

Management of Technology

2012

Zuber coll. tid

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Approaching multinational IT development projects

Trondheim, mai 2012



Høgskolen i Sør-Trøndelag
Avdeling Trondheim økonomiske høyskole

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Approaching multinational IT development projects

Master of Science – Management of Technology
Trondheim, May 24th

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Preface

This master thesis is part of the study in Management of technology at Sør-Trøndelag University College (HIST), department Trondheim Business School (TBS). The journey towards completion of this study has been challenging, but at the same time very inspiring. The study has been both educational and interesting, and looking years ahead we are sure we will make use of our experience in practice. Big thanks to TBS for great lectures and our fellow students.

Secondly we thank MARINTEK, as the facilitator of this study, for the collaboration. They've been available and supportive since the beginning, by helping us out with material when needed. We are further grateful to the representatives from the involved actors in this thesis, for their contribution with data through phone interviews and e-mail correspondence. We hope the thesis can be of use throughout the project and in other future project as well.

Next we thank our mentor, Endre Sjøvold, for guidance throughout this thesis, and thanks to Tommy Steensnæs and other friends for correction and constructive feedback that has improved the thesis. We would also like to thank two of our fellow students Jørgen Larsen and Andreas Einejord which we have shared office with during this period, for both the formal and also the motivating informal discussions.

Finally we would like to thank our families that have been patient and supportive, despite pregnancy and childbirth during this spring. Without both their and our children's patience in this period, it would have been much more challenging.

Trondheim, May 2012

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Abstract

In an overall setting this can be viewed as the beginning of a major change operation which can lead to a more transparent transport and logistics industry. Through the EU-project called Finest, one seeks to improve the communication and interaction in this industry by developing a new collaboration platform based on possibilities in future Internet technology. This study has focused primarily on the experience and actions from the four Norwegian partners that constitutes one of three use cases in this project. One of these partners is MARINTEK which is responsible for managing this use case. The other three are small actors which represent a business chain as part of the scenario upon which this use case is based. The three actors had chosen different approach in some degree to this project, which appear to have led to different experience of and influence in this project. On the basis of this and it not being a prominent subject in existing theories, there was constructed a research question for this study to examine this aspect at a more general level:

“How can the approach from participating actors influence the process of an early stage, in IT driven development projects?”

There were primarily used knowledge sharing theories and actor network theory as an analytical framework to study the interaction between and approaches of actors and the project. Project- and change management theory has further been used to support this. The empirical data has been collected with use of a qualitative method. There have been conducted eleven semi-constructed interviews, one focus group interview with MARINTEK, and document studies of provided materials and deliverables from the project. Our findings indicate that technology can act as what we've termed trust objects through facilitating for openness and information sharing in projects. Also sampling participants from existing business networks can lead to a more informal start up process. The creation of the project network is crucial, and should require a focus on consequences of interests and both sides presenting their demands. Through involving the participating actors in the contracting phase, one also gives them responsibility and thereby forces some commitment to the project. Trust in projects is usually context dependent and contracting activities should be used to establish trust, not established based on prior trust. An unidentified difference between project approach and actors boundary to the project, can inhibit the contributions. Using an external consultant might be one way to help coping with a boundary and it might also create enough slack in the organization to manage a project like this. Nevertheless it seems that having a clear vision and intention for joining, is the most influencing aspect for participation actors.

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1. Introduction and research question

As a result of the globalization where change in markets and environment influences both the global economy and organizations need to respond to these changes faster than ever. These trends can create threats for organizations in sense of more competition, but at the same time it also creates opportunities to cooperate (Cummings & Worley, 2009).

To cooperate, organizations seek towards information technology (IT) as the use of it shortens the distance between organizations. Use of IT changes the traditional business model of how work is performed and how knowledge is used (Cummings & Worley, 2009). There are also economic advantages to use IT effectively, regarding how organizations collect, store and transmits information. Not just internally, but also externally towards customers.

When it comes to the industry of transport and logistics the European Union (EU) initiated a project called FInest (Future Internet enabled Optimization of Transport and Logistics Business Networks) at the start of 2011. The overall goal for this project is to develop a concept for a future Internet based collaboration platform, that's going to make deliveries of cargo more effective. This means gains in both socio-economically and ecological matters (FInest, 2012). This will further move the organizations from an as-is situation of separate internal systems today, to a to-be situation where information sharing is made simpler and faster. The early stage of this Finest is based upon three use case scenarios. One of the coordinators in this project is MARINTEK, is responsible for use case scenario 1, consisting of three other Norwegian actors regarding transport of fish from Norway to Europe by sea.

Shipping containers across seas has been done for ages, and can be thought of as quite old-fashioned by many. The maritime industry is familiar with use of information systems to track boats and handle internal data, but the industry needs to change radically according to Egil Ulvan at Rederi AS in Trondheim (Opland, Adresseavisen, 27.03.2012). Another advisor Geir Berg at SITMA consulting, requests an overall strategy for the industry: *"It's cheaper to freight cargo from Ålesund to Trondheim via Oslo with a truck, than directly by boat."* (Berg, 2012; used by Opland, Adresseavisen, 27.03.2012). Both Berg and Ulvan are however optimistic about the future. They mention how the politicians have recognized a need to strengthen the sea transport on the basis of environmental and economic issues. *"Socio-economically, sea transport is in no doubt the best solution."* (Berg, 2012).

All this can indicate both a need, opening and through this FInest project also an opportunity for change in this industry. Then again an opportunity has to be seized to give effect. It is dangerous for management to automatically assume that a new information system will solve all their problems. Packendorff (1995) found in his research that many managers start projects without even having a goal or intention by doing so. Projects can therefore be initiated just because one feels a need to change something or perhaps maybe just because everyone else is doing it. What Packendorff (1995) refers to is more projects in general, and this should not imply any differences between technology driven change and other types of organization development. However, according to McDonagh (2001; used by Church et al. 2002), large scale IT implementations has a success rate of 50 % total failure and 40 % delivered late and over budget. So the need for a planned approach and a correct focus when designing new information systems seems to be critical.

This study can be claimed to have been explorative with an intention to see if it through this project and use case could be found a contributing perspective to how one can improve IT development projects. Given this and an inductive approach, gathering of empirical data was used to supplement the development of a research question.

After the initial interviews it appeared like the actors had a different base for and approach to this project. There were raised some issues with the way the project had been presented for the participating actors, and there were some actors that given the chance to do this again, stated that they would have considered a different approach to the project. This illustrates that there seemed to be issues regarding how all the participating actors approached the project, and further a perceived difference in influence from this. Based on this there were constructed a research question to see if there could be identified aspects concerning the approach of the project and participating actors that could be used as a contributing perspective to the execution of IT development projects

The research question for this study is:

“How can the approach from participating actors influence the process of an early stage, in IT driven development projects?”

1.1 Limitations

This study will mainly focus on possible influences and effects to the existing and upcoming elements in the process and not the outcome. The reason is mainly related to the fact that the project we're looking at is currently in such an early phase that it would be difficult to predict effects of future outcome. Furthermore, the maritime industry is currently in a change process, but this study will not elaborate on how each of the actors directly manages the change itself from their organization and neither will we point out how this change process should be managed even though change management theory will be used related to the phase the project is located in

We will further keep this study on a project based focus rather than at a focus on organizational level. This case study will thereby not examine subjects like organizational learning, though it might have been relevant to examine how learning is provided by the different approaches, as the FInest project concerns a lot of communication and information sharing. It is further important to mention that this study will give answers on a generic level, as we will not seek to answer for whether one approach is better than another for any of the involved actors.

1.2 Assignment structure

2.Theory chapter:

In the theory chapter it will be presented relevant theory that can help answer the research question through offering a framework and which also can be influenced by this study. There will be a focus on theories regarding organizational change, project management, technology development and interaction between this and people or organizations.

3.Method Chapter:

In this chapter the chosen method and actions for how this study has been conducted will be presented. This chapter will describe aspects regarding how the empirical data was collected, processed and will be presented in the analysis.

4.Case description:

This will describe the case of this study through describing the context and involved participants. Since this chapter has been constructed on collected empirical data and based on the process in this study, it is intentionally put adjacent to the analysis chapter. This is related

to that it in this case description chapter is conducted a short analysis or partial diagnosis of the situation which will inflict further analysis.

5. Analysis

In this chapter the empirical data is presented, compared and analyzed for creating a new understanding. This chapter first introduces the structure of the analysis which focuses on three factors, framework set by the project, commitment of the actors and contribution from the actors. Further the findings relevant for each of these factors is presented and compared in a findings section, before they are looked upon in a theoretical perspective and analyzed in a discussion section.

6. Conclusion

In this chapter the identified aspects from the analysis and this study will be compiled, to offer an answer to the define research question of this study.

2. Presentation of relevant theory

As the organizations are about to enter a change process, it's natural to first present theory on aspects of organizational change. Change management is more than just another system implementation and both project management and change management will thereby be relevant to enlighten the importance of involving the people that will be affected by and responsible for making the change. Further on we will go deeper in the understanding surrounding the development and implementation of technology through describing the interaction between people and technology. There will also be described how projects and technology can be view in light of a network perspective, and what influences information sharing inside and between these networks.

2.1 Organizational change

"... at no other time has OD (Organization development) been more responsive and practically relevant to organizations' needs to operate effectively in a highly complex and changing world." (Cummings & Worley, 2009, p.5).

