

COOPETITION AS AN ATTRIBUTE OF CLUSTERS FOSTERING INNOVATIVENESS OF ENTERPRISES – THE CASE OF ONE CREATIVE CLUSTER

Barbara Jankowska

Poznań University of Economics, Faculty of International Business and Economics, Department of International Competitiveness

Ph.D.

barbara.jankowska@ue.poznan.pl

—Abstract—

In the literature one can come across numerous definitions of clusters. Despite slight differences there is the compliance among experts that coopetition is a crucial attribute of clusters. Cooperation and competition which constitute coopetition have been traditionally perceived as opposites. But nowadays this kind of business relationships is becoming more and more popular and recognized as a solution fostering innovativeness of companies.

The purpose of this paper is a brief presentation of the concept of clusters, creativity and coopetition as a key characteristic of clusters and its exemplification by announcing the results of the research carried out by the author in relation to coopetition in Leszno Printing and Advertising Cluster. The experiences of this creative cluster show that it is possible to combine such different ways of behaviour of enterprises as co-operation and competition which is sometimes referred to as the symbiosis of water and fire and to exploit it in fostering innovativeness of companies.

Key Words: *coopetition, cluster, innovativeness*

JEL Classification: L14, O31

1. THEORETICAL BASIS FOR RESEARCH INTO CREATIVE CLUSTERS AND COOPETITION AS PRO-INNOVATIVENESS PHENOMENA

1.1. The concept of clusters and creativity

In the literature one can come across many definitions of clusters. As the aim of the paper is not to review them, there is presented only one that was used in the empirical research conducted by the author. The most popular concept of a cluster was developed by Porter (Porter, 1998), according to which a cluster is “a group of companies existing in a geographical neighbourhood along with the institutions which are related to them and deal with a particular activity, connected by similarities and competing one another”. The most typical attributes of clusters according to the above mentioned Christian Ketels (2004) are as follows:

- Proximity: the entities need to be sufficiently close spatially to permit positive spillovers and enable the sharing of common resources to occur,
- Linkages: their activities need to share a common goal for them to be able to profit from proximity and interactions,
- Interactions: being close and working on related issues does not seem to be enough – some level of interaction is essential,
- Critical mass: a sufficient number of participants being present are required for the interactions to have a meaningful impact on companies.

Their interactions within clusters create cooperative relationships that are crucial for creation and diffusion of knowledge and in this for fostering innovativeness. Innovativeness is related to the concept of creativity, but it is not the same. Creativity seems to be prior to innovativeness. Santagata (2004: 75-90) stresses, that creativity in terms of art and economics differs from each other. The economic concept of creativity is associated with the search for new paths, new ideas, which can be implemented by entrepreneurs, and so the idea turns into action to benefit those involved in the process. In the case of innovation, aesthetic aspects are irrelevant, while they play a big role when it comes to creativity in terms of arts. Creativity can also be seen as a social process. Interactions with other people, institutions, social structures, in which the knowledge is embedded are the prerequisite for starting the process of creativity. Creativity is the basic concept for creative industries and creative clusters. There is an extensive

literature that gives more detailed accounts of the various terms related to creative industries (Power, Nielsén, 2010, Stryjakiewicz et.al. 2009: 15). An important position within the creative industries belongs to knowledge-based industries. The set of creative industries comprises:

- Advertising,
- Architecture,
- Photography,
- Libraries, museum, heritage,
- Object d’art – glass, ceramics, cutlery, crafts, jewellery,
- Design – fashion design, graphic design, interior design, product design,
- New media, film, broadcast media,
- The “finer” arts – literary, visual and performance arts,
- Print media and publishing,
- Software, interactive leisure software,
- Financial services,
- Legal services and other business services,
- Research and development and education,
- Production and services in the field of information and communication technologies (ICT).

1.2. The phenomenon of coopetition

In the literature various approaches to coopetition can be found. Dagnino and Padula (2002) define coopetition as “an incomplete interest and goal congruence”. On the basis of the number of interdependent firms and the level of the value chain they distinguished four types of coopetition: simple dyadic (i.e. alliance – consortium in the field of R&D – only two partners), complex dyadic (i.e. alliances in automobile sectors – many partners, different fields of cooperation – R&D, manufacturing of components), simple network (coopetition among multiple firms at one level of the value chain), and complex network (i.e. Italian industrial districts). Clusters are a particular example of the type called complex network. Cooperation and competition which constitute coopetition are one of the main attributes of clusters. This process is related to knowledge transfer and knowledge spillovers which can have positive impact on company’s innovativeness. Innovations can be recognized as a result of knowledge transfer and knowledge spillovers within clusters. The knowledge artefacts can be either

explicit or tacit in nature. The process of transmitting tacit knowledge is today one of major factors in the emergence of clusters. The more important the tacit knowledge is for production, the more localised the production is likely to be (Evers, 2008:6). One can assume that the intensity of interactions among cluster participants, especially among competitors that cooperate in some areas, influence the efficiency of the whole system, determining the capacity for acquiring, assimilating and adopting new knowledge. Results of those processes are innovations within clusters.

