

SWOT analysis in the company manufactures steel structures

Analiza SWOT w przedsiębiorstwie produkującym konstrukcje stalowe

Marlena Król¹, Piotr Sygut²

¹ Inż., student, Politechnika Częstochowska, Polska, e-mail: marlenak@opoczta.pl

² Dr inż., Politechnika Częstochowska, Polska, e-mail: piotr.sygut.wz@gmail.com

Abstract: The purpose of this article is to carry out a SWOT analysis for companies operating in the construction industry engaged in the manufacture and installation of steel structures. The strengths and weaknesses, opportunities and threats were defined. Based on the analysis of the relationship between them has been defined strategy for the investigated company.

Streszczenie: Celem niniejszego artykułu jest przeprowadzenie analizy SWOT dla przedsiębiorstwa działającego w branży budowlanej zajmującego się wytwarzaniem oraz montażem konstrukcji stalowych. Zostały określone czynniki analizy SWOT takie jak mocne strony i słabe strony oraz szanse i zagrożenia. Na podstawie analizy powiązań między nimi została określona strategia dla badanego przedsiębiorstwa.

Key words: SWOT analysis, company strategy

Słowa kluczowe: Analiza SWOT, strategia przedsiębiorstwa

1. Introduction

The analyzed company belongs to the construction industry. Mainly deals with the design, manufacture and assembly at the construction site of steel structures. It belongs to large enterprises employing over 250 people. Examined the company has six branches in the southern Polish are located at the main provincial roads. Another advantage is the fact that it has implemented an Integrated Management System and the Integrated Information System. In this way, the individual branches are connected and have a common database.

2. Experimental

SWOT analysis is the main tool of strategic management. Abbreviation SWOT comes from the initial letters of English words such as [1]:

S - meaning strength or power strengths of the company,

W - weakness is the weakness of the audited company,

O opportunities is translated as chances occasions that the company should be used,

T - threats, which means the threat coming from the external environment of the company.

It is used primarily at the level of management of the entire enterprise and the individual functional departments SWOT analysis allows to evaluate the environment inside and outside the company [2]. It consists of three basic steps such as analysis of the strengths and weaknesses of the company, analysis of opportunities and risks and formulate strategic proposals [3].

By the strengths or assets of the company understood as the values of companies that positively distinguishes it in the environ-

ment and in the midst of competition. While weaknesses are related to areas that limit the efficiency of the company. Chances are that all of the existing or anticipated processes, phenomena and trends taking place in the business environment, which properly used can be an impetus to its development. While the risk of a barrier in the development of the organization.

The main objective of the SWOT analysis is to study the relationships and interactions between factors weaknesses of businesses or assets, or opportunities and risks of the environment of the organization. This analysis allows you to determine the optimal plan of action for the company to date could operate and develop the market [4].

3. SWOT analysis

Performing a SWOT analysis should identify the factors and their importance. The validity of these factors has been determined in such a way that the sum of the weight for each group was equal to 1.0 (100%).

Table 1 has been presented identification of factors, along with the division on the strengths, weaknesses, opportunities and threats along with their weights.

The data in Table 1 show that the most important strengths of the analyzed companies are features such as having your own galvanizing and have special rights by employees of the company. The validity of these factors was measured at 0.20. In contrast, the least important strong point was recognized factor in good location. It was granted the validity of 0.01.

For the weakest parties were considered factors such as the lack of own transport vehicles and obsolete machinery and equip-

ment. These factors gained weight 0.20. It follows from this that the most adversely affected by the development companies analyzed.

In contrast, factors such as the emergence of new groups of customers and the ability to enter new foreign markets were also given the importance level of 0.20. It follows that they are for the company the best chance for its development. Equally important for the study of the organization is the emergence of new groups of customers. The weight of this factor is 0.15. And the factor called little competition received validity of 0.01. These environmental factors outside the company, to be able to develop it as much as possible should use the opportunities created.

The biggest dangers of the external environment for the company analyzed are new technologies used by the competition and the emergence of cheaper contractors. These factors received validity of 0.20. While the lowest risk for the analyzed organizations represent such factors as: the changing prices from suppliers, stunting in the construction of steel structures, increase taxes or the high premiums for benefits in ZUS.

