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PRODUCTION CAPACITY MANAGEMENT IN THE CONTEXT OF PROVISION OF ECONOMIC SAFETY OF THE ENTERPRISE

Abstract. Research was conducted on general methodological approaches of economic science, in particular, systematization, analysis, synthesis, induction, deduction, generalization.

The authors formed their own interpretation of the «production capacity» concept, determined the essence of enterprise's production capacity management and proposed the algorithm for its calculation. The article also deals with the strategic, tactical and operational management features of production capacity in the context of ensuring the economic security of the enterprise. The research substantiates the role of production capacity in terms of providing economic security of the enterprise.

The conducted research has both theoretical and practical significance. Theoretical significance is reflected in the expansion of the theoretical basis of the functional areas of management and management activity studies. The practical significance lies in the elaboration of the specific proposals concerning the formation of a strategy for managing the production capacity of the enterprise.

Keywords: capacity, production capacity, production program, bottleneck, operational process, economic security.

JEL Classification: D24, L23, L52, L53, M11

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СУТНІСТЬ УПРАВЛІННЯ ВИРОБНИЧОЮ ПОТУЖНІСТЮ В КОНТЕКСТІ ЗАБЕЗПЕЧЕННЯ ЕКОНОМІЧНОЇ БЕЗПЕКИ ПІДПРИЄМСТВА

Анотація. Сформовано авторське трактування поняття «виробнича потужність». Визначено сутність управління виробничою потужністю підприємства та запропоновано його алгоритм. Розглянуто особливості стратегічного, тактичного та оперативного управління виробничою потужністю в контексті забезпечення економічної безпеки підприємства. Обґрунтовано роль виробничої потужності у системі забезпечення економічної безпеки підприємства.

Ключові слова: потужність, виробнича потужність, виробнича програма, вузьке місце, операційний процес, економічна безпека.

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ПОНЯТИЕ УПРАВЛЕНИЯ ПРОИЗВОДСТВЕННОЙ МОЩНОСТЬЮ В КОНТЕКСТЕ ОБЕСПЕЧЕНИЯ ЭКОНОМИЧЕСКОЙ БЕЗОПАСНОСТИ ПРЕДПРИЯТИЯ

Аннотация. Представлено авторское определение понятия «производственная мощность». Определена сущность управления производственной мощностью предприятия и предложен его алгоритм. Рассмотрены особенности стратегического, тактического и оперативного управления производственной мощностью в контексте обеспечения экономической безопасности предприятия. Определена роль производственной мощности в системе обеспечения экономической безопасности предприятия.

Ключевые слова: мощность, производственная мощность, производственная программа, узкое место, операционный процесс, экономическая безопасность.

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Introduction. The production capacity of the enterprise is a determining criterion for its further operational activity and at the same time a specification of the available production capacity. Planning of production capacities is one of the strategic decisions that determines how much and to what extent an enterprise can produce in order to put the goods on the market in time and satisfy the needs of the consumers. In practice, the definition of production capacity is basic for planning the operating activities of an enterprise which determine the effectiveness on which depend the level of profitability of the enterprise and its economic security in general. Therefore, while planning production capacity correspondent manager should take into account the trends of the current state of the economy, the innovative changes that take place in it, new methods of making managerial decisions. Under such conditions it is possible to minimize the risks for an enterprise's economic security and ensure it is on sufficient level.

Analysis of the contemporary research and problem statement. The analysis of up-to-date scientific economic literature has shown that scientists are considering some aspects of production capacities management, in particular its planning and optimization. It is the specifics of these areas of activity that are disclosed in the writings of such scientists as: M. Brazhnikova, L. Horal', M. Zaytseva, N. Kas'yanova, Yu. Levshova, S. Matsyura, K. Naumenko, Y. Petrovych, M. Spens, T. Khorhren, I. Khorina. However, the complex approach, which would provide the very interpretation of the enterprise production capacity managing process and describe its main stages, has not yet been developed.

