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### INTERCOMPANY NETWORKS OF THE CROSS-BORDER REGION (LATVIA-LITHUANIA-BELARUS)

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**Abstract.** Global crises of the end of the XX – beginning of the XXI century have additionally contributed to the search for new market opportunities and made it obvious that on the modern market efforts of one particular company are not enough to do business efficiently. Thus, companies choose a survival strategy in times of growing uncertainty and together with small-scale and medium-scale companies form unified structures which allow competing successfully with large companies. These structures also reveal and enhance their advantages which lie in flexibility and adaptability to the market demands. The article examines basic models of the intercompany networks which meet the requirements of transition to sustainable economic growth in the cross-border region (Latvia-Lithuania-Belarus).

**Key words:** intercompany networks, network competitiveness, sustainable growth.

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DOI: [http://dx.doi.org/10.9770/jssi.2017.7.1\(4\)](http://dx.doi.org/10.9770/jssi.2017.7.1(4))

**JEL Classifications:** O1, R12, L26, Y1

## 1. Introduction

The globalization process has exerted a significant impact on the development of network cooperation (Simionescu et al. 2017; Balcerzak, Pietrzak 2017; Prause, Atari 2017; Hilkevics, Hilkevics 2017; Fuschi, Tvaronavičienė 2016; Monni et al. 2017; Tvaronavičienė, Černevičiūtė 2015). Intercompany cooperation has become an integral part of the economy of modern companies: the number of links among the units of a company and independent businesses has increased. Moreover, a growing number of companies have been successfully taking advantages of their mutual cooperation. Mutual collaboration in the economy has formed the basis for the development of high-technology products and increase in network competitiveness of companies based on developing a strategic policy among the business partners (Menshikov et al. 2017). At the moment to succeed a multiple number of conditions must be met which include economic, organisational and technological opportunities of different market players (Caimcross 2002; Dicken 2003; Hakansson, Waluszewski 2007; Goeke et al. 2010; Hamel 2012; Belas, Sopková 2016; Lavrinenko, et al. 2017). Networks are viewed as a beneficial strategy for small-scale and medium-scale businesses which helps them to grow and develop without a surge of intercompany expenses associated with the business expansion (Besser, Miller 2011; Veilleux et al. 2012).

A network is a means of intercompany cooperation which is juridicially independent but dependent in the economic sense. It can be implemented vertically and/or horizontally (Ziber 2000); it is a means of enterprise

integration, i.e. their unification through the system of vertical and horizontal cooperation agreements and contracts, coordination of their activity and through engaging new partners (Rüegg-Stürm, Achtenhagen 2000). It is a structure which contains two or more companies which share common objectives or work to meet shared challenges by cooperating over a long period of time (Haggins 2000); it is a loose flexible coalition managed at a single centre which forges and manages alliances, coordinates financial resources and technologies, defines the areas of competencies and strategies as well as addresses the relevant management issues which connect the network together using information resources (Webser 1995).

The main factor contributing to network formation is their feature of facilitating access of economic agents to resources and capacities which they need but lack (Gorlacheva, Omelchenko 2010). In terms of resource approach companies form strategic networks to create value. This objective, in turn, can be divided into three main tasks: obtaining, using and developing resources and capacities. Using resources and capacities implies company's following these objectives: using its strengths and key resources and overcoming weaknesses using resources and capacities of the partners. When making a decision concerning the transition to forms of organization based on networks several factors must be taken into account: increased need for organizational flexibility, need for reducing market uncertainty, search for complementary resources and capacities which other network participants possess as well as developing of a high-technology basis.

## 2. Methodology

One of the first works which examined sustainable network interaction is "Principles of Economics" of A. Marshall (Marshall 1890). A. Marshall pointed out that sustainable network interactions among collaborating economic agents located in close proximity to each other receive positive externalities (accelerated information sharing on important issues, access to specialized suppliers of goods and services as well as access to skilled labour). In the future the ideas of A. Marshall were widely accepted and developed as they formed the basis for the modern understanding of enterprise clusters as a network form of modern markets.

However, most of the researchers believe that the theory of network forms of business organization is fragmented and it has not been completely formed by now. They stick to the idea that there is neither integrated approach to defining networks in business nor a generally acknowledged methodology of its studying. (Colombo et al. 2011; Bergenholtz, Waldstrøm 2011; Katkalo 2006; Katenev 2007; Sheresheva 2010). Thus, conceptual framework of the research subject needs its developing and defining a consensus on some key concepts.

At the current stage intercompany cooperation is characterised by the following features: cooperation is an effective form of interaction while creating innovative products; cooperation with foreign partners increases (Prasad 2004); companies use cooperation agreement to successfully develop technological base of innovative enterprises (Hamel, Prahalad 1996). As T.Choi and Y.Hong put it, (Choi, Hong 2002), business process management in networks means developing a tool of intercompany coordination directed to policy coherence as well as to adjustment, streamlining and synchronization of all the actions done by interdependent network participants.

R. Miles and C. Snow (Miles, Snow 1986) conceptualized networks as a strategic organization solution by the beginning of the 90s. They suggested that intercompany networks should be considered a new stage in organizational structures evolution: linear – functional – divisional – matrix – network. The main feature of a network was the idea that the place where it occurs is global turbulent markets; the researchers saw the *modus operandi* in aggregating of temporary structures by a broker company. These structures presuppose information exchange among the participants as a foundation of trust and coordination. According to Miles and Snow, a common difference of networks is also using collective assets of some economic agents located at different stages of value chain creation. It differs from a "traditional" situation when all assets necessary for product creation are within one organization or exclusive contract. In resource management market mechanisms predominate, but network participants demonstrate proactive behaviour in order to improve a product or service, i.e. they not only observe their contractual obligations but also are ready to extra investments in shared outcome.

Complexity and diversity of network forms are confirmed by the fact that the researchers analyse different types of intercompany networks: internal, stable, and dynamic (Miles, Snow 1989). Internal networks imply partial ordering of goods and services from other suppliers. Internal networks best suit the situations when companies experience difficulties with finding new suppliers and flexibility of their own independent branches is required.

Network of cooperation between divisions even in times of strict coordination makes it possible to adopt organizational innovations. One of the advantages of a stable network is supply and distribution reliability as well as close cooperation in the production schedule and quality control. A drawback of this network type is strong interdependence of the companies and the loss of flexibility. The future of the network is determined basically by the development level of the core company. Internal and stable networks are most prevalent in mature sectors where significant capital investments are required.

Dynamic network strives to adapt to business environment through distribution of self-administered entities on different markets. Such network type is used in a fast-changing competitive environment. The network head office unites necessary assets in some cases wholly owned by other companies; it has only key competencies for the business in, for instance, producing, designing or marketing. The advantage of dynamic networks is specialization and flexibility, which is convenient within projects at least cost and in minimum time. Dynamic networks exist both in low-technology industries with a short cycle of product development and in high-technology industries such as electronics and biotechnology.

