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## From idea to attractive project proposal

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### Abstract

**Objective:** The purpose of this study is to examine the development of ideas from Higher Education Institutes (HEIs) into project proposals for which funding is sought to strengthen and secure the early stages of the innovation path.

**Phenomenon:** A small open economy like Finland is constantly in need of new innovations in the global market. HEIs have a significant role to play, especially in generating innovations, but their commercialization has proved challenging. Thus, RDI activities are supported by public RDI funding. This funding, however, is highly competitive, so making an interesting project application is an extremely demanding process.

**Theoretical Anchoring:** Funders and organizations provide technical guidance for project applications, but there is little research in the traditional project management literature on what happens during a project preparation. Thus, we focus on collaboration capability building (Blomqvist & Levy, 2006) during critical incidents of the project preparation phase.

**Context:** Finnish Higher Education Institutes use projects as means of contributing to new research knowledge, providing education based on it, and producing social impact. Twice a year, the national funder organizes a call to support the commercialization of research-based innovations in HEIs. In its projects, LAB UAS has succeeded in utilizing its previous understanding of pre-commercialization projects and is therefore an interesting project partner for universities and external stakeholders.

**Research Design:** Two of the authors were involved in all the project preparations studied in this case study. We utilize their experience in project preparation as well as analyse discussions between other key players during the preparation, and memos, documents, and applications produced in connection with project preparation.

**Findings:** Preliminary findings suggest that project planning involves several critical incidents that are handled differently by successful and unsuccessful projects. Projects framed around an idea that continues to provide interesting opportunities in both research and commercial areas seem to lead to a positive funding decision, although the opportunities also involve risks and uncertainties that need to be taken into account as the flexibility of the application.

**Contributions:** The research provides an insider's view of the development phase of the commercialization project, expanding the theoretical literature of project research in an academic context.

**Keywords:** project management, collaboration capability, critical incidents, research commercialization, higher education institutions

## **Introduction**

Universities and Higher Education Institutes support the innovativeness and competitiveness of their region (Allison & Eversole, 2008). They produce new knowledge, apply it in real cases, and distribute and share it in their networks which integrate universities into close collaboration with surrounding companies (Cutler, 2008). Thus, universities are in a key role in forming innovation systems not only for their region (Osborne et al., 2016) but also nationally (e.g. Lööf & Broström, 2008).

This is seen as growing literature about the university-industry cooperation, technology transfer and exploitation of research results (Bozeman, 2000). But when universities disseminate new knowledge to society, they also absorb ideas from partners about new research areas, market trends, and problems. This makes universities flexible actors and challenges their past role as expert-led and supply-driven R&D organizations (Allison & Eversole, 2008). Close collaboration and knowledge sharing with the companies, public organizations, and even end-users and customers have been studied in terms of regional innovation systems (Cooke et al. 2004), triple helix (Etzkowitz & Leydesdorff, 1998), and quadruple helix (e.g. Carayannis & Campbell, 2009), to name a few. From a university perspective, cooperation is quite often embodied as projects where knowledge is created and applied to solve practical problems. In this study, we focus on the project preparation phase. We use five different project preparations of which three successfully were granted funding, to study how the successful projects are prepared by teams of researchers, business champions, and industrial partners. All five project proposals were heading to commercialize technologies developed in the Finnish Higher Education Institutes (HEIs).

The study is under development. In this article we test whether the framework of collaboration capability enables us to answer the following research question: What are the the critical incidents of the project planning process that make some preparations successful and some unsuccessful? In this study, these cases are tentatively analyzed from the perspective of project management and capability building literature.

In the next section, we further describe the theoretical framework. After that we shortly describe how the data is collected and analysed. The findings are given next and they are discussed in detail in the end of this article.

## **Theoretical Background**

New Public Management (Chandler et al., 2002; Lorenz, 2012) began to spread in 1980s to European universities. This meant that higher education adopted many practices that were previously known from the business side (Lähdesmäki, 2003). For example, universities were forced to apply external funding (Auranen & Nieminen, 2010), and the biggest funders also expected HEIs to have closer collaboration with the companies and other society. Universities of Applied Sciences (UAS) have been given a special role in regional development and therefore they act as a part of regional innovation ecosystem. For this task, it is important to develop research-based commercial innovations to meet market needs, support regional entrepreneurship and strengthen national competitiveness.

Today, project work is a very common way to operate in the Finnish HEIs (Ylijoki, 2016). Projects are a way for HEIs to compete for external funding and they also bring experts from different disciplines together to research and solve current problems that often require multidisciplinary cooperation.

