COMPREHENSIVE ASSESSING THE ENTERPRISE DEVELOPMENT CONSIDERING THE EDUCATIONAL AND PROFESSIONAL POTENTIAL OF EMPLOYEES IN MANAGEMENT SYSTEM

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Abstract
This paper aims to substantiate the theoretical positions and develop practical recommendations for the development of tools for analytical assessment of enterprise development taking into account the educational-professional potential of the personnel (in the management system) as a factor of the effectiveness of the functioning of the enterprise and the formation of its prospect. The obtained results improve the analytical method of the complex assessment of the enterprise development, which, unlike the existing ones, takes into account the following inalienable structural components (absolute business indicators): 1) the scale of enterprise development considering the level of educational-professional potential personnel in the management system; 2) the level of quality of enterprise development.

The authors established that in order to ensure the effective development of any enterprise, the following two basic (fundamental) requirements must be fulfilled, namely: 1) a quality system of enterprise management; 2) high (or optimal, desirable) level of competitiveness and investment attractiveness of the enterprise, which directly depends on the educational-professional potential of employees in management system. It is determined that the educational-professional potential of personnel should be understood as the possibilities, knowledge and skills, competence and practical skills, which employees have mastered in educational institutions or during through self-education.

Keywords: enterprise, enterprise development, management system, employees, educational and professional potential

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Introduction

The prosperity of the Ukrainian economy depends on effective activity and purposeful development of enterprises. In the conditions of European integration, there is a need for improvement and adaptation of the developed scientific results and practical approaches for the definition and ensuring the effective development of Ukrainian enterprises (Skrynkovskyy, 2015).


In the works of the above-mentioned researchers are presented a variety of tools for analytical assessment of the activities and development of enterprises, which are based on a definite list of principles (general, special), a clear selection of business indicators (criteria, indicators, parameters) with their filling content, specific evaluation methods, etc. At the same time, it should be noted that the concept and practical tools of the analytical method of integrated assessment of enterprise development remain the object of sharp discussions. It also does not take into account the role and place of the educational-professional potential of the personnel in the management system, which can be partially identified with the intellectual (human) potential in the context of the development of the entity, which includes such elements (Golov, 2007, p. 368): 1) human capital (characterizing skills, abilities, experience, etc. of employees of the enterprise, which enable to generate new knowledge and ideas); 2) capital of relations (directly related to the external environment of the enterprise and determined by loyalty to customers, partners in business, reputation, etc.); 3) intellectual property and infrastructure assets (constitute organizational capital - reflects the knowledge that is involved in the structure, processes and culture of the enterprise, etc.).

In addition, within the framework of study of the publications found that the existing approach to determining the role and place of the educational-professional potential of personnel in the management system requires, first of all, to clarify the definition of the nature of the educational-professional potential of staff as a category. Here it is also worth noting that (Yankovska, 2008): 1) the concept of "educational" is derived from the notion of "education" (the system of knowledge, skills and abilities acquired: as a result of studying in educational institutions, through self-education), and the term "profession" is the same as the "specialty" (system of acquired knowledge and practical skills, preparation for work in any field of material production or culture, etc.); 2) the term "professional" does not fully correspond to the concept of "educational".

Therefore, the purpose of the article is to substantiate the theoretical positions and develop practical recommendations for the development of tools for analytical assessment of the development of the enterprise, taking into account the role and place of the educational-professional potential of the personnel (in the management system) as a factor of the operation of the enterprise and the formation of its prospect performance.
Research Results

1. Analytical method of complex assessment of enterprise development

On the basis of the results of the performed research it was established that the method of complex assessment of the development of a production enterprise (regardless of the form of ownership, type of activity and management) is based on the principles of computing the integral level of enterprise development ($L_d$) – the formula (1):

$$L_d = \frac{(L_m \times a) + (L_q \times b)}{100},$$

(1)

where $L_m$ – is the level of enterprise development (calculated by the method of reference enterprise, presented in (Kostenko et al., 2007, pp. 14-16); $a$ – is weight (or share in the general indicator) of the scale of development for the enterprise, %; $L_q$ – is the level of quality of enterprise development (calculated by calculation and analytical methods); $b$ – is weight (specific gravity) of the level of developmental quality for the enterprise, %; ($b = 100 - a$) (Melnyk, 2010; Skrynkovskyy, 2015).