Other researchers (Möller, Rajala 2003) used marketing logic of creating value and pointed out three types of business networks. Stable business networks with a well-established system of value creation, well-known competencies of the participants and clearly defined business processes. They are divided into two categories: vertical demand and supply networks built along the value chain and horizontal market networks which are created to offer the final consumers the product of a collaborative effort. Incremental business networks also have quite a stable system of value creation; the network participants, however, can change and improve it. They are also divided into two categories: temporary networks with a single goal which consists from a focal company and its suppliers, customers, consultants and specialized technologies suppliers; solution networks for the end-user which comprise producers with complementary resources and competencies and which act as projects.

At present intercompany network has transformed into an effective tool of coordinating actions of all its participants. This tool directly influences the establishment of a sustainable competitive advantage.

In this regard, the following models of the network cooperation have been determined to reach the research objectives:

- intercompany cooperation model based on supply chain;
- cooperation model based on competencies and capacities;
- cooperation model based on the market offering with developing a new product;
- competitive cooperation model.

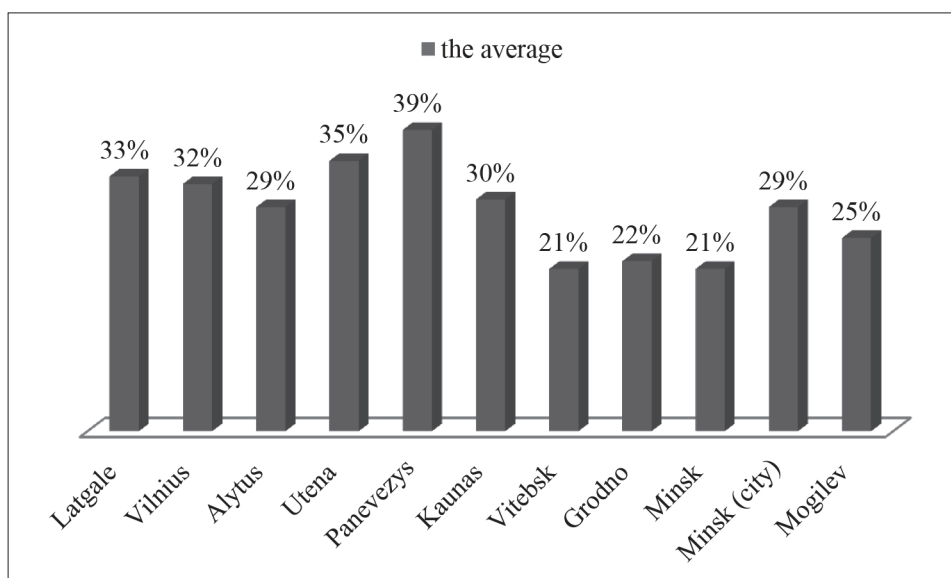
The main data for analysis in the regions under research was obtained from the survey of 620 small and medium-sized business entrepreneurs in the cross-border regions in Latvia (Latgale region), Lithuania (Vilnius county, Alytus county, Utena county, Panevezys county, Kaunas county), Belarus (Vitebsk oblast, Grodno oblast, Minsk oblast, Mogilev oblast) in the period April-June, 2014. The survey was carried out in the main communication languages in the regions: Latvian and Russian in Latgale, Lithuanian in Lithuania and Russian in Belarus. The sample design by the type of selection – combined, by the method – non-repeated sampling, by the way of selection – stratified by the main directions of the research. The survey was carried out by means of a questionnaire available both in paper version and online to be completed on the Internet (Daugavpils University 2015). In the process of work on the base in the SPSS programme, the survey data were subjected to weighting on the main directions of stratification, as a result the deviations of the parameters of the sample from the parameters of the general population comprised less than 3%. One of the limitations of empirical research is different methodological approaches to identifying the size of business in the EU and Belarus. Therefore, for

the weighting the sampling of Latvian and Lithuanian companies, the EU criteria were applied (Department of Trade and Industry 2015), but in Belarus regions – the criteria defined by the law of the Republic of Belarus, as the weighting is based on the statistical data, but the further analysis of the obtained survey data is based on the EU methodology. The results of the frequency-response analysis as well as other methods of mathematical statistics were applied to the data analysis (Lavrinenko et al. 2015)

### 3. Results

Not a single company in the world can increase its capabilities, resources, innovations and geographical spread fast and at no extra cost; thus, the only way to do this is based on the intercompany cooperation development. Cooperative relationship is one of cooperation models among the companies. Answering the question “what percentage of costs is associated with paying external services?” the authorities of the enterprises estimated it from 21% to 39%. Thus, the percentage of costs associated with paying services of external organisations indicates the necessity of intercompany cooperation: the higher the costs percentage, the more necessary inter-company cooperation is.

The greatest need for intercompany cooperation of enterprises have shown the enterprises of Panevezys region (39% of costs are associated with paying services of external organisations), Utena region (35% of costs are associated with paying services of external organisations), Latgale (33%), Vilnius region (32%), Kaunas region (30%), and Minsk and Alytus regions (29%). Not that great need for intercompany cooperation exists in Mogilev region (25% of costs are associated with paying services of external organisations), Grodno region (22%), and Minsk and Vitebsk regions (21%).



**Pic. 1.** Percentage of Costs Associated with Paying External Services

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

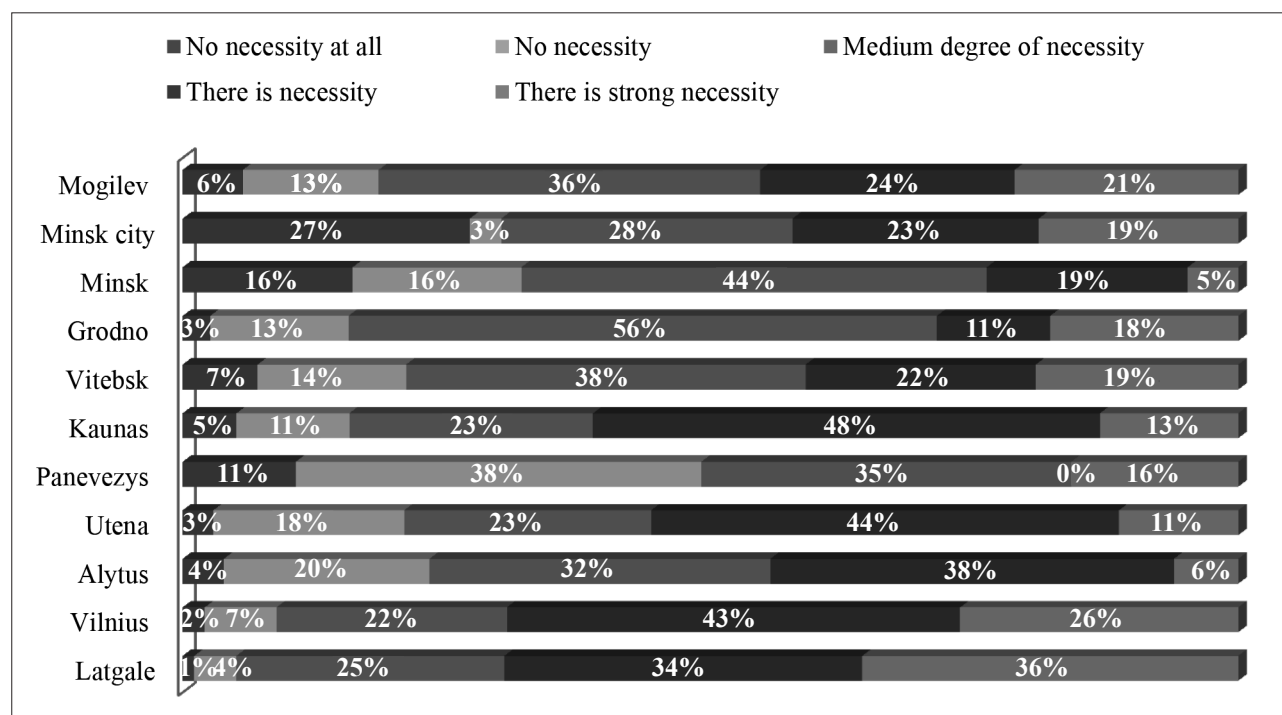
The enterprises of Latgale, Vilnius and Kaunas regions are most acutely aware of the need for intercompany cooperation development (69,5%, 69,2% and 61,1% of the respondents respectively have replied that *need exists* and that there is *very strong need*). They are followed by the enterprises of Utena region (55,6%), Mogilev region (45,3%), Alytus region (44,3%), Minsk (42,2%), and Vitebsk region (41%). Whereas intercompany cooperation development of the enterprises in Grodno (28,5%) and Minsk regions (23,8%) is considered less necessary.

