

## PROJECT TEAMS IN SUPPLY CHAINS IN POLAND - THE RESULTS OF EMPIRICAL RESEARCH

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### Abstract

The aim of the article is to present the characteristics of project team operation in supply chains. The authors concentrated on issues such as the composition of project teams, their size, the way of team management, the tools used for managing the team, as well as on the object of their operation and the extent of reaching the objectives within a supply chain. The paper concentrates particularly on project teams having non-organizational character (whose members are the employees of at least two enterprises within a supply chain). The results of a survey conducted in 20 supply chains located in Poland are presented in the paper.

**Keywords:** Project teams, supply chain, supply chain integration

### 1. INTRODUCTION

The success of supply chains depends predominantly on the ability to integrate and coordinate actions of the network participants in particular concerning the flow of goods, information and financial means from the places where the raw materials are obtained to the place of consumption, which (as it is emphasized in the reference literature) contributes to the creation a competitive edge of a supply chain participants and their customers. The cooperation of particular links of a supply chain is mainly based on many standardized processes, but also more and more often on projects. The projects, in contrast to the term applied to the processes in management, are of unique character, limited duration and are gradually made more and more precise. In practice, the undertakings which are projects are realized by project teams (task-oriented). Such a team is a group of people put together to perform tasks which lead to the aim, that is the completion of the project. The people most commonly work under the supervision of the project manager - the team might thus have a well-developed hierarchical structure. The character of project teams is marked with exceeding the functional limits, and in some cases (as for example in the case of a supply chain) even organizational ones. However, the relevant literature lacks the descriptions of the characteristics and operation of project teams both in theoretical and in empirical dimension. Yet, in the operational practice of supply chains, the creation of project teams is a common organizational solution. The authors believe that it implies a need to examine the characteristics and objectives of project teams in those specific network structures. The cognitive concern thus expressed resulted in the formulation of the objective of the paper which is the presentation of the characteristics of project teams functioning within supply chains. The attempt to obtain the aim is expressed in the analysis of the relevant literature and the presentation of the results of empirical research conducted in 20 entities of supply chains, conducting business in Poland.

### 2. PROJECT TEAMS IN A SUPPLY CHAIN - THEORETICAL CONSIDERATIONS

The issue of the integration of particular links in a supply chain is widely discussed in relevant literature and theoretical studies are abundant of structured lists of integration tools, developed on the basis of varied criteria of classification. Usually, their common feature is joint operation of varied links in a supply chain, understood as degree of extending the borders of the organization and integrate the partner within the borders [1]. To develop a comprehensive conceptualization of supply chain integration, we included practices strengthening

the linkages between companies occupying different positions in the supply chain (i.e., vertical linkages) and practices that foster horizontal linkages amongst the various functional areas within the firm [2]. Thus, it should be noted that a tool which enables the supply chain entities to merge and cooperate is the creation and operation of (internal) project teams, whose scope of operation concerns at least two enterprises within a supply chain [3].

The empirical studies reveal that the internal integration of an organization (for example, merging the function of production with logistics and marketing) constitute the first step to a full integration within a supply chain [4]. The relevant literature emphasizes that the most effective tool of internal integration is the creation of cross-functional teams [5,6,7], which are aimed at developing bonds between people representing different organizational units with theoretically contradictory interests. Cross-functional teams are usually used to achieve the integration needed across internal functions to ensure that quality or innovation aims are realized [8,9]. Occasionally, the representatives of suppliers or customers become members of the team, then the cross-organizational team becomes a tool of external integration, thus team work may support the development of both vertical and horizontal linkages in supply chains.

The overview of literature enables to make a distinction between two levels of supply chain integration by project teams [3]:

- Level 1 (low) - the variant of internal integration - the project teams are mainly established within the enterprises of the leader of the supply chain.
- Level 2 (high) - the variant of external integration - the enterprise of the leader of the supply chain initiates the creation of inter-organizational project teams including the members from partner organizations.

At Level 1, a project team consisting of the members of the leader's organization may fulfill tasks on behalf of the same enterprise, as well as on behalf of the activities performed within the supply chain. Level 2, on the other hand, which assumes establishing cross-organizational project teams within a supply chain, represents a higher stage of integration. Consequently, apart from the integration of particular functional areas, a transfer and diffusion of knowledge is provided to such places within a supply chain, where particular project tasks are performed. Additionally, this option is likely to allow a more accurate selection of the team members in terms of their knowledge and competence - as it is possible to choose specialists from many not from one organization. More importantly, particular organizations (links) of the supply chain will accept more easily (in comparison with the Level 1) the decisions / solutions developed within the project team, if their representative was a member of the team (due to the fact of the representation of their interests).

### **3. RESEARCH METHODOLOGY AND GENERAL CHARACTERISTICS OF THE SURVEYED COMPANIES**

The empirical research was conducted on the basis of a survey consisting of two parts. The study was focused on the identification of project teams structure in supply chains in order to identify the type of integration they serve. The first part of the survey concerned the general aspects of the operation of project teams in the analyzed companies. The second was about the activity of a project team consisting of employees from different organizations within a supply chain, in which the analyzed company operates. The surveys were sent to 20 selected companies by email or given directly to the members of project teams.

