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РАЗРАБОТКА ЭКОНОМИЧЕСКИХ ПОДХОДОВ К ФОРМИРОВАНИЮ И ОЦЕНКЕ СТРАТЕГИИ СТРОИТЕЛЬНЫХ ПРЕДПРИЯТИЙ

Проанализированы подходы разных ученых к формированию и оценке стратегии застройщика на рынке жилищного строительства через тринарную систему критериев «доступности жилья». Эта система, в отличие от существующих, позволяет учесть требования потребителей к комфортности, экологичности, экономичности жилья (обоснованного уровня заданных параметров для каждого типа), что является основой формирования стабильного (устойчивого) спроса.

Ключевые слова: доступность жилья, доступность строительства зданий, стратегия доступности, доступное жилье.

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THE USE OF A BALANCED SYSTEM OF INDICATORS FOR THE MANAGEMENT OF CONSTRUCTION ENTERPRISES

Розкрито призначення збалансованої системи показників, її структура і зміст основних елементів. Виділено етапи формування. Обґрунтовано доцільність і сформульовані можливі напрямки використання збалансованої системи показників в практиці управління будівельними підприємствами. Проілюстрований вибір ключових бізнес-процесів для будівельних підприємств України як основи побудови збалансованої системи показників, визначена структура збалансованої системи показників і представлена стратегічна карта для підприємств.

Ключові слова: управління розвитком, стратегічні цілі, нематеріальні активи будівельного підприємства, стратегічна карта.

1. Introduction

In recent years, the role of intangible resources has increased in ensuring the competitiveness of construction companies. This has led to the fact that traditional performance measurement systems, focused primarily on financial indicators, can no longer provide the necessary information for managing enterprise development.

Addition of valuation systems to indicators characterizing the intangible assets of the enterprise led to the

emergence of a new approach to the evaluation, called the concept of measuring achievements. To date, almost every existing system has its advantages and disadvantages. But their comparison with a number of criteria:

- degree of coverage of various spheres of enterprise activity;
- using indicators aimed at the external environment and internal characteristics of the enterprise;
- the relationship between strategic and tactical aspects and others prove that they have a number of short-

comings. Analysis of practical applicability allows us to conclude that the most universal and widespread for today and day is a balanced system of indicators (BSI). That is why it is relevant to study the possibility and necessity of using a system of balanced indicators in the management of construction enterprises.

2. The object of research and its technological audit

The object of research is a balanced system of indicators, which is evaluated from the standpoint of its ability to use in the management of construction enterprises, taking into account the current conditions of their functioning in the market.

Traditional management concepts in existing conditions can not satisfy modern construction companies, who seek to become leaders in the relevant industries or maintain a competitive position. Modern strategic management systems are based primarily on measuring the efficiency of enterprises in value form. In accordance with the cost form, the main indicators of evaluation are the amounts of profit and expenses of each unit and the enterprise as a whole. But today intangible assets such as human and client capital, brand, innovative potential, etc., are crucial to achieving long-term strategic objectives. In connection with the above-mentioned, one of the most promising analytical tools of strategic management is the balanced indicator system, which has recently gained a lot of supporters both in Ukraine and abroad. The precondition for the development of BSI was the data obtained from the results of studies [1, 2]. These studies have shown that most companies lose their competitive position precisely because of their inability to effectively implement a business strategy.

One of the most problematic places of this approach is that it is difficult to objectively assess the indicators that characterize the qualitative component of the enterprise management system. In particular, indicators of the assessment of the effectiveness of the management system, staff satisfaction, and others are rather biased.

3. The aim and objectives of research

The aim of research is substantiation of the need to implement a mechanism for assessing the effectiveness of strategic development of an enterprise, based on the use of a balanced system of indicators and the definition of methodological approaches to its development.

To achieve the aim of research, the following scientific objectives are identified:

1. To define the notion of a balanced system of indicators.
2. To study the basic components and elements of a balanced system of indicators.
3. To evaluate the possibility of using the mechanism of balanced system of indicators in the practical activity of Ukrainian construction companies.
4. To illustrate the choice of key business processes for Ukrainian construction companies as the basis for building a balanced system of indicators.
5. To identify the structure of a balanced system of indicators and present a strategic map for construction companies.

