

THE APPLICATION OF E-COMMERCE TECHNOLOGIES FOR THE DEVELOPMENT OF TRADE IN FOREIGN MARKETS

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Abstract. The article discloses the application of e-commerce technologies for the trade development in foreign markets. This topic is popular between authors, who published books about trade: 49% of authors give their attention to the trade in foreign markets. The study presented bellow contains three different aspects. First, model, which can be used for the comparison and selection of foreign markets, is suggested. Second, the number of enterprises, which sell goods using e-commerce technologies, is identified. Third, the formulated model is applied to case study seeking for practical evidence.

The article is based on comparative and multi-criteria analysis. For the comparison of foreign markets multi-criteria evaluation method COPRAS is used. This method has been applied for the comparison of 39 foreign markets, which are located in Europe, Asia, Africa, North and South America.

The results of the study can be used by on-line sellers, which are dealing with the problem how to compare foreign markets. It is defined that the top ten most attractive foreign markets for selling items are located in European Union.

Keywords: e-commerce, trade, foreign markets, COPRAS, “business-to-consumer”, the spread of e-commerce technologies.

Jel: D70, F16, L10, N70.

1. Introduction

The world has been changing: traditional economies are replaced by digital economies placing greater focus on knowledge and technologies.

E-commerce technologies are given exclusive significance under such conditions. Enterprises introduce e-commerce technologies with an aim to improve their methods of trade.

The application of e-commerce technologies is significant for enterprises dealing in trade, because e-commerce is usually more efficient than common trade forms. This also means that there is a demand to create and use in trade such instrumentation that

would be used to compare foreign markets. The usage of such instrumentation is extremely important nowadays when the crisis is deepening and business try to reduce costs, is looking for new foreign markets.

Research objective is the comparison of export markets, where e-commerce technologies can be used effectively. This is used here in order to get the choice among several or more alternatives of foreign markets. The results of the study show that the comparison of foreign markets is important for on-line sellers.

The research tasks are formulated for the study: 1) to present methods and criteria, which can be used for the comparison of foreign markets, 2) to formulate model, which can be used for the comparison of foreign markets, 3) to disclose the number of enterprises, which sell goods using e-commerce technologies, and 4) to provide the practical application of proposed model.

The article is based on comparative and multi-criteria analysis.

The scientific novelty of the study – formulated model, which can be applied for the comparison of foreign markets. The proposed approach can be useful for on-line sellers, which are dealing with the problem how to compare foreign markets.

2. The concept of e-commerce

E-commerce can be described as the usage of electronic networks (Internet and electronic data interchange (EDI) networks) for buying and selling goods. In literature quite often the broader term is used. E-commerce is considered as a concept for trade based upon products and services that are being marketed, contracted, and paid for over the Internet (Bergendahl 2005). E-commerce is considered, as employment of electronic networks for simplifying and expediting the purchase-sales process of goods (Šarapovas 2005).

There are several ways to develop trade by applying e-commerce technologies:

- a trade centre on the Internet. Consumer can visit the website of trade centre and choose item from a wide range of stock. A range of goods in supermarket is limited to the items of 40–60 thousand whereas there are no technological limitations of having wider range of goods in such shop;
- a producer on the Internet. Consumers can easily find, choose and even make a “purchase-sale” deal with a direct producer online. This encourages more and more consumers to buy goods directly;
- trade with the help of electronic network. More and more permanent business partners use electronic networks to receive orders, transfer the documents of payment and transport. Data received via electronic networks are integrated

into the information systems of enterprises.

There are two main e-commerce solutions:

- “business-to-business” solution. It is described as the realization of electronic links between two or more enterprises. It is the most prevalent e-commerce solution all around the world, being developed since the origins of e-commerce and all the time being one of the main e-commerce development stimulators (Barnes 2007; Kesthong et al. 2007; Kvainauskaitė et al. 2005, etc.).
- “business-to-customer” solution. It includes transactions between the retailer and consumers of final goods (Cao et al. 2005). The main form of “business-to-customer” solution is electronic store. The main principle of this business solution is connected with the efforts, which the company makes in order to give complete necessary information about its products to present or potential consumers, allowing them to order them, to pay for them and expect future services (Becker 2007; Jovarauskiene et al. 2009; Kornum et al. 2005, etc.).

