MANAGING INNOVATION PROJECTS WITH MULTIPLE STAKEHOLDERS: EXPLORING THE REQUIRED CAPABILITIES

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Abstract
Organizations developing new products or services increasingly need the support of external actors (stakeholders). Previous research on dealing with such stakeholders in innovation projects has mainly focused on dyadic relationships. Little is known about the specific challenges that innovation project teams face as a result of the fact that they have to deal with a heterogeneous set of stakeholders. Moreover, most studies tend to have a rather strategic focus, providing little insight in the capabilities that innovation project teams need in their day-to-day activities. To close this gap with this study we explore the unique multi-stakeholder innovation capabilities (MSI). We have conducted a qualitative explorative study through five in-depth cases in the health care industry. Based on our initial findings from 20 semi-structured interviews, observations during team meetings, and secondary data on the innovation projects we uncovered five MSI capabilities. This paper conceptualizes and describes these MSI capabilities. We conclude the article with how innovation project teams may use these insights and provide directions for future research.

Key words: capabilities, innovation teams, multiple stakeholders, case studies

Introduction
Increased specialization of organizations, rapidly changing customer requirements, and technological advances, have pushed organizations to collaborate with multiple stakeholders (such as research institutes, customers, suppliers, co-manufacturers, governmental organizations, and NGOs) to efficiently and effectively develop innovations (Davies, Brady, and Hobday, 2007; Hakanen, and Jaakkola, 2012; Stock, 2012; Michelfelder, and Kratzer, 2013; Laursen, and Salter, 2014). For example, cooperating with research institutes may give an organization access to knowledge it does not possess itself, cooperating with suppliers may provide an organization with co-designed ingredients and components it cannot make itself, cooperation with customers may help an organization with better understanding market requirements and references from lead customers, and cooperation with NGOs may give an organization (and the innovation) legitimacy (Gemünden, Ritter, and Heydebreck, 1996; Driessen, and Hillebrand, 2013).
While cooperating with stakeholders during innovation projects may give a firm access to resources it does not possess itself, it also complicates the management of such innovation projects, because a more complex set of relationships with a more diverse set of actors needs to be coordinated. This makes multi-stakeholder innovation projects difficult to manage and as a consequence many such innovation projects fail (Matta, and Ashkenas, 2003; Shepherd, Patzelt, and Wolfe, 2011; Levering, Ligthart, Noorderhaven, and Oerlemans, 2013). Therefore, managing multi-stakeholder innovation projects likely requires special capabilities, here labeled as multi-organizational innovation (MOI) capabilities (Randhawa, Wilden, and Hohberger, 2016). While previous research (Ritter, and Gemünden, 2003; Driessen, and Hillebrand, 2013; Kazadi, Lievens, and Mahr, 2016) provides a glimpse of the capabilities required when conducting multi-organizational innovation projects, there is still a need to “explore how firms can sense, seize and reconfigure complementary resources and relational capabilities across open business so as to capture value through OI [open innovation]” (Randhawa et al., 2016, p. 18). Especially when the set of stakeholders is heterogeneous, specific multi-stakeholder innovation (MSI) capabilities are likely to be relevant, while distinct from more traditional capabilities that are needed in innovation contexts. Therefore, this study aims to provide a systematic inventory of MSI capabilities. In addition, as MSI capabilities described in the literature have remained rather abstract, and conceptual, offering little insight in what these capabilities entail, this study also provides an empirically supported, detailed description of the MSI capabilities. The findings of this study allow academics and managers to better understand which MSI capabilities are needed in multi-stakeholder innovation projects and what they entail. This study may also help develop training mechanisms through which teams will learn the MSI capabilities. An inventory of MSI capabilities will help teams to more successfully deal with challenges occurring in a MSI context.

**Theoretical background**

We define an MSI capability as the ability to deal with the specific challenges that a project team faces during the course of a multi-stakeholder innovation project (Marsh, and Stock, 2003; Hackman, 2011). A capability is a higher order construct that consist of skills and routines (Nelson, and Winter, 1982; Dosi, Faillo, and Marengo, 2008; Felin, Foss, Heimeriks, and Madsen, 2012; Kazadi et al., 2016) which may be regarded as the microfoundations of capabilities.