4. Research of existing solutions of the problem

The methodological and practical aspects of developing and implementing a balanced system of enterprise performance indicators have been researched and deepened in the papers [3–6]. Among the many discussion topics considered by these scientists, one of the most important is the question of expediency of using a balanced system of indicators and its implementation into the management system of Ukrainian enterprises. As has already been stated, in today's conditions, traditional financial indicators are not sufficient to assess the effectiveness of business and enterprise management. That is why it is promising to assess the effectiveness of an enterprise depending on the results of the strategy implementation. In such analytical tool, which would provide improvement in the future and take into account past activities. It is precisely such tool of strategic management and evaluation of the effectiveness of strategy implementation that there is a balanced system of indicators, the issues of development and implementation of which are devoted to many scientific works. In spite of the existing scientific work on this issue, it should be noted that today the methodological aspects of developing a balanced system of indicators at Ukrainian enterprises remain insufficiently highlighted. Its implementation is rather complicated and debatable.

Modern enterprise performance measurement models, called Performance Measurement, or measurement of achievements, aim at combining the majority of existing systems of indicators in different areas of the enterprise to evaluate and analyze the effectiveness of actions at each organizational level [7]. The development, implementation and application of these models is one of the most important tasks in the strategic management of the enterprise, since they play an important role in the formulation of strategic plans, in assessing the activities of business units and in increasing the motivation of employees to implement plans. Many variants of new models or have already found application in the practice of management and management of the enterprise, or are in the initial stage – theoretical training for practical application [6]. Models of measuring achievements have a fundamental difference from the system of indicators, which consists in the fact that the indicators that form the model are not necessarily quantified and are financial in nature. According to researches of scientists [1, 2] it is expedient to allocate several basic models of strategy of management of activity of the enterprise.

The most used model today is the Balanced ScoreCard, which was proposed by the authors [1, 2] in the early 90's of the twentieth century. Using this model allows the company to more strategically solve strategic tasks. The basis of this model is the unification of different areas of activity of the enterprise, first of all projections «finance», «clients», «internal business processes», «training and development». The peculiarity of this model is the balancing of the data of four projections, providing a complete description of the enterprise, taking into account the time factor, since the values of the selected parameters can be the consequences of the past period [3]. The model, developed in 1992 [8], has the same name as the model proposed by the authors [1, 2]. This model also defines four projections, on the basis of which business

activity of the enterprise can be estimated. Instead of a learning and development perspective, this model uses a projection of human resources that includes an assessment of innovation, competence, education, and staff training.

Model Tableau de Bord («Board display») was developed by French engineers in the 60's, but found practice in practice only in the early 90's. The purpose of the concept is to provide the manager with brief information about each department or enterprise as a whole. The Tableau de Bord models, like the Balanced ScoreCard, are characterized by causal relationships between financial and non-financial performance of the enterprise [9]. In 1990, the Performance Pyramid («Pyramid of Efficiency») model was presented [10]. As with other models considered in the study, the main concept is the relationship of customer-oriented corporate strategy with financial indicators, complemented by several key qualitative (non-financial) indicators. Traditional management information should only come from the upper level. The effectiveness pirate builds on the concepts of global quality management, industrial engineering and accounting. The Quantum Performance Measurement model [11] was developed by Arthur Andersen Consulting Company to optimize enterprise performance. As indicators of enterprise productivity are used:

- the quality of the goods or services;
- time reflecting the quality of the process;
- costs showing the degree of economic quality.

In 1993, ER2M model (abbreviation of Effect Progress and Performance Measurement) was proposed [12]. According to this concept, it is important, above all, that the company does in the following four directions:

- customer service and markets;
- improvement of internal processes (growth of efficiency and profitability);
- change management and strategy;
- property and freedom of action.

The next model is the further development of the Balanced ScoreCard and is called the prism of effectiveness. This model is based on the following provisions:

- it is unacceptable for an enterprise to concentrate on the needs of one or more interested parties if it seeks long-term development;
- strategies, capacities and processes must be agreed upon;
- the enterprise and stakeholders should recognize that their relationship is interdependent.

