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ANALYSIS OF COMPETITIVENESS OF BUSINESS ORGANIZATIONS

V. Milusheva

Business Faculty, University of National and World Economy, Sofia, Bulgaria

ABSTRACT
Company competitiveness is one of the favorite fields of study of scientists, managers and analysts alike. The progress in terms of theory and methodology is undeniable, yet this is hardly the case with the practical application of the approaches and methodology for evaluation of the competitiveness of business organizations which have been proposed in the theory. The purpose of this article is to propose an approach for evaluation and analysis of the competitiveness of business organizations. The proposition is that the presented approach can be used by practitioners. The proposed approach is based on evaluating companies' competitiveness, benchmarking (against competitors and previous years) and identifying reserves. The value of the competitiveness indicator shows not only the business results of the business organization, but also its place among its other market competitors. At the same time this value allows individual business organizations to assess their ability to benefit from the current impact of the factors of the environment. It also shows the extent to which the company management has chosen the appropriate strategy for functioning and development.

Key words: competitiveness, business organization, methodology, evaluation, analysis.
JEL: L00

INTRODUCTION

In recent years, the topic of competitiveness and its measurement has become very relevant. Such relevance comes as a result of the modern highly dynamic business environment in which business organizations operate. It is worth noting that competitiveness is a fundamental comprehensive indicator and has many dimensions. Many scientists have been expressing their views as to what competitiveness is, how it is evaluated, and there are many recommendations as to how to enhance it. Nevertheless, the scientific literature fails to offer a single definition of competitiveness which hinders the selection of indicators for its evaluation and analysis.

The methodology presented here reflects the complexity of the various aspects of competitiveness of business organizations. The purpose is to integrate the many components affecting the way business organization operate in an efficient manner. This article deals mainly with the dimensions of competitiveness of business organizations and industrial companies in particular. Therefore, I propose the following definition: *business organization's competitiveness is the organization's ability to make a maximum use of the factors of the external environment and successfully utilize the reserves within its own potential over an extended period of time.* The approach toward analyzing competitiveness is based on the views of authors such as Michael Porter (2004), Jan Fagerberg (2004), N. S. Yashin (1997) and Mladen Velev (2004, 2008) which have been adapted at industrial company level. The approach allows for establishing the condition of business organizations, making comparisons with their competitors, and thus to outline a strategy for enhancing competitiveness through the possibilities identified.

1. Some major aspects of the analysis of business organization's competitiveness

Business organization's competitiveness is its ability to compete successfully on the market and to generate economic benefits with respect to its competitors. Competitiveness is a comprehensive indicator which can be analyzed after evaluating various indices. The purpose of business organization's competitiveness analysis and evaluation is to determine organization's condition, its position with respect to its sectoral competitors, to define which factors of the external and internal environment affect the operation of the business organization and the respective competitive position the organization occupies. Based on this, it is possible to determine the level of competitive advantages possessed by the business organization. The level of business organization's competitiveness depends on the competitive advantages possessed by that organization. They, in turn, depend on the efficient utilization of the various types of resources used in production, marketing, after-sale customer service, etc.

Factors affecting a business organization's condition and the many features which the organization has make the selection of indicators for evaluating and analyzing competitiveness difficult. Business organization's competitiveness analysis is a complex task the solution of which requires the selection of methods and methodology suitable for the type of business the respective company is engaged in. The methodology selected must employ key company indicators as it is impossible to take account of all of its features. This requires that the most important indicators from analysis point of view be selected.

Therefore, the evaluation of a business organization's competitiveness depends on the analysis objectives; the ability to collect the necessary data and select the proper methodology. Major principles of competitiveness analysis are *complexity* and *correlation*. Complexity means the need to analyze the totality (complexity) of indicators. Correlation includes the comparative nature of the evaluation, comparison with competitors. When analyzing competitiveness, the following sequence should be employed:
1) determination of evaluation objective;
2) determination of the types of activities considered for the analysis;
3) selection of basis of comparison;
4) determination of measured indicators;
5) evaluation of selected indicators;
6) calculation of a summary indicator (index) of competitiveness;
7) summaries and conclusions on the level of competitiveness.

When beginning to evaluate competitiveness, the key factors of a business organization's success should be highlighted. These are indicators which are carriers of competitive advantages. When evaluating a business organization's competitiveness, its competitive advantages and those of organization's main competitors must be subjected to a comparative analysis. At the same time, any possible risks stemming from the external environment must also be evaluated.