E-commerce distinguishes for certain peculiarities: a customer can get purchases in any country worldwide any day, at any time; the prices of products are usually lower than in traditional shops; also consumers have goods delivery (Andersone et al. 2009). The choice of item prices by e-shop can match the prices of a traditional shop (Khosrowpour 2006), and delivery price can cover item delivery costs.

The implementation of e-commerce technologies gives many new opportunities. In comparison to traditional trade, expenditure incurred by selling goods on-line can be bigger or smaller. Smaller activity expenditure can be determined by formation of a customer's made orders, smaller trade expenditure, less money required for advertisement and exposition equipment. Bigger activity expenditure can be determined by order delivery, introduction and maintenance of electronic store.

E-commerce provides more opportunities to conduct transactions and encourage the development of new forms of trade. Author thinks that the main reasons encouraging enterprises to have electronic store are extra income, and smaller administration expenditures. Due to this in the further study the application of “business-to-consumer” solution will be discussed only.

This means also that the usage of e-commerce technologies is the main factor, determining the perspectives of trade development.

3. The application of e-commerce technologies for the development of trade in foreign markets

In this section research methodology is presented. The presented methodology in

which provided the following empirical researches:

- A) Research in which the number of enterprises, which sell goods using e-commerce technologies is identified. During research 2599 enterprises located in 157 foreign countries are examined. By using various statistical analysis methods, the number of enterprises, which sell goods using e-commerce technologies in foreign countries, is identified. In order to avoid test errors, the application practices of e-commerce technologies are presented only for those foreign markets where the number of trade enterprises, which are included in Planet Retail (2008) database, is significant.

For this research non-random sampling is used. The sample size is determined by using on-line calculation. The results were showed that confidence interval is equal to 3.14%.

The research is conducted to reveal the usage of "business-to-consumer", and to get inputs for one of the criteria, which will be included into formulated model.

- B) Research in which the comparison of foreign markets is provided. For the comparison of export markets, multi-criteria method COMplex PROportional ASsessment of alternatives (COPRAS) and the set of five criteria is used.

During the application of method direct and proportional dependences are assumed and the alternatives, values and weights of criteria are adequately described (Turskis et al. 2009). Among Lithuania scientists COPRAS method is used widely (for example, by Andriuškevičius (2005); Ginevičius et al. (2009); Ginevičius et al. (2008), (Peldschus 2009)).

The criteria differ in optimization direction (Turskis et al. 2009). Maximising and minimising criteria.

The application of multi-criteria methods depends on the calculation of criteria weights. Usually for the estimation of weights experts are used. When the weights of criteria are entered, the matrix is normalized. In order to avoid the difficulties caused by different dimensions of all criteria, the normalization is used (Migilinskas et al. 2007).

New normalised matrix is built. The purpose of this phase is to receive normalised values. The sum of normalised values of each criterion is always equal to initial weight of criterion. In other words, to initial weight of criterion is distributed between all alternative options according to their values. Usually, the sum of normalizes values is equal to one.

The maximizing and minimizing values are calculated for each comparative variation.

The relative importance of comparative variations is determined by describing them as positive and negative characteristics. At the end generalized criteria (final outcome) is calculated. The higher value of generalized criteria shows the higher place in priority row.

3.1. The comparison of foreign markets

The comparison of foreign markets is very important to on-line sellers. Talking about foreign geographic market, first it is necessary to take into account that commodities offered on-line by enterprises are accessible from any place in the world. But still some geographic restrictions are used by on-line sellers to different foreign markets.

In the literature these main methods, which can be used for the comparison of foreign markets, are presented:

- Market estimation methods. Other methods are market estimation methods. The criteria used in market estimation vary and may include the indicators of growth, size, etc. Foreign markets are evaluated on the basis of several criteria; later the markets with the highest score are selected.
- Market grouping methods. For the application of these methods a wide variety of political, economic and social indicators are used. These general country-based indicators are used seeking to identify and to group countries, which have different development levels.

