CONFIGURING THE DEVELOPMENT SPACE FOR CONCEPTUALIZATION

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ABSTRACT
This paper addresses issues of conceptualization in the early stages of concept development noted as the Front End of Innovation [FEI]. We examine this particular development space as a socio technical space where a diversity of technological knowledge, user perspectives and organizational agendas meet and interact.
Based on a case study from an industrial medical company, the paper addresses and analyses the configuration of the development space in a number of projects aiming to take up user oriented perspectives in their activities. It presents insights on how the FEI was orchestrated and staged and how different elements and objects contributed to the configuration of the space in order to make it perform in a certain way.
The analysis points at the importance of the configuration processes and indicate how these configurations often may act as more or less hidden limitations on concept development making it difficult to bring forth new concept ideas.

Keywords: early design phases, front end innovation, organisation of product development, project management, development space

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1   INTRODUCTION

Companies are increasingly seeking to improve their innovative capacity and capabilities through an explicit focus on the so-called Front End of Innovation [FEI]. The Front End of Innovation appears as a development space where product developing companies are willing to implement and try out new approaches and methods aimed at improving their innovative processes and especially the early development of new product concepts. FEI is often defined in relation to project models inspired by the Stage Gate model for product development (Cooper 1990) emphasizing the 'front end loading' expecting to obtain a reduction of uncertainties relating to the working of technologies and markets which may otherwise hamper the subsequent product development process.

FEI is particularly interesting since it is regarded as the development space where new opportunities are identified, developed and matured into new feasible product concepts (Koen 2004). The interest in the FEI space may be understood as a response to shortcomings of relying solely on formalized models of planning and rigid stage-gate models for product based innovations. These formalized processes have over time been subject to 'time to market' compressions and rationalizations leaving limited or no space for innovative processes. FEI has been characterized as a space encouraging open ended interactions between actors, interest and objects compared to the linear and control oriented stage-gate processes. So, while the FEI is often defined in its relation and in comparison to the subsequent stage-gate model, it has become interesting to problematize the definition and configuration of FEI and the context and relation it is placed in.

1.1   Studying FEI

Recent debates on user driven innovation has pointed at FEI as a target for the uptake of user knowledge in an organizational context (Buur and Matthews 2008) where FEI seems to indicate a potential locus for the translation of user knowledge into new concepts. But, while the FEI may appear as a promising space for the synthesis of user, technology and strategic perspectives, it is also inhabited by 'dominant designs' and path dependent thinking which makes the uptake of user knowledge difficult (Clausen et al. 2012) .

In this paper we will explore how the front end space is constituted in the light of its position vis a vis the stage gate model and how the development space are configured through diverse arrangements and project templates. The paper is mainly based on a case study from industry on how the staging of FEI processes led to configuration of the space to act in certain ways.

It is a common understanding that bringing forth new innovative concepts is depending on the processes of idea generation and subsequent selection of ideas (Koen 2004). In this paper we claim that that the key problem is not to identify ideas and new opportunities, but that the focus should be broadened to include the entire development space and the mechanisms influencing the conceptualization process. These considerations include the organizational structure, the management tools and processes as well as implicit mindsets regarding the development of an innovation or new product concept. In our case we will present some of these mechanisms and discuss how they influence the staging of concept developments in the FEI.

We claim that it is interesting to study the organization and the organizing of processes and actors in relation to FEI. We see that the many initiatives aiming at producing new concepts and idea creation may be well described, but are not taking the context of which they are deployed into account. We therefore wish to open op the discussion of how to stage such initiatives to comply with the overall strategy for development in FEI.

The data were gathered in relation to a master thesis project carried out in a medical company in 2009, and have been updated and further analyzed as part of a current Ph.D. project "Staging Innovative Processes Across Different Knowledge Domains in the Front End of Innovation". In this regard the paper serves as a focal point for the scoping of the Ph.D. project, and as an initial study pointing at further research within its area.

