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SELECTED ASPECTS OF BUSINESS NETWORKS
This article deals with a specific field of SME activities. Not only does it describe and analyse the current state of network cooperation between businesses, it also anticipates its future developments on the basis of an empirical research project conducted. We examined the innovation potential of business networks through a questionnaire survey. The answers were provided by SMEs from numerous districts of Slovakia.
Keywords: business networks; clusters; SMEs; Slovakia.

Енікьо Коршмарос, Ладіслав Мура, Андрей Хевесі
ОБРАНІ АСПЕКТИ БІЗНЕС-МЕРЕЖ
У статті досліджено співробітництво малого та середнього бізнесу в бізнес-мережах. Описано та проаналізовано взаємодію бізнесу в мережах, зроблено спробу спрогнозувати майбутній розвиток цієї форми співробітництва. Інноваційний потенціал бізнес-мереж оцінено на матеріалах опитування, проведеного в більшості регіонів Словаччини.
Ключові слова: бізнес-мережі; кластери; малий та середній бізнес; Словаччина.
Табл. 5. Літ. 18.

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ИЗБРАННЫЕ АСПЕКТЫ БИЗНЕС-СЕТЕЙ
В статье исследовано сотрудничество малого и среднего бизнеса в бизнес-сетях. Описано и проанализировано взаимодействие бизнеса в сетях, сделана попытка спрогнозировать будущее развитие данной формы сотрудничества. Инновационный потенциал бизнес-сетей оценен на материалах опроса, проведённого в большинстве регионов Словакии.
Ключевые слова: бизнес-сети; кластеры; малый и средний бизнес; Словакия.

Introduction. In order to maintain their market position businesses today need to search new ways of gaining competitive advantages. The ever deepening globalisation and internationalisation force businesses into new forms of cooperation and closer collaboration. As a result of this they are able to succeed at their markets. In this respect the key terms that must be dealt with are business networks and business clusters. In this paper we analyse business activities on the basis of whether they are network-based (or cooperation-based), i.e. whether they are involved in business networks.

The driving force for market economy development is entrepreneurial activity, in the framework of which new assets are created to meet the needs of individuals or groups. Doing business must be approached as a process rather than as a result of something. It is a continuous activity involving the analysis of market opportunities, creation of new ideas, formulating of business vision, elaboration of a business strategy, elimination of business risks and implementation of a business plan.

Theoretical background. The European Union pays much attention to businesses at present mainly because it is the entrepreneurial sector that can revive the economy in the current downturn. Small and medium-sized enterprises make up large part

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of the entrepreneurial sector. These businesses create nearly two thirds of all jobs and they can be considered as the most important element of economic growth. The European Union (2014) attaches particular importance to business activities, since besides their economic function they also have social and political roles. Here we primarily address the issues of social stability and in relation to policies the subsegments of public policy, such as employment policy, economic policy, integration policy and about the dynamics of innovation activities (Kozubikova and Zoubkova, 2016).

Business activities not only help increase the competitiveness of the economy, they also improve the ability to innovate (Goraczkowska, 2015). Development of businesses is spurred by innovation and by the efforts of business entities to generate revenues (Buleca, 2013). Large businesses could not exist without cooperation with SMEs. When it comes to supplying goods, not only individual business size categories complement each other, they also make up certain business networks. While pursuing activities in these business networks companies create new jobs and new goods are produced.

In the framework of its business support policy the European Commission focuses on the promotion of economic growth, since it is small and medium-sized enterprises that contribute to economic growth the most. The question arises how economic growth can be maintained? According to K. Lazanyi (2014) by the stimulation of business activities which should be aimed at the establishment of innovative businesses and the creation and cultivation of business environment. The main aim in business development is to help them implement their ideas: this way they improve their own business potential in a knowledge-based economy. The EU has also been devoting great attention to businesses and this is reflected in a number of legislative documents passed in the field. The main aim of the EU is to support businesses, to deregulate trade and remove barriers. The European Charter was adopted already at the time when the EU had only 15 member states who committed themselves to implementing jointly the adopted measures in practice in their own territories. From the macroeconomic perspective and from the perspective of the EU the importance of businesses can be summarized in 4 basic points:

- Business entities, especially SMEs have the biggest role in innovative activities starting from research and development through implementation to selling innovative products and services.