One of the first scientists who scientifically stated the necessity to optimize the size of enterprises' production capacity, was A. Marshall [1]. He described the maximum capacity as the current size of fixed capital. Studies by A. Marshall were developed by the representatives of other scientific schools. In particular, Domar Ovsy D. substantiated that investment costs have a double effect: they bring income and increase production capacity [2]. He also proved that the efficiency of the production system functioning depends not only on the volume of production, but also on the amount of profit from its realization. To similar conclusions, independently from O.–D. Domar came J. Harrod [3]. Therefore, in this article, we consider it appropriate to examine the essence of enterprise's production capacity management, to develop its algorithm, to identify the features of strategic, tactical and operational management in the context of providing economic security.

Research results. First of all, it is necessary to find out the essence of the production capacity concept. The generalization of the approaches of scientists to the interpretation of this concept (Table 1), and our own considerations allowed to formulate an author's interpretation.

Table 1

Approaches to the definition of the «enterprise's production capacity» concept

Author of the definition	The definition
Y. Kurenkov	Maximum possible output under ideal conditions of the capacity resources functioning, which is determined by the maximum hourly capacity of the work tools set, the full annual calendar of their work time during the entire period of the work tools physical service
B. Voskresens'kii, R. Manilovskii, M. Mel'nychuk, L. Revuts'kii	Maximum possible annual (daily) output in the established nomenclature, in terms of the full use of equipment and space implying progressive norms of labor productivity, with the usage of the leading technologies and perfect production process organization
G. Gigels, P. Danilov, N. Konovalova, V. Mavryshchev, K. Nevelska, V. Kharyapchenkov, D. Shtefanych	The maximum possible high quality products production in the range of provided planned period/the volume of raw material processed with the full use of equipment and production space, with the application of advanced technology, and improvement of the production and labor organization
I. Petrovych, R. Atamanchuk	Potentially possible output per time unit of equipment operation to a set date by means of organized set of available in the enterprise work tools, capable of coordinated functioning in time and space, provided specified technological development level achieved by workers
M. Vakhrushyna	Characterizes the work of fixed assets under conditions where it is possible to maximize the potential of equipment
K. Krasilnikov	The ability of an enterprise to produce products of a certain quality and in the maximum volumes and nomenclatures that meet the needs of the economy, correspond to the composition and production and technical characteristics of the available means of labor, their full use for the entire calendar of time on the progressive norms of the productivity of equipment, taking into account new technologies and rational norms of work organization at the enterprise

Summarized by the author on the basis of sources [4–17]

Consequently, the enterprise's production capacity is an indicator which characterizes the ability to produce the maximum possible number of products of the appropriate quality and a certain nomenclature per time unit that meets market needs and provides economic efficiency in terms of the optimal use of equipment, effective work process organization and the use of advanced technologies.

Management as an economic category is considered in a scientific literature in various ways. The analysis of existing definitions allows us to combine them into three approaches, namely: 1) management as a targeted action; 2) management as a process of influence; 3) management as a set of interrelated activities aimed at production supporting. In our opinion, the most the third approach is the most appropriate, but it should be supplemented by the notion that management activities should be aimed not only at maintaining the status quo, but also on the development of the object.

Therefore, taking into account the interpretation of the enterprise's production capacity and a defined approach to the management we propose to portray the enterprise's production capacities management as a purposeful activity regarding the use of a set of interrelated actions, which will result in the formation of optimum production capacity and ensure the preconditions for its effective use and capacity growth.