The initial focus for the empirical research was to identify in which stages of the development processes there might be a need for rethinking of the methods and tools applied in relation to working with user oriented development. However, initial investigations pointed at dedicated websites containing well described methods and processes for working with user insights already being present and available to all projects. But interestingly, knowledge on new methods and processes from the website were not applied in the development projects which attempted to include working with user

insights. User insights in projects were facilitated and represented via key actors claiming that focus in the project and thus bringing in different activities in this relation. The focus for the thesis therefore changed to answer question concerning why the available methods and processes were not seen as applicable for the projects since it would make little sense to create yet another method.

2   METHODOLOGY

In this section we will present the research methodology, the company as the context in which the study was carried out as well as the extent and premises of the study.

The empirical data in this paper is based on a case study in a company working with concept development in FEI. The study was based in a R&D division for medical delivery systems in a medical company. The study was carried out over a period of nine months, where the main author of this paper and a colleague (in the following referred to as the 'we' or 'the researchers') were employed by the company to study and bring forth new ways of working with user insights in the early concept development. Focus of the study changed during the process as mentioned above based on the insights gathered. The study has thereby been highly influenced by an action research approach. While our role mostly consisted of observational studies and interviews, we also took part in project activities.

The field study is a qualitative research study with the intent to affect the field in a certain manner. The study draws upon ethnographical methods such as interviews with open-ended questions and observational studies, in order to understand the dynamics and the latent knowledge that were framing the research area and thereby understand their world from their perspective in their own context (Boyle 1994). An action research approach was applied allowing the researchers to participate in the everyday life, and in this regard influence the process in the making. By a participatory enquiry method, the attempt was to become an integrated part of the company, and hereby involve the informants in the process when seeking answers and bringing forth questions. In many regards we tried to place ourselves as equals in the research field, by being employed by the company and participating in project work and activities (Bogdan and Taylor 1975, Patton 1990). We recognize that we were not equals, but our attempt and the daily routines that we took part in have opened the door for conducting interviews with a high level of confidence from our informants.

We had our basis in a section, the task of which was to support projects in the early development phases. Employees from this section were brought into the development projects on request from the project manager and focused on supporting the need for working with new methods e.g. user oriented development. Being in the section also legitimized our presence in projects, and the focus for our project was well suited with the mission for the section, which gave us a position to set up interviews with some of the mid-level managers and vice presidents of the company. To illustrate our position we earned our nickname 'the small soldiers' of this particular section, as we put emphasis on the core values of this section.

We were included in the project team which in many ways was an important aspect in regard of earning the trust from our informants when doing interviews and observational studies. Due to the nature of the research objectives it was important that they felt comfortable in providing sensible information to us and engaged in an enlightened reflection both concerning their own role but also on the organizational structures they were working within. The obvious risk of 'going native' with such a close engagement with certain parts of the research object was mitigated by a regular critical reflection including university based supervisors.

2.1   The research process

The research process was characterized as an iterative process with the implication that information has been gathered throughout the entire process, and that we as researchers have influenced the field we were studying by suggesting a change within the organization at an early stage. In collaboration with our colleagues we identified four projects that would be interesting to study further as they had all worked with users and hereby with a different approach to the projects than normal. One project was ongoing (referred to as project Blue), in which we were included in the activities in the time period of the study. Furthermore three finished projects were studied by looking into the project material and interviewing project members; tracing back the lessons learned from the projects. We focused on tracing the progress and achievements of the projects in regard of working with user oriented development methods. By tracing information in historical projects an opportunity was created for the informants to reflect and make sense of the projects in a dialog with us. In this sense we have asked

questions and received answers to themes that were not explicitly counted for by the projects at present time. Furthermore we looked into the material and background for the development of project structures and development models. A total of 37 formalized interviews were carried out with key stakeholders and project participants (see Table 1).

The interviews had a duration of 30 to 90 minutes; the interview guide consisted of thematics and open ended questions allowing the informant to reflect on what they thought to be the important aspects to highlight (Spradley 1979). All the interviews were transcribed, and served as input for a KJ analysis (Kawakita 1991) identifying themes and relations in the statements across the interviews in regard of the research questions and scope of the project. The informants were selected based on the projects they had been working on, and their role in the project in order to allow insight from a diversity of perspectives and actors to provide a nuanced picture of the uptake of user perspectives.