To elaborate on the fact that organizations use information technology as an important part of their business model, Cummings & Worley (2009) speak of *managerial innovation*. Managerial innovation is how organizations have responded to the globalization and use of information technology. This has resulted in new organizational forms like networks, strategic alliances and virtual corporations, which provide organizations with new ways of thinking about how to manufacture goods and deliver services (Cummings & Worley, 2009). Furthermore, this can result in downsizing or reengineering to make the organization more flexible, but according to Webster (1992) this can also provide organizations to focus more on their own core competence and outsource parts of the production that others can do better. From an overall perspective this can be described as process or operational innovation, which according to Hammer (2004), is a way to achieve competitive advantage.

Many organizations therefore seek towards information technology to solve their everyday-work challenges and to cooperate better with their partners. One important aspect to remember is however, that projects of implementing complex IT systems are more likely to fail than succeed. A survey conducted in 2009 by the Standish Group showed that 32 percent of IT-projects are successful (Dominguez, 2009). 44 percent partially failed, while 24 percent

was cancelled. However, that a project is cancelled does not mean that it failed. A cancellation can sometimes be the best solution for the company as well (Teoh, 2010). The point of this was to show that many projects fail, and the reason can be a lot of things, but one reason that often sticks out is that – the organization was not ready to commit to the change. *“If the desired improvement conflicts with what people are motivated to do, a system alone will not solve the problem.”* (Markus & Keil 1994, p.24).

Cummings & Worley (2009) speaks of how understanding of organization development can help people become committed and support the future solution. Because it’s important to remember that an organization is driven by people. The gain from implementing a new system will most likely not come from the technology itself, but rather be procured through the usage and application of it. *“Systems do not improve organizational performance or create business values; users and their managers do.”* (Markus & Keil, 1994, p. 24).

The next chapter will therefore elaborate more on project management and how it is recommended to do this.

2.2 Project management

2.2.1 Managing IT-projects

IT-project is a project where information technology is involved. Information systems can be seen to serve many purposes in an organization, and there are several ways of using information technology in relation to the organization’s overall business strategy. Petter Gottschalk (2002), an expert in the field of information management and strategy, speaks of four levels of seeing information technology as a part of the overall business strategy in organizations. To explain these four levels, Gottschalk (2002) uses ten mechanisms that show how information technology could be integrated at each level. These mechanisms are:

- Purpose of the integration
- IT-function’s role
- IT-manager’s primary role
- Evaluation criteria for the IT-function
- Triggers for development of IT-applications
- Top management participation in the IT-strategy
- User involvement in the IT-strategy
- IT-manager’s participation in business strategy
- Evaluation of new technology
- IT-manager’s status

These mechanisms will not be further explained hence it's the difference on which level in the business strategy information technology is integrated which is interesting for this study. Level 1 is called *Administrative integration*, where IT is seen in isolation from the business strategy. Level 2 is *Sequential integration*. At this level Gottschalk (2002), states that the business strategy affects the IT-strategy as well. At the third level, *Mutual integration*, the business strategy and IT-strategy affect each other both ways. Last, the level of *Full integration*. Here is the business strategy and IT-strategy is developed in the same process. On the basis of Gottschalk's (2002) thoughts on IT-strategy, it can be argued that an organization at Level 1 will have bigger challenges seeing gains from participation in an IT-project than another organization at Level 4. This however, cannot be directly related to successful implementation of information systems. It's not like as IT-projects will run perfect just because the organization can be identified at Level 4.

To get a better understanding of how projects run, one could try to divide the process in a project into different phases.

2.2.2 Cadle & Yeates' project phases

Cadle & Yeates (2008) present their own project model divided into six phases, where especially the first two phases can be seen as relevant for this study and is explained next.

2.2.1.1 Pre-phase

Cadle & Yeates (2008) sees it as important to involve the customer in the pre-phase of a project. The customer has usually needs that should be emphasized throughout the project. If these needs are not met or misunderstood it will, according to Karlsen & Gottschalk (2008), give the project a bad start and it will eventually also lead to a point where one is unable to satisfy the needs of the customers.

2.2.1.2 Start-up

In the pre-phase one establishes an understanding of the project main goal, while in this phase one go into detail of how one actually is going to reach that goal. According to Cadle & Yeates (2008) this phase decides whether the project will

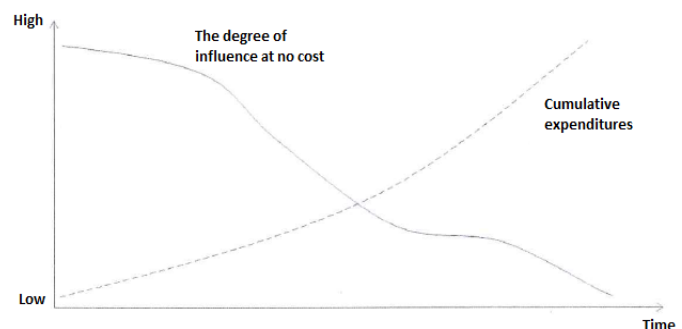


Figure 1 - Correlation between degree of influence and cumulative expenses (Karlsen & Gottschalk, 2008)

be a success or failure. Bad planning is one of the reasons why projects fail, because too often one is in a hurry of going straight to the development phase. Cadle & Yeates (2008) states that it's really important to be patient in this phase of the project. Furthermore, it's important to include the future users at this point, because this is the phase of the project they have the biggest influence at the lowest cost, as seen from figure 1. This gives an overall understanding to the important processes, but to get a deeper understand in what influences projects and how to this, the characteristics of projects will be examined.

2.2.3 Characteristics of projects

One important aspect concerning projects, as already mentioned in the previous chapter, a lot of them fail. According to Carlos (n.d.) the reasons for project failure are listed as following:

Poorly managed	Undefined objectives and goals	Lack of management commitment
Lack of a solid project plan	Lack of user input	Lack of organisational support
Centralised proactive management initiatives to combat project risk	Enterprise management of budget resources	Provides universal templates and documentation
Poorly defined roles and responsibilities	Inadequate or vague requirements	Stakeholder conflict
Team weaknesses	Unrealistic timeframes and tasks	Competing priorities
Poor communication	Insufficient resources (funding and personnel)	Business politics
Overruns of schedule and cost	Estimates for cost and schedule are erroneous	Lack of prioritisation and project portfolio management
Scope creep	No change control process	Meeting end user expectations
Ignoring project warning signs	Inadequate testing processes	Bad decisions

Figure 2 - Why projects fail (Carlos, n.d.)

Lists of factors for both success and failure like the one above can be found everywhere, but sometimes with different content and in different order. So the lists itself can give an indication of what makes projects succeed or fail, but Engwall (2003) states that success or failure for one project can't be generalized to yield for all projects, as they are non-historical to the given project. He further thinks that it depends completely on the context around the given project. This could also be seen against Packendorff's (1995) view on success and failure stories. He sees these stories as only something that will mainly show benefits of a specific project management approach, as they rarely will mention all the underlying reasons

for the success. According to Packendorff (1995), neither of them enlightens the reasons for the failure. He further says that it would be useful to experience i.e. if it was the management techniques that were used wrong or perhaps not at all (Packendorff, 1995). The traditional thinking of project management is therefore what Engwall's (2003) research is based on as well. Engwall (2003) mention how projects has been seen as a lonely and closed system, that doesn't take into account the history of the organization and the environment that the organization is a part of. Packendorff (1995) also shares this view of projects seen as a lonely system, but he uses another term of seeing projects as tools.

Many scholars have shown how environmental aspects, such as uncertainty, rate of change, and the allocation of authority and the availability of resources have an impact on the internal behavior of an organization. Furthermore, Engwall (2003) explains the importance of analyzing the internal process of a project in relation to the given task, like methods applied, measures taken and occurring problems. In addition, which according to Engwall (2003) is just as important, this also needs to be seen in relation to: (1) experiences from past activities; (2) politics during the pre-project phases; (3) parallel courses of events happening during project execution; (4) ideas about the post-project future; and finally (5) institutionalized norms, values and routines of the project's historical and organizational context. Another author within the field of change management, John P. Kotter (1996), mentions the importance to leverage the organization's history and traditions when implementing change. In one of Kotter's (1996) eight steps towards successful change this is mentioned as necessary to get the employees to embrace the change effort. According to Kotter (1996) it's wise to give the employees a chance to say goodbye to years of history and traditions, before they enter a new future. Kotter's (1996) view on this is however a bit different than Engwall's (2003) view. While Kotter (1996) views history and traditions more as something that are to be gradually forgotten as through need to embrace the change, Engwall (2003) sees existing history and traditions as something that's not to be forgotten and rather directly emphasized during projects to make it successful. This will be further explained in this chapter.

Engwall (2003) states that one of the tendencies towards previous research on project management has been that projects are looked upon as similar to each other. As a result, project management has been presumed as a universal phenomenon. There's been done a lot of research on types of projects, but with no evident impact (Engwall, 2003). Packendorff (1995) also seem to have come to this conclusion, as he states that there are no good answers

on how to run projects. Projects get initiated every day, but it don't exist good theory on how to control activities in projects (Packendorff, 1995). Packendorff (1995) says further that the existing theory is too general and therefore it's not correct to use the same theory for all kinds of projects. Packendorff (1995) says further that there's a need to go from seeing projects as tools, and acknowledge them more like *Temporary organizations*” as he calls it.

