FORMATION OF INDICATORS SYSTEM OF EVALUATION OF ENTERPRISES ACTIVITY AS PROCESS OF THEIR INTERACTION WITH INTERESTED PARTIES

Анотація. It is considered the activity of enterprises taking into account their socio and economic interaction with the internal and external environment, each of which can be considered as an active or passive interested party. It should be noted that each party has its own goals, which are mostly non-compliant with each other. It is emphasized that enterprises as the main element of socio-economic interaction, create the economic basis of innovative transformations of operational basis, social progress of society and the preservation and reproduction of ecosystem. At the same time, the positioning of enterprises in the environment of functioning as responsible economic entities directly or indirectly affects the results of their production and economic activity.

It has been analyzed the dynamics of socio-economic development of Ukraine for last ten years by the values of generalized indicators, in particular, indicators of living standards of population, perceptions of corruption, economic freedom, the shadow economy and the impact of enterprises on the ecosystem. It was investigated the indicators of social responsibility of some profitable enterprises in Lviv region and it was found that operation of the disparate indicators of standard statistical reporting of enterprises does not allow to establish an objective integral estimation of the results of their activity as a process of interaction with the interested parties.

It is noted that the assessment of the socio-economic interaction of enterprises with interested parties should be based on the system of hierarchically organized, interrelated, independent and non-contradictory indicators. It is described the basic system requirements for the structure of indicators. The basic functions of the system of indicators are specified: transformative, normative, monitoring, analytical and regulatory. It is recommended to adhere to the principles of completeness, diversity, optimality and flexibility when constructing a system of indicators.

It is developed the structure of the enterprise performance evaluation system, which consists of three groups of indicators (interaction with internal and external environment), which includes nine subgroups and fifteen aggregated baseline indicators. It is substantiated the expediency of inclusion into the index system the efficiency indicators of use of natural resources, energy efficiency of operational activity, renewal of resources, waste utilization, motivation of labor and personnel development, satisfaction of consumers’ needs, social and economic development of the regional community, and the effectiveness of functioning the information and communication technologies. It is emphasized the necessity of synchronization of indicators of management and accounting, standard statistical reporting with the system of enterprise activity evaluation.

Keywords: system, index, evaluation, activity, enterprise, process, interaction, interested parties.

JEL classification: M1, M2

Formula: 1; Tables: 4; Ref.: 14.
ФОРМУВАННЯ СИСТЕМИ ПОКАЗНИКІВ ОЦІНЮВАННЯ ДІЯЛЬНОСТІ ПІДПРИЄМСТВ ЯК ПРОЦЕСУ ЇХ ВЗАЄМОДІЇ ІЗ ЗАІНТЕРЕСОВАНИМИ СТОРОНАМИ

Анотація. У статті розглянуто діяльність підприємств з урахуванням їх соціально-економічної взаємодії з внутрішнім, зовнішнім і навколишнім середовищем, кожне з яких можна розглядати як активну чи пасивну заінтересовану сторону. Зазначимо, що кожна зі сторін переслідує власні цілі, які переважно не компліментарні між собою. Наголошено, що підприємства, як основний елемент соціально-економічної взаємодії, створюють економічне підґрунтя інноваційних перетворень операційного базису, соціального поступу суспільства та збереження і відтворення екосистеми. У той же час позиціонування підприємств у середовищі функціонування як відповідальних суб’єктів господарювання безпосередньо чи опосередковано позначається на результатах їх виробничо-господарської діяльності.

Проаналізовано динаміку соціально-економічного розвитку України за останні десять років за значеннями ряду узагальнених показників, зокрема, індикаторів рівня життя населення, сприйняття корупції, економічної свободи, тіньової економіки та впливу діяльності підприємств на екосистему. Досліджено показники соціальної відповідальності ряду прибуткових підприємств Львівської області та виявлено, що оперування розрізненими показниками стандартної статистичної звітності підприємств не дає змоги встановити об’єктивну інтегральну оцінку результатів їх діяльності як процесу взаємодії із заінтересованими сторонами.

