Impact of factors of external and internal environment on competitiveness of construction company

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one of the most important sectors of the national economy of Ukraine today is the construction industry. Thanks to this branch, the material base of the whole production complex of our country is being updated and re-equipped. Moreover, the conditions of development for the non-production sector are being created. Economic theory states that the driving force of development of enterprises is high level of competition. Enterprises with low competitiveness do not meet the market requirements, stop their activity, leaving only competitive enterprises in the market. Thus, the basis of development of the country’s construction industry is the development of competitive relations among enterprises and, as a result, increase in their competitiveness. Under such conditions, the study of construction enterprises’ competitiveness is important and relevant both for the economy of the country and individual enterprises.

In general, strategic management of the enterprise deals with the process of forming competitive advantages and their maintenance. The basis for effective enterprise’s development strategies is the ability to predict changes in the external and internal conditions and to react to them. The process of creating new advantages of the enterprise is based on an adequate reaction to potential threats and opportunities and prompt redistribution of resources of the enterprise.

It is vitally important for enterprise managers to take such steps faster than rivals. Thus, long-term
competitiveness is possible only if the enterprise is able to identify potential competitive advantages and realize them as soon as possible.

The main objective of construction enterprise activity is the competitive level achieved under market conditions. Such level implies high level of stability and profit in the future. Development of measures increasing competitiveness of the enterprise is crucial for success.

Theoretical and empirical studies show that key success factors differ from industry to industry. Moreover, the factors may vary with the flow of time in the same industry due to many reasons.

Therefore, an important analytical task is to identify the key success factors, taking into account both present and future conditions of industry development and intra-industrial competition [1].

Specific factors of competitiveness formation for construction enterprises should be examined for further consideration:

1. Construction works involve a large number of highly qualified personnel. As a result, labor costs for engineers and workers are rather high.
2. The introduction of tailored structural or architectural solutions which cannot be applied to other objects. Repair works and modernization under unfavorable conditions can result in additional expenses.
3. Unlike other branches of economy, a construction object is territorially fixed during the whole process: from preparatory works to operation. As a result, such fixity can increase the cost due to infrastructure location and use of the special equipment [4, p. 11].
4. Such factor as stable high level of products’ material capacity is directly related to the competitiveness of production and overall cost. Materials and structures cover a large percentage of production costs in construction industry. Additional complexity for the process of each object construction is in high cost of transportation of materials and constructions, and costs of intermediaries’ services.
5. The price of construction products depends on the overall inflation rate. That is why most enterprises purchase the necessary materials well in advance.
6. Increasing public concern about the environment protection creates a demand for higher sustainability standards of building materials and construction works. Domestic and foreign researches have proved that the integral component of assessing enterprise’s competitiveness is the analysis of external and internal environment factors influencing on the activities of the enterprise.

The analysis of the environment is the study of external factors of the environment of the enterprise. The external environment consists of multiple factors, including economic, technological, political, legal, and social ones.

Circulation of money, goods, information, and energy is regarded as economic environment. There is a direct correlation between services and goods production and the general rate of economic growth, the level of prosperity and solvency.

Technological environment is understood as the level of scientific and technological progress. New kinds of products, processes and materials are emerging due to the development of technologies.

As the overall scientific progress increases the efficiency and quality of work, the enterprise should monitor this factor of the environment, because backwardness from rivals results in a consistent decline in the competitiveness of the enterprise.

Political and legal environment has impact on efficiency of enterprise. All enterprises operate in the legal framework being under the influence of political events.

The rules of law create the conditions and rules that companies must stick up to in the course of their activities.

The state of the legislation regulating the relationship between enterprises and the state is constantly being changed or supplemented, so it is extremely necessary to monitor all the changes.

Political factors, in turn, have an impact on companies’ international relations and foreign trade in the whole country. Thorough monitoring political events is absolutely necessary to understand further trends in relations between enterprises and the state. These trends may then have legal consolidation.

Social factors include the following concepts: social norms, social views, ethical norms. Changes in these norms impact other spheres of life and requirements for them.

Thus, the development of culture and education establishes the properties of the potential market; defines the main requirements for the properties of goods and services, or for the method of their production. For example, with the change of views on environmental issues, consumer demands have changed both for the product itself and for the technology of its production. Modern consumer culture involves the consciousness of the customer in choosing the company depending on its philosophy.

