Improvement of cooperation among SMEs and other stakeholders as means of fostering innovation

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Introduction

A business does not operate in a social or economic vacuum. No matter what approach or perspective of it we take, it is meant to be involved in some kind of cooperation with other market actors. Small and medium sized enterprises, because of the liability of smallness implying their scarcity of resources, are not able to compete on the basis of economies of scale and so are even more destined to cooperate and network with other stakeholders . Cooperation itself is no longer a domain of the individual enterprise, especially a small organization. Therefore, the interest of SMEs in involvement into cooperation with other stakeholders seems to work as a natural development path for an enterprise.

Cooperation via networks and networking among SMEs and other stakeholders

Main academic discussion evolving around concepts of cooperation among SMEs uses concepts of networks and networking. There has been substantial contribution in terms of research on networks in business context. Overall, when we discuss networks in the context of entrepreneurship and small business, we may distinguish three types of networks:

- networks as personal contact networks of entrepreneurs, often named as social networks.
- locally clustered groups of small businesses linked together by interdependencies (e.g. industrial districts of *Third Italy*, *Silicon Valley* cluster)
- networks as organizations supporting inter-firm cooperation and collaborations such as chambers of commerce, business clubs.

In practice, it is often difficult to distinguish a particular network phenomena in a structure of businesses working together. One of the examples are industrial districts in Third Italy, to which we refer to later in the paper, where cooperation linkages between companies overlap with cases of institutional support for inter-firm cooperation together with entrepreneurs being connected on the basis of social networks, strengthened by the spirit of togetherness.

Third Italy, is a region with many industrial districts working on the basis of networking and cooperation idea among SMEs. It is very often used as an example of a unique structure of industrial organization, characterized by strong attachment to place, interdependencies between organizations, craft skills and innovation. Perry[1] talks about the districts and describes their success thanks to '*industrial atmosphere*' while referring to Becattini. There are '*secrets of industry in the air*'.

Strong attachment to place strongly linked to shared norms, business inclination towards cooperation; the local know-how, the diffusion of the knowledge (so called *knowledge spillovers*) in the area and capacity for innovation together with specialization within value chain and division of labor constitute strong pillars for districts' success. Industrial districts are alternative models to large, vertically integrated companies. The business population is dominated by SMEs. Yet, it is claimed that districts are more flexible and display better innovation flows when compared to large corporations. Firms' cooperation does not exclude competition and vice versa. This issue is one of the most relevant points for discussion among entrepreneurs and small business owners, who easily think of other business as competitors as a natural effect market processes. It is more difficult for entrepreneurs to consider cooperation with the same market actors.

Third Italy is a valuable best practice for the reflection on stimulating the Hanseatic spirit, that was very strong and displayed strong interconnections between cities in Baltic Sea region in the former times. It especially important in the context for the discussion of the aims of Hanseatic Parliament, which wants and makes efforts to build the 'we feeling' in the area of Baltic Sea. Without doubt, Hanseatic tradition and success was significant between XIVth and XVth century, as *Hansetage* policy was aimed at building it. Hansa started losing its strength, as soon as particular cities became more dependent on the monarchs ruling their lands.

At present, the socio-cultural and economic differences between countries in the Baltic Sea region are significant, as these countries have evolved and changed throughout centuries. We cannot think of Baltic Sea region as one of homogenous socio-economic structure. Therefore, in our discussion on the cooperation among SMEs we need to consider the situation of individual countries. It is important to remember that the contemporary economic and social development is determined by the linkages of cooperation, network effect generation (as manifestations of social capital), and not availability of natural resources

[1] Perry M. (1999) Small firms and network economies, Routledge: London and New York cf. Becattini G., (1978) The development of light industry in Tuscany: an interpretation, Economic Notes 2(3), p. 107-123.

or the outputs of technical progress as reminded by Graban (2010). Of course the access to resources, especially to industrial or technological infrastructure is relevant but it is rather complementary rather than key driving factor for economic development. Social capital is displayed in a variety of dimensions – a cultural, symbolic and psychological one. via networking potential. Graban resumes that regional leaders and authorities treat social capital too technically, using it as additional resource that can be easily controlled and managed and as he claims – approach it as if it was situated in a vacuum. A lot of policies support the cooperation among SMEs , between industry and universities. These all work as boundary conditions for innovation generation and diffusion. Rather, as Graban proposes, social capital, is culturally determined. It comes from cultural identity of a region rooted in its geographical location, natural environment and resources, as well as industrial and transport infrastructure of a community where people get involved in economic activities. The identity works as a filter for information flows that an individual faces and is not able to get trough unless they use some kind of lenses/reference points for making decisions. Baltic region has worked out its cultural identity over years, and at present there are many attempts to revive it, through reference to Hanseatic tradition, unique geographical location, elements of the region's infrastructure.