Зазначено, що оцінювання соціально-економічної взаємодії підприємств із заінтересованими сторонами повинно спиратися на систему ієрархічно організованих, взаємопов’язаних, незалежних і несуперечливих показників. Окреслено базові системоутворюючі вимоги щодо структури показників. Конкретизовано основні функції системи показників — перетворювальну, нормативну, моніторингову, аналітичну і регулювальну. Рекомендовано дотримуватися принципів повноти, різноманітності, оптимальності та гнучкості при побудові системи показників.

Розроблено структуру системи показників оцінювання діяльності підприємств, яка складається із трьох груп показників (взаємодії із внутрішнім, зовнішнім та навколишнім середовищем), до складу яких входять дев’ять підгруп та п’ятнадцять агрегованих базових показників. Обґрунтовано доцільність включення до складу системи показників індикаторів ефективності використання природних ресурсів, енергозатратності операційної діяльності, відновлення ресурсів, утилізації відходів, мотивації праці та розвитку персоналу, задоволення потреб споживачів, соціально-економічного розвитку регіональної громади, ефективності функціонування інформаційно-комунікаційних технологій. Наголошено на необхідності синхронізації показників управлінського і бухгалтерського обліку, стандартної статистичної звітності з системою оцінювання діяльності підприємств.

Ключові слова: система, показник, оцінювання, діяльність, підприємство, процес, взаємодія, стейкхолдер.

Формул: 1; табл.: 4; бібл.: 14.
Формирование системы показателей оценки деятельности предприятий как процесса их взаимодействия с заинтересованными сторонами

Аннотация. В статье рассмотрена деятельность предприятий как процесс их социально-экономического взаимодействия с заинтересованными сторонами. Проанализировано состояние социально-экономического развития Украины по значениям ряда обобщенных показателей деятельности предприятий. Определены базовые системообразующие требования по формированию совокупности показателей, а также конкретизированы основные функции и особенности построения системы показателей оценки деятельности предприятий. Рассмотрены принципы построения системы показателей и основные требования к базовым показателям. Разработана структура системы показателей оценки деятельности предприятий, состоящая из трех групп показателей – социально-экономического взаимодействия с окружающей, внутренним и внешней средой.

Ключевые слова: система, показатель, оценки, деятельность, предприятие, процесс, взаимодействие, стейкхолдер.

Формул: 1; табл.: 4; библ.: 14.

Introduction. In the context of globalization and the intensification of competition in open markets, the problem of identifying and assessing the interests of interested parties in the enterprise’s activities is raised. Only on the basis of an active social position is possible the formation of effective tools for interaction with stakeholders, what will ensure the sustainable development of the enterprise and a number of competitive advantages. Today it is difficult to imagine a successful, highly effective organization that would operate without taking into account the interests of stakeholders and reflecting them in the system of evaluation indicators of enterprise activity.

Analysis of research and problem statement. Among domestic and foreign researchers who worked on the described problem, it is worthwhile to outline such as B. Andrushkiv, G. Bashnyanin, Y. Blagov, V. Gerasimchuk, R. Kaplan, N. Kizim, A. Kolot, F. Kotler, A. Kuznetsova, O. Melnyk, D. Norton, Yu. Pogorelov, V. Ponomarenko, V. Saveliev, S. Ukrainets, N. Chukhrai, V. Yachmeniova and others. The differences in conceptual approaches to the formation of a system of indicators for evaluating the activities of enterprises, taking into account their interaction with the stakeholders do not allow to form a universal methodology for assessing the activities of enterprises [1-5]. That is why the purpose of the article is to justify the theoretical foundations of the formation of a system of indicators of enterprise activity evaluation.

Research results. The activity of enterprises we will consider as a process of their socio-economic interaction with the interested parties, where each party seeks to achieve its goal: the environment - to preserve the ecosystem; the internal environment - to provide permanent economic
development of enterprises; the external environment - to balance economic and social interests. The enterprise as the central link of social and economic interaction (SEI) of stakeholders is not only intended to create the economic basis for innovative transformations, but also act in a socially responsible manner in a functioning environment that directly or indirectly affects the results of its production and economic activity.