There are two groups of indicators:

- General indicators, which are characterizing market environment. For such analysis Douglas et al. (2011) suggest using economic, demographic, socio-cultural, geographic and/or situational consumption indicators.
- Specific indicators, which include the features of products. The analysis of these indicators is not a part of this study.

Market grouping methods are based on the postulate that the most attractive markets for an enterprise are those, which most closely resemble the markets it has already penetrated assuming that successfully.

Market estimation methods are subdivided into the evaluation of (Papadopoulos et al. 1988):

- Total demand potential. These methods include indicators characterising economic development and political stability. They are used when statistical data about market is not available. Sometimes market quality index is used. This index includes macro indicators such as national income, electricity consumption and number of technology in the market. The total demand potential of foreign

market can be evaluated by dividing the population of foreign country from the population of domestic market and by multiplying by the production amount of domestic market (in tons or units).

- Import demand potential methods. Methods used for the estimation of import demand potential typically use trade statistics for specific commodity. One of these method (is called multi-criteria method proposed by the UNCTAD and GATT) analyses markets in terms of size of imports, growth of imports, market coverage (imports versus exports) and competition. Another method (which uses the shift-share approach) relies on the identification of relative changes of import shares in various countries. The analysts calculate the average growth rate of imports and compare actual growth rate of each market with the calculated average. The main disadvantage is that for the evaluation of import demand potential only two criteria are used.

Finally, the analysis of various methods shows that multi-criteria method can be used for the comparison of foreign market. In addition, the conclusion can be drawn that if statistical data is available then general indicators of foreign markets and import share approach can be used seeking to compare foreign markets. The analysis of criteria shows that the size of import, the growth of import, and the competition in the market can be used as the most important criteria.

For the comparison of foreign markets, where enterprises have the purpose to use e-commerce technologies for selling goods, multi-criteria method COPRAS and the set of five criteria is used. So, the set consists of such criteria:

- a) The size of import (import value compared with gross domestic product (GDP), in percentage);
- b) The number of internet users in market (from all inhabitants, in percentage);
- c) The percentage of enterprises, which sell goods using e-commerce technologies;
- d) The decrease of import (in percentage compared with previous years; criteria get value when import value compared with GDP of actual year is smaller than in previous year, over wise criteria value is zero);
- e) Not enough spread of e-commerce technologies between enterprises in foreign market (in percentage). It is a vector distance between current level and expected level, which according Amazon.com practice has to be at least 10%.

The criteria presented above are divided into such two groups:

- The set of criteria, which describe the openness of markets for import (a and d criteria);

- The set of criteria, which describe the level of the spread of e-commerce technologies in foreign markets (b-c and e criteria).

The author of this paper thinks that the set of criteria can describe the markets, where it is possible to use on-line business-to consumer solutions in efficient way.

Below is the presentation of the model, which can be used for the comparison of foreign markets (see Fig. 1).

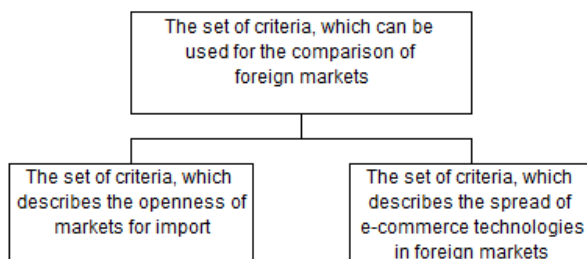


Fig. 1. The model, which can be used for the comparison of foreign markets (Source: Burinskienė et al. 2011)

Each decision maker (this time on-line seller) has own preferences, but in most of cases is interested in foreign markets, which are attractive economically. Quantitative evaluation of such aspects allows defining their impact to the final decision.

Each alternative in the quantitative evaluation is described by five criteria (Table 1).