It has long been recognized that the management of actors outside the own organization requires specific capabilities. For example, several authors have investigated customer relationship capabilities (Day, 1994; Battor, and Battor, 2010; Yonggui, and Hui, 2012) and others have investigated the capabilities that are required for managing (strategic) alliances (Lambe, Spekman, and Hunt, 2002; Draulans, de Man, and Volberda, 2003; Wang, and Rajagopalan, 2015). This type of studies, while not always in an innovation context, provides valuable insights in the capabilities to engage in relationships, absorb information from the other actor, and subsequently use that in the further improvement of the relationship. However the majority of these studies still focus on the so called hub and spoke perspective where the main organization (the hub) engages and keeps relationships with separate clusters of stakeholders (the spokes) (Neville, and Menguc, 2006), rather than the complex network of interrelated stakeholders (See Figure 1).
Far less academic attention has been devoted to capabilities that are needed for the management of a more heterogeneous set of stakeholders. Some researchers have only recently started proposing and exploring capabilities in a multi-stakeholder environment, such as Ritter and Gemünden (2003), Walter, Auer and Ritter (2006), Plaza-Úbeda, Burgos-Jimenez and Carmona-Moreno (2009), Driessen and Hillebrand (2013), Hillebrand et al. (2015), Kazadi et al. (2016). Examples of such capabilities investigated include stakeholder competence mapping, which is the ability of the organization to produce an overview of competences present in different stakeholders (Kazadi et al., 2016); network competence, which is defined as tasks that need to be performed in order to manage a company’s technological network and the qualifications, skills, and knowledge that are needed in order to perform these tasks (Ritter, and Gemünden, 2003); stakeholder integration which is a strategic capability that helps a company to establish positive collaborative relationships with a wide variety of stakeholders (Plaza-Úbeda et al., 2009). The common ground of these capabilities is that they focus on the abilities of one company to successfully work with its network partners. Moreover, those capabilities focus more on the long term relationship building aspects rather than the challenges of dealing with multi-stakeholder issues. Furthermore, even though the studies take projects as the unit of analysis, none of the capabilities is analyzed in terms of the abilities that a project team needs to achieve a project progress. This is especially interesting since what makes the innovation projects challenging is the fact that the project team involves more than only one stakeholder.

Thus, while this literature provides a fruitful basis for our study it still fails to grasp the complexity of multi-stakeholder innovation projects. That is, these studies do not address the specific challenges that managers’ face as a result of the fact that they have to deal with a heterogeneous set of stakeholders, where each stakeholder has different interests, expectations, backgrounds etc. Moreover, most studies tend to have a rather strategic focus, providing little insight in the capabilities that innovation project teams need in their day to day activities. In addition, there is no specific focus on how project teams should deal with a multi-stakeholder innovation context. We focus on project teams in our cases because project teams have become the most popular structure for complex innovations (Gann, and Salter, 2000; Hobday, 2000; Du Chatenier, Verstegen, Biemans, Mulder, and Omta, 2009) and because their failure rates continue to be high.
Method

We study five multi-stakeholder innovation projects from the health care sector. European and, more specifically, Dutch health care is under a constantly increasing pressure to reduce costs, which requires a fundamentally new approach to health care (Davidson, and Randall, 2006; Porter, and Teisberg, 2006; Schäfer, Kroneman, Boerma, van den Berg, Westert, Devillé, and van Ginneken, 2009). Many of the innovations in this sector involve multiple stakeholders, thus increasing the level of difficulty in health care innovation projects (Helfrich, Weiner, McKinney, and Minasian, 2007). The health care sector thus provides a fertile place to find cases for our study.

We opted for an explorative case study design. Case studies are especially appropriate when investigating complex and understudied phenomena (Yin, 2003), as is the case in our study. The first author selected the cases in cooperation with the innovations director of a private general care hospital in the Netherlands. The hospital is continuously involved in approximately 40 innovation projects. Many of these projects are executed by teams that include stakeholders from other health care institutions, local government, suppliers, patient organizations and/or research institutes.

The projects were selected based on the four criteria. First, selected projects needed to have at least two stakeholders involved from different organizations (i.e. from outside the hospital). Projects with more diverse stakeholders from different backgrounds are more likely to experience challenges unique for multiple-stakeholder contexts (Driessen, and Hillebrand, 2013; Hillebrand et al., 2015), which creates a good basis for our study. Second, selected projects needed to involve innovations that are new to the hospital (Avlonitis, Papastathopoulou, and Gounaris, 2001; De Dreu, and West, 2001). Innovations that are new to the hospital involve high levels of uncertainty, which makes them more prone to require unique capabilities (Song, and Montoya-Weiss, 1998). The novelty of the project was assessed by asking the hospital innovations director to select the innovation projects that are new to the hospital. Third, to ensure that respondents were able to remember the details of the innovation project we wanted projects that were still ongoing. This also enabled us to collect observational data were possible. Fourth, we wanted to include a mixture of successful and less successful innovation projects. As the projects were not yet finished, the exact level of success cannot be determined yet, so we relied on the innovations director’s general satisfaction with the project progress. Based on these four criteria, we selected five projects. A short description of the projects is provided in the appendix and some general information on the innovation projects is provided in table 1.

