

Identification of Factors Influencing Company's Competitiveness

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Abstract—Fast development of technologies, economic globalization and many other external circumstances stimulate company's competitiveness. One of the major trends in today's business is the shift to the exploitation of the Internet and electronic environment for entrepreneurial needs. Latest researches confirm that e-environment provides a range of possibilities and opportunities for companies, especially for micro-, small- and medium-sized companies, which have limited resources. The usage of e-tools raises the effectiveness and the profitability of an organization, as well as its competitiveness.

In the electronic market, as in the classic one, there are factors, such as globalization, development of new technology, price sensitive consumers, Internet, new distribution and communication channels that influence entrepreneurship. As a result of e-environment development, e-commerce and e-marketing grow as well.

Objective of the paper: To describe and identify factors influencing company's competitiveness in e-environment.

Research methodology: The authors employ well-established quantitative and qualitative methods of research: grouping, analysis, statistics method, factor analysis in SPSS 20 environment, etc.

The theoretical and methodological background of the research is formed by using scientific researches and publications, such as that from mass media and professional literature; statistical information from legal institutions as well as information collected by the authors during the surveying process.

Research result: The authors detected and classified factors influencing competitiveness in e-environment.

In this paper, the authors presented their findings based on theoretical, scientific, and field research. Authors have conducted a research on e-environment utilization among Latvian enterprises.

Keywords—Competitiveness, e-environment, factors, factor analysis.

I. INTRODUCTION

THE modern day global economy is related to dynamics and rapid changes. Changes are taking place at all levels of the society and market – from the individual, company, and sectorial level, to the national and global level. The changes are linked to the variety and the fragmentation of buyers' wishes and needs, introduction of new technologies, company mergers, as well as to other micro- and macro-economic occurrences.

“Changes that are taking place in the economy and on the market stimulate companies, countries, and regions to adapt.

The situation grows ever more complex because the ability to adapt to a changing environment does not guarantee successful operations of a company – a company must be superior in a certain aspect over other market participants, i.e. must be able to successfully compete” [1]. In other words, a company must be competitive.

Donnelly believes that competitiveness is referring to the relative state of individuals, entities, companies, or a country in comparison with other individuals, entities, companies, and nations [2]. Roldugin (*Ролдугин*) describes the concept of competitiveness as the comparative characteristic of consumption and price parameters of particular goods in relation to analogue goods [3]. Competitiveness can also be described based on the combination of price and quality. “[H]aving the same quality and reputation, companies are competitive, if their price is below that of the competition. A company cannot be competitive with quality that is lower than that of the competition, even if it offers a low price. Having a reputation of high quality, a supplier can be competitive even if offering a higher price than that of the competition” [4]. There is an opinion among the specialists that states that competitiveness is related to the proficiency of a company and its management: “...in creation of a proper market of goods and services, solving matters of technology, production, services, personnel, practical skills and knowledge, strategy and calendar planning, as well as in ensuring a proper market policy, fine quality of products and services, a high level of customer service, etc.” [5].

Rhoda Abrams believes that it must always be taken into account that the competition will only become more intensive and the company must be ready for new competition entering the market [6].

Upon summarizing the opinions of the aforementioned and other authors, the authors of the article conclude that three main factors affecting competitiveness can be distinguished – price, quality, and reputation. There are also a number of stakeholders among the factors affecting competitiveness: the market, clients, competitors, partners, etc.

To be competitive means to be superior over the competition and to be able to maintain the position in the long term.

The electronic market is one of the constituents of e-environment. The electronic market, existing parallel to the conventional market, evolves as a result of development of electronic environment. The importance of e-commerce and e-trading is also increasing. Ph. Kotler maintains that the external and internal environment factors affecting e-

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marketing are globalization, new technologies, consumers sensitive to price changes, internet, new distribution and communication channels, etc. [7].

e-Market is characterized with industrial and technological convergence, disappearance of physical borders, changes in the needs of consumers and retailers, smart and creative competitors of the sector, etc. Nowadays, it is difficult for a company to realize how to position and distinguish itself between a competition and a partner or collaboration partner (though, these positions sometimes overlap). The market is changing and will continue to do so [8].