SWOT analysis of the relationship is the basis for determining the company's strategy. Also identifies the strong links between the factors, which are divided into four groups. These are the strengths, weaknesses, opportunities and threats. By analyzing the relationship SWOT obtained information on the number of interactions and the strength of ties. Tables 2a to 2d presents an analysis of the linkages between factors. Table 2a shows the association between factors such as strengths and opportunities flowing from the environment for the enterprise.

It shows that between opportunities and strengths of the interaction takes place 48, while the sum of products is 4.99. Most interaction with the opportunities has factor [S3]. This means that highly qualified workers help to seize the opportunity that appear in the company environment. In contrast, the factors having only one link of the opportunities that have the Integrated Management System by the audited organization and having a center of quality control and welding. Table 2b shows the association between factors such as the strengths of the company and the risks.

The data in Table 2b show the relationship between threats and strengths. The data in Table 2b show the relationship between threats and strengths. Most interaction with threats is a factor [S8]. This means that having a special permission by the employees is the most vulnerable to the weakening of the dangers of the enterprise environment.

Table 2c illustrates the relationship between factors such as the weak points of the enterprise and opportunities.

The data contained in Table 2c shows the interaction between the opportunities and weaknesses. Between the two factors, there is a 20 interactions, and the sum of products is 1.87. Most interaction has factor [O2].

The analysis of this phenomenon shows that the weaknesses of the most limited appearance in the analyzed company new machines and equipment.

Table 2d shows the association between factors such as the weaknesses of the company and threats. Analyzing the data contained in it can be stated that occur interaction between threats and weaknesses. Between the factors studied the interaction takes place 24, while the sum of products is 2.35. Most interaction with the weaknesses of has factor [T4]. It follows the changing prices from suppliers are compounded by weaknesses of the analyzed company.

Table 3 presents the aggregate results of the SWOT analysis, it also contains the sum of the interactions and the sum of the products for all connections factors.

Table 1. Identification of factors and their validity

| The internal factors | Weight | The internal factors | Weight |
|--|---------------|--|---------------|
| Strength | 0.1 | weakness | 0.1 |
| recognized brand [S1] | 0.04 | The lack of a steel-works [W1] | 0.10 |
| high quality of services [S2] | 0.05 | Lack of own transport vehicles [W2] | 0.15 |
| Highly skilled workers [S3] | 0.10 | Weak level marketing [W3] | 0.05 |
| Good localization (3km od DK1) [S4] | 0.01 | Dismissive of competition [W4] | 0.05 |
| High bargaining power against the competition [S5] | 0.10 | Obsolete machinery and equipment [W5] | 0.15 |
| Owning your own galvanizing plant [S6] | 0.20 | The large distance between a galvanizing plant [W6] | 0.10 |
| Having Integrated Management System [S7] | 0.15 | Bureaucracy in the company [W7] | 0.10 |
| Having a special permission by the staff eg. Welding [S8] | 0.20 | No personal contact design office [W8] | 0.10 |
| Having a center of quality control and welding [S9] | 0.05 | Contact with other centers electronically [W9] | 0.10 |
| Having your own technical office abroad [S10] | 0.10 | No warehouse [W10] | 0.10 |
| External factors | Weight | External factors | Weight |
| Opportunities | 0.1 | Threats | 0.1 |
| little competition [O1] | 0.01 | The possibility of the emergence of new competition [T1] | 0.10 |
| The appearance on the market of new machinery and equipment [O2] | 0.09 | The deterioration in the economic situation [T2] | 0.10 |
| Extending the offer of new services [O3] | 0.10 | New technological solutions used by competition [T3] | 0.20 |
| The possibility of entering foreign markets [O4] | 0.20 | Changing prices with suppliers [T4] | 0.05 |
| Creating your own transportation [O5] | 0.10 | The advent of cheaper contractors [T5] | 0.20 |
| Development of infrastructure construction steel [O6] | 0.10 | Inhibition of steel construction [T6] | 0.05 |
| The appearance of new groups of customers [O7] | 0.15 | The deterioration of cooperation with the regional government [T7] | 0.10 |
| Investing in advertising [O8] | 0.10 | The increase in taxes [T8] | 0.05 |
| Conducting courses for employees [O9] | 0.05 | High contributions to ZUS [T9] | 0.05 |
| Purchase of modern machinery and equipment [O10] | 0.10 | Legal barriers to foreign countries [T10] | 0.10 |

It shows that the majority of relationships between agents from the group of strengths and opportunities, and the smallest number of interactions occur between the opportunities and weaknesses of the company.