The main goal of the Model Data Envelopment Analysis («Comprehensive Data Analysis») is measuring the relative effectiveness of business units [3]. In complex analysis linear programming is used, comparison of input and output factors for each, separately taken unit of the enterprise. The main difficulty of its application is the complexity of the calculation and the high complexity of the comparative base with a large number of input and output data. Model Performance Measurement in Service Business [3] characterizes the type of enterprise in the field of service and services, based on the number of determinants that determine the performance of the enterprise in various areas. The main disadvantage of this concept is its weak link with the company's strategy. The Model Productivity Measurement and Enhancement System (ProMES) [1, 2] is based on three principles:

1. Combining goals.
2. Evaluation of actions to achieve goals.
3. Combining and implementing information of past periods.

The most important difference between the model of ProMES and other models is the division of the organizational structure and employees of the company in such way that not only the achievement of the organizational unit (division, group), but also employees of the unit. The model J. I. Case (JAYKeys), developed by the JayKeys Group [13], combines financial and non-financial performance of the enterprise. The main objective of this model is achieving the status of world-class manufacturer. As a category of indicators of the enterprise – the world-class manufacturer, the following areas were chosen: quality, service, production process time (flexibility), finance (expenses). For each sphere, the enterprise independently selects the indicators characterizing achievement of the set goals. The Caterpillar model («Caterpillar») [14] was used by the Caterpillar tractor division in 1990. The active financially used financial indicators for the entire corporation were also added to the non-financial indicators that were put into operation by this division. In this model of achievement measurement applied to Caterpillar, financial and nonfinancial indicators are considered in sections of the past, present and future time. An important difference between this model and the previous one is that it focuses on the trend (tomorrow) and little attention is paid to the analysis of past results. One of the most interesting models of achievement measurement, based on the mutual appreciation by Hewlett-Packard Deutschland units of services provided to each other, was called the Hewlett-Packard concept of the domestic market [15]. The development of this model is carried out in 6 stages:

1. Description of the processes between the divisions of the enterprise.
2. Task parameters of the process measurement.
3. Based on the assessment – the assumption of further development of the unit and the enterprise.
4. With the «client» (subsection – the recipient of services within the enterprise), the costs and quality of the service provided are discussed.
5. Quality standards and criteria for their measurement are fixed.
6. The following measures provide a continuous assessment and improvement of the processes taking place at the enterprise.

Consequently, in the framework of these models, the strategy is assessed by monetary and non-monetary indicators, covering the operational and strategic level of management, past and future results, as well as internal and external aspects of the company's activities. An assessment of the effectiveness of the company's business management strategy, based on models of achievement measurement, includes financial and non-financial performance of the enterprise.

The most effective models of business management strategies correspond to the following characteristics:

- they have clearly articulated and registered all processes and areas of use;
- for each sphere of activity of the enterprise there is a system of indicators or a set of indicators;
- the quantitative assessment of indicators on quality is prevalent.

The considered models of strategies for managing performance are proposed [16] to structure in accordance with the following factors:

1. Development and application practice (how far the model has been developed and how successfully applied in practice).

2. Sectoral applicability (developed only for a certain area).

3. Representation of all spheres of enterprise activity.

The best ones to implement are those models that are most satisfying the above-mentioned factors.

According to research by scientists [3, 12], the Balanced ScoreCard model («Balanced Scorecard») most closely matches selected assessment factors, namely:

- successfully applied in the practice of enterprises;
- this model can be applied in any industry;
- reflects all spheres of activity of the enterprise.

5. Methods of research

To solve the problems, a set of methods of scientific knowledge was used, which ensured the implementation of the concept of a methodology for the formation of a balanced system of indicators and the development of scientific and practical recommendations for its implementation and use at construction enterprises. General scientific and special research methods were used, in particular: analysis and synthesis; system generalization; statistical and economic analysis; comparative analysis; comparative; graphic For analysis of the activity of construction enterprises, methods of computer processing and analysis of information using computer programs were used.