The socially responsible activity of enterprises on the environment is assessed by indicators of its impact on the state of the ecosystem that means, by the level of utilization of waste products, by the use of secondary raw materials, as well as by renewal (Table 1).

Table 1

<table>
<thead>
<tr>
<th>Indicator</th>
<th>The average per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The waste* at the end of the year in specially provided places or objects and on the territory of enterprises, million tons</td>
<td>20,1 20,8 14422,4 15167,4 12505,9 ...</td>
</tr>
<tr>
<td>2. Produced* the waste of I-IV classes of danger, million tons.</td>
<td>2,6 1,2 447,6 448,1 312,3 366,4</td>
</tr>
<tr>
<td>3. Utilized*, processed (recycled), million tons.</td>
<td>1,0 0,8 153,7 147,2 92,5 96,0</td>
</tr>
<tr>
<td>4. Volumes of emissions of harmful substances, million tons.</td>
<td>7,4 6,4 6,9 6,5 4,5 2,6</td>
</tr>
<tr>
<td>5. Volumes of carbon dioxide emissions, million tons.</td>
<td>218,1 185,2 236,0 230,7 162 124,2</td>
</tr>
<tr>
<td>6. Total drainage of return water, million cubic meters.</td>
<td>8917 7692 8044 7722 5581 ...</td>
</tr>
</tbody>
</table>

* Note: in 1994-2009 there are displayed data on waste of I-III classes of danger; since 2010 - on waste of I-IV classes of danger; till 2009 the data are displayed from the economic activity of enterprises and organizations, since 2010 - taking into account waste made in households; till 2013 the data are given taking into account the waste temporarily placed in specially provided places or objects.

** Source: [6].

According to Table 1 it can be concluded that the state of waste management in Ukraine is unsatisfactory, because up to 35% of waste annually is utilized, and the volume of existing and formed waste is increasing.

The state of water and air basins of Ukraine can also be characterized as unsatisfactory, because the volumes of emissions of harmful substances remain significant; the volumes of carbon dioxide emissions are increasing; and the share of allocated water taken from natural water objects does not exceed 60%.

The socially responsible activities of enterprises in relation to the environment mean the compliance with their obligations to society and the regional community regarding their permanent development by creating new work places, improving the infrastructure, implementation of innovative technologies, and keeping to the norms of current legislation, transparent and fair business conduct, non-acceptance of corruption manifestations [1].

The basic indicators of social and economic development of Ukraine are presented in the Table 2.
Growth of gross domestic product (GDP) per person can be considered as a positive trend, although some researchers point out that GDP is not a key indicator of economic development. At the current stage of economic development, indicators of the implementation rate of information and communication technologies (ICTs), energy substitution, the efficiency of use of natural resources and the development of e-governance [10] are the priorities.

Also the important indicator is the “transparency index” of enterprises. According to the CSR Development Centre, the transparency of surveyed domestic enterprises in 2011-2013 was kept at level of 20%, which indicates their lack of information openness [11]. The value of corruption index in recent years falls in the interval with a qualitative estimation of “shame for a nation” (CPI < 30). Similarly, it can be interpreted the level of shadow economy, which according to unofficial data exceeds 50% (according to official data up to 40%). The volume of unemployed people at vacancies during 2007-2017 ranged from 4 to 11 people, while the basic employment rates of population had a clearly tendency to reduction.

The change in indicators that characterize the living standard of population is given in Table 3.

### Table 2

<table>
<thead>
<tr>
<th>Indicator</th>
<th>The average per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. GDP per person, thousand., UAH</td>
<td>2007</td>
</tr>
<tr>
<td>2. Unemployment rate, %</td>
<td>6.4</td>
</tr>
<tr>
<td>3. Inflation rate, %</td>
<td>112.8</td>
</tr>
<tr>
<td>4. Integral indicator of shadow economy, as a percentage of GDP</td>
<td>29</td>
</tr>
<tr>
<td>5. Corruption Perceptions Index</td>
<td>2.8</td>
</tr>
<tr>
<td>6. Index of Economic Freedom</td>
<td>51.5</td>
</tr>
</tbody>
</table>

*Source: [7-9].