Table 2a. Whether a particular strong point allows use given the chance?

| Opportunities/ Strength | [O1] | [O2] | [O3] | [O4] | [O5] | [O6] | [O7] | [O8] | [O9] | [O10] | Weight | Number interactions | Product weight and interactions |
|---------------------------------------|------|------|------|------|------|------|------|------|------|-------|--------|------------------------|---------------------------------------|
| [S1] | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0.04 | 3 | 0.12 |
| [S2] | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.05 | 2 | 0.1 |
| [S3] | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0.1 | 4 | 0.4 |
| [S4] | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0.01 | 2 | 0.02 |
| [S5] | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 | 3 | 0.3 |
| [S6] | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 | 3 | 0.6 |
| [S7] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 1 | 0.15 |
| [S8] | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.2 | 3 | 0.6 |
| [S9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.05 | 1 | 0.05 |
| [S10] | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 2 | 0.2 |
| Weight | 0.01 | 0.09 | 0.1 | 0.2 | 0.1 | 0.1 | 0.15 | 0.1 | 0.05 | 0.1 | | | |
| Number interactions | 3 | 3 | 4 | 3 | 1 | 1 | 4 | 1 | 3 | 1 | | | |
| Product weight and interactions | 0.03 | 0.27 | 0.4 | 0.6 | 0.1 | 0.1 | 0.6 | 0.1 | 0.15 | 0.1 | | | |
| Rank | | | | | | | | | | | | | |
| The sum of interaction | | | | | | | | | | | | 48 | |
| Sum of products | | | | | | | | | | | | | 4.99 |

Table 2c. Whether a particular weakness limits the ability to use the chance?

| Opportunities/ Weakness | [O1] | [O2] | [O3] | [O4] | [O5] | [O6] | [O7] | [O8] | [O9] | [O10] | Weight | Number interactions | Product weight and interactions |
|---------------------------------------|------|------|------|------|------|------|------|------|------|-------|--------|------------------------|---------------------------------------|
| [W1] | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1 | 0.1 |
| [W2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 0 | 0 |
| [W3] | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.05 | 2 | 0.1 |
| [W4] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.05 | 0 | 0 |
| [W5] | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 1 | 0.15 |
| [W6] | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0.1 | 1 | 0.1 |
| [W7] | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0.1 | 0 | 0 |
| [W8] | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 2 | 0.2 |
| [W9] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 |
| [W10] | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1 | 0.1 |
| Weight | 0.01 | 0.09 | 0.1 | 0.2 | 0.1 | 0.1 | 0.15 | 0.1 | 0.05 | 0.1 | | | |
| Number interactions | 1 | 4 | 0 | 0 | 2 | 2 | 1 | 0 | 0 | 2 | | | |
| Product weight and interactions | 0.01 | 0.36 | 0 | 0 | 0.2 | 0.2 | 0.15 | 0 | 0 | 0.2 | | | |
| Rank | | | | | | | | | | | | | |
| The sum of interaction | | | | | | | | | | | | 20 | |
| Sum of products | | | | | | | | | | | | | 1.87 |

Table 3. Analysis results SWOT

| Combination | The sum of interaction | Sum of products |
|----------------------------|---------------------------|--------------------|
| Opportunities/ Strength | 48 | 4.99 |
| Threats/ Strength | 28 | 3.15 |
| Opportunities/ Weakness | 20 | 1.87 |
| Threats/ Weakness | 24 | 2.35 |

Based on certain factors and their impact strength can be determined strategy for the company (Tab. 4).

