BOOSTING INNOVATION THROUGH INTERFIRM-COOPERATION

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Abstract

Innovation is very often characterized as a resource-intensive activity connected with a relatively high level of risk and uncertainty. Therefore small and medium-sized enterprises are more vulnerable in this respect than large companies. Cooperation is one of the ways of tackling this disadvantage. The objective of the paper is to reveal the attitudes of SMEs in the South Moravian Region towards interfirm-cooperation in the form of strategic partnerships and find out the attributes of such cooperation in the field of innovation. To achieve this goal the authors have evaluated and interpreted the results of research conducted in 2010–2011. To gain data quantitative methodology was applied in the form of a questionnaire survey. This data was completed with primary qualitative data from personal interviews and secondary data from previous research.

The paper is organized in the following way: first of all, the importance of innovation is highlighted and the means of its creation through cooperation are introduced. Then the research methodology is described in more detail followed by the presentation of research results. Finally, there is a discussion of the main results and the conclusions arrived at.

Keywords: innovation, cooperation, management, competitive advantage.
JEL Classification: M21, O32, P47.

Introduction

Over the past 40 years there have been numerous definitions created to capture the notion of innovation differing from each other in some nuances. Innovation in a broad-view represents development of a new process or a new product (Cumming, 1998). Innovative capability is currently considered the key condition of companies' competitiveness (Andergassen et al., 2009) and performance. This relates particularly to small and medium-sized enterprises (SME), which, thanks to their less structured organisational and administrative systems, are able to react more quickly to customers' requirements and trends in development (Audretsch, 2003; Zeng et al., 2010). On the other hand, they face more barriers to innovation than large firms (Diez, 2002). This is one of the main reasons, why innovative processes in SMEs take place in cooperation with one or more partners (Rogers, 2004). Dewick & Miozzo (2004) emphasize that inter-organizational and cross-sector cooperation between firms accelerates the flows of information and so has become a key strategy these days. In accordance with this Doloreux (2004) sees innovation as a process resulting from interactions among various actors. These processes characterised by various degree of interaction and sharing of tasks (Schibany et al., 2001) allow for synergetic effects. Cooperation based on this purpose is known as synergetic business (Mikoláš, 2002).

From practical experience, e.g. (Vodáček & Vodáčková, 2002) or (Dvořáček, 2006), there is no definition of synergetic business. In the broadest context synergetic business includes all forms of cooperation between firms, from free forms such as occasional cooperation to close alliances such as joint ventures. Cooperation formed in this way, formal or informal, is usually based on agreement between the relevant partners.

Synergetic business focused on generation, transfer, and application of knowledge is a natural reaction of modern management to the period of information society heading towards the knowledge-based society (Vodáček & Vodáčková, 2002). It is implemented in managerial time and space, i.e. in the necessary time between concrete spheres of value chains of the cooperating partners. Synergetic business implemented through grouping of resources or activities relating to important economic or functional areas forms cooperation on a strategic level (Buzády & Tari, 2005). In these relations the emphasis is on further growth and development of the firms (Gulati, 2007).

Vodáček & Vodáčková (2002) named these relationships strategic partnerships and defined their following forms: free forms (occasional cooperation and informal agreements), strategic alliances (more specific interpretation of the category), joint ventures (strategic alliances more broadly interpreted) and "close" forms (mergers and acquisitions).

Child (2005) states that "strategic" in the denomination of these relationships defines the purpose of their creation, which is facilitation to achieve strategic goals of the companies through such methods, that

can be implemented more conveniently in cooperation than individually. Narula & Hagedoorn (1998) note, that the primary goal within such forms of cooperation is the long-term value enhancement.

By drawing upon the understanding of strategic partnerships as long-term value-oriented relations and innovation as a result of interaction among the parties (Dewick & Miozzo, 2004; Doloreux, 2004) the paper investigates innovation activity from the viewpoint of cooperation. The objective of the paper is to reveal the attitudes of SMEs in the South Moravian Region toward strategic partnerships and find out the attributes of cooperation in the field of innovation.