Cooperation as means of fostering innovation

The issue of innovation has been of interest to economists since its birth. Even though the term innovation is not used in classical and neoclassical theories, the theory of value by Smith and its later developments by Ricardo and Marx were the beginnings of the theory of innovation. Schumpeter has emphasized the role of a creative entrepreneur (innovator) in implementing innovations in a company. He looked at innovations analyzing the effects of innovative activities, i.e. launching a new product on the market or launching an old product on a new market. The role of an entrepreneur in the company has been strongly emphasized by Coase - the most prominent representative of institutional school and a Nobel prize winner. Most importantly, he defined innovation as a process taking place inside a company, which requires an adequate organizational structure and strategy. He considered that its pace and effectiveness depends upon managerial competences of the entrepreneur (coordinator).

The latest economic concepts, particularly in the theory developed at the beginning of the 80's in the last century, have looked on economic processes as dynamic phenomena, which take place is a population of mutually interacting elements (so called population view) with the strong emphasis on the diversity of actors' activities on the market as being its inherent feature. Lundvall (1998) was first to emphasize the importance of interaction among such

elements in innovation processes. His analysis was based on Perroux's (vertical production organization systems analysis), Feeman's (industrial innovation analysis), N. Rosenberg's (interaction analysis in production processes) and Arrow's (organization theory) legacies.

According to Lundvall (1998), innovation can be seen as a process of inner-organizational interactions whose effectiveness depends upon learning process among its participants. Moreover, he claimed that business entities interact with each other, thus initiating innovative activities of different types. As a result that create a system of economic, social, political, organizational and institutional linkages among them (innovation system), which influence development, diffusion and innovation application (Edquist, 1977).

This brief outline of the innovation concept and its evolution allows us to understand better how complicated the process of creation and development is in the competitive economy. That is why today the concept of "*open innovation*" has become so popular. It is based on the assumption that "*firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology*" (Chesbrough, 2003). Running own research and development (R&D) department in a company is not a sufficient condition for creating and introducing innovations to the market. Nowadays, knowledge generation is no more limited to a company, but it is distributed among its customers, employees, suppliers, competitors, universities and other external institutions. So to generate innovation, many companies from a variety of different industries, that at first sight have very little in common, should interact.

Competitiveness growth is based here on unique company's strengths, competences, specialization and employees' talents and experience. The basic condition for stimulating open innovation, research and development is bringing together researchers and specialists in scientific disciplines relatively distant from the current production profile of the firm. The transfer of theoretical knowledge and practical knowledge is through innovation teams - they can be mixed teams, consisting of people from outside the company (institutes, consulting firms, etc.) and employees of the company. The researchers, with considerable freedom to choose research directions, initiate new areas of competence, what can have enormous implications for the future development of the company. Moreover, this effort should be supported by creative methods of managing R&D and innovation, associated with the development strategy of the company. If companies do not use the knowledge they have inside, someone else will do. This is why the cooperation in an innovation process has become the most crucial factor is market success.

It is not easy for company to cooperate with other partners in innovation process. Only 26 % of innovative firms in EU 27 were engaged in some kind of cooperation with other companies, customers, suppliers, competitors, universities and public research institutions (Eurostat 2008). Polish micro entrepreneurs perceive innovation as a competitive tool of no great importance in contrast to prices, product and service quality, employee competence and customer service, business management method, equipment and location. In the EU countries innovative firms cooperate mostly with suppliers (17% of innovative companies) and customers (14%), rarely enter into cooperation with universities and research institutions (only 9%). So the most important question is what the determinants of cooperation in innovation activities are and what is the difference between the cooperating companies from non-cooperating ones? It is also important to attempt to answer the question, with which type of partners the companies cooperate most willingly to develop their innovative capacity.

There are several studies pointing why companies enter into innovation cooperation. Firstly, cooperation activities with other companies or institutions give firms a possible access to additional, external resources (such as skills), which may contribute to faster development of innovations, improved market access, economies of scales, cost sharing and risk diversification of the companies (Hagedoorn 2002; Lopez 2008). This resource-based concept of making cooperation in innovation process is the most popular one. Secondly, the cooperation facilitates and accelerates flows of information, resources and trust, which are necessary to secure and diffuse innovations (Dewick and Miozzo 2004). Finally, the companies undertake cooperation in innovation activities in order to achieve balance between the desire to achieve a high flow of knowledge and a desire to protect their internal knowledge potential from leaking out (Schmidt 2005).

