

WHEN INTER-ORGANISATIONAL NEW PRODUCT DEVELOPMENT (NPD) PROJECTS FAIL

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ABSTRACT

*Many inter-organisational new product development (NPD) projects fail e.g. are seriously delayed or abandoned. The innovation literature has focused on why NPD projects fail and several constraining factors have been identified such as the type of projects, structural aspects or economical related issues. The aim of this paper is to investigate what both customers and suppliers learn from failed inter-organisational NPD projects. We investigate the causes for failed projects, the consequence for the customer and the supplier involved, and the extent to which action has been taken upon what has been learned from the failed NPD projects. Based on previous studies we identified two failed inter-organisational NPD projects of interest; a seriously delayed and an abandoned NPD project. In this study we analyze two failed NPD projects and the data is gathered from in-depth interviews with both the customers and the suppliers of the inter-organisational NPD projects. Our preliminary findings show that the customers' **lack of commitment** and the suppliers' **lack of technical knowledge** causes the projects to fail, which consequences are **economic losses** and **repeating failures**. Based upon these leanings the suppliers have taken action to promote **open information exchange**. The customers have made adjustments in own organizational procedures and will support future **management set-ups** at the suppliers.*

Keywords: *Failed inter-organisational NPD projects, causes, consequences and learnings.*

1. INTRODUCTION

The innovation literature has advanced our understanding of why new product development (NPD) projects succeed or fail (Edmondson & Nembhard, 2009). Failure rates in innovation-driven industries remain high. The NPD project fail if the products are: not introduced to the market, abandoned, prematurely stopped, seriously slowed down, not even started or temporarily stopped (Mohnen, et al., 2008).

Failed NPD projects are difficult to avoid and are considered as a waste of time and resources (Garcia-Vega & Lopez, 2010). However failed inter-organisational NPD projects can also be considered as valuable learning for the involved parties and their relationship. To our knowledge, the innovation literature has focused on identifying factors leading to failure and not so much on the consequences and the extent to which action has been taken based upon what has been learned from the failed projects. Furthermore often research only focuses one perspective of the customer-supplier relationship, however we study the customer, the supplier and the customer-supplier relationship (a dyad perspective). Therefore, our research questions are:

- 1) Why do inter-organisational NPD projects fail?
- 2) What are the consequences for the customer, the supplier and their customer-supplier relationship?
- 3) What actions are taken by the supplier and customer in response to the failed NPD projects?

The overall aim of this paper (research note) is to contribute with a broaden understanding of causes and consequences of failed inter-organisational NPD projects and of their effect on future actions of both the customer and the supplier.

Failed inter-organisational NPD projects are considered broadly in this paper and includes NPD projects that have been abandoned, delayed, prematurely stopped, seriously slowed down or did not even start (Mohnen et al., 2008). We acknowledge that NPD projects can fail during all phases of the development process but in this paper we focus on NPD failure after implementation.

2. THEORETICAL FRAMEWORK

Prior literature on failed NPD projects has identified the following causes of failure: lack of required skills and knowledge, organisational structure and lack of information may lead to substantial delays in NPD projects (Radas et al., 2012). Issues related to economical aspect as cost, risk and finances (Galia & Legros, 2004; More, 1982), financial constraints and economic uncertainty (Mohnen, et al., 2008) are also identified as factors that harm NPD projects. Last, findings have also shown that firms are more inclined to abandon incremental NPD projects (Schmidt & Calantone, 1998).

Research has shown that failed NPD projects are difficult to avoid, due to firms lack of knowledge of the difficulties, the risks related to the project, and because the future is unknown (Garcia-Vega & Lopez, 2010). But Radas and Bozic (2012) have shown that firms who experienced failed NPD projects can continue innovation. They found that the main problem was the lack of capabilities. However, they also found that these capabilities could be acquired through e.g. external collaboration.

Another stream of literature regarding knowledge and learning have shown that firms NPD projects are influenced by knowledge obtained from previously abandoned NPD projects (Hashi et al., 2013). The literature on learning applicable for failed NPD projects may be learning-by- experience (Huber, 1991), and prior experience with innovation projects, such as learning-by-doing and learning-by-failing, which will enhance success in future innovation projects (Van der Panne, Van Beers & Kleinknecht, 2003). Furthermore, it is claimed that firms may transfer the learning and experience from one project to a future project via post-project reviews (Koners & Goffin, 2005; Koners & Goffin, 2007) to minimize the potential waste of resources.