Production facilities management poses a number of tasks that can be divided into functional areas. The main functions of the production capacities management correspond to the classical management functions: planning, organization, motivation, coordination or regulation, control, which are supported by the decision-making process and communicative ties. However, each object of management activity has its own specifics and features. The enterprise production capacity is not the exception. Therefore, we have determined the functional directions of the enterprise's production capacities management system:

- assessment and diagnostics of the enterprise effectiveness and the efficiency of the production capacity implementation;
- substantiation and choice of production strategy taking into account available production capacities, planned production program and micro- and macro-environment factors that influence these values;
- analysis of the interconnection and interdependence of the enterprise's production capacity levels, indicators of production capacity implementation and the results of the enterprise activity in general;
- development and realization of operational management decisions for the long-term perspective taking into account the existing trends;
- forecasting and optimization of the enterprise's production capacities;
- operational control over the directions of managerial decisions aimed at enterprise's production capacity optimization and increase of its use efficiency .

Along with the functional areas of activity development, it is important to establish a clear sequence of steps aimed to achieve the goal of management activity – production capacity optimization and increase of its implementation efficiency (Figure 1).

It should be noted that the enterprise's production capacity management can be divided into strategic, tactical and operational. This opinion is shared by foreign scholars [18–20].

Strategic management is carried out by senior management and provides definition for: location of production capacities; location of production equipment and workplaces; the main parameters of the production process.

Regarding the strategies for production capacities management basing on the generalization of the work of the scientists, we propose to highlight:

- an advancement strategy when additional (reserve) capacities are formed for the future, providing further growth of demand. This strategy involves active engagement in attracting new customers, expanding sales markets. The disadvantage of such a strategy may be the production of surplus stocks, requiring additional costs for their maintenance;
- reactive strategy, which involves the growth of production capacity as a response to the growth of demand. On the one hand choosing such a strategy, an enterprise does not incur additional costs for reserve capacities maintenance, on the other hand, it may lose consumers in the

event of an untimely response to the growth of demand or a long period of additional capacities introduction;

–balancing strategy involves the formation of additional production capacity reserves by artificially creating «bottlenecks», which are subject to rapid fission. This type of strategy allows to balance the company between the availability of additional capacities and the lack of maintenance costs.