Of course, the most important question is, if a cooperation with different partners really improves the creation and diffusion of innovation in company and beyond the company. There are many studies that confirm a strong positive relationship between the strength of cooperation in innovation process and increase in innovative potential of firms. The increase of this potential can be seen in an increase of sales of innovative products (Klomp and Van Leewen, 2001; Loof et al., 2003), growth of patents (Miotti and Sachwald, 2003; Van haverbeke et al., 2002) and augmentation of sales (Cincera et al.2003).

Numerous studies also provide us the knowledge about the determinants of cooperation in the innovative processes. Firstly, the cooperation increases with the size and R&D intensity of firms (Lukas, 2001). Secondly, the more technology intensive a sector is, the greater propensity of firms in this sector to create the cooperation in innovation. Thirdly,

as Mention indicates, based on the fourth Community Innovation Survey(CIS4) and the sample of 1052 service firms, the degree on innovation novelty (new to the market or new to the firm) is strongly dependent upon the type of the cooperating actor (Mention, 2010). Vertical cooperation (with supplier and customers) is more significant in development of innovation process than horizontal cooperation (with universities, research institutes) (Faria et al, 2010). Interestingly, the cooperation with competitors is negatively related to the novelty of the innovation introduced by the firm.

It should also be pointed out that most firms still introduce into the market their new products, process or services without formal cooperation with other partner i.e. in the innovation process they prefer informal cooperation than formal agreements (Tether B, 2002). Finally, the other (but equally important) determinants of cooperation in innovation processes are a degree of absorptive capacity, a level of the innovation intensity and a level of the management of incoming spillovers (Faria, 2010).

Most studies on cooperation in the processes of innovation based on a study of large enterprises. But as we know, the concept of "*open innovation*" give great opportunities to small and medium-sized companies.

Interestingly, many SMEs do not have enough skills, which limits their ability to innovate and deepens their competence gap. This strengthens the obstacles associated with innovative activity. Research by Juchniewicz (2010) carried out among 1500 Polish micro-enterprises indicates that most microentrepreneurs often show high innovation costs, difficult access to external financing and EU funds among the factors hampering innovation. Innovative activity is considered as the main ingredient of entrepreneurship and a key instrument in the success of the company. It is accompanied by various types of barriers, that come from three actors that could potentially contribute to innovation process: the governments and their agencies, enterprises and research institutes/universities. One such barrier is the inadequacy of their level of key competences such as effective management methods. Due to the R&D institutions do not relationships with other stakeholders as valuable source for generating innovative output.

Based on a survey of 137 Chinese manufacturing SMEs Zeng shows that inter-firm cooperation (with customers, suppliers) is the most important one (Zeng et al, 2010). Moreover, the cooperation with government agencies has not got any impact on innovative activity among small and medium size enterprises. Results of this study are confirmed by a study conducted among Polish small and medium-sized, concerning the forms, barriers, support for their cooperation in innovative activities (Grzybowska, 2010). Among the 1,500

surveyed Polish SMEs 67% indicate customers and 55% suppliers as the main cooperation partners in innovative projects. Almost 76% of them declare no need for deeper cooperation in a form of clusters. The most frequently indicated barriers of cooperation in innovation (table 1) and the expectations of entrepreneurs to facilitate cooperation in innovation (table 2) are presented below.

Table 1. Barriers to cooperation in innovative activities.

Type of barriers	% of firms
financial difficulties	68
law regulations	48
lack of or poor quality of the offers of cooperation	22
lack of tangible benefits of cooperation	17
unwillingness to cooperation from companies	17
lack of information about opportunities for collaboration	20
little use of the proposed solution (result of cooperation) in companies	16
lack of interest in cooperation from research institutions	13

Source: Grzybowska (2010).

Table 2. Expectations of entrepreneurs to facilitate cooperation in innovation.

Expectations	% of firms
the creation of programs to support technological development at the level of municipalities and provinces	27
construction of an information system about the technology needs of companies	18
development of institutional infrastructure for transfer of technology	18
increase the quality and degree of adjustment from research institutions to the needs of the company	13
construction of an information system about the cooperation's offer of research institutes	13

Source: Grzybowska (2010).

The date from the tables above shows the barriers and expectations of SMEs with regard to cooperation in innovation, and provides some recommendations for the development of this type of cooperation. All actions should focus primarily on raising awareness and promoting the benefits resulting from cooperation in innovation processes. It is necessary to show good practices and sharing experience in this area, but it should begin with creating incentives and facilitating networking among the participants in the process of cooperation.

