TWO FOR TANGO: ARE BOTH PARTNERS ABLE TO TURN FAILURE INTO SUCCESS?

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ABSTRACT

This paper argues for the importance of understanding failed inter-organisational innovation projects, so firms are able to learn from failure and turn failure into success in future innovation projects. This requires an investigation to understand why innovation projects failed and what the consequences and actions were from these failures. We gathered empirical evidence from two inter-organisational innovation projects that failed after introduction to the market, and carried out in-depth qualitative interviews with both the customers and the suppliers of the two failed innovation projects. The results lead to two contributions. First, we identify why the innovation projects failed and the consequences and actions of the failures. Second, we find that the suppliers didn't learn from these failed projects due to their attitude towards their role in innovation. Furthermore, the firms neglected to stop or abandon the innovation projects earlier in the process, due to problematic relationships between the partners. Therefore we recommend that before entering an inter-organizational innovation, both partners must be committed to the innovation project and have the 'right' mind-set and attitude towards innovation and the project; otherwise the project will fail. Furthermore, if the project is likely to fail then the partners involved also need to be able to stop the innovation projects earlier in the process, and not wait until the projects are implemented on the market. The right mind-set is important in order to foster learning that can be applicable in future innovation projects.

Keywords: Inter-organisational collaboration, Failure of innovation projects, Consequences and actions, learning from innovation failure

Session track: Innovation with external partners

1. THEORETICAL BACKGROUND AND RELEVANCE

"99 percent of success is built on failure" –*Charles Kettering*

Literature indicates that inter-organisational collaborations for innovation are relevant and critically necessary for companies' innovative performance, because they enable firms to absorb knowledge and access resources from other firms or partners to benefit the firms' innovation projects (Faems, Van Looy, & Debackere, 2005; Grimpe & Sofka, 2009; Knudsen, 2007). However, not all collaborative innovation projects are successful due to problems either during the innovation project or after introduction on the market.

The literature on failed new product development (NPD) projects states that failed NPD projects may be difficult to avoid due to firms' lack of knowledge about the difficulties a project may experience, and because the future is unknown (Garcia-Vega & Lopez, 2010). However, it is also shown that firms that experience failed NPD projects continue with innovation (Radas & Bozic, 2012) and apply their experiences with failing in their future innovation projects (Hashi & Stojčić, 2013). In fact Leoncini (2016) argues that having had failed NPD projects is "one of the key elements in determining successful firms' innovative performance" (p. 376), but notes that the literature lacks research investigating the possible experience with failing and action taken from failed NPD projects (p. 385).

The aim of this paper is to contribute to the gap in the literature revealed by Leoncini (2016). As failed innovation projects are hard to avoid, it is important that firms are able to understand the consequences of their experiences with failure so that they may implement learned lessons into their organisational routines and future innovation projects. In this way, the experience with failure becomes a vital source of insight for future innovation projects (Radas & Bozic, 2012).

The research questions for this paper are:

1) Why do inter-organizational innovation projects fail?
2) What are the consequences and actions from these failed innovation projects?

We use qualitative case studies for the method. We examine the dyadic relationship in failed inter-organisational innovation projects, studying both the supplier's and the customer's identification regarding *why* the innovation project failed (RQ1) and their ability to understand the *consequences* of their shared failed projects as well as their ability to *take actions* to mitigate failure for future innovation projects (RQ2).

This research makes two important contributions. First, it provides insights about why innovation projects fail and the consequence of these failed innovation projects, thereby contributing to an emerging stream of literature on failed innovation projects. Second, it applies a dyadic approach to investigating both partners, and the results show that the suppliers haven't learned anything from the failed innovation projects.

This research is relevant for academia and practitioners. For the research community, it will broaden the understanding of experience and action taken from failed innovation projects, and how such actions are beneficial for future innovation projects. For practitioners, it will provide knowledge about and a more positive view on the

experience of failure and ways to turn lessons learned into future success. Instead of being controlled by a pessimistic view or by trying to avoid all potential obstacles in advance (and thereby endangering the firm's innovative capacities), firms will learn how they can approach potential failure with a more positive view and learn from the experience of failure in order to act subsequently with more success.