Table 1. The estimation of weights by experts (Source: own calculations)

Criterion	Experts							Sum
	No1	No2	No3	No4	No5	No6	No7	
The size of import (%) (import value compared with GDP)	4	2	2	5	1,5	5	4	24
The number of internet users in market (%)	2	4,5	3	1	3	2	1	17
The percentage of enterprises, which sell goods using e- commerce technologies (%)	5	4,5	4,5	4	5	3	5	31

The decrease of import (%)	3	3	4,5	3	4	4	3	25
Not enough spread of e-commerce technologies (%)	1	1	1	2	1,5	1	2	10
Sum (<i>c</i>)	15	15	15	15	15	15	15	105
Average (\bar{c})								21

Bellow the direction of each criterion – maximizing or minimizing (i.e. max or min in column 2), is defined (Table 2).

Table 2. The information about criterion (Source: own calculations)

Criterion	The direction of criterion	Deviations from the average (<i>S</i>)	The weight of criterion
The size of import (import value compared with GDP) (%)	Max	6	0.224
The number of internet users in market (%)	Max	20	0.157
The percentage of enterprises, which sell goods using e-commerce technologies (%)	Max	100	0.295
The decrease of import (%)	Min	12	0.233
Not enough spread of e-commerce technologies (%)	Min	132	0.090
Sum		271	1.00

For the estimation of weights 7th experts were used (Table 1). For the checking consistency of experts' judgments the coefficient of concordance is calculated.

The sum of scores is calculated according such formula:

$$c = \sum_{j=1}^r c_{ij} (i = 1, \dots, m), \quad (1)$$

here m is the number of alternatives; r – the number of experts.

The coefficient of concordance W is calculated according this formula:

$$W = \frac{S}{S_{\max}}, \quad (2)$$

here S is the sum of deviations, which shows difference from average squared, S_{\max} – the sum of deviations in ideally agreed case.

The sum of deviations is calculated according the formula:

$$S = \sum_{i=1}^m (c_i - \bar{c})^2, \quad (3)$$

here \bar{c} – overall average is calculated.

The overall average is calculated according such formula:

$$\bar{c} = \frac{1}{2} r(m + 1), \quad (4)$$

The sum of deviations in ideally agreed case:

$$S_{\max} = \frac{r^2 m(m^2 - 1)}{12} = \frac{49 \cdot 5 \cdot (25 - 1)}{12} = 490,$$

$$W = \frac{S}{S_{\max}} = \frac{271}{490} = 0.55$$

The significance x^2 for the coefficient of concordance is calculated as follows:

$$x^2 = Wr(m - 1) = 0.55 \cdot 7 \cdot (5 - 1) = 15.49$$

Random number x^2 is distributed under x^2 with $v=m-1$ the degrees of freedom at chosen significance level α (in practice α is equal to the value of 0.05 or 0.01). The assessments of experts are aligned. It is revised, if x^2 value is greater than x^{cr} value (x^{cr} is presented in the distribution table and is equal to 9.49 when the degree of freedom is equal to $v=7-1=6$ and significance level α to 0.05).

The coefficient of concordance is equal to 0.55 (its significance is equal to 15.49 and is greater than the critical value x^{cr}). This shows that experts' judgments are in a good agreement (Podvezko 2007). Such data can be used for further calculations (Podvezko 2005).

Finally, the weights of criteria are placed into the formulated model. The criterion, which represents the number of enterprises, which sell goods using e-commerce technologies, received the highest score.

3.2. The percentage of enterprises, which sell goods using e-commerce technologies

For the formulated model it is necessary to figure out the percentage of enterprises located in different foreign markets, which sell goods using e-commerce technologies (Burinskienė 2010).

World-wide "business-to-consumer" is used by 7% of enterprises (Crito 2005). With respect to the application of "business-to-consumer" technology, it is noted that the highest potential is in Asia (44% of Internet world-wide users in Asia and their number is increasing rapidly). Progress has been going in N. America – 74% of the continent's population has Internet access. "Business-to-consumer" has conditions for rapid development in S. America – the number of Internet users increased rapidly from 8% in 2000 to 33% in 2008. "Business-to-consumer" steps to the European Union, Oceania, and Australia. In European Union 60-61% of the population has the access to the Internet, and 33% of the population buy products on-line (Eurostat 2008). Finally, in Africa only 5.6% of the continent's population has Internet connection.