<table>
<thead>
<tr>
<th>Case</th>
<th>Aim of project</th>
<th>Stakeholders involved</th>
<th>Starting year</th>
<th>Current phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Developing tools for building sustainable hospitals</td>
<td>3 hospitals, 13 companies, 4 research institutes</td>
<td>2013</td>
<td>concept development/prototype development</td>
</tr>
<tr>
<td>B</td>
<td>Developing new test for rachitis</td>
<td>1 hospital, 2 companies</td>
<td>2012</td>
<td>prototype development</td>
</tr>
</tbody>
</table>
Table 1: Case descriptions

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Participants</th>
<th>Year</th>
<th>Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Developing instrument for curing blather cancer</td>
<td>2 hospitals, 2 industry companies</td>
<td>2009</td>
<td>commercialization</td>
</tr>
<tr>
<td>D Developing new allergy treatment</td>
<td>2 hospitals, 1 research institute, 1 governmental organization</td>
<td>2013</td>
<td>commercialization</td>
</tr>
<tr>
<td>E Developing software to support e-healthcare</td>
<td>1 hospital, 1 stakeholder, 1 patient organization, 1 governmental organization</td>
<td>2013</td>
<td>concept development/prototype development</td>
</tr>
</tbody>
</table>

Data collection

The main data collection method used in this study are in-depth interviews. In-depth interviews allow us to get thorough insights into a complex phenomenon like MSI capabilities. In-depth interviews are aimed at describing and understanding behaviors and processes (Rubin, and Rubin, 2012), making them suitable to investigate such complex topics such as innovation project teams with multiple stakeholders. Interviews are especially beneficial in exploratory studies such as this one (Zsidisin, Panelli, and Upton, 2000). In-depth interviews were be conducted with project managers and other stakeholders according to referrals of project managers from each of the five chosen cases (snowball sampling). In total we conducted 20 interviews, lasting one hour on average (Table 2).

Interviews were held in a semi-structured way. Semi-structured interviews provided us the flexibility that is required for exploratory research that aims to investigate unknown territory and allow the researcher to go back and forth, following the course of a discussion, while allowing researcher and respondent to cover all the topics of interest (Louise Barriball, and While, 1994). The interview consisted of three parts. First, we focused on understanding the nature of the project. Topics addressed in this first part of the interview included the aim and origin of the project, the (elements of the) new product, the stakeholders involved, and the current phase of the project. Second, we focused on the stakeholder-related problems that the innovation project team has encountered during the project. A characteristic of any capability is that it is built up to solve problems (Marsh, and Stock, 2003; McEvily, and Marcus, 2005). Focusing on problems encounter thus allowed us to which capabilities were required during the project. Third, we asked respondents to describe the actions that has been taken or discussed by the innovation project team to address the problems it was facing.

To increase the validity of the case study results and to avoid the limitations and bias of interviews, we triangulated the findings with other data sources where possible (Yin, 2003). Interviews were supported with available secondary materials such as project performance reports, product information and web material. Furthermore, the first author was allowed to be present at several meetings, resulting in 1290 minutes of
observations data. To check the accuracy of our findings the second and third author presented the initial findings on two separate occasions to the hospital, giving us the opportunity to obtain additional feedback on the initial findings and test the accuracy of our interpretations (Yin, 2003). An overview of the data is presented in table 2.

<table>
<thead>
<tr>
<th>Case</th>
<th># interviews</th>
<th>Duration interviews (min)</th>
<th>Observations (min)</th>
<th>Documents (# pages)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5</td>
<td>300 min</td>
<td>630 min</td>
<td>&lt; 150 pages available project reports and web material</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>240 min</td>
<td>120 min</td>
<td>70 pages project reports</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>240 min</td>
<td>300 min</td>
<td>&lt;20 pages product reports</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>240 min</td>
<td>120 min</td>
<td>50 pages of project reports and product information</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>180 min</td>
<td>120 min</td>
<td>10 pages of product information</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>1200 min</td>
<td>1290 min</td>
<td>App. 250 pages</td>
</tr>
</tbody>
</table>

Table 2: Data collection

Analysis

We combined the theory and practice in a systematical, ongoing, and nonlinear way (Dubois, and Gadde, 2002; Järvensivu, and Törnroos, 2010). This way, we continuously went back and forth between the field and the literature, increasing our understanding of the MSI capabilities. We used manual coding. Open coding was applied at the beginning stages of analysis to constantly contrast and compare the cases, as new data are added, on differences and similarities while deriving categories and subcategories (Yin, 2003). When all the data was gathered and categorized, we unified the categories around a central core, which was the MSI capabilities. Coding was done mainly by the first author but the other authors checked the initial open codes to ensure the inter-coder reliability (Lombard, Snyder-Duch, and Bracken, 2002, 2003).