2. THE THEORETICAL FRAMEWORK

Failing innovation projects are suggested to be linked to subsequent successful innovation and innovation processes (D'Este, Amara, & Olmos-Peñuela, 2015). Ederer and Manso (2013) suggest that if firms support failure in the beginning of their innovation projects, it may be beneficial for their processes to foster innovation in the longer run. Furthermore, Madsen and Desai (2010) claim that learning from failure is more valuable than learning from projects which turned out to be successes. But an important question is: When can an innovation project be classified as a failure? Following Mohnen, Palm, Loeff, and Tiwari (2008), we define failed innovation projects as efforts that may be abandoned, delayed, prematurely stopped, seriously slowed down or projects which did not even start. Innovation projects may fail during all phases of the development process and after introduction/implementation to the market. This paper further operates with the concept of failure as an outcome below the expected level or a negative deviation from expected and desired results (Greve, 2003).

The theoretical framework is divided into two sections: first we discuss 'why innovation projects fail,' and secondly we examine 'the consequences and actions of these failed innovation projects.'

2.1 WHY DO INNOVATION PROJECTS FAIL?

Reasons for innovation and NPD projects to fail can be categorized according to a time-line: before, during and after the projects. However, it may be empirically difficult to pinpoint the specific cause for an innovation project to fail (and there may be multiple causes). Furthermore, both partners in the inter-organizational innovation can cause the innovation projects to fail, and therefore the causes listed below may be applicable for both partners in the inter-organizational innovation project.

2.1.1 BEFORE THE INNOVATION PROJECT

One of the reasons for an innovation projects to fail before getting started may be due to the mind-set of the management in the firms. Are the managers of each firm willing and capable to do innovation? (O'Connor & DeMartino, 2006) Furthermore, both internal and external barriers may hinder the firm's willingness or ability to start the innovation project. Internal barriers may include a lack of financial resources or qualified employees. External barriers may result from competitors presenting a solution or product, just prior to the firm's innovation project, or from changes in regulations. See Sandberg and Aarikka-Stenroos (2014) for a review of internal and external barriers hindering innovation.

2.1.2 DURING THE INNOVATION PROJECT

During the innovation projects, there are multiple challenges that may lead to failing. Prior literature on failed projects has identified the following causes: lack of required knowledge and skill, lack of information, issues related to economic aspects and financial constraints (Galia & Legros, 2004; Mohnen et al., 2008). Furthermore, an innovation project may fail due to coordination problems or an inadequate climate between the project partners. One of the conditions often listed in the literature as important for a beneficial partnerships is the presence of trust, for if the partners don't trust each other it may be problematic to transfer and receive knowledge, and such lack of trust may lead the project to fail (Sankowska, 2013). Another cause for innovation projects to fail is the different (and sometimes conflicting) management style which may lead to challenges between firms.

Easterby-Smith, Lyles, and Tsang (2008) present in their model on partnerships an overall picture of what may cause failed innovation projects during the process if certain 'conditions' are not met. They state that both the nature of the knowledge, the dynamics, and types of relationships between the partners influence the possibility to transfer knowledge and therefore the outcome of the innovation projects. They furthermore emphasize that both firms need to be motivated and have the capability to absorb knowledge (absorptive capacity) otherwise it may be likely that the firms will fail the innovation project. Another issue related to knowledge transfer is that when partners do not share sufficient knowledge, they may experience mistakes (Hoopes, 2001). These mistakes are often experienced in inter-organizational innovation projects with new external partners and in the case of sticky knowledge. Hoopes (2001) stresses that to avoid these mistakes it is important to have experience with the partner and to be able to receive and translate knowledge.

2.1.3 AFTER THE INNOVATION PROJECTS

One of the main reasons for failed introduction to the market is lack of customers' adaption or customers' resistances. Heidenreich and Kraemer (2016) divide resistances into active and passive innovation resistance.

2.2 CONSEQUENCES AND ACTIONS

The second part of the theoretical framework is about the consequences and actions firms experience or make due to the failed innovation projects. Some of the consequences of failure can include severe reputation and image consequences for the affected firm which can harm the firm in the long-run, while other consequences may include additional costs or even legal challenges. Consequences of the failed innovation project can be classified as either external (e.g., losing a customer or a contract), or as internal (e.g., changes in organization structure or implementation of new procedures).