Table 1. Informants

Position in the company	# informants	# interviews
Executive management	1	1
Corporate vice presidents	3	6
Section leaders	2	4
Project managers,	4	6
Product developers	11	14
Internal consultants	3	5
Marketing	1	1

3   THEORETICAL FRAMEWORK

The theoretical framework and notions for the analysis used in **this study will be** introduced in this paragraph. We wish to discuss and apply the notion of space as the framework in which conceptual development occurs in the FEI. By this we will shortly touch upon the staging of the space (Brandt et al.2012) . The development space is described by Clausen and Yoshinaka (2007) as a sociotechnical space, the context in which concept development is taking place. The development space is a dynamic contemplation of a development discourse and is defined and redefined according to the inclusion (and exclusion) of actors, defining objects and development agendas of the space; such as the scope and reasoning for the project and how the project is related to other current projects in the pipeline. In this vein, staging (Brandt et al. 2012) can be seen as the action of bringing together actors and objects to engage in a collectively defined space including a certain configuration of the space. The development space therefore encompasses a range of different approaches and competencies brought together to perform development activities. The notion of development space has been used in our analysis of the case to differentiate diverse configurations of spaces across development projects (Brandt et al. 2012) .

3.1   Configuration

Configuration of the development space becomes interesting when looking at desired outcomes for certain processes and development spaces; both the official and the ones being negotiated throughout the process. Clausen and Yoshinaka (2009) have described some of the elements as devices and mobiles as being objects that influence the configuration of the space. Such devices will be described throughout the case to discover how they influence and configure the development space to act in a certain way. The nature of such a device is not to be taken literally but it should be acknowledge as elements brought into the space catering for certain behavior or enact certain competencies. Devices introduced in the space may serve as moderators between actors and force them to relate to the introduced object. The configuration will show due to the actors' reaction to the introduced element as they may have to choose whether to follow the in-scripted guidelines in the device. Obviously by choosing the guidelines they will contribute to configure the space in a certain way, but also by not applying to the device a different configuration will occur. Due to the presence of a device the actors will have to relate to it and their further actions and decisions will in many ways be benchmarked against the inscription of the device; therefore configuring the space and shaping the outcome

The staging and configuration is therefore as Clausen et al. (2012) states it part of a political process of the organization and the space is amenable for shaping in regard to the involved actors and the elements and their configuration in the space.

4   CASE STUDY

In this paragraph we will describe how different configuring elements of the FEI development space have influenced the concept development and working with new development methods and processes. We will describe how a FEI development space has been staged and how different actors and elements have configured for the outcome and the process within the development space. The company where the study took place is characterized by being a larger corporation with a market leading position. Historically the company has defined itself as being a technology driven company explicitly focusing on the R&D of medical substances and the technical features for the medical delivery system to meet compliance for the user. In this case study the focus was solely on the R&D of the delivery systems.

4.1   Configuring elements

We will show how configuring elements are brought into the space changing the nature of the space, but also how the actors are obliged to acknowledge to elements and relate to them thereby co-creating the space accordingly.

4.1.1 Dominant designs

Firstly we studied the history of the company to get an overview of the context and the culture in which the R&D setting was placed. It became very clear that the historical perspective and take on development was a core dimension in relation to the current development practices. The company had, due to patents on market leading medicament, a leading position on the market. In addition to this they were also the first company to develop a device for handling the delivery of the medicament in a discreet manor; not dealing with syringes and vials and thereby changing the market. This led to a dominant design (Utterback and Abernathy 1978) of the delivery system in the development praxis and the way development of new delivery systems is being thought of. The delivery system has entailed similar designs from the rival companies enhancing the domination of the design. This dominant design was not explicitly seen as the only way to think of new delivery systems, but it figured as a latent best design, a mindset for the developers, knowing that new concepts would always be benchmarked against this design, production line and the business plan behind it.

The dominant design is therefore an element that configures the development space of FEI in certain ways; not officially but by its latent presence it takes part in shaping the understanding and the development space for new concepts.