Research methods

With regard to the identified objective of research projects – *learn and study the current state of issues of innovative activities development and creating strategic partnership as these areas are currently being solved in Czech, as well as foreign, expert literature and in practice in Czech companies* – and the method of their fulfilment, when processing the research, the system approach and the following scientific work methods were utilized:

a) Analysis is used as a method of acquiring new knowledge and its interpretation. When processing secondary data, the method of secondary analysis was utilized. A source of secondary data was the professional literature, especially foreign – books, magazines, articles from scientific and professional databases (Emerald, Science Direct, etc.) or proceedings from scientific conferences, with respect to their professional level and relevance.
b) Questionnaire was used to gather primary data. The key was to approach as many respondents as possible and, therefore, to acquire a sufficiently large data scale factor for evaluation of the primary research. The inquiry itself provided quantitative, as well as qualitative data on the current state of the issue in question. Simplicity and relative briefness of the questionnaire, affecting a respondent's willingness to fill it out, was an important factor when creating the questionnaire. There were the following types of questions (i) with selectable answers and the option to select just one; (ii) with selectable answers and the option to select several answers at once; (iii) with pre-defined answers with an evaluation scale; (iv) some questions had the option to fill in answers freely.
c) Comparison was utilized for comparison of results of the questionnaire inquiry of individual companies. This basic benchmarking approach selected more innovative companies for further personal interviews with the company's management.
d) Inquiry with the objective to acquire the particular data and following discussion about acquired results and verification of their implementation and realization in practice was carried out in the form of personal interviews with companies' managements, i.e. especially with members of the top management, executive agents, or owners of production facilities.
e) Content analysis was applied to the study of texts processed and acquired in the course of interviews with managers of selected companies (interview transcriptions, personal supporting documents acquired from respondents).
f) Induction was utilized especially when generalizing all the findings achieved in the questionnaire inquiry. Verification of found dependencies was carried out by application of deduction.
g) Statistical methods were utilized when analysing primary data, and their results are presented in tables in this report.

Primary research

Two research projects were carried out for the purpose of determination of the real state of solved issues of innovation activities development and strategic partnership creation. These projects were carried out in 2010 and 2011 under the sponsorship of the Internal Grant Agency of the Faculty of Business and Management, Brno University of Technology.

The list of respondents was carefully considered before the start of the project. Options for defining research limits were company size, industry and geographical location in the Czech Republic. After careful consideration, the decision was taken to conduct research in randomly selected big companies in the South-Moravian Region of the Czech Republic. The research was limited to the South Moravian Region because authors believed that it would enhance the informative value of questionnaire surveys. Thus limited research is of much better quality because it allows (in spite of the often-encountered reluctance to complete the

questionnaire and to cooperate) the gathering of data from a large number of companies in the region, which may not have been possible for the whole of the Czech Republic, and individual data would have been much too scattered.

The first piece of research entitled *"Development of knowledge for improvement of information support of the economic management of company development, in accordance with development of the business environment"* (Reg. No. FP-S-10-17), which issued from the results of the previous year's research, studied the importance of forming strategic cooperation for the development of innovative activities. It was discovered (see below) that cooperation is one of the key areas of the innovative activities pursued by South Moravian enterprises. This is why this sphere was studied in greater detail under a parallel project entitled "*Networks of small and medium-sized enterprises in the South Moravian Region*" (reg. No. FP-J-11-5), which focused on mapping cooperation between small and medium-sized enterprises and on the study of conditions for participation in business networks in the South Moravian Region.