The literature emphasises the importance of learning from these failed innovations, because the act of failing provides valuable learning for future projects (Ederer & Manso, 2013) and fosters innovation in the long run (Madsen & Desai, 2010). However, learning from failure depends on the company's willingness and ability to incorporate knowledge gleaned from failed events into changes (Lorenz, 2014). Dörfler and Baumann (2014) investigate learning from the Airbus A380 Program and present that it is not enough to redesign organisational behaviour (ad hoc), but the firm needs to

enforce changes, raise awareness and provide stability. Learning from these failed innovation projects may be labelled learning-by- experience (Huber, 1991), learning-by-doing or learning-by-failing (Van der Panne, Van Beers, & Kleinknecht, 2003). Leoncini (2016) shows that learning from failure is moderated by the firm's engagement in innovation.

3. RESEARCH DESIGN

Our empirical data is from two failed inter-organisational NPD projects. We carried out in-depth qualitative interviews with both the customers and the suppliers of the two failed inter-organisational NPD projects. The customers are in both cases large international manufactures, whereas the suppliers are small- to medium-sized national transport firms (Table 1).

The respondents were the managers for the projects and they were selected due to their high involvement in the failed NPD projects. The interviews are based on semi-structured interview guides, and they were recorded and transcribed. The qualitative data was then coded, which means that small parts of the text were 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 analysis of the interviews.

We acknowledge that NPD projects can fail during all phases of the development process but in this paper we focus on innovation projects which failed after implementation to the market.

Table 1 presents a description of the two innovation projects and the four firms.

	Innovation project 1 (I1)		**Innovation project 2 (I2)**	
	Offshore Wind Solutions		EMS vehicle (European Modular System)	
	Company S1*	**Company C1***	**Company S2**	**Company C2**
Industry	Transport	Machinery & components	Transport	Bakery
Description of the firm	National trucking company specializing in food transport	International technology firm	National shipping company specializing in offshore	International food company with activities in 18 countries
Number of employees	80 employees	11,000 employees	200 – 499 employees	8,500 employees
Turnover	n.a.	22 billion EUR	n.a.	4,100 million EUR
Own innovation department	No	Yes	No	Yes

Table 1: Description of the case firms.
*S and C are short for supplier and customer. S is the transport supplier (transportation firm) and C is the customer (manufacturing firm)

4. RESULTS

Both projects we investigated failed after implementation to the market. The first innovation project was an offshore wind project (I1) that failed three times after introduction to the market. The first failure happened because the customer was not ready to use the system, so implementation was postponed for six months. The supplier didn't get any payment during that period. When the customer was ready to re-commission implementation in order to utilize the innovation, the supplier dropped a tower section for a wind turbine, which required a short delay while the equipment was repaired. Subsequently, following one month of utilization the same situation happened (another tower section was dropped). These events were covered by the press with great interest, since the accidents had a major impact on traffic on that specific stretch of road.

The second innovation project was related to transportation for a large bakery (I2). The customer abandoned this project six months after commissioning, due to financial and cost issues. The customer did not renew the contract with the supplier.

4.1 WHY INNOVATION PROJECTS FAIL (RQ1).

Both failures occurred after introducing the new products to the market; however, the interviews identified some sources and issues during the innovation projects which had a negative influence on the relationship between the two partners, as well as on the outcome of the innovation projects.

A possible explanation for the failed innovation projects could be related to the **difference in firm sizes.** In both innovation projects the size of the customers' organizations are much bigger, measured by the number of employees. Additionally, both customers also have their own innovation department (Table 1), in contrast to the two small suppliers who do not have innovation departments. Because innovation was handled in a more formal manner by both customers, they each used standard operating procedures for handling innovation projects that forced/required suppliers to take on sole financial responsibility for innovation projects. The smaller companies thereby assumed greater risk in each case. Company S1 provided an example of the higher degree of formality that big companies have related to innovation: *"when doing business with the big companies we nearly always have to sign a non-disclosure agreement."*