However by seeking to develop trade, the "business to consumer" solution has to be applied more actively by enterprises in all continents.

After revision of statistical databases the author has drawn conclusion that there is no statistical database, which covers the data of 140 foreign markets. Due to this author

made a research. Based on Planet Retail database covering 2910 trade companies (in 140 geographic markets of the world), an assessment is made how enterprises apply e-commerce technologies (Planet Retail 2008) (Table 3).

It is noted that the application of e-commerce technologies differs in various foreign markets. It has been revealed that in 65 countries (from 157 world countries) trade companies which apply e-commerce technologies also apply “business-to-consumer” solution.

Table 3. The percentage of enterprises, which sell goods using e-commerce technologies (Source: Planet Retail (2008) and own calculations)

By country	Number of trade enterprises, which are included in Planet Retail database	Number of trade enterprises, which sell goods using e-commerce technologies	The percentage of enterprises, which sell goods using e-commerce technologies (%)
Belgium	56	10	18
The Netherlands	66	10	15
Sweden	30	10	33
Luxembourg	25	3	12
Finland	18	5	28
Czech Republic	35	4	11
Denmark	32	7	22
Austria	38	8	21
United Kingdom	95	31	33
France	68	19	28
Germany	77	12	16
Hungary	33	3	9
Norway	26	6	23
Singapore	23	4	17
Switzerland	55	8	15
Japan	69	20	29
Poland	45	6	13
Canada	70	11	16
Malaysia	25	1	4
New Zealand	31	5	16
Ireland	35	7	20
Portugal	42	9	21
Chile	15	3	23
Spain	80	17	21
Italy	68	11	16
Australia	57	8	14
Korea, South	22	6	27
Thailand	30	3	10
United Arab Emirates	24	0	0
South Africa Republic	16	3	19
India	37	5	14
Mexico	54	9	17
China	92	13	14
Greece	25	4	16
Philippines	19	0	0
Brazil	38	5	13
Turkey	28	1	4
Saudi Arabia	18	0	0
Indonesia	20	0	0

During the comparison of 39 foreign markets it is defined that the top ten most at-

tractive foreign markets for selling items are located in European Union.

3.3. The practical evidence of formulated model

In the paper the developed profile is applied to case study looking up for practical evidence. The formulated model has been applied for the comparison of 39 foreign markets, which are in Europe, Asia, Africa, North and South America. To assess the practical relevance of presented model the data of Amazon.com (2009), Eurostat (2009), WTO (2008) is used (Table 4).

For practical evidence of formulated model Amazon.com case study is used. In the website of Amazon.com it is stated that Amazon.com sells on-line 200 thousand items. The main goods such as books, music, videos are sold all over the world, but other goods are sold only in limited number of foreign markets (usually to 35 markets). It is also mentioned that the warranty of manufacturer may not be valid in other countries; also goods may not have instructions or safety warnings for a specific language; the product may not meet the standards of other markets, specifications and labelling requirements, as well as products may not meet the requirements for electrical goods, which are valid in other foreign markets. In this case, the buyer is responsible for assurance that the product can be lawfully imported into domestic market.

Amazon.com selected for the trade these 35 foreign markets, which are: Australia, Austria, Belgium, Brazil, Canada, China, Chile, Czech Republic, Denmark, Holland, India, Italy, Japan, Luxembourg, Malaysia, Mexico, N. Zealand, Norway, Philippines, Poland, Portugal, S. African Republic, Saudi Arabia, Singapore, Spain, Sweden, Switzerland, Thailand, United Arab Emirates, and United Kingdom.

It may be noted that countries such as Greece, Turkey, S. Korea, Indonesia, and others, which the volume of imports is quite significant (these markets are among TOP 50 importing countries (WTO 2008)), are not priority markets of Amazon.com.

The comparison of foreign markets shows that such markets as Greece, Turkey, Indonesia have got places from 34 to 39, and S. Korea got 29th place. The author suggests adding S. Korea to the list of priority markets. The results of this study also show that top ten the most attractive foreign markets for selling items are located in European Union.