3. THE EMPIRICAL SETTING AND RESEARCH DESIGN

In order to ensure a comprehensive understanding and investigation of the *causes* and *consequences* of failed inter-organisational NPD projects and the following future *actions* of both the customers and the suppliers, two in-depth case studies have been carried out. An explorative case study approach is appropriate when limited knowledge of a phenomenon exists (Yin, 2003). To investigate the research questions, two failed inter-organisational NPD projects (a temporarily stopped NPD-project and an abandoned NPD project) are chosen as the main unit of analysis. The two failed NPD project were identified and selected from a survey carried out in the Danish transport industry (Sandgreen, 2013). For future research we hope to identify and analyse 5-7 additional inter-organisational failed NPD project.

We carried out in-depth qualitative interviews with both the transport firms and the transport buyers of the two identified failed inter-organisational NPD project, henceforth referred to as RA4 and MRT. The objective of RA4 project was the development of a special transport system for wind power plants and this project is after implementation temporarily stopped. The objective of the MRT project was to implement and apply a new transport system a so-called modular road train and is after implementation abandoned.

Both failed NPD Project are conducted in close collaboration between a supplier (transport firm) and a customer (transport buyer). Therefore, in four explorative interviews are conducted, one with each of the two transport firms (in both cases both project owners and suppliers) and one with each of the two transport buyers (customer). The respondents were the responsible managers and they were selected due to their high involvement in the failed NPD projects. The interviews are based on semi-structured interview guides covering areas as; why and when did the NPD project 'fail', what was the reason for the project being temporarily stopped or abandoned and what are the consequences, learning and actions taken after these failed NPD projects.

The interviews were recorded and transcribed. Then the qualitative data was coded, which means that small parts of the text are given a code representing a certain theme, area, construct etc. in order to get an overview of the data. We use the editing approach (Robson, 2002) where codes are defined based on our findings during the analysis. All the data were managed by utilizing a specialized software tool to support the qualitative data analysis, which also provides the opportunity for both the researchers to code, review and interpret the collected data and the obtained results.

4. PRELIMINARY FINDINGS BASED ON THE EXPLORATIVE INTERVIEW

Comparing the two failed inter-organisational NPD projects provides interesting insights into similarities and differences regarding the NPD projects, causes and consequences for the transport firms and the transport buyers.

The customers are in both cases large international manufactures, whereas the suppliers are small-medium sized national transport firms. In both NPD projects we find that the customers initiated the NPD projects and that they pushed (required) that the supplier took the financial responsibility of the NPD project. The data show that the RA4 project is considered to be a transport system with a very high technology uncertainty. In contrast, the MTR project is considered to be a system with very low technology uncertainty.

The RA4 project failed three times after implementation. After completing the development of the RA4 it turned out that the customer was not ready to use the system and it was postponed for six months – without any payment for the supplier. A couple of months after commissioning, the supplier dropped a tower section for a wind turbine. A short delay is required while the equipment is repaired and after month utilization things go wrong again and another tower section is dropped. The MTR project is abandoned by the customer after six months commissioning and the cause is a pure cost issue. The contract with the supplier is not renewed.

In both NPD project, the suppliers argue that the customers' *lack of commitment* (financial resources and no renewal the contract) is a very influential factor for failure (delayed and abandoned NPD project). When new transport systems are requested the transport firms need to find competitive solutions in collaboration with their equipment suppliers. This requires large NPD investments from the transport firm, which can have devastating consequences if the transport buyer delays or decides not to renew the contract (tender). The suppliers pointed to the *open information exchange* as being important for the commitment. Before investing in new NPD projects, it is important for the supplier to determine whether the customer will renew his contract with the present supplier and remain in the relationship. This will require more open and direct communication. Thus, for future projects the suppliers will require more direct answers from the customers in regard to their strategic considerations. The customers agree that the lack of communication with the suppliers might be a hindering factor for a successful innovation. However, the dynamic of their organisations and the market situation put a constant pressure on the customer and makes it difficult for the customer to foresee the future.

In our study, we found that the supplier for the RA4 project *lack of technical understanding*. The supplier lacks the basic scientific 'know how' to be able draw inferences from the experience of failure and is not able to engage in the following aspects of rigorous analysis with their own equipment supplier and the customer (problem diagnosis etc.). The customer also argues that a *new management set-up* is required. According to the customer, the supplier struggle with the day-to-day mindset and lack a more strategic proactive process when it comes to learning from failure. The consequences of ignoring or suppressing the seriousness of the failed RA4 project the first time allowed the failure to be repeated. To avoid this for future inter-organisational NPD projects the customer has taken the initiative to develop a system and procedures that can identify and address failures in a timely manner. Furthermore, the customer has

therefore taken action to support the supplier and their sub-suppliers in future innovation projects. The motivation to protect idiosyncratic investments in the relationship with a supplier is of special interest for the customer. The customer stresses the importance of confidence and faith that the supplier will be reliable, willing and motivated to listen, learn and engage in the challenging task of seeking out failures and learn from previous experience. Whereas the customer carry out strategic changes, the supplier has made changes at a operational level and is now utilizing special measuring devices during transportation.

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