Another explanation for the failed innovation projects identified in the interview is due to the firms' **different mind-set** with respect to initiating the innovation project and towards innovation in general. We identified that the customers initiated the innovation projects even though the suppliers were the owners of the projects; while the suppliers were more reactive/passive, waiting for the customers to take the first step. As company C1 says: *"..and how many times do we have to… how should I call it….entice NN (company S1) to invest in the project?"*. This is echoed by company C2 when they explain that they have asked company S2 for several years to participate in innovation, but they have stopped asking, because *"...it is not the transport supplier who initiates and drives the innovation, but us."*

This negative attitude towards the suppliers' **lack of taking initiative related to innovation** is supported by some statements from one of the suppliers. As company S2 explains: *"….we don't develop anything specific; …the focus is on operations and not*

on innovation projects. We do not have a dedicated project manager..". Company S2 also used the word *'halfhearted projects'* with respect to their involvement in the innovation project, due to their focus on the operations instead of on the innovation. These comments from the suppliers support the customers' impression that the suppliers are reactive, lack commitment, and perhaps lack the needed capabilities for joining these inter-organizational innovation projects.

However, the suppliers also point to **lack of commitment** from the customers as an explanation for the failed innovation projects. As an example of this lack of commitment can be seen in company S1's statement that: *"They move the production when the prototype is working"* (indicating that the customers are not committed to the suppliers). This is supported by company S2's statements that: "… *I use a lot of my time on collaboration with customers* [and] … *transport agreements today are not exclusive agreements,"* so the customers can 'freely' change suppliers. Because the customers don't make exclusive agreements with their suppliers, the suppliers need to trust the customers not to change supplier; however company C2 didn't renew the contract with S2, instead company C2 replaced S2 with another supplier.

Some explanation for why the innovation projects failed may be found in the **knowledge exchange** between the supplier and the customers. There is potential conflict related to how suppliers and their customers view their own willingness and capability to exchange information and knowledge. For example, company S2 says that in regards to their willingness to share knowledge, *"we are the type of company that plays completely open handed."* Company C2 also claims that open communication is valuable for the collaboration and knowledge exchange. However it was not possible to detect from the interviews if the two companies were truly willing to share, or if these were just empty statements.

Another issue is that company C1 claims their supplier **lacks education** needed to effectively collaborate: *"…there is an education gap and a cognition gap"* between the customer and the supplier. In relation to knowledge exchange, company C1 also claims that: *"[S1's] biggest source of knowledge comes from their chauffeurs… the chauffeurs are very skilled. But from the chauffeurs is it very difficult to absorb knowledge that can be useful for our business."* Furthermore, C1 states that "*it would be more fun to sit with a supplier who can match us on knowledge and engineering skills."*

Another explanation for the failed innovation project (I2) is due to **lack of and/or late approval** from authorities. Due to political resistance, company C2 was delayed in testing the innovation. Furthermore, use of company I2's innovation was granted on only an experimental basis, so ongoing use of the innovation required further dispensations.

4.2 WHAT ARE THE CONSEQUENCES AND ACTIONS FROM THESE FAILED INNOVATION PROJECTS? (RQ2)

In the case of **first innovation project (I1)** the supplier (S1) does not seem to realize the seriousness of failure. The manager believes there was little that they could have done to avoid the failure situation. This is an attitude which contributed to the firm's inability to detect the failure and furthermore it also relates to their inability to effectively communicate their expectations to their sub-suppliers. Instead of insisting that their sub-supplier has learned from the failure and will meet obligations in the

future, the manager states: "*I would hope that my sub-supplier has learned something. Well, I would hope that they have learned to check one more time.*" This indicates that the supplier (S1) doesn't feel any responsibility for the failure.

Furthermore, when the transport suppliers realize that their projects have failed, they do not start an investigation to understand the root causes. Such an investigation would require technical knowledge and the ability to undertake a sophisticated analysis to ensure that the right lessons are learned and the right solutions are employed (knowledge resources that the transport suppliers lack). The supplier (S1) only focuses on 'practical knowledge' and not knowledge related to the failure: "*Yes, we have the knowledge that we need. When we have to unload such a tower, what is interesting for us to know, is of course, how big it is, what diameter we are to take and how much it weighs… and then we do not really need more. So we have what we need."* This lack of knowledge makes it difficult for management to ensure that their organisations don't just move on after a failure but stop to analyse and learn from the failure. In this case the transport supplier must rely on the knowledge of the sub-supplier. The results show that after the failure the transport supplier is not considering making any structural changes in regard to future NPD projects.

