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Evaluation of functioning of an innovating enterprise considering the social dimension

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Abstract.

The paper presents a holistic evaluation model of an innovating enterprise that considers the social dimension. The design and functioning of the model is consistent with the paradigm that assumes a balance between economy, natural environment and the society. The evaluation is conducted with the use of a three-step approach (size – module – evaluation factor), and it also takes into account relations between particular structural elements.

Keywords. Innovating Enterprise • Holistic evaluation • Social dimension

1 Introduction

The evaluation of the functioning of an innovating enterprise is a complex and difficult research issue due to the necessity to take into account in the evaluation: its multiple dimensions, more and more common and powerful turbulences and changes that take place in the environment, the anticipated risk that also has a multiple dimension character.

Thanks to the varied dimensions of the evaluation, the measures applied have both quantitative and qualitative character, and such a complex measure is difficult to apply when conducting a synthetic valuation. Therefore, evaluation of the functioning of an innovating enterprise considering the social dimension, that prefers qualitative evaluations, tends to be difficult. However, it is necessary when adopting the paradigm of a sustainable development.

2 Key terms related to evaluation of an innovating enterprise

While examining the evaluation of the functioning of an economic entity considering the social aspect, it is necessary to define the basic terms connected with the problem, such as: innovative enterprise, efficiency (outputs vs inputs), effectiveness (outputs vs targets), performance (state of achievements), utility (results vs needs), productivity

(products vs utilized resources). The literature described them in various, often different manner [1]. However, some conclusions and recommendations aimed at reducing ambiguity were presented [2].

Innovating enterprise is defined as an enterprise that in the tested period (predominantly three years) – implemented at least one product or technological innovation: a new or improved product, or a new or improved mechanism that are a novelty at least from the perspective of the enterprise [3]. An innovating enterprise could be seen as an intelligent organization that constantly generates and implements innovations, appreciated by customers for high level of modernity and competitiveness [4].

In order to get a better understanding of the term, the features of an innovating enterprise are often formulated, that is [5]: wide range of R&D works, continuous implementation of scientific and technical solutions, significant share of technological, product and organizational novelties, constantly launches innovations on the market, able to predict future, characterized by flexibility of activities, creative teams, characterized by the ability to tap into the innovative potential, in constant contact with clients, able to generate innovations constantly.

The term performance is wider than efficiency which does not include setting goals and allocation of resources. Therefore, the term effectiveness has the closest meaning to the word performance. Then, activity is marked by the maximum effectiveness, feasible in the given conditions in methodological meaning, if the operator did his best in the given conditions to ensure that the operation has the maximum real effectiveness in all aspects. Such an achieved effectiveness may be lower than the planned one due to unforeseeable difficulties [6].

The performance term has multidimensional character, it assumes that each member (element) of the organization has his aspirations. In order to measure the degree of such aspirations specific measures of effectiveness, efficacy or productivity may be adopted. The approach provides for the basic aspect connected with the understanding of the type of „performance” that specific parts of the organization may have contradictory objectives. And this type of understanding turns out to be vital if we want to take into account the social as well as the environmental dimension in the evaluation.

When adopting the holistic approach to the evaluation, as it is in the presented paper, it is necessary to take into account the three approaches in the literature:

- purpose-bound – assuming that organizations aim at achieving specific, ultimate objectives (consistent with ‘effectiveness’),
- resource - assuming that organizations have to operate in order to protect and use the limited and particularly valuable resources (similar to ‘performance’),
- process – defining performance in the context of the behavior of the organization members (elements) [7, 8].

3 Holistic approach to the enterprise evaluation

The idea of the holistic approach is a notion implying that all social phenomena constitute holistic systems subject to specific regularities that cannot be inferred bas-

ing on the knowledge of regularities governing their elements [9]. The principle of the holistic approach is analysis of all existing conditions and all occurring phenomena from the point of view of a holistic system, not taking into consideration the individualism methodology. Departure from the individualism methodology in the evaluation processes has been widely discussed in literature [10]. The holistic approach to the evaluation should encompass all its dimensions, that are economic, technical and technological, legal, social and environmental. When adopting such an approach it is necessary to characterize each of the listed dimensions [11,12].

