

# The Application of Porter's Five Forces Model on Organization Performance: A Case of Universities in Republic of Macedonia

ISSN 1857-9973

UDC 378.4:005.332.1(497.7)

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## **Abstract**

**Strategic planning is fundamental in the process of deciding where an organization wants to find itself in the future and how it will get there. Strategic planning is a serious analysis of external factors that affect the success and failure of the organization and its activities and aims to solve the problems of the organization and strengthen internal factors. It contributes to the development of the capacity of the organization and to the efficiency in achieving the set goals and tasks. Porter five forces analysis is a framework that attempts to analyze the level of competition within an industry and business strategy development. It consists of those forces close to a company that affect its ability to serve its customers and make a profit. A change in any of the forces normally requires a business unit to reassess the marketplace given the overall change in industry information. The overall industry attractiveness does not imply that every firm in the industry will return the same profitability.**

**Key words:** analysis, competitiveness, market attractiveness, Porter's model, strategy

## **1. Introduction**

The development and application of models within a competitive economy and a complex international market largely dictates the approach to corporate profitability. The models plan in achieving the expected growth and achieving the desired result. Every business strives to increase its ability to adapt to different conditions in the modern global and turbulent environment and to achieve its goals. Thus, through the application of the models, the enterprise creates differentiated reasons for all, where it more successfully implements the defined strategy. Through the application of the models, the enterprise creates differentiated performances on the market, which more successfully implement the defined strategy. Although strategy is supported by vision, mission, goals and directions, it often oscillates between the goal set and the execution of current activity. Therefore, it is necessary to approach the application of models that are aimed at strategic changes and that reflect

positively on the organization [1]. Most of the organizations successfully achieve their goals and achieve the expected results on the market on a consistent basis. We are talking about organizations where the strategy is implemented by constantly revising the results and achievements, in a way that facilitates the implementation of the process and determines the right direction towards the defined goal. In the focus of this paper is Michael Porter's "Five Forces Model" as one of the most significant models that stimulate useful strategic thinking and generation of creative tactical ideas.

## **2. Overview of the analysis subject – “Goce Delchev University” – Shtip**

This strategic analysis was performed using the publicly available informations for the Goce Delchev University and all the other universities mentioned further in this paper. Goce Delchev University in Shtip functions according to the model of an integrated university and is managed by a rector. It was founded by the Assembly of the Republic of Macedonia on March 27, 2007, and in the academic year 2007/2008 it started with the implementation of the first study programs at seven faculties and one high school. Today the University integrates 12 faculties and 3 academies, a total of 15 units that are located in four campuses with more than 100 study programs in three study cycles [2]. The University's mission is to create and transmit knowledge to ensure social and economic well-being and progress of society, prepare students for occupations that require the application of scientific discoveries and professional knowledge, cultural and linguistic diversity, encouraging technological development, development of arts, technical culture and sports [3]. The vision of the university is a leadership role in the field of higher education, as a significant and active participant in the overall progress of society and the economy in the country and in the region. Hence, the strategic goals of the University are understandable and recognizable, such as: providing top education for the students, securing own research staff and material resources, active involvement in the international composition of higher education and science, quality transfer of knowledge and technologies to the economy and society as a whole, continuous building and improvement of the professional reputation of the university.

## **3. Porter's Five Forces Model**

Porter's model of market research or industry analysis, also called Porter's 5-force analysis is a model that allows managers to properly face certain forces from the external business environment. Porter identifies five key forces that affect the competitiveness of a business in a market or industry in which that business exists, which include the competitive rivalry in an

industry, the potential threat of new entrants in the industry, the power of suppliers, bargaining power of suppliers, bargaining power of buyers and the threat of substitute products. The combined power of these forces determines the maximum profit potential within the sector. Profit potential is measured by the ability to make a long-term return on invested capital. Each industry has substantial differences in terms of its maximum profit potential because there is a difference in the joint power of the forces. Hence, the difference in terms of potential between industries is clear.