Paths for cooperation in innovation for SMEs

Among the most common actors for research - development activities among micro firms in Poland are the other companies in the industry (46.2%), research institutes (30.8%), consulting firms (23.1%), suppliers (23.1%) and clients (15.4%). According to Juchniewicz (2010) the most common innovations introduced by the Polish micro-enterprises include: product (56%), organizational (53%), process (45%) and marketing (38%).

An important distinguishing feature of networking, is that it works in two layers: business and social networks to create certain conditions to compete on a global scale. OECD has singled out four forms of relationships in the innovative system: (Burzynski et al, 2004)

- company-company, including cooperating in the field of R & D, common property of products and patents;
- enterprise–R&D actors and public technology transfer institutions;
- market technology transfer - the diffusion of knowledge and innovation through the purchase of machinery, equipment, licenses;
- mobility of staff, transfer of knowledge.

Architecture of the relationship between the firm and its environment is developing in three interrelated areas - internal, external and networked. Internal architecture createa relationships within the organizational business and contributes to it internally. Exterior architecture, shaped by the company, involves the relationship with its external stakeholders, especially customers, materials and equipment suppliers, other companies with similar business profiles, government agencies, partners, trade unions, pressure groups.

Juchniewicz (2010) in her research results confirms that the main actors of cooperation in the future for Polish micro-enterprises will be: clients (67%), suppliers (55%), other companies with similar profile (46%) and financial institutions (34%). Community Innovation Survey in the EU indicates that most of the interaction and cooperation takes place at the regional level. Geographical proximity is more important as knowledge transfer is mainly

based on direct contacts between people. Consequently, the greatest efficiency to support local and regional industry to stimulate innovation is possible through dialogue between industry, science and public authorities. Small and medium-sized enterprises indicate the Business Environment Institutions as necessary to promote entrepreneurship, introduce modern technologies and develop cooperation in the form:

- Technological Parks
- Clusters
- Entrepreneurship Incubators
- Technology Transfer Centers

The research carried out in Poland in 2007 showed that despite the low percentage of partnerships between R&D institutions and companies, entrepreneurs are more interested in cooperation with institutions, organizations or research centers than with companies. At the same time, enterprises evaluate the cooperation with science institutions better than the service sector. The tendency to invest in new technologies is dependent on the scope of the market in which the SMEs operate. The least likely to invest companies that sell their products on local markets. They are under less competitive pressure and engage in less risky investments - purchase of machinery, equipment and software.

Research among SMEs and their networking potential

In our study, on the sample of 90 small businesses (micro. and small sized companies) in the following locations (Gdańsk, Sopot, Gdynia, Pruszcz Gdański, Kosakowo, Rumia, Reda, Wejherowo, Żukowo, Kartuzy) we made a survey on network involvement of entrepreneurs and their businesses. The sample was stratified and reflected the Pomeranian business structure in individual EKD categories.

Our research questions were aimed at measuring network and cooperation involvement in terms of participation in networking organizations. One of the first questions we asked was whether an entrepreneur or his/her business was a member of any organizations for entrepreneurs or any chambers or associations for business.

Table 3. Network involvement among entrepreneurs

Are you or your business members of any association, chamber or organization for business purposes?	Number of answers	Share

no	74	82%
yes	16	18%

Source: Own research

As we can see, there is a very limited involvement in networking associations among entrepreneurs. Only 18% of the surveyed admitted that they are involved.

It seemed important to enquire entrepreneurs about the nature of such involvement. Network membership happens to take passive nature, where individuals have very limited interest and engagement in how the organization works and how it can generate benefits for the company. In some cases, especially in craft context, membership is an obligatory issue.

Table 4. The nature of network involvement among entrepreneurs

	Number of answers	Share of all cases
I pay membership fee	12	80
I get some printed info on network activity	10	66,67
I work actively for the network	7	46,67
I regularly attend meetings	9	60
Other	1	6,67
		260[2]

Source: Own research

It is really disappointing to see weak active network involvement among the surveyed entrepreneurs. If we keep in mind that only 18% were doing this kind of networking, more than 46% (in fact 7 entrepreneurs) admitted that it was active participation.

[2] The answers do not add up to 100% as respondents could choose more than just one answer.

We also wanted to find out why entrepreneurs do engage in such networking. Although we realize that our sample was relatively small, it is still remarkable, that only 14 entrepreneurs said that they could see some benefits for their business there, whereas 2 of them acknowledged that '*it is a right thing to do*'. Conversely, when prompted about reasons for not networking (82 entrepreneurs were not doing so) 31 entrepreneurs could see no need to do so, 7 of them claimed there weren't any organizations like these whereas 6 entrepreneurs said that such organizations had bad reputation.