In comparison Gaston-Breton et al. (2011) made empiric research and found out such the most attractive markets are Belgium, The Netherlands, Sweden, Luxembourg, and Finland. This also shows that presented model gives similar results. This shows that a set of criteria, which is used for the comparison of foreign markets, can be used in future. The results of the study show that the comparison of foreign markets is important for on-line sellers.

Table 4. The comparison of foreign markets

By country	The size of import value compared with GDP (%)	The number of internet users in market (%)	The percentage of enterprises, which sell goods using e-commerce technologies (%)	The decrease of import (%)	Not enough spread of e-commerce technologies (%)	The size of import of import (%)	The number of internet users in market (%)	The percentage of enterprises, which sell goods using e-commerce technologies (%)	The decrease of import (%)	Not enough spread of e-commerce technologies (%)	The sum of values in significance matrix	The sum of values minimizing criteria	The sum of values minimizing criteria	The relative importance of comparative options	Priority row
Belgium	0.22	0.16	0.30	0.23	0.06	0.024	0.013	0.006	0.000	0.000	0.043	0.048	0.000	1.00	0.0468
The Netherlands	0.65	0.87	0	0.077	0.016	0.016	0.016	0.005	0.000	0.000	0.038	0.031	0.000	1.00	0.0421
Sweden	0.34	0.86	0	0.009	0.016	0.014	0.015	0.011	0.000	0.000	0.036	0.038	0.000	1.00	0.0368
Luxembourg	0.54	0.82	0	0.014	0.015	0.008	0.014	0.004	0.000	0.000	0.033	0.032	0.000	1.00	0.0372
Finland	0.33	0.78	0	0.009	0.014	0.009	0.014	0.004	0.000	0.000	0.033	0.036	0.000	1.00	0.0366
Czech Republic	0.70	0.53	0	0.018	0.010	0.004	0.004	0.000	0.000	0.000	0.032	0.018	0.000	1.00	0.0358
Denmark	0.32	0.82	0	0.008	0.015	0.008	0.015	0.008	0.000	0.000	0.031	0.010	0.000	1.00	0.0350
Austria	0.43	0.64	0	0.011	0.007	0.012	0.007	0.007	0.000	0.000	0.030	0.002	0.000	1.00	0.0342
United Kingdom	0.23	0.77	0	0.008	0.014	0.011	0.014	0.011	0.000	0.000	0.032	0.014	0.000	1.00	0.0314
France	0.24	0.60	0	0.008	0.011	0.004	0.011	0.006	0.000	0.000	0.027	0.009	0.000	1.00	0.0309
Germany	0.32	0.71	0	0.008	0.013	0.006	0.013	0.006	0.000	0.000	0.027	0.009	0.000	1.00	0.0309
Hungary	0.69	0.52	0	0.010	0.003	0.010	0.010	0.003	0.000	0.000	0.031	0.005	0.000	0.01	0.0306
Norway	0.24	0.87	0	0.008	0.016	0.008	0.016	0.008	0.003	0.000	0.032	0.006	0.003	0.00	0.0286
Singapore	0.61	0.70	0	0.016	0.004	0.006	0.004	0.006	0.000	0.000	0.035	0.004	0.000	1.00	0.0264
Portugal	0.41	0.74	0	0.011	0.014	0.005	0.014	0.005	0.004	0.000	0.035	0.005	0.004	0.00	0.0263