- Business sector has the key role in maintaining and development of employment.

- With their activities business entities contribute to growing competitiveness of their country of operation and to the competitiveness of the EU as a whole.

- Besides their economic role businesses also have a social role, which is manifested in social integration of population through the creation of favourable living conditions and through smoothening of regional disparities.

This article deals with a specific field of activities of SMEs. The finding of new forms of cooperation between business entities is inevitable in order for SMEs to develop further. Cooperation between businesses can take various forms ranging from looser to closer collaboration (Dobai Korcsmaros and Seres Huszarik, 2013). It is understandable that various forms of business cooperation between entities bring along different effects for the organisations involved, which can be largely positive

resulting in significant development for companies and also in less but still positive ones that have a limited positive impact on development. Managers must carefully consider what impact from entering a business network/cooperation their company will have.

Development of SMEs in market-oriented developed economies is of key importance. The EU has declared that SMEs are one of the basic pillars of its economy. Priorities in this area have been defined not only in the European Charter for Small Enterprises and in the Law on SMEs (Small Business Act), but also in the "Europe 2020" strategy. Self-employment and entrepreneurship are defined in this strategy as essential and important prerequisites for sustainable and the so-called inclusive growth (Subertova et al., 2015).

In addition to new market opportunities and trade liberalization rapidly developing information and communication technologies also largely contribute to the development of network cooperation between businesses. D. Pavelkova et al. (2009) also point out to the fact that new forms of relations are evolving between economic entities and traditional barriers between them are coming down. As a result of sharing resources and information in a network externalities can be created, which in turn reduce the costs of doing business and contribute to market expansion.

Besides the development of modern information and communication technologies K. Stofkova et al. (2013) think that networked business cooperation evolved not only due to the development of information and communication technologies, but it is also the result of developments in the market environment, which is knowledge-based and creative. These authors think that business network cooperation is fuelled by knowledge, skills and creativity, all of which provide a way to develop business and gain competitive advantage in a knowledge-based economy. Knowledge-based economy, in which active elements are networked, creates added value where the importance of using knowledge is increasing, and economic success of businesses is based on the effective application of skills and knowledge, which are the key source of competitive advantage. Traditionally operating businesses can acquire the character of networked businesses if they become grouped.

Two renowned teams of scholars, D. Zadrazilova et al. (2004) and I. Ubreziova et al. (2013), define business network cooperation as an interconnection of business entities in which participating businesses are jointly involved in the development of products/services. They cooperate with each other in R&D in the creation of logistics networks and in distribution. We can talk about business network cooperation in the case of a group of companies, which use the shared resources to cooperate.

In Slovakia, and in Central Europe overall, business network cooperation can be characterized as a new but growingly canonized expression for a cooperation type in which participating businesses act together in different areas. Business network cooperation is one of the ways to achieve higher competitiveness of businesses and subsequently of the regions where participating businesses operate. Business cooperation can take different forms and shapes, which can range from corporate networks to looser forms of networking such as clusters.

It is business network cooperation that can foster further development of SMEs. It can be characterized as mutual cooperation and support, as a certain form of partnership. Impulse for the creation of a business network is the intensification of inter-

action and cooperation as well as the existence of common goals to reach long-term objectives in a challenging competitive environment. When a strategic partnership is set up, participating businesses have an opportunity to use their business contacts more and their market position and competitive advantage grows as well (Branyi et al., 2015).

Networking is a widely used term in scientific papers. Its main purpose is creation and maintaining of a network itself. Network should be beneficial to all participating businesses. Setting up of different forms of cooperation and associations by businesses is supported by the EU and individual member states through different support mechanisms, such as legislative measures, financial support (Belas et al., 2015), grant schemes etc. Networking can be largely facilitated by geographical proximity and by the IT background of participants.

In this respect, V. Korab (2007) refers to business networks as advanced methods of doing business. This author also states that these networks are often set up as a defensive reaction to the growing influence of multinational corporations. The exchange of information, a better recognition of opportunities for doing business and the concept of sustainable development — contribute to better cooperation between businesses through networking.