There are some main determinants that have influenced networking and cooperation among SMEs. One perspective takes a viewpoint that it is difficult to replicate the success of industrial districts in Third Italy. So issues such as serendipity and very strong 'we feeling' together with shared community solidarity (incumbent in the history of the geographical area) are key in explaining Italian success. Others, claim that there has been too much praising on the strong pillars explaining Italian success, and that small firms work together as a result of common origin or experience of working together.

Therefore, if we think of building the spirit of Hansa, each country or subregion should focus on its key strengths in individual crafts, industries. The research[3] made among industrial districts in 90's, brings interesting result, that around half of the businesses surveyed agreed with the following statement '*because this locality has many firms in textiles and/or related activities, customers come from far and wide to find a suitable partner'*. Regional specialization of SMEs in particular area should not be too narrow, to lead to an ease in building value added and increase interfirm cooperation to achieve economies of scale.

We have identified two groups of determinants shaping cooperation patterns among small businesses. The first group of determinants is related to dominating market structure and business models. There are industries dominated by large market players, where barriers to entry are to high. SMEs cooperate with large corporations on the basis of subcontracting. It is even impossible here to talk about competition between large players and networks of SMEs because for examples economies of scale are too high to be reached. Also, it is important how the knowledge is diffused, as it works differently for traditional industries and for high-tech ones. Another group are socio-cultural determinants. What matters here, is the level of interpersonal trust and institutional trust in individual societies. Poland belongs to

[3] Perry M., (1998) Small firms and network economies, Routledge: London and New York cf.: Bull A.C., Pitt M., Szarka J. (1991) Small firms and industrial districts. Structural explanations of small firm viability in the three countries, Entrepreneurship and Regional Development, 3, p. 83-99.

the group countries with low-trust culture. According to European Social Survey data[4], around 18% Poles agree with the statement that '*one can trust majority of people'*. If we consider Scandinavian countries, the numbers are much higher for example for Denmark and Sweden more that 65%, West Germany around 32%, Lithuania 22%, Estonia 21%. Over the decades, in the light of unstable institutional arrangements governing economies and societies, there have appeared alternative informal institutions. Chinese have *guanxi* whereas Russians use *blat.* These are manifestations of how networks between entrepreneurs can work and determine how business is run. In the high-trust societies, people and businesses are more open to cooperation and networking.

Summary

There are many relevant conclusions emerging from this paper. First of all, Polish enterprises and entrepreneurs need more time to build stronger, stable socio-economic system in their local contexts. If the problem is strong on the local – Pomeranian level, it is important to consider how interested Polish SMEs would be when it comes to cooperation with other partners/actors from the Baltic Sea Region. Would a low level of networking potential be confirmed in the wider context? If we are not able to fully capitalize on the local identity in terms of cooperation would we be able to do so in Hanseatic context? Second, micro and small enterprises are destined to cooperate to generate innovation. It is worrying, that they are less willing to cooperate with one another when compared with other stakeholders such as research institutes/universities and other actors. There can be many attempts and actions taken to implement regional innovation strategies on the local policy level, but without serious effort of all the interested stakeholders (not only policy makers) to strengthen local and regional social capital real learning and knowledge diffusion process will never take place. It is a long term process. Local policies should be designed to capitalize on the regions' existing and historical industrial strengths, therefore, it is important to appreciate the role of not only of new technology based SMEs but also small and medium sized enterprises in traditional sectors of the economy such as craft, which are incumbent to regions' organic growth. Another important point is that the process of building regional or local *millieux* , where there are strong inter and intra industry interdependencies (just like in the case of *Terza Italia*) is dependent upon a set of important factors such as effort of business support institutions as

[4] Adapted from Raport o Kapitale Intelektualnym Polski, 10 lipca 2008, Warszawa, http://www.innowacyjnosc.gpw.pl/kip/ based on European Social Survey 2007-2008

local authorities, strong interpersonal linkages and mutual trust among entrepreneurs, favorable political and economic environment. Actually in the case of Pomeranian context the state of the art is promising. In November 2010, Pomeranian ICT cluster consisting of around 80 actors, has been awarded a status of the best cluster across Poland. This is promising, especially because industrial history of the region has relatively short period of ICT industry developments when compared with other traditional industries. Would Polish small and medium sized enterprises be able to cooperate on more broader basis, in the Baltic Sea Region? Without doubt, the process of the growth of the regional innovation system has to be a result of natural and organic growth that is facilitated by available business support institutions.

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