Results

The data reveal that there are five capabilities that teams require when operating in a multi-stakeholder innovation context. We discuss these capabilities next.

Managing stakeholder tension is defined as the ability of a team to balance the interests, expectations and backgrounds of the various stakeholders. Several of our respondents indicated that innovation projects that included multiple stakeholders were difficult to manage because all stakeholders tended to have different interests, expectations and backgrounds. For example, the project manager from Case A described how several stakeholders participated in the project for different reasons: “The University only wants publications, they want a major step forward in their specific field of research (…). On the other hand, the commercial (supplier) says ‘well, we want a software tool that we can sell many times’. And then there’s a consulting company who says ‘(…) This is for us a cheap way to get knowledge and experience in this specific field of working so that we can say for future customers hey, we’ve done that, we're very good at it”.
In many cases, this amount of diversity caused tensions. For example, in Case B one of the respondents from the materials supplier remembered that there was some tension between his own company and the hospital regarding the required amount of time for developing the prototype: while the hospital believed that this should take a few days, his own company argued that they would need much more time for developing the materials and designing the prototype. In some cases the tension resulted in such major problems that project participants were forced to leave the project. In Case E the software supplier wanted to use patient data to make the communication between the various stakeholders more integrated, but the hospital was concerned that this would jeopardize the privacy of the patients. The software company decided to resign from the project and another software supplier (that did not require access to the patient data itself) was brought in.

We noted in the cases that dealing with such problems requires two things. First, teams need to be able to identify the interests, expectations and background of all stakeholders. This may not always be easy, because not all stakeholders are always very open about their interests, expectations or backgrounds, or they remain very implicit. Teams thus need to make an effort to uncover hidden or implicit interests. For example, the project manager of Case A explained that he made a concise effort to understand the interest of all stakeholders involved in his project. This turned out to be difficult because all stakeholders have “different languages, different models of the world, [resulting in] total confusion... It’s all one big challenge” (project manager Case A).

One way of uncovering hidden interests, expectations or backgrounds is to prepare a formal contract as the process of making a contract forces the stakeholders involved to make their interests explicit. In Case D, several respondents stated that the project has problems progressing since there is no specific document that would allow the stakeholders to express the project requirements and clearly describe what is asked from each team member. The team in Case D is struggling to write such a document and is in continues negotiations on defining the exact interests and expectations of all the parties involved.

Uncovering interests and expectations requires building strong, trust-based relationships. This may explain why many respondents indicated that they had less difficulty with aligning stakeholders when it concerned stakeholders they had already worked with in previous situations. Previous experiences with each other helped stakeholders to understand the interests, expectations and background. For example, the two medical experts from Case C stated that they did not encounter much difficulty in the project due to the fact that the team consisted of stakeholders they knew from previous projects: “we are a very strong team. (...) We knew each other from before, because he (the technical supplier) worked for us (the medical institution) for years, so everybody who did anything with (this treatment), knew him..., and I met him again at this conference so we started collaborating (...), then I talked to the urologist whom I have known as well... and that’s why we really didn’t have a lot of difficulties”.

Second, the team needs to be willing to explore creative solutions that ensure that all stakeholders benefit from the innovation. For example, in Case A the project manager stated that he had to “define activities in the project in such a way that each partner thinks ‘hey yes, that’s interesting’” (project manager from Case A). The empirical data shows several ways in which project innovation teams can do this. For example, tension between stakeholders may be addressed by focusing on the value for the customer. We noticed that focusing on how the innovation provided value for the ultimate customers helped teams understanding the purpose of the project and to recognize their joint interest. For example, in Case A the stakeholders were struggling to agree on the next
step in the project. A draining discussion on this was solved by asking the customer (present in the meeting) what he wanted. This sealed the discussion because, as one of the stakeholders noted “if you are happy, we are happy!” (Note from observing Case A).

Another creative way of solving the tensions is to reframe the original objectives in such a way that part of them are adapted. The main goal of project E was to develop a software package for patient information management. In one of the observed meetings, the supplier started explaining that pursuing that goal might not be a reasonable objective. He argued that there is software available on the market, similar to the desired one and he therefore suggested to just adapt existing software. The client was at first unhappy with this proposition, but at the end of the meeting he realized that it might be in project’s and team's best interest to find a less complex solution to his needs (Note from observations, Case E).