The delay of the enterprise from actual requirements of consumers will have negative consequences for its competitiveness. The conclusions after researching the factors affecting competitiveness of the construction company ALD Engineering Company LLC, are presented in table 1 [2].

Inflation. The impact of the inflation factor has negative consequences for the enterprise. In most cases, the process of concluding the contract between the customer and the contractor provides the option of the so-called dynamic contract price, which can change with the flow of time.

Building materials costs increase by 30-50% from the date of signing the contract till the date of purchasing necessary materials. Such a situation is rather common in construction industry and can be easily explained by the influence of inflation.

This unfavorable circumstance lessens the profit of the enterprise or makes it enter a supplementary agreement in order to change the initial contract price. Preparations for the conclusion of such an agreement result in additional expenses for legal work.
Table 1. Analysis of external factors’ effect on competitiveness of ALD Engineering Company, LLC

<table>
<thead>
<tr>
<th>External environment factors</th>
<th>Condition of factor</th>
<th>Development tendency</th>
<th>Type of effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>Inflation in 2021 is 100% [7]</td>
<td>Growth</td>
<td>Negative effect on company’s general income</td>
</tr>
<tr>
<td>Competition</td>
<td>High competition level is observed</td>
<td>Growth</td>
<td>High competition level motivates company to search and use new ways of increasing competitiveness</td>
</tr>
<tr>
<td>Labor market</td>
<td>Critical minimum of highly-qualified workers</td>
<td>Lack</td>
<td>The need to look for professionals</td>
</tr>
<tr>
<td>Partners</td>
<td>Solid partnership with big companies and groups of companies</td>
<td>Growth</td>
<td>The number of reliable partners increases</td>
</tr>
<tr>
<td>Consumers</td>
<td>Legal entities and individuals</td>
<td>Growth</td>
<td>Company’s income increases with growth in demand</td>
</tr>
<tr>
<td>Technical and ecological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecology</td>
<td>The main attention is drawn to the ecological balance</td>
<td>Growth</td>
<td>Minimizing the company’s impact on environment</td>
</tr>
<tr>
<td>Political and legal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The state of current legislation</td>
<td>Legislation fully controls the company’s operation</td>
<td>Refining</td>
<td>Gaps in legislation can lead to corruption</td>
</tr>
<tr>
<td>Martial law</td>
<td>Occupation of certain regions of the country</td>
<td>Loss</td>
<td>Potential need in construction services</td>
</tr>
</tbody>
</table>

Source: authors’ own development

Competition. For thorough consideration of competition impact on the researched enterprise’ activities it is necessary to explore a wide range of services in the field of construction works, their legal and engineering support.

The services of the enterprise embrace the following activities:
- construction of residential and non-residential buildings;
- installation of water supply networks, heating and air conditioning systems; construction of other buildings;
- preparatory work on the construction site; electrical work; other construction and installation works;
- other works on completion of construction; activities of intermediaries in trade in a wide range of goods;
- wholesaling of timber, construction materials and equipment;
- activities in the field of law; activities in the field of architecture;
- activities in the field of engineering, geology and geodesy;
- construction buildings, power supply and telecommunications facilities;
- production of concrete products, fibrous cement products; production of gypsum and cement products;
- construction of roads and highways, bridges, tunnels, pipelines;
- exploratory drilling, plaster works, painting and glazing, roofing works;
- wholesaling of computers, peripherals and software; wholesale of electronic and telecommunication equipment;
- wholesaling of machine tools and computer programming; consultations on informatization issues; computer equipment management activities;
- activity of news agencies; provision of other information services; repair of computers and peripherals; repair of communication equipment;
- leasing and operation of own or leased property; rental of construction machinery and equipment; rental of office machines and equipment;
- leasing of intellectual property and similar products;
- provision of landscape services;
- production of building metal structures; metalworking and coating of metals;
- machining of metal products; repair and maintenance of metal products; repair and maintenance of machinery and equipment for industrial purposes;
- repair and maintenance of electrical equipment; installation and assembly of machines and equipment;
- road transport freight; rental of cars; rental of trucks; rental of other machinery, equipment and goods.