### Table 3

<table>
<thead>
<tr>
<th>Indicator</th>
<th>The average per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Average monthly subsistence minimum, UAH / month</td>
<td>518.5</td>
</tr>
<tr>
<td>3. Average monthly nominal wages, UAH / month</td>
<td>1351</td>
</tr>
<tr>
<td>4. The ratio of available income to the subsistence minimum, times</td>
<td>1.6</td>
</tr>
</tbody>
</table>

* Source: [6].

It should be noted that despite the high rate of change in nominal wages, its relation to the subsistence minimum, as well as the ratio of available income, it is insignificant, that means, it does not really affect the living standard of population. The confirmation of this can be the following data: in 2013, the ratio of monthly average income to the average monthly subsistence level for the half of population did not exceed 1.5; and for the most typical (modal) population, this ratio was even lower than 1.3.
The social responsibility of enterprise regarding the internal environment is primarily in responsible attitude to the personnel, that is, to ensure the employment of workers and to provide them with a decent wage, able to satisfy the needs of person, the creation of corresponding work and leisure conditions appropriate to the requirements of the current legislation, the involvement of employees not only to the creation of product (operational activity), but also to the sphere of its distribution and management of the enterprise.

Indicators of social responsibility of a number of profitable enterprises of Lviv region concerning workers are given in [1]. According to these data, it can be concluded that even profitable enterprises avoid costs on cultural and household services for workers and insufficient funds are invested in the development of their professional skills. This situation is typical for the industrial enterprises of Ukraine, as evidenced by such data - the share of workers who have at least one type of benefits and compensations for work with harmful and difficult working conditions in 2013 did not exceed 40%. We also note that the share of workers of industrial enterprises of Ukraine, who work in conditions not complying with sanitary and hygienic standards, exceeds 35% (according to the State Statistics Committee of Ukraine).

The given indicators allow receiving segmented evaluations of socially responsible activity of enterprises, and for the establishment of integral estimation of additive form \( I_a \) it is necessary to use the formula

\[
I_a = \sum_j \sum_i a_{ij} \cdot a_{ij} \cdot \sum_j \sum_i a_{ij} = 1, \tag{1}
\]

Where \( a_{ij} \) – weight ratios indicators; \( a_{ij} \) – the relative value of \( i \)-th indicator of the \( j \)-th subgroup, it is necessary to form a structured system of indicators, to determine the weight indicators \( a_{ij} \) and to justify the methodology for calculating evaluations \( a_{ij} \).

In the economic community there is established a conceptual approach based on the indicator system. Domestic and foreign researchers have developed a number of methods for evaluating the results and performance of business development based on a set of basic indicators, which are identified with indicators of development. For example, according to the concept of balanced system of indicators by R. Kaplan, D. Norton, they are called “performance drivers” and “resulting evaluations” [2].

Based on the works [3-5], we note that the indicator, as a key quantitative measure of functional properties, structural relationships of the researched object, its state or change, is a tangent to the socio-economic activity as a means of tracking, analysing, evaluating, forecasting and planning of SEI processes. Let's consider the theoretical, methodological and organizational principles of system forming of evaluation indicators of enterprise activity.

The term “system of indicators” has a well-defined content [4]: "The set of hierarchically organized, causally and consequentially interrelated, independent, non-contradictory indicators that are subordinated to the achievement of established main goal". The above definition contains the basic system requirements for the formation of a set of indicators: hierarchical organization means the subordination of indicators of lower levels of management to higher levels; the causal relationship means not accidental entry of indicators into the system; independence of indicators – means their non-correlation; the consistency - can be interpreted as the direction of indicators to achieve the main goal.