Of a total of 800 respondents contacted during the project "*Development of knowledge for improvement of information support of the economic management of company development, in accordance with development of the business environment"*; 750 were contacted electronically and 50 received printed questionnaires during a personal meeting. Companies for the electronic survey were selected from the Technological Profile of the Czech Republic (www.techprofil.cz) database of contact addresses, and the world-wide database Kompass (cz.kompass.com) with its over 34,000 contacts to Czech companies was also used. The guarantee that innovating companies are selected from the database lies in the fact that database search is performed according to user-defined parameters. The selection of companies for personal visits was based on contacts made during our previous project from 2009. That provided a guarantee that the survey will cover companies actively engaged in innovations that have something to say on the issue. Authors received a total of 139 correctly completed questionnaires, which represents a 17.4% return rate. Detailed statistics of the 2010 questionnaire survey are in Table 1.

Table 1. Overall statistics of the questionnaire survey 2010

Number of addressed companies	800
a) by e-mail	750
b) by personal visit with printed questionnaire	50
Number of undelivered e-mails	35
Number of partially filled questionnaires	9
Number of completely filled questionnaires	139
Real return	17.4%

A total of 401 companies were approached under the second project entitled "*Networks of small and medium-sized enterprises in the South Moravian Region*". Data were sourced from a database provided by the Czech Statistical Authority, which also contained information on the HQ, number of employees, turnover, and the subject of the companies' business. The criterion of selecting enterprises from the database – besides the HQ and size – was the pursuit of research and development as part of or alongside the main activity. Enterprises were contacted by phone and e-mail, most of them twice. There were 132 fully and correctly filled in questionnaires, which represents a 33% real return. Detailed information is listed in Table 2.

Table 2. Overall statistics of the questionnaire survey 2010–2011

Number of addressed companies	401
c) by e-mail	296
d) by telephone	105
Number of partially filled questionnaires	3
Number of completely filled questionnaires	132
Real return	33%

Research results

One of the areas studied under the project *"Knowledge development towards the enhancement of information support of the economic management of company development in accordance with the evolution of the business environment"* was a background of the individual enterprises available during the work on

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innovative projects and experience from collaboration with other subjects on these projects. As the figures below show, 74% of subjects do have this experience. In most cases the respondents also stated that without this cooperation it would be impossible to actually start any innovation because most of them (75% of respondents) did not have their own research and development facilities and did not even think about developing them. Most of the innovations therefore result from cooperation with other enterprises.

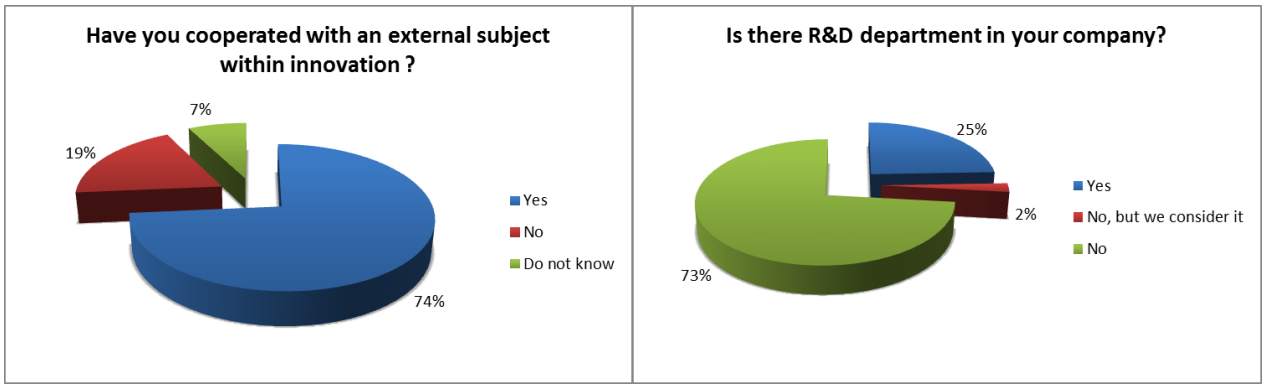

Figure 1. Research result in the field of cooperation

Most frequently mentioned partners, with whom the companies cooperate, include clients or customers. Other categories of valuable partners are subjects that are included in specific customer-supplier chains, e.g. suppliers of equipment, materials, parts, or software. Next are universities or other higher education institutions standing outside this chain. However, also research-focused non-governmental organisations or advisory agencies were also considered highly valuable for innovative enterprises (see Table 3).