Due to an extremely wide range of services, competition takes place in every single sector. The main rivals of the enterprise are KBK, LLC; Metprombud Invest, LLC; Promkomplektgrup, LLC; RBO Ukraina, LLC; Metinvest engineering, LLC; Vivat Invest, LLC; Metinvest Promservice, LLC; Tandem-2000, LLC.
It should be noted that due to extremely wide range of services, ALD Engineering, LLC has significant competitive advantages. In construction industry large construction companies often act as general contractors, while smaller companies are subcontracted to perform specific tasks. Under such circumstances competing companies become partners. This win-win strategy is mutually beneficial both for enterprises and customers.

Labor market. A study of labor market in the construction industry shows that the share of vacancies in construction on job search sites is about 18% of the total number of offers in Ukraine. It means 304 vacancies of 1670 vacancies offered on the site are in construction industry [8]. At the same time, construction industry is characterized by the outflow of labor force abroad. Thus, companies have to compete for workers. There are numerous cases when highly qualified workers perform work simultaneously for several competing companies due to the lack of specialists.

Partners. ALD Engineering, LLC has partner relations with such companies as Metinvest Holding, LLC; Onur Construction International, LLC; TD Standart, LLC; Group of enterprises Energomash; PJSC Santekhkomplekt; Simens Ukraine, SE; Schneider Electric, Trading House Watra-Dnipro, LLC; Vikant, LLC; Promenergospetsmontazh, LTD. It is seen from the list that the enterprise cooperates with established international companies and domestic ones.

Consumers. The main consumers of ALD Engineering, LLC are legal entities - enterprises of manufacturing industry, such as PJSC Zaporizhzhal, JSC Azovstal Iron and Steel Works, PJSC Dniprovskiy Coke and Chemical Plant (Dnipro Coke), PJSC ZaporizhVognetryv. The company sells concrete to small businesses and individuals, but their share is rather limited. ALD Engineering, LLC is known of high quality and wide range of performed work. Moreover, the company works in the legal field, so its business reputation is impeccable. All these contribute to consumer confidence, the demand for company’s services and products grows, having positive impact on the development of the company.

Ecology. The worldwide trend is a special attention to the ecological sustainability of construction and the use of environmentally friendly materials. Studies of environmental impact provide an opportunity to anticipate and immediately respond to any ecological threat by taking specific measures able to avoid it. The company ALD Engineering, LLC is fully aware of importance of greening every sphere of human activities as the main factor of persistent development [6]. The company uses environmentally friendly materials that do not harm human health and the environment both during the construction process and the operation cycle.

Martial law. Large-scale military actions on the territory of the country have a great negative impact on the economy of the country as a whole and, on the construction enterprises, in particular. The companies which were the main consumers of construction services have stopped their activities, so, capital repairs projects are frozen.

For example, the modernization of the post-blast yard of the blast furnace of the enterprise PJSC Zaporizhstal was to be implemented in 2022, but the project is now frozen due to the customer’s inability to pay. Among other unrealized projects is modernization of bunker room of the blast furnace at PJSC Azovstal Iron and Steel Works. Due to devastating military actions at Azovstal, major destruction of the company’s infrastructure, uncertainty in terms and results of combat actions, the planned project can be called irrelevant. However, the process of post-war reconstruction will begin, resulting in increased demand for services of construction companies. Moreover, depending on the financial stability of each construction enterprise in the crisis situation, the range of competitive enterprises may decrease.

With the start of economic recovery, the restoration of supply chains and necessary infrastructure, industrial enterprises will be able to overcome the crisis. In this case frozen projects will be restored and new ones created.

Thus, according to the analysis of external environment factors impact it is necessary to state that the most negative influence on competitiveness of enterprise ALD Engineering have the following ones: growth of inflation rate in the country, critical lack of qualified personnel in labor market; economic crisis because of military invasion.

Assessing the company’s ability to quickly react to competition, it is critical to analyze the influence of internal environment factors on the enterprise (Table 2) [2].

The internal environment includes subjects, forces, and situations which are used by the enterprise itself. This environment is considered to be controlled by the management of the enterprise ALD engineering.

From the table above we can see that almost all internal environment factors have positive influence on the competitiveness of the construction company. The company pays great attention to characteristics of its personnel, primarily, to the qualification level both at the stage of hiring and during employees’ work.