Project meta- phor Research focus	The project as a tool	The project as a temporary organization
Development	Plan ↓	Expectations ↓
Implementation	Control ↓	Action ↓
Termination	Evaluation	Learning

Figure 3 - Projects as a tool vs. as temporary organizations (Packendorff, 1995)

A temporary organization gives more responsibility to the actors, and less control and planning to the top management. The group members decide among themselves what activity to do and prioritize, as they know best about their own abilities. Packendorff (1995) states that the group knows how to set goals for themselves, which again makes the goals more realistic. This makes it possible for them to evaluate the project up against the budget. Automatically they will get more ownership to the task, which will lead to more participation and in the end learning (Packendorff, 1995). A temporary organization also gives more feedback from each part of the process, in contrast to the tool metaphor which is quite linear. As Packendorff (1995) points out, it's possible to move back and forth in the process, which also makes it more flexible.

Project management today can be categorized as the lonely project perspective, but as Engwall (2003) points out, this view has two shortcomings. First, the scope is too narrow. Some studies has focused on the implementation of lonely projects and viewed them up against its organizational environment. Often the appointment of team members to a project is a negotiation process between the PM and the other players in the project environment, which goes on throughout the entire project. One can therefore say that success or failure, on many occasions, could be caused more by the result of these negotiations than by any specific project management skills or techniques (Engwall, 2003). Another example of consequences of viewing projects as lonely is if the timeframe of the project is too short. E.g. if the focus is on one project at a time, every project would seem unique. Engwall (2003) further also says

that a project organization cannot be understood deeply without taking its history into account. So if the timeframe is expanded, one will find that some projects really are unique, and further represent a completely new experience for the parent organization. At the same time, this makes it possible to see that a large number of the project assignments are of repetitive nature, with little deviation in relation to preceding projects within the organization (Engwall, 2003). Thus, the success or failure in this example as well might be more dependent on the experience of the key team members than on specific project management skills and techniques.

2.2.4 Project management example

To give a clearer picture of Engwall's (2003) research, the study will further present a short version of his research of the two projects, Hydropower and Transmission. The Hydropower project was going to extend an old hydropower plant, while the Transmission project were to work on the design and construction of an international power transmission link, connecting the power systems of two nations across the Baltic Sea (Engwall, 2003). Hydropower and Transmission can be looked upon as similar in many ways. First, the projects were among the biggest investment project carried out in Scandinavia at that time in the 1980s. Further, they had a budget of approximately US\$ 250 million each and were complex undertakings, employing a large network of engineers, departments, contractors and suppliers over several years.

What differ the projects from another was firstly that Hydropower managed the project with help from an expert, which had the leader skills and had big influence from the division he was recruited from. This PM had read a lot of project theory and learned ways to lead projects. He thereby took charge and led the project by himself where he had total control of everything. Further the PM did change the structure of several activities because it was correct according to the theory he had learned. While Transmission chose a different approach and chose a PM with much lower rank than the one at Hydropower. This PM had little experience of running projects. This PM felt right away the need for extra help to run this project and promoted an employee as a sub-PM. Further they handled the divisions within the organization as unique by delegate responsibility to the team leaders for each division with their own budgets. Furthermore this organization has been through several other projects over the previous last three years, and saw the result from this project in relation to the present one (Engwall, 2003).

The results of these projects were quite different. The Hydropower project did not have success at all, while the Transmission project was regarded as a tremendous success. Not all the aspects of the story is mentioned here, as it also concerns aspects of context in deals they've made, expectations for the future etc. As short as this version of the story might be, the point is that the project manager at Hydropower had the project management skills and knew by theory the techniques of how to run projects, but still it was other aspects that were even more important to make it a success. The Transmission project did really good, above all expectations, despite the lack of project management skills. Engwall (2003) states from his research, that the PM at Hydropower did not lead the project correctly when he ran the project in isolation from all other activities in the organization. This only turned the employees against the PM and resulting in not doing as he told. This resulted further in delay of the project. This might be essential to manage projects.

How to motivate the employees can be what it all depends on. To further explain aspects regarding this, it will be elaborated on change management perspectives.

2.3 Change management

There are several models that are used in change theories. Many of these models are based on model for change by Kurt Lewin, which is divided into the three phases. Unfreeze, Move and Freeze. Therefore this model and some aspects from other models will be further described below, before it's seen at other aspects that might influence a change operation.

2.3.1 Change models

Kurt Lewin early introduced a model for planned change (Cummings & Worley, 2009). Lewin's understanding of leading change is dependent on the forces that keep a system's behavior stable. These behaviors are divided into groups, and the first one is those who strive to maintain the status quo and those that are pushing for the change. Lewin states that when these forces are equal, one has reached the state of "quasi-stationary equilibrium." (Cummings & Worley, 2009). To change a state, Lewin says one can either increase the forces pushing for change or decrease the forces maintaining the current state. On the basis of this, Cummings & Worley (2009) mentions Lewin's change model of change as consisting of three following steps:

- Unfreeze
 - The unfreeze phase involves reducing the forces that maintains the organization's behavior at its present level. By further introducing information that shows inconsistency between the desired behavior by the organization members and those behaviors that currently exist, members can be motivated to engage in change activities.
- Move
 - The moving phase is where the behavior of the whole organization is changing to a different state. This involves developing new behaviors, values and attitudes that changes organizational structures and processes.
- Freeze
 - In the Freeze phase it's all about stabilizing the organization at a new state of equilibrium. The mechanisms that manage this are factors like organizational culture, rewards and structures.

Lewin's change model is quite broad by only having three phases, and since Lewin's time there's been developed other change models as well with more stages. Kotter's (1996) change model, that can be summed up in eight phases: establishing a sense of urgency, creating a guiding coalition, developing a vision and strategy, and communicating the change vision (Unfreeze); empowering broad-based action, generating short-term wins (Move); and consolidating gains and producing more change, and anchoring new approaches in the culture (Freeze). Cummings & Worley (2009) states that Lewin's model has been closely related to the field of organizational development, and has further been used to explain how information technologies can be implemented more effectively.

There's a third model that Cummings & Worley (2009) describes in the literature - The positive model. This model differs from the ones already mentioned. While those models focus on the organization's challenges and these can be fixed, the positive model focus on what the organization is doing right (Cummings & Worley, 2009). The reason why is that it believes it helps members to understand their organization when its working at its best, and further build on these capabilities to achieve even better results.

As mentioned is the FInest project currently in a concept development phase of the project. Therefore will not all the phases in the presented models be relevant, as this study will not develop a plan for implementing change. There is however aspects by some of these phases that can enlighten what has happened in the project of this case study. The aspects of creating a vision will be presented next.

2.3.1.1 Vision

One of these aspects is creating a vision. A vision is something that can describe what the future situation of an organization can look like (Cummings & Worley, 2009). This can further be viewed as: “... *the most popular yet least understood practices in management.... Creating a vision is considered a key element in most leadership frameworks*” (Cummings & Worley, 2009, p.169). They say further that a vision is supposed to describe the core values and purpose that guide the organization as well as an envisioned future toward which change is directed. Furthermore, it's thereby important that a vision is realistic. If a vision isn't aligned with the organization's ability, it will work against the original intention (Cummings & Worley, 2009). A vision is also important as it can: “... *energize commitment to change by providing members with a common goal and a compelling rationale for why change is necessary and worth the effort.*” (Cummings & Worley, 2009, p.169). To make a vision even more reliable, Cummings & Worley (2009) points out that leaders need to have an active role in describing this vision, as these are the ones that can get the organization to commit to it.

Often leaders aren't the one operating a change process. Organizations use change agents of different kinds to handle this process. The next section will therefore explore different influencing aspects of these change agents.

2.3.2 Change consultants

For an organization to handle change management, it requires one or more change agents. Lunenburg (2010) speaks of the need for a change agent to be a person who has the skill and power to stimulate, facilitate and coordinate the change effort. He further says that change agents can be either external, such as consultants from outside the firm, or internal such as managers and employees.

According to Lunenburg (2010) the success of any change effort, depends heavily on the quality and workability of the relationship between the change agent and the key decision makers within the organization. John Kotter (1996) speaks much about the importance of including top management in the change effort. In fact, one of Kotter's (1996) eight steps towards successful change is called *creating a guiding coalition*. Kotter (1996) mention a good guiding coalition as necessary to get the organization members in on the change. A good guiding coalition according to Kotter (1996) must have a certain set of skills like credibility,

expertise, position power and leadership to be able to motivate the organization members to further commit to the change effort.

Lunenburg (2010) says it's common for organizations to hire external change agents to handle major organization-wide changes. The reason for this he points out that an external resource is not bound by the organization culture, politics, or traditions. This way a change agent from the outside can bring in a different perspective to the situation and challenge the status quo (Lunenburg, 2010). It seems that this is also the most common reason organizations choose to hire an external change agent. Lunenburg (2010) also see external consultants as a disadvantage, due to this person's lack of understanding of the organization's history, procedures and personnel. To accommodate this disadvantage, external change agents gets usually paired up with someone within the organization, like an internal coordinator from human resource department (Lunenburg, 2010). This way the external change agent gets a better understanding of the whole business.