Results were derived from evaluation of respondents based on the scale: 1 – very important, 2 – important, 3 – neutral, 4 – not important, 5 – completely unimportant. In the summary of the percentage ration of positive answers, i.e. values 1 (very important) and 2 (important), the order of individual possibilities was determined.

Table 3. Top 10 most important partners for innovation activities

	Average	Standard deviation	Modus	Evaluating 1–5 (%)					Σ 1+2 (%)
				1	2	3	4	5	
Customer	1.3855	0.6555	1	66	26	2	2	2	**92**
Internet	2.0988	0.8549	2	24	42	22	6	6	**66**
Competitors	2.2561	0.8087	2	15	48	26	7	4	**63**
Employee	2.1538	0.8332	2	21	39	26	5	9	**60**
Partners	2.1842	0.8692	2	20	40	21	7	12	**60**
Own research into customers	2.2836	0.9433	2	16	34	17	11	22	**50**
Suppliers	2.4595	1.0804	2	19	30	17	21	13	**49**
Service	2.4079	0.7809	3	12	34	38	5	11	**46**
Exhibitions	2.4478	1.0116	3	17	21	27	13	22	**38**
Conferences	2.7581	0.9278	2	4	28	20	20	28	**32**

The importance of cooperation with customers and suppliers is confirmed also by the results of the "*Networks of small and medium-sized enterprises in the South Moravian Region*" project. In the first phase the presence of strategic cooperation with business partners was detected, namely in 72% of businesses. 61% of the surveyed companies cooperate with their customers and suppliers on a strategic level. More than half of these businesses have their strategic partners solely from among customers and suppliers. The other group of potential strategic partners are competitors and potential competitors. The latter is understood as a company that currently does not directly compete with the given enterprise, but could become a competitor

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in the future or in case of changing conditions. Alliances with competitors, i.e. potential competitors are less characteristic and were detected in 38% of the companies only.

The next step studied the most preferred areas of strategic cooperation (see Figure 2). First were activities in research and development. Up to 51% of small and medium-sized enterprises cooperate with strategic partners in this field. This fact is in accordance with the findings from the second research project. Second was production (38%) and third cooperation in services (25%). Business and marketing were fourth (22%), while sourcing and logistics had significantly weaker preferences than the previously mentioned areas (14%).