The authors of the article are of the opinion that in order for a modern company to be competitive, it has to operate on both markets – the traditional and the electronic, by adapting to modern-day market requirements.

II. CREATION OF SUSTAINABLE COMPETITIVENESS ADVANTAGE

A company's competitive advantage is the key element constituting its competitiveness. Doole maintains that formerly companies differentiated their goods and services as innovative "news to the world", allowing consumers to gain something new from using the goods or services. That being said, today, it is becoming ever more difficult to find completely new products. Practically all of the major companies today can offer better quality goods and services contributing value to the customers. Therefore, it is no longer the source of a differentiating competitive advantage, because the competition can quickly offer alternative goods at a lower price [9].

Due to the above considerations, the authors of the article believe that companies should address the aspects of sustainability of competitiveness and of competitive advantage. This opinion is also confirmed by world renowned economists, who believe that it is specifically the sustainable competitive advantage that is of importance. Thus, James H. Donnelly believes that a sustainable competitive advantage can be based on assets or skills, or on differing competencies of the organization. Technical superiority, low production costs, proper service for goods/services, location, financial resources, innovative product development, as well as general marketing skills are examples for differing competencies, which affect the formation of a sustainable competitive advantage [10]. Berkowitz considers that a sustainable competitive advantage is the company's stability against the competition in the market niche or several markets [11]. Assael believes that sometimes the creation of a sustainable competitive advantage can be compared to the preparation for a battle with all military elements: "a frontal attack on competition, attempts to circumvent the competitor, a war for depletion, to see who can survive in the market etc." [12].

The authors of the article believe that competitiveness features all characteristics of a company's strategy and a sustainable competitive advantage is a set of tools (see Fig. 1), which helps implementing this strategy.

Based on previously conducted researches on scientific

literature sources and their own entrepreneurship experience, the authors distinguish between the following groups of tools, which constitute a sustainable competitive advantage (subject to the fundamental condition that the company is profitable): a unique product, consumer-oriented service, continuous creative process, complexity/infeasibility of imitating the product, resources, collaboration with all stakeholders, brand/company image, superiority over the competition, as well as a stable market position (see Fig. 1).

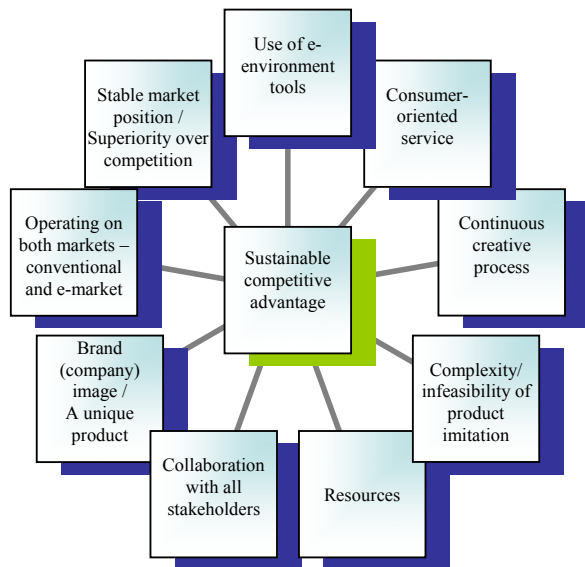


Fig. 1 Elements of a sustainable competitive advantage [author's created figure]

All of these elements, along with a combination of separate elements, can be used in creating a sustainable competitive advantage.

A Unique Product

The company has a unique product or several products that are inimitable and are offered only by this specific company.

1. Consumer-Oriented Service

The company provides its clients with service during sales and after-sales period. Before selling the product, the company provides the clients with all the necessary information about the products demanded by the clients. Companies having client-oriented service provide clients with various consultations about the product, as well as try to find the most suitable solution for the clients. Client-oriented service is also manifested after the end of product guarantee term. To ensure good service, the company may employ various tools: loyalty programs, client relationship management (CRM) systems etc.

2. Continuous Creative Process

This process consists of a creative process and a technological process. As a result of the technological process,

new or improved goods and/or services, production, sales, service technologies are obtained. It is particularly regularity and continuity of this process that can ensure a sustainable competitive advantage for a company over its competition.

