

DOI: 10.6084/m9.figshare.9783233

UDC 338.33

### Yuanyuan Li

PhD student in the Department of Information Systems and Technologies, [orcid.org/0000-0002-8200-4720](https://orcid.org/0000-0002-8200-4720)  
Taras Shevchenko National University of Kyiv, Kyiv

### Biloshchytska Svitlana

Ph.D., assistant professor of Information Technology Designing and Applied Mathematics, [orcid.org/0000-0002-0856-5474](https://orcid.org/0000-0002-0856-5474)  
Kyiv National University of Construction and Architecture, Kyiv

## DIVERSIFICATION OF ACTIVITY AS A COMPONENT OF ADAPTIVE STRATEGIC MANAGEMENT OF CONSTRUCTION ENTERPRISE

**Abstract.** *The paper describes the strategy of diversification of construction enterprises. Their advantages and disadvantages are highlighted. The necessity of diversification of enterprises for increase of profits, reduction of risks and expansion of competitive opportunities is established. It was found that diversification of construction companies is relevant due to the significant development of the construction industry in the last decade in Ukraine, China and the world. The task of adaptive enterprise management in the part of creating diversification strategies is to conduct an analysis of the enterprise and the conditions in which the company operates. The scheme of analysis of the construction company for the implementation of diversification strategies is presented.*

**Keywords:** *construction enterprise; diversification; adaptive strategic management.*

### Introduction

Scientific and technological development, increasing competition between producers and reducing the life cycle of products are a consequence of the variability of the vector of economic development. In order to accelerate the growth rate and intensify scientific and technological progress in the field of production, it is necessary to adapt the enterprises of the industry to external conditions. One of the approaches to adapting the company to changing business conditions is adaptive strategic management. The most effective part of adaptive strategic management is the diversification of enterprise activity.

Diversification of an enterprise is an integral part of its adaptive management. The introduction of diversification is due to the growth of the dynamics of the economy, the creation and activation of new markets, the permanent crisis in the economy, changes in demand for products. Diversification of enterprise activity and adaptive management allows you to profit in new markets if there is a loss in the main market.

Enterprises that use diversification are more competitive and profitable compared to other businesses. This is due to the fact that diversified enterprises increase the name of goods and services, penetrate into new areas of activity.

Analyzing the approaches to diversification of enterprises, one can conclude that the construction of diversification strategies in each country (Ukraine,

China, EU countries) has some differences and features. This is due to legislation and traditional approaches to managing enterprises in each country.

In general, diversification is divided into two components: diversification of activities and diversification of production. In general, these two components can be combined together. In addition, we will consider a special approach to diversification, as we will be interested in the diversification of construction companies.

In general, according to studies, the diversification of activities of enterprises, in particular the construction industry, leads to an increase in long-term profits of the enterprise and reduces risks. However, diversification of the company is associated with the risk of uncertainty. The company did not work in a new market, does not know its features and can not effectively calculate gains and losses. This problem is eliminated by an integrated approach to diversification, taking into account adaptive strategic management, which involves analyzing potential markets for diversification of activities. In addition, in order to create effective diversification strategies, it is necessary to make predictions of the company's activity based on its performance indicators [1 – 6].

In addition, strategic management of the company requires the use of new concepts of project and program management [7 – 12].

The work [13 – 15] describes the features of investment and diversification activities of enterprises.

In works [16 – 17] formed four basic strategies for

enterprise development: market penetration, new product development, market development and diversification.

Diversification is the most complex strategy, because it requires the company to acquire new knowledge, skills, resources, new tools and technologies that will compete with other companies in the new market.

In work [18] describes that an enterprise can choose to diversify its activities only when there are no other opportunities for growth. It is proposed to perform tests to determine the effectiveness of diversifying activities:

1. The chosen market should be interest to the consumer.
2. The cost of diversification should be acceptable to the enterprise.
3. The new market should feed the company to gain a competitive advantage.