4.1.2 Framing the project

The company operates with two types of project models, Technology Pathway [TP] for the early conceptual development projects, and the Development Manual [DM] for the projects that has a proven business plan and technological feasibility study. The two project models are adjacent in the sense that TP is designed to foster a concept ready to be executed within the DM if proven feasible. The DM is highly inspired and governed by the principles of the Stage Gate model (Cooper 1990). Formally, the first three stages and gates of the DM are defined to be explorative and works as a frame for concept development, but the DM is never used for projects that have an explorative character. Formally, TP covers the same first three stages of the development. TP is also constructed with stages and gates that need to be passed, but the main difference in the two models relates to governance. A project run under the TP model is owned by the local management for the delivery system R&D, whereas the DM is owned by the executive management. This difference in ownership leads to a different focus on the projects throughout the organization. As an example will marketing as a mandatory actor in the DM typically opt for different agendas and focus, such as business planning in relation to the current product pipeline, in the project even when working with the early concept development.

TP was originally introduced as a project model for working with the maturing of technological aspects for a delivery system that can be implemented in a project run in the development manual. Projects run in TP is therefore only in theory justified if the given technology is applicable for one of the projects or can be assigned to the overall product strategy for the company. TP is also a mean for

creating a more focused development process and improving the "Hit Rate" for the technology, which historically could have a tendency of having too much focus on the scientific aspects of the technology compared to the applicability aspects of being integrated in a deliverable system concept.

Amongst the project managers the Technology Pathway is the preferred project structure as it represents more freedom and flexibility in regard of managing ones project. Therefore TP is the project model that will be applied to any project working with development in the early stages, in this paper defined as FEI. However the name "Technology Pathway" outlines some sort of expectation to the focus of a project facilitated within this frame and can be contradictory when working with projects focusing on user insights and user oriented development.

4.1.3 User oriented development in relation to the development models

In contrast to the historical focus of the company being a technological driven company, user oriented development and therefore new approaches have become an explicit new strategy. A smaller group of managers and developers in the R&D division advocates user oriented development as a new development mindset or paradigm. Included in this group is the section of our employment.

As for many other companies users have been involved in usability testing when a concept has been matured and prototypes can be produced. But except for that, the input form users have not been applied in the development process. This observation is closely related to the framing of the users and hereby the user representation in the development process. We will come back to this in the next paragraph.

Interestingly, of the two development models, Technology Pathway is the model that has been used in projects exploring a user oriented development approach. The argument for selecting a technology oriented model is that it offers the project manager more autonomy to manage the project, even though TP constitutes guidelines for the development stages and has several gates and milestones that need to be passed. Due to the conception or experienced reality that TP does not provide a strict framework for projects, it is up to the project manager to stage the space for new approaches and processes within the stages of TP. It is decisive which project manager is in charge of the project, since they will be held responsible for the project at each milestone. TP pre-defines milestones that seek to ensure the technology development is progressing and the feasibility is plausible.

The user oriented approach has been explicitly crystalized in one project facilitated through the Technology Pathway, and we will later describe some of the dimensions involved in the framing and staging of the space for user driven innovation in a technological development paradigm. Initiatives leading up to the formalization of such a project with focus on the early involvement of users and letting the insights inspire for opening up the solution space are projects that have involved external anthropological consultancies.

4.1.4 User framing and user representation

Technological projects are developed with the assumption that the users and customers of the delivery system are known in regard of preferences and use. The knowledge of the users that are represented in these projects contains embedded conceptions of the patient and the health care professionals stemming from the years long experience within this market. However, the conception is not explicit, and if asked the developers do not know of which medical or patient perspective they are referring when they as representations are included as an argument or counter-argument for a conceptual idea. The user framing and current understanding is therefore very much an element that takes part in configuring the development space when developing new concepts for delivery systems. In projects where new insights of users are provided e.g. via anthropological field studies the findings are up against deeply anchored conceptions embedded in the cultural mindset of the company.