Each system of indicators is intended to carry out, in whole or in part, the following functions:

1. Transformative – that means the transformation of qualitative and quantitative goals into a set of measurable indicators, with the help of which we can evaluate the obtained results, and accordingly - the achievement level of established goal;

2. Normative – that means the establishment of “threshold” (critical) limits of variation, namely, determining the permissible range of indicators changes, that provide the variability and flexibility of managerial decisions;

3. Monitoring - it gives an opportunity to determine the nature of processes, to reveal timely the differences between the actual and critical levels of indicators, that is, to receive appropriate warning signals;
4. Analytical - it ensures the establishment of reasonable estimates of present and future states of the entity;

5. Regulatory – it allows adjusting differences between actual and planned levels of indicators.

The peculiarity of a system constructing of indicators for evaluating the enterprise activity is that at present, existing accounting and statistical reporting systems of enterprises do not provide the display of social responsibility indicators as indicators of a certain group. At the same time, the corporate awareness of corporate social responsibility in relation to personnel, environment becomes the widespread and practical reflection in their activities. This is explained both by the understanding of society's requirements for business management and the economic benefits, which directly or indirectly are received by socially responsible enterprises on the way of forming a positive reputation of social partner in the society; increasing the commitment and confidence of consumers to the enterprise products and its activities, ensuring staff loyalty to the system management of enterprise, establishment of partnership relations of the enterprise with state authorities, local self-government bodies, public organizations and the media. We emphasize that the activity of enterprises cannot be considered separately from the social development of the region or society in general, therefore, the system of indicator evaluation of enterprise activity should be consistent with the system of indicators of living standards and social development of the territory.

An analysis of theoretical sources for social development assessing of the population at the macroeconomic level suggests that the following groups of traditional indicators traditionally include the following: population living standards, demographic indicators, indicators of educational level of population, indicators of population health, and indicators of population development [1; 3].

And, if at the macro level it is formed a set of indicators of social development of population and the environment state, at the micro level (at enterprise level) it was not only formed similar groups of indicators, but not developed a coherent approach to their selection and formation. For example, in the work [12] the following indicators are included into the social structure: the fund of basic and supplementary wage of employees; salary expenses; deductions for social events; average salary at the enterprise. All listed indicators are related to the group of indicators of corporate social responsibility for internal environment (employees) and do not include social responsibility to external environment.

At the same time, the work [13] identifies four main groups of indicators of corporate social responsibility: a group of social responsibility indicators for employees (9 sub-groups of indicators); group of environmental indicators (5 sub-groups of indicators); group of indicators of enterprise behaviour in the market (8 sub-groups of indicators); group of indicators of involvement into the community life (5 sub-groups of indicators). The entry into the system of 27 sub-groups of indicators, each of which covers at least 3 indicators, creates significant informational, computational, analytical and difficult interpretations of evaluation results of socially responsible activities.

It should also be taken into account that the change in the conditions of enterprise activity requires an adequate reflection in the formation of a system of indicators for assessing socio-economic results of information and communication technologies [10; 14].

Taking into account the above systematically requirements and the work of a number of researchers, we outline the general principles of constructing a system of indicators for assessing the enterprise activity, which should be: complete - that means, to cover all the catholicity of enterprise interaction with the surrounding, external and internal environment; include both financial and non-financial indicators (to be diverse); the minimum configuration according to the principle of V. Pareto (“20/80”) in relation to the number of influence factors; flexible - that is to allow the possibility of its periodic transformation by introducing the new actual and removing the outdated or surplus indicators.

As for the basic indicators that are part of the system, then first of all we note the following requirements to them: expediency; authenticity; orientation; reliability; availability; measurability; unambiguousness; regulatory capacity.

Having considered the principles of system constructing of evaluation indicators of enterprise activities and the main requirements for the indicators that are part of the system, let’s turn to the formation of their totality. In the group of indicators of interaction between enterprises and environment it is expedient to allocate the following two subgroups: the use of resources; ecosystem restoration, recycling of waste. It is expedient to include into the composition of basic indicators such indicators as energy
efficiency of operational activities (rate of energy replacement), efficiency of natural resources utilization, resource recovery and utilization (recycling) of waste.