However, it was found that the most informational level of enterprise development ($L_m$) is characterized by the following absolute key business indicators (parameters), such as:

1) Net profit (loss) of the enterprise;
2) Net income from sales of products;
3) Cost;
4) The average annual value: assets, fixed assets, current assets;

Besides, it is also worth noting that the formulas used to calculate the business indicators given above (in the context of determining the level of enterprise development – $L_m$), as well as their content and criterion values (taking into account the contradictions of the Ukrainian legal and regulatory framework in the field of economic diagnostics of activities enterprises (Melnyk and Adamiv, 2016) is presented in the scientific work (Melnyk, 2010). The given information in the work (Melnyk, 2010) is relevant, and in (Melnyk and Adamiv, 2016) – it requires the additional research.

At the same time, according to the results of research of scientific works (Melnyk, 2010; Holtshev, 2009), it is established that the key parameters that allow us to calculate the level of developmental quality of an entity (firm) are the following (Skrynkovskyy, 2015):

1) The coefficient (index) of defect and rhythm of production ($K$) - the formula (2) (on the basis of work (Melnyk, 2010, pp. 274-275):

$$K = \sqrt{S \times M} = \sqrt{\frac{R_1 (1 - R_{in})}{R_1} \times \sum_{i=1}^{t} \frac{R_{ii}^{min}}{100\%}},$$

(2)

where $S$ – is the coefficient of defect and rhythm of production; $M$ – is the coefficient of production rhythm; $R_i$ – is volume of commodity products; $R_n$ – is a share (specific gravity) of defective products in commodity products; $i = 1 \ldots t$ – is the number of periods in a year, by which the comparison of production volumes (planned and actual).
is done; \( R_{i}^{\text{min}} \), \% – is the minimum (min) share of commodity products in comparison with the annual equivalent between the planned production program and the actual one.

2) The level of satisfaction of the consumer's demand for finished goods (services) \((Q)\) – the formula (3) (Holsteve, 2009, p. 83):

\[
Q = \frac{E}{C} = F, \tag{3}
\]

where \( Q \) – is the level of satisfaction of the consumer's demand (according to the marketing approach); \( E \) – is the value of production (services); \( C \) – is the cost of production (goods, services); \( F \) – is the consumer cost.

In addition, according to the research (Melnyk, 2010; Skrynkovskyy, 2014; Kuzmin and Melnyk, 2007; Koropetskyi, 2018), it is determined that the quality of the educational-professional potential of the personnel in the management system directly affects the performance (efficiency, cost effectiveness, flexibility, reliability) of business processes of the enterprise in the context of ensuring the achievement of its goals (strategic, tactical, operational, functioning, development).

It is clear from this that the method for the integrated assessment of the development of a production enterprise (see formula (1)) should also take into account the level of educational-professional capacity of the personnel in the management system: 1) as an absolute business indicator (parameter) in the context of the definition scale of enterprise development \((L_m)\); 2) as a factor in the effectiveness of the operation of the enterprise and the formation of its prospect.

### 2. Educational-professional potential of the personnel in the management system as a factor of the performance of the operation of the enterprise and the formation of its prospect

The existing theory and practice of doing business proves that in order to ensure the effective development of any enterprise, the following two basic (fundamental) requirements must be fulfilled, namely:

1) High-quality enterprise management system;

2) High (or optimal, desirable) level of competitiveness and investment attractiveness of the enterprise, which directly depends on the educational-professional potential of the personnel in the management system (Melnyk, 2010; Pawlowski, 2017; Skrynkovskyy, 2014; Kuzmin, 1995; Skrynkovskyy et al., 2017; Goncharuk and Karavan, 2013; Samofatova and Gerus, 2012).