The holistic approach to the evaluation of the functioning of an enterprise, regardless of its character, should be in line with the universal idea of the holistic approach (fig. 1).

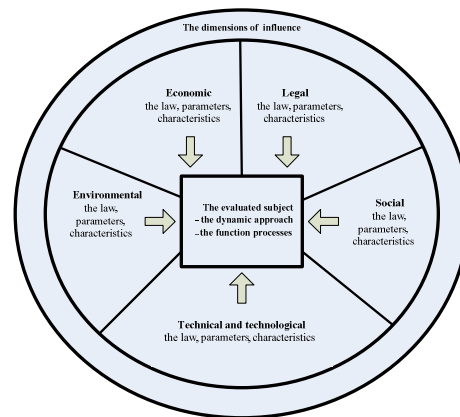


Fig. 1. The universal idea of the holistic approach

The dimensions cover the key assessment areas that should be taken into consideration by innovative entity operating in developed country and following the idea of sustainable growth. Each of them should be assessed from internal and external perspective. The external perspective considers the influence of outside conditions on management decisions (especially: legal, social, economic, and technical) and influence of the activity on surrounding (especially natural environment). The internal perspective describes how the available resources are managed and utilized.

4 The importance of the social dimension in the holistic evaluation of the enterprise

When presenting the problem regarding the evaluation of functioning of an innovating enterprise, one should advance a thesis that, apart from the economic and financial, technological, environmental protection and formal and legal dimension, above all the social dimension is an important element that affects the evaluation of the enterprise effectiveness and efficacy in the operations. It results from the occurring regularity that the environmental and social dimension plays growing part in the evaluation of the productivity of production processes. It is connected with the fact that the listed dimensions in many cases in the 21st century will determine, or deter-

mine now the effectiveness of the applied production processes. It is clearly reflected e.g. in the production of electricity, but it may also occur in the manufacturing of modern products or services in various branches of the developed market economy. Therefore, an innovating enterprise should be perceived as an economic entity that functions in a dynamic environment, characterized by the implementation of time-varying innovative actions: processes and tasks.

Analyzing the literature it may be concluded that most organizational and social innovations occur inside the society, and in many cases the enterprise workers are their authors [13]. It is consistent with the whole chain of links, relations, attitudes, notions and values that evolve slowly and transform in time, and they tend to assume complex character. It is therefore beyond doubts that accepting to implement a new solution (innovation) at the enterprise level, is a result of dynamic and turbulent changes both of the environment and inside and it should inevitably affect its evaluation.

An enterprise development should be attested not only by economic and financial or technological indicators, but also by changes occurring in the sphere of attitudes, values or employees and consumer behaviors. Very often it is the decisive, creative and open approach of the employees that becomes the determinant of progress that confirms the enterprise innovativeness and it allows to achieve a strong market position. Taking into account the contemporary reality of the competitive economy, it needs to be noted that development should be coupled with social capital. The implemented innovations should force the employees to change their attitudes, values and knowledge etc. As a result, it creates an innovative culture in the enterprise allowing to survive in the long term. Continuous development of the innovative culture requires constant reinforcing of the belief that the implemented solutions are effective, as well as social acceptance and an assent to such an enterprise development. It leads to more and more effective innovations, which translates into an increase in economic benefits of economic units which, in the long or short run, increase the standard of living in the society [14]. Summing up, it should be explicitly stated that the innovation theory has a complex character especially in the social dimension, which increases the importance of the raised problem. When presenting the holistic approach, it must be noted that the most effective innovations in the social dimension occurred in the 60's of the 20th century and in the early years of the 21st century.

The innovativeness level of the enterprises is affected by human resources of the enterprise, as well as the wider society (clients, contractors, competitors etc.). the general social factors that affect the evaluation process and its results include historical conditions, culture, lifestyle, and the integration of the society. More specific factors, that should absolutely be covered by evaluation, include the availability of professionals (qualified staff), education and knowledge level of the employees, as well as their creativity and imagination, client's trust in the enterprise ability to implement innovative actions and other sociological and psychological features. Each innovation implemented by a specific economic unit brings about certain changes, it destroys the existing organizational order and it introduces a new one. Some employees react to it with fear and resistance, others are positive about it. When evaluating the enterprise operations it is vital to learn in advance about the employees' attitude towards various

actions and to react properly to the existing situation. It may take one of the four forms [15]: acceptance, indifference, passive or active resistance. The approach to various types of the enterprise operations in the internal dimension comes down to the subjective employee evaluation resulting from the employment situation, their knowledge and experience. The most common barriers in acceptance for operations are psycho-social ones and they need to be broken skillfully with the employees' previous acceptance.