6. Research results

The Balanced Scorecard (BSS) is defined as the system of strategic management of an organization on the basis of measurement and evaluation of its effectiveness. The system is based on a set of logically interconnected indicators, chosen in such way as to take into account all the essential aspects (in terms of the organization's strategy) of its activities. The strategy refers to the management model of the enterprise, aimed at strengthening its positions, satisfaction of consumers and the creation of a competitive advantage, which can be stored for a long time. The basis of the BSI formation are the following provisions:

- the set of indicators is determined by the strategy of the enterprise, and does not replace it; therefore, the development of the BSI can only be started after the strategy has been formed;
- the implementation of the chosen strategy is possible only when all strategic goals are detailed and interconnected at different levels of enterprise management, that is, the strategy will be «broadcast» at all levels of management in indicators that meet each level;
- it is possible to manage only what can be measured, therefore, it is necessary to learn to evaluate not only material but also intangible resources of the enterprise;
- a blind belief in a single indicator is dangerous, so it is necessary to choose a limited set of so-called Key Performance Indicators (KPIs). These indicators are both financial and non-financial, they have the greatest impact on the achievement of strategic goals of the enterprise;
- a set of valuation indicators is typical for this enterprise and for a particular strategy.

Therefore, firstly, there is no universal system of indicators that can be recommended for implementation even in similar, at first glance, enterprises. Second, as

the strategy changes, not only the values of the selected indicators, but also their composition change.

The balance of the system of indicators involves finding an equilibrium between different aspects of the enterprise, characterized by both financial and non-financial indicators:

- short-term and long-term goals;
- the number of internal and external indicators;
- the number of overdue and delayed indicators;
- objective (numerical) and subjective (expert) estimates.

Different types of links between indicators play an important role in ensuring a balance, such as:

- causal relationships of indicators of different levels with the strategic goals and strategy of the enterprise;
- connection of the resulting indicators with the factors having the most significant impact on them;
- connection of all indicators with the financial results of the enterprise.

In order to reveal the possibilities of using BSI in the management of construction companies, give a brief description of its main elements and the procedure of formation. One of the first steps in the BSI development is the formation of its structure. Traditionally, BSI is considered in four main aspects (perspectives, or projections) [2]:

- finance – shows which indicators need to be achieved to ensure the interests of shareholders and attract investors' attention;
- customer relationship – shows what can interest and attract customers in order to achieve the required financial results;
- internal processes – shows which processes play the most important role in realizing the competitive advantages of the enterprise and how they can be improved;
- innovation, training and development of personnel and infrastructure – shows that at the expense of knowledge, skills, technologies and other intangible assets the enterprise can realize its competitive advantage. It is also possible to determine which competencies need to develop in order to be able to attract customers and improve internal processes.

An analysis of the practice shows that the common variants of the grouping of indicators are also [4, 17]:

- finance, marketing (considered wider than «clients»), internal business processes and personnel. In this case, the indicators of innovation are included in all other aspects;
- finance, internal business processes and the outside world – a simplified version based on the fact that the activities of any enterprise is divided into internal and external, and finance – can solve everything;
- advanced options. So, for large construction companies, the presence of aspects of «suppliers» or «dealers» is typical; in many large manufacturing companies there are such aspects as «logistics», «production», «research and development».

In addition to highlighting the main aspects of the grouping of indicators, in the BSI structure are considered different «sections», or modules by levels of management. All modules are designed in terms of selected aspects, but the quantity, composition and priority of indicators in each aspect is different for different levels.

One of the world's largest home appliances manufacturers, Electrolux (Sweden), uses the Dynamic Business

Measurement (DBM) system built on the principles of LSS. In the system, the indicators are grouped in the following aspects: consumer relations, operational activities, corporate culture and financial activities. At present, DBM includes 16 key indicators, 12 of which are non-financial. In each sector of the company, different indicators from this set are considered as the priority. It is believed that at the same time it is possible to achieve optimization of no more than 57 indicators. Thus, DBM is a «menu», from which each unit can select key indicators that are most relevant to the situation they have in the situation [4]. Weighting factors that characterize the relative importance of a particular indicator are used to set priorities in the BSI.

After determining the structure of the BSI its formation can be carried out in two ways:

- «top to bottom», when the corporate BSI was first developed, which then unfolds in the BSI of the units, etc.;
- «pilot project», when the development begins with BSI divisions (one or several). The experience gained in this case is then used when constructing BSI at the corporate level, which is a more complex task and requires the involvement of large resources and highly skilled developers, including consultants of specialized companies.