Diversification of construction companies is relevant due to the significant development of the construction industry in the last decade in Ukraine, China and the world. Diversification of the activities of construction companies has a number of specific features that are studied in this study.

In general, to create an effective system of adaptive strategic management of a construction company, in particular in terms of diversification of activities, the following tasks must be performed:

1. Conduct an analysis of construction companies, their classification regarding the application of diversification strategies.
2. Explore strategies for diversifying construction companies taking into account the risk and financial effect.
3. To propose more advantageous strategies of diversification of construction enterprises.

### **The purpose of the article**

The research objective is:

1. To conduct a review of diversification strategies for use in the activities of construction enterprises.
2. To propose a scheme of analysis of the construction company, which is the first stage of the implementation of diversification strategies.

### **Presenting main materials**

#### **Features of diversification of enterprises**

Diversification strategies in adaptive management can be considered a marketing strategy. This strategy manifests itself in increasing the name and type of goods and services, improving the service, increasing consumer demand and attracting new consumers through advertising. For example, let the construction company deal with housing construction. In order to increase the demand for its main products, the enterprise can engage in interior design, production and furniture, windows and

doors. All of this can be offered to potential customers to increase profits.

However, diversification may apply to non-core products and services. This kind of diversification is especially complex. However, in the event of its successful implementation, the company significantly reduces the risks associated with the crisis in the main industry. To implement this type of diversification, the company needs to create new relationships with consumers and partners, to form a new system of sales of services and goods, to conduct effective marketing, to gain experience in a new market. It takes time and considerable human and financial resources.

Diversification as a complex process is a combination of the process of creating new products and services and the outputs to new markets. Products and services may be brand new for their core business. Such a strategy is expensive and risky.

Consequently, diversification involves access to new markets that are not related to the core business. This contributes to the development of inter-branch relations, which positively affects the economy of the region or the country as a whole. In general, diversification is used to increase economic benefits and reduce risks in conditions of instability and uncertainty of the economy.

A classic look at the diversification strategy is discussed in [19]. The construction of diversification strategies depends to a large extent on the combination of competencies and capabilities of the enterprise to diversify with the desire to increase the diversity of goods and services.

The system of indicators that determine the company's ability to implement diversification is described in [20]:

1. Specialization coefficient (SR): The share of annual revenue of a firm to its main business in this year.
2. Related Ratio (RR): The proportion of annual revenue earned by a firm belonging to its largest group of affiliated enterprises.
3. Contiguous core assets ratio (CR): The proportion of annual revenue earned by a company that falls on its largest business group that shares or uses the same general skills or resources.
4. Vertical Ratio (VR): The share of annual revenue earned by a firm in its largest product group.

According to the definitions, SR is an indicator of the state of diversity used in the economy, RR and CR characterize horizontal diversification strategies, and VR is for vertical strategies.

According to the concept described in [21], diversification involves identifying exactly the kind of activity (products) in which the company's competitive advantages can be most effectively realized. An enterprise applies diversification strategies in the event that it is necessary to reduce the risk or to generate profits in other industries. The main reason for Ukrainian construction companies is the crisis in the economy of

recent years. These crises threaten a steady profit and commitment to customers and partners.

In an unstable Ukrainian economy, diversification of activities is an effective way to reduce risks. Another classification of diversification strategies is as follows:

1. Assortment diversification. When a product is produced or provided with a service with significant differences from other market positions.

2. Conglomerate diversification. Investing in completely unrelated to the main production market.

3. Chain diversification. It involves the involvement of suppliers, carriers and other companies related to the company's core business to the structure of the company.

Commonly accepted classification of business strategies includes: dominant vertical, limited, unrelated strategies, related strategies and conglomerate strategies.

The associated diversification is to attract factors that already exist in the mainstream. Such factors include: staff, sales channels, technology, suppliers, marketing system, management methods, etc. Associated diversification can be strong or weak. A well-organized strategy for related diversification has a positive impact on all the strategies of a construction company. Such a type of diversification increases the competitiveness of key goods and services, and allows lower production costs through the introduction of new technologies.