In order to assess advantages and disadvantages of being involved in networking, it is necessary to compare the participating businesses in terms of the subfields of their activities, such as their production, customers, marketing, management etc. The findings of our comparison are shown in Table 1.

Table 1. **Comparison of businesses involved and not involved in networking,** *authors'*

Field	Networking business	Not networking
Production	broader product/service portfolio, diversification of product range	narrower range of manufactured products or of provided services
Economic efficiency	application of the economies of scale and increased efficiency through adoption of new businesses to a network	a business can increase economic efficiency through cheaper inputs. The cost of maintaining economic sustainability cannot be spread
Marketing	marketing is focused on presentation of a broad portfolio of products and services. The stress is on the complexity of an offer	marketing is focused on the presentation of activities of a company and its products and services. The stress is on individual approach
Customers	wider range of customers that are often the same customers of several members of the network; roader customer base makes it easier to attract new customers	individual customers, no interaction
Management	more complex organizational structures; the network is divided into divisions and departments	simpler organizational structure allows more flexible management

What are the benefits of networking for participating organizations? There are several but the most significant ones are the following:
- increased economic efficiency, cost cutting, economies of scale;
- intensification of innovations;

- increased competitiveness;
- adequate partner for multinational companies.

Network cooperation is becoming growingly important in business development, as there will be fewer and fewer businesses owned by a single owner. Fierce competition at markets pushes managers and business owners seek new opportunities to maintain sustainable growth. Managing of cooperating businesses and strategic partnerships requires special knowledge and expertise in networked businesses (Rajnoha and Lorincova, 2015). Thus, it brings along new challenges in management theory and practice (Simo and Mura, 2015). In order to be able to apply progressive methods and use a variety of techniques in company management one needs to study this field and to learn from the developments in economically developed countries.

Cooperative entrepreneurship, where clusters also belong, has a longer history than the concept of clusters. Enterprises, however, have been trying to move to a higher level in cooperation. The concept of clustering began to boom in the 1990s. D. Pavelkova et al. (2009) pointed out that associations of SMEs, business networks and cooperation networks are very similar terms to clusters.

Integration of businesses into strategic partnerships in the form of cluster initiatives has emerged as one of the critical success factors in business amid the current market conditions. The efforts of business entities to join together are based on their mutual interests in research and development, in launching products and services (commercial activity), in logistics solutions etc. Globalization has changed cooperation forms resulting in new forms of working together, which can serve as a starting point for dealing with specific issues arising in individual businesses. The reasons for businesses entering joint initiatives vary largely; however, rather frequently it is their effort to deal with large multinational competitors. Involvement of businesses in corporate strategic partnerships is purely voluntary and the nature of participants' motivation varies individually. For example, businesses can join business networks and clusters. In these cases, participating companies preserve their legal and economic independence: they are not wound up or merged with another business. The objective of setting up a partnership is to achieve common goals based on shared interests.

Research methodology and methods of research. We examined the innovation potential of business networks through a questionnaire survey conducted among SMEs. Answers were provided by SMEs from numerous districts of Slovakia. Questionnaires were distributed in electronic and in printed forms. The data obtained were processed and presented in graphs and in statistical analyses.

On the basis of scientific papers' analysis we formed the following research question: Is the lack of trust between partners the most significant factor hindering cooperation between partners in business networks?

When choosing the survey sample of SMEs, we proceeded as follows: From the website zoznam.sk we obtained the database of enterprises to be used for research purposes. Of the 5,208 respondents chosen from SMEs in Slovakia 454 completed the questionnaire which were all processed. This amounted to the 8.7% return.

The analyzed questions regarding the innovation potential of business networks has led us to formulate questions as follows:
- characteristics of the examined SME;

- characteristics of its membership in a business network and its impact on the examined SME;
- characteristics of innovative activities of this business.

On the basis of the research questions, we investigated whether there is consensus among the members of business networks that the lack of trust between partners is the most significant factor that hinders cooperation between partners in business networks?

Research results. Based on the ideas of E. Soltes (2015) in order to get answer to the abovementioned research question, we must examine the relationship between two nominal indicators, where the dependent variable consists of individual factors hindering cooperation in business networks, and the independent variable is the individual role of the researched business within a business network (founder, member, support member). Since there are two nominal variables, the research question will be examined using Pearson's chi-square test of independence.