2. METHODOLOGY OF THE STUDY

2.1. Variables, relationships studied and the research question

The aim of this paper is an attempt to investigate the implications of cooperation for innovativeness of companies-participants of one creative cluster. For the sake of empirical research the author used Dagnino and Padula's approach to cooperation (2002: 15-17). Three variables were used to measure the intensity of cooperation: the number of competitors the company cooperated with, the differentiation of cooperative relations with competitors assessed by the number of organizational forms of cooperation, and the number of links in the value chain which are performed in cooperation with market rivals. There was used the concept of innovation at the company level presented in the 2008 Oslo Manual which can be associated with the concepts developed by Schumpeter :

- introduction of a new product or a qualitative change in an existing product;
- process innovation new to an industry;
- the opening of a new market;
- development of new sources of supply for raw materials or other inputs,
- changes in industrial organization.

According to the Oslo Manual (2008: 16-17) there are four types of innovation – product, process, organizational and marketing innovation. In Table 2 the operationalized variables of the research are presented.

The research question was whether cooperation with market rivals caused any visible changes in the innovativeness of companies – maybe there was an increase in the share of new products sold in the total sales of a company, the company introduced new organizational solutions, decided to expand into new foreign markets or implemented new forms of expansion (entrance strategies more risky and more capital-intensive than export).

Table 2: Operationalization of research variables

| Variable | Measures |
|--------------------------|---|
| Intensity of cooperation | The number of competitors the firm cooperates with |
| | Differentiation of cooperative relations with market competitors – the number of organizational forms of cooperation |
| | Differentiation of cooperative relations with market competitors – the number of links in the value chain included in the cooperation with market competitors |
| Innovation activity | The increase in the share of new products sold in the total sales of the company – product innovation |
| | New organizational solutions – organizational innovation |
| | Expansion into new foreign markets – marketing innovation |
| | New forms of foreign expansion – organizational innovation |

Source: author's own studies.

2.2. METHOD OF DATA COLLECTION

Empirical research into the consequences of cooperation for innovativeness of enterprises from one creative cluster in Poland in form of direct interviews were conducted during the summer of 2010. The method of sampling used was a non-random selection method. It was snowball sampling. Snowball sampling is a special non-probability method used when the desired sample characteristic is rare and this is the case in this research – cooperation is not so visible and popular as competition or even cooperation with suppliers or clients. The interviews were conducted with managers at a medium or high level or with the owners of the firms. The research tool was a questionnaire. To quantify the respondents' opinions a five-degree ordinal scale was used, where 1 meant – “definitely not”; 2 – “rather not”; 3 – “difficult to say”; 4 – “rather yes”; 5 – “definitely yes”. The interviews gave the opportunity to ask some open questions and part of them was

related to the issue of innovativeness. The whole set of collected data was used to prepare a case study presenting functioning of one creative cluster in Poland (Jankowska 2012: 277-293). The paper is based just on a piece of results obtained and related to the issue of innovativeness.

2.3. Characteristics of the sample

The firms that were interviewed are representatives of the Printing and Advertising Cluster in Leszno, one of the main cities in the Wielkopolska region in western Poland. Leszno Printing & Advertising Cluster (LPAC) is supported by a cluster initiative which was developed by the Marshal Office of Wielkopolska Region and based on the existing economic ties and interactions among companies representing printing and advertising industries. The cluster was formalized in 2007 and today there is a cluster organization in the legal form of an association. The interviews were conducted with 14 companies participating in the association. Altogether there are 27 firms involved in the formalized cluster. But according to the opinion of the cluster manager those 14 companies are the most active ones, involved in co-opetitive ties what was crucial having in mind the aim of the study. The majority of the companies are micro and small family firms.

3. RESEARCH RESULTS

3.1. Coopetition within LPAC

LPAC firms reported building cooperative relationships with rivals in number from 2 to 5 and their involvement in other than cluster forms of coopetition – 2 companies indicated business networks and 1 firm pointed to strategic alliances. They signalled cooperation with national – Polish competitors, particularly located in Wielkopolska that are larger than they are and participate in the same as they economic self-government organizations. The respondents were offered 10 possible areas of cooperation which corresponded to the various links in the chain of value creation: product and semi-product supply, supply logistics, production operations, “we subcontract production for our brand/we accept production orders for products from the other company’s brand”, technology development, human resource management (e.g. temporary work, employee leasing, training), company infrastructure/management support systems, distribution logistics, sales and marketing, and after-sale service. The respondents conduct cooperation in five of the ten above mentioned areas. The average of the answers in the case of five of

those potential areas of cooperation goes beyond the level of 3 and in three cases is much closer to the level of 4. The highest ratings were received by acceptance of production under foreign brand (3.86), manufacturing operations and technology development (3.71).