Additional training and guidance of employees are regularly conducted. The company appreciates every employee taking appropriate measures to create the right level of safety and well-being, thus, promoting steady development of their employees.

In addition to the factors positively influencing on the competitiveness of the enterprise, the company is looking for additional ways of strengthening its positions. For this purpose, “ALD Engineering”, LLC signed the memorandum of artificial intelligence development in Zaporizhzhia region. The company took active part in founding TechnoHUB at National university Zaporizhzhia Polytechnic. TechnoHUB is a specialized technological space with new equipment, where you can work out practical programming, simulate the work of different equipment and see whether it functions correctly.
Thus, the company makes contribution to the development of science and technology preparing highly qualified specialists at the same time. These are long term investments which can provide strategic advantages for the company.

The level of used technologies is also of great importance in the analysis of the internal environment. The company uses cutting-edge technologies and equipment increasing labor productivity and quality of finished products.

The quality of the performed works complies with the norms and instructions, the management pays attention to the observance of quality standards. These efforts ensure higher level of competitiveness of the company.

Since the company's main value is wellbeing of people, the company contributes actions to improve communication with clients. For example, the company has the website, where the customer can easily leave the data for immediate communication on the project, getting information on the range of services offered and examples of projects performed. What is more important, communication with the customer is supported during the implementation of the project.

Organizational structure is of great importance for efficiency. "ALD Engineering", LLC is of medium size having about 300 employees.

The enterprise has a linear-functional structure of management with vertical subordination. The main advantages of the structure are the following: balanced actions of middle and lower elements of the structure; ease of control and management; the possibility to carry out medium-term and long-term planning.

However, it is important to pay attention to the disadvantages of this structure, namely: slow process of making managerial decisions, heavy loading on the persons responsible for all departments.

The company takes measures to mitigate the negative impact of such a structure by introducing automated accounting and detailed regulation of employees’ activities. These actions allow to remove the burden from high management and accelerate communication among divisions.

There are well-established scientific methods of assessing competitiveness of enterprise: method of expressing by signs, quantitative method, qualitative, matrix, index and graphic ones [5, p. 15].

The use of quantitative methods of assessing competitiveness means the calculation of relative values. Then conclusions on the level of the investigated indicators are drawn. Finally, these indicators are subdivided into group indicators or integral indicators.

The quantitative methods of estimation include: differentiated method, integral method, method of differences, method of points. Through these methods, the company can assess its potential in competition for strategic zones and make appropriate management decisions.

The main drawback of some methods mentioned above is subjective approach to determining the factors of greater or less importance.

As opposed to quantitative methods, qualitative methods contain higher level of subjectivity. SWOT-analysis, expert evaluation method, euretic methods are considered as qualitative methods. Despite the low mathematical component, these methods use reliable information, therefore, they can help to assess real facts in terms of general market conditions, while quantitative methods deal with abstract figures.

Matrix methods provide the use of matrix, a table of rows and columns of items. The method is based on the analysis of two-dimensional matrices based on the principle of the coordinate system. The core of the method is in marketing assessment of enterprise activities [3, p. 113].

This method includes: the BCG matrix, the Mac Kinsey method, the Shell/DPM matrix, the PIMS method, the Ansoff matrix. The advantages of these methods can be attributed to the possibility of
research in dynamics. The disadvantage of these methods is that the number of factors taken into account is limited.

The use of index methods provides for the calculation or quantitative determination of individual indices, key indicators of certain directions of enterprise activity. Then indices and indicators are to be turned into the integral indicator for their further consideration.

Index methods include: integration methods, competitive advantage method, efficient competition theory, product competitiveness.

Graphical methods are necessary for a spider chart or a competitiveness polygon. Besides the above methods, graphical method of "profiles" is also widely used.

The graphical methods are known of their accuracy and relative simplicity, but they do not allow to set the overall value of the indicator and to forecast possible changes.

All these methods do not provide an overcharging evaluation of the competitiveness level, so the most effective solution will be to use several methods. It is important to note that each enterprise needs to individually select methods of evaluation, depending on factors of competitive environment, availability of information and performed tasks.