Indicators of the socially responsible activity of enterprises in relation to the internal environment should be grouped into the following subgroups: economic results; motivation of work of the personnel; staff development. The basic indicators should include those that correspond to the content of isolated subgroups, namely indicators of performance, business activity, labour and rest conditions, remuneration, spiritual and professional personnel development.

To the basic principles of the socially responsible activity of the enterprise with regard to the environment, we label the following: satisfaction of consumers’ needs; fulfilment of obligations to society and regional community regarding their development and increase of living standards of the population; compliance with current legislation and ethical principles of business management. In this group it is expedient to select the following subgroups of indicators that characterize: satisfaction of consumers’ needs; social development of regional community; partnerships with interested parties; development of information and communication technologies. The indicators of these subgroups should include the following basic indicators: consumer loyalty; the impact on the quality of life of the regional community; ethical behaviour of enterprise in external environment; partnership in the business environment; access, skills and use of ICT.

Based on the systematically principles of the aggregate of indicators formation, the following structure of indicators evaluation system of enterprise activity, consisting of three groups and nine subgroups of indicators, is proposed. As for the number and specific type of singular indicators, their choice for specific enterprises depends on a number of factors, in particular, the type of economic activity, scale of production activities involved into the production of resources, information support, etc.

In the Table 4 shows the system structure of indicators of enterprise activity evaluation.

<table>
<thead>
<tr>
<th>Indicator’s group</th>
<th>Subgroup of indicators</th>
<th>Basic indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SEI with environment</td>
<td>1.1. Application of resources</td>
<td>1.1.1. Efficiency indicators of using the natural and energy resources 1.1.2. Indicators of the use of secondary raw materials</td>
</tr>
<tr>
<td></td>
<td>1.2. Restoration of ecosystems, recycling of waste</td>
<td>1.2.1. Indicators of ecosystem restoration 1.2.2. Indicators of waste recycling</td>
</tr>
<tr>
<td>2. SEI with internal environment</td>
<td>2.1. Economic result</td>
<td>2.1.1. Performance indicators 2.1.2. Indicators of business activity</td>
</tr>
<tr>
<td></td>
<td>2.2. Motivation of personnel work</td>
<td>2.2.1. Wage indicators 2.2.2. Indicators of labour and rest conditions</td>
</tr>
<tr>
<td></td>
<td>2.3. Staff development</td>
<td>2.3.1. Indicators of spiritual development 2.3.2. Indicators of professional development</td>
</tr>
<tr>
<td>3. SEI with external environment</td>
<td>3.1. Satisfaction of consumers’ needs</td>
<td>3.1.1. Indicators of consumer loyalty</td>
</tr>
<tr>
<td></td>
<td>3.2. Social development of regional community</td>
<td>3.2.1. Influence indicators on life quality of population in the region</td>
</tr>
<tr>
<td></td>
<td>3.3. Partnership relations with interested the parties</td>
<td>3.3.1. Indicators of ethical bases of business activity 3.3.2. Indicators of partnerships in the business environment</td>
</tr>
<tr>
<td></td>
<td>3.4. Information and communication technology (ICT) development</td>
<td>3.4.1. Indicators of access, skills and use of ICT</td>
</tr>
</tbody>
</table>

*Source: author’s development.
System flexibility of assessing indicators of socio-economic interaction at enterprises is ensured by the possibility of periodic review of the number and types of basic indicators.

**Conclusions.** The novelty of the article is to consider the activities of enterprises as a process of their socio-economic interaction with the interested parties, where each party seeks to achieve its goal. There are formulated the basic system-forming requirements for forming a set of indicators, and described the features and peculiarities of construction of indicator system of enterprise activity evaluation. It is developed the structure of indicator system of enterprise activity evaluation, which consists of three groups of indicators of socio-economic interaction with surrounding, internal and external environment.

Further research will focus on infographic visualization and analytical interpretation of evaluations of enterprise activity obtained through a structured system of indicators.

### References