When trying to sum up the discussed problems one may notice that specific factors of the evaluation of enterprise operations in the social dimension tend to be connected with the internal environment, whereas general factors – with the external environment.

5 The holistic model of the enterprise evaluation

The holistic model of the evaluation of the enterprise operation constitutes the basis of presenting the place of the social dimension in the evaluation (fig. 2).

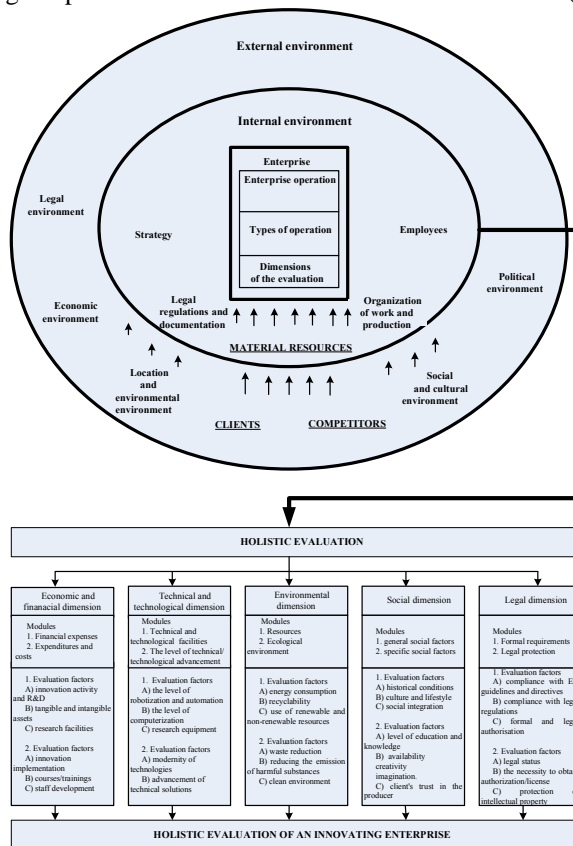


Fig. 2. The ideational model of the holistic evaluation of an innovating enterprise considering the social dimension

The presented approach to the evaluation could be found in the literature related to sustainable enterprises. However, it is not the dominant approach for innovation assessment. In the literature, one can find models that used different than suggested in the paper dimensions [16, [17].

The model presents the relationship among its elements and points out the needs of wide evaluation. Analysing the business solutions, the proper concentration on political and social environment is the main area of improvement, because of their qualitative nature and problems with reliable valuation. In order to avoid passing over the selected areas, the examples of measures were presented. However, each entity should develop their own measures selecting the type of activity and manager's needs.

6 The conditions in implementation of the holistic model of the operations of an innovating enterprise

As it was stated before in the paper, the social dimension may be properly included in the evaluation only when adopting the holistic approach.

The conditions in implementation of the holistic model of the operations of an innovating enterprise may vary. They result from areas that the holistic evaluation encompasses and from universal rules that the innovating enterprise is subject to. The classification of the possible conditions has been presented in table 1.

Table 1. Classification of conditions from the perspective of how their effect on the holistic evaluation.

	Classification criterion of the condition	Distinguished dimensions/types	Features of conditions	
Type of condition	A. DIMENSION	1. economic and financial 2. technical and technological 3. environmental 4. social 5. legal	1. requisiteness / optionality	The influence of conditions on the evaluation level: efficiency, productivity, effectiveness, efficacy
	B. GOAL	1. general 2. particular 3. operational 4. tactical 5. strategic	2. the possibility to grade the level	
	C. RULE	1. global 2. regional (continental) 3. domestic 4. territorial (local government)	3. the possibility to identify in time	

Basing on the presented classification of conditions it may be observed that it is not their type but above all the features they display that have significant influence on the holistic evaluation. As a result, they determine the level and character of the evaluation conducted according to the previously adopted method or procedure. Each of the management methods used in the process, such as management by objectives, controlling, Lean Management etc., are well known in the literature. The choice usually depends on the adopted and preferred at a given moment management paradigms adequate for the economic paradigms.

