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A comprehensive estimation method for enterprise capability

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Abstract: In today's highly competitive business world, the need for efficient enterprise capability management is greater than ever. As more enterprises begin to compete on a global scale, the effective use of enterprise capability will become imperative for them to improve their business activities. The definition of socio-economic capability of the enterprise has been given and the main components of enterprise capability have been pointed out. The comprehensive method to estimate enterprise capability that takes into account both social and economic components has been offered. The methodical approach concerning integrated estimation of the enterprise capability has been developed. Novelty deals with the inclusion of summary measure of the social component of enterprise capability to define the integrated index of enterprise capability. The practical significance of methodological approach is that the method allows assessing the enterprise capability comprehensively through combining two kinds of estimates – social and economic and converts them into a single integrated indicator. It provides a comprehensive approach to socio-economic estimation of enterprise capability, sets a formal basis for making decisions and helps allocate enterprise resources reasonably. Practical implementation of this method will affect the current condition and trends of the enterprise, help to make forecasts and plans for its development and capability efficient use.

Keywords: enterprise capability, economic component of enterprise capability, social component of enterprise capability, enterprise capability management, integrated estimation of enterprise capability



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1. Introduction

In today's highly competitive business world, the need for efficient enterprise capability management is greater than ever. A lot of national enterprises want to match the current market situation. As more enterprises begin to compete on a global scale, the effective use of enterprise capability will become imperative for them to improve their business activities. Generally speaking, the capability is an integral part of any enterprise covering such components as production, labour, financial, investment, innovation, marketing, logistics and others. The comprehensive estimation of enterprise capability in a market economy and increased competition are important and practically significant. There is no general methodological approach to socio-economic estimation of enterprise capability that could help to conduct a comparative analysis of enterprise capability level and make their rating by the integrated assessment of capability for managers and investors.

Recent research and publications analysis. A challenging task of any enterprise is to use the capability to gain sustainable development and competitiveness. Among all the works devoted to specific issues of capability management and capability estimation, the scientific papers of O.I. Amosha, O.E. Kuzmin, A.A. Pylypenko, S.M. Voronina, N.M. Markova, R.M. Naboka, T.O. Sobolev, N.P. Piatkova, M.S. Saxena, D. Ulrich, D.G. Lake should be mentioned.

The entire set of estimation methods for enterprise capability presented in the economic literature can be divided into two main groups. The authors of the first group emphasize the capability value assessment. The second group authors suggest evaluating of enterprise capability based on already known economic indicators. Consequently, no attention is paid to the study of enterprise capability features as an integrated part that combines not only economic but also the social aspect.

There was no attempt to determine the socio-economic estimation of the enterprise capability, which could allow making reasonable conclusions based on a combination of various aspects of this assessment. Therefore, it is necessary to discuss the issue of socio-economic estimation of enterprise capability. This assessment should be integrated. It must cover a range of aspects and lead to a single integrated index based on general indicators.

The goal of this article is to develop the methodological approach concerning socio-economic estimation of enterprise capability through the measurement and estimation of different quantitative and qualitative parameters characterizing the components of enterprise capability.

2. Key research findings

Clearly, the enterprise capability estimation must be an integral part of business management because it is a basis for effective management and planning of business activity for short and long term. The effective use of enterprise capability is the most important factor in the operation of the enterprise because it combines all available resources in order to meet the required enterprise objectives.

In order to establish the meaning of socio-economic estimation we need firstly to define the term "socio-economic capability of the enterprise" and distinguish its main components. On the basis of different definitions [1, p.142], [4, p.82] the socio-economic capability can be defined as a system of separate capabilities that forms the socio-economic ability of the enterprise to most efficient and effective work over the long-term prospects.

Generally speaking, the economic capability of any enterprise depends on:

- 1) quality and volume of available resources at the enterprise;
- 2) abilities of staff of the enterprise to create the material benefits that is educational, qualification, and motivational capabilities;
- 3) abilities of management to use available resources;
- 4) innovative abilities (that is ability of the enterprise to different changes in area of production, management and so on);
- 5) information abilities (ability to process information for the purpose of its further use);
- 6) financial abilities (solvency of the enterprise and others) [8, p. 46].

It's well-known, that the economic recourses are the basis of enterprise capability. All available economic recourses form separate components of the enterprise capability, among which we can distinguish the economic component and social component. Therefore, we offer to estimate the enterprise capability by taking into account two types of this assessment, such as economic and social.

Enterprise capability estimation in economic terms covers the evaluation of its components such as production, financial, investment, innovation, marketing, logistics, infrastructure, information, etc. Let's take a look at the economic components of enterprise capability in details.