After two failures in the innovation project (I1), company C1 decided to make a major technology investment in an extra control system in order to address future challenges. Unfortunately, neither the transport supplier nor their sub-supplier of the system were certain that the new system would work.

Company S2 had different consequences and actions from **their failed innovation project (I2):** they lost their customer (C2) (the contract was not renewed). First company C2 asked one of company S2's competitors, however the competitor said no. So company C2 invited company S2, but in the end company S2's competitor was willing to take the contract after all. Company S2 remarked that: *"….we are not in an industry that collaborates. On the contrary, we work against each other."* Furthermore, because of the agreement on cost and risk in the projects, company S2 was left with the bill for all costs: "*it was our risk; we took a chance."*

With respect to action, knowledge transfer and learning, company S2 learned that the process took longer than expected due to the needed approval from authorities. And Company S2 continues: "*we have been impatient and the customer is also impatient… but no, I don't think….that we have learned anything specific in the case of the innovation project (I2)."* And S2 has not made any changes in their company since their failed collaboration with C2.

The consequences and actions for C2 were that they replaced the supplier S2 with one of S2 competitors. Any time there is a customer-supplier relationship, it takes time for the customer to make their needs and requirements clear to the new supplier.

5. DISCUSSION AND CONCLUSION

This paper began by arguing that it is important to understand failed innovation projects to be able to investigate if both partners in the innovation project are able to turn failure into success.

Therefore we asked the following two questions:

1) Why do inter-organizational innovation projects fail?; and,
2) What are the consequences and actions from these failed innovation projects?

The empirical results for the first research question indicated multiple reasons why the inter-organizational projects were problematic and failed. The reasons included differences in size and mind-set, lack of commitment and education, issues related to knowledge exchange and lack of adequate expectations related to approval processes. The results related to the question about consequences and actions show that the suppliers have not learned from their failed innovation projects. Therefore, they are not capable of turning failure into success. In contrast, both customers have made changes and have tried to learn from the failed innovation projects.

An interesting finding is that firms involved in failed innovation projects do not necessarily learn from their failures, which is contrary to our theorized expectations. In both cases, only the customers were willing to learn and make changes after the failed innovation projects. The suppliers' lack of learning may be explained in different ways. One explanation may be that people have an instinct to deny, ignore, or disassociate themselves from their own mistakes (Cannon & Edmondson, 2005). The suppliers avoid admitting and acknowledging failure. Another explanation may relate to the suppliers' perspectives on innovation: they seemed to be reactive and 'half-hearted' about innovation, as they were more focused on day to day operations. This observation supports findings by Leoncini (2016) suggesting that a firm's engagement is important for learning from failure. It follows that there is no learning if firms are not engaged. This lack of learning from the suppliers' perspective needs further research to determine if it is due to issues listed above or to other aspects such as firm structure, size, workforce educational level, or characteristics of the industry.

A further interesting finding is that the innovation projects were not stopped nor abandoned during the process, but only after the two innovation projects were implemented on the market. This late identification of the failure had a huge impact on both partners, and especially on the suppliers due to the consequential financial burden. An interesting question to ask is: Why did they not stop the project earlier in the process? There may be multiple answers to that question. One answer may be that the communication and knowledge exchanges between the partners were not sufficient to cue the suppliers in to the potential for failure. Another potential answer to the question may be related to the low level of commitment by the customers during the process. There could be other reasons as well, especially as in both cases the customers of the innovations realised after implementation that they had to reject the innovations. Further investigation is needed to provide more detailed answers to this important question.

This paper suggests the following *managerial implications*: Before entering an inter-organizational innovation project, the partners need to have the 'right' mind-set and attitude towards innovation, and they also need the resources and willingness to fully commit themselves to the projects. Otherwise, there are higher chances for failure. Furthermore, managers also need to be able to evaluate the project in an earlier phase (and throughout the whole innovation process), and they need to be willing to stop the project.

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