3. Use of e-Environment Tools

By using various e-environment tools, a company can compensate for the deficient resources, which is a problem particularly face by micro- and small enterprises.

4. Operating on both Markets – The Conventional and e-Market

A company can increase its sales volume, as well as create new business models, by operating on both markets.

5. Complexity/Infeasibility of Imitating the Product

The more difficult it is for the competitors to imitate the product, the longer it will take for the company to be more competitive. To ensure this feature, a company may employ various solutions – unique production technologies (know-how), unique product components, design and other qualities, as well as can take various protective measures – patents, licenses, design samples, confidentiality contracts, etc.

6. Resources

To create a sustainable competitive advantage, a company needs various resources, which can be classified into four basic groups and which, in essence, are production factors. Nowadays, information, knowledge can be regarded as resources, however one of the important traditional production factors is undertaking, which is the ability to use production factors rationally and effectively to ensure the creation of sustainable competitive advantages.

7. Brand/Company Image

This consists of various elements, such as reputation, quality, consumer experience, recognizability, etc.

8. Stable Market Position

The company holds a stable position in the market, including a market share, loyal customers, trust in the product, etc.

9. Collaboration with all Stakeholders

The company must identify all stakeholders involved in the process of creating a competitive advantage, for instance, suppliers, consumers, partners, distribution channels, etc.

10. Superiority over the Competition

The foundation for superiority over the competition is ensured by a combination of unique abilities, skills, and experience of a company's human resources in exploiting the resources. A company must have various abilities that would enable it to be superior or stronger than the competition in a particular sphere. Image, reputation, physical evidence, and other extended "4P" model elements can be regarded as superiority. Furthermore, a favorable geographical location among other features can serve as the grounds for superiority.

Analogously (see Fig. 2), the authors of the article summarized the elements constituting competitiveness of Latvian enterprises, determined by the result of a study.

In June 2011, a study was conducted on the competitiveness of Latvian companies by researcher Dr. Arnis Skuja from the Stockholm School of Economics in Riga ("SSE Riga"), in collaboration with Nordea Bank. Nearly six hundred Latvian entrepreneurs participated in the study. Upon summarizing the study results, seven key elements forming competitiveness of Latvian companies were determined (see Fig. 2): employee effectiveness, availability of physical resources, availability of financial capital, business strategy, use of communications networks, impact of external environment, as well as operational parameters in comparison with the competition.

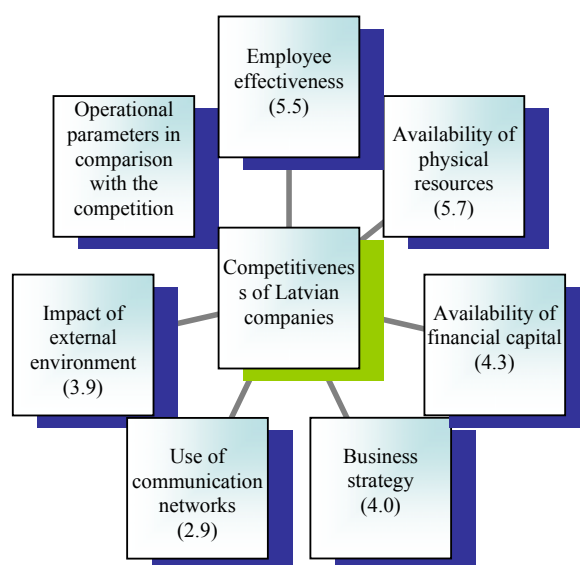


Fig. 2 Competitiveness of Latvian companies [13]

11. Summary of Study Results

All elements were evaluated on a scale of 1 (least used element in entrepreneurship) to 7 (most used element in entrepreneurship). According to the study results (see Fig. 2), the element, which overall is the least used by Latvian entrepreneurs to foster competitiveness, is the use of communication networks, which was evaluated only at 2.9.