Furthermore, sometimes a way to dissolve the tensions is to neglect part of the original project goals that no one wants to contribute to. An illustration of neglecting some of the original goals is provided by a project manager from Case A: "If there is a work package to which no-one says 'yes, I can do it and I want to do it’, then we say OK, let's just forget about this piece of work and do something else. As long as we can reach the same (main) results at the end (of the project) of course."

Synthesizing resources is defined as the ability of the team to integrate the diverse stakeholders’ resources. Our data suggests that to be able to integrate diverse stakeholders resources, teams must first be able to deal with the challenge of tracking down the work of such a diverse group of stakeholders. The inability to track down the work of all stakeholders impairs the team to fully oversee the progress of the project. As one manager stated: “There’s never enough input and you never know what the other people are doing” (Case A).

The ability to track the work of multiple stakeholders consists of knowing how stakeholders create their part of the project and when they will deliver their part. This has shown to be important for being able to adapt to the processes of other stakeholders. The inability to track the stakeholders’ development process creates delays and has implications for the integration of all the stakeholders’ resources. For example, a chemical expert in Case B was confused by finding calcium in textile that was not there in prototype version of the textile: “In the finish (a specific textile manufacturing procedure), they (the textile supplier) have this step where they wash the material with tap water. So at the end it turned out that this way calcium was introduced into the textile. In prior prototype versions they did not use that step. But of course it took us a while to realize that they had included that step. And then several meetings passed and we kind of found out eventually about (introducing) that step.”

Tracking the stakeholder work also consists of the need of receiving all the stakeholders’ inputs. That has shown to be a very tricky challenge due to the fact that different stakeholders work in physically separated places. This physical restriction pushes the teams to always have to present the inputs at the meetings which are not as frequent or as structured as in traditional teams. Consequence of that is the inability of all the project stakeholders to present their inputs thoroughly. The inability to have all the inputs, creates concerns for the team members as is clearly stated by the project manager in Case A: “By the end of the meeting, he (the hospital representative) was stressing his concern that we do not really see the results of the other hospitals and he wanted to see more of the results and to be able to discuss them”. The hospital representative remembered that at several occasions there was simply not enough time
to “show the slides” and discuss project progress. As a result everyone was at a loss at where the project stood. Being able to visually show what one was working on turned out to help other to understand what was going on. For example, in Case B a respondent noted that “The best thing would be to have some samples on the table, and to make sketches and to show it visually. I think most of the time we did that, or I did that, and we had a good understanding in the group. If you just talk without showing any of the technical aspects, it's more difficult to (get good inputs from others).”

Being able to track the work of all the stakeholder makes it easier to integrate resources. Some of the cases suggest that choosing a specific team structure might be a prerequisite for integrating the diverse resources: “I can imagine that in some other projects where you have very clear cut, low uncertainty activities... yes then you can distribute (the tasks). You can make a work breakdown structures like you can read about in all the project management handbooks. But if you have a very interconnected project..... yeah you have to distribute the work” (project manager, Case A). He therefore he opted to structure his team in a very hierarchical way.

Integrating the stakeholders’ resources might need planning for the integration in advance. In some of the cases the initial proposal served as a guideline for integrating the stakeholders’ resources. For example, a respondent from Case A explained how he told the other stakeholders to work according to the project proposal: “It says that you, you, you and you are contributing to it (the specific deliverable) so, we just do it like that. That's the formal way, you know, that's the formal management way. We have this project plan in which it is all detailed out how contributions from the different directions should go together in the deliverable” (Case A).

Synthesizing resources may be difficult at times. Some of the respondents stated that they used a stepwise approach to solve such problems. First they would try to postpone the integration of the resources until the next meeting in the hope that a solution would have emerged by then. When this did not help (and it usually did not), a second step might be to ask the team members to sit together and brainstorm how to integrate their deliverables. If the stakeholders do not reach the agreement, they should ask the internal customer on what he needs from them. As a final resort, the project managers would sit together and reach an agreement themselves.

