

THE ROLE OF CO-OPERATION IN CREATION OF INNOVATION IN THE TSL INDUSTRY

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Abstract

Business co-operation is one of the ways in which companies perceive opportunities to improve their performance in reaching targets. One of them is the desire to increase the level of innovation of the co-operating entities, resulting in the creation and implementation of new product, process, organizational and marketing solutions. This issue also applies to companies providing a broad spectrum of logistics services, representing the TSL (transport-shipping-logistics) industry. These entities, despite their significant and continuous development in recent years, are still often characterized by a low level of innovation. Through acting on the market, they engage with a wide range of other entities in various types of activities that can be characterized by loose or permanent and formalized relationships. However, in analyses conducted up to date, little attention is paid to the area of co-operation between these companies and other entities while engaging in some innovative activity. Hence, the purpose of this article is to take a preliminary look at this issue and to show, on the basis of available data, the degree of co-operation between TSL enterprises in the area of innovative activity.

Keywords: Co-operation, innovation, TSL industry

1. INTRODUCTION

The activities of companies on the market in a time of intense competition and globalization forces the search for ways of continuous development. These include, inter alia, the ability to co-operate with other entities. It allows for a number of benefits, including the ability to improve the level of enterprise innovation. The term "co-operation" is broadly defined in the literature. It is most often referred to as the mutual benefits achieved through joint efforts of enterprises. Furthermore, it is stressed that the essence of co-operation is the achievement of a common goal or the pursuit of mutual support if the objectives are not directly linked [1]. It follows that co-operation is the pursuit of not only mutual but also individual goals of the enterprise [2]. Co-operation is also understood as a relationship that is created between two or more partners or as a coordination of partial tasks performed between various entities [3]. The decision to co-operate is related to the use of its various forms. To this end, companies can create a variety of structures that rely on economic co-operation, as well as on organizational changes that manifest themselves in various divisions, mergers, acquisitions, and transformations [4]. In addition to the form of co-operation, the process of choosing the partner with whom co-operation is to be taken, is mentioned in the literature as an issue of great importance. This factor is considered to be key and determinant of effectiveness in the transfer of knowledge and learning process and, consequently, of innovation [5]. At present, innovation has become a symbol of modern society. They are often treated as a way to solve numerous business problems and to seek competitive advantage. Sources of origin of innovative solutions in literature are usually classified in two groups: internal and external. Internal sources generate less innovation but are relatively inexpensive, unlike external ones. External sources are very diverse and thus create many possibilities for generating new solutions. The way to exploit the advantages and reduce the risks that result from the two sources of innovation may be cooperation to expand the innovative activities of enterprises [6].

The problem of enterprises co-operation and their innovativeness is often analyzed in the available literature. Moreover, as far as logistic companies are concerned, the importance of co-operation and the form it adopts

in practice are also crucial. Not so much attention is focused on the area of co-operation between the companies and other entities that conduct innovative activity. Hence, the purpose of this article is to initiate a preliminary discussion on this issue and to show, on the basis of available data, the degree of co-operation between TSL entities in the field of innovative activity.

2. CO-OPERATION IN DEVELOPMENT OF INNOVATION

Nowadays in the EU, business co-operation is viewed as a key instrument in many areas of business, including the development of a knowledge-based economy and innovation [3]. As in other industries, logistics companies also co-operate to generate and implement innovative solutions. This fact is particularly important due to limited availability of resources that hinder the process of self-innovation. At the same time, the availability of material and non-material resources and the ability to use them in the processes of generating and absorbing innovation is an important factor influencing the innovativeness of enterprises [7]. Also, the increased complexity of knowledge management processes that underlie new technologies and innovations drives businesses to seek new opportunities and skills beyond their own borders by undertaking various forms of co-operation on the market. It can contribute to faster innovation, cost and risk sharing, higher complementarity and creation of synergies [8]. Literature highlights the role of efficient knowledge management in achieving market success, including its impact on the development of enterprise innovation. Efficient knowledge management involves both the acquisition, storage, transmission and use processes in organizations. The strategic nature of knowledge is mainly due to its usefulness for creating or improving various elements of the company's business, including the building of enterprise innovativeness [9]. Individual organizations often lack the capacity to make rational decisions regarding the creation of innovative and future development strategies, the construction of innovation-enhancing structures, and the ability to seek and acquire the necessary resources needed to successfully implement innovative processes [10]. General research conducted and presented in the literature supports the assertion that co-operation between enterprises has a positive impact on the volume of innovations being created. However, the power of this significance is different and depends on many factors which affect the lack of possibility to link the degree of co-operation between companies with the success of a given innovation. In addition, industry and/or regional specificities in the field of co-operation for innovation are often mentioned and highlighted [11]. As emphasized by P. de Faria, F. Lima, R. Santos [8], innovation co-operation is more common in the case of innovations that are new not only to the company but also to the market. In addition, the intensity of research and development activities tends to increase the likelihood of innovative co-operation arrangements with external partners. Moreover, in case of more complex innovation processes (for example, combining product and process innovations), the role of business-to-business co-operation is frequently emphasized. A similar tendency exists in large sectors which extensively utilize modern technology. M. Huczek [12] notes as well that complex relationships between groups of entities occur more and more often in those technology-driven markets.

