

COOPERATIVE ENVIRONMENT AS THE BASIS FOR CREATING SYNERGY

Jana KundrÍková¹

e-mail: jana.kundrikova@fri.uniza.sk

Martin Holubčík

e-mail: martin.holubcik@fri.uniza.sk

University of Žilina, Slovakia

¹ Corresponding author.

Abstract. Nowadays one observes a widespread tendency to create cooperation between universities and companies. This is due to benefits achieved by participating entities, including technology and knowledge transfer. Under certain conditions and by application of appropriate cooperation management it is possible to create synergy effects which extend the benefits for universities and companies. Given these facts the purpose of this paper is to define the conditions in terms of cooperative management which will ensure synergy effects in cooperation between universities and companies.

Key words: cooperation management, knowledge transfer, synergy effect, technology transfers.

Introduction

Nowadays, knowledge has become a fundamental source of competitive advantage. The current situation leads to systematic supporting cooperation between research organizations and business entities. The main interconnection of universities with corporate interests is the fact that they generate knowledge that has become an essential source of competitive advantage for companies, and also universities share with companies a common interest, which is applying knowledge in practice.

The purpose of this paper is to demonstrate that proper strategic management of university – company cooperation and application of strategic management methods such as MBO, WBS, and RACI can lead to achieving synergy effects which are beneficial for both the university and company. The discussion deals with a model of strategic cooperation (MSC) between academia and companies which was proposed by the authors.

1. Literature review

Cooperation between academia and business is mostly aimed at joint research and development. Companies want to implement current technology and modern concepts but they do not have enough information about them or they are not able to apply them in the specific conditions of their environment (Coates et al. 2010). It also often happens that companies have good ideas but they are not able to implement them, mainly because of insufficiency of necessary knowledge. The cooperation needs to be properly managed, so that it would be profitable from long-term perspective for all participating entities. The best way of doing it is the application of principles of cooperation management, which represents “effective and efficient management of relationships in a cooperation between separate and relatively independent organizations or individuals, with the goal of improving their competitiveness” (Soviar et al. 2013). Creating cooperative interconnections allows spreading of innovative activities and helps increasing the global competitiveness of the participating organizations. That’s because globalization means that internal efficiency isn’t enough to achieve international competitiveness (Solvell et al. 2003).

Cooperation management offers effective management of cooperative processes between independent organizations. The aim is to continuously improve inter-organizational activities and provide flexibility for companies which are facing challenges of today, so that opportunities for cooperative development don’t remain unused (Davis 1999). One of the most serious problems prohibiting cooperation activities to be successful in deregulated markets is the inability of companies to identify and develop cooperation management. Cooperative values and intentions determined by the company serve to correctly define management roles within the cooperation. Modern cooperative initiatives need management committed to fulfillment of the cooperation objectives, led by the cooperation values and responsible to concerned and informed members of the partnership.

Technology and knowledge transfer often occurs within cooperation between academia and business. Generally one may state that technology transfer (TT) is a process through which the technology is extended. TT may be secured with legally binding agreements, but it includes the transfer of knowledge (through an intermediary) from the provider to the recipient (UNCTD 2001). TT can be considered as a successful event if the recipient is able to use the technology effectively in practice.

TT between universities and companies is very important for both sides. The benefits for universities include mainly acquisition of financial resources, feedback on their competences and performance in research, their involvement in the identification of new research areas and acquisition of new knowledge. In turn, the companies benefit from getting access to external expertise, which

is easier for them than developing new products or processes, and support by constructing specific competencies. These benefits may occur but it should be understood that they are not automatically guaranteed (Hofer 2008). Though the TT has a wide range, the willingness to participate in it varies.

After an extensive theoretical analysis from the perspectives of different authors, e.g. Ivanička (1997), Goold and Campbell (1998), Vodáček and Vodáčková (2009), Damodaran (2005), Kaplan and Norton (2006), one may state that synergy is a significant value resulting from the cooperation between academia and business. Cooperative environment is a characteristic feature of mutual interactions between them and through its managing, not only expected but also unexpected synergies can be achieved. However, synergy is understood in different ways by different authors and it always reflects the specific situation and its effect. For example, according to Ivanička (1997), synergy reflects the newly discovered properties. Evolution of the current environment and its dynamic change gives rise to new forms of cooperation. This supports the view of Corning (2003), who characterizes synergies as associated or cooperative effects, which are generated by two or more elements. Goold and Campbell (1998) have a similar opinion.