Various approaches exist for evaluation and analysis of a business organization's competitiveness. Part of them is based on quantitative, and others, on qualitative data. For example, marketing approaches to competitiveness evaluation, unlike financial and economic ones, are based mainly on qualitative (usually provided by experts) data. At the same time, the general approach to competitiveness evaluation (both of company and its products) involves the selection of a list of features (indicators), determination of their relative significance (weight in the overall score, %) and assessment of these features (indicators) for the company and its main competitors. Considering the complexity of a competitiveness analysis, an analysis approach is presented which includes an assessment of a business organization's external and internal environmental factors. The approach comprises two stages: external environment study and assessment of current competitiveness.

2. Approach to analysis of business organization's competitiveness

Stage I. Study of business organization's external environment

The objective of this stage is to produce a quantitative evaluation model for the factors of the environment which allows for building a relatively clear picture as to the actual condition of the factors and their effect on organization's competitiveness. The environmental factor analysis is carried out by employing an approach based on quantitative evaluation. Such an assessment is done by experts. The model has been adapted based on Michael Porter's (1) classification of factors for international competitiveness, and, for analysis purposes, the determinants of national advantages are pre-decomposed to components, and the components are decomposed to variables (2).

The quantitative assessment of environmental factors is done by experts to which end the determinants of national advantages are predecomposed to components, and the components are decomposed to variables as shown in Table No. 1. Each variable is assigned a score for the degree of development/availability in the country. The scores range from 1 to 7 (1 – very low degree, 7 – very high degree). At the same time each variable is also assigned relative significance with respect to competitiveness. Significance is determined through scores from 1 to 10 (1 – no significance, 10 – very high significance). Then the so called "weighted value" of the variable is determined, i.e. scores accounting for their significance with respect to industry's competitiveness. It is calculated as follows:

C = S*Z/10, where:

C – weighted value of the environmental variable;

S – score for the degree of development/availability of the variable in a country's environment;

Z – relative significance of the environmental variable with respect to competitiveness.

For better presentation and ease of scoring, **Table 1** can be used.

The logic behind the environmental factor scoring is based on the understanding that a *higher value of the variables*, and therefore higher scoring of the respective components and determinants, is a sign of more favorable company's competitiveness condition as well as more favorable environmental effect, while a lower value signals a worsening condition. A high value of the indicators for *level of costs for using individual resources*, for *corruption level*, for *taxes*, *duties* and *levies* reflects an adverse effect on competitiveness and vice versa (in Table 1 these variables are marked with *). In that respect, their values must be "inverted" before being used further, i.e. the values to be employed are determined as follows:

$$S = \frac{1}{P} \qquad (1)$$

where:

S – "inverted" value of the environmental variable;

P – calculated actual value of the variable.

The scores for each component of environmental determinants are defined as mean values of the weighted values of their constituting variables, i.e.:

$$C_e = \frac{\sum_{i=1}^{n} C_i}{n} \qquad (2)$$

where:

C_e – overall score of the *e* component of environmental determinants;

C_i – weighted value of the *i* variable of the *e* environmental component;

n – number of variables of the *e* environmental component.

The overall scores of the environmental determinants and the overall score of the business environment impact are defined also as mean values of the weighted values of their constituting variables, i.e.:

$$C_d = \frac{\sum_{i=1}^{m} C_i}{m} \qquad (3)$$

and

$$Co = \frac{\sum_{i=1}^{p} C_i}{p} \qquad (4)$$

where:

C_d и C_o – overall scores of the *d* determinant and the overall score of the business environment impact, respectively;

m – number of variables of the *d* environmental determinant;

p – total number of environmental variables.

The end results give an idea of the condition of the environmental factors and their effect on business organization's competitiveness. This serves as a basis for drawing conclusions as to the magnitude of the impact throughout the analyzed period for each individual external factor. Thus emerge the environmental variables and determinants which have a beneficial effect as well as those which hinder competitiveness improvement. This also allows for making comparisons with other companies from the sector. The concurrent monitoring of competitiveness levels for sectoral companies and the scores for the levels of environmental factors for a set of years allows for a more in-depth analysis. Results could support prioritization when developing policies and strategies (3).