The result of co-operation in the area of innovative activities is the acquisition of new solutions in the fields of production, processing, marketing and organization. Co-operation in the field of innovative activities, both according to the Oslo Manual and to the Statistical Yearbook of the Polish Central Statistical Office, is defined as active participation in joint projects with other companies or non-profit institutions. Importantly, partners do not have to obtain immediate economic benefits from a given venture. Such co-operation may be long-term and prospective. On the other hand, in case of hiring external contractors, if there is no active involvement of the contracting entity in the execution of a contract, companies rarely regard this type of relationship as "co-operation" [13, 14]. The Oslo Manual mentions two main types of co-operation in the sphere of innovation [13]:

- vertical co-operation - occurs along the supply chain and encompasses customers and suppliers working together to develop new solutions;
- horizontal co-operation - companies work together with other companies or public research institutions.

Co-operation between companies in the area of innovation brings many benefits, including access to new knowledge, technology and solutions that they would not be able to develop or exploit on their own. In addition, synergies are generated through mutual learning [13]. It also allows to reduce the costs and risks of conducting innovative activity [15].

3. CO-OPERATION IN CREATION OF INNOVATION IN THE ENTERPRISES OF THE TSL INDUSTRY

The transport, shipping and logistics (TSL) industry is developing very dynamically in recent years. Forecasts also point to TSL as a service area for which further growth is anticipated, mainly due to the growing demand for such services. However, it is necessary to understand that without the innovative activity of enterprises, the development of this industry will be strongly inhibited [16]. There is no comprehensive analysis of the innovative activities of TSL enterprises in the available literature. Moreover, little effort has been put so far in the research into the co-operational activities these companies undertake in order to generate innovation and the forms which those activities adopt. The available analyzes concern primarily the innovative activity of service enterprises, which are considered less innovative than industrial enterprises. Generally, the TSL industry is considered to be developmental, unfortunately not generating a significant level of innovation. Also, in the context of other service industries, the area of logistics is relatively weak in comparison [16]. Improvement of this issue could lead to co-operation, which gives entities a number of benefits both in the area of innovative activities and in other fields. K. Dziekoński and J. Chwiećko [7] mention in their research the barriers to innovation in the TSL industry. The respondents of a survey who provided logistic services indicated the following issues as the main factors limiting the development of innovations: high costs of developing and implementing innovations, risk fears, lack of financial resources, long implementation time and lack of appropriate research infrastructure. Co-operation with other entities could be a solution to the problem and could to some extent reduce the impact of these factors.

To illustrate the role of co-operation and the impact it has on the TSL industry, data collected by the Polish Central Statistical Office during three study periods: 2011-2013, 2012-2014, 2013-2015 was used. That data shows the number of companies co-operating in the field of innovative activity among all companies considered to be innovative. According to the Polish Central Statistical Office, innovative companies [14, 15, 17] are the entities which introduced at least one product or process innovation during the period under review, or implemented at least one innovative project that was discontinued or cancelled, which means it was not successfully completed, or a project which was not completed, therefore it continues. The TSL industry is absent from the study as a separate part, however the classification was conducted according to the Polish Classification of Activities (PKD). The following types of partner institutions have been identified for the purposes of the analysis of innovative activities and their role in co-operation [15]:

- other companies that represent the same group of entities (in the case of the TSL industry, this is the co-operation between various entities representing only that industry, not competitors on the market);
- competitors and other entities pursuing the same activity;
- suppliers of materials, equipment, software, etc.;
- customers;
- consulting companies, laboratories, private R & D entities;
- scientific branches of the Polish Academy of Sciences and research institutes;
- foreign public R & D institutions;
- higher education institutions.

The part that represents the TSL industry against the entire scope of service providers does not show a significant contribution to co-operation for innovation. The most innovative service sectors were: insurance, reinsurance and pension funds in the periods between 2011-2013 and 2012-2014, where respectively 56.8% and 66% of the innovative enterprises co-operated with other entities. In the period of 2013-2015, that sector ranked second with 54.3% of innovative enterprises, while "Research and Development" was at the first place

with 64.8% [14, 15, 17]. Companies representing the TSL industry in three analyzed study periods are shown in **Figure 1**.