Operating parameters in comparison with the competition are also evaluated below the average: at 3.8. Latvian entrepreneurs have evaluated the impact of external environment – namely, how favorable or unfavorable the market, in which the company operates, is for conducting business activities – at almost the same value, i.e. 3.9. The competitiveness of companies to a great extent is determined also by how successful companies are in planning and implementing business strategies. As evidenced by the average study results, a considerable part of Latvian companies with the indicator of 4.0 must reconsider their

choice of strategies. Latvian companies give only a slightly better evaluation – 4.3 – to availability of financial capital, demonstrating that overall there is still plenty of work to be done in this sphere as well. Comparatively better evaluations, respectively at 5.5 and 5.7 in the overall competitiveness contribution, are given to the Latvian entrepreneurs' effectiveness in exploiting human resources, as well as to availability of physical resources.

Upon summarizing the study results, the authors of the article conclude that Latvian entrepreneurs should employ various tools to more actively and effectively promote business competitiveness, in particular *communication networks*, which in essence are the electronic environment.

III. EXTERNAL AND INTERNAL E-ENVIRONMENT FACTORS

A. External Electronic Environment Factors

In order to operate in the market in a sustainable manner, a company must develop along with the environment, in which it operates. The authors of the article concur with the opinion voiced by J. Caune, namely, that "many companies are successfully meeting the market demand, however cannot follow the changes in the environment, believing that the initial success formula will remain effective indefinitely. They do not keep track of the occurring changes in the external environment – and there might arrive a time, when other companies become stronger and can meet the clients' demands better. Due to this reason, such companies often lose their competitive advantages and are forced to leave the market." The external environment consists of a general external environment and of the environment of the sector or competition. Demographical, political, social, cultural, and macroeconomic factors, as well as the development of technologies and globalization describe the overall external environment [14]. In general, the environment is formed by forces and tendencies, which to a greater or lesser extent affect all companies. The main forces present in all sectors are: customers, competition, suppliers, and possible replacement for goods and services [15].

With regard to the competition environment, the authors of this article would like to draw particular attention to the factors related to customers: customers' requirements towards data protection, immunity of customers' personal lives, customers' disloyalty, instability, etc.

The changing market environment brings about new habits, topicalities, and rules, which impose new challenges to entrepreneurship and marketing. All of these occurrences and changes have contributed to a number of comprehensive phenomena: people in the Western nations are wealthier, but they have less time to enjoy their wealth, more seniors are becoming richer and wish to travel around the world, the number of online communities, consumer groups, and political lobbies is increasing, and, even though a considerable part of people already have all that they need, they wish to have even more [16].

The authors of the article believe that the structural and

behavioral model changes of these consumers affect the market transformation, when often a profitable sector becomes unprofitable, while at the same time, companies have an opportunity to uncover new fields of activity.

B. Internal Electronic Environment Factors

The operations of a company (a company's internal environment) are linked to various aspects. It is accustomed to consider that changes to the external environment determine the company's needs for changes in its internal environment. However, the company's internal environment can trigger changes in the company as well [17]. The authors of the article believe that the creation of a company's competitive advantage, insofar as it applies to all activities of the company, serves as the grounds for changes of a company.

The electronic environment also consists of external and internal environment. Due to the peculiarities of e-environment, these factors differ from the conventional environment factors.

The authors of the article believe that the external e-environment factors consist of external factors of the traditional environment and specific e-market factors. Whereas, the internal e-environment factors are mainly linked to technologies, know-how, e-marketing, e-commerce, e-entrepreneurship, etc.

The internal and external e-environment factors affect a company's activities in two ways: positively – promotes the formation of competitive advantages and ensures a possibility to increase the sales volume owing to e-environment; adversely – in the opinion of the authors – can be manifested more as a threat, creating circumstances, which impair the company's competitiveness and create obstacles for entrepreneurship.

Based on an analysis of scientific literature, as well as on studies conducted by them, presented in several scientific publications of the doctoral thesis of one of them, covering the problems of e-environment, the authors of the article propose a classification of the said factors. The electronic environment factors having a positive impact are summarized in Table I.

Factors that, according to the opinions of the authors of the article, can generate conditions, which enfeeble a company's competitiveness and bring about obstacles and encumbrances for conducting entrepreneurship, are summarized in Table II.