4.2 An example of the configuring elements in play

The Blue project was the main case study, and was ongoing while the field study took place. The project was a one-of-a-kind in scope, approach and purpose, and was in particular interesting since it explicitly stated from project initiation that it should include working with user oriented innovation methods, in order to develop radical new concepts in a FEI context. The project had four sub-projects and the focus was as follows: 1) Life cycle management, 2) Identifying development opportunities via the complaints from existing products, 3) Development of a concept for new delivery system – described by a product developer as: "a techno anthropological study", and 4) The user track; working

with user insights obtained at potentially new markets. The two last sub projects were the main focus for the study, as it explicitly defined itself as being explorative in the early development phase.

4.2.1 Choosing the project model

Project Blue was managed through the TP model; the reasoning for that is characterized by the project manager as: *"the only reason why I convinced the vice president that it should be a technology pathway project was to get more time. Things tend to be more committing when it is placed in the Development manual"*. In this statement it became clear to us that the TP allowed for greater flexibility than the DM model and it, in that light, often became the preferred project structure for the managers when working with new concept development. The project manager in this case explicitly chooses TP, since it offers him the space to plan accordingly to project specific agendas. TP is a strong configuring element, whether you follow the project model or not. The presence of the model forces the actors within the space to relate to it.

A product developer states: *"I don't care why I wasn't hit by the tsunami, if it was because there was a brick wall, or if it was because the earthquake didn't happen. – just as long as the sun is shining on me"*. In this quote the product developer state that the choice of project structure is not essential for his work tasks, what is important is that the project team gets the space to do what they find suitable for the development process. In this case it became clear that the project leader played an important role. He made sure that management interfered as little as possible in the project activities, and made sure that Project Blue had something to report and show at the defined milestones and gates when asked. However the product developers are in many ways dependent on which project model they are working within. The incentive for getting the yearly bonus payment is dependent on whether you reach the milestones as planned. In this perspective the TP model becomes a configuring element, since it incorporates the perspectives of progressing in relation to the maturing of the technology.

4.2.2 Applying user insights

The sub project concerning user insights was initiated in parallel with the development of the new concept, and it therefore became difficult to affect the perception of the users in this project. Especially the user track project was up against mindsets such as presented in the following quote form a product developer: *"Well, it is not like having to develop something to a person without any feet. Anyone can relate to having to give oneself medicine three times a day"*. It is clear that within the company is embedded a user framing which becomes very dominant; this is explicitly seen when a project like Blue discovers new user insights that does not fit into the pre-existing framing. The new insights are neglected and dismissed as being not applicable for the concept at hand, or even that the developer based on their experience knows better. In the Blue case the timing of the two sub projects were doubtful, user insights were provided after the development of the new concept had reached the working prototype stage.