Table 1. *Environmental factors score sheet*

Determinants	Components	Variables	Significance for industry's competitiveness (Z) Scores from 1 to 10 (1 – no significance, 10 – very high significance)	Degree of development/ availability (S) Scores from 1 to 7 (1 – very low degree, 7 – very high degree)	Weighted value C= S*Z/10 C*=((1/S)*Z)/10)
1. Factor conditions	1. Work force	1. Availability of skilled labor force needed by the industry			
		2. Level of employee benefits payments *			*
	2. Natural resources – quantity, quality, accessibility	1. Domestic availability of natural resources needed by the industry			
		2. Proximity to foreign suppliers			
		3. Level of cost of materials *			*
		4. Proximity to markets			
	3. Knowledge pool – scientific, technical and market	1. Availability of governmental and private agencies providing R&D beneficial for the industry			
		2. Collaboration with universities in applied R&D			
		3. Available pool of applied R&D results			
		4. Access to information on industry novelties and market trends			
		5. Availability of resources necessary for accelerated innovation including EU funding			
		6. Access to reliable statistical data			
	4. Capital	1. Access to capital needed to finance the industry			
		2. Developed stock exchange facilitating access to capital			
		3. Availability of foreign investments			
		4. Opportunities for EU funding			
		5. Capital acquisition costs *			*
	5. Infrastructure	1. Availability of the necessary quality basic infrastructure – transport system, postal deliveries, healthcare system, housing, cultural institutions, etc.			
		2. Availability of the necessary quality modern infrastructure – communication system, logistics network, payment and fund transfer system, e-commerce system, etc.			
		3. Infrastructure use costs *			*

Table 1 (cont.). *Environmental factors score sheet*

Determinants	Components	Variables	Significance for industry's competitiveness (Z) Scores from 1 to 10 (1 – no significance, 10 – very high significance)	Degree of development/ availability (S) Scores from 1 to 7 (1 – very low degree, 7 – very high degree)	Weighted value (C=S*Z/10)
2. Demand conditions	1. Domestic market	1. Demand level in the domestic market			
		2. Demand growth in the domestic market			
		3. Demand quality in the domestic market - buyers' requirements and degree of overlap with foreign buyers' requirements.			
	2. Foreign markets	1. Demand level			
		2. Demand growth			
		3. Demand quality - buyers' requirements and degree of overlap with foreign buyers' requirements.			
3. Factors accounting for related and supporting industries	1. Suppliers	1. Availability of necessary local suppliers for industry's development			
		2. Level of competitiveness of local suppliers			
	2. Commercial brokers and distributors	1. Availability of specialized local commercial brokers and distributors necessary for industry's development			
		2. Level of competitiveness of specialized commercial brokers and distributors			
	3. Supporting industries	1. Availability of local companies from supporting industries necessary for industry's development			
		2. Level of competitiveness of local companies from supporting industries			
4. Factors related to company's strategies, structure and rivalries	1. Foundation of companies	1. Existence of increased entrepreneurial activity			
		2. Ease of starting up a business in the industry			
	2. Management	1. Management personnel qualification			
		2. Quality of company strategies			
		3. Existence of industry governance and development strategy			
	3. Competition	1. Competitive intensity in the industry			
		2. Opportunity for emergence of new competitors			
5. Government	1. Political and legislative conditions	1. Political priorities promoting industry's development			
		2. Regulatory framework fostering industry's development			
		3. Corruption and crime level *			*
	2. Macroeconomic conditions	1. Domestic and global macroeconomic situation			
		2. Financial stability			
		3. Level of taxes, duties and levies *			*
		4. Population's purchase power			
	1. Governmental support	1. Educational support			
		2. Support in the R&D field			
		3. Export support, etc.			

When determining company's potential to enhance its competitiveness using quantitative methods, account has been taken of external factors by presenting their intensity and impact without interference from the business organization and irrespective of its interests.

The proposed model allows for making external factor analysis. By employing this approach, company management can prioritize their actions on strategies for achieving maximum completive level.