Beverly Scott and Jane Hascall (2003), two experienced consultants, bring up the question when it's most reasonable to use internal resources and when to use external consultants. As already Lunenburg (2010) has mentioned, there are different pros and cons with each approaches. To elaborate on this Scott and Hascall (2003) has interviewed 75 internal and external consultants. The result of these interviews is showed in the table below, which illustrates when it's favorable to use external and internal consultants:

Use External Consultants When:	Use Internal Consultants When:
To support development of strategy or facilitate corporate-wide initiatives or key priorities	To support implementation of strategic priority, or intervention as an operational focus
Do not have internal expertise	Have the internal expertise
Deep expertise is needed	Broad generalist knowledge is needed
An outside, neutral perspective is important	Knowledge of the organization and business is critical
New, risky alternatives need validation from an outside expert	Speaking the jargon or the language of the organization and the culture is important
Internal does not have status, power or authority to influence senior management or the culture	A sensitive insider who knows the issues is needed
CEO, President or senior leaders need coach, guide or objective sounding board	Need to sustain a long-term initiative where internal ownership is important
Initiative justifies the expense	Cost is a factor
Project has defined boundaries or limits	Follow-up and quick access is needed

Figure 4 - External vs. internal consultants (Scott & Hascall, 2003)

Further points Lunenburg (2010) at ten characteristics to successful change. One of them is *proximity*, which refers to how close the change agent work with others in the organization.

He says that the closer, either physical or psychological, the collaborative involvement is, the more likely the change agent will succeed. Kraut, Fussel, Brennan and Siegel (2002) describes in their article, a research with 164 scientists and engineers, the effects of proximity related to collaboration. According to Kraut et al. (2002) the results showed that it was unlikely that these scientists and engineers would complete a technical report together unless they had offices physically near each other, even if they had previously published on similar topics or worked in the same department in the company.

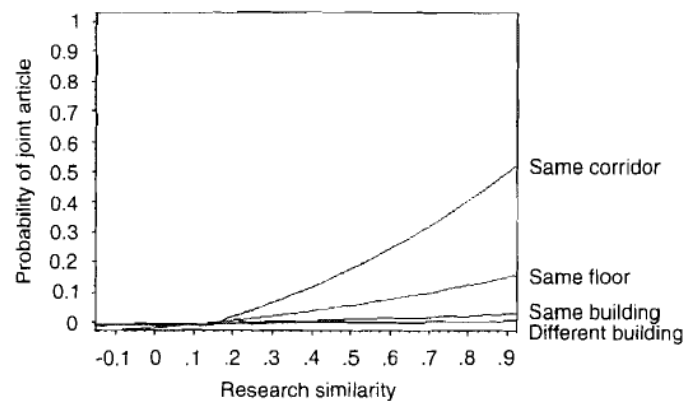


Figure 5 - Effects of physical proximity (Kraut, 2002)

As shown on the figure above, it was needed to be in the same corridor to finish a technical report, even if they had high research similarity. This can also be seen together with another characteristic that Lunenburg (2010) mentions - *Linkage*. Linkage refers to the extent the change agent and organization members work together in collaborative activities. As the proximity between them get tighter, the change agent will get a better understanding for the employees work and vice versa. As a result of this Lunenburg (2010) sees proximity as a way towards an open door policy and the visibility of the change agent during working hours.

Another characteristic is *structuring* that bases it onto the ability of the change agent and organization members to organize their activities concerning the change effort. If the change effort is clearly defined, it will be much easier for the employees to understand it (Lunenburg, 2010). This can further be an important influence on another characteristic namely *Energy*. Lunenburg (2010) describes energy as to how much effort the change agent and the organization are willing to expend on the change effort. Daily tasks and activities can be enough and then it further taps the employees for energy, which next can result in no time to participate in the change effort (Lunenburg, 2010).

Last Lunenburg (2010) uses the term *Openness* - This characteristic refers to the degree to which the change agent and organization members are willing to listen, make response, and to be influenced by one another. As already mentioned characteristics like tighter collaboration and proximity can both facilitate such openness, but when they're absent, it can hinder the development of openness between the change agent and organization members (Lunenburg, 2010). However, openness doesn't just occur by putting people together. Trust is also necessary to establish a relationship in first place (Håkansson & Snehota, 1995).

2.4 Trust

"Trust... takes time to develop between two actors." (Håkansson & Snehota, 1995, p.198). They say further that a relationship develops over time as a chain of interaction episodes between both sides. Based on Håkansson & Snehota's (1995) thoughts one could argue that openness can't be expected right away, but according Meyerson, Weick & Kramer (1996) and Panteli & Duncan (2004) it is essential for temporary groups or projects that trust is developed quickly and early. Swift trust is the solution for this according to (Meyerson et al., 1996), because this kind of trust is quicker to develop due to focusing more on action based qualifications of role than personal cues. *"Role-based interaction leads to more rapid development of trust than does person-based interaction."* (Meyerson et al., 1996, p.181) So from Meyerson et al.'s (1996) perspective trust should not take that much time to develop in a projects setting, if one focus more on the case at hand than personal related issues. This also illustrates the differences in trust, so what is trust and what types of trust exists? Rousseau, Sitkin, Burt & Camerer (1998, p.395) defines trust as: *"Trust is a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another."* They further claim there are three main concepts of trust - *Calculative trust, relational trust and institutional trust* (Rousseau et al., 1998).

The first trust concept of Rousseau et al. (1998) is institutional trust that concerns expectations to institutional systems, like legal forms, social networks and societal norms. Rousseau et al. (1998) states that these systems are likely to interact and create a context for interpersonal and inter-organizational trust. This form of trust is more as a consistent ground level that have developed over time. Where this institutional aspect work as some form of support to the other forms of trust, and thereby might facilitate for greater risk taking and trust worthy behavior. In one way this can viewed as present in what Meyerson et al. (1996) term as swift trust. Both perspectives would lead to trusting a project manager based on this

person's position, presumed knowledge and good intentions or unlikeliness of this person spreading false information. Both these would also be similar in another way, since they both in a way have a predetermined way of deciding who to trust and not. "...*People have to wade in on trust rather than wait while experience gradually shows who can be trusted and with what...*" (Meyerson et al., 1996, p.170). The next to concepts of trust described by Rousseau et al. (1998) are in some way concerned with the opposite of this, that which types of trust are used if it isn't predetermined.

Calculative trust is based on that one believes that the other party intends to perform an action that's beneficial to you. This can be credible information that can help the other part to achieve their goals. Doney et al. (1998) (Used by Rousseau et al., 1998) says that credible information can be information one receives from others about a company one is about to enter relationship with. This can be to get information of reputation or certification. Information like this can work like "proof sources" of trust. So in this case one chooses to trust the other part based on what the other part can do to contribute to this relationship, but also other information gathered that can affect the other company's trustworthiness (Rousseau et al., 1998). This is the initial trust where members in the lack of relational bonding use information available to more actively assess each other before getting involved in cooperation. In terms of project this can be compared to Panteli & Duncan's (2004) theory, which through their dramaturgical perspective also feel that trust in projects is important from the beginning, but they introduce the term *situated trust*. This trust according to Panteli & Duncan (2004) emerges with the situation, and contractual agreements in the beginning hold an important position. In their way of analyzing trust they mean that a signed contract defines the interaction situation and clarify roles in a project (Panteli & Duncan, 2004). It is thereby important for developing trust, but it does not solely define situated trust (Panteli & Duncan, 2004). Situated trust also seems to be defined by the presence in a project and developed through successful achievements. This can imply that there is room for maturing trust, which is what Rousseau et al. (1998) explains through their last concept.

Relational trust is based on the history of repeated interactions. Based on this, information available within the relationship itself forms relational trust. A relationship is often established on the basis of mutual dependence, and as a relationship develops into more of a friendship it will according to Håkansson & Snehota (1995) be more difficult to end the relationship. The main reason for this can be because of exchange of both resources or

information or perhaps even business secrets. Rousseau et al. (1998) says further that companies' previous interactions creates positive expectations towards the other parts' future actions.

“Repeated cycles of exchange, risk taking, and successful fulfillment of expectations strengthen the willingness of trusting parties to rely upon each other and expand the resources brought into the exchange.” (Rousseau et al., 1998, p.399).

Relational trust differentiate from calculative trust in the way that relational trust concerns more exchange of both resources and socio-emotional support, while calculative trust prevails more in single situations. Calculative trust is also less resistant when expectations are not met, and if this happen this type of trust is likely to be terminated at once compared to relational trust which is more resilient (Rousseau et al., 1998). Rousseau et al. (1998) have illustrated their concepts of trust in a figure shown below.

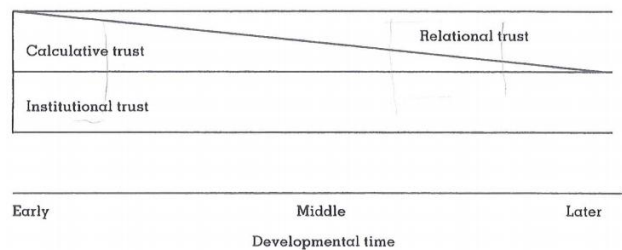


Figure 5 - Concepts of trust (Rousseau et al., 1998)

All these forms of trust described above have something in common. They are more dyadic in their focus, meaning that they lack the perspective of how trust is generated and transmitted in a network. One example of this can be as simple as when a CEO is about to hire new staff. The CEO could sense the person's trustworthiness by calling the applicant's references. If the response is as preferred, the CEO will trust the applicant to be the right candidate for the job. This is transferable to organizational situations as well, where trust can be transmitted between groups through something Julsrud & Bakke (2007) refer to as *trust brokering*. The trust brokering concept addresses two issues: *“... the establishment of trustful relationships, and the “bridging” of formerly weakly connected groups or sub-groups within a larger structured network.”* (Julsrud & Bakke, 2007, p.158). Said in other words, trust broker facilitates trust over boundaries that separate different networks or organizations. According to this perspective though, this role of trust broker is meant filled by persons or in some context organization and not artifacts, because it demands an active role. This is seen through

that trust brokering can be defined as: “... *the active building of trust across distinct groups and/or subgroups, through the development of social relations.*” (Julrud & Bakke, 2007, p.156). In one way the trust brokering concept can be compared to information related brokers between networks, as will be described later in this theory chapter, but it is also claimed to be different. Julrud & Bakke (2007) means that in their understanding of information and trust brokerage, the information brokers are focused on getting access to information whereas the trust broker is more oriented on creating ties and relations across distances and not exploit the information.