**Table 1.** Assessment of the Need for Intercompany Cooperation Development

Region	No need at all	No need	Moderate need	Need exists	Very strong need
Latgale	1,1%	4%	25,4%	33,9%	35,6%
Vilnius	2,1%	6,8%	21,8%	42,9%	26,3%
Alytus	3,9%	19,5%	32,3%	38,2%	6,1%
Utena	2,9%	18,1%	23,4%	44,3%	11,3%
Panevezys	10,7%	38,4%	35%	0%	15,8%
Kaunas	5,1%	10,7%	23,1%	48%	13,1%
Vitebsk	7,1%	14,1%	37,9%	21,8%	19,2%
Grodno	2,6%	13,1%	55,7%	10,7%	17,8%
Minsk	16,1%	16%	44,1%	19%	4,8%
Minsk (city)	27,2%	3%	27,6%	23,3%	18,9%
Mogilev	5,7%	12,9%	36,2%	24,1%	21,2%

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013*.

The last to acknowledge the need for intercompany cooperation is Panevezys region – only 15,8% of the company authorities have answered the question about cooperation that *need exists* and that there is *very strong need*, which somehow comes into conflict with the amount of the previously established indicator, which shows the intercompany cooperation necessity (39% of costs are associated with paying external services).



**Pic. 2.** Assessment of the Need for Intercompany Cooperation Development

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013*.

#### 4. Assessment of Cross-Border Company Resources and of their Usage Effectiveness

According to the survey a lack of resources and their usage effectiveness have been determined at small-scale and medium-scale enterprises. Latgale region enterprises mostly face difficulties with financial resources (40% of the enterprises *lack them or do not have them at all*), 5,7% of the entrepreneurs, however, admit that financial resources are inefficiently used; 34,6% of the enterprises lack human resources while they are inefficiently used in 2,6% of the enterprises; 19,1% of the enterprises lack information resources while they are inefficiently used in 12,1% of the enterprises; 18% of the enterprises lack time resources while they are inefficiently used in 11,1% of the enterprises; 15,4% of the enterprises lack technological resources while they are inefficiently used in 10% of the enterprises; 14,4% of the enterprises lack energy resources while they are inefficiently used in 4% of the enterprises.

The enterprises of Vitebsk region lack financial resources (36,3% of the enterprises *lack them or do not have them at all*), but 14,5% of them use the resources ineffectively; 34,1% of the enterprises lack information resources while they are inefficiently used in 28,7% of the enterprises; 31,7% of the enterprises lack technological resources while they are inefficiently used in 26,3% of the enterprises; 24,7% of the enterprises lack time resources while they are inefficiently used in 18,3% of the enterprises; 23% of the enterprises lack human resources while they are inefficiently used in 20,6% of the enterprises; 6,6% of the enterprises lack energy resources while they are inefficiently used in 20,8% of the enterprises.

The enterprises of Grodno region face greatest difficulties with financial resources (21,9% of the enterprises *lack them or do not have them at all*), however, 11,6% of them use the resources ineffectively; 14,6% of the enterprises lack human resources while they are inefficiently used in 10,7% of the enterprises; 14% of the enterprises lack time resources in 9,7% of which the resources are used ineffectively; 12,5% of the enterprises lack information resources while they are inefficiently used in 4,4% of the enterprises; 6,6% of the enterprises lack technological resources while they are inefficiently used in 8,8% of the enterprises; 2,3% of the enterprises lack energy resources while they are inefficiently used in 3,4% of the enterprises.

The enterprises of Minsk region lack financial resources (19,9% of the enterprises *lack them or do not have them at all*), but 24% of the enterprises use them ineffectively; 24,3% of the enterprises lack technological resources while they are inefficiently used in 12% of the enterprises; 13% of the enterprises lack energy resources while they are inefficiently used in 12% of the enterprises; 8,2% of the enterprises lack information resources while they are inefficiently used in 16,1% of the enterprises; 4,1% of the enterprises lack time resources while they are inefficiently used in 13% of the enterprises; the region is ensured with human resources despite the fact that 16,1% of the entrepreneurs use them ineffectively.

The metropolitan region – Minsk – face greatest difficulties with financial resources (35,1% of the enterprises *lack them or do not have them at all*), 16,7% of the entrepreneurs, however, use them ineffectively; 31,2% of the enterprises lack human resources while they are inefficiently used in 25,7% of the enterprises; 24,9% of the enterprises lack technological resources while they are inefficiently used in 19,5% of the enterprises; 14,9% of the enterprises lack information resources while they are inefficiently used in 20,5% of the enterprises; 13% of the enterprises lack time resources while they are inefficiently used in 23,8% of the enterprises; 3,9% of the enterprises lack energy resources while they are inefficiently used in 19,7% of the enterprises.

The enterprises of Mogilev region face greatest difficulties with financial resources (30,9% of the enterprises *lack them or do not have them at all*); 5,4% of the entrepreneurs, however, admit that they are inefficiently used; 22,5% of the enterprises lack technological resources while they are inefficiently used in 11,2% of the enterprises; 21,6% of the enterprises lack time resources while they are inefficiently used in 8,1% of the enterprises; 16,1% of the enterprises lack information resources while they are inefficiently used in 9,8% of the enterprises; 8,1% of the enterprises lack human resources while they are inefficiently used in 4,7% of the enterprises; 5,6% of the enterprises lack energy resources while they are inefficiently used in 5,2 % of the enterprises.

Thus, the enterprises of both Latgale and Belarus regions face considerable difficulties both with the resource potential and their usage effectiveness.

In Lithuania regions there is the most favourable situation with the resource usage effectiveness as well as with the resource potential. The greatest difficulties with all the regions are connected with financial potential. The enterprises of Vilnius region face the difficulties with financial resources. (11,3% of the enterprises *lack them or do not have them at all* while they are inefficiently used in 1,2% of the enterprises), 9,2% of the enterprises lack time resources while they are inefficiently used in 1,2% of the enterprises; 1,2% of the enterprises lack technological resources despite the fact that they are used effectively. Other resources are used effectively as well.