The results of the analysis of recent studies and publications in this area, studies (Pawlowski, 2017; Skrynkovskyy, 2014; Skrynkovskyy et al., 2017; Skrynkovskyy and Pawlowski, 2016; Lipych et al., 2018; Coculova, 2018; Gross-Gołacka, 2018; Ischuk and Kudria, 2016) and practical experience in the problem suggest that the model of enterprise management process according to process-structured management (Figure 1), presented in the writings of Kuzmin (2012), Kuzmin (2013), Kuzmin and Melnyk (2007). Kuzmin et al. (2010) should be based on the modern theory and practice of management, according to which:

1) Management is a business process that includes consistent, concrete (completed) stages:

   *Stage 1* – Realization of specific management functions (management of supply, production, sales, finance, divisions, etc.);

   *Stage 2* – Formation, formalization and use of management methods depending
on the goals;

Stage 3 – Ensuring effective managerial influence on the basis of management, each of which (stages) has its structure (internal structure) and a set of functions with subfunctions, which together ensure the management of the influence of the management system (managers of the enterprise, management apparatus) on the system of controlled (subordinate workers of the main and auxiliary production) in order to achieve the goals (strategic, tactical, operational, functioning, development) enterprises (institutions, organizations) in the system "information - resource provision - time - opportunities (threats) in the management system" presented in works (Pawlowski, 2017; Kuzmin, 2012; Kuzmin and Melnyk, 2007).

Figure 1. Graphical Model of the Management Process in Accordance with the Process-Structured Management*

Source: Kuzmin et al. (2010)

Notes: * The basis of process-structured management forms process, system, functional, situational and dynamic approaches to management

(2) The management system of an enterprise (institution, organization) contains the following structural elements:
1) Systems: controlling (subject) and controlled (object);
2) General management functions:
a) Controlling the achievement of results;
b) Planning, proceeding from the main goal;
c) Coordination and corrective actions (in the system of organization of work and production);
d) Action as a form of act (conscious, volitional, directed);
e) Accounting system (accounting, statistical, operational-technical and managerial);
f) Diagnostics (economic, legal) with subfunctions such as: identification of the state and capabilities; analysis (economic, legal, systemic) with argumentation; assessment of the state, trends and prospects of development;

3) Specific functions (supply management, organization of work and production, sales, finance, divisions, etc.) and a unifying function (general management);
4) Methods of management (a set of methods and techniques) - economic, technical, information-technological, administrative, social-psychological and others;
5) Managerial decisions (current, perspective) taking into account factors of profit growth, level of efficiency of innovative expenses of the enterprise and responsibility (legal, social), etc.;

However, maintaining the opinion formulated by Yankovska (2008), the educational-professional potential of staff should be considered in a horizontal-quantitative aspect as: 1) the potential of individual employees of the organization with their educational-professional potential of the individual, as the management system (managers of the enterprise) and the managed system (subordinates of the main and auxiliary production) of the management (see Figure 1); 2) educational-professional potential of the organization (enterprise), which outlines the overall educational-professional potential of the subject of management. In this aspect, special attention should be paid to: 1) competence of individual employees; 2) "competence of the organization (enterprise)" (Skrynkovskyy, 2014).

In the context of this, and based on the research of the internal environment of the enterprise, which is determined by its internal variables (people (employees), goals, tasks, structure and technology (Kuzmin and Melnyk, 2007), it has been established that the educational-professional potential of the personnel (in the management system) should be understood as abilities (natural abilities, giftedness), knowledge and skills (education), competence and practical skills (skills), which employees (the most important situational factor) have mastered in educational institutions (based on the structure of education) or through self-education (those theoretical aspect), as well as in the course of work (practical experience) and which can be applied in the necessary socio-economic direction, namely, to ensure the development of the enterprise and the formation of its perspective (Skrynkovskyy, 2015; Skrynkovskyy, 2014, p. 20-21).

Moreover, it was determined that the main input parameters for the objective determination of the level of educational-professional potential of the personnel (managers of the enterprise and subordinates of the main and auxiliary production) in the management system (in the context of determining the scale of enterprise development \( L_m \)) is the calculation of such absolute business indicators as (Skrynkovskyy, 2014):

1) The level of education (RO) – the formula (4):
\[
RO = \frac{W_1}{W_k}
\]

where \( W_1 \) – is the number of those (employed) having education ("higher" or "higher and secondary special"); \( W_k \) – is the average number of employees.