This is interesting, because it shows that a change operation cannot be viewed in isolation. It might be influenced by how the interaction among actors is conducted and how information is shared inside and between surrounding networks. Since this is a technology focused project it will first be focused on aspects regarding the interaction between people and technology. This way one might better understand what influence the development of technology, and perhaps what makes people accept technology.

2.5 Interaction between people and technology

When developing new technology, theories presented by people like Cooper (1993), emphasizes the importance of that this developing process is done in closeness to the users. This focus on market oriented product development is according to Cooper (1993) one of the critical aspects of achieving a success. Other theories further support this view, and some like Orlikowski (1992) and Latour (1991) also defines the influence from technology to be more interactive than traditional thinking. Orlikowski (1992) focuses on the understanding between technology and organizations. She describes the importance of realizing technology as not something static, but something that both will influence and be influenced by the social network it is introduced in. Orlikowski (1992) thereby seeks to contradict the traditional approach where there often is a distinction between those who develop and those who use the technology.

According to Orlikowski (1992) the intention is often to construct technology in cooperation with the users, but somewhere along there becomes a distinction in space and time between the users and developers. Orlikowski (1992) seeks through the introduction of the structural model of technology to view upon technology like an open system, which will be influenced and developed far beyond the phases of design and implementation. This way of viewing

technology as an equal actor in networks, can open for a new way of acknowledging how introducing new technology might change social structures in an organization. Bruno Latour (1991) introduces a view to Actor-Network Theory (ANT) where he seeks to integrate the understanding of technology into social theory. Latour (1991) states that we are never faced with just objects or social relations but rather “*chains which are associations of human (H) and non-humans (NH).*” (Latour, 1991, p.110).

According to ANT humans and machines must be viewed as equal actants in networks, where actants are elements in networks that through a mutual interdependence form a net of relations in which they must be understood (Hafnor 2004). Through an example with a hotel director that seeks to make his customers leave their hotel key at the front desk every time they leave the hotel some of the central terms in ANT is explained. Latour (1991) describes how the initial statement is changed as the owner has to change his program to face the anti-programs of the customers in order to make them leave their keys. Anti-program can be understood as a reluctance to accept or follow the inscription which is the intended use of technology or meaning of statement. According to Hafnor (2004) inscription is an important term in ANT and describes the process where one develops non-human elements to secure one’s interests. At the end to meet his intention the hotel manager needs to innovate and attach a bulky metal object to the keys, in order to secure that an accepted number of customers leave their keys. This shows how a program will transform as it encounter anti-programs, and it’s only when most of these are countered that the path of a statement becomes predictable (Latour, 1991).

This is according to Latour (1991) the first principle of studies on science and technology, “*The force with which a speaker makes a statement is never enough, in the beginning, to predict the path that the statement will follow. This path depends on what the successive listener do with the statement.*” (Latour, 1991, p.104).

From Latours (1991) view on how society and technology interact, one could argue that the path of the statement highly rely on the customers. If they have developed complex anti-programs this would imply that the initial inscription from the speaker might not be enough and must be changed in order to make customers follow the statement. The focus from this view can be viewed as a more buyer vs seller situation, where the “seller” or focal actor as Latour (1991) speak of, tries to make customers accept what he is selling or in other words accept the new actant in the network. Another way of approaching ANT and the terms programs and anti-program, is more in line with what Orlikowski (1992) states. This more

open approach might cause one to realize this as an innovation opportunity. Because facing these anti-programs might be viewed as a planned step in the development process, where one deliberately seeks to face them in order to exploit this friction, to further develop the technology. In the example from Latour (1991) the manager seeks help from an innovator to design what seems to be what the manager feels is the best solution to counter the customers' anti-program. One should not put too much in a simple example like this, but in a potential case like this, it might from Orlikowski's (1992) point of view be seen as a distinction in time and space between the developer and the customers. If one instead keeps an open approach to technology, one might get to know customers' needs, and thereby get useful information on how to better overcome their anti-programs.

2.6 Network perspective

According to this ANT perspective an introduction of a new tech system can imply a change in social structures and processes, given that the chain of Human and Non-human associations that Latour (1991) talks about is either changed or modified. Said in other words this causes a modification in the existing or the creation of a new network. According to Law (1992, used by Hafnor 2004, p.14), a network in this ANT perspective could be described as:

"The network of interactions between actors, which include people, technology, documents and statements, shapes knowledge as a capability".

The reason for using ANT as a basis for analyzing technology projects, can be ascribed to the possibility of creating a wider perspective to what influences the process. Hafnor (2004) means that ANT can be used as an analytical framework to understand the socio-technical interaction in organization, and through its vocabulary offer a precise tool to describe this precisely. This view is shared by other researchers like Andrade & Urquhart (2010) who also emphasizes in their article, the affordance of actor network theory in ICT for development research, that ANT can give an insight to projects underlying anatomy and assumptions. They have used the translation process in ANT to examine the different phases in the ICT for development project, because this gives an insight to the process of engaging participants (Andrade & Urquhart, 2010). According to ANT a network is formed through this process called the translation process (Hafnor, 2004). According to Hafnor (2004) social order and stability is a continuous negotiation process, and the stability of a network will rest on how every actor's succeed in translating others interests into its own. The translation process can

be described to consist of three steps, *Problematization*, *Intèressement* and *Enrollment* (Hafnor 2004). Problematization is the first step in this process, and this is according to Hafnor (2004) where the focal actor which is the actor in focus defines an obligatory passage point (OPP). It's through this OPP that the focal actors make themselves indispensable, because it can be seen as the position that is guardian of true knowledge and reality for this new network (Hafnor 2004). Further it is in the Intèressement step that the focal actor convinces other actors to accept the defined interests of focal actor, which then will lead to the Enrollment step if they accept these interests (Hafnor 2004). Another important role in this process is the Intermediary, which is important in translation process as a mean in form of e.g. a text or a product through which the other actors communicate and translates their intentions (Hafnor, 2004). From a simple perspective one can try to illustrate the translation process as shown below.

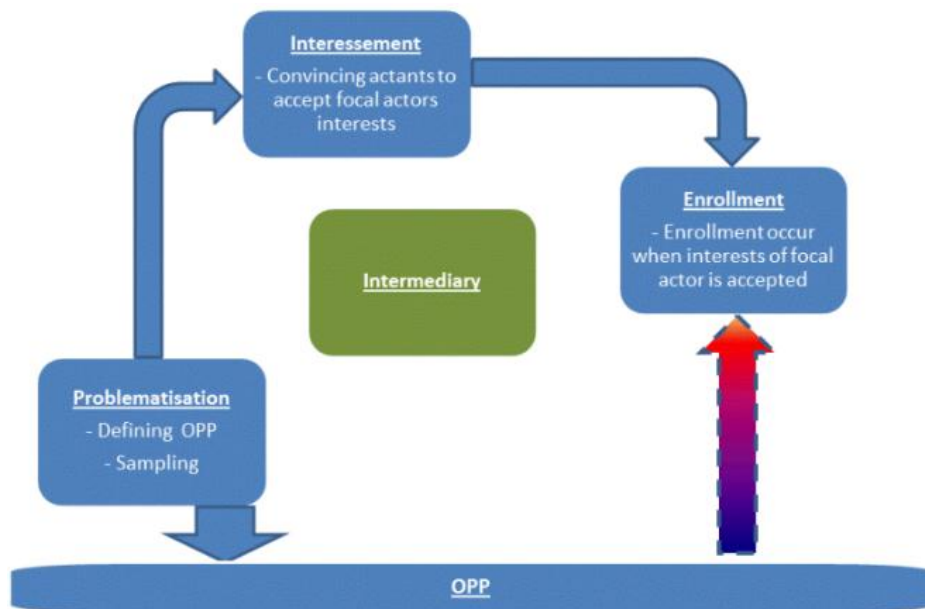


Figure 6 – Illustration of the ANT translation process

This way of viewing network creation is very wide and can be seen to be applicable to many types of social networks. So in one way this way of approaching network creation, actually give an impression of that the focal actor possesses large amount of power and that the focus is somewhat centered around how this actor can exploit others in achieving his intentions. In projects the power reality might be slightly different and also the focus on which the network is created may influence this process. A supplementing perspective can be to view how Wenger (2006) describes creation of what he terms Communities Of Practice (COP), since

these network cannot be linked only to e.g. people sharing a music interests, given that they must be bound to sharing of information through joint activities regarding a shared practice.

From Wenger's (1998) perspective, we are all members of different communities, where one develop knowledge and learn from each other through sharing of information and experience. These communities is by Wenger (1998) described as community of practice (COP), and people are usually member of several communities like this. Since people move between communities, some of them will bring experience and knowledge from one practice to another. In one way, this can be compared to what Lewitt & March (1988) describes as mimetic spread of knowledge. Where one host carries knowledge and experience as a disease between groups and infect them. Viewed upon COP this host can be compared to what Wenger (1998) describes as broker. Where a broker is "*...people who can introduce elements of one practice into another*" (Wenger, 1998, s.105).