TABLE I
E-ENVIRONMENT FACTORS POSITIVELY AFFECTING A COMPANY

Internal e-environment factors	External e-environment factors
Individual (digital) knowledge of employees	Uninterrupted access to e-market
Developed e-infrastructure of the company	Compression of time and space dimensions
A company's online website serving as a sales and marketing tool	Capacity of information and data processing
Arranged and optimized internal processes of a company	Operational transparency
Company's presence in online social networks	Virtual links
Availability of company's products in e-environment	Culture globalization
Electronic payment options are ensured	Market globalization
Company's communication with consumers online and in stakeholder mode	Brand globalization
Client service level	Increased importance of intellectual property
Use of indexing in search engines	Increased importance of intangible assets
Factor of economy	Factor of economy
Etc.	Changes in global purchasing ability
	Community formation and their impact on market changes
	Communication speed
	Etc.

TABLE II
E-ENVIRONMENT FACTORS ADVERSELY AFFECTING A COMPANY

Internal e-environment factors	External e-environment factors
Intellectual capital costs	Rapid increase of information volume
Data security	Immediate imitation of new products
Digital experience of a company's personnel	Legislative framework lagging behind technologies
Inability of employees to perceive and process large amounts of information	Illegal copying of brands
Non-acceptance of e-environment tools by employees	Religious differences
Costs of establishing and introducing infrastructure	Complexity of price control processes
Obsolete information about the company online (website, blogs, etc.)	Increasing requirements for data protection
Language barrier	Increasing requirements for personal data protection
Etc.	Client migration
	Disbalance between consumer generations and their habits
	Cybercrime threats
	Etc.

The table summarizes internal and external e-environment factors, indicating that the use of e-environment provides a strong potential for entrepreneurship favoring competitiveness and helping to create new competitive advantages for companies. At the same time, e-environment demands that the company's management and employees have specific knowledge and skills that require constant improvement and development, because e-environment is dynamic and constantly developing.

The defined factors are indicative of the predominant role

of consumers in today's market relations. Previously, companies "hunted" for consumers, but now – the consumer has turned into "the hunter" [18]. Companies have moved away from the "produce-sell" philosophy [19]. Companies should be looking more broadly at the functions of consumer values and strive to satisfy the customers' needs in a more convenient way, by reducing the time and energy wasted by consumers on searching, ordering, and receiving products.

IV. A STUDY OF THE USE OF E-ENVIRONMENT IN ENTREPRENEURIAL ACTIVITIES OF LATVIAN COMPANIES

The aim of the survey conducted by the authors of the article was to find out the e-environment tools that companies use, the intensity of their use, skills required in handling them, as well as to find out the entrepreneurs' knowledge level and overall attitude towards e-environment tools. For this purpose, the authors have performed a descriptive processing of answers and factor analysis in SPSS 20 environment.

Questions of the survey questionnaire and the selection of main factors are based on the European Commission's guidelines for the use of e-environment in entrepreneurship, assessment of various sources of literature, opinions of e-environment experts and related associations, and on the results of the study on the use of e-environment, etc. (see Table III).

TABLE III
JUSTIFICATION FOR QUESTIONS OF THE QUESTIONNAIRE

Title of question section	Description of question section	Justification/source of questions
First question section (5 questions)	Questions related to the use of e-environment tools in entrepreneurs' hip	P. Timmers [20]; Laudon K.C. & Traver C.G. [21]; Hart J. & Daoust B. [22]; P. Evans & T. Wurster [23], A. Kambil [24], J. Gebauer & M. Zagler [25], eMarketer [26], G. Adomavičius & A. Tuzhilin [27], Cable & Telecommunications Association for Marketing [28]
Second question section (five questions)	Questions about the digital knowledge level	A. Tversky & D. Kahneman [29], J. Margretta [30], M. Porter [31], P. Timmers [32], K. Laudon & J. Laudon [33], eMarketer [34], Briks I. [35], G. Adomavičius & A. Tuzhilin [36], P. Pavlou [37].
Third question section (5 questions)	Descriptive structural questions	Action plan of the European Union for doubling the volume of e-trade until 2015 [38], SKDS [39], TNS [40], Central Bureau of Statistics of Latvia [41], Latvian Internet Association [42].