Production capacity comprises the productive resources, entrepreneurial capabilities and production linkages which together determine the capacity of an enterprise to produce goods and services. The production capacity consists of four components such as land, fixed assets, working capital and intangible assets [6, p. 95].

Financial capability covers funds that are needed to do economic activity with its own funds (used by enterprise to put into production in order to make a profit) or borrowed funds (provided to an enterprise by a bank or external sources (external investors) and internal sources (owners)).

Investment capability is the part of financial capability that can be broken into three basic groups: ownership investments, lending investments and cash equivalents. They focus on combined investments of the owners in stocks, investment for starting and running a business, investment into real estate and precious objects (metals) [3, p. 90].

Innovative capability is the enterprise ability to effective use of its own internal resources for generating and implementing new ideas under the existing conditions in order to improve the quality, economy or efficiency of a specific product or process. Innovative capability of the enterprise is the capacity to develop, create and implement product, process, marketing and organizational innovations.

Marketing capability is the enterprise ability to determine the need and demand of customers in order to meet the needs of marketing outlets.

Logistics capability is the enterprise's ability to manage the flow of resources between the point of origin and the point of consumption in order to meet some requirements. This capability is based on the overall management of the way resources are obtained, stored and moved to the locations where they are required.

Information capability is the collection, storage, processing and dissemination of information resources through databases that are used to make rational decisions by top executives [4, p. 130].

Infrastructural capability is basic physical and organizational structures and facilities (e.g., buildings, roads, equipment, and power supplies) needed for the operation of an enterprise and satisfaction of staff social needs.

We consider that the enterprise capability estimation in social terms should cover assessment of skills and employee abilities, assets and resources that ensure proper working conditions and employee development. The social component of enterprise capability includes human recourse, organizational and motivational capabilities. Therefore, the estimation of enterprise capability in social terms must include such three main components as human resources, motivation and organizational capability.

Human resources capability covers the employee ability related to employee's interpersonal connections and refers to the stock of competences, experience, skills, knowledge and personality attributes embodied in the ability to perform labour. Efficient use of employee abilities depends on employee engagement that is it shows how employees are committed to their organization's goals and values, motivated to contribute to organizational success, and are able at the same time to enhance their own sense of well-being [8, p.86].

Motivational capability is based on social security benefits, different social security programs and labour programs, professional development opportunities for employees and participation of enterprises to support their employees socially.

Organizational capability covers the enterprise ability to create appropriate occupational safety and working conditions, time management in the workplace and employee turnover management.

Determination of the capacity estimation tool enables the enterprise to develop an effective management at certain stages of its development in accordance with the external environment requirements. The enterprise typically uses the existing resources to some extent and the systematic monitoring of its use will adjust the internal capabilities and prevent crisis situations.

As a result of studying the economic literature leads to the conclusion that the estimation of enterprise capacity is often confined to assessing its economic component, and the evaluation of social component is overlooked, which in its turn, is unable to provide a comprehensive approach to this estimation. Therefore, it is appropriate to propose a methodological approach for capability estimation by its structure, which is based on the use of single, general and integrated indicators.

Calculation of single (defined by standard methods) and general (calculated by the average methods) indicators is based on the statistical information needed for determination of separate capability components.

Thus, it is advisable to use a comprehensive framework that combines two components to estimate the enterprise capability. Accordingly, the integrated index of enterprise capability is the result of socio-economic assessment of capability components, which is based on the definition of general indicators and consolidating them into a single type by application of multivariate averages.

The calculation of this index we propose to carry out in several steps. The first step involves the identification of the key areas of integrated assessment. The second step involves a selection of key indicators for each area of integrated assessment. The third stage involves a selection of experts who determine the weight factors of separate indicators for each area of integrated assessment. The fourth step calculates the general indicators for each area of integrated assessment. The fifth step includes measurement of the integrated capability index and establishment of its standard values.