7 Summary

When presenting the evaluation of the functioning of an innovating enterprise in conditions providing for the social dimension, it must be emphasized that it is only possible for the holistic approach. Then the social dimension may be correctly isolated, and it enables to make an attempt at quantifying it through the application of adequate measures. The presented measures should reflect the character of the social dimension and they should ensure consistency with other dimensions that ought to constitute the elements of the holistic method. Therefore, we may conclude that ensuring the specific character and consistency are the two main problems that must be solved by the evaluators.

The presented proposal has some limitations. It is the theoretical framework that utilization should be evaluated by entities in the future. The analysis in presented dimensions follows the theory of sustainable development and includes all weaknesses of its. Exploitation of the model needs from organization a lot of additional effort in controlling and application in decision taking process. Because of additional inputs the model can be adapted especially by the organization that want to develop in long-term perspective and operate in sensitive sector from the customer perspective.

References

1. Shaw E.H.: A general theory of systems performance criteria. *International Journal of General systems*, Vol. 38(8), pp. 851-869 (2009)
2. Głodziński E.: Efficiency in management science. Reasons of multi-interpretations and recommendations for their reduction. *Scientific Papers of Silesian University of Technology. Organization and Management Series*, Vol. 83, pp. 165-176 (2015)
3. Oslo Manual: Guidelines for Collecting and Interpreting Innovation Data, Third Edition. OECD/Eurostat, Paris (2005)
4. Sosnowska A., Łobejko S., Kłopotek P.: *Zarządzanie firmą innowacyjną*. Difin, Warsaw (2001)
5. Białoń L. (ed.): *Zarządzanie działalnością innowacyjną*. Placet, Warsaw (2010)
6. Zieleniewski J.: *Organizacja zespołów ludzkich*. PWN, Warsaw (1967)
7. Steers R. M.: Organizational Effectiveness: A Behavioral View. *Administrative Science Quarterly*, Vol. 22, No. 3, pp. 538-540 (1977)

8. Ford J. D., Schellenber D. A.: Conceptual Issues of Linkage in the Assessment of Organizational Performance. *Academy of Management Review*, Vol. 7, No. 1, pp. 49-58 (1982)
9. Encyklopedia Gazety Wyborczej, vol. 6, p. 524. PWN, Warsaw (2005)
10. Marciniaka S.: Zespólona metoda oceny efektywności przedsięwzięć techniczno-organizacyjnych. OWPW, Warsaw (1989)
11. Marciniak S., Ejsmont K.: Ocena przedsięwzięć techniczno-organizacyjnych typu eScop. *Economics and Organization of Enterprise*, no. 12 (791), pp. 17-32 (2015).
12. Ejsmont K.: Paradygmat oceny w odniesieniu do inteligentnych technologii. *Innowacje w zarządzaniu i inżynierii produkcji* (ed.) Knosala R., vol. II, Opole, pp. 144-155 (2017)
13. Tidd J., Bessant J.: Zarządzanie innowacjami. Integracja zmian technologicznych, rynkowych i organizacyjnych. Wolters Kluwer, Warsaw (2011)
14. Wierzyński W.: Społeczny wymiar innowacji. PARP – Portal innowacji, Warsaw (2011) http://www.pi.gov.pl/PARP/chapter_86196.asp?soid=30ECD70166564C808564276ADC D2664E, accessed 18.01.2017
15. Judson S.: *Manager's Guide to Making Changes*. McGraw-Hill, London (1966)
16. Lendel V., Hittmár Š., Siantová E., Latka M.: Proposal of the evaluation system of the level of the innovation processes management in company. *Procedia Economics and Finance*, vol. 34, pp. 417-422 (2015)
17. Boly V., Morel L., Camargo M.: Evaluating innovative processes in french firms: Methodological proposition for firm innovation capacity evaluation. *Research Policy*, Vol. 43(3), pp. 608-622 (2014)