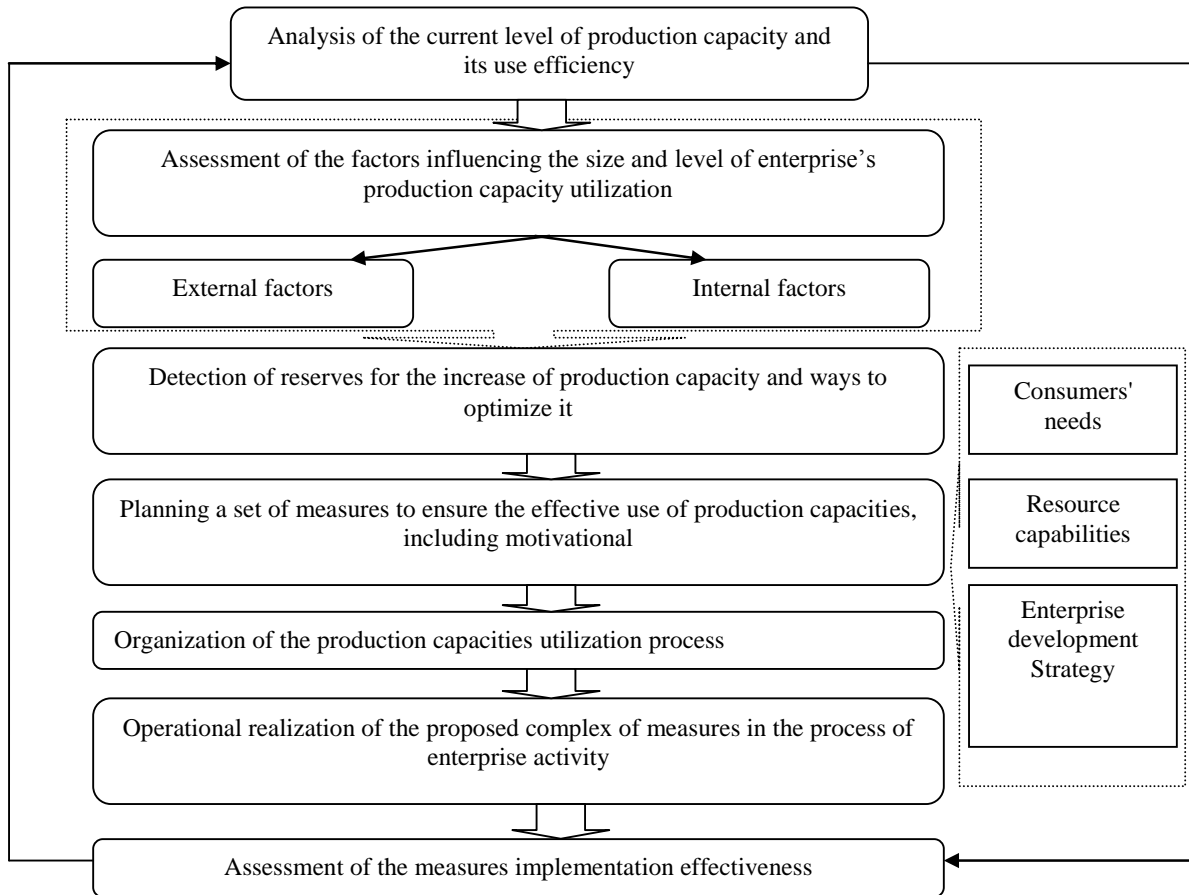


Fig. 1. The algorithm of the enterprise's production capacities management Note. Developed by the author

Tactical management is carried out by the managers of the middle level and involves: harmonization of the production program performance indicators with the levels of workload capacity; search of ways for production capacity optimization; search for reserves and bottlenecks for production facilities; development of programs aimed to motivate the efficient use of production facilities.

The operational level of management requires the executives of the lower level who implement a number of tasks: make schedules for the use of production capacity; form route maps and employees' work schedules; monitor compliance with the developed schedules; plan coordination actions and implement them if necessary.

Summarizing it is possible to determine that production facilities strategic management involves their planning: tactical – the organization and motivation of the implementation and optimization processes of, and operational – control of use and regulation. All this is accompanied by decision-making at all levels of management and its harmonization through the exchange of information and effective communication.

Therefore, the study of the of the enterprise's production capacity management features, the specifics of its definition and planning indicate a close relationship and the impact on the level of economic security of the enterprise (Figure 2).