In Alytus region difficulties with financial resources have been determined (29,3% of the enterprises *lack them or do not have them at all* whereas all the enterprises use the resources efficiently); 11,7% of the enterprises lack technological resources 2,6% of which use them ineffectively; 2,7% of the enterprises lack human resources; 2,6% of the enterprises lack time resources. Usage effectiveness of human, energy, financial, information and time resources is quite high.

In Utena region in 12,3% of the enterprises difficulties with financial resources have been determined; 5,3% lack human resources, 3,9% of the enterprises lack time resources, 2,9% of the enterprises lack energy and technological resources. Information resources are inefficiently used in 2,9% of the enterprises. Human, energy, finance, technological and time resources are used quite effectively.

In Panevezys region the greatest difficulties are with financial resources: 32,2% of the enterprises *lack them or do not have them at all*; 9,1% of the enterprises lack time resources; 6,5% of the enterprises lack technological resources; 3,7% of the enterprises lack information resources; 1,9% and human resources. However, the effectiveness of the resource usage is quite high (excluding information resources which in 5,8% of the enterprises are used ineffectively).

In Kaunas region there is no problem with either resources or their usage effectiveness. Some minor difficulties have been encountered with financial resources: 7,2 % of the enterprises *lack them or do not have them at all*, 6,7% of the enterprises lack time resources, 5,1% of the enterprises lack energy and information resources, 4,2% of the enterprises lack technological resources. The usage effectiveness of all the resources is very high.

Intercompany cooperation is quite a risky business which involves considerable resources of the enterprises. That is why it is necessary to establish cooperation with regard just to the enterprise strategic priorities. Consequently, being engaged in intercompany cooperation relationships, it is vital to analyse four aspects of enterprise activity: business processes, organization capabilities, designing and implementing value offering, and supply chain management. To develop each of the four aspects of the activity mentioned above it is necessary to implement the appropriate cooperation model based: on the supply chain, on the company capacity, on the market offering, and on the competitive cooperation.

## **5. Assessment of Companies on the Basis of Cooperation with Strategic Providers and Clients (on the Basis of Supply Chain)**

Cooperation on the basis of supply chain is based on business processes. It does not entail broadening of a company activity scope as when implementing this cooperation model either a certain part of work is given to the partner or, when the cooperation is directed to broadening of the intercompany offering up or down the industry chain of adding value, performing of specific actions can be distributed among the organisations. In this regard, the cooperation may focus either on reducing costs or enhancing its quality. Therefore, cooperation model on the basis of supply chain exists to provide available products or services of enterprises in a more efficient way than when using personal resources only. The risks of this cooperation model are minor; they are associated not so much with deterioration in the existing situation, but more with absence of the anticipated progress. The factor which contributes to successful cooperation is similarity of corporate cultures of the cooperating companies: commitment to similar values, similar approaches to management, common incentive schemes and etc.

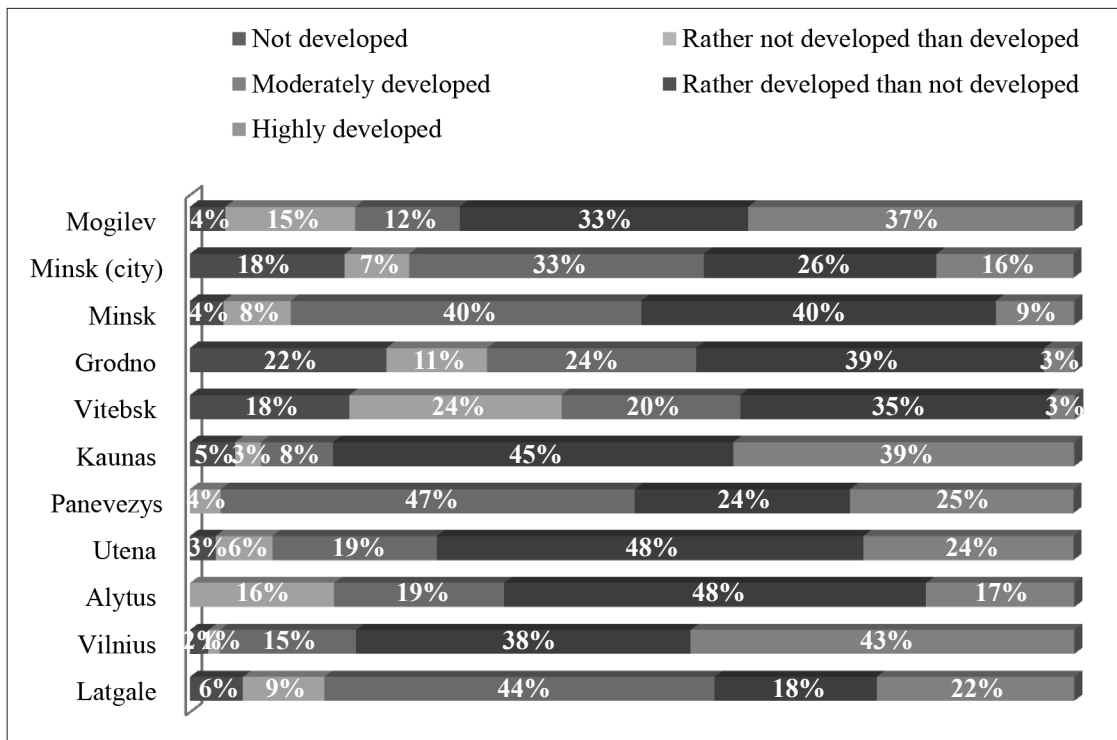
**Table 2. Cooperation with Strategic Providers and Clients (on the Basis of Supply Chain)**

Region	Not developed	Rather not developed than developed	Moderately developed	Rather developed than not developed	Highly developed
Latgale	6%	9,2%	44,1%	18,3%	22,4%
Vilnius	2,1%	1,3%	15,4%	37,8%	43,4%
Alytus	0%	16,3%	19,2%	47,7%	16,8%
Utena	2,9%	6,4%	18,6%	48,2%	23,8%
Panevezys	0%	3,5%	46,8%	24,3%	25,3%
Kaunas	5,1%	2,9%	8,2%	45,2%	38,6%
Vitebsk	18%	24%	20,2%	35,1%	2,8%
Grodno	22,2%	11,4%	23,6%	39,4%	3,4%
Minsk	3,8%	7,6%	39,6%	40,1%	8,9%
Minsk (city)	17,5%	7,3%	33,3%	26,3%	15,5%
Mogilev	4%	14,7%	11,8%	32,6%	36,9%

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013*.

Kaunas and Vilnius regions are in the lead in terms of development of cooperation on the basis of supply chain (83,8% and 81,2% of the enterprises revealed a *developed* and *highly developed* cooperation level respectively). High development of this enterprise cooperation model has been shown by the regions of Utena, Mogilev and Alytus (72%, 69,5% and 64,5% respectively). These are followed by the enterprises of Panevezys и Minsk regions (49,6% and 49%). Moderate development of this enterprise cooperation model can be observed in Grodno region, Minsk and Latgale region (42,8%, 41,8% and 40,7% respectively). The least developed cooperation on the basis of supply chain is in Vitebsk region (37,9%).