Japan	0.14	0.62	0	0.004	0.011	0.010	0.004	0.010	0.000	0.000	0.025	0.025	0.000	1.00	0.0261
Poland	0.26	0.50	0	0.010	0.009	0.004	0.009	0.004	0.000	0.000	0.024	0.027	0.000	1.00	0.0277
Canada	0.33	0.73	0	0.009	0.013	0.006	0.013	0.006	0.007	0.000	0.025	0.0274	0.007	1.00	0.0274
Malaysia	0.61	0.20	4	0.001	0.015	0.004	0.015	0.001	0.015	0.001	0.041	0.000	0.015	0.00	0.0260
New Zealand	0.49	0.20	0	0.013	0.004	0.006	0.013	0.006	0.000	0.000	0.022	0.019	0.000	1.00	0.0259
Ireland	0.32	0.56	20	0.009	0.010	0.007	0.010	0.007	0.006	0.000	0.021	0.025	0.006	0.00	0.0255
Peru	0.35	0.39	21	0.007	0.007	0.007	0.007	0.007	0.004	0.000	0.024	0.026	0.000	0.00	0.0256
Chile	0.29	0.20	0	0.007	0.004	0.008	0.004	0.008	0.000	0.000	0.019	0.019	0.000	1.00	0.0231
Spain	0.26	0.49	21	0.007	0.009	0.007	0.009	0.007	0.000	0.000	0.023	0.020	0.000	0.00	0.0230
Italy	0.24	0.39	16	0.006	0.007	0.006	0.007	0.006	0.000	0.000	0.019	0.019	0.000	1.00	0.0229
Australia	0.22	0.67	14	0.006	0.012	0.006	0.012	0.006	0.002	0.000	0.025	0.027	0.002	0.00	0.0227
Korea, South	0.38	0.15	0	0.010	0.003	0.009	0.004	0.009	0.004	0.000	0.026	0.019	0.004	0.00	0.0219
Thailand	0.58	0.15	10	0.015	0.003	0.003	0.005	0.003	0.005	0.000	0.026	0.021	0.005	0.00	0.0213
United Arab Emirates	0.67	0.15	0	0.017	0.003	0.000	0.000	0.000	0.000	0.001	0.021	0.002	0.001	0.00	0.0202
Saudi Arabia	0.35	0.20	19	0.009	0.004	0.006	0.004	0.006	0.000	0.000	0.020	0.019	0.000	0.00	0.0193
India	0.22	0.20	0	0.006	0.004	0.005	0.004	0.005	0.000	0.000	0.014	0.014	0.000	1.00	0.0182
Mexico	0.36	0.14	17	0.008	0.002	0.006	0.005	0.006	0.005	0.000	0.022	0.016	0.005	0.00	0.0176
China	0.37	0.23	0	0.007	0.004	0.005	0.004	0.005	0.000	0.000	0.017	0.016	0.000	0.00	0.0162
Sri Lanka	0.21	0.25	16	0.005	0.004	0.006	0.005	0.006	0.000	0.000	0.016	0.016	0.000	0.00	0.0148
Philippines	0.40	0.15	0	0.005	0.000	0.000	0.000	0.000	0.000	0.001	0.014	0.013	0.001	0.00	0.0132
Maldives	0.10	0.31	6	0.003	0.006	0.004	0.003	0.004	0.004	0.000	0.014	0.019	0.000	0.00	0.0129
Brazil	0.27	0.12	4	0.007	0.002	0.004	0.007	0.002	0.004	0.000	0.015	0.019	0.005	0.00	0.0107
Turkey	0.25	0.15	2	0.008	0.003	0.000	0.003	0.000	0.001	0.001	0.011	0.002	0.000	0.00	0.0092
Saudi Arabia	0.25	0.15	2	0.008	0.003	0.000	0.003	0.000	0.004	0.001	0.013	0.0074	0.005	0.00	0.0074
Indonesia	0.18	0.15	0	0.005	0.004	0.000	0.004	0.000	0.004	0.001	0.013	0.0074	0.005	0.00	0.0074
Total amount	1500	1172	607	259	54	392	324	0.16	0.062	0.006	1.000	0.922	0.068	17.00	1.0000
The total amount multiplied by significance	336	273	185	53	5										
The sum is equal to 855															

