

## **CROSS-FUNCTIONALITY AND ITS ROLE IN THE NEW PRODUCTS DEVELOPMENT PROCESS**

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### **ABSTRACT**

*The purpose of this paper is to emphasize cross-functionality as a manner of new products development process. Starting from the reference literature, this paper investigates the research models of the enterprises that are launching new products on the market, the cross-functional character of the team in charge with this process, as well as the problems of these teams during their innovative activity. The internal and external communication within the new products development team is the essential factor to ensure the success of it.*

**KEYWORDS:** *cross-functionality, new products development process, cross-functional, plurifunctional teams*

**JEL CLASSIFICATION:** *L11, L14, M11*

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### **1. INTRODUCTION**

Nowadays, enterprises enter a new development age in which markets and technologies are evolving very rapidly. The competition context pushed enterprises to stated their capacity to fastly develop new products in good economic conditions, with the purpose to satisfy clients' needs and bring value to them, as well. Subsequently enterprises are needed to work with shorter and shorter deadlines and without any error in designing or manufacturing the final service or product.

For the enterprise, the cross-functionality allows an answer to the clients' needs with an acceptable delay. There are two main factors that take into consideration the implementation necessity of the cross-functionality: the capacity of the enterprise to react rapidly as well as the emergence of the project organization manner for the new product development process (NPDP). These two factors may lead to the increase of the enterprise's competitiveness. The short time allocated for the NPDP as well as the competition from the market put pressure on the enterprise. It is constrained to prove its capacity to adjust to the various clients' needs with a reasonable cost and within an acceptable period of time. These demands require a very good interface between various activities of the enterprise. Cross-functionality follows the logic of the service or product. The real patron is the client or the project head, and not the head of the function. Cross-functionality, that is recomposing the enterprise following the client's logics (Tarondeau and Wright, 1995), allows the achievement of this objective.

The NPDP with its dimensions (deadlines, costs, quality) bring in the front certain elements defining the cross-functionality logics: exceeding the functional limits, decreasing the costs of the services delivered to the clients and effective management of the delays.

Due to the integration, the cross-functional organization of the NPDP confers to these projects autonomy towards the enterprise functions and invests them with decision authority and direct responsibility. Nowadays the cross-functional organization is much used within the innovative

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enterprises that are confronted with a complex environment and exposed to the necessity to develop new products in a fast and effective manner.

In order to identify the characteristics of the innovative companies, studies achieved at the end of the XXth century (Rotwell, 1992; Cooper, 1983) proved that there are no consecrated recipes for a successful innovation. These studies took into consideration either the success factors or the failure ones and were based on various samples established depending on the enterprise type and size, the level of the technology development as well as the activity field.

The present paper intends to render and compare the main findings of the research models involving innovative companies, to show that NPDP is a cross-functional process, to identify the problems of the teams in charge with the NPDP, as well as to propose some factors to be activate in order to improve the activity of those teams.

## **2. RESEARCH MODELS FOR INNOVATIVE ENTERPRISES**

The models proposed by Rothwell and Cooper take into consideration both the client and the market. They also show that the team in charge with the NPDP has a plurifunctional or multidisciplinary feature, which is actually assimilated to the cross-functional team. At the same time, due to its assigned task, this team has a high autonomy and increased decision power.

In his empirical study, Rothwell (1992) highlights two major findings. The first one is about the horizontal management as a factor ameliorating the development indirect activities and the second one is about the using of the cross-functional teams for the NPDP. Due to the major necessity to reduce the duration of the NPDP, strategies based on time were used.

This is why Rothwell considers that the implementation of the horizontal management style is one of the factors favouring the reduction of the period for new products development. The horizontal management allows the decision taking process to be developed at the middle levels of the hierarchy, in this way the efficacy of the indirect activities such as project control, general administration and coordination of activities is increasing (Little, 1992). The indirect activities may rise until 50% from the total duration for the NPDP.

The cross-functional teams are also very important. It is less important who issued the idea of a new product, either the research&development or the marketing department, but it is crucial that all departments to be involved in the NPDP. One factor encouraging the NPDP is actually the good internal communication between the involved departments, in this way cross-functional, multidisciplinary teams being constituted. This integrating approach was used by the innovative Japanese car enterprises, that involved even suppliers in the NPDP, getting to reduce the time necessary to develop the new models in the end.

While Rothwell chose a descriptive demarch, another researcher, Cooper, started with a prescriptive one. Beginning with an empirical model, Cooper (1983) proposes a normative model for the NPDP. This is a sequential model, including 7 stages and every of them is getting finalized by a decision. The respective decision moment is considered as a point to evaluate the project. This model has been implemented by many enterprises during the 80's years of the XXth century having as consequences some improvements like: plurifunctional dimension of the NPDP and of the team in charge with it, the reduced number of redundancies, a better detection of potential failures, better prepared commercial launching of the products on the market. All these improvements led in the end at the reduction of the time necessary for the NPDP. However, even these improvements are really important, this model is being slow and is generating bulky procedures.