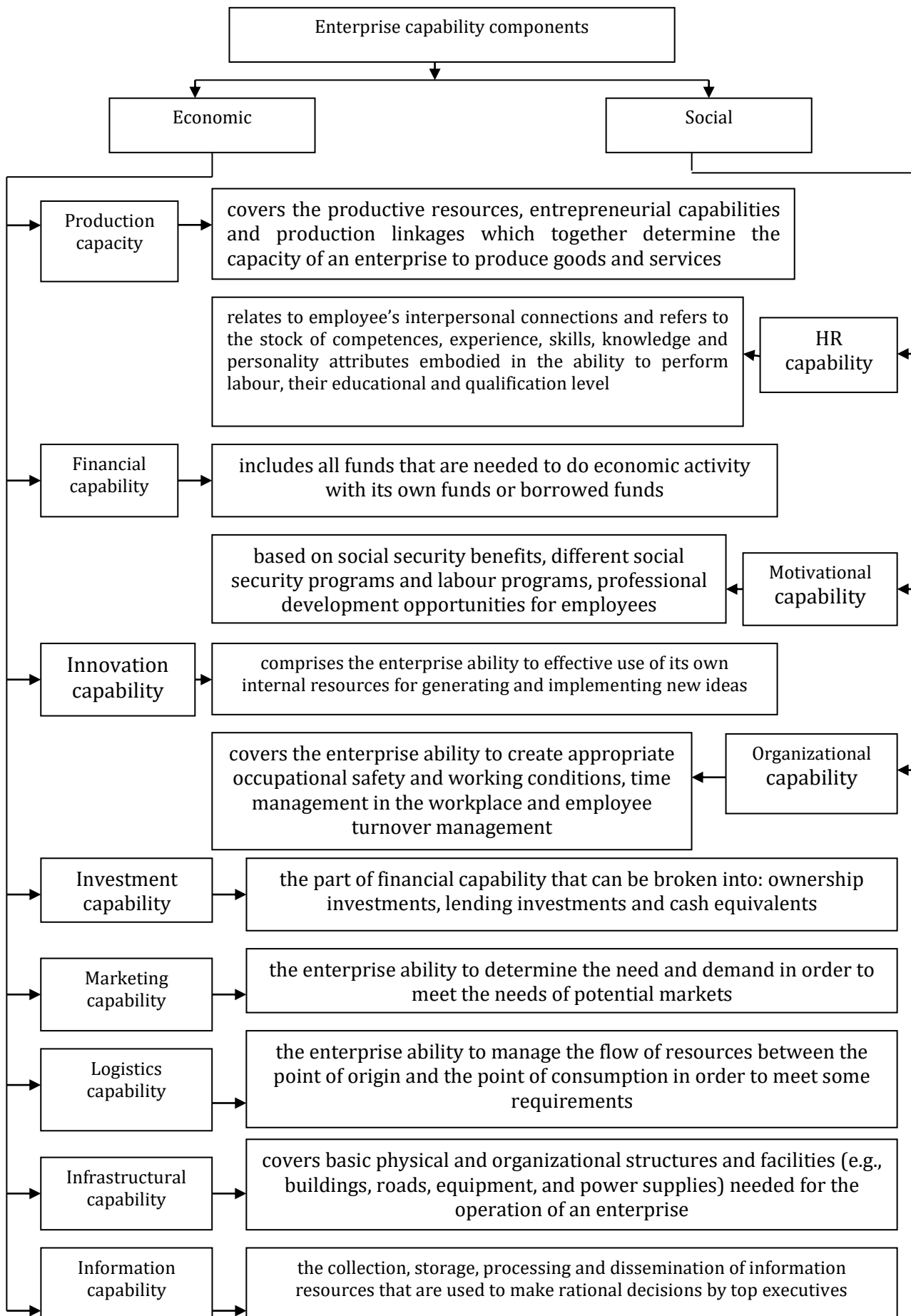


Figure 1. The main components of enterprise capability

The calculation formulas of general indicators for each area of integrated assessment are given below

$$GI_{EC} = \sum_{i=1}^n EC_{i,j} \cdot W_{i,j}, \quad (1)$$

$$GI_{SC} = \sum_{i=1}^n SC_{i,j} \cdot W_{i,j}, \quad (2)$$

where GI_{EC}, GI_{SC} – are the general indicators under the economic component and the social component of enterprise capability;

$EC_{i,j}$ – is the partial figures for the respective areas of integrated assessment of the economic component of enterprise capability;

$SC_{i,j}$ – is the partial figures for the respective areas of integrated assessment of the social component of enterprise capability;

$W_{i,j}$ – is the weight factors of separate indicators for each area of integrated assessment.

The calculation formula for integrated capability index based on the geometric mean of general indicators is given below.

$$ICI = \sqrt{GI_{EC} \cdot GI_{SC}}. \quad (3)$$

If the integral capability index is close or equal to one, the enterprise capability is used effectively. On the other hand, if the actual value of integral capability index is close to 0 then the level of capability use is inefficient.