Stakeholder decision making is defined as the ability of a team to jointly reach agreement with stakeholder representatives with limited decision power. Often in the project teams, some team members are purely representing their home organizations. Our analysis has yielded two important parts of the explained stakeholder decision making capability. First, the data show that the stakeholder representatives in the team do not have the decisional power. For example a project manager from Case A remembered a team member saying: “I have no mandate from my management to say yes or no and the reason why I don't have a mandate is that there was no paper sent around before the general assembly that I could hand over to my management and ask them if we have to vote should I say yes or no. So you should have sent your proposal three weeks before the general assembly so I could have checked with my director and I could on behalf of him have a yes or no.” As a consequence, team members with little decisional power have to be able to sell the solution reached in the team to their home organization and progress of the team is delayed.

Moreover, some representatives of stakeholders in the team not only have to represent their own organization, but also the business partners of his/her organization. Such a team member has to find a way to voice his business partners concerns, capabilities and agenda. For example, a supplier from Case B voiced this concern: “(our business
partner) also has maybe 10 textile development projects, and he has to fit it (the project) in, and he has to buy or acquire some materials first, and make some kind of a sample. People you work with, your network partners, also have their agendas, priorities and those have to fit in.” Including such a second tier stakeholders as a representative in the team might speed up the project.

Involving stakeholders is defined as the ability of a team to decide when and whom to involve in the project. Our cases suggest that in a multi-stakeholder innovation context, the involvement of stakeholders is rarely a straightforward procedure. As the project manager from Case A states: “It’s trial and error, it's an organic growth process”. Rather than selecting partners at the beginning of the project, a multi-stakeholder innovation project is characterized by constant flux, i.e. a constant change of the team composition. Our analysis suggests that an important part of the managing the participation of the stakeholders involves the ability to see when part of the team becomes redundant for the project progress. For example, in Case D there was some discussion about whether it was good to still involve all stakeholders. Some team members argued that involving all stakeholders delayed the progress of the project because not all stakeholders were still motivated to participate and/or contributed little to the project. However, these stakeholders did complicate the discussions and therefore some team members were in favor of involving these stakeholder no longer.

On the other hand, in some projects unanticipated needs emerged, requiring the team to find and involving new stakeholders in the project. For instance, the medical expert in Case C explained that during the course of the project the project team realized that it needed another partner for to create a business plan. They had not thought of that before and no team member wanted to work on that.

Involving stakeholders in a multi-stakeholder innovation project is also hampered by the fact that building good relationships between multiple actors is more difficult than in an intra-organizational context or when the project involves only one stakeholder. For the team to work well, all stakeholders need to know and trust each other, which is hardly ever the case at the beginning of a multi-stakeholder innovation project simply because there are too many stakeholders that do not (yet) know each other. Making decision about whom to involve is therefore difficult.

Adapting to stakeholder changes is defined as the ability of a team to be flexible towards the withdrawal or entrance of stakeholders during the course of the project. The analysis of the cases shows that the withdrawal or entrance of stakeholders during the course of the project create uncomfortable feelings among the existing stakeholders. In general, teams do not like changes in the composition of the team. For example, in Case A team members were reported to feel uneasy by the frequent changes during the project: “Sometimes someone leaves and is replaced by someone else and then they (the team) are just a little bit worried... what will the style of this new person be? How to adapt?” (Case A). Similarly, in Case B the project team struggled with changes in the team during the project: “But to answer the question do we mind changes? Yes, unless the (new) people pick it up quickly (… If a new person would join the team) it would become more difficult, because we’d have discussions or discrepancies in understanding and if it's constantly new people, then it stops the process I think” (Case B). The data suggest that it is crucial for at least part of the team to remain stable, i.e., at least some stakeholders should always remain the same during the course of the project. As one respondent from a supplier from Case B argued: “I think, yea, it's a
normal process, but the steady factor in a team is important for the motivation of the team and the balance.” (Case B).

When stakeholder resigns from the project the remaining team members use the new situation as an opportunity to renegotiate their status. Some stakeholders may want more work load, while others do not. In Case A, for example, the project manager stated: “In terms of budgets some people say: ‘We don’t need extra work, we’re already struggling to fulfill the duties that we already have’. Other people say: ‘No, please give us extra budgets.’ So that's a little bit of politics, it's a little bit of a game, you know? You suddenly see that some partners are very eager to gain more influence, that some partners are eager to get a foothold in a type of activity that they were not yet connected to.” (Case A).

**Literature implications**

This study set out to explore the capabilities that innovation project teams need in the context of multi-stakeholder innovation projects. Our study suggests that developing such MSI capabilities is not an easy task. The setting of multiple stakeholders from different organizations working together on an innovation often creates difficulties, such as poor resource integration, dysfunctional conflicts, and poor coordination among diverse team members. Innovation project teams that have to involve multiple stakeholders require specific capabilities to deal with these challenges. With this study we first answered the call for more research on multi-stakeholder issues (Hillebrand et al., 2015). Secondly, we answer the call for more research on the unique capabilities needed to deal with multi-stakeholder challenges (Kraaijenbrink, Spender, and Groen, 2010; Kazadi et al., 2016).