Traditionally projects are perceived as linear instruments to complete identified tasks but modern interpretations view projects as contemporary organisations that work in a iterative manner (e.g. Svejvig & Andersen 2015). This enables flexibility in goal setting and task setting which may adapt to contextual development as the project goes on (Lenfle & Loch 2010). Still the task-oriented project work dominates the current discourse on projects, and e.g. funders expect clear objects, tasks, schedule and resources from the applications (Wysocki 2014, 4-6).

Literature on innovation and R&D processes and their performance has been growing recently (Henttonen et al., 2016). This is in line with overall interest in success measurements. The problems arise since innovation projects are not similar and thus difficult to compare and measure (e.g. Smith-Doerr, 2004; Chiesa et al., 2009). However, Henttonen et al. (2016) noticed that good management practices, rapid implementation, customer satisfaction and innovativeness were common for well-performing innovation projects.

Since the projects bring different experts together, cooperation requires investment in the creation of a common vision. Project teams may serve as communities of practices (Wenger, 1998) whose members learn from each other. In the literature, this kind of assimilation of new knowledge from others has been called by many terms such as dynamic capability (Teece et al., 1997), partnering skills (Buckley et al., 2002) or collaborative capabilities (Tyler, 2001). Blomqvist and Levy (2006) use the concept of collaborative capability building to highlight the matter of trust, commitment, and communication to this process of learning from others. These three are interlinked and intertwined as the collaboration intensifies. The study by Mora-Valentin et al. (2004) confirmed that cooperation, communication and commitment are important for the HEI when working together with business partners, but also the reputation of their partners was critical to the success of the cooperation. Although Blomqvist and Levy (2006) studied alliances, we utilise the concept in analysing commercialization project preparations which bring together researchers and business experts.

## **Research Methodology**

Twice a year, the national funder organizes a search to support the commercialization of research-based innovations in Finnish universities. These Research to Business projects (R2B projects from now on) seek to accelerate research-based commercial innovations to meet market needs, support regional entrepreneurship and strengthen national competitiveness.

As the type and purpose of the project affect the performance and its measurement (Henttonen et al., 2016), we focus here on five proposals that all applied for R2B project funding for commercialization purposes. The project performance is typically measured as customer satisfaction, financial issues or technical advancement (Griffin & Page, 1996). In this study, we call successful the three cases that received funding but although the other two were not funded, they did not necessarily fail because they provided new knowledge and valuable information for their stakeholders, and they may serve as a basis for the next round of applications. For this research, they, however, provide a point of reference against successful applications in terms of receiving funding.

We employ an exploratory case study approach to identify and describe the critical incidents of the project planning process. Two of the authors were involved in all the preparations enabling us an insider view of the cases. We used their experiences and field notes as the primary data source supported by the project documentaries produced during the preparation. Also, the final application documents were analyzed. In this study, these cases are tentatively analyzed from the perspective of project management and capability building literature. From this data, we identified the critical incidents in project preparation. Through them the project preparation progressed into an application that receives a positive funding decision. In the next section, we present the key points of these events as short story summaries and step by step highlight the differences we found between successful and unsuccessful projects. The focus is not on project preparation in general but on R2B project preparations meant for the commercialization of research-driven innovations. We also do not seek to show the progress of projects step by step but pay attention to those events where successful and failed projects work differently.

## **Findings**

### *An idea from research that still has a lot to explore*

The R2B projects initiate with the researchers' curiosity to identify the business opportunities for their recent invention. The research notice that their invention solves a practical problem at least in laboratory conditions. After this, the team begins to search for broader applications and tentatively explore the market, but often the project preparation itself is led by one junior researcher, most often a newly defended young doctor. The research teams are closely connected to related industries and have received encouraging feedback for their early findings in previous research projects. Important for R2B projects, however, is that the innovation must not be too ready for the markets. The type of funding necessitates that the future project has still a strong research focus. Innovations that appear to be ready for market launch generally do not receive funding.

According to our data, it is difficult for many researchers to start designing a market study and to contact previously unknown but potential industrial partners whose evaluation is important to validate an early market need. If the research team receives outside help for this phase, project preparation will go well and a positive funding decision will be possible. According to our data, it is challenging for

young researchers in particular to recognize and acknowledge that the idea is still quite raw and that the project application must still include a lot of scientific research and validation. Especially for the second successful project, there was a close discussion about how ready the idea is from a technical and research point of view. When the inventor was ready to change his previous perception of the readiness of the idea, the project plan proceeded in the direction desired by the funder.