In contrast to previous authors, Vodáček and Vodáčková (2009) defined synergy as a change in behavior and properties of a system under an influence of interaction of functioning of partial systems or subsystems. Eye et al. (1998) are also among the scholars dealing with the topic of synergy. They claim that synergy is a result of operation of two or more entities. On the other hand, Damodaran (2005) explains synergy as an added value generated by two entities, which would not be otherwise available.

Synergy is one of the main reasons for the strategic movements of various kinds of cooperation, such as alliances, mergers, diversifications, etc. (Martin, Eisenhardt 2002). It is a dynamic process based on the dynamism of the market. From this perspective, application of synergy in strategic management is an important aspect for the creation of synergy effects. Kaplan and Norton (2006) identified synergies as the part of Balanced Scorecard (BSC) method, which is used for measuring performance of the companies.

Generalizing the principles of synergy and synergistic effect, one may state that it is an input – output process of various changes in the current dynamic environment. Therefore it means a need for a constant development. Synergy allows to achieve the added value from linking activities of various entities and also creates a cooperative environment which develops in time.

The areas in which synergistic effects may occur and meeting criteria of a cooperative environment and cooperative management should also be mentioned. These effects are focused on economic aspects, innovation, changes in the structure and culture of the companies, behavior changes of the companies and market aspects.

Analysis of the current state of relevant literature on technology transfer, cooperative management and synergies was the main method used in this paper. Induction and deduction, qualitative method, and modeling method within illustrating relations between researched topics were used to define conclusions.

2. Synergy in cooperation between universities and the companies: a strategic view

Reaching synergy in cooperation between universities and companies is one of the most important aspects. However, the question is, how it can be obtained? One of the possible approaches is a better understanding and proper utilisation of strategic management and its methods. Strategic management focuses on managing entities in a long-term perspective and considering future performance within the “top-bottom” scheme of management. Relationships between academic institutions and companies can be properly managed using a combination of three methods: MBO, WBS and RACI.

Management by objectives (MBO) is a method based on a mutual agreement about objectives and controlling the achievement of these objectives. This is mostly achieved by delegating responsibilities regarding the set goals between authorities and executors (Vliet 2014). SMART criteria are used to set goals in this method. Given this, each goal must be specific, measurable, agreed, realistic, time-bound (Bogue 2005), because the main philosophy of this method is: “what gets measured, gets done”. The main rules of the MBO method may be presented as (Rodgers, Hunter 1991):

- mutual goals planning (employees support company goals with their own personal objectives),
- providing work responsibilities to employee within assigned task (involving employees in management),
- monitoring and evaluating achievement of objectives within performed activities,
- knowledge on the environment and human potential for achieving objectives.

Work breakdown structure (WBS) is an analysis technique, which aims is to decompose the project to activities in detail, so that it is possible to determine responsibility, complexity and time horizon. The main principles of the WBS method include (Project Smart 2016 a):

- hierarchical decomposition of the work, that will be performed,
- intelligibility of the individual tasks (task are easily understandable),
- a detailed description of the tasks within the required resources to its implementation, delegating of power, time horizon, risks and future performance,
- simplicity and velocity of its utilisation,

- two-way communication (active working with feedback) among management, responsible workers and executors.

Responsibility assignment matrix also known as RACI, is a method based on assigning different types of responsibilities to individual tasks or activities using the form of a matrix. As a rule, responsibility is usually assigned in columns and activities in rows. It distributes and allocates responsibilities of the team members in the projects, processes or their parts. The matrix uses different letters: R for responsibility, A for accountability, C for consulted, and I for informed. There is a rule that only one person has overall responsibility for a certain task (A – accountability), however people involved (R – responsibility) should be appropriate to the given tasks. This matrix operates with the following responsibilities (Project Smart 2016 b):