**Pic. 3.** Cooperation with Strategic Providers and Clients (on the Basis of Supply Chain)

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

## 6. Assessment of Cooperation to Acquire Knowledge and Experience of other Partners (Cooperation on the Basis of Competencies and Capacities)

Cooperation on the basis of competencies and capacities is based on companies' acquiring the knowledge and experience of one another in order to get a new product within the present activity scope. In this regard, this cooperation type does not broaden the activity scope of a company. It is directed to improvement and if the partners do not get the anticipated advantage, it does not have devastating consequences. That is why although the risks in this model are higher than in the one mentioned above, they are not high either.

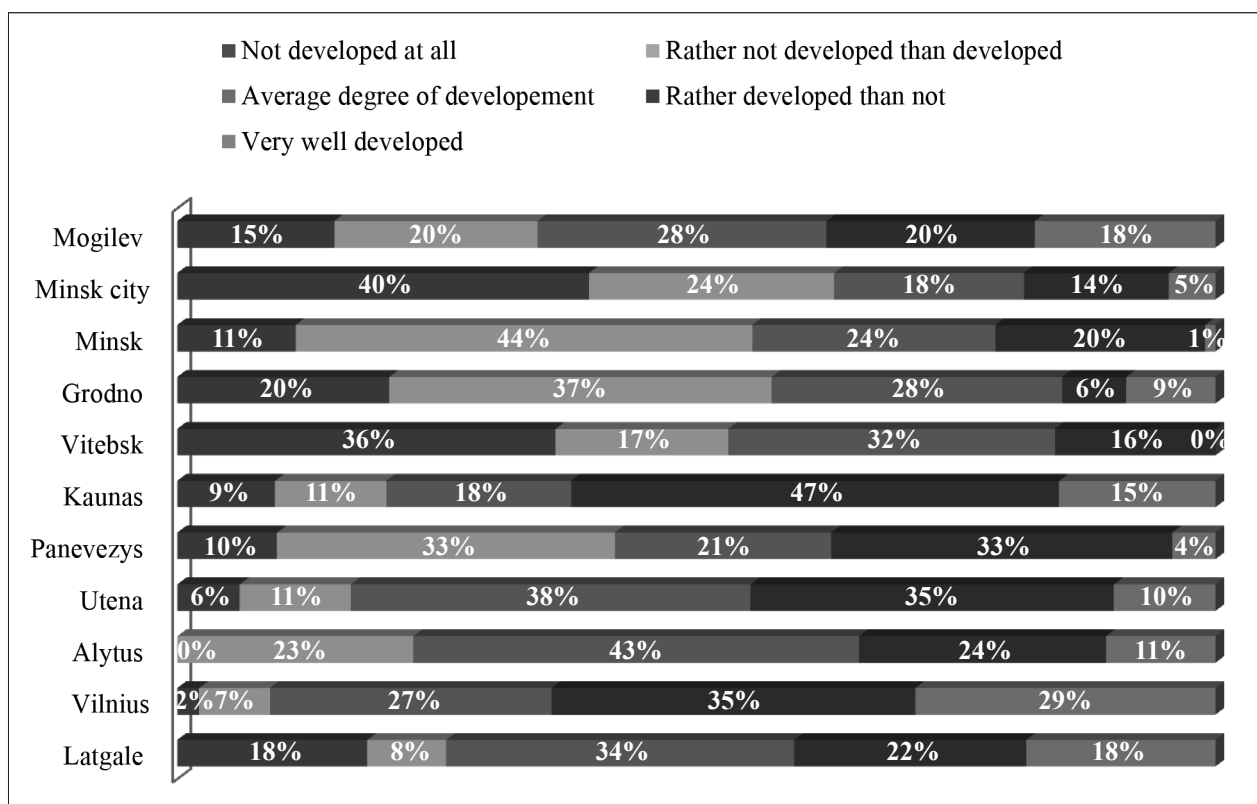
**Table 3.** Cooperation to Acquire Knowledge and Experience of other Partners (Cooperation on the Basis of Competencies and Capacities)

Region	Not developed	Rather not developed than developed чем развито	Moderately developed	Rather developed than not developed	Highly developed
Latgale	18,3%	7,6%	33,5%	22,4%	18,3%
Vilnius	2,1%	6,8%	27,1%	35%	29%
Alytus	0%	22,7%	42,9%	23,8%	10,6%
Utena	6,0%	10,7%	38,4%	35%	9,8%
Panevezys	9,6%	32,5%	20,8%	32,9%	4,2%
Kaunas	9,4%	10,7%	17,8%	47%	15,1%

Vitebsk	36,4%	16,6%	31,5%	15,5%	0%
Grodno	20,4%	36,8%	28%	6,2%	8,6%
Minsk	11,4%	44%	23,5%	20,3%	1%
Minsk (city)	39,6%	23,6%	18,3%	14%	4,5%
Mogilev	15,1%	19,6%	27,8%	20,1%	17,5%

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

Vilnius and Kaunas regions are leading in terms of cooperation development on the basis of capacities (64% and 62,1% of the enterprises revealed a *developed* and *highly developed* cooperation level respectively). Moderate development of this enterprise cooperation model can be seen in the regions of Utena, Latgale, Mogilev, Panevezys and Alytus (44,8%, 40,7%, 37,6%, 37,1%, and 34,4% respectively). The least developed cooperation development on the basis of capacities is in Minsk region, Minsk, Vitebsk and Grodno regions (21,3%, 18,5%, 15,5% and 14,8% respectively).



**Pic. 4.** Cooperation to Acquire Knowledge and Experience of other Partners  
 (Cooperation on the Basis of Competencies and Capacities)

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

## 7. Assessment of a Model of Combining Company Capacities with Promoting a New Product or Service (Cooperation on the Basis of Market Offering)