Table 4. The results of strategic analysis and strategy selection

| | Opportunities | Threats |
|----------|---|---|
| Strenght | Aggressive strategy | Conservative strategy |
| | Number interactions | Number interactions |
| | 48 | 28 |
| | Weighted average number of interactions | Weighted average number of interactions |
| | 4.99 | 3.15 |
| Weakness | Competitive strategy | Defensive strategy |
| | Number interactions | Number interactions |
| | 20 | 24 |
| | Weighted average number of interactions | Weighted average number of interactions |
| | 1.87 | 2.35 |

Table 2b. Whether a particular strong point can reduce the threats?

| Threats/ Strength | [T1] | [T2] | [T3] | [T4] | [T5] | [T6] | [T7] | [T8] | [T9] | [T10] | Weight | Number interactions | Product weight and interactions |
|---------------------------------------|------|------|------|------|------|------|------|------|------|-------|--------|------------------------|---------------------------------------|
| [S1] | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.04 | 1 | 0.04 |
| [S2] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.05 | 0 | 0 |
| [S3] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0.1 | 2 | 0.2 |
| [S4] | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0.01 | 1 | 0.01 |
| [S5] | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.1 | 2 | 0.2 |
| [S6] | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0.2 | 2 | 0.4 |
| [S7] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 0 | 0 |
| [S8] | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0.2 | 3 | 0.6 |
| [S9] | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.05 | 1 | 0.05 |
| [S10] | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 2 | 0.2 |
| Weight | 0.1 | 0.1 | 0.2 | 0.05 | 0.2 | 0.05 | 0.1 | 0.05 | 0.05 | 0.1 | | | |
| Number interactions | 3 | 2 | 1 | 0 | 1 | 1 | 2 | 0 | 2 | 2 | | | |
| Product weight and interactions | 0.3 | 0.2 | 0.2 | 0 | 0.2 | 0.05 | 0.2 | 0 | 0.1 | 0.2 | | | |
| Rank | | | | | | | | | | | | | |
| The sum of interaction | | | | | | | | | | | | 28 | |
| Sum of products | | | | | | | | | | | | | 3.15 |

Table 2d. Whether a particular weakness limits the ability to use the chance?

| Threats/ Weakness | [T1] | [T2] | [T3] | [T4] | [T5] | [T6] | [T7] | [T8] | [T9] | [T10] | Weight | Number interactions | Product weight and interactions |
|---------------------------------------|------|------|------|------|------|------|------|------|------|-------|--------|------------------------|---------------------------------------|
| [W1] | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1 | 0.1 |
| [W2] | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 1 | 0.15 |
| [W3] | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0.05 | 2 | 0.1 |
| [W4] | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.05 | 3 | 0.15 |
| [W5] | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.15 | 1 | 0.15 |
| [W6] | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 2 | 0.2 |
| [W7] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 1 | 0.1 |
| [W8] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 |
| [W9] | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 1 | 0.1 |
| [W10] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0 | 0 |
| Weight | 0.1 | 0.1 | 0.2 | 0.05 | 0.2 | 0.05 | 0.1 | 0.05 | 0.05 | 0.1 | | | |
| Number interactions | 3 | 1 | 1 | 4 | 2 | 0 | 0 | 0 | 0 | 1 | | | |
| Product weight and interactions | 0.3 | 0.1 | 0.2 | 0.2 | 0.4 | 0 | 0 | 0 | 0 | 0.1 | | | |
| Rank | | | | | | | | | | | | | |
| The sum of interaction | | | | | | | | | | | | 24 | |
| Sum of products | | | | | | | | | | | | | 2.35 |

From the data in Table 4 shows that the company should choose the aggressive strategy. This strategy is characterized by the predominant links between the strong and the opportunities. It involves the maximum use of the opportunities and strengths in order to develop dynamically. Advantages of companies in certain areas can be used, because the setting gives you the chance. The strategy of aggressive, you can consider the following procedures such as capture opportunities, involving the search for opportunities that will allow the company to develop and builds on the strengths available to the company, strengthening market position, which involves the use of a positive situation in which there is the company focus on the best products, applies to maintain good condition and top-quality products the company produces. You should also be aware of other products, and strive to improve them.

Literature

[1] Czubała A.: *Podstawy marketingu*. Wydawnictwo PWE. Warszawa 2013. s 273.
 [2] Michalski E.: *Zarządzanie przedsiębiorstwem. Podręcznik akademicki*. Wydawnictwo Naukowe PWN. Warszawa 2013. s 120.
 [3] Penc-Pietrzak I.: *Analiza strategiczna w zarządzaniu firmą. Koncepcja i stosowanie*. Wydawnictwo CH Beck. Warszawa 2003. s 152.
 [4] Czubała A., Jonas A., Smoleń T., Wiktor J.: *Marketing usług*. Oficyna Ekonomiczna, Kraków 2006.