In order to apply the formulated model in the future such steps have to be taken: first, statistical data about export markets has to be collected; second, the comparison of foreign markets have to be made (through the set of criteria); third, the foreign markets have to be selected; fourth, the further monitoring of foreign markets have to be implemented. The selection of foreign markets methods are discussed in the next section.

3.4. The selection of foreign markets

The term “selection” is used here in order to mention the choice among several or more alternatives of foreign markets. For such selection the method called “the choice of foreign markets by the convergence method” (Kinderis 2010), can be used. In the mentioned method there are four steps.

- From all foreign markets, which are under reviewed, first, those markets are eliminated, where the local legislation is weak and administrative priority is not proper;
- From foreign markets, which are left after the first review, second, other markets are eliminated. Now those markets are eliminated, which are not attractive economically;
- From the list of markets, which are left after previous revisions, third, new markets are eliminated. Now those markets are eliminated, where the competitive advantage of an enterprise is low;
- From the final list of markets, which are left after above mentioned revisions, fourth, other markets are again eliminated. Now those markets are eliminated, where the company has no available resources or capability.

The formulated model can be used in the second step, where on-line sellers are eliminating the markets which are not attractive economically. This also shows that according “the choice of foreign markets by the convergence method”, it has to be 4 steps but Amazon.com filters foreign markets based on the first two. Amazon.com selects whose foreign markets, which are attractive economically. Other steps of the method, which are related to competitive advantage and resources or capability of company, are not used by Amazon.com.

Alexander et al. (2011) suggest that managers responsible for selection decisions do not have the freedom of action implied in the literature and that their actions are constrained by conditions. For example, the better indicators of foreign market will also affect the selection of this market for trade transactions (Alexander et al. 2011).

Other authors mention that foreign market can be selected using the results of analysis concerning foreign market opportunity.

4. Conclusions

It is noted that the application of e-commerce technologies differs in various foreign markets. It has been revealed that in 65 countries (from 157 world countries) trade companies which apply e-commerce technologies also apply “business-to-consumer” solution. The results of this study also show that top ten the most attractive foreign markets, where e-commerce technologies can be effectively used for trade development, are located in European Union.

The model, which can be used for the comparison of foreign markets, is presented. In the model variety of evaluation criteria are used, including criteria which reflect to openness of market for import and criteria, which reflect to the spread of e-commerce technologies in foreign markets. Such set of criteria can be applicable when foreign market is chosen, in which e-commerce technologies can be effectively used for trade development.

The formulated model has been applied for the comparison of 39 foreign markets, which are in Europe, Asia, Africa, North and South America. 35 foreign markets of these are the priority markets of Amazon.com.

It is noted that four countries such as Greece, Turkey, S. Korea, Indonesia and others, which the volume of imports is quite significant (these markets are among 50 countries, which have the highest import volume), are not priority markets of Amazon.com.

For the selection of foreign markets “the choice of foreign markets by the convergence method” is used. It is identified that according “the choice of foreign markets by the convergence method”, which has to be 4 steps, the formulated model can be used for the second step, where on-line sellers are eliminating the markets which are not attractive economically. It is identified that according that is mentioned above, Amazon.com filters foreign markets based on the first two steps. Other steps of the method, which are related to competitive advantage and resources or capability of company, are not used by Amazon.com.

The assessment of practical application of presented model shows that it suits for the comparison of foreign markets, where e-commerce technologies can be used effectively. It helps to identify foreign markets in proper priority sequence. The results of the study show that the comparison of foreign markets is important for on-line sellers.

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E-KOMERCIJOS TECHNOLOGIJŲ TAIKYMAS PLĖTOJANT PREKYBĄ UŽSIENIO RINKOSE

A. Burinskienė

Santrauka

Straipsnyje nagrinėjamas e-komercijos technologijų taikymas plėtojant prekybą užsienio rinkose. Straipsnyje pristatomas modelis, skirtas naudoti užsienio rinkų palyginimui; atliekamas suformuluoto modelio praktinio tinkamumo įvertinimas; nagrinėjamas e-komercijos technologijų taikymas užsienio rinkose.

Straipsnyje naudojami lyginamosios ir daugiakriterinės analizės metodai. Daugiakriterinės analizės metodas COPRAS yra taikomas 39 užsienio rinkų, esančių skirtinguose žemynuose, palyginimui.

Tyrimo rezultatai atskleidė, kad modelis yra tinkamas naudoti. Atlikus rinkų palyginimą, nustatyta, kad tarp dešimties patraukliausių užsienio rinkų yra rinkos, esančios Europos Sąjungoje.

Reikšminiai žodžiai: e-komercija, prekyba, užsienio rinkos, COPRAS, “verslas-vartotojui” sprendimas, e-komercijos technologijų paplitimas.

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