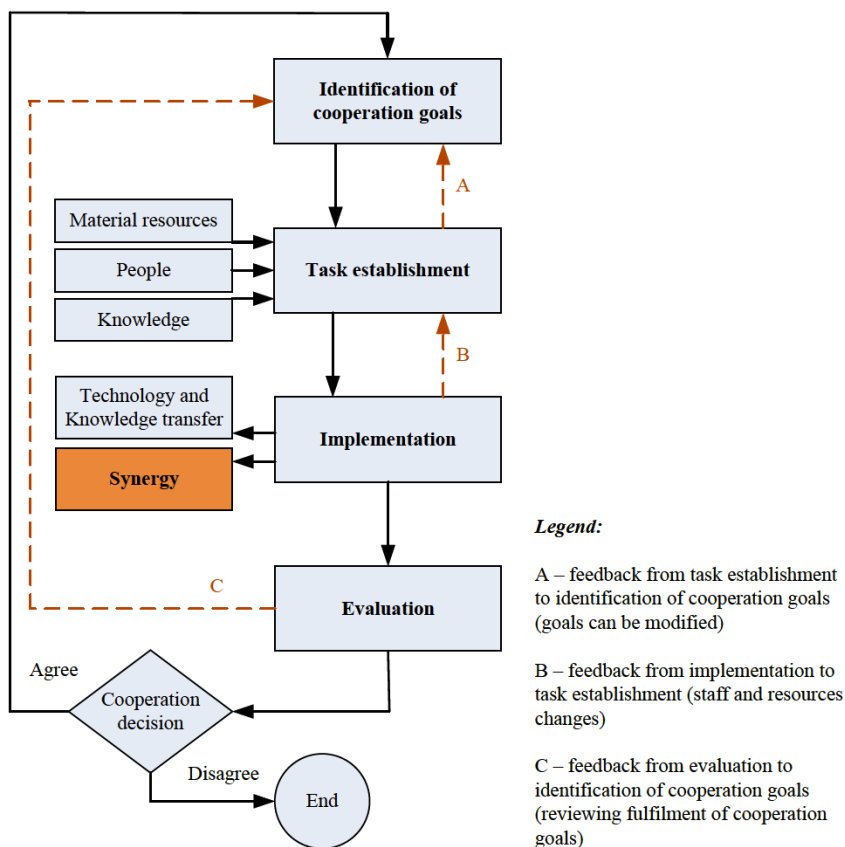
- responsible: who is responsible for carrying out the task?,
- accountable (approver): who is responsible for the entire task, he or she is responsible for what is done?,
- consulted: who can provide a valuable advice or a consultation to the task?,
- informed: who should be informed about progress of the task or decisions about the task?.

The matrix complements the WBS method and further analyses the overall process of responsibilities within the allocated task and work on it. It is important to understand the responsibility as an interactive process, not a one-off activity.

3. Discussion

Selected elements of the methods mentioned in previous section were included into the first two steps of the model of strategic cooperation (MSC) between academia and companies proposed by the authors (Figure 1). The first phase of the model is identification of cooperation goals. The essential factor is that cooperation goals should be beneficial for each participating entity. It is recommended to use the principles of MBO method, which include: double-sided planning, usage of SMART technique to determine a mutually consistent goals, dividing goals in terms of time aspect, as well as linking the cooperation goals with individual goals and strategies of the participants. Finding a common interest of university and company is significant as it may be the first impulse to start a cooperation in the first place.

Figure 1. Model of strategic cooperation (MSC) between academia and companies



Source: Own elaboration.

The second phase of the model is the task establishment within the defined goals of the university-company cooperation. This phase involves supporting the set goals with activities, resources, management and monitoring, that should be undertaken for a successful implementation of the cooperation goals. For each goal to be fulfilled it has to be transformed into a set of specific tasks and the principles of the WBS method should be applied. It includes *inter alia*: a hierarchical decomposition of the work, two-way communication during the task establishing (tasks need to be elaborated in detail), active listening, cooperation within the allocation of tasks and resources needed for their implementation. Determining responsibilities and power of each task and process should be done in accordance with RACI method. The importance of application of RACI matrix is caused by the fact that responsibilities and power are distributed to different organizations (i.e. university and company) and it is more

difficult to manage them. It is also important that both university and company would have the same negotiating force during tasks establishment so that neither of the negotiating sides would feel harmed.

The last important step in this phase is setting metrics for the particular tasks, processes and activities. One should state that resources that are needed for solving single tasks should be contributed both by the universities and companies. Generally, these resources can be divided into material ones, people and knowledge. Universities should provide high-tech devices, experienced researches with deep knowledge in specific problems, results of their research and development. In turn, the companies should be able to provide financial resources, experts from practice as well as their know-how.

There is feedback A in the model which is situated between goals setting and tasks establishment. The feedback A creates an important back-link to cooperation goals. This connection is required in the preparation phase of MSC, where the goals can still be modified in later defined tasks. However, this modification is possible only in the second phase of MSC because when the tasks are established, the modification of goals is not further possible. The change of set goals of cooperation during the implementation phase should not be possible.