In our case it is expedient to use SWOT-analysis. This method gives the possibility to form a complete list of the company's strategies taking into account all peculiarities. The content of the strategy may be either adaptation to environment or formation of influence on it. The general idea of SWOT analysis is to take measures turning weaknesses into strengths, and threats – into opportunities, developing strong features of the company under conditions of its limited possibilities [1, p. 91].

Observation of internal and external environment factors influencing on competitiveness of the enterprise gives the possibility to carry out SWOT-analysis of ALD Engineering, LLC. Table 3 shows multilevel comparison of strengths and opportunities, strengths and threats, weaknesses and opportunities, weaknesses and threats.

As a result, the company has the opportunity to enter new markets and increase the number of consumers. A positive factor is in-house technology of automated accounting - software product "ACS". The company implements in-house automation software for tracking the supply and shipment process and for monitoring the health of employees.

### Table 3. Matrix SWOT-analysis of "ALD Engineering", LLC

<table>
<thead>
<tr>
<th>Opportunities and threats</th>
<th>Opportunities:</th>
<th>Threats:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. access to new markets;</td>
<td>1. competitive pressure;</td>
</tr>
<tr>
<td></td>
<td>2. increase in the range of services;</td>
<td>2. unstable level of political course</td>
</tr>
<tr>
<td></td>
<td>3. increase in customer base;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. creation of new investment projects and their further implementation;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5. ability to conduct an effective marketing campaign</td>
<td></td>
</tr>
<tr>
<td>Strengths:</td>
<td>1. development strategy;</td>
<td>1. reduction of services provided;</td>
</tr>
<tr>
<td></td>
<td>2. diversification strategy</td>
<td>2. survival strategy</td>
</tr>
<tr>
<td>Weaknesses:</td>
<td>1. lack of effective marketing tools;</td>
<td>1. exit from the market</td>
</tr>
<tr>
<td></td>
<td>2. imperfect organizational structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. market development strategy</td>
<td></td>
</tr>
</tbody>
</table>

*Source: authors’ own development*

Automation of working processes allows to connect any construction site with the head office for expeditious solution of day-to-day problems. The negative side is that the enterprise has poorly developed marketing activity. However, the company has opportunities to implement such activities, so the current situation is to be improved. The construction market is highly competitive, so there is a real threat of reducing the number orders and market share. However, during the period of post-war reconstruction, the overall volume of necessary construction and repair works is expected to increase rapidly, and as a result, the company will have a great potential for development.

Highly qualified personnel, conformity of the quality of the works to international standards, compliance with the legislation, high level of labor efficiency are the main constituents of high level of competitiveness. It should be noted that the company has substantial financial resources and genuine opportunities for improvement.

All things considered, the following actions are proposed to increase the competitiveness of ALD Engineering, LLC:

- clients’ satisfaction;
- development of well-grounded marketing policy;
- expansion of construction works range;
- timely modernization of technical equipment;
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Conclusions

Competition is a driving force, which contributes to the increase of efficiency of the enterprise, its development and constant improvement. The assessment of the competitiveness of the enterprise allows to reveal challenges and gaps to enhance further functioning of the enterprise. In general, the process of forming competitive advantages later, their maintenance is the subject of strategic management of the enterprise. The foundation for effective strategy of the enterprise development is the ability to forecast and react to changes in the external and internal environment. Analysis of the environment of the building enterprise ALD Engineering, LLC has shown unfavorable factors: inflation, military situation, lack of specialists in the labor market.

Internal factors generally have constant influence on the assortment of enterprise’s services, indicators of resource efficiency, and general level of the enterprise.

According to the research of scientific methods of estimation of competitiveness it is concluded that it is expedient to use group of methods, which the enterprise will choose.

After scrupulous analysis of scientific methods of assessing competitiveness a group of methods which are to be provided at the enterprise has been proposed. According to the results of SWOT-analysis possible strategies for ALD Engineering, LLC were proposed.

Abstract

Current situation in the country’s economy is extremely complicated. The majority of domestic enterprises suffer heavy losses or suspend their activities. Despite unfavorable business conditions, construction companies are trying to stay in business. Under such circumstances the competition is getting fierce. In order to survive the company should take into account many factors influencing its efficiency. Scientific methods of assessing competitiveness are considered in the paper. SWOT-analysis of ALD Engineering Company is done. Key competitive strategies allowing to withstand competitive pressures and strengthen market position are analyzed.

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