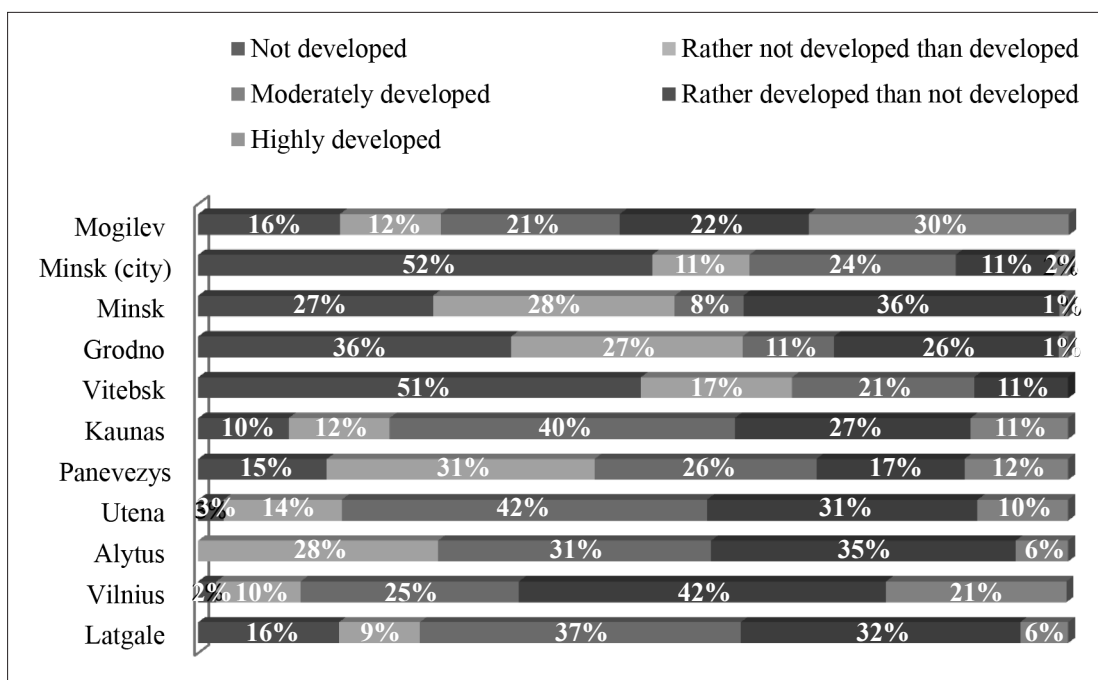
The core of cooperation on the basis of market offering is creation of a new product or service offering. If, however, the ideas are being developed to implement a new offering, cooperation on the basis of capacities is appropriate. Cooperation on the basis of market offering results in creation of a product or service which broadens the activity scope of the participating companies. The clients, in turn, get a new, more advanced offering. The risks of this model are quite high as something new is being created which broadens the activity scope of the participating companies, which is associated with considerable uncertainty, and, as a result, with high risk level. In this way, particular attention should be paid to the processes of contracting and management as well as to defining intellectual property rights.

**Table 4.** Combining Company Capacities with Promoting a New Product or Service (Cooperation on the Basis of Market Offering)

Region	Not developed	Rather not developed than developed	Moderately developed	Rather developed than not developed	Highly developed
Latgale	16,2%	9,3%	36,9%	32,1%	5,5%
Vilnius	2,1%	9,7%	25,1%	42,2%	20,7%
Alytus	0%	27,6%	31,4%	35%	6%
Utena	2,9%	13,6%	42%	31,1%	10,4%
Panevezys	14,8%	30,8%	25,5%	17%	11,9%
Kaunas	10,4%	11,6%	39,7%	27,1%	11,2%
Vitebsk	50,9%	17,4%	20,9%	10,8%	0%
Grodno	36%	26,6%	10,5%	25,8%	1,1%
Minsk	27%	27,8%	7,9%	36,3%	1%
Minsk (city)	52,2%	11,2%	23,7%	11,2%	1,7%
Mogilev	16,3%	11,6%	20,6%	21,7%	29,9%

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

Vilnius and Mogilev regions are at the top in terms of cooperation development on the basis of market offering (62,9% and 51,6% of the enterprises revealed a *developed* and *highly developed* cooperation level respectively). Moderate development of this enterprise cooperation model can be observed in the regions of Utena, Alytus, Kaunas, Latgale, Minsk, Panevezys and Grodno (41,5%, 41%, 38,3%, 37,6%, 37,3%, 28,9% and 26,9% respectively). The least developed cooperation development on the basis of market offering is in Minsk and in Vitebsk region (12,9% and 10,8% respectively).



**Pic. 5.** Combining Company Capacities with Promoting a New Product or Service (Cooperation on the Basis of Market Offering)

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus (B2B)* funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

### 8. Assessment of a Competitive Cooperation Model (Teamwork to Lessen Competition)

Competitive cooperation is based on search for the ways to enter the market not changing the scale of the company production (excluding the situation when new offer prices are established). The goal of competitive cooperation is redistribution of the market power by gradually adding value. Intercompany competitive cooperation forms the basis for subsequent mergers or acquisitions of companies. The focus must be directed to devising contract proposals taking into account state or regional antimonopoly legislation. The risks of this model are high and they must be actively managed, which presupposes monitoring the activity of regulatory authorities, competitors, clients and partners.

**Table 5.** Teamwork to Lessen Competition (Competitive Cooperation)

Region	Not developed	Rather not developed than developed	Moderately developed	Rather developed than not developed	Highly developed
Latgale	8,6%%	19,1%	45,8%	22%	4,4%
Vilnius	6,3%	14,2%	31,0%	33,7%	14,8%
Alytus	8,5%	47%	24,4%	14,3%	5,8%
Utena	8,5%	39,5%	15,9%	32,3%	3,8%
Panevezys	17%	24,2%	41,6%	13,7%	3,5%
Kaunas	9,6%	23%	39,3%	22,9%	5,2%

Vitebsk	71%	12,7%	10,1%	1,3%	4,9%
Grodno	45,9%	13%	18,1%	21,9%	1,1%
Minsk	23,2%	28,1%	47,7%	0%	1%
Minsk (city)	50,3%%	18,7%	14%	8,7%	8,3%
Mogilev	36,2%	1,9%	39,5%	4,6%	17,7%

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus* (B2B) funded by transboundary cooperation programme of Latvia-Lithuania-Belarus.. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

Despite the high risk, the leader of the intercompany competitive cooperation is Vilnius region (48,5% of enterprises have shown a *developed* and *highly developed* level of this cooperation type) whereas competitive cooperation of the regions of Utena, Kaunas, Latgale, Grodno, Mogilev, and Alytus is less developed (36,1%, 28,1%, 26,4%, 23%, 22,3%, and 20,1% respectively). At the bottom of the competitive cooperation development are Panevezys region, Minsk, Vitebsk region, and Minsk region (17,2%, 17%, 6,2%, and 1% respectively).

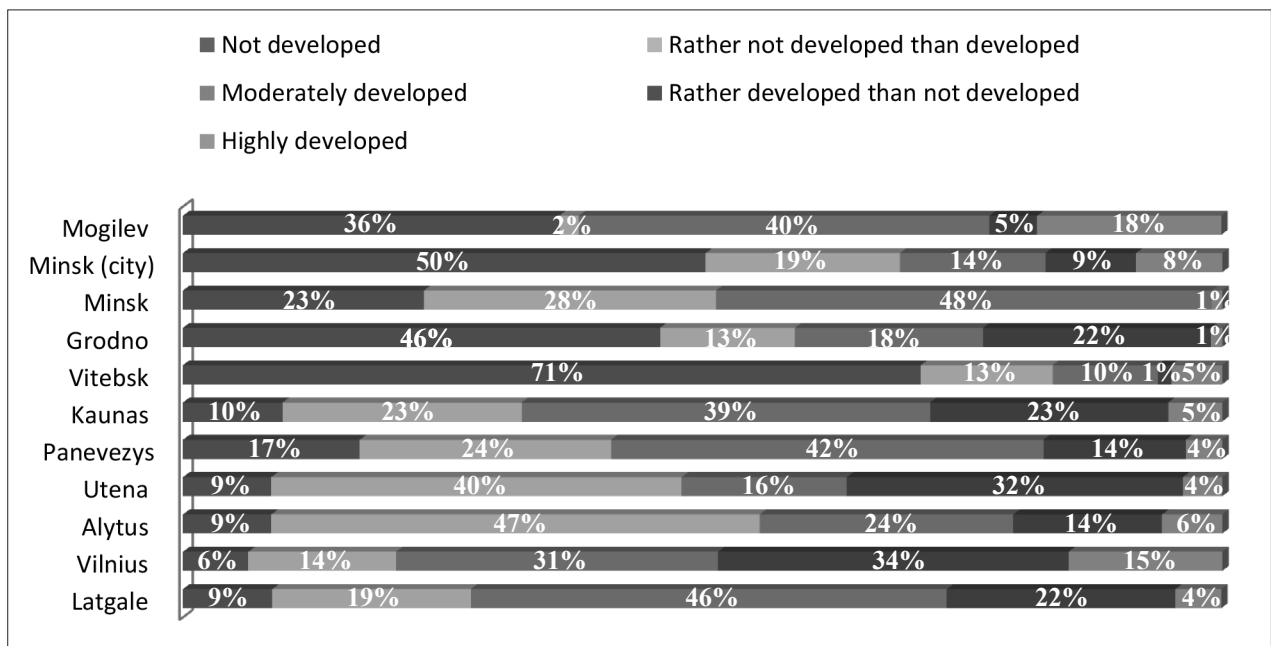


Fig. 6. Teamwork to Lessen Competition (Competitive Cooperation)