An unrelated strategy involves creating a new product or service that is complementary to the main product or service. Conglomerate strategy involves the creation of a new product that is not related to the main product and is aimed at the new consumer. Conglomerate diversification is more complicated. Its implementation is a costly and risky process. On the other hand, if an enterprise produces only goods of the same type, it is a factor of additional risks.

Another classification distinguishes the following types of diversification:

– vertical diversification is that the company produces goods that are related to the main goods. An enterprise in this case creates goods and services independently, without buying them from third parties;

– horizontal diversification involves the release of goods that are not technologically related to the main products, but in general may be of interest to the main customers of the enterprise. In this case, enterprises can unite and produce goods that will be in demand for a particular group of customers;

– conglomerate diversification involves the creation of goods and services that are not at all related to the main goods and services. Customers of such goods and services may be completely different consumers. That is, the market for such goods is different from the main one. In this case, the company's activities extend to new industries to reduce risk, increase profits, and open new markets.

In [22] the following types of diversification processes are defined:

1. Concentric (vertical) – the company produces goods that are both in the technological and marketing aspects associated with existing products of the company. The advantages of this type of diversification are guarantees for providing resources, availability of reliable sales channels, stability of economic ties at the enterprise. The disadvantages of this type of diversification are the reduction of competition and the limited marketing market, significant production costs, and so on.

2. Horizontal diversification – expansion of its own assortment of products products that are not related to what is produced, but create the interest of existing customers. Horizontal diversification involves the development of new markets and business areas that meet the needs of existing customers. The advantage of horizontal diversification is the versatile satisfaction of consumers' needs. A disadvantage is the risk of a decrease in sales market. This leads to a change in activity as a whole.

3. Conglomerate diversification – replenishment of the company's range of products that are not related neither to the technologies used, nor with the markets in which the firm operates, nor with the existing needs of consumers. This type of diversification requires the greatest financial cost and can only be used by large, profitable enterprises.

In [21], the following types of diversification are defined:

- diversification with a vertical dominant;
- diversification with limited vertical dominance, when diversification is focused on one of the strong positions in the market or on one resource;
- diversification associated with a vertical integration dominant when diversification is oriented simultaneously to several strong positions or several resources;
- unconstrained diversification;
- conglomerate diversification, the creation of conglomerates through the acquisition of new enterprises;
- passive diversification.

Thus, the diversification of construction companies is to expand the business to develop new markets, reduce risk and increase profits. The choice of diversification strategy depends on enterprise management. The decision to implement a specific strategy is an important step in ensuring the efficiency of a construction company.

In order to implement diversification strategies at a construction company, it is necessary to conduct an analysis of the enterprise, to explore the existing strategies and to propose new diversification strategies.

The primary task for the formation of effective adaptive management of a construction company in terms of diversification is to conduct an analysis of

enterprises. The following sequence of research is proposed (Figure):

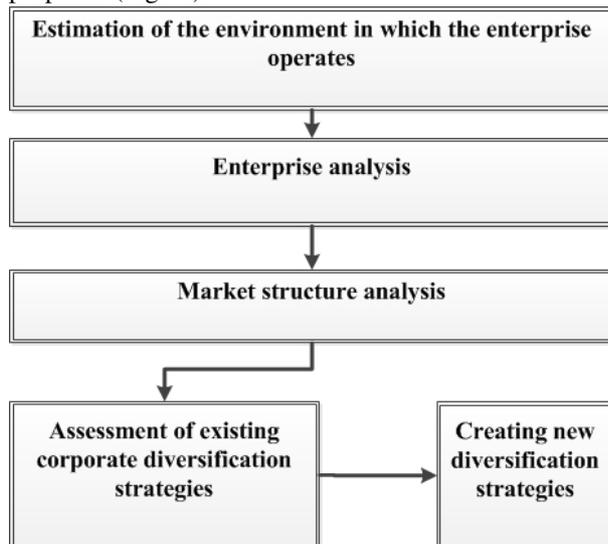


Figure – Scheme of enterprise research before implementing diversification strategies

1. Estimation of the environment in which the enterprise operates.
2. Enterprise analysis from the middle: assessment of the management of the enterprise, its organizational structure.
3. Analysis of the structure of the market. Estimation of profitability of markets of goods and services.
4. Assess current corporate diversification strategies, if any.
5. Creating new strategies. Calculation of financial effect and risks from implemented diversification strategies.