The subject of the research was a purposive sample of enterprises - a supply chain links - selected under the condition that there are project teams in their structures. The analysis of the obtained results was performed with the use of Excel spreadsheet.

A half of the companies were big enterprises, namely employing 250 employees or more. One fourth of the examined group consisted of middle-sized companies. The remaining units are classified as small-sized or

micro enterprises. In terms of the dominating profile of business activity the distribution is fairly proportional, namely 9 manufacturing companies, 7 service companies and 6 trade companies. It means that the research included the representatives of different links of a supply chain. The authors would like to emphasize that the researched companies represent different branches, including for example: automotive, construction, IT, FMCG, furniture, medical, education and training services, and e-commerce.

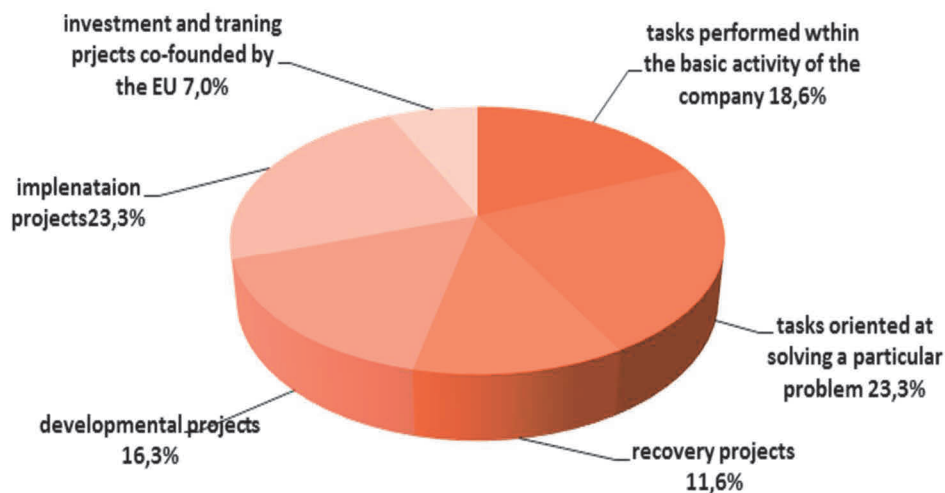
Due to the share of foreign capital in studied enterprises 11 out of 20 units are companies without any foreign capital. In 8 cases, they are entities with dominating foreign capital ( that is over 50% of shares). Only in one entity the share of foreign capital is minor. The companies with the share of German capital are most common among the researched companies (3 entities), then with Japanese capital (2 entities) and one from Great Britain, USA and joint French and American capital.

#### 4. RESEARCH RESULTS

##### 4.1. General aspects of project teams operation

As it was mentioned, the first part of the survey concerned mainly general aspects of the functioning of project teams in studied entities. Cross-functional project teams exist in all 20 supply chains, thus in each of the analyzed cases we deal with the variant of internal integration ( Level 1 of integration - low).

The selected results for this part of the research are presented below. They concern for example the frequency of establishing cross-functional project teams, the type of activities performed by them, the criteria of selecting the managers of project teams and main problems and advantages resulting from the realization of tasks relying on such teams.



**Figure 1** The percentage of responses in terms of the type of the undertaking realized by project teams (total number of responses = 43).

In terms of the frequency of establishing such project teams, among the researched entities, such teams are a permanent element of the operations of the company in a huge majority of entities (12 entities). In the case of 2 entities the teams are established at least a few times a year, and in 6 entities occasionally, that is once a year or a few years. These results show that the implementation of undertakings on the basis of project teams is a quite popular practice in business. The respondents selected 43 options within 6 suggested groups ( it was possible to choose more than one answer) with reference to the type of undertakings realized in project teams. Most commonly they regarded the implementation activities such as launching a new product on the

market, the implementation of quality management system or IT system and tasks aimed at solving one particular problem such as the elimination of a product defect ( in both cases each got 23.3% of all selected options). Next, the tasks performed as a part of regular activity of the company was selected, such as individual requests of customers, untypical / unique orders (18.6% of all selected options) and developmental projects, such as the development of the company's strategy or designing a new product (16.3% of all selected options). The remaining areas of project teams activity obtained a lower percentage. Detailed results were presented in the **Figure 1**.

In terms of selecting the manager of the created project team 101 responses were selected among 13 defined answers. Having specialist knowledge and skills (16.8 % of all selected options) and experience (15.8%) were chosen most commonly. Next, communicative skills (10.9 %) and ability to work in a team (9.9%) were pointed out. The lowest number of responses received the criterion of negotiation skills (2%). Detailed results are presented in **Table 1**.