The major cornerstone in planning R2B projects is the communication of technical and business people to find a common language. When parties understand possibilities and limitations, it is possible to create a proper plan, although room for changes is left for radical innovations in particular. Another significant effect of combining business experience and technical experts is that inventors themselves have a better understanding of their innovation and what issues should be highlighted in the project application and why. For example, in another successful project, the precise market niches were identified, and they all had specific requirements, which were then introduced in the application.

#### *A careful review of feedback from the first round of demonstrations*

Based on discussions with industry partners and other external assistance, the project idea is beginning to take shape. The preparation may take months but the exact writing of the proposal may be a matter of weeks which is an extremely rapid timetable for academic and teaching organizations. R2B proposal drafts are pitched for the funder whose representatives provide feedback and ask questions.

Teams that were successful in their application were united by an active review of the feedback at each stage. When the funder complained that the team did not have enough international vision, the successful project invited foreign experts to the steering group. On the other hand, the comment received from the funder of the project on the challenges of the implementation roadmap was left unnoticed by the team. However, a well-prepared project does not uncritically change the direction based on the feedback received but seeks to present its own views in more detail and justify them in the event of a conflict. According to our data, especially projects that commercialize disruptive and radical innovations are progressing slowly towards a structured project plan. The same flexibility will be seen in the implementation of the project later. The iterative process takes time but the application period for R2D projects is intensive and tight.

#### *Addressing emerging vulnerabilities*

Project preparation highlights vulnerabilities in both research and its commercial exploitation. Although the invention works in the laboratory, it is difficult to predict the costs of its implementation on a large scale. Another potential vulnerability concerns the composition of the project team. These uncertainty factors are brought up in the project plan, but they are communicated as challenges to be solved. In this way, a clear need for project funding is demonstrated.

This critical incident is linked to two other phases. However, since successful projects manage to turn challenges to their advantage, it deserves their own attention. R2B projects arise from the university world, so the previously only research-focused team is strengthened with external members. However, investing in trust-building and communication within the team is approached in different ways. Successful teams invest in regular project group meetings at different stages of project planning and

clearly state how the cooperation will be further intensified if the project receives funding. If the project's business idea doesn't seem technologically revolutionary or interesting when measured in terms of money, other factors such as team commitment or a clear action plan can fix these challenges related to novelty value up to a certain point. Overconfidence in terms of revolutionary technology can easily lead to underestimation by evaluators, and therefore the facts presented in the plan must be transparent. Successful projects also maintain a consistent visual look throughout their application.

## **Discussion**

This tentative study on preparation of project proposals in academic context highlighted the critical incidents that are handled differently by successful and unsuccessful projects. However, none of these incidents will definitely lead to the desired or undesired outcome. For example, one of the major cornerstones of project planning is active and open communication within partners, as commercialization is rarely a priority for researchers or educational institutions. However, we were not able to measure or track how active the communication was but only evaluate the content of the communication retrospectively from the field notes.

We focused on very early-stage commercialization processes which still involve several uncertainties. Projects that openly communicate about the risks and manage to turn them into opportunities in their application improve their chances of getting project funding.

The results show that successful projects pay attention to trust, commitment and communication. These are important in collaboration capability building (Blomqvist & Levy, 2006). However, there are several solutions to these related challenges. Successful projects communicate openly and regularly and try to find a common understanding of both the project's target and its future field of operation. Responsibilities and tasks are divided so that each of the team members can work in their own areas of strength while still listening to the feedback and comments of others. Thus, they are able to build on their previous network and expertise (Mora-Valentin et al., 2004).

Successful projects balanced between traditional linear project plans and flexibility (Svejvig & Andersen 2015). Especially in the case of radical innovations, the context may change rapidly, so it is also good to identify these changes in the project plan (cf. Lenfle & Loch 2010). Still, the applications of the projects that received funding were formulated in a clear and task-oriented manner (cf. Wysocki 2014)

The basic comparison between successful and unsuccessful applications in terms of funding decisions did not reveal the full potential of the project analysis. In the future, we will broaden our analysis to identify the relation of collaboration capability building and project preparation steps. This helps us to improve the overall quality of project applications in practice, but also theoretically provides an interesting angle with the project literature.

## **Conclusions**

The insider perspective sheds light on softer issues such as trust, interaction and commitment during the project preparation stage. Although success is not just a matter of a funding decision, activities that maintain and develop the collaborative capability of the team have the potential to lead to better

results. The information about the critical incidents of successful project preparation helps us to improve the overall project application quality in the future.

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