Once the structure and scheme of the BSI development are defined, they proceed to the next stage: the formation of a tree of strategic goals within the framework of the selected aspects of activity, or to the construction of a strategic map.

As the most common strategic goal, the value of a business is often used [3]. This is explained by the fact that, first of all, it is complex (its value is determined by the influence of a large number as internal factors that characterize the resources available to the company and the efficiency of their use, and external ones). Secondly, unlike the most commonly used valuation indicator – profit – is closely related to the expected outlook for enterprise development (any assumption of slowing down the growth rate leads to a decrease in the value of the enterprise). Target tree formation usually begins with financial goals, then the influence on them of the goals on the aspect of the relationship with clients, the achievement of which requires an appropriate organization and improvement of key business processes of the enterprise, training and development of personnel.

Next, Key Performance Indicators (KPIs) are selected to measure the goals. Classification of different types of KPIs:

- Lag Indicators or Outcomes measures generally correspond to common goals, measure the outcome of an already implemented process or event, or indicate which expected results should lead in the near term.
- Lead Indicators or Performance Measures meet specific goals, are a condition for achieving performance indicators and signal what needs to be done today to ensure a successful implementation of the strategy tomorrow. So, for the purpose of «consumer commitment» lag indicators can be a market share and profitability of the product, and ahead – the indicators of product quality and price compared with competitors.

Regardless of the type, all KPIs must meet the following requirements: dimensionality; controllability; compliance with the chosen strategy; simplicity and unified method of calculation at all levels and aspects of BSI. Importance is the availability of perception by the personnel of the

enterprise; availability for each KPI of a person responsible for reaching the target value.

Despite the fact that, as it was said before, the BSI of each enterprise is unique, for each aspect, the recommended list of the most frequently used indicators can be used as a benchmark. Once the KPI has been selected, its target values are determined, and then a list of measures needed to achieve the goals is drawn up. As a result, an account card of the enterprise as a whole and its units, up to separate employees is formed.

On the basis of the above, one can distinguish the following possibilities of using BSI in the practice of management of construction enterprises:

- as an instrument of realization of the chosen strategy by «translating» strategic goals at all levels of enterprise management by means of the detailed financial and non-financial indicators and establishing interrelations between them;
- in the process of strategic planning for clarification and formulation of the strategic goals and strategy of the enterprise. It is traditionally believed that it is possible to proceed with the BSI development. According to the results of the evaluation, the most important business processes for construction companies can be classified as:
 - technological development of building processes;
 - preparation of construction;
 - HR (Human Resources);
 - processing of innovations;
 - technical support of construction;
 - strategic planning and quality management of construction works.

After determining the importance of the process, the level of its problems is evaluated. To do this, a list of problems inherent in this business process, the strength of each problem (on a 5-point scale) and the degree of its impact on the implementation of this business process, or the weight of the problem (from 0 to 1) is estimated. The result of the evaluation is determination of the index of the problem (IP) of the business process.

The most problematic are as a rule the following business processes: preparation of production; marketing; strategic planning; finances; HR. Based on the obtained values of index of importance (II) and IP, a matrix of business processes distribution is created, which has 8 lines (corresponding to the 8-point IP score) and 5 columns (based on the 5-point IP evaluation). The business processes that should be given the greatest attention are closer to the upper right corner of this matrix, which corresponds to a combination of high values of both the II and IP. In parallel, a list of key actions to improve business processes is being developed.

Next, the links point out that in the first place, it is necessary to improve those processes, optimization of which requires relatively lower costs. To do this, the aggregate estimate of financial and time costs, the expected degree of resistance of staff and the need for social obligations is calculated index of resource intensity of process changes (IC). The index of the possibility of making changes (IC) is the magnitude of the reverse IP. The General Business Process Priority Index (IPR) is calculated as the sum of three indices:

$$IPR=IP+IC.$$

The formation of the BSI is a long and labor-intensive process [4, 19, 20]. The conditions for the successful development and implementation of the system at this stage are: attention and support from the top management; creation of the initiative group; support and cooperation of personnel; the establishment of clear, substantiated and real goals, a clear definition of priorities.