The key factors that influence the activity of a construction company are:

1. Factor of the environment: the presence of competitors, partnerships with other companies, entry into regional construction clusters.
2. The factor of strategic enterprise management.
3. Organizational structure of the enterprise.
4. Productivity of the enterprise.

The analysis of construction companies in Ukraine shows that about 40% of companies use horizontal diversification strategies in their activities, 27% use unrelated strategies, 9% use vertical strategies, and 24% do not use any of the strategies at all.

## Conclusions

As a result of the conducted research:

1. Diversification strategies used by construction companies in their activities are considered.
2. It is determined that the tasks of adaptive enterprise management in the part of creating diversification strategies are to conduct an analysis of the enterprise and the conditions in which the company operates. Scheme analysis is shown in Figure 1.
3. It has been established that most Ukrainian construction companies use horizontal diversification strategies. In addition, a quarter of all construction companies do not diversify their activities at all.

Due to the crisis conditions in the Ukrainian economy, construction companies should use diversification strategies. Effective use of diversification strategies increases the adaptive capacity of a construction company, reduces risks and increases profits. In general, the use of diversification strategies should be considered not only to reduce risks due to economic crises, but also for the future development of the enterprise.

## References

1. Kuchansky, A., Biloshchytskyi, A., Andrashko, Yu., Biloshchytska, S., Shabala, Ye., Myronov, O. (2018). *Development of adaptive combined models for predicting time series based on similarity identification. Eastern-European Journal of Enterprise Technologies*, 1/4 (91), 32–42. DOI: 10.15587/1729-4061.2018.121620.
2. Kuchansky, A., Biloshchytskyi, A. (2015). *Prediction of time series by selective comparison with the sample. Eastern-European Journal of Enterprise Technologies*, 6/4 (78), 13 – 18.
3. Kuchansky, A., Nikolenko, V., Rachenko, A. (2015). *A method for identifying trends in financial time series based on trend models of forecasting. Management of Development of Complex Systems*, 24, 84 – 89.
4. Kuchansky, A., Nikolenko, V. (2015). *Pattern matching method for time-series forecasting. Management of Development of Complex Systems*, 22 (1), 101 – 106.
5. Berzlev, A. (2013). *Methods of pre-forecasting fractal time series analysis. Management of development of complex systems*, 16, 76 – 81.
6. Berzlev, A. (2013). *The current state of information systems of time series forecasting. Management of development of complex systems*, 13, 78 – 82.
7. Beloshchitsky, A.A. (2012). *Vector method of goal-setting projects in design-vector space. Management of development of complex systems. Kyiv, Ukraine, KNUCA: 11, 110 – 114.*
8. Kolesnikova, E.V. (2013). *Modeling poorly structured project management systems. Odes. Polytechnic. University. Pratsi*, 3 (42), 127 – 131.