Source: calculations of the enterprise survey authors in 2014 within the project *Creating a Unified Support System to Entrepreneurship and Establishing Business Relations for a Sustainable Transboundary Cooperation of Latvia, Lithuania and Belarus* (B2B) funded by transboundary cooperation programme of Latvia-Lithuania-Belarus. *The European Neighbourhood and Partnership Instrument (ENPI) of 2007-2013.*

The partners of cooperative enterprises in Vilnius region have been determined: 1,8% of the enterprises cooperate with enterprises from Switzerland, Sweden and Denmark. In Panevezys region 1,8% of the enterprises cooperate with the enterprises from Latvia and Russia. In Grodno region 5,1% of the enterprises cooperate with enterprises from China, Russia and Poland. In Kaunas region 5,2% of the enterprises cooperate with enterprises from Poland and Germany. In Utena region 6,4% of the enterprises cooperate with enterprises from Poland and Germany. In Latgale region 8,1% of the enterprises cooperate with enterprises from England, Poland, Norway, Sweden and Finland. In Minsk 17,6% of the enterprises cooperate with enterprises from Austria, Russia, Lithuania, Germany, Poland and Turkey. In Mogilev region 18,7% of the enterprises cooperate with enterprises from the USA, Russia, the Baltic States and Germany. Thus, it can be concluded that the number of the cooperative

enterprises characterised by full integration level testifies its insufficiency in some regions.

In general, in assessing the border area of Latvia, Lithuania and Belarus it can be singled out that the cooperation model on the basis of supply chain predominates (the average is 3,47; the median is 4); the cooperation model on the basis of competencies or capacities is less developed (the average is 2,81; the median is 3); the cooperation model on the basis of the market offering and development of a new product is not developed enough either (the average is 2,68; the median is 3). The least developed model is the one of competitive cooperation (the average is 2,47; the median is 3).

## Conclusions

The necessity for intercompany network cooperation has been determined: 21% - 39% of the companies reveal costs associated with paying external services. The greatest need in intercompany network cooperation has been determined in enterprises of Minsk and of the regions of Panevezys, Utena, Latgale, Vilnius, Kaunas and Alytus. Not that urgent need in intercompany network cooperation has been determined in the regions of Mogilev, Grodno, Minsk and Vitebsk.

The enterprises of Latgale and Belarus regions face significant challenges in both resource potential and in effectiveness of its use. In Lithuania regions there is a favourable situation with effective use of resources as well as with the resource potential as such. Therefore, the determined predominance of the cooperation model on the basis of supply chain in the cross-border region (Latvia-Lithuania-Belarus) can be explained by compensating the lack of one's own resources as well as by this model posing the lowest risk. It is possible that an additional factor which contributes to sticking to this model is close location of the cooperating companies.

Kaunas and Vilnius regions are in the lead in terms of development of cooperation on the basis of supply chain (83,8% and 81,2% of the enterprises revealed a *developed* and *highly developed* cooperation level respectively). High development of this enterprise cooperation model has been shown by the regions of Utena, Mogilev and Alytus (72%, 69,5% and 64,5% respectively). These are followed by the enterprises of Panevezys и Minsk regions (49,6% and 49%). Moderate development of this enterprise cooperation model can be observed in Grodno region, Minsk and Latgale region (42,8%, 41,8% and 40,7% respectively). The least developed cooperation on the basis of supply chain is in Vitebsk region (37,9%).

Vilnius and Kaunas regions are leading in terms of cooperation development on the basis of capacities (64% and 62,1% of the enterprises have revealed a *developed* and *highly developed* cooperation level respectively). Moderate development of this enterprise cooperation model can be seen in the regions of Utena, Latgale, Mogilev, Panevezys and Alytus (44,8%, 40,7%, 37,6%, 37,1%, 34,4% respectively). The least developed cooperation development on the basis of capacities is in Minsk region, Minsk, Vitebsk and Grodno region (21,3%, 18,5%, 15,5% and 14,8% respectively).

Vilnius and Mogilev regions are at the top in terms of cooperation development on the basis of market offering (62,9% and 51,6% of the enterprises revealed a *developed* and *highly developed* cooperation level respectively). Moderate development of this enterprise cooperation model can be observed in the regions of Utena, Alytus, Kaunas, Latgale, Minsk, Panevezys and Grodno (41,5%, 41%, 38,3%, 37,6%, 37,3%, 28,9% and 26,9% respectively). The least developed cooperation development on the basis of market offering is in Minsk and in Vitebsk region (12,9% and 10,8% respectively).

Despite the high risk, the leader of the intercompany competitive cooperation is Vilnius region (48,5% of enterprises have shown a *developed* and *highly developed* level of this cooperation type) whereas competitive cooperation of the regions of Utena, Kaunas, Latgale, Grodno, Mogilev, and Alytus is less developed (36,1%, 28,1%, 26,4%, 23%, 22,3%, and 20,1% respectively). At the bottom of the competitive cooperation development are Panevezys region, Minsk, Vitebsk region, and Minsk region (17,2%, 17%, 6,2%, and 1% respectively).

Thus, intercompany cooperation has become one of the most important features of modern times as because

of it control and information are distributed. Proliferation of intercompany networks dictates changes in the means of coordinating human activity and frames the mechanisms of structuring in the society. However, for cooperation to be successful, apart from the process of establishing relations and subsequent management, it is necessary to establish a clear procedure of business partner selection. The business partner must share common values and aims; integrated planning must take place both at the beginning of the cooperation and in the course of it as well as a standardized assessment of the cooperation process and progress in the collaborative work must be made.