#### 4. Competitive analysis of "Goce Delchev" University - Shtip through Porter's Five Forces Model

**Table 1.** Competitive analysis of "Goce Delchev" University - Stip through Porter's 5 forces model

Porter's five forces that condition the attractiveness of the industry	Elements of the factors of impact	Rating for each of the sub-factors on the market	Average grade for each of the factors of impact	Threat to market profitability (small, medium or high)
<b>1. Competitive rivalry in the industry</b>	There is a large number of competitors	"High impact – 3"	The Intensity of Rivalry is "medium – 2"  Inversely proportional, medium impact on the attractiveness (high rivalry – low attractiveness)	Medium
	the market growth rate is low	"High – 3"		
	Barriers to exit the market are medium	"Medium – 2"		
	Fixed costs	"Medium – 2"		
	Large differentiation of services	"Medium – 2"		
	Brand identity	"Medium – 2"		
<b>2. Threat of substitutes</b>	Large numbers of substitutes	"High – 3"	Threat of substitutes  "medium-2"	Medium
	Switching costs are high	"Low – 1"		

			<p>inversely proportional</p> <p>medium impact on attractiveness</p> <p>(high threat of substitutes – low attractiveness)</p>	
<b>3. Threat of new entrants (entry and exit barriers)</b>	The need for investment	“High – 3”	<p>Possibility of entry of new competitors on the market is "medium - 2"</p> <p>inversely proportional, medium impact on the attractiveness of the market (high possibility of entry-low attractiveness)</p>	Medium
	Government policy and legal regulations	“High – 3”		
	Strength of the brand	“Medium – 2”		
	Demand flexibility	“Medium – 2”		
	Economies of scale are required	“High – 3”		
<b>4. Supplier Power</b>	Professors as core service providers	“High - 3”	<p>Supplier power “Medium-2”</p> <p>Inversely proportional, (high supplier power – low attractiveness)</p>	Medium
	Suppliers of work software - accounting, analytical, etc.	“Medium - 2”		
	Suppliers of repromaterials and materials - toners, paper, water, coffee, etc.	“Low - 1”		
	Suppliers of equipment such as computers, printers, coffee machines, laboratory equipment	“Medium – 2”		

	Employee transportation suppliers	"Low - 1"		
	Media as providers of information and promotion services	"Medium - 2"		
<b>5. Buyer Power</b>	The concentration of buyers in relation to the sellers is large	"High - 3"	Buyer power is "High - 3"  Inversely proportional,  (high buyer power-low attractiveness)	High
	The level of dependence on the existing channels of distribution	"High - 3"		
	Large number of substitutes on the market	"High - 3"		
	Price sensitivity	"Medium - 2"		
	Differentiation of services	"High - 3"		
	Customers increased access to informations	"High - 3"		

After determining to which extent does each of the five forces affect the profitability (low, medium or high), Table 1 gives a general picture of the attractiveness of the higher education market.

#### 4.1 Competition

Rivalry or the level of competition in an industry determines attractiveness in an inversely proportional direction – *if > the degree of rivalry is low > then > the market is attractive for entry*, and if it is high – the market is unattractive. On the higher education market in Republic of Macedonia according to the analysis, the degree of rivalry is "medium", and such a situation is conditioned by more sub-factors such as its fragmentation, which also means that there are a large number of competitors and that results in high level of competitiveness. The development of higher education in the Republic of Macedonia in the past decade has been characterized by several trends. First, there has been a significant increase in the number of universities, colleges and study programs in the country. According to the Ministry of Education and Science, in 2006 there were three public universities, in 2016 – six (one of which is in the form of a public-private partnership), and the establishment of two more public universities has been in the process (according to data from 2016). Second, a policy of development and promotion of dispersed studies organized by existing universities and faculties has been