9. Rach, V., Rossoshanskaya, O. Medvedeva, O. (2010). Status and Trends in the Development of the Trend Project Management Methodology. *Management of development of complex systems*, 3, 118 – 122.
10. Oganov, A.V. & Gogunsky, V.D. (2013). Use the Theory of Constrains in PMO implementation at the organization. *GESJ: Computer Science and Telecommunications*, 4(40), 59 – 65.
11. Tesla, Yu.M. (2010). Information technology of project management based on ERPP (enterprise resources planning in project) and APE (administrated projects of the enterprise) systems / Yu.M. Teslya A.O. Beloshchitsky, N.Yu. Tesla // *Management of development of complex systems*, 1, 16 – 20.
12. Morozov, V., Kalnichenko, O. & Liubyma, I. (2017). Managing projects configuration in development distributed information systems. *2nd IEEE International Conference on Advances Information and Communication*, 154 – 157. doi: 10.1109/aiact.2017.8020088.
13. Samuelson, P.A. (1967). General Proof that Diversification Pays. *Journal of Finance. Quantitative Analysis*, 2, 1 – 13.
14. Markowitz, H. (1959). *Portfolio Selection: Efficient Diversification of Investments*. John Wiley & Sons, Inc., New York, Chapman & Hall, Limited, London, 356.
15. Teece, D.J. (1982). Towards an economic theory of the multiproduct firm. *Journal of Economic Behavior and Organization*, 3 (1), 39 – 63.
16. Ansoff, H.I. (1957). Strategies for Diversification. *Harvard Business Review*, 35(5), 113 – 124.
17. Ansoff, H.I. (1968). *Corporate Strategy*. Harmondsworth: Penguin, 113 – 114.
18. Porter, Michael. (1987). From Competitive Advantage to Corporate Strategy. *Harvard Business Review*, May – June (3), 43 – 59.
19. Rumelt, Richard P. (1974). *Strategy, structure, and economic performance*. Harvard University Press. Revised edn, 249.
20. Rumelt, Richard P. (1997). Towards a strategic theory of the firm. *Resources, firms, and strategies: A reader in the resource-based perspective*, 131 – 145.
21. Kunts, Roger M. (1994). Strategy of diversification and enterprise goals. *Problems of management theory and practice*, 1, 5 – 8.
22. Kotler, F. (1990). *Fundamentals of Marketing*. Moscow: Progress, 736.

Стаття надійшла до редколегії 07.02.2019

#### Юаньюань Лі

Аспірант кафедри інформаційних систем та технологій, [orcid.org/0000-0002-8200-4720](https://orcid.org/0000-0002-8200-4720)

Київський національний університет імені Тараса Шевченка, Київ

#### Білощицька Світлана Василівна

Кандидат технічних наук, доцент кафедри інформаційних технологій проектування та прикладної математики, [orcid.org/0000-0002-0856-5474](https://orcid.org/0000-0002-0856-5474)

Київський національний університет будівництва і архітектури, Київ

### ДИВЕРСИФІКАЦІЯ ДІЯЛЬНОСТІ ЯК СКЛАДОВА АДАПТИВНОГО СТРАТЕГІЧНОГО УПРАВЛІННЯ БУДІВЕЛЬНИМ ПІДПРИЄМСТВОМ

**Анотація.** В роботі описано стратегії диверсифікації будівельних підприємств. Розглянуто їх переваги та недоліки. Визначено необхідність проведення диверсифікації підприємств для збільшення прибутків, зменшення ризиків та розширення конкурентних можливостей. Виявлено, що диверсифікація будівельних компаній є актуальною через значний розвиток будівельної галузі в останнє десятиліття в Україні, Китаї та світі. Завданням адаптивного управління підприємством щодо створення стратегії диверсифікації є проведення аналізу підприємства та умов, в яких підприємство функціонує. В роботі наведено схему аналізу будівельного підприємства для впровадження стратегії диверсифікації діяльності.

**Ключові слова:** будівельне підприємство; диверсифікація; адаптивне стратегічне управління

#### Link to publication

APA Yuanyuan, Li, & Biloshchytska, Svitlana, (2019). Diversification of activity as a component of adaptive strategic management of construction enterprise. *Management of development of complex systems*, 37, 173 – 177, dx.doi.org/10.6084/m9.figshare.9783233.

ДСТУ Юаньюань Л. Диверсифікація діяльності як складова адаптивного стратегічного управління будівельним підприємством [Текст] / Л. Юаньюань, С.В. Білощицька // *Управління розвитком складних систем*. – № 37. – 2019. – С. 173 – 177, dx.doi.org/10.6084/m9.figshare.9783233.