One major difference from this perspective when it comes to networks is that artifacts and technology cannot be viewed as equal participants to humans. This is linked to the how Wenger (1998) defines the term participation, which is viewed as an active process that contains the possibility for mutual recognition, but these kinds of objects can still play an important role also in COP. One central term in COP and, living in general, is according to Wenger (1998) the process negotiation of meaning. Important in this understanding is the duality of meaning, which is formed through the interplay between the distinct and complementary dimensions of participation and reifications (Wenger 1998). It is through the term reification one can understand e.g. technologies influence in the COP. This is i because Wenger (1998) describes reification to be when participants project their understanding or given meaning of reality into artifacts, like documents, objects or technology.

"We project our meaning into the world and then we perceive them as existing in the world, as having a reality of their own." (Wenger, 1998, p.58).

In this way technology cannot be seen as a broker between practices, but given that technology is a projection of our meanings, it can create a link through which one can organize interactions. Wenger (1998) describes these connections through reification as boundary objects.

Both brokers and boundary objects act in one way as means to carry knowledge from one network to another, or in other words moving it over knowledge boundaries. In new product development different types of boundary objects can according to what Carlile (2002) describes be used to handle different types of boundaries, from offering a shared syntax to facilitating for transformation of knowledge. In this perspective there are three main types of boundaries that separate networks, described by Carlile (2004) as a syntactic, semantic and pragmatic type of boundary. What these different types of boundaries all are based on is that it is the degree of novelty between two actors in any given situation which decides the type of boundary and appropriate way of sharing knowledge across them. If the novelty is low, it might according to Carlile (2004) be sufficient to develop a shared vocabulary or syntax that represent the differences and transfer knowledge across the boundary. This is often seen as based on a more technical grounded perspective, as one in technology focuses on matching interfaces, this is according to Carlile (2004) to be seen as an information-processing approach to managing boundaries. When novelty in the situation arises however just being able to transfer the knowledge might not be enough according to Carlile (2004). "... a semantic boundary occurs when novelty makes some differences and dependencies unclear or some meanings ambiguous."(Carlile, 2004, p.558). A boundary like this calls for a possibility and an opportunity to translate information in order to withhold effective and appropriate knowledge sharing across a boundary. When novelty further increases in a situation and there is not only differences in understanding but also in interests (Carlile, 2004). According to Carlile (2004) this a boundary like this is a more costly process for any actor, because it implies transformation of existing knowledge. Since knowledge can according to Carlile (2002) be seen as something that's invested in practice, there can arise a feeling of that previous ways of operating is at stake in these situations. The knowledge boundaries can be illustrated as shown in figure 7.

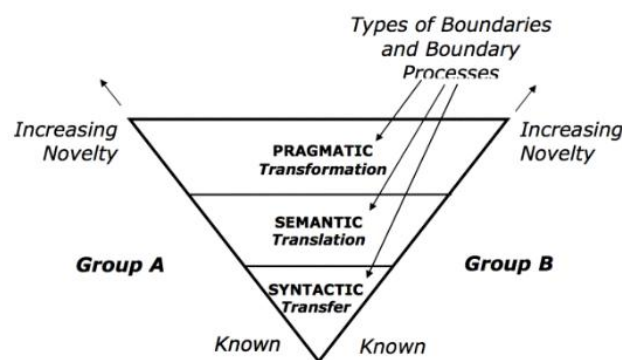


Figure 7 – An integrated/3-T Framework for Managing Knowledge Across Boundaries (Carlile, 2004)

This terms are not only a way of defining boundaries, the also transfer to describing approaches to boundaries (Carlile 2002). The importance of this perspective is linked to matching the chosen approach to the boundary present (Carlile, 2004). According to Carlile (2004) this is the influences by path dependency, where one reuse common knowledge at boundary, which only is helpful as long as the boundary is stable. Said in other words there is no best way of doing this, a pragmatic approach to a syntactical boundary can cause inefficient knowledge transferring and a syntactic approach to a new boundary may be affected by the path dependency factor, of not realizing semantic or pragmatic issues.

2.7 Knowledge sharing

In the previous section there where seen how information can move between networks, groups or organizations, in this section it will be focused on this from an individual level. There seem to be a growing tendency that the knowledge humans possess is valued more important for organizations than technology. As it is people that make decisions on the basis of the knowledge they have. One can therefore say that information sharing and knowledge is one of the keys for organizations' success.

There's been done research in the field of knowledge management and the academics Ikujiro Nonaka and Hitotsubashi Takeuchi are central on their initiation of the concepts of tacit and explicit knowledge. Nonaka & Takeuchi (2001) speaks of tacit knowledge as knowledge that there's difficult to put words on. It can be knowledge based on gathered experience and build up routines that are both personal and contextual (Nonaka & Takeuchi, 2001). E.g. tacit knowledge is often compared to the knowledge of knowing how to ride a bicycle. Nonaka & Takeuchi (2001) further states that explicit knowledge is knowledge that is easy to explain and teach others. This can be as simple as knowledge people gain just by reading a book. These terms can also be used at an organizational level, both then they are perhaps better explained by what Brown & Duguid (2001) terms as *leaky* and *sticky* knowledge. Where sticky knowledge can be viewed upon as the core competence of an organization and leaky knowledge is something that easily can be transferred to others (Brown & Duguid, 2001). It can also be mentioned that this way of viewing upon it might open for other dimensions for assessing sharing of knowledge as well like agendas and which information to protect.

Nevertheless to get a better insight in how knowledge development should be done in practice, Nonaka & Takeuchi (2001) has developed a *knowledge management spiral* that explains this.

<i>From /To</i>	Tacit	Explicit
Tacit	<p><i>Socialisation</i></p> <p>Creates <i>sympathised</i> knowledge through the sharing of experiences, and the development of mental models and technical skills. Language unnecessary.</p>	<p><i>Externalisation</i></p> <p>Creates <i>conceptual</i> knowledge through knowledge articulation using language. Dialogue and collective reflection needed.</p>
Explicit	<p><i>Internalisation</i></p> <p>Creates <i>operational</i> knowledge through learning by doing. Explicit knowledge like manuals or verbal stories helpful.</p>	<p><i>Combination</i></p> <p>Creates systemic knowledge through the systemising of ideas. May involve many media, and can lead to new knowledge through adding, combining & categorising.</p>




Figure 8 - Knowledge spiral (Nonaka & Takeuchi, 2001)

The knowledge management spiral is divided into four categories between tacit and explicit knowledge as shown in the figure above. In the category socialization, the mentor-apprentice relationship is important. Nonaka & Takeuchi (2001) implies this as to learning by doing together with others, where the mentor describes and explains all the routines along the way. This way the apprentice will receive the same knowledge and routines as the mentor. One may have experienced learning at this stage of the knowledge management spiral, but according to Nonaka & Takeuchi (2001) it's important to continue all the way around it to achieve good knowledge development within the organization.

Nonaka & Takeuchi (2001) describes the next category of *externalization* as where one reflects on the knowledge one already possess, and further also reflect on the routines that's already buildup of tacit knowledge. The keywords are awareness and reflection. This way the tacit knowledge get transferred to explicit knowledge, which can be described to the outside of a contextual frame more easily (Nonaka & Takeuchi). To elaborate on this, Argyris and Schön's (1978) theory on learning could together with Levitt & March's (1988) and Hafnor's (2004) view on competency traps, support Nonaka & Takeuchi's (2001) view. As employees use a procedure over and over, they will no longer reflect on what they're doing and when it starts to run automatically, and no questions towards existing methods are asked, one has fallen into a competency trap or into a "Black box as Hafnor (2004) calls it. Hafnor (2004) further states that once a while it will be useful to "open" the black box and reflect on existing

methods to ensure that the ones that are being used are the best ones. Argyris and Schön (1978) bring up this issue with use of two models - Single-loop learning and Double-loop learning. The Double-loop learning model differs from the other, in the way that instead of working on the “same track” (Single-loop), the Double-loop model reflects on existing methods one uses.

Combination is seen in situations where one gets to document known, explicit knowledge with e.g. use of reports, documents and building a prototype (Nonaka & Takeuchi, 2001). “Individuals exchange and combine knowledge through such media as documents, meetings, telephone conversations, or computerized communication networks.” (Nonaka & Takeuchi, 2001, p.73). In a way this can be compared to exchange of what Brown & Duguid (2001) terms as leaky knowledge. Knowledge that is shared at this phase can therefore be seen as prepared for sharing by the organization.

The last category in the knowledge management spiral is *internalization*. Nonaka & Takeuchi (2001) says this is where one learns tacit knowledge by actively doing something. This can be through trying and failing (Levitt & March, 1988), or by following documentation or a user manual. Trying and failing mainly are related to that routines are often related to success will be adopted, and oppositely that others will be rejected. Hafnor (2004) uses the expression inscription that can be associated with internalization. Inscription can be described as an instruction for how one could get someone to use the system as it originally is tended (Hafnor, 2004). E.g. the user manual to mount IKEA furniture is a good example of an inscription. When this furniture is mounted once, the next time one will know which screw goes where and where it’s best to start to make it easy for oneself. This can further be compared to what was explained above about Latour’s (1991) anti programs, and how it is in the encounter of these anti programs that a path become predictable. In this IKEA case the inscription, the user manual, may not be enough to make people mount the furniture correct. People might have developed anti programs through experience, and want to mount it differently or in a different order. To secure that this does not happen, it can seem like there are developed programs in form of just enough bolts and screws but also completed holes for them in the furniture to support the inscription.