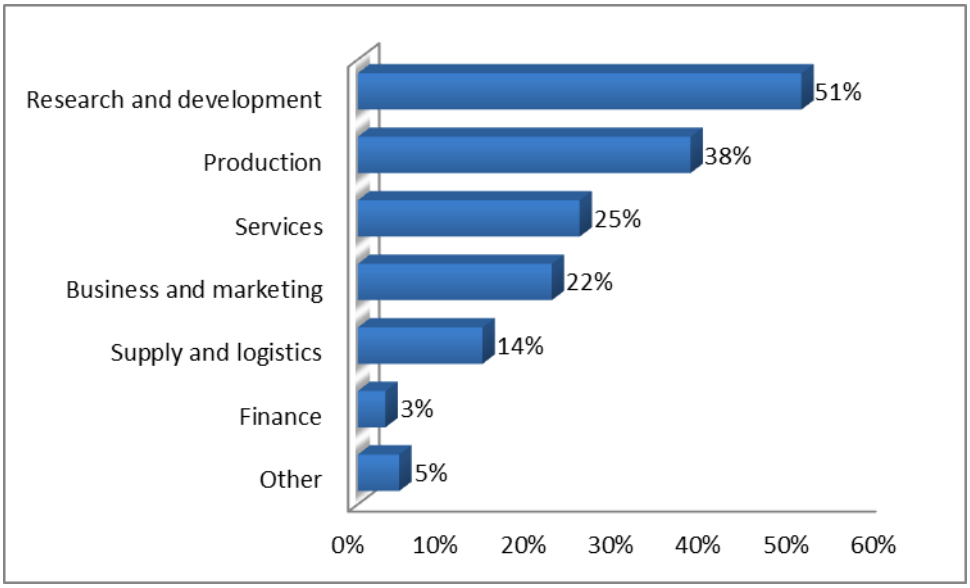

Figure 2. Areas of strategic cooperation

The purpose of strategic cooperation between small and medium-sized enterprises was studied as well. The results are illustrated by Figure 3. The summarised answers clearly show the dominance of cooperation aimed at development or innovation of a product or service (54%). Second and third placed expansion to foreign markets (43%) and optimisation (of production, processes, methods 41%). Least characteristic is strategic cooperation aimed at increasing turnover and enhancement of market share (under 10%).

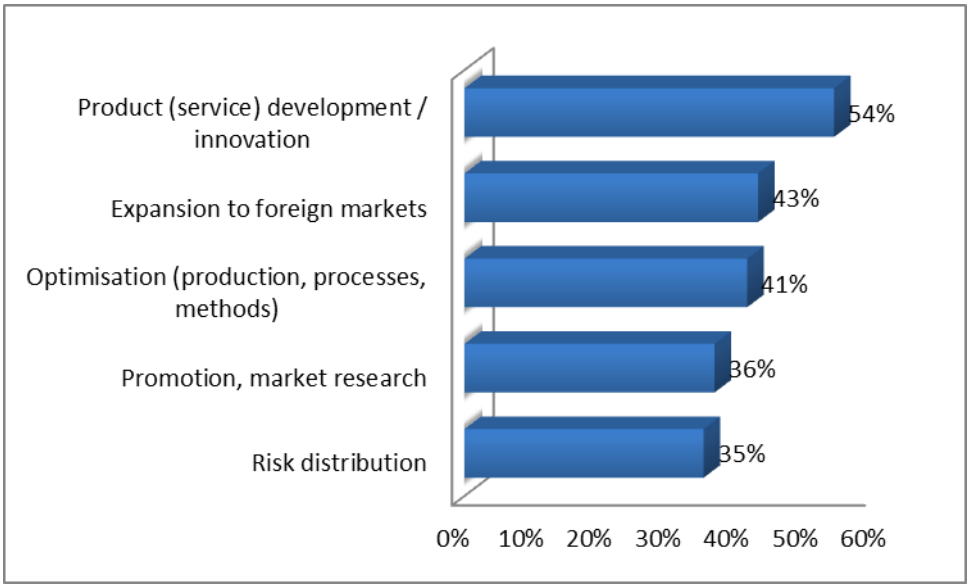

Figure 3. Purpose of strategic cooperation

Discussion

The efficiency of innovative synergetic business is based on the character and intensity of voluntary participation of all or most of its members. The study of secondary data revealed that companies cooperate with other subjects for many reasons, mostly in order to:

- reduce the costs of technological development or entry to the market,
- reduce risks of development or entry to the market,
- save money on production volume,
- reduce the time needed for development and commercialisation of new products,
- support sharing of learning,
- open access to new technologies,
- suppress competition and enhance their own competitive position,
- use shared distribution channels, etc.

Besides its strategic form, cooperation between companies may have various other – more or less interrelated – forms. Secondary research yielded the following overview of selected forms of cooperation that may bring a positive synergetic effect to innovation activities (see Table 4).