2) The level of professional training (\( RP \)) – the formula (5):
\[
RP = \frac{W_2}{W_k}
\]

where \( W_2 \) – is the number of employees who increase the qualification.

3) Indicators that characterize the educational-professional potential of the personnel from the standpoint of quality - the formulas (6) proposed by the author (Skrynkovskyy, 2014, p. 87-88):
\[
IP = IP_R + IP_N; \quad K_V = K_{VI} / K_{PI}; \quad KO_{PI} = 0.5 \cdot K_{PPI} \cdot D_{Qj} + C_{Fi} \cdot P_i;
\]
\[
K_{PRI} = (O_i + C_{SI} + A_i) / 0.85; \quad D_{Qj} = \sum_{j=1}^{m} D_{Qj} (IK, K_V) \cdot \rho_j; \quad \sum_{j=1}^{m} \rho_j = 1.
\]

where \( IP \) – the Intellectual potential, which can be divided into two parts - discovered (\( IP_R \)) and undiscovered (\( IP_N \)); \( K_V \) – the coefficient of implementation of ideas, which is estimated as the fraction of the division of the number of implemented \( K_{VI} \) ideas into the number of ideas proposed \( K_{PI} \); \( KO_{PI} \) – complex assessment of the individual employee, \( i = 1,2,3, \ldots n \); \( K_{PRI} \) – professional-qualification level of the individual employee; \( D_{Qj} \) – set of business skills of the individual employee; \( D_{Qj} \) – average rating of business qualities of the individual employee; \( C_{Fi} \) – a parameter characterizing the complexity of the functions performed by the individual employee (potential performances of the complicated functional operations of the individual employee leading to the economic effect); \( P_i \) – concretely achieved result of the individual employee; \( O_i \) – assessment of education and self-education of the individual employee (established by an expert method); \( C_{SI} \) – assessment of the experience of the individual employee on the specialty; \( A_i \) – activity of participation of the individual employee in the system of continuous education; 0.85 – max (maximum) score of professional qualification level (according to the standard); \( \rho_j \) – coefficient of weight of the corresponding factor; \( i \) – serial number of employees, the total number of which is \( n \); \( j \) – serial number of business qualities of employees, the total number of which \( m \).

In (6), the parameters with the index «\( i \rangle» refer to the individual employee, and the factors of \( IP, K_V \) - as to individual employees, and to the entire staff (staff) of the organization.

Conclusions and Perspectives of Further Research

The results of the research prove that:

1. The main inalienable structural components (indicators, business indicators, parameters) of the system of analytical assessment of enterprise development are:

   1) The scale of enterprise development characterized by such absolute business indicators as: net profit (loss) of the enterprise; net income from sales of products; cost; average annual value: assets, fixed assets, current assets; average number of employees; the level of educational-professional potential of the personnel as a factor of the effectiveness of the operation of the enterprise and the formation of its prospect;

   2) The quality level of the enterprise's development, which includes the calculation...
253

of such absolute indicators as: the coefficient of defect and rhythmicity of production; the level of satisfaction of consumer needs of finished products.

2. To ensure the effective development of any enterprise, the following two basic (fundamental) requirements must be fulfilled, namely:

1) High-quality enterprise management system;
2) High (or optimal, desirable) level of competitiveness and investment attractiveness of the enterprise, which directly depends on the educational-professional potential of the personnel in the management system.

3. The educational-professional potential of the personnel (in the management system) should be understood as the possibilities (natural abilities, giftedness), knowledge and skills (education), competence and practical skills, which employees (the most important situational factor) mastered in educational institutions (based on the structure of education) or with the help of self-education (the theoretical aspect), as well as during the labor activity (practical experience) and which can be applied in the necessary socio-economic direction, namely, to ensure the development of the enterprise and the formation of its prospects.

4. The main input parameters for the objective determination of the level of educational-professional potential of the personnel (managers of the enterprise and subordinates of the main and auxiliary production) in the management system is the calculation of such absolute business indicators, such as:

1) The level of education;
2) The level of professional training;
3) Indicators that characterize the educational-professional potential of personnel from the standpoint of quality.

The prospect of further research in this area is the development of a conceptual model of enterprise development through the use of modern management concepts and experience of highly professional managers.

References


