lei/> [in English].

12. Chyryva, Yu. Iu., & Zaverbnyi, A. S. (2022). Osoblyvosti formuvannia systemy reputatsiinoho menedzhmentu v umovakh rozvytku internet-tekhnologiih [Peculiarities of the formation of the reputation management system in the conditions of the development of Internet technologies]. *Menedzhment ta pidpriyemnytstvo v Ukraini: etapy stanovlennia ta problemy rozvytku – Management and Entrepreneurship in Ukraine: the stages of formation and problems of development*, 2 (8), 121-127. DOI:

<https://doi.org/10.23939/smeu2022.02.121> [in Ukrainian].

13. Kuziakiv, O., Anhel, Ye., Hulik, A., & Shapovalova, D. (2024). Nove shchomisiachne opytuvania pidpriemstv "Ukrainskyi biznes pid chas viiny" [New monthly survey of enterprises "Ukrainian business during the war"]. *HO "Instytut ekonomichnykh doslidzhen ta politychnykh konsultatsii"*, 29. Retrieved from <https://www.slideshare.net/slideshow/29-2024/272934692> [in Ukrainian].

14. Bozhanova, V., Vechev, V., Kononova, O., Chernysheva, O., & Dykun, D. (2023). The enterprise management in the force majeure conditions of its activities. *Ekonomicnyi visnyk Derzhavnoho vyshchoho navchalnoho zakladu "Ukrainskyi derzhavnyi khimiko-tehnologichnyi universytet"* – *Economic Herald of State Higher Educational Institution "Ukrainian State University of Chemical Technology"*, 18(2), 17-24. DOI: <https://doi.org/10.32434/2415-3974-2023-18-2-17-24> [in English].

15. Strategy and tactics for achieving breakthrough improvements. www.tocexpert.com. Retrieved from <https://www.tocexpert.com/> [in English].

Received 12.02.2025.

Revised 22.02.2025.

Accepted 27.02.2025.

Published 25.06.2025.

УПРАВЛІННЯ ВИРОБНИЧОЮ ДІЯЛЬНІСТЮ СОЦІАЛЬНО-ЕКОНОМІЧНИХ СИСТЕМ В УМОВАХ ВОЄННИХ ПОДІЙ

**Божанова Вікторія, Кононова Олександра,
Черчата Анжела, Любушкін Валерій, Дикун Дмитро**

Направленість структурних змін в економіці, політиці, бізнесі, соціумі, що викликані тривалими воєнними подіями внаслідок ескалації воєнного конфлікту та тривалих воєнних подій в Україні за останні три роки стало передумовою обрання мети даного наукового дослідження: аналіз сучасного стану соціально-економічної системи на прикладі підприємства ТОВ «ВУД» (м. Дніпро, Україна), що виробляє будівельну продукцію та розробка заходів щодо удосконалення системи управління його виробничою діяльністю та репутацією в умовах високого рівня невизначеності зовнішнього середовища в умовах воєнних подій. Науковою новизною стало запропонування комплексного застосування методів та інструментів виробничого та репутаційного менеджменту щодо управління соціально-економічними системами в умовах воєнних подій. Практична цінність: запропонуванні до застосування інструмент менеджменту теорія обмежень систем, концепція ощадливого виробництва, інструменти і методи управління репутацією та в їх межах практичні заходи дадуть можливість соціально-економічним системам: сформувати шляхи перспективного розвитку, адаптуватись до умов високого рівня невизначеності зовнішнього середовища та нестабільного попиту через воєнні події. Тому послідовність аналізу стану соціально-економічних систем, пошук причинно-наслідкових залежностей проблем та прийняття управлінських рішень керівництвом мають бути практикоорієнтованими та враховувати комплексний всебічний підхід щодо їх вирішення. Результатами такого підходу стане

раціональне використання ресурсів соціально-економічних систем, збільшення їх прибутку та клієнтури, відновлення ділової репутації на ринку.

Ключові слова: соціально-економічна система, управління підприємством, теорія обмежень систем, концепція ощадливого виробництва, виробничий менеджмент, репутаційний менеджмент, виробництво будівельних матеріалів.

MANAGEMENT OF PRODUCTION ACTIVITIES OF SOCIO-ECONOMIC SYSTEMS UNDER WARTIME CONDITIONS

**Bozhanova Viktoriia, Kononova Oleksandra*,
Cherchata Anzhela, Liubushkin Valerii, Dykun Dmytro**

Ukrainian State University of Science and Technology
"Prydniprovsk State Academy of Civil Engineering and
Architecture" Educational and Research Institute, Dnipro,
Ukraine

*e-mail: oleksandrakononova@gmail.com

Bozhanova Viktoriia ORCID: <https://orcid.org/0000-0002-0595-9347>

Kononova Oleksandra ORCID: <https://orcid.org/0000-0002-7215-8574>

Cherchata Anzhela ORCID: <https://orcid.org/0000-0002-6753-2891>

Liubushkin Valerii ORCID: <https://orcid.org/0000-0001-7636-2153>

The focus of structural changes in the economy, politics, business, and society caused by long-term war events as a result of the escalation of the military conflict in Ukraine over the past three years has become a prerequisite for choosing the purpose of this scientific study: the analysis of the current state of the socio-economic system using the example of the VUD LLC (Dnipro, Ukraine), which produces construction products, and the development of measures to improve the management of its production activities and reputation under conditions of high-level uncertainty of the external environment in the context of military events. The scientific novelty was the suggestion of a comprehensive application of methods and tools of production and reputation management to organize and govern the socio-economic systems in the context of wartime events. Practical value: the suggested management tools, the theory of constraints of systems, the concept of lean production, tools and methods of reputation management and within them, practical measures will enable socio-economic systems to form ways of prospective development, to adapt to the conditions of high-level uncertainty in the external environment and unstable demand due to military events. Therefore, the sequence of analysis of the state of socio-economic systems, the search for causal dependencies of problems and management decision-making should be practice-oriented and take into account a comprehensive approach to solve them. The results of this approach will be the efficient use of resources within socio-economic systems, increasing their profits and clientele, and restoring business reputation in the market.