7. SWOT analysis of research results

Strengths The strong point in the conducted research is the assessment of the possibility of using a balanced system of indicators in the activities of Ukrainian construction companies and the development of a mechanism for the introduction of a balanced system of indicators into practical activities, taking into account the specifics of the Ukrainian construction market.

Weaknesses The weak side may be that the model of the balanced system of indicators functions only within the indicated indicators, the choice of which is limited and does not take into account possible changes in the competitive environment. That is why the enterprise, when using the mechanism, should additionally carry out an assessment of possible changes and take into account the subjectivity of a part of the indicators.

Opportunities Opportunities for further research are the experience of foreign countries in introducing BSI and assessing the effectiveness of its use in the practical activities of foreign enterprises.

Threats The threats to the research results are that the construction market is rapidly changing, there are new «players» in the market that need to be taken into account and changed the set of indicators.

8. Conclusions

1. It is proved that the most well-defined system of balanced indicators is the most complete: a balanced system of indicators (BSI) is defined as the system of strategic management of an organization on the basis of measurement and evaluation of its efficiency. This system is based on a set of logically interrelated indicators, selected in such way as to take into account all the essential aspects (in terms of the organization's strategy) of its activities. The strategy refers to the management model of the enterprise, aimed at strengthening its positions, satisfaction of consumers and the creation of a competitive advantage, which can be stored for a long time. At the present stage of social development, the world of material assets gives way to the world of intangible assets and perspectives in which ideas and ideas turn into the main source of competitive advantage.

2. It is determined that the BSI involves the development and achievement of the strategic objectives of the enterprise, which are determined by the financial results of the enterprise.

3. The analysis of the indicators on the BSI projections allows to determine the trends of change in each of the four key areas of the enterprise, but doesn't provide an objective assessment of the enterprise as a whole. At present, several large Ukrainian construction companies have begun work on the BSI formation at the enterprise, the main aspects of which are: finance; customers and marketing; business processes and staff. Since most of the Ukrainian construction companies are diversified, several

areas of activity need to be identified. As the main strategic goal, the most common is to increase the value of the enterprise. On the basis of information on the markets for the sale of the main types of products, it is necessary to select the factors that have the most significant impact on the value of the enterprise: the profitability of assets and the current value of contracts. Further BSI formation requires the identification of key business processes, which should be a list of the main, which provide a top management business process.

4. The concept of the enterprise development strategy based on a balanced system of indicators is proposed, due to the definition of the main objectives, tasks and principles for the construction enterprises. It is determined that the most problematic are usually the following business processes: preparation of production; marketing; strategic planning; finances; HR. Based on the obtained values of the IP and II, a matrix of business processes distribution is created, which has 8 lines (corresponding to the 8-point IP score) and 5 columns (based on the 5-point IP evaluation). The business processes that should be given the greatest attention are closer to the upper right corner of this matrix, which corresponds to a combination of high values of both the IP and the II. In parallel, a list of key actions to improve business processes is developed.

5. The mechanism of stimulation of the company's employees in the formation of a development strategy based on a balanced system of indicators is developed, which encourages employees to make decisions in the company's activities, to set clear objectives and fair remuneration standards.

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ИСПОЛЬЗОВАНИЕ СБАЛАНСИРОВАННОЙ СИСТЕМЫ ПОКАЗАТЕЛЕЙ ПРИ УПРАВЛЕНИИ СТРОИТЕЛЬНЫМИ ПРЕДПРИЯТИЯМИ

Раскрыто назначения сбалансированной системы показателей, ее структура и содержание основных элементов. Выделены этапы формирования. Обоснована целесообразность и сформулированы возможные направления использования сбалансированной системы показателей в практике управления строительными предприятиями. Проиллюстрирован выбор ключевых бизнес-процессов для строительных предприятий Украины как основы построения сбалансированной системы показателей, определена структура сбалансированной системы показателей и представлена стратегическая карта для предприятий.

Ключевые слова: управление развитием, стратегические цели, нематериальные активы строительного предприятия, стратегическая карта.

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