3. Method

This chapter will explain the approach and procedures for data collection which has been conducted in this study. We were introduced to this FInest project by MARINTEK, which is one of the participating actors. After the first initial meetings with MARINTEK, it became clear that this was a large and complex project with many participants, but given this also many possible angles to study. We received little in terms of limitations in form of research questions from MARINTEK, which can be seen as our facilitator, apart from that the study should focus on the project called FInest. Regarding other boundaries, it was mentioned that this was a project operated on a tight schedule, and that many of the involved actors already had a hectic schedule. Therefore it was expressed that contact with the other involved actors should be coordinated with MARINTEK, and that they had little resources to cover traveling expenses. So to visit the participating actors abroad was not an option. Besides these situational limitations to the study, we were free to choose both research question and procedure. In this situation we felt that there were many variables and uncertainties, both regarding our knowledge of this particular industry, the project itself and the involved actors. Therefore much of the process related to this study was also linked to finding an interesting research question that we could cope with. This process will be further explained in this chapter. The illustration below shows an overall view of the research process.

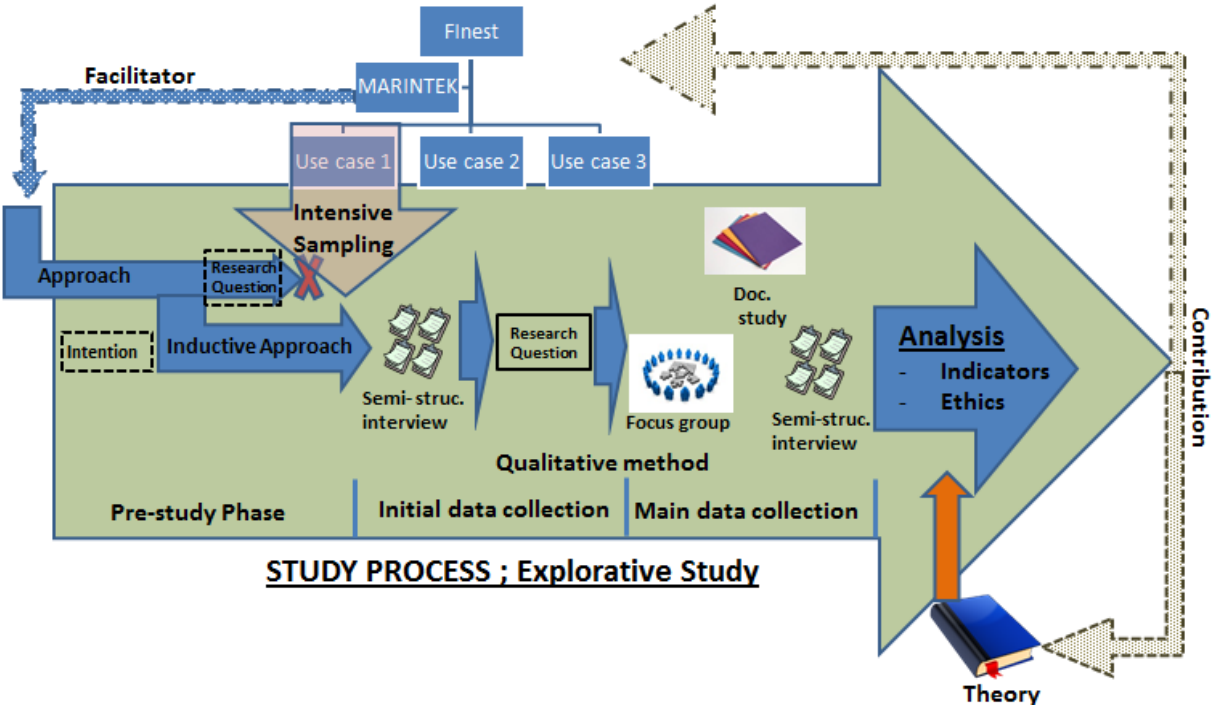


Figure 9 - Illustration of the research process

3.1 Research design

According to Johannessen et al. (2010) it is important that a researcher at an early stage in the process decides upon three fundamental questions, “what” to study, “who” to study and finally “how” to do this. The “who” to study was to some degree already given and can also be said to have influenced the choice of design for this study. Because to our understanding, we were intended to focus on the FInest project. This can therefore be defined as a type of case study, since this project is as according to what Silverman (2010) describes as a case that will be studied in detail and which have clear boundaries that can be identified at an early stage. Thagaard (2009) states that one of the perspectives to case studies emphasizes that it covers when a phenomenon is researched in the natural environment. It is also distinctive for these kinds of studies to have an analytical focus towards one or more units that represent the case. This is very transferable to our situation, where we have followed a part of an ongoing project without the intention to interfere or influence it. Also our lack of knowledge to this industry led us to want to focus more on project process related issues rather than focusing on needs in this business sector or technological and process solutions for the involved actors. There was thereby an interest to keep this study at a somewhat general level regarding the situational context. In other words it can be compared to what Silverman (2010) states as an instrumental case study, since we hoped to use the given case to create insight about an issue that was not purely related to this industry or project. This could open for a possibility to make it transferable to other situations and through this perhaps also make a contributing perspective to existing theories in change management or project management. The main interest with and purpose of this study was, in accordance to what Johannessen et al. (2010) talks about, therefore not to predict the outcome or to change the situation through an action research approach.

Given the open approach, with few limitations and presets related to research questions, this study can be compared to what Johannessen et al. (2010) refer to as being an exploratory research. Thagaard (2009) and Halvorsen (2003) explains exploratory research as an approach where one doesn't base the research on a firm research question, and where the study is focused on phenomenon that there exists little prior knowledge about. In our case there were no firm research question and given the many possibilities, our plan was to use the results from the initial data collection to construct a research question. Also in project theories at least people like Packendorff (1995) and Søderlund (2004) have requested the need for further

research based on empirical data, so it seems to be a perceived need for new or supplementary perspectives in the scope of this study. We therefore intended to decide upon a scope or theme for this study, which should be further developed into a research question after the initial empirical data collection. Since this study was not based upon a predefined hypothesis or theory, it can be argued to have been inductive, which can be said to be when theory is developed from data (Thagaard, 2009). Although different theories and articles may have influenced the process and been used to create ideas on what to study, the main contribution that ended up defining the research question came from empirical data collected in the initial interviews. Halvorsen (2003) points out that research can have pieces of both deductive and inductive approaches. So in some cases it could be a need to use an intermediate term that's between these two, like *abduction* that Thagaard (2009) explains. Even though there might be possibilities to use and define this to partly have been something in the middle, we feel it is best defined as an inductive research, according to Silverman's (2010, p.435) description that inductive is: "*Based on the study of particular cases rather than just derived from a theory.*"

To sum up it can therefore be said to have been what can be described as a *pre-study phase* where theme, scope and sampling were decided upon. Further there were planned an *initial collection phase* which should provide a research question, a *main data collection phase* where this would be further investigated and finally an *analysis phase* where the collected data would be processed. These phases will be used as further framework for this chapter.

3.2 Data collection

There will in this part be given an elaboration regarding each of the defined phases. As an overall setting it can however be important to emphasize that because all the involved respondents in this study are Norwegians, all the collection processes towards them have been conducted in Norwegian. The empirical data used in the study have later been translated into English by us.

3.2.1 Pre-study phase

This phase can be described to cover events up to when we actually approached the involved actors. There were probably least overall challenges linked to deciding on "who" to study, but when it came to "what" to study there were much more back and forth. We started up trying to build knowledge about both the project and the industry, through documentation provided from the project. From this there were first constructed an initial idea to research which

impact it could have on the project by not including the fish exporters in Use case 1. One of the reasons for considering this angle, was related to the possibility for easier access to empirical data, given that one also could include actors that wasn't occupied with assignments from the project. This idea was discarded given that it did not seem to make the data collection easier since they seemed to have little knowledge about the project. Also exporters of fish that interacted with the involved actors in FInest's Use case 1, did not seem to relate to the challenges identified through the project. As the representative of one exporter of fish stated, *"When we need to ship fish we just call a transport agent, and they handle everything for us"*.

The initial intention with this preliminary study was first of all to get a better understanding of the situation, but it was also initially thought to help creating a research question. There was made a request to get access to the project's internal web area and files, but this was denied. Instead we got access to meeting reports and presentations conducted in the use case. In addition we have also made use of the products that are available on the project's public web site. It turned out to be more difficult than first expected to create a good understanding and a research question based on these documents. Even though this contributed to some understanding, much of these collected data proved to be more useful in later phases. This can be related to the large amount of information made available, and thereby problems selecting relevant material. Initially we also conducted three relatively extensive conversations with MARINTEK. These conversations can however be said to have had a very positive influence for the initial process of deciding what to study.

Through these initiatives it emerged some aspects, which could be interesting to examine closer. We e.g. found that it seemed to become a change in how companies in this industry would interact and exchange information in the future. There also appeared to be an impression that the process in this project had been very good, and that special initiatives like the conducted workshops in the project where the participating actors were given an arena to interact was perceived to have been important. Therefore the idea was now to base our study on aspects regarding the interaction between the participating actors in the use case.