Keywords: socio-economic system, enterprise management, theory of constraints of systems, concept of lean production, production management, reputation management, production of building materials.

Bozhanova Viktoriia, Kononova Oleksandra, Cherchata Anzhela, Liubushkin Valerii, Dykun Dmytro

REFERENCES

1. Troinikova, O. M. (2021). Funktsionuvannia sotsialno-ekonomichnykh system u suchasnykh umovakh [Functioning of socio-economic systems in modern conditions]. *Infrastruktura rynku – Market Infrastructure*, 51, 279-282. DOI: <https://doi.org/10.32843/infrastruct51-45> [in Ukrainian].
2. Rudachenko, O. O. & Klebanov, T. S. (2012). *Rozvytok rehionalnykh sotsialno-ekonomichnykh system v umovakh kryzy: analiz, otsinka, prohnouzuvannia : monohrafiia* [Development of regional socio-economic systems in crisis conditions: analysis, assessment, forecasting: monograph]. Kharkiv: FOP Rubashkin D.Iu. [in Ukrainian].
3. Garcia-Fernandez, M., Claver-Cortes, E., & Tari, J. J. (2022). Relationships between quality management, innovation and performance: a literature systematic review. *European Research on Management and Business Economics*, 28 (1). DOI: <https://doi.org/10.1016/j.jedeen.2021.100172> [in English].
4. Hsieh, T.-J. (2023). Performance indicator-based multi-objective reliability optimization for multi-type production systems with heterogeneous machines. *Reliability Engineering & System Safety*, 230. DOI: <https://doi.org/10.1016/j.res.2022.108970> [in English].
5. Gu, M., Zhang, Yan., Li, D., & Huo, B. (2023). The effect of high-involvement human resource management practices on supply chain resilience and operational performance. *Journal of Management Science and Engineering*, 8, 176-190. DOI: <https://doi.org/10.1016/j.jmse.2022.12.001> [in English].
6. Biletskyi, I. V., Kondratenko, N. O., & Rudachenko, O. O. (2024). Upravlinnia kadrovym zabezpechenniam budivelnnykh pidpriemstv v umovakh kryzy [Management of personnel support of construction enterprises in crisis conditions]. *Naukovi perspektyvy – Scientific Perspectives*, 10 (52), 385-395. DOI: [https://doi.org/10.52058/2708-7530-2024-10\(52\)-385-395](https://doi.org/10.52058/2708-7530-2024-10(52)-385-395) [in Ukrainian].
7. Machado, M. P., Abreu, J. L., Morandi, M. I. M., Piran, F. S., & Lacerda, D. P. (2023). Exploratory decision robustness analysis of the theory of constraints focusing process using system dynamics modeling. *International Journal of Production Economics*, 260. DOI: <https://doi.org/10.1016/j.ijspe.2023.108856> [in English].
8. Zosym, M. (2023). *Teoriia obmezhen* [Theory of constraints – TCS]. Retrieved from <https://www.maxzosim.com/teoriia-obmiezhen/> [in Ukrainian].
9. Uddin, M. B. (2022). The effect of strategic commitment and supply chain collaboration on operational and innovation performance. *IIMB Management Review*, 34 (4), 364-377. DOI: <https://doi.org/10.1016/j.iimb.2022.12.002> [in English].
10. What is Lean? Lean Enterprise Academy. www.leanuk.org. Retrieved from <https://www.leanuk.org/> [in English].
11. About the Lean Enterprise Institute. Lean Enterprise Institute. www.lean.org. Retrieved from <https://www.lean.org/about-lei/> [in English].
12. Chyrva, Yu. Iu., & Zaverbnyi, A. S. (2022). Osoblyvosti formuvannia systemy reputatsiinoho menedzhmentu v umovakh rozvytku internet-tekhnologii [Peculiarities of the formation of the reputation management system in the conditions of the development of Internet technologies]. *Menedzhment ta pidpriemnytstvo v Ukraini: etapy stanovlennia ta problemy rozvytku – Management and Entrepreneurship in Ukraine: the stages of formation and problems of development*, 2 (8), 121-127. DOI: <https://doi.org/10.23939/smeu2022.02.121> [in Ukrainian].
13. Kuziakiv, O., Anhel, Ye., Hulik, A., & Shapovalova, D. (2024). Nove shchomisiachne opytuvannia pidpriemstv “Ukrainskyi biznes pid chas viiny” [New monthly survey of enterprises “Ukrainian business during the war”]. *HO “Instytut ekonomichnykh doslidzhen ta politychnykh konsultatsii”*, 29. Retrieved from <https://www.slideshare.net/slideshow/29-2024/272934692> [in Ukrainian].
14. Bozhanova, V., Vechev, V., Kononova, O., Chernysheva, O., & Dykun, D. (2023). The enterprise management in the force majeure conditions of its activities. *Ekonomichnyi visnyk Derzhavnoho vyshchoho navchalnoho zakladu “Ukrainskyi derzhavnyi khimiko-tekhnologichnyi universytet” – Economic Herald of State Higher Educational Institution “Ukrainian State University of Chemical Technology”*, 18(2), 17-24. DOI: <https://doi.org/10.32434/2415-3974-2023-18-2-17-24> [in English].
15. Strategy and tactics for achieving breakthrough improvements. www.tocexpert.com. Retrieved from <https://www.tocexpert.com/> [in English].