After forming the research question, it is necessary to elaborate the hypothesis H_0 and the alternative hypothesis H_1, which is the opposite of H_0.

H0: There is no significant relation between the views of individual members of business networks and the factor hindering cooperation within a network the most.

H1: There is a strong relation between the views of individual members of business networks and the factor hindering cooperation within a network the most.

After drawing up the contingency table the contingency factors were determined. When determining the individual contingency coefficients we start with the chi-square test of independence of the null hypothesis, which expresses the independence of variables. The chi-square value is 11.831 with the value of significance 0.066. In order to assess the null hypothesis we need a comparison of the set significance level (α) and of the P-value. The null hypothesis can be rejected if the set significance level is higher than the P-value. In other cases, H0 is confirmed. In this case, P-value is higher than the set α significance level of 5%, so the null hypothesis is proven. This means there is no significant relation between the views of individual members of business networks and the factor that hinders cooperation within a network.

Table 2. **Chi-square test,** *authors'*

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson chi-square	11.831[a]	6	0.066
Likelihood ratio	15.466	6	0.017
Linear-by-linear association	2.353	1	0.125
N of valid cases	74		

[a] At 58.3% the given value is lower than 5. The minimum expected value is 2.27.

According to the likelihood ratio the significance level is lower than 0.05. A linear-by-linear association cannot be used in this case since it expresses connection between two nominal variables. Due to this, we cannot make a clear statement regarding the earlier formed research question. The inconsistency can be solved in two ways. In practice, it often happens that the generally used significance level of 5% does not show any relation, but at 10% it already happens. Thus, we can change the significance level. The second way to resolve the inconsistency is to look at note [a] in

Table 2 next to the chi-square value. The note says that in spite of the respective values shown in the contingency table, at 58.3% the given value is lower than 5. It follows that the pivot table is not fully reliable for the confirmation of the research question, since one of the conditions is not suitable to be analyzed through a chi-square test.

Table 3. **Lambda, Goodman and Kruskal tau, risk quotient,** *authors'*

			Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Nominal by Nominal	Lambda	Symmetric	0.049	0.053	0.899	0.368
		What do you think; which factor hinders cooperation within a business network most? (dependent)	0.040	0.048	0.820	0.412
	Goodman and Kruskal tau	What do you think; which factor hinders cooperation within a business network most? (dependent)	0.049	0.022	-	0.098[c]
	Uncertainty Coefficient	Symmetric	0.089	0.030	2.907	0.017[d]
		What do you think; which factor hinders cooperation within a business network most? (dependent)	0.076	0.026	2.907	0.017[d]

[a] If the null hypothesis is not confirmed.
[b] Using of asymptotic standard error if the null hypothesis is proven.
[c] Based on chi-square approximation
[d] Chi-square likelihood ratio.

Another useful tool to express the rate of association between a column and a line variable is the Goodman-Kruskal lambda, which measures the usefulness of the line (or column) variable in predicting the values of another variable. The lambda value ranges from 0 to 1. If the value is 0, it means that even if we know the value of one variable, it does not indicate the value of the second one. If the value is 1, it means that the knowledge of the value of one variable allows us predict the value of another one correctly. Without knowing the values of the independent variable (in this case, the activity of a business within a network), the value of the dependent variable (i.e. assessment of the factors hindering cooperation in networks) in the case of each observation can be best predicted as its most frequent value. Then the numerousness of the most numerous category of the dependent variable will be the number of correct estimates (Rimarcik, 2007). If the dependent variable is the factors hindering cooperation in business networks, lambda has the value of 0.049, that is, knowing the factors hindering cooperation is 4.9% reduction of errors in anticipating a business's actions in a business network. Data in Table 3 suggest that it is not possible to prove there is significant relationship between the researched variables (the value of approx. Sig is higher than 0.05).

Thus, the H0 hypothesis is confirmed: there is no significant relation between the views of individual members of business networks and the factor that hinders cooperation within a business network the most.