promoted. In a period of just a few years, dispersed studies have been opened in 15 cities of the country [4]. The growth rate of the higher education market is low, and the low growth rate of the market makes the existing competitors fight for more market share, increases the competition and reduces the attractiveness of the market. Macedonia has the lowest percentage of all other countries in terms of young students, and thus the lowest enrollment rate in higher education. In Macedonia, less than half of secondary school students go on to university (data for the period from 2015 to 2019) [4]. Regarding higher education, the main problems of Macedonia's universities are related with demographic characteristics and the trends of decreasing of young population and therefore potential students. The number of high school students enrolled in university had its peak between 2004 and 2012, afterward followed process of stagnation and decrease [6]. From the contracts with the suppliers and distributors, in case of possible early termination of the contract, costs for leaving the market arise in the form of fines and penalties. In the higher education market, there is a great differentiation of the study programs that are offered, which reduces the degree of competitiveness and increases the attractiveness. In the last two decades, the higher education system has grown rapidly, from 5 universities with 29 faculties in 2003/2004, to 17 universities (6 state, 1 private-state and 10 private) with 128 faculties in 2018/2019 [5]. Part of the market participants, such as the University "St. Cyril's and Methodius" in Skopje (UKIM), have built strong brands, which automatically limits competition and increases attractiveness. A study has shown that the most popular state universities in the regions within this survey are the University "St. Cyril's and Methodius" in Skopje (UKIM), this being the preference of 24.4 % of the high school students and Goce Delchev University of Shtip (UGD) with a 20.3% preference. The high school students from urban areas and with higher education of one of the parents are more likely to choose study on UKIM. Also, the students with better grades prefer UKIM (41 % of excellent high school students had choose UKIM over 16.6 % of the excellent students who chose UGD) [6].

## 4.2 Threat of Substitutes

The threat of substitutes in the higher education market is at a "medium level" and is manifested not only through the functioning of more than 137 faculties and high schools in our country, but also through the growth of training centers, academies and other organizations for informal education, a trend which arose due to the dynamic development of certain industries, the changes which are inadequately followed by formal education in the world. These are industries related to advanced technologies, programming, social and digital media, as well as web design. Fast-growing industries, transformed markets, impose the same dynamics in education. Academies with narrowly specialized courses have a significant growth in newly enrolled students. The students of these academies vary in terms of previous professional and academic experience: from students who enroll immediately after completing secondary education, students who leave or supplement formal education, to mid- and high-profile professionals who are changing their professional direction. On the other hand, the transition costs are high, in addition to the monetary compensation paid by the users of the transfer service, there is also a time cost for processing the request and implementing the change.

## 4.3 Entry Barriers

In addition to the analysis of existing competitors, *the possibility of new competitors entering the market* should be assessed, which depends on the size of the exit barriers and entry barriers. New competitors increase rivalry and reduce market attractiveness. Entry barriers and the increase in the number of potential competitors and rivalry are inversely proportional,

and with the attractiveness of the industry they are in direct proportion and are relatively high for the following reasons: starting with the offer of services on the higher education market requires investments in property and equipment but also significantly in intangible assets. Government policy and legal regulations largely dictate the entry of new entrants into the market, through the government contribution, amendments to the Law on Higher Education, regulations on cooperation with government institutions, etc., thus acting as a barrier to market entry. The brand strength of certain educational institutions also acts as an entry barrier for new market entrants. The strength of the brand of the University "St. Cyril and Methodius" in Skopje stems from the position of the oldest and most eminent university in the country, recognized internationally as well. In order to achieve lower operating costs, it is necessary to enroll a larger number of students (users of the service), i.e. to achieve economies of scale, which makes it difficult for new competitors to enter.

#### **4.4 Supplier Power**

The bargaining power of the suppliers refers to how strong the suppliers are in imposing their wishes and demands on the company – the buyer. In the higher education sector, the bargaining power of suppliers is at a medium level and the impact on the reduction of profitability is "medium". The greater the bargaining power of suppliers, the lower the attractiveness of the industry. The smaller the number of suppliers, the greater their power. "Goce Delchev" University in Shtip publishes announcements for delegation of a contract for public procurement by conducting an open procedure in order to obtain external resources, mostly from commercial bidders, in accordance with the Law on Higher Education. In larger production enterprises, single purchases are in larger quantities, and it is usual for the supplier to have a wider range of products, which binds the manufacturer to itself even more. As service providers for the university with the highest impact, are the professors as providers of the basic service, there is deficiency of teaching and administrative staff, as well as staff overload in individual faculties.