The first capability we identified is Stakeholder tension management defined as the ability of a team to balance the interests, expectations and backgrounds of the various stakeholders. Our analysis is aligned with previous literature which suggests that different stakeholders in multi-stakeholder innovation projects, which come from different organizations are likely to have different expectations, backgrounds and interests regarding what should be done in the project (Rockmann, Pratt, and Northcraft, 2007; Bstieler, and Hemmert, 2010). These differences in expectations, backgrounds and interests result in tension as was suggested by several academics (Paul T.M. Ingenbleek, and Immink, 2010; Driessen, and Hillebrand, 2013; Hillebrand et al., 2015). In multi-stakeholder projects, multiple team members from different organizations bring together all the needed resources (knowledge, skills, technology) crucial for the development of the innovation, which makes dealing with tensions among those stakeholder all the more so relevant. Maintaining a balance between the interests, expectations and backgrounds of various stakeholders is important to ensure that all the resources remain available for innovation development (Kumar, and Van Dissel, 1996; Aritzeta, Ayestaran, and Swailes, 2005). The second capability we have uncovered is Synthesizing attributes, defined as the ability to integrate the diverse stakeholders resources. Combining resources from multiple different stakeholders that come from different organizations is indeed more difficult than when these resources are combined in an intra-organizational traditional projects (Stock, 2006; Lewin, Badrinarayanan, and Arnett, 2008; Maurer, 2010; Gardner, Gino, and Staats, 2011; Mason, 2012). Different stakeholders are not likely to be familiar with each other’s resources (technologies, skills and specific knowledge) well enough to know how to combine them with their own. In other words, the success of the multi-stakeholder innovation is likely to depend on the degree to which the innovation functions as an integrated whole (Johansson, Krishnamurthy, and Schlissberg, 2003; Sawhney, 2006).
Therefore, multi-stakeholder projects teams need to develop a capability to integrate the resources that originate from diverse stakeholders.

The third capability identified is Stakeholder decision making. While much academic attention has been paid to the topic of how to manage powerful stakeholders (Daake, and Anthony, 2000; Newcombe, 2003), what was least investigated is how to deal with the representatives of stakeholders that often poses less power to make decisions relevant for the innovation project progress. Our cases show that inability to deal with stakeholder representatives with limited power ultimately delays projects and sometimes even leads to the decision of the main stakeholders to remove the representatives. Therefore, the ability to deal with the representatives of stakeholders with limited decision power represents an important challenge in the multi-stakeholder innovation projects.

Managing the participation of stakeholders is the fourth identified capability. Project management literature is rich with academic discussion on why it is important to include multiple stakeholder in the team boundaries (Wang, and Huang, 2006; Greenwood, 2007). However, knowing which stakeholder and when to involve him in the project team is less elaborated. On the other hand, stakeholder analysis literature mentions the importance of knowing whom to involve (Buckles, 1999). However this literature does not mention the need to develop an ability to deal with challenges that multi-stakeholder innovation projects produce. Therefore the ability of the team to decide when and whom to involve in the project seems as an added value to the existing research.

The fifth capability is Adapting to stakeholder changes. Multi-stakeholder innovation project teams are operating in changing circumstances that involve constant changes of team stakeholders. As the literature suggested before, changes in one domain are likely to trigger the need for changes in other domains (Evanschitzky, Wangenheim, and Woisetschläger, 2011). Consequently, finding a new equilibrium in a team is more difficult when the coordination involves multiple stakeholders from different organizations (Drach-Zahavy, 2011). Therefore the ability of a team to be flexible towards the changes of partners during the course of the project, represents another needed capability for the multi-stakeholder innovation project teams.

**Managerial implications**

Multi-stakeholder innovation projects create many challenges for their managers. Knowing what is important for project progress is essential in all cases. By identifying capabilities for dealing with challenges of multi-stakeholder innovation projects, we have provided project managers with a set of capabilities to deal with the unique aspects of such a context.