Stage II. Determination of business organization's current competitiveness

Business organization's current level of competitiveness is determined using the indicators for product competitiveness, labor productivity and business organization's growth. The proposed indicators are aligned with the definition of competitiveness of a business organization. These indicators are at various degrees of development in a business organization at various periods of time. Therefore, each value of the indicators will reflect different degree of competitiveness which is in line with the understanding that business organizations' competitiveness has various levels. The higher level of these characteristics for a given organization, the higher that organization's competitiveness and vice versa. High levels of all characteristics of the proposed system are a sufficient condition to conclude that a business organization is functioning successfully. These characteristics reflect the current condition of organization's competitiveness. A condition at a given moment which is an end result of prior efforts which are also consistent with the effects of environmental factors. The said characteristics, although of various significance for the manifestation of the current condition of a business organizations' competitiveness, must be employed in their entirety. This is due to the multifaceted nature of competitiveness and the fact that each separate characteristic of an organization sheds light on a different aspect of its condition. Lack or poor level of any of them points to issues with competitiveness and pushes its overall level down. The system of characteristics of a business organization's competitiveness could be expanded by adding new ones. However this is not recommended since an excessive number of characteristics would make their real-life use for clarifying organization's competitiveness difficult. Their use would become too labor intensive and will entail an increased difficulty for capturing the necessary data. Increasing the number of characteristics will also deepen their interdependence which in turn will affect the accuracy of the end result. Business organization's product competitiveness is a precondition for good financial performance; however it is also a general criterion for the appropriateness and quality of all company efforts undertaken so far in a specific sector. High product competitiveness can be also achieved at the expense of the other business success indicators. For example, it may lead to worse financial performance of an organization if it has been achieved at the expense of an unreasonably high costs (for product improvement, marketing promotion, etc.), or at the expense of a grossly reduced price. That is why it must be combined with the other indicators of organizational competitiveness. Product competitiveness is evaluated using the relative perceived quality and product price indicators. In order to determine the relative perceived quality (RPQ), the following sequence of steps is used:

1) Identification of the most important product features for the consumers (properties, parameters). Product features can be determined by experts.

2) Determination of significance factor (Ksig) for each of the identified parameters, i.e. the relative significance for each of them for the consumers. This is done through consumer surveys where consumers are asked to express their opinion on the significance of product characteristics. To that end, consumers are asked to evaluate each characteristic by assigning a weight ranging from 0 to 1 so that the total of the weights for all characteristics equals 1, i.e. they must distribute the total rating of 1 among all parameters. Significance factors can also be determined by experts.

3) Determination of the degrees (levels) to which each of the significant parameters, as defined by consumers, is developed (present) in the organization's product and the competitors' products to which it is being compared. To that end, the group of consumers is given tables containing the indicators being assessed and a scale of the various degrees of their development from 1 to 7 (a score of 1 represents very low level, and the highest score 7 - excellent). Each user gives their assessment of the organization's product and competitors' products for each of the indicators and results are then summarized. Although with a lower

confidence level, ratings can be determined by experts.

4) Determination of final ratings for each compared product for each characterizing indicator. This is done by multiplying the ratings for each indicator by their respective significance factors. The sum of ratings allows determining a single overall consumer rating for the consumer value of the compared products, i.e. their relative perceived quality.

Table 2. *Determination of the relative perceived quality of the product:*

Number	Features	Feature significance		Score (S) for a product of: (1- very low level, 7 – excellent)				Final score (FS) for a product of:			
		from 1 - low to 10 - very high	K_{sgn}	company (S_c)	competitor 1 (S_{comp1})	competitor2 (O_{comp2})	competitor3 (O_{comp3})	company (FS_c)	competitor1 (FS_{comp1})	competitor2 (FS_{comp2})	competitor3 (FS_{comp3})
1											
2											
3											
4											
5											
6											
7											
			1					∑	∑	∑	∑

When determining the relative perceived quality, the following can be compared using the table: all products competing in that market and the product of the organization, and the product of the major (the strongest) competitor in cases where the competitiveness of only two companies is being assessed.

The assessment of individual product's competitiveness is carried out in accordance with the formula:

$$CP = \frac{\mathbf{RPQ}}{\mathbf{P}} \quad (5)$$

where:
CP – competitiveness of an individual product;
RPQ – relative perceived quality of the product (score);
P – product price (score).

Labor productivity is one of the most important indicators of company competitiveness, yet it is not sufficient to fully characterize it. It must be supplemented by the level of the other indicators, too (4). Furthermore, in order to assess the current competitive state of a business organization, account must be taken not of the growth rate (it can be significant but at a low absolute productivity value) but of the current productivity level (5).It is its higher level, as a result of company resource mobilization and the use of organization's resources, which shows a higher rate of conversion of a unit of resources into products sought in the market and, therefore, higher success rate and competitiveness. Labor productivity (LP) is determined based on the following formula:

$$LP = \frac{Q\mathbf{c}}{Number} \quad (6)$$

where:
Qc – production volume in BGN;
Number – number of production workers

Business organization growth rate Compared to the previous year or other benchmark period is an indicator of independent value. It is a testament of organization's development, of the rise in its potential. A widely recognized economic law is that business success results in growth, and not in reduction in operations. That is why this indicator cannot be ignored. It can be also assessed by the rate of growth of sold products, market share as well as organization's resources. For example, better final financial performance achieved at the expense of lower sales volume cannot be considered a success and is not a positive sign of organization's condition. In addition, the growth of a business organization (whether in terms of resource or products sold and market share) is of great significance for achieving business results in general and is the very driver toward improvement of the latter. *Organization's growth* is defined as a percentage increase compared to the previous year as measured by the following indicators:

- increase in sales volume (revenue) – Is;
- increase in the relative market share compared to the main (biggest) competitor – Ims;
- increase in the value of fixed assets – Iast;
- increase in the number of employees – Ie.

The following formula is used to calculate percentage growth (G):

$$G\% = \frac{Vcy - Vly}{Vly} * 100 \quad (7)$$

where:

V_{ly} and V_{cy} are the levels (values) for the previous and for the current year, respectively.

Business organization' growth (BOG) is assessed by comparison to the previous year by employing the values of the indicators:

$$BOG = w_1 Is + w_2 HIms + w_3 Iast + w_4 Ie \quad (8),$$

where:

w_1, w_2, w_3, w_4 – significance factors.

Before making an overall assessment of business organization's current competitiveness, it is necessary to define scores for the respective indicators by the formula:

In case of *assessing and comparing the competitiveness of a large number of business organizations*, in order to determine their relative position (ranking):

$$S_{ik} = 6 * \frac{(V\,ik - V\,i\,min)}{(V\,imax - V\,imin)} + 1 \quad (9)$$

where:

S_{ik} – score for the i indicator for the *k* organization;

V_{ik} – value of the i indicators for the *k* organization;

V_{imax} and V_{imin} – the respective maximum and minimum level (value) of the *i* indicator for the entire population of analyzed organizations.

In case of *assessing and comparing the competitiveness of only two organizations* (e.g. comparison with the main competitor), the organization with the higher level (value) of the indicator receives a score of 7, and the rating of the other organization is determined in accordance with the following formula:

$$S_{ik} = 6 * \frac{V\,ik}{V\,imax} + 1 \quad (10)$$

Significance factors for the individual indicators are also determined. They show their various relative significance for the value of the respective factor. These can be determined in three ways:

- by experts in a research team;
- by surveying manager's opinion;
- as a result of empirical studies.

Irrespective of the way employed to determine them, when quantifying them it should be taken into account that the sum of the significance factors of all indicators for a specific factor must be 1.

Then, an overall score of business organization's competitiveness (BOC) is determined as per the formula:

$$BOC = w_1 CP + w_2 LP + w_3 BOG \quad (11)$$

w_1, w_2, w_3 – significance factors.

The higher the overall score, the higher the current competitiveness of an organization. The main objectives of the analysis of organization's competitiveness are:

- determination of its current state;
- clarification as to what its competitive position with respect to other organizations in the industry is and how it changed over time;
- determination of its strengths and weaknesses and, based on that, reasoned managerial decisions on future actions are taken.

When comparing two or more organizations operating in a given industry, a higher competitiveness indicator for an organization is also a sign of its higher current competitiveness and it is that much higher as is its indicator. When the indicators of the two organizations of the same industry are equal, then their competitiveness is also equal. The analytical capabilities of these comparisons are widened when they are conducted as per separate indicators and metrics.

Ranking organizations based on their competitiveness is of great importance in order to properly assess and analyze their individual condition and position at a given moment. This can serve as a basis for assessing the effectiveness of past actions and evaluate the quality of management of a business organization. It is also a good basis for planning future efforts.

CONCLUSION

The process of evaluating and analyzing business organization's competitiveness is crucial for defining management priorities. The concurrent monitoring of the levels of the proposed indicators allows for in-depth competitiveness analysis. This can serve as a basis for identifying relationships between the individual indicators over the period in review.

Evaluation and analysis of business organization's competitiveness can also be used for:

- Development of measures aimed to enhance competitiveness of the various company functions;
- Selection of counterparties for joint operations;
- Preparation of a program for increasing market share;
- Implementation of investment activities;

Defining company's response to changing external environment (e.g. regulatory changes, crises, etc.)

Generally, results can be useful when selecting domains of priority for company management action during strategy development.

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