**Table 1** The percentage of responses with regard to the criteria of selection of project team managers (total number of responses = 101)

Criterion	Knowledge and specialist skills	General knowledge	Experience	Independence	The knowledge of planning and organizational methods	Creativity and compliance	Flexibility	Determination	Reliability	Communicative skills	Negotiation skills	Ability to work in a team	Current position	In total
Number of responses*	17	7	16	6	3	5	4	4	7	11	2	10	9	101
Share in general number of responses	16.8%	6.9%	15.8%	5.9%	3.0%	5.0%	4.0%	4.0%	6.9%	10.9%	2.0%	9.9%	8.9%	100%

\* It was possible to choose more than one answer.

#### 4.2. Project teams consisting of employees from different organizations within a supply chain - the external integration variant

The second part of the questionnaire concerned the activities of project team consisting of the employees from different organizations within a supply chain, in which a studied company operates. It appears that only in 5 out of 20 researched entities cross - organizational project teams are established, including the members-employees of suppliers and / or recipients. It means that in the researched entities, despite the fact that the implementation on the basis of project teams is a quite common practice, they are most often limited to the employees of a given company ( all 20 enterprises) and the representatives of other links of a supply chain do not participate therein. Thus, only in ¼ of the studied supply chains level 2 - high level of integration was identified, corresponding to the external integration.

In the cases where a project team allows the participation of employees of different organizations within a supply chain, such teams most often consist of at least 4 persons and operate over 6 to 12 months. In 4 out of 5 cases the team is of interdisciplinary nature, including members representing the suppliers or recipients of various specialization, namely the participants represent different areas, such as marketing, IT, finance and accounting from a few enterprises of a supply chain. Only in one case such a team had a functional nature, so it included members from the suppliers or recipients having the same specialization.

The answers provided by this group of entities reveal also that the members of such a team:

- perform tasks connected with the work / participation in the project team apart from other tasks in their original unit (5 responses) and also within another task team (3 responses). There was no response, claiming that the employee performs tasks exclusively on behalf of the task team,
- leave the team once they have performed their tasks, and their place is occupied by other participants, who implement the following stages of the project (4 indications),
- communicate within a team via email, teleconferences and direct meetings of the whole team (5 indications each), hardly ever through internet communicators and internal documents (1 indication),
- use mainly the techniques and tools to schedule the work, including the Gantt chart (5 indications) and the methods CMP and PERT (2 indications each), while planning and organizing the team's work.

31 responses were selected among 14 defined answers in terms of the main criteria of selecting members for the discussed teams. Having specialist knowledge and skills as well as experience (16.1 % of all the responses) were most commonly indicated, similarly as it was in the case of the selection of the manager of the project team. Next, creativity, communicative skills and the ability to work in a team were selected (each 12.9 % of all the responses). Such criteria as: general knowledge, determination and current position, were not selected at all. The results were presented below in a table.

**Table 2** The percentage of indications with regard to the criteria of selecting project team members from different organizations within a supply chain. (total number of indications = 31)

Criterion	Knowledge and specialist skills	General knowledge	Experience	Independence	The knowledge of planning and organizational methods	Creativity and compliance	Amicability	Flexibility	Determination	Reliability	Communicative skills	Negotiation skills	Ability to work in a team	Current position	In total
Number of responses*	5	0	5	1	1	4	2	2	0	2	4	1	4	0	31
Share in general number of responses	16.1%	0.0%	16.1%	3.2%	3.2%	12.9%	6.5%	6.5%	0.0%	6.5%	12.9%	3.2%	12.9%	0.0%	100%

\* It was possible to choose more than one answer.

It needs to be emphasized that in the case of each of the analyzed entities in this group, the results of the team's work are transferred and implemented by the suppliers / recipients. In three cases the transfer consisted of handing over the project documentation, in two - trainings at the supplier / recipient company. Additionally, in one entity the transfer was realized in the form of donating a high-value fixed asset for the purposes of the prototypical work conducted in the project.

The main problems identified by the respondents in terms of the creation and operation of the described project teams included (there was a possibility to mark more than one answer): difficulty in balancing everyday duties and project team tasks (5 indications), problems with integration and coordination of work of team members (4 indications) and difficulties in communication between the team members and different views and opinions represented by particular members (3 indications each). It might be concluded that those problems are mainly the consequence of inter-organizational nature of such teams.

## 5. CONCLUSION

The conducted research showed that in all 20 analyzed cases cross - functional project teams were identified fostering the internal integration of a supply chain. However, merely in ¼ of cases the external integration variant exists - in 5 empirically studied supply chains cross organizational project teams are created. Despite the fact that the effects of team work in each of the analyzed cases affect the operation of enterprises in a network, only in the 5 cases mentioned hereinabove particular enterprises participating in the project have the influence on the direction and shape of the effects rendered by the teams. The presence of the representatives of suppliers and recipients in the project team, as its active participants, increase the predilection to accept the produced solution by their parent company. As a result, in those supply chains we have the possibility to deepen the connection between particular links of the supply chain, a better bilateral flow of information and knowledge and the synergy effect connected with the presentation of different perspectives (suppliers, recipients and producer), which in turn contributes to a mass production of a component meeting the expectations of the final customer.

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