## References

- Balcerzak P. A.; Pietrzak B. M. 2017. Digital Economy in Visegrad Countries. Multiple-criteria Decision Analysis at Regional Level in The Years 2012 and 2015, *Journal of Competitiveness* 9(2): 5 – 18.
- Belas, J., Sopková, G. (2016). Significant determinants of the competitive environment for SMEs in the context of financial and credit risks. *Journal of International Studies*. 9(2), pp.139 – 149. DOI: <http://dx.doi.org/10.14254/2071-8330.2016/9-2/10>
- Bergenholtz, C; Waldstrøm, C. 2011. Inter-organizational network studies — a literature review, *Industry and Innovation* 18(6): 539–562.
- Besser, T.L; Miller, N. 2011. The structural, social, and strategic factors associated with successful business networks, *Entrepreneurship & Regional Development* 23(3–4): 113–133.
- Cairncross F. The company of the future: Meeting the management challenges of the communications revolution. L.: Profile Books Ltd., 2002.
- Choi, T.Y; Hong, Y. 2002. Unveiling the structure of supply networks: case studies in Honda, Acura, and DaimlerChrysler, *Journal of Operations Management* 20(5): 469–493.
- Colombo, M.G; Laursen, K; Magnusson, M; Rossi-Lamastra, C. 2011. Organizing inter-and intra-firm networks: what is the impact on innovation performance?, *Industry and Innovation* 18(6): 531–538.
- Dicken, P. 2003. *Global Shift: Reshaping the global economic map in the 21st century*. 4th ed. L.; Thousand Oaks, CA; New Dehli: SAGE Publications.
- Fuschi, D. L.; Tvaronavičienė, M. 2016. A network based business partnership model for SMEs management, *Entrepreneurship and Sustainability Issues* 3(3): 282-289. [https://doi.org/10.9770/jesi.2016.3.3\(5\)](https://doi.org/10.9770/jesi.2016.3.3(5))
- Goeke, C; Gersch, M; Freiling, J. 2010. The coevolution of alliances and industries: How industry transformation influences alliance formation and vice versa, *Research in Competence-Based Management* 5: 79–109.
- Gorlacheva, E.N; Omelchenko, I.N; 2010. The Role of Intercompany Cooperation Realising the Concept of Open Innovation, *Science and Education: Electronic Scientific and Technical Publication* 12: 1-17.
- Haggins, R. 2000. The success and failure of policy–implanted inter–firm network initiatives: motivations, processes and structure / R. Haggins, *Entrepreneurship and Regional Development* 12: 111–135.
- Håkansson, H; Waluszewski, A. (eds.) 2007. *Knowledge and innovation in business and industry: the importance of using others*. Taylor & Francis.
- Hamel, G. 2012. *What matters now: How to win in a world of relentless change, ferocious competition, and unstoppable innovation*. Bass, Wiley.
- Hamel, G; Prahalad, C.K. 1996. *Competing for the future*. – Harvard: Harvard Business Review, 384 p.
- Hilkevics, S.; Hilkevics, A. 2017. The comparative analysis of technology transfer models, *Entrepreneurship and Sustainability Issues* 4(4): 540-558. [https://doi.org/10.9770/jesi.2017.4.4\(11\)](https://doi.org/10.9770/jesi.2017.4.4(11))
- Katenev, V. I. 2007. Perspectives of Network Economy Development under the Emerging Knowledge Society, *Problems of Modern Economics* 2 (22).
- Katkalo, V.S. 2006. *Evolution of Strategic Management Theory*. St. Petersburg: Publishing House of St. Petersburg State University.
- Lavrinenko, O.; Jefimovs, N.; Teivāns-Treinovskis J. 2017. Issues in the area of secure development: trust as an innovative system’s economic growth factor of border regions (Latvia-Lithuania-Belarus), *Journal of Security and Sustainability Issues* 6(3): 435–444. <http://>

[dx.doi.org/10.9770/jssi.2017.6.3\(9\)](http://dx.doi.org/10.9770/jssi.2017.6.3(9))

Lavrinenko, O.; Ohotina, A.; Ruzha, O.; Shmarlouskaya, H.; Tumulavičius, V. 2015. Cross Border Cooperation of Small and Medium Enterprises: Problems, Opportunities, Prospects. Monograph. Rezekne Higher Education Institution, 308 p.

Marshall, A. 1890. Principles of Economics. London: Macmillan and Co., Ltd., 1920, 8th edition. Available on the Internet: <http://www.econlib.org/library/Marshall/marP.html>

Menshikov, V.; Lavrinenko, O.; Sinica, L.; Simakhova, A. 2017. Network capital phenomenon and its possibilities under the influence of development of information and communication technologies, Journal of Security and Sustainability Issues 6(4): 585-604. [http://doi.org/10.9770/jssi.2017.6.4.\(5\)](http://doi.org/10.9770/jssi.2017.6.4.(5))

Miles, R. E. 1992. Causes of failure in network organizations/ R. E. Miles, C. C. Snow. California Management Review 34 (4): 53 – 72.

Miles, R.F; Snow, C.C. 1986. Network Organizations: New Concepts for New Forms, California Management Review 28(3).

Miles, R; Snow C. 1989. Fit, failure and the hall of fame. 1984. Miles R. Adapting to technology and competition: A new industrial relations system for the 21st century. California Management Review 31(2); 11-14.

Miller, N. 2010. Networking as marketing strategy: a case study of small community business. Qualitative Market Research: An International Journal 13(3): 253–270.

Möller, K; Rajala, A. 2003. Rise of Strategic Nets - New Modes of Value Creation, Russian Management Journal 6(4): 113–140.

Monni, S.; Palumbo, Tvaronavičienė, M. 2017. Cluster performance: an attempt to evaluate the Lithuanian case, Entrepreneurship and Sustainability Issues 5(1): 43-57. [http://doi.org/10.9770/jesi.2017.5.1\(4\)](http://doi.org/10.9770/jesi.2017.5.1(4))

Prasad, R. 2004. Emerging Paradigm of Strategic R&D alliances vis-à-vis corporate international competitiveness, Technology Experts 7(1): 1-6.

Prause, G.; Atari, S. 2017. On sustainable production networks for Industry 4.0, Entrepreneurship and Sustainability Issues 4(4): 421-431. [https://doi.org/10.9770/jesi.2017.4.4\(2\)](https://doi.org/10.9770/jesi.2017.4.4(2))

Rüegg-Stürm, J. 2000. Network Organisational Management Forms – Fashion or Necessity? //J. Rüegg-Stürm, L.Achtenhagen, Theory and Practice Problems of Management 6: 53 – 57.

Sheresheva, M.Y. 2010. Forms of Intercompany Network Cooperation. Moscow: Publishing House of State University of Higher School of Economics.

Simionescu, M.; Lazányi, K.; Sopková, G.; Dobeš, K.; Balcerzak, A. P. 2017. Determinants of Economic Growth in V4 Countries and Romania, Journal of Competitiveness 9(1): 103 – 116.

Tvaronavičienė, M.; Černevičiūtė, J. 2015. Technology transfer phenomenon and its impact on sustainable development, Journal of Security and Sustainability Issues 5(1): 87–97. DOI: [http://dx.doi.org/10.9770/jssi.2015.5.1\(7\)](http://dx.doi.org/10.9770/jssi.2015.5.1(7))

Veilleux, S; Haskell, N; Pons, F. 2012. Going global: how smaller enterprises benefit from strategic alliances, Journal of Business Strategy 33(5): 22–31.

Webser, J. 1995. Networks of Collaboration or Conflict? Electronic Data Interchange and Power in the Supply Chain, The Journal of Strategic Information Systems 4(1): 31 – 42.

Ziber, P. 2000. Network Management as a Key Competence of an Enterprise/P.Ziber, Theory and Practice Problems of Management 3: 92 – 96.