Based on studies dealing with business clusters, their contribution to their members and their region, we have formulated a number of statements through which the members of business clusters could express their views using a Likert scale, where they could choose from 4 options (1 — I do not know, 2 — disagree, 3 — partly agree, 4 — strongly agree). For individual statements we have developed the basic indicators of descriptive statistics and thus we found the minimum and maximum values of the respondents' agreement with individual statements as well as the average values and standard deviation. Standard deviation expresses to what extent individually measured values are around the mean. The lower the value of standard deviation is, the closer the measured values are around the mean, so variance is lower. The higher is the value of standard deviation, the further the individual measured values are around the mean, so variance is higher. Crucial value of standard deviation is 1: if standard deviation is lower than 1, the respondents had similar views. If standard deviation is higher than 1, the respondents' views differed with respect to the given statement.

Table 4. **Views of the respondents (members of business networks),** *authors'*

	Mean	Standard deviation
Business networks and the forming of business clusters is only a temporarily popular thing to do	2.27	0.688
There is high potential in business networks; it is worth becoming a member	2.73	0.865
Business networks operate only up to the point of receiving financial support	2.76	0.888
Business networks largely contribute to economic development of a region	2.97	0.891
Development of business networks is a good economic policy objective	2.62	1.082
Emergence and spread of business networks has already begun	2.14	0.941
Regional economic entities are aware of the opportunities lying in business networks	2.22	0.815
Economic entities liaise with clusters and are open to cooperation with them	2.51	0.954
Regional institutions are aware of the opportunities lying in business networks and they promote them	2.19	0.902
Business networks are vital	2.16	1.159

The basic descriptive statistics regarding the responses provided by the members of business networks show that the views of the respondents were similar (standard deviation < 1). However, regarding the statements that the development of business networks is a good economic policy objective and that the existence of corporate networks is necessary, the respondents had different views.

According to the nature of business networks, different types of clusters can be identified. Taking into account the geographical location of the researched districts and their socioeconomic characteristics we identified the following types of business networks: industrial networks, industrial innovation networks, creative industrial clusters, tourism business networks and traditional craft clusters. The members of these networks could express their views with the help of a Likert scale (1 — I do not know; 2 — it is not typical; 3 — it is partly typical; 4 — it is definitely typical) regarding to what extent each type of business network is typical for their district. Besides tourism business networks the views of the respondents were similar. Taking into account the weighted average values within each type of business network it can be

stated that the views of the respondents were in agreement that industrial business network (mean = 2.51, standard deviation = 0.864) and traditional craft clusters (mean = 2.54, standard deviation = 0.797) are more likely to be partly typical for the researched districts, while industrial innovation business networks (mean = 2.24, standard deviation = 0.824) and creative industrial clusters (mean = 2.30, standard deviation = 0.872) are rather unusual for the districts studied.

Table 5. **Views of the respondents (members of business networks),** *authors'*

	mean	standard deviation
Industrial business networks	2.51	0.864
Industrial innovation networks	2.24	0.824
Creative industrial clusters	2.30	0.872
Tourism business networks	2.73	1.038
Traditional craft clusters	2.54	0.797

We proceed to examine the reasons for members' engagement in business networks in terms of innovation. Based on the replies made by SMEs we can state that the primary reason for engaging in business networks in terms of innovation is a strategy of joint business activities (27.03%). Another reason to engage in clusters was management of joint entrepreneurial activities (24.32%) and costs sharing (18.92%). The least chosen reason for being engaged in business networks in terms of innovation was commercialization of innovation potential (5.41%).

The individual respondents gave similar opinions regarding whether their company's activities changed after joining a network (standard deviation = 0.799). Based on the opinions of the majority (89.20%) their company's activities did not change after joining a network.

Conclusion. The ever increasing globalization brings along the increasing integration of companies into different partnerships, through which they can effectively face the pressure from competing businesses. P. Gavlakova (2012) states in this regard that globalization intensifies the role of clusters due to which businesses participating in clusters are more competitive. The sources of competitive advantages are internal and external resources available in national and local business environment. Clusters are a potential tool for enhancing regional values according to the author, since they use a combination of knowledge, skills and abilities of different entities. They foster the creation of value for customers while reducing transaction costs and increasing economic benefits for all partners. The innovative approach to doing business in clusters helps their members enhance their competitiveness and improves the overall situation in a region.

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