The most important advantages of cooperation for LPAC companies are:

- Complementing each others' activity (4.50),
- Achieving economies of specialization (4.43),
- Taking more advantage of market opportunities (4.43).

Each of the 10 advantages was evaluated higher than 4.00 and it confirms very positive perception of cooperation among the companies. The disadvantages were evaluated as not very important. Each disadvantage of cooperation got the rank around 2.00.

LPAC can be recognized as an environment positively affecting the innovativeness of companies-its participants. According to the opinions of respondents cooperation within the cluster helped the companies to increase the share of new products in total sales of their companies (score 4.00), which indicates the impact of cooperation on product innovation. The entities noticed positive consequences of cooperation for organizational innovations (score 3.57). However, there were no positive changes in terms of marketing innovations. Ratings do not even reach the level of 2.00. The reliability of these ratings is also confirmed by the lack of involvement of respondents in the activities on foreign markets. The surveyed companies focused on the domestic market, and even narrower, at most regional.

Table 3. Results of competition for innovativeness of companies

| Types of innovation | Average | Standard deviation |
|---|----------------|---------------------------|
| The increase in the share of new products sold in the total sales of the company – product innovation | 4.00 | 0.55 |
| New organizational solutions – organizational innovation | 3.36 | 1.15 |
| Expansion into new foreign markets – marketing innovation | 1.50 | 1.16 |
| New forms of foreign expansion – marketing innovation | 1.29 | 0.61 |

Source: own research.

The research method – direct interviews gave the opportunity to use not only the questionnaire but to ask more and investigate the issue of innovativeness. After the interviews the author concludes that LPAC is an example of an active entrepreneurial and pro-innovation structure. A spectacular confirmation of the fact is that seven micro-companies which participate in the cluster were able to obtain "innovation vouchers". Innovation Voucher Programme in Poland allows micro and small businesses to get full financial funding of activities dedicated to collaboration with an R&D institution.

In 2008 the idea of the contest for innovation vouchers was presented to cluster companies by representatives of the Polish Agency for Enterprise Development. Three firms decided to participate in the contest but they failed. One year later two of the three companies prepared their applications and presented them to the council of the program "Innovation Vouchers". This time their applications were very well prepared and they got high evaluation. It was important that the companies cooperated in the process of preparation and shared their visions with one another. Representatives of the companies discussed the issues with the cluster coordinator who is recognized as a strategic leader. The financial support won by the two companies in 2009 and by next five enterprises in 2010 - altogether seven firms was the opportunity to develop the collaboration with the Research & Development Centre for the Graphic Arts and to improve the innovativeness of companies, especially in terms of their products. Cooperation with the research and development institution also allowed to find the right approach to the transfer of technology and knowledge. Entrepreneurs pointed to three simple, but important issues. You need time to seek innovation needs. Only when those are defined, you can start the search for funding for cooperation. The

knowledge transfer will meet its role only if it will respond to real needs of an enterprise.

The coopetition within LPAC supports innovative activities of the enterprises and fosters important changes in the education sector in the location of the cluster. Thanks to explicit formulation of demands in terms of the profiles of employees, the companies and the cluster coordinator were able to convince the Leszno City Council to develop new fields of education. Thanks to their efforts there operates the secondary vocational school - The School of Electro-Telecommunications. In this way the businesses will get access to well-educated, professional workforce that will contribute to the innovativeness of enterprises. Summing up we can conclude that the intra-cluster coopetition has an impact not only on the innovativeness of the companies but even influences the education profile of the particular location and makes it more pro-innovative.

4. CONCLUSIONS AND FUTURE RESEARCH

The research results show that among companies from LPAC one can identify entities aware of being involved in collaboration with their market rivals. The respondents indicated the number of rivals they cooperate with and tried to assess 'the pros and cons' of this peculiar phenomena. The results of the empirical research highlight that in the case of LPAC coopetition is a kind of remedy against „collective blindness” mentioned by Tura and Haarmaakorpi (2005: 1111-1125). The obtained results seem to confirm the thesis, that coopetition stimulates transfer of knowledge and market development. The increase of the share of new products in the total sale of a firm which appears thanks to cooperation with market rivals is a sign that coopetition helps in creating customer needs and preferences what was underlined by Garcia and Atkin (2005). The involvement of a firm in a cluster, business network, strategic alliance, short-term agreement is a great opportunity to learn new ways of behaviour – in other words to capture a new strategy. A firm must learn how to behave being a cluster participant, network actor, partner in an alliance or short-term agreement. Being involved in an exact form of coopetition means being in specific relation with some other market players and being forced to cope with them in a specific way. Their behaviour can encourage the firm to change its own behaviour. It can engender imitation of the behaviour of partners which from the view point of the firm will be innovation – new strategy. The obtained results are only a snapshot of business relationships among LPAC companies but apart from that fact, it is possible to