The survey period: May–October 2012. Number of respondents: 526 Latvian companies. The respondent sample was formed of 54 % men and 46 % women. The distribution of the interviewed companies in the sample by their size according to the EU classification is as follows: 44 % - microenterprises, 52 % – small enterprises, 3.2 % – medium, and 0.6 % – large enterprises. The respondent distribution by positions: 40 % of the respondents are employees who are well informed of the company and its processes. Company managers and division managers, 15.2 % and 17 %

respectively. Among the respondents, there were also 4 % company owners, 15 % owners, who are simultaneously also an employee at their company; as well as 8.3 % owners, who are concurrently also a manager at their company.

As a result of factor analysis in processing the survey results in SPSS 20 environment, 36 factors have been obtained. The task of the authors is to classify these factors. Factor classification means that the factor has to be given a name, under which the included variables can be consolidated. Factor classification is encumbered by the fact that the variables are not homogeneous. The factor includes several answers to questions or variables, each of which has a correlation coefficient that measures the linear relation between the variables. If the value of the correlation coefficient by module is approximating zero, then the linear correlation is weakened. If the value is around minus 1, it means that there is a reversely proportional link between the variables and the correlation is strong.

Upon performing an analysis of the variables, the authors of the article reached a conclusion that the obtained result is too broad and difficult to identify, hence it encumbers naming of factors. The authors have increased the statistical significance and obtained the least number of factors with the least possible number of variables in them. The performed step can be compared to selection of parameters by a parameter p-value (or Sig. in SPSS environment). Statistical significance values usually range between 0 and 0.1. To increase statistical significance, such parameters must be selected, which have the p-value or Sig. greater than 0.05 or 0.01. As a result of the manipulations, 10 factors have been obtained. After reducing the factors, the obtained result is satisfactory, because the dominant variable "aim of use of e-environment tools" – is the main aspect interesting the author of the paper.

Taking into account the obtained variables and the correlation coefficients (see Table IV), the authors of the article have performed their interpretation and prepared classification of factors:

- 1) Understanding of managers and management about the ways of using e-tools;
- 2) Understanding the communication tools and their use in entrepreneurship;
- 3) Understanding e-business models (the author's remark: taking into account the variables in this factor, as well as the correlation coefficients, it can be concluded that the companies do not have a clear understanding of the meaning of e-business models);
- 4) Company's communication with stakeholders online;
- 5) Company's online website, which serves as a sales and marketing tool (the author's remark: companies have these tools, however they do not have understanding about the purposes of these tools or how to use them);
- 6) Use of e-environment tools in market and consumer studies (the author's remark: companies are aware of the existence of such a tool, however they do not know how to use it);
- 7) Understanding services offered by the state (the author's

remark: the factor is affected not merely by a weak use of tools, but also by shortcomings of several "e-government" tools, which encumber their use);

- 8) Acceptance (reception) of e-environment tools among employees;
- 9) Diversity of e-environment tools in a company;
- 10) Use of e-services offered by the state for business and individual needs.

The authors of the article conclude that the determined factors affect company competitiveness.

TABLE IV
FACTORS DETERMINED AS A RESULT OF THE SURVEY IN SPSS 20
ENVIRONMENT

#	Factor title	Number of variables (questions) per factor	Correlation coefficient (average)
1	Understanding of company managers and management about the ways of using e-tools	7	,917
2	Understanding about communication tools and their use in entrepreneurship	3	,725
3	Understanding about e-business models	1	-,869
4	Company's communication with stakeholders online	4	,795
5	Company's online website, which serves as a sales and marketing tool	1	,701
6	Use of e-environment in market and consumer studies	3	-,770
7	Understanding about state-offered services	5	-,852
8	Acceptance (reception) of e-environment tools among employees	2	,825
9	Diversity of e-environment tools in a company	2	,811
10	Use of e-services offered by the state for business and individual needs	2	,736

Based on the study results, the authors conclude that in general companies use e-environment tools. However, the lack of information and poor knowledge of the entrepreneurs regarding the use of e-environment tools in entrepreneurship are evident. A positive conclusion is the fact that SMEs realize that e-environment tools can be used to replace/supplement the insufficient or lacking resources. Companies also wish to obtain knowledge and learn how to apply e-environment tools for entrepreneurial needs. Several answers point to partial acceptance of e-environment tools by company managers and employees, which is a hindrance to proper use of these tools.

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