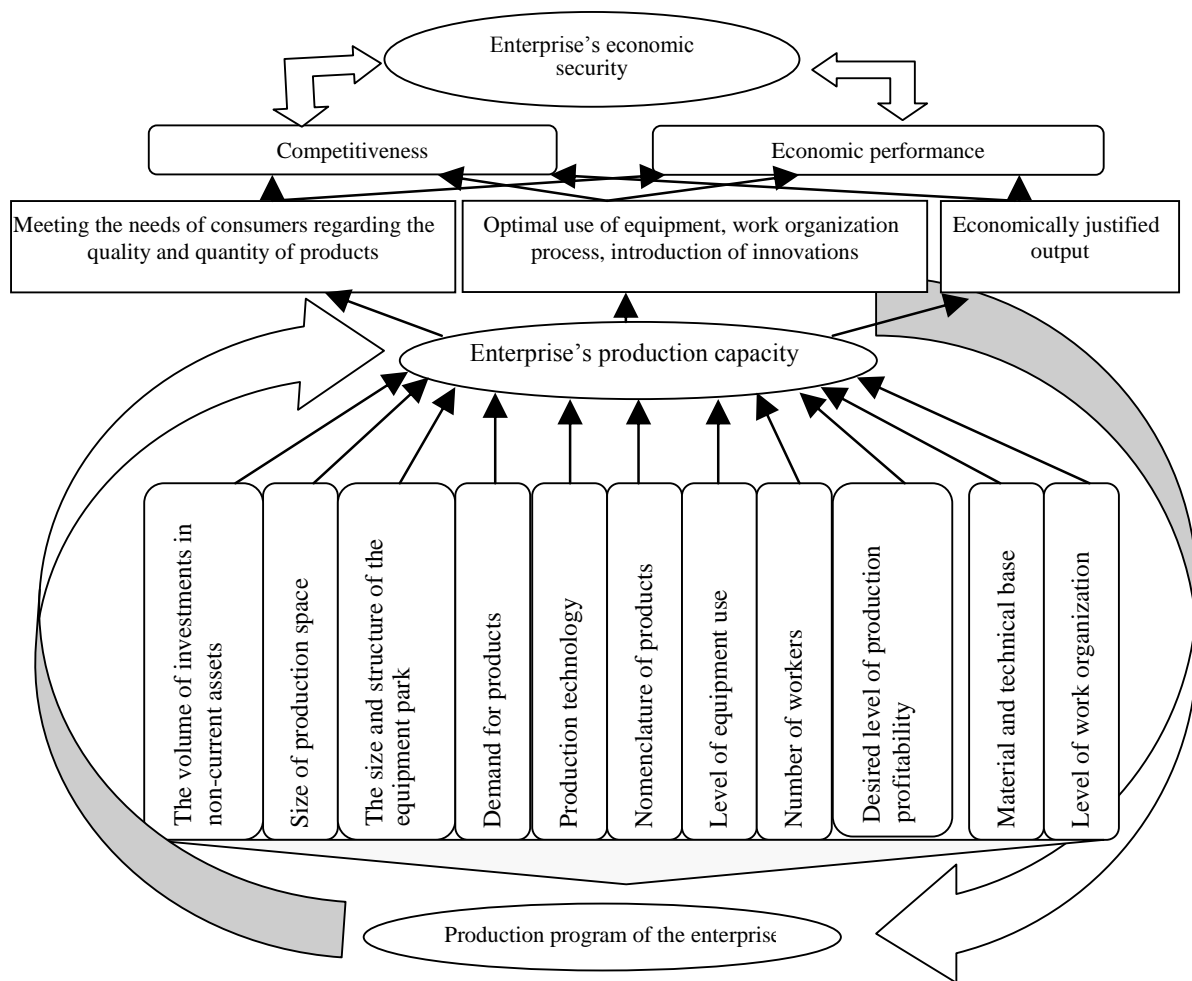


Fig. 2. Scheme of connection between enterprise's production capacity and its economic security
 Note. Developed by authors

As you can see, the formation of the enterprise's production capacity is influenced by a number of factors, which at the same time determine the production program. The strength of influence of these factors and their level of account while planning production capacity can have both a positive and a negative impact on the final results of the enterprise. Thus, an erroneous, superficial approach to the process of production capacity formation can provoke the emergence of risks and dangers for the economic security of the business entity. On the contrary, a substantiated approach to the production capacity planning and its optimal use will: a) contribute to satisfying the needs of consumers for the qualitative and quantitative characteristics of goods, b) facilitate in providing economically feasible numbers of production, c) encourage the economical use of equipment, d) help to attract investments for the renewal of fixed assets, e) anchor the development of innovative technologies. All this will ultimately ensure the economic efficiency of the enterprise, its competitiveness, and hence the desired level of economic security.

Conclusions. As empirical analysis demonstrates the production capacity management is a complex, multi-stage process, which requires the development of a specific approach, the definition of the appropriate strategy and implementation of the justified measures. It is obvious that the strategic direction of management activity with respect to production capacity and its functional purpose will determine the level of economic security of an enterprise, while it depends on the efficiency and competitiveness of the business entity.

Therefore, the study has both theoretical and practical significance. The theoretical significance is reflected in the expansion of the theoretical basis of the management functional areas and management activity in general, and practical significance lies in the specific proposals for the formation of a enterprise's production capacity management strategy. Further research should be directed at the development of a methodology for assessing the effectiveness of the enterprise's production capacity management.

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