#### **4.5 Buyer Power**

Bargaining power of buyers refers to their power to impose their demands in the relations with the company - seller. The greater the bargaining power of buyers, the less attractive the market. Buyer power in higher education as a market, according to the analysis, is large and has a "high" impact, and is determined by the following sub-factors: the concentration of buyers in relation to sellers - in the academic year 2019/20, more than 137 faculties and high schools functioned in in country. If we take into account that there are approximately 1,830,000 inhabitants in Macedonia, it is established that approximately for every 13,358 inhabitants in the country, there is one faculty. Comprehensive analyzes of the higher education system that would cover all concerned institutions are missing, so the university does not have enough significant information regarding consumer demands, which places it in a subordinate position. In the case where the seller's products are highly differentiated, the buyer's power is reduced, because they are preferred by consumers, but the university's services are not highly differentiated, which weakens its position in relation to buyers who can easily substitute them with other products. After the analysis with Porter's five forces model, it can generally be said that the level of competitive intensity in the higher education market is at a high level, which inevitably, from the point of view of profitability, reduces the attractiveness of the market. It represents a mature and fragmented market, with a low growth rate, where more profit can be made by increasing the market share, which means that a fight has to be conducted for the end consumer.

## 5. Comparative overview of the ranking of competitors in terms of key success factors in the industry

In order for the analysis of the industry and the market to be complete, it is necessary to make a comparative review of the rank of the competitors in terms of the key success factors in the specific industry, in order to be able to see the progress of the company in relation to the competitors on the market through a two-dimensional matrix (Table 2).

**Table 2.** Comparative overview of competitors' rankings in terms of key factors for success in the industry

Universities		"Goce Delchev" University - Shtip		University "St. Cyril's and Methodius" - Skopje		International Balkan University		Ideal practice - Benchmark	
Key success factors	Ranking	Rate	Strength	Rate	Strength	Rate	Strength	Rate	Strength
<b>Quality of service</b>	20	4	80	4	80	3	60	5	100
<b>Price competitiveness</b>	15	4	60	3	45	2	30	5	75
<b>Promotion</b>	10	2	20	4	40	4	40	5	50
<b>Management</b>	05	3	15	3	15	4	20	5	25
<b>Finances</b>	15	3	45	3	45	4	60	5	75
<b>Total</b>	<b>65</b>		<b>220</b>		<b>225</b>		<b>210</b>		<b>325</b>

The matrix is constructed in a way that several key success factors are first determined and depending on how many are taken into account, they are ranked in order of importance by assigning a total number of 1 or alternatively 100 points from 1 (least important), and then for each of the selected competitors it is evaluated according to the achievements in relation to the key factors on a scale of 1 – 5 (1 the lowest, 5 the highest), after which the scores of the key factors are multiplied by the scores per competitor and the sum for each competitor is represents its relative business strength in relation to others. The selection of the universities that are included in the matrix was made according to the data of the State Statistical Office for enrolled students at the higher professional schools and faculties in the Republic of North Macedonia in the academic year 2020/2021 (first cycle of studies), where the largest state university in the country is "St. Cyril and Methodius" University - Skopje with a total of 22,489 enrolled students, the University "Goce Delchev" - Shtip has a total of 6,951 enrolled students, and the largest private university in the country, i.e. the university that has the most students compared to other private universities in the country, is International Balkan University - Skopje with a total of 2,024 enrolled students [7]. In this analysis, the top-ranked competitor according



to its relative business strength in relation to the other competitors is the "St. Cyril and Methodius" University - Skopje, but in terms of ideal standards, i.e. best practice, all three institutions should work further to improve their performance on the market.

## Conclusion

This paper approaches the concept of strategic analysis of the organization and the industry through Porter's 5 Forces Model, where the key characteristics of the industry/sector are identified, within which the company through its actions responds to the forces of competition and actualizes its profitability. Regarding higher education, the main problems of Macedonia's universities are related with demographic characteristics and the trends of decreasing of young population and therefore potential students. The wider trends in Macedonia also show that state universities are the most popular choices. We notice that the preference of the state universities is related to the perception of higher quality, better accessibility and lower costs. The vision of the "Goce Delchev" University – Shtip is a leadership role in the field of higher education. In order to accomplish this corporate strategy, continued national and international growth of its diverse academic programs is required. Through the basic sources of competitive pressure, the critical strengths and weaknesses of the analyzed subject are highlighted. This makes it possible to better understand the areas in which strategic changes contribute to the achievement of the best possible result, and highlights the areas in which market trends indicate whether they are opportunities or threats.

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