Later on, new models appear for the management of the NPDP, which pay more attention to the resources allocation. In the meantime, the management of the projects about new products development evolved from the sequential process involving each enterprise's function to the cross-functional teams, characterised by high autonomy and decision power. Within cross-functional teams, the transfer of information between experts belonging to various functions is being realised.

Within this new organizational context, the project teams assigned with the NPDP are centralising the decision taking process and are developing new skills rather than specialised knowledge. However, when the enterprise felt a weakening of its functional skills, a limit in the NPDP development of the project organization or cross-functional organization appear.

The cross-functional organization and its integration managed to prevail the functional organization and the sequential approach of the processes. Decompartmentalization of activities involved in the NPDP favours intensification of information exchange starting with the first phases of the process, allows the simultaneous achievement of the previous project phases in a sequential way and is a factor leading at the time reduction for the development process (Clark and Fujimoto, 1991). The cross-functionality offers to the actors from projects the possibility to understand and to measure their contribution at the collective efforts, allows the understanding of the value received by the client as a result of activities integration.

The processes for launching new products may be of two types: recurrent and unique (Lorino, 1995). These processes have a different logic. The recurrent processes for the NPDP are being repetitive and are deployed during a short period of time. The unique processes include those used to achieve less repetitive products or even unique and have a longer deployment cycle within one project.

### **3. PROBLEMS AND SOLUTIONS FOR EFFECTIVE WORKING OF THE NEW PRODUCTS DEVELOPMENT TEAM**

The cross-functional or plurifunctional team are often perceives as cooperation or collaboration networks between individuals coming from various functional departments. The stake is that the group should bring ideas, knowledge, expertise, innovation to a specific project for the new products development. This kind of team always has more to offer than simple individuals, it generates ideas and brings creative solutions much more easily. In a similar way, an enterprise concerned to develop new products is aware of the necessity to implement cross-functional relations between teams in charge with the NPDP, with the purpose to encourage their members to share or to accumulate knowledge. In an expressive definition, the cross-functionality is defined as the "fecund coexistence of some activities otherwise usually separated"

(<http://www.guichetdusavoir.org/viewtopic.php?t=9093>).

Most of the times, the new product development teams reunite members with various backgrounds and features: sex, age, training, ethnicity, professional history. But all these people must share the same values and purposes that determined them to agree with the joint mission of the team.

The creative tension produced by the team members coming from various departments often is the one increasing the speed by which the new products reach the market (Pelz and Andrews, 1996; Kessler and Chakrabarti, 1996). But this thing is not always possible. In some cases, team members are coming from various departments and they have several solutions about the work processes should be deployed. Also some team members may have a temporary employment and they need to prove loyalty for their origin departments. Other members are recognised experts and they must keep confidential the NPDP in order to keep their job. Under these circumstances normal conflicts may appear within the team in charge with the NPDP, and the enterprise is needed to identify new ways to reach this objective.

Various studies show that cross-functional teams constituted for the NPDP may record either positive effects (such as cooperation, consensus, cohesion) or negative effects (such as conflicts, misunderstandings).

The most important factor for a team in charge with the NPDP is the communication between its members that may have various expertise and skills. Keller (2001) stated that external communication has indirect effects on the cross-functional teams in charge with NPDP. The case of the Hewlett-Packard Company is well known: they failed when they launched the 23 pounds laptop on the market

because of the lack of communication between its marketing and designing departments (Luo et al., 2006). During the industrial revolution, the high effectiveness of enterprises resulted due to their specialization. Later on, when the matrix structure appeared, it was necessary that various experts from different fields to cooperate very well. The problems they are confronted with are pretty complex and couldn't be solved by only one person, no matter how skilled that is. But, despite all these reasons, cooperation and communication are generally dysfunctions in most of the NPDP teams. Healthy cross-functional relations may be an essential resource for a fruitful collaboration between team members. This is why trust is needed within the team, as a binding able to bring progress in finalizing new products and their launch on the market. In a similar way, the lack of trust inside the team may amplify the tension between its members and prevent a fruitful collaboration. Literature show various and opposed opinions. On the one hand, the president of the Chrysler company stated that the cross-functional teams achieved products with higher quality, faster and at a lower cost when working together (Lutz, 1994). On the other hand, Chaudron (1995), Donnellon (1996), Swamidass and Aldridge (1996) showed that not always the cross-functional team are working well together.

However, consistent findings showed that while various cross-functional teams may get positive results during their joint work, the team's members tend to have low cohesion and job satisfaction. Besides these, the most important factors to be activated in order to lead to effective cross-functional teams are: external and internal communication, trust building, making public the team's objective, interventions for improving the inter-personal relationships, institution of dialogue groups, development of the information exchange by organizing meetings with all members involved in the NPDP.

#### 4. CONCLUSIONS

The NPDP is deeply affecting the enterprise activity, by its influence on the production flow and on the costs. Since it is involving several departments in its deployment, the NPDP may be considered a cross-functional process, whose effectiveness level has a major impact on all production stages and subsequently on all the enterprise. The research models of the innovative companies take into account both time horizon and resources allocation. The cross-functional teams in charge to create and to launch new products obtain good results if they ensure a good external and internal communication.

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