5 ANALYSIS

Through the case analysis we have shown how a FEI development space has been configured in different ways and how these configurations, intentionally or unintentionally, have influenced the concept development process, the focus in the projects and their outcome. The actors and objects that are brought into the space configures for different strategies dependent on the actor(s) engaged in the constellation. The analysis points to the importance of the configuration processes and indicate how these configurations often may act as more or less hidden framings for concept development, making it question of navigating the space in order to bring forth new concept ideas. A configuration of the space places certain objects and subject matters in the foreground and place others in the background. As such it shapes the conditions for whether certain user configurations will be taken for granted or questioned. The paper describes and analyzes a number of configuring elements such as: 1) Selection of the project model 2) Existing user representations 3) Dominant designs and 4) Path dependency. The configuring elements described in the case and the effect they have on the conceptual development will be subject to further discussion in relation to the staging of future development spaces. Furthermore it will be interesting in future studies to explore which objects and actors are the strong configuring elements and how these are staged and applied in the development space. We will in this paper discuss the impact of some of the configuring elements, but the empirical data for this paper does not conclude the power structures and individual relations of a given object.
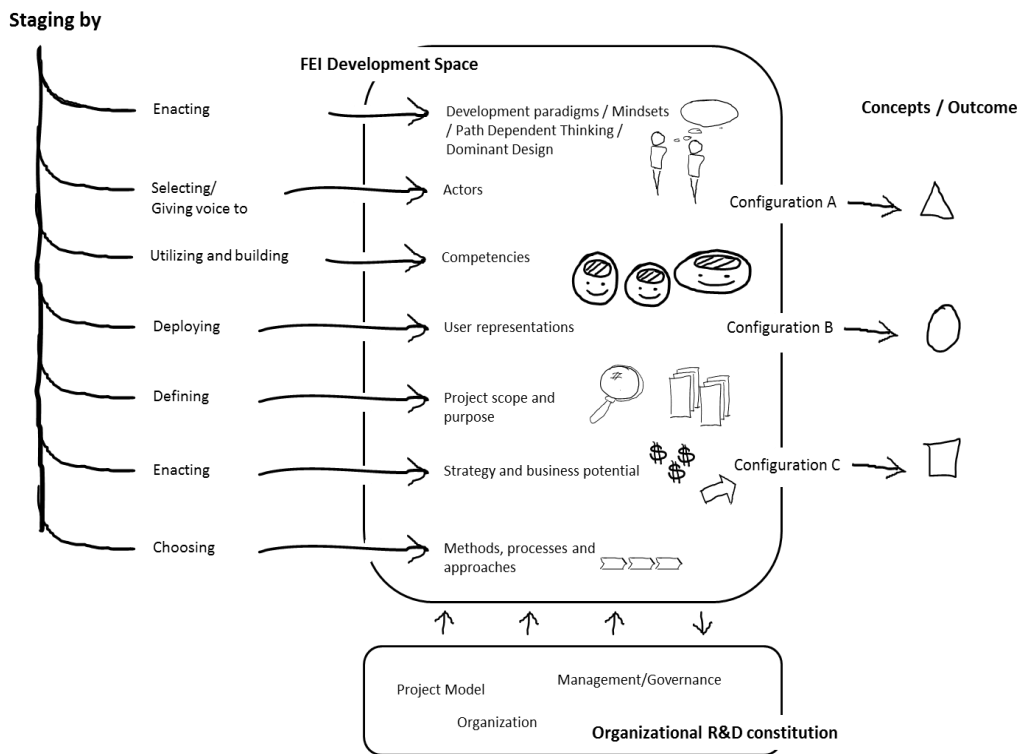
Figure 1- Staging the FEI Development Space (Inspired by Mogens Myrup Andreasen 2011)

In Figur 1 we have suggested a more general model to illustrate and inform our further inquiry into the staging and configuration of FEI development spaces. The staging is about bringing in or taking out the different object or actors (or enacting or evoking these) as illustrated in the left hand side. The different objects and actors will on that basis configure the development space to perform in a certain way; depending on the configuring elements. In some projects certain configuring elements will have a stronger position than others thereby influencing the space accordingly. The outcome in shape of potentially concepts are dependent on that configuration and will take form as a consequence of the configuring elements. In our case study certain configuring elements were brought into the space catering for a certain company behavior in the development process by applying pre-inscribed framings, rules, best practices and models for navigating the development space. We have labeled these more constitutional elements 'Organizational R&D constitution' as they may be more difficult to manipulate and change in the short term. The diverse and emergent FEI spaces that will occur over time may equally influence the organizational constitution of R&D which will lead to continuous adjustments and changes.

Gish et al. (2009) states that the FEI is constituted and influenced by the many different divisions and agendas prevalent in larger development companies. In this paper we propose that the constitution of a FEI space and configuration of such a space is a key element to explicitly consider in the future, when constituting a dynamic development process for achieving the desired outcomes, as well as staging the development space to accommodate and support the focus of the project. The question is not whether innovation can happen in the FEI settings as they are configured in the case. It is a matter of configuring for including a diversity of knowledge forms towards desired outcomes concerning concept development. As an example should be mentioned the focus on the insights stemming from users and how such an approach can be staged and configured for, in a company who defines itself as technology driven.