3.2.1.1 Sampling

This section will give a better explanation of what we previously referred to as the "who" in the research, and that this being a case study it could be defined to be bound by the boundaries

of the participants in the project. Of course it could be argued that this was not so, based on our hope to make this transferrable to other cases. This could mean that the population for this study was not automatically bound by the participants in the FInest project. This is related to what Johannessen et al. (2010, p.404) describes population to include “... *all units that a research question applies to.*” In this sense it could among others have been fruitful to compare our findings to data from other cases. Given both the aspect of time and resource limitations we decided to avoid what Silverman (2010) states as a kitchen sink approach and keep our focus on a sampling from inside the FInest project. We had been told that it wouldn't be possible to visit participants abroad, but that it was possible to collect data from these actors by e.g. telephone interviews. Still, keeping an overall focus to the project also from this perspective would be extensive. When we entered the project, it was in the process of creating scenarios for the three use cases that this project is divided into. Therefore it seemed to be appropriate to focus on one of these use cases, which covered a transport scenario through different business segments and therefore could be a natural way of narrowing our scope. It was further decided that it would be best for us to focus on Use case 1 since this consisted of Norwegian actors and thereby could open for more opportunities in terms of data collection. From one point, this can be compared to what Johannessen et al. (2010) defines as a convenience sampling, given that it can be argued to have been a selection among others based on the given boundaries in form of resources and time. A sampling like this is according to Johannessen et al. (2010) often used, but also the least desirable sampling method. In our case, there has of course been some form of influence from the fact that it probably would be more convenient for us to choose an approach which didn't imply collection of data from foreign participants. We feel however, that this has nevertheless not been a sampling based on convenience, at least given our limitations it could be argued to have been used something in line with what Silverman (2010) refer to as purposive sampling. From another perspective this use case can also be argued to be a representative sampling of how it is to participate in these kinds of projects. Since our decided focus was not concerned with evaluating the project, it can further be argued that these actors should represent the variety and possess the knowledge we needed for our study. This sampling can therefore be categorized to what Johannessen et al. (2010) describes as intensive sampling, given that it “... *consist of persons or instances that are rich in information because they are strongly influenced by the characteristic being studied...*” (Johannessen et al., 2010, p.110)

This intensive sampling approach can also be said to have been dominating when choosing informants inside this use case, given that we have chosen most of the people who had knowledge about the project, and probably the people who can be said to have been the most involved from each actor in this use case. In the interviews that were conducted there was also intentionally put an additional question which regarded the possibility to interview other informants that could have contributing information. The hope was that this would cause some form of snowball effect, like Johannessen et al. (2010) refers to, but as it turned out, this did not result in a very noticeable increase of informants. This can be an indication that our selected sampling, mainly felt that they were best suited for answering our questions. It can thereby base on our scope for this use case, also be argued that they have been intensive, given their own perceived richness in information.

3.2.2 Initial collection phase

3.2.2.1 Data collection method

After constructing an idea about “what” and the overall “who” to study, it was needed a more planned approach regarding “how”. Case studies are according Johannessen et al. (2010) often conducted with qualitative approaches and also given the inductive approach this should favor a qualitative method, since: *“Qualitative research is often said to be inductive...”*(Thagaard, 2009, p.193). There were though reasons for considering a more quantitative method as well, much given the mentioned perceived issues of hectic schedules and thereby access to key personnel. Also the idea from the pre-phase was to focus on aspects regarding the interaction among the actors, so it would be appropriate to get access to informants throughout the organizations. This could give a better situational understanding through wider information picture and also presumably contribute to a research question. This could be done through quantifiable data collection methods, and we planned to use a method called SPGR. SPGR stands for “Systematizing the Person-Group Relation”, and can be used for studies on an individual-, group- or organizational level (Sjøvold, 2006). The idea was to this through using a questionnaire from the SPGR method, which consists of 24 predefined questions about how one assesses the interaction situation.

“In many areas there are designed questionnaires which are used and quality assured, and it is then a waste of time to develop their own systems.” (Johannessen et al., 2010, p. 45)

When this approach had given a situational understanding and a research question it was planned to use what Johannessen et al. (2010) describes as qualitative in depth interviews, to

further answer this question. This could be seen as a way of trying to combine different methods and compared to what Silverman (2010, p.439) defines as *triangulation*:

“The comparison of different kinds of data (e.g. quantitative and qualitative) and different methods (e.g. observation and interviews) to see whether they corroborate one another.”

Unfortunately it after a while turned out that the SPGR approach would not be possible to carry out, due to us not being able to get all the participating actors to commit to it. Because even though it was emphasized that this questionnaire only took 7 min, one of the actors could not give us access to more than one, perhaps two respondents supposedly due to a hectic schedule. It is however plausible that there were other reasons as well that influenced the actors' commitment to this questionnaire. It could of course be seen as making too big of a footprint in the organizations, but it could also be that we failed to communicate the purpose of either the method or our study well enough. This or other reasons may have caused some actors to become skeptical or prevent them from seeing this as a meaningful activity. Anyway there seemed to be issues that complicated the possibility for having employees in all the organizations to assess their own and other participating organizations role in this interaction. We felt this process to go a bit back and forth and having spent according to our e-mail log 6-7 weeks on this focus, we for a while hoped that it eventually would be resolved. Finally, instead of waiting any further or probing any deeper into this, we acknowledged the setback and changed our course.

Even though there had been lost time and the possibility to achieve a kind of triangulation through this, we had established access to representatives from all the involved actors. Though there only were few possible respondents from some of the actors, all of them were perceived to have much information about both the project and their business. When this was taken into account, it was also concluded that it was no longer appropriate to focus on the interaction between these actors. It was therefore decided that we should undertake a more project related focus to this study. Since there was not expected any progress from further study of the documentation at this stage, it was decided to be better constructing a new research question through qualitative interviews with our provided contact at each actor.

Furthermore, it was decided upon qualitative approach to this study and there were scheduled four interviews with one representative from each of the four involved participators to create a

situational understanding. The basis for these interviews would be constructed upon what had been identified up to now, and presumably lead to defining a research question.

3.3.2.2 Initial qualitative interviews

Based on the work we had done up to now, we had constructed some assumptions which we wanted to examine more closely and see if could be confirmed. These assumptions were concerned with that:

- It seemed to be a top- down approach, in a technical dominated process.
- The process seemed to be focused at upper organizational level, and poorly communicated throughout the company.
- There were assumed to be differences in perceptions, interests and expectations.
- New ideas and knowledge was created as a result of the workshops, where the participants actually met face to face.

By constructing the interviews to be based upon these assumptions, we predicted to find information that would make us able to finally determine a research question. The interviews were meant to have an open approach, because there could be other subjects or perspectives than our predefined assumptions that could be interesting. It was therefore decided to use what Johannessen et al. (2010) describe as *semi structured in depth interview*. It was constructed a flexible guide with some overall themes based on the previous mentioned assumptions. The idea was that we would seek to investigate about all the selected themes and it was also made some subordinate questions to each theme that could be used if necessary. This would depend how the interview would unfold, since there were not intended a distinct sequence or an objective to take one theme at a time. For a more in depth insight about these questions, please consult the interview guide in the attachments. The overall subjects for this interview besides the introduction part were:

- General questions
 - Regarding the company, their role in the project and project experience
- The interaction situation today
 - Regarding the characteristics of today's situation, and how they perceive it and if they had knowledge about the other actors challenges in this interaction.
- The Project
 - Regarding how they were introduced to the project, expectations and various aspects with the process of the project
- Closing
 - Regarding if there were other important aspects about the project and possibilities for further interviews.

From an overall perspective one can see that the focus of this interview can be said to depend upon what Silverman (2010) describes as a positivist model of research, where one assume “... *that interviews can give a direct access to experience...*” (Silverman, 2010, p 190). To give our respondents the possibility to prepare for this experience sharing, we sent them the overall subject we wanted to focus on, one day in advance. It was therefore made two different interview guides, one with the subordinate questions which we kept and one with the overall subjects which was sent to the respondents. The reason for this was that we did not want to make what we had perceived to be important about each subject affect what they wanted to focus on. Given the geographical distances between us and the actors, and based on time and resource issues we decided to conduct these interviews by telephone. This would of course mean that we would lose the possibility to observe body language etc., but since our focus was on the content of the information, it was concluded as the most favorable solution.

Our impression was that the informants seemed to have prepared for this interview, which also in some cases led to that it was followed a more or less sequential order. In addition it further felt like the informants based on this had much information to share. The interviews took from around one to one and a half hour.

3.3.2.3 Main collection phase

After the initial interviews, they were all transcribed and it was made some overall assessments to what had been found. Based on these assessments it seemed to be issues regarding the different approaches, which was used to define the research question for this study:

“How can the approach from participating actors influence the process of an early stage, in IT driven development projects?”

The basis for this research question was linked both to being actualized through the conducted interviews, but also to the reason that it to our knowledge was not a prominent theme in existing theory. According to Packendorff (1995) project theories could benefit from focusing more on the actual process and explaining the underlying reasons based on empirical evidence. Søderlund (2004) also emphasize the opening for additional perspectives too and more empirical studies about project management in his paper.

To further study the selected research question, we decided that we needed more in-depth information. As mentioned from the three actors we had limited access to number of personnel with relevant information. We therefore decided to conduct additional in-depth, or what Halvorsen (2003) describes as intensive interviews with the same and some new personnel from these actors. From MARINTEK, where the project probably had a bigger footprint in the organization, we had the possibility for more respondents. We decided to take advantage of this, and try to conduct a group interview with them. We decided not to conduct any further in-depth interviews with the respondent from MARINTEK used in the initial data collection phase. This was because it had already been conducted several conversations with this informant in the pre-study phase, and it was thereby perceived to be sufficient. Methodically we felt it was legitimate to conduct a different approach towards MARINTEK, since they have a different role in the project, compared to the other three actors with relatively similar roles.

3.3.2.4 Focus group

We hoped to conduct the group interview before the other in-depth interviews. The reason for this was that we both hoped and expected to find information from this session