Table 4. Forms of partnerships

Type of cooperation	Typical duration	Advantages	Disadvantages
Outsourcing Contractor relations	Short-term	Reduction of costs and risks Shorter time of implementation	Dependence on partners Product quality Inefficient R/D
Licensing	Fixed term	Faster access to technologies Lower costs of R/D Faster product development	Contractual costs and restrictions
Spin-off companies	Medium-term	Expert knowledge Radical innovations	Lack of business experience Risks
Research consortium	Medium-term	Sharing of costs and risks Combination of expertise and special equipment Shared financing	Knowledge leaks Follow-up differentiation
Strategic alliance	Flexible	Low level of the bond Access to market	Potential blocking Information leaks
Joint venture	Long-term	Shared know-how Access to new markets	Cultural disharmony Instable and unsure (threat of take-over or separation)
Innovation networks, clusters	Long-term	Dynamic cooperation Potential for learning and gaining of knowledge	Instable relations Cost of control and maintenance of network

At the moment there are practically no ventures that can ignore the importance of partnership. The success of this synergetic cooperation depends on the degree of mutual communication. According to Johnson & Scholes (2000) the following activities are needed for successful (strategic) cooperation:

- a proactive approach to the requirements and suggestions of the partner, an open mind and trust, a sensitive approach to national and cultural differences;
- clear and simply defined organisational structure, especially where potential clashes could occur;
- an equal goal of all the participating partners to achieve powerful interpersonal relations, interconnection and flexibility of teams, as well as a long-term perspective on the life of such alliance.

However, even such – seemingly – simple steps could be difficult to realize in practice. The high failure rate of strategic alliances generally acknowledged by researchers (Gulati, 2007; Vodáček & Vodáčková, 2002) proves this.

Conclusions

Most innovations fail and enterprises that don't innovate, they die. This paper is about the process of innovation, about how enterprises utilize and advance partnership to create new products and services. Bringing a wealth of new and different ideas into the innovation process includes looking outside the boundaries of an enterprise. The huge potential for innovation exists outside company across network of customers, suppliers and partners. One of the essential practical conclusions of primary research is that companies are open to external cooperation. Furthermore, they admit that without this collaboration they will not be able to produce any innovative products.

The results of the work have shown the importance innovations play in company business and strategic partnerships as a framework for performing these activities. 74% of respondents have ever cooperated with an external subject within innovation projects. They stated that without this cooperation it would be impossible to actually start any innovation because most of them (75% of respondents) did not have their own R&D facilities and did not even think about developing them. Most of the innovations therefore result from cooperation with other enterprises. Most frequently mentioned and important partners, with whom the companies cooperate, include clients or customers. Up to 51% of SMEs cooperate with strategic partners in the R&D, follows production (38%) and cooperation in services (25%). The purpose of strategic cooperation between SMEs was studied as well. Research results show the dominance of cooperation aimed at development or innovation of a product or service (54%).

By comparing these findings with the Innobarometer survey (2009) it is possible to see that in the sphere of setting-up cooperation aimed at innovation, the Czech Republic achieves better results than the average in the EU 27. Detailed data reveals the relatively significant number of strategic partnerships with customers and research centres (the Czech Republic is among the best three), but a lower degree of cooperation with universities and a significantly lower degree with suppliers (just above average). In these two areas there will be space for improvement. In terms of the overall assessment of the Czech Republic's innovative activities, the Gallup Organization (2009) included the country in its group of *Moderate Innovators*, which comes after the *Innovation Followers* and *Innovation Leaders* (the most active group).

Innovation has been the engine of economic growth and technological progress (Bruque & Moyano, 2007). According to the presented research results more than a half of SMEs in the South Moravian Region understand this trend and form strategic partnerships in order to boost innovation. Every second partnership has been created in the field of research and development, representing processes with long-term perspective. This finding points to the fact that numerous companies have chosen the way of continuous development and value enhancement. It is very important from the viewpoint of the future as Diez (2000) warns that innovations are becoming more complex, especially for SMEs.

Perceiving innovations as the result of interactions and systematic building of cooperation with business partners may bring a result in the form of synergetic aspects, and positively influence the increase in SME competitiveness.

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