User insights are in the case of project Blue to be considered as the odd thing out of scope. The projects intent was to get radical new information on potential new markets; defined both geographical as well as immediate needs compared to the existing markets. However the choice to initiate the different sub projects in parallel showed to have significant influence on the ability to integrate insight and experiences across the different projects. Project Blue is an example of how the timing and the

orchestration of projects influences the solution space for conceptual development when working with new user insights. In such cases, the easy way for progress in the project and clearance in the government system will be to develop within the existing development paradigms, framings and understandings; such as described in the case as a configuring element. The user insights provided in the Blue project is embedded in traditional R&D practices with a historical technological drive. The development space can therefore be characterized as a field of engineering design and has historical been revolved around the solution itself as a product, and the possibilities and alternatives within functionalities and design of a given solution. For obvious reasons engineering design focuses on producing concepts including technical features that has to be engineered some way or the other. The focus has been on the synthesis of new solutions and the characteristics that makes up new functionalities (Hansen and Andreasen 2002). Constructing concepts in engineering design includes a variety of parameters such as described by Hansen and Andreasen (2008), which are applicable for describing the variety of many agendas and perspectives that are put into a concept. However, the notion of 'user needs' in a conceptual framing may be defined depending on the professional competences applied. 'User needs' described as an ethnography is deeply entangled in relation to the context of which the needs are applicable. In addition the user needs represented in engineering design are more characterized by product related needs concerned with the use of a given solution.

In this light 'user needs' becomes a difficult matter to grasp and incorporate in a common conceptual development space, as the data given and the data expected in regards of user insights are on very different levels. 'User needs' in this respect refers to different practices of representation. The user representation embedded in the company culture influences the concept development. Akrich (1995) describes how perceived latent user knowledge is integrated into the concepts. In this case it configures the development process to exclude new insights that are not compliant with the existing conception of users. To stage for a development space where new user insights are brought into play it will be necessary to design the process accordingly, so that the existing user framing is made explicit and thereby become an active explicit configuring element in the development process.

Dominant designs (Utterback and Abernathy 1978) are configuring elements as they contribute to path dependent development mindsets. Garud and Karnøe (2001) describe path dependency as a dimension that influences the space in many regards. Dominant design in the case is not an explicit configuring element, but it is clear that the developers recognized that the types of concepts that proceed through the development process are those that do not diverge from the existing (dominant) designs.

6   CONCLUSION

In this paper we have applied the notion of a socio technical development space as a frame for understanding the mechanisms and dynamics occurring in the FEI development space of a R&D company. The notion of the space utilizes and points out some of the configuring elements and actors staging the FEI development space, and by this contributes to the discussion on how concept development is shaped in the early phases of the process. As the case study analysis shows, the FEI development space can be influenced in many ways if the staging of the space becomes more explicit in regard of scope and vision for a project. We have seen that some of the configuring elements predisposes for certain processes and approaches; such as the Technology Pathway project model and its pre-defined milestones and gates that configures the project team to think and act in certain ways; even though it is not the official intention with the model; the outcomes of such configuring elements are interesting as it predispose for other than the intended configuration. The embedded user representation in the company is both staged by a dominant design and a tradition of the main actors affiliated with the R&D division. This makes it difficult to introduce new insight to frame for a new understanding of the solution space for concept development. The premises, regardless of the object or actor, are that any object or actor staged in FEI will configure for certain behavior, mindset and conceptual idea of the possible solution space. The intent should therefore be to open up for a more explicit reflection on how the staging of the development space takes place and thereby enable a more dynamic configuration of FEI and its ability to handle and accommodate the scope, intent and focus of a project given the context of the company and strategy it is embedded in.

For future studies; the first authors PhD project "Staging Innovative Processes across Different Knowledge Domain in the Front End of Innovation" will further explore the configuration that occurs in the development space. Furthermore the staging can become an important factor for creating FEI development spaces as it includes the possibilities to evolve into an explicit tool for managing and

facilitating the conceptual development process. It will therefore become interesting in this regard to consider staging of new types of FEI development spaces in order to cater for specific development agendas and paradigms.

From an academic viewpoint it will be interesting to further identify and analyze the configuring elements that constitute the FEI development space. From a company and practical viewpoint it is desirable to further investigate how companies actively and practical can begin working with special designed FEI development spaces accommodating for specific development needs.

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