3. Conclusions

To sum everything up, we must mention that this methodological approach allows assessing the enterprise capability comprehensively through combining two kinds of evaluations – social and economic and converts them into a single integrated indicator. It provides a comprehensive approach for the enterprise capability estimation, sets a formal basis for making decisions and helps allocate enterprise resources reasonably. Practical implementation of this method will affect the current condition and trends of the enterprise, help to make forecasts and plans for development and use of the enterprise capability.

Author details (in Ukrainian)

Комплексний метод оцінювання потенціалу підприємства

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Анотація. Оскільки все більше підприємств починають конкурувати на міжнародних ринках, то ефективне використання потенціалу підприємства є важливим напрямком управління для того, щоб покращити результати діяльності. В статті роз'яснено сутність соціально-економічного потенціалу підприємства та виокремлено основні його складові. Запропоновано здійснювати комплексне оцінювання потенціалу підприємства з врахуванням двох його складових – економічної та соціальної. Розроблено методичний підхід до інтегральної оцінки потенціалу підприємства. Наукова новизна полягає у включенні узагальнюючого показника соціальної складової потенціалу підприємства до визначення інтегрального показника оцінювання потенціалу підприємства. Запропонована методика дозволяє всесторонньо оцінити потенціал підприємства, оскільки поєднує дві оцінки – соціальну та економічну і зводить їх в єдиний інтегральний показник. Це забезпечує комплексний підхід до соціально-економічного оцінювання потенціалу підприємства, задає формалізовану базу для прийняття управлінських рішень, допомагає обґрунтовано розподіляти ресурси. Практична реалізація методики дозволить впливати на поточний стан та тенденції розвитку підприємства, складати прогнози та плани розвитку і використання потенціалу підприємства.

Ключові слова: потенціал підприємства, економічна складова потенціалу підприємства, соціальна складова потенціалу підприємства, управління потенціалом підприємства, інтегральна оцінка потенціалу підприємства.

Author details (in Russian)**Комплексный метод оценивания потенциала предприятия**

Татьяна Кужда, Наталия Кирич

Аннотация. Поскольку все больше предприятий начинают конкурировать на международных рынках, эффективное использование потенциала предприятия является важным направлением управления для того, чтобы улучшить результаты деятельности. В статье разъяснено сущность социально-экономического потенциала предприятия и выделены основные его составляющие. Предложено осуществлять комплексную оценку потенциала предприятия с учетом двух его составляющих – экономической и социальной. Разработан методический подход к интегральной оценке потенциала предприятия. Научная новизна заключается во включении обобщающего показателя социальной составляющей потенциала предприятия к определению интегрального показателя оценки потенциала предприятия. Предложенная методика позволяет всесторонне оценить потенциал предприятия, поскольку объединяет две оценки – социальную и экономическую и сводит их в единый интегральный показатель. Это обеспечивает комплексный подход к социально-экономической оценке потенциала предприятия, формирует базу для принятия управленческих решений, помогает обоснованно распределять ресурсы. Практическая реализация методики позволит влиять на текущее состояние и тенденции развития предприятия, составлять прогнозы, планы развития и использования потенциала предприятия.

Ключевые слова: потенциал предприятия, экономическая составляющая потенциала предприятия, социальная составляющая потенциала предприятия, управление потенциалом предприятия, интегральная оценка потенциала предприятия.

Appendix. Supplementary material**Citation information**

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References

1. Conrad M. *Resource*. C., Cambridge University Press, 2010, 285 p.
2. Ricketts M. *The Economics of Business Enterprise*. B., Edward Elgar Publishing Ltd., 2003, 592 p.
3. Ulrich D., Lake D. G. *Organizational Capability: Competing from the Inside Out*. M, John Wiley & Sons, 1990, 339 p.
4. Saxena M. S. *Capability Management*. S.: Global India Publications Pvt Ltd, 2009, 310 p.
5. Davenport H. *The Economics of Enterprise*, C., Augustus M Kelley Pubs, 2008, 300 p.
6. Manne A. S., Markowitz H. *Studies in Process Analysis: Economy-wide production capabilities*. New York: Wiley, 2008, 600 p.
7. Bainbridge D. *Intellectual property*. P., Pearson Education, 2009, 892 p.
8. Garg V. G., Venkitakrishnan N. K. *Enterprise Resource Planning: concepts and practice*. New Delhi: Prentice-Hall of India Pvt.Ltd, 2003, 200 p.
9. O'Leary D. E. *Enterprise Resource Planning Systems: Systems, Life Cycle, Electronic Commerce, and Risk*. C., Cambridge University Press, 2000, 520 p.



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