Our inventory of five multi-stakeholder innovation capabilities may make innovation teams more aware of the capabilities that they need. Please note that it is not just the project manager that needs to possess these capabilities. Rather, the whole team and maybe even the home organizations (stakeholders) need to be able to deal with the challenges of multi-stakeholder innovation. This may have major implications for the selection of team members: preferably, team members should not only be selected based on their technical capabilities or the resources they can bring in, but also on their proficiency in the multi-stakeholder innovation capabilities. However, this is not always possible and in many cases at least some of the team members will lack these capabilities. In those cases one may consider to provide the team with an external mentor or consultant that may help the team with dealing with the specific multi-stakeholder challenges they are likely to face.
Our inventory of multi-stakeholder innovation capabilities also provides teams a stepping stone for thinking about what tools and skills to develop so improve their capabilities. For example, value blueprinting (Adner, 2012) has been suggested as an important tool for understanding the interests of multiple stakeholders, which is an important element of managing stakeholder tension. Similarly, visualization tools that help people to explain their part (and understanding) of the project may help teams to communicate across organizational borders, which is an important element of synthesizing resources.

**Limitations and future research**

While providing a fruitful ground for studying an under-explored phenomenon, a qualitative explorative case study such as this one does not provide strong evidence for the importance of MSI capabilities in every multi-stakeholder context. For a start, our study is limited by the fact that all cases were selected from the health care sector. To increase generalizability of our results we therefore recommend to extend the exploration on cases outside the health care domain. This study provides rich descriptions of MSI capabilities. However, it does not delve into the micro-foundations of MSI capabilities such as routines and skills (Kazadi et al., 2016), which could offer a more precise understanding of the specific actions needed to successfully manage innovation projects in a multi-stakeholder context. Furthermore, a next step would be to quantitatively test the effects of the MSI capabilities on different types of outcomes. This would first require the development of a measurement instrument for the MSI capabilities.

**References**


Appendix (description of cases)

Case description A- developing integrated tools- software, new concepts and labels, cost efficient calculations and architectural solutions in 3 phases. Objectives have tendency to change due to the stakeholder constantly wanting to only use specific parts of the final tool. First idea was to have an integrated tool- now it seems there will be separate tools. Project runs in working groups in every country specifically oriented towards 3 practical cases- hospitals. Typical problems- change of members that needs to be approved by all the partners on the formal meetings. Change of project manager happened in the middle of the project. Other problems are related in defining the final goals- there is a constant need to adapt the project goals. Problems with understanding each other- language barrier and poor English but also discipline diversity. Problems with environment- focal organizations- there is a need by the representative to explain to them how the hours and objectives are reached.

Case description B- specifically designed test made of several layers of different fabric to extract pure samples of body liquid. This test makes a specific disease easier to detect at children. Discussion is underway to make it applicable for older patients as well. The test makes work easier for the nurses who collect the liquid. Problems emerge in understanding each other in the team and the fact that the stakeholders have to deal with their environment as well. Hospital on the other hand needs to satisfy the ethical board and has deadlines to reach. There are visible problems in communicating the diverse ways of work and process to each other. Different ways of working- created problems with the prototypes. Due to that a lot of delay. Another problem includes satisfying the stakeholders criteria.

Case description C- developing a needle and catheter; joining them with new type of therapy and approach via existing technology. Objectives were clear from the beginning and there was a very strong wish to collaborate together. There are, however, funding issues especially problems in commercialization phase (change of stakeholders- the developer bought by another stakeholder). Very good collaboration and enthusiasm throughout the project- could be due to individuals that basically picked themselves for this project and were not picked by the outside parties. Other problems include adaptations throughout the project. The stakeholder was present inside when operations on patients were done so they can better develop the product together. Needles and catheters are already on the market but the goal is to further commercialize them.

Case description D- started off as a health test that is less invasive and easier to apply than commercially available tests. The test was developed in the laboratory of the hospital. Problems started at the commercialization phase where the hospital showed the need for suitable patients. Therefore, contact was made with the X center. The discussions now are around who is going to profit and how. The test eventually evolved to a larger objective than just commercialization. The goal is to create a big center around that test and expand its usage. Meetings are currently held with financial consultancy stakeholder to extrapolate the opportunities for a business case. Problems with the outside stakeholders include fulfilling their needs- how to keep the budget and the patients. There is a need to create a collaboration agreement and the business case.

Case description E- developing a software and integrated software interface. Collaboration between hospital, pharmacies, patient community, ICT stakeholder and inside ICT from the hospital. Typical experienced problems involve agreeing about the goal of the project- should the scope be broad or narrow; should they develop a software or use an existing one which can then be adapted. The patient wants broader application
of the final output then the others are willing to consider. ICT from the hospital fired
the first stakeholder and started negotiation with another stakeholder without project
manager even knowing. Problems with the change of stakeholders and loss of a
stakeholder who was involved from the beginning on in the idea generation. Problems
in understanding each other and why the final product cannot be developed faster-
especially from the client side.