Implementation, as the third phase of MSC is the part, where all the planned activities and processes commence. Therefore, a continuous measurement and evaluation of the present state of cooperation tasks and goals fulfillment is needed. The outcomes of these measurements have the form of arrangements within implementation and adjustment of actors' responsibilities or adjustment of set metrics, which could be needed due to the dynamic conditions of both internal and external environment of the cooperation.

There is also a feedback B in the figure 1 which is situated between tasks establishment and implementation. The reason for this feedback is that some staff changes in the university or in the company can happen during implementation, so that it is necessary to re-allocate responsibilities and power. Additionally, the tasks and their resources can also change. However, as it was mentioned before, the modification of the goals in this phase is no longer possible.

One should emphasize that during the implementation phase (where the basis of cooperation between universities and companies itself takes place), technology and knowledge transfer (TT and KT) is frequently observed. The transfer is two-sided because on the one hand, TT can mean acquirement of the new technologies or procedures developed in academia for the company, and on the other hand, it can also take the form of utilisation of the company's machinery for the research purposes of the university. Moreover, KT represents acquiring knowledge for both the universities and companies. But TT and KT are something that is expected from the university-company cooperation and also included in cooperation goals. It is also important that a synergistic effect

may occur. Though it wasn't directly the purpose of cooperation, it is regarded as something more, being an extraordinary contribution. For example, university may find new research areas, or acquire new knowledge that widens the perspective of some research problems, as well as find a partner relating to the bachelor and diploma thesis. The other synergies that could be reached within MSC between universities and companies may include: cost savings, profiling experts during mutual projects, obtaining goodwill and positive references within the sphere of activity, acquiring a cooperative-oriented reputation in public and a status of an attractive business partner, development of cooperation in other areas, creation of innovation, new ideas and solutions within the mutual project, etc.

The last phase of MSC is evaluation. It is necessary to compare what was done with the set goals of the university-company cooperation. Did it succeed? Did it achieve all goals? Were the resources sufficient? Answering these questions help to evaluate the mutual efforts for achieving the common interests of both parties. It is illustrated through feedback C in the model (Figure 1) and is situated between the evaluation and cooperation goals.

The last step in any cooperation is a decision-making process, whether the cooperation with current partners should be repeated with new or modified goals, or the cooperation should be terminated.

Conclusions

This paper is pointing out the importance of strategic management of cooperation between universities and companies, because it creates conditions not only for occurring technology and knowledge transfer, but also for occurring other synergistic effects that play an important role in future decision-making about repeating the cooperation. The paper constitutes a continuation of former papers of authors: 'Technology and knowledge transfer and its application in cooperation between universities and business' (Kundříková 2014), 'Technology transfer between academia and business as a driver in implementation of innovation in companies' (Kundříková et al. 2015) and 'Cooperation as base for synergy' (Holubčík 2016).

The model proposed presents a new view of the strategic management of cooperation between academia and business. Acc. to this model, a couple of factors have a key importance for success. These factors include: mutual goal setting, mutual tasks establishment, assigning responsibilities and power, mutual control metrics designing, mutual modifying cooperation management and mutual evaluation of cooperation.

For the long-term success and sustainability of the cooperation between university and a company, we would recommend the following:

- precise and clear defined vision, mission, purpose, and strategic goals that will determine the right direction of all cooperation activities,

- a cascade structure for the cooperation strategy (culture, goals, strategy, information passing from top level to lower levels, from managers to employees),
- two-way active communication,
- monitoring the performance of the individual tasks within the set goals,
- evaluating and taking measures as a response to changes in both internal and external environment of the cooperation.

A proper utilization of cooperative management tools in the model of strategic cooperation between universities and companies relates to the ability to create synergies and better capturing benefits of technology and knowledge transfer. The main contribution of the paper is providing a new perspective of using management techniques in a specific, university-company environment. The aim of the paper was creating an optimal scheme of strategic management of university-company cooperation, which would lead to achieving a positive experience, repeating the cooperation, positive references, synergistic effects and other benefits.

The three methods described can be used by exploring their various elements in practice and authors see a great potential in their better utilisation in various cooperative projects between companies and academic institutions (universities). It would be appropriate to follow up on the issues outlined in this paper. Further research could deal with the validation of the model, as well as the elements of introduced MSC model in relation to the ability to achieve the cooperation goals, technology and knowledge transfer, and last but not least – the desired synergistic effects.

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