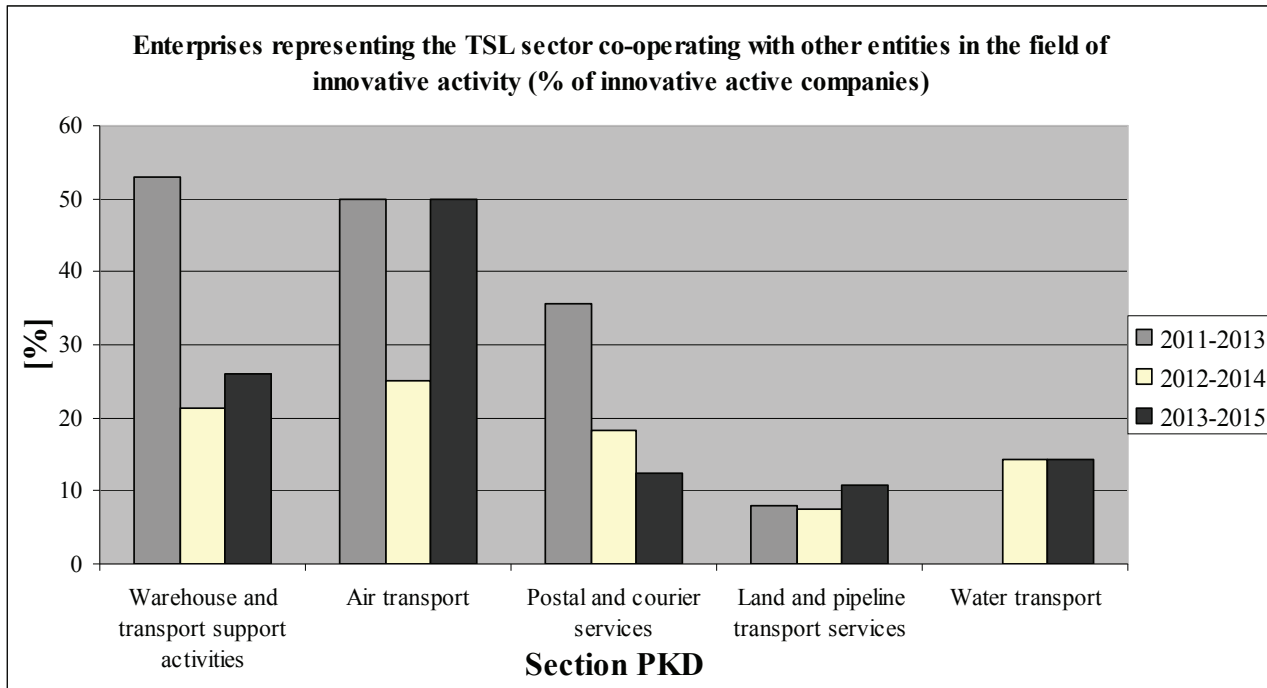


Figure 1 Enterprises representing the TSL sector (as classified according to the Polish Classification of Activities) co-operating with other entities in the field of innovative activity (% of innovative active companies)
Source: own research based on literature [14, 15, 17].

As mentioned earlier, companies in the TSL industry are not one of the most collaborative groups for conducting innovative activities. This factor may be contributing to the relatively low innovation of this industry. In addition, there are irregularities in this area, especially in three branches: warehouses and transport support activities, air transport, postal and courier services. Land transport and pipeline transport are the weakest (respectively: 8%, 7.5% and 10.7% of innovative companies), however their distinctive feature is stability of undertaking co-operation with innovative activities. Similarly, a small number is visible in water transport - in the first period there is no data, in the remaining two periods there is a stable amount of 14.3% innovatively active companies. The highest level of co-operation is visible in air transport (respectively: 50%, 25%, 50% of innovative companies), yet it is difficult to talk about stability here. In the case of warehouses and transport support activities, in the first period the number of co-operating entities was significant (53%). Unfortunately, in the two successive periods it was significantly reduced (21.3% and 26%, respectively). In postal and courier activities there is a systematic decrease in the level of co-operation - 35.7%, 18.2% and 12.5%, respectively.

4. SUMMARY

Co-operation plays a very important role in building corporate strategies for the creation and implementation of innovation. It is undertaken by both production and service enterprises of various industries, including those representing the TSL industry. Collaboration can be undertaken with various entities and institutions (including customers, suppliers, competitors, universities, etc.) and in various forms. As shown in the article for companies in the TSL industry, it is difficult to talk about the high level of co-operation for innovative activities. It may also be related to the fact that this industry is generally not considered highly innovative. It is possible to reflect on the extent to which increased co-operation between companies could contribute to their

innovation. However, this issue requires more detailed research. Moreover, the form of co-operation between TSL enterprises to create innovative solutions also requires further analysis. The only data available from the Polish Central Statistical Office is on clusters - they are not the subject of this study but will be the basis for separate studies. Apart from the clusters, there are no characteristics of other forms of co-operation, which clearly indicates the directions of further research.

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