formulate some general recommendations for enterprises and entities involved in creating business environment in Wielkopolska. The prerequisite for cooperation is mutual trust, which is even more needed for cooperation with rivals. Local and regional authorities as well as institutions of business environment as non-business actors could help companies develop relationships based on trust. Efforts of these institutions do not replace companies' activities but can create the atmosphere of trust, promoting ethic business behaviour or organizing meetings for networking firms. The biggest disadvantage of cooperation with rivals indicated by the cluster participants is the threat of diffusion of core competences. The core competencies are very often the know-how of a firm. To increase safety in this kind of a business relationship intellectual property rights play a crucial role. Managers need more data and knowledge about how to protect their rights while sharing their know-how. There is a space to be cultivated by the mentioned institutions.

Transformation in the landscape of business relationships and companies competitiveness (Dzikowska, Gorynia 2012) brings a great challenge for researchers. The challenge is methodological in nature. The question how to assess intensity of competition among and between companies remains open. What are the appropriate measures? The task is very difficult as the phenomenon can be discussed from the perspective of economics and the perspective of management science. The present study does provide guidance for directions as to what factors and relationships deserve to be further investigated.

BIBLIOGRAPHY

- Dagnino, Giovanni, Battista., Padula, Giovanna (2002), *Coopetition Strategy. A New Kind of Interfirm Dynamics for Value Creation*, Paper presented at EURAM – the European Academy of Management, Second Annual Conference – “Innovative Research in Management”, Stockholm, 9th-11th May 2002 <http://www.altruists.org/static/files/coopetition%20strategy.pdf> [Accessed 17.02.2011].
- Dzikowska Marlena, Gorynia Marian (2012), *Teoretyczne aspekty konkurencyjności przedsiębiorstwa – w kierunku koncepcji eklektycznej?* (Theoretical aspects of firm's competitiveness – towards eclectic approach?) “Gospodarka Narodowa”, No. 4, pp. 1-30.

- Evers Hans-Dieter (2008), "Knowledge Hubs and Knowledge Clusters: Designing Knowledge Architecture for Development", *ZEF Working Paper Series*, Center for Development Research (ZEF), Bonn, University of Bonn.
- Garcia, Rosanna, Atkin, Tom (2005), "Co-opetition for the Diffusion of Resistant Innovations: A Case Study in the Global Wine Industry, Institute for Global Innovation Management", Working Paper No: 05-002.
- Jankowska, Barbara (2012), *Koopetycja w klastrach kreatywnych (Coopetition within creative clusters)*, Poznań, Uniwersytet Ekonomiczny w Poznaniu.
- Ketels, Christian (2004), "European clusters", (in Thomas Menztel-Ed, *Structural Change in Europe 3 – Innovative City and Business Regions*), Bollscheivel, Hagbarth Publications, pp. 1-5, http://www.isc.hbs.edu/pdf/Ketels_European_Clusters_2004.pdf, [Accessed 18.04.2013].
- Oslo Manual (2008), *Guidelines for collecting and interpreting innovation data*, OECD, Eurostat.
- Porter, Michael (1998), "Clusters and the New Economics of Competition", *Harvard Business Review*, Vol. 76, No. 6, pp. 77-90.
- Power, Dominic, Nielsén, Tobias (2010), Priority Sector Report: Creative and Cultural Industries, Europe Innova, http://www.europe-innova.eu/c/document_library/get_file?folderId=148901&name=DLFE-9315.pdf, [Accessed 18.04.2013].
- Santagata, Walter (2004), *Creativity fashion and market behavior*, in: Dominic Power, Allen Scott- Eds., *Cultural Industries and the Production of Culture*, London, Routledge, pp. 75-90.
- Stryjakiewicz, Tadeusz., Męczyński, Michał, Stachowiak, Krzysztof (2009), *Sektor kreatywny w poznańskiej gospodarce*, Poznań, Uniwersytet im. Adama Mickiewicza (Creative sector in the economy of Poznan), <http://www.poznan.pl/mim/public/publikacje/attachments.html?co=show&instance=1017&parent=31288&lang=pl&id=64772>, [Accessed 18.04.2013].
- Tura, Tomi, Harmaakorpi, Vesa (2005), "Social capital in building innovative regional capability", *Regional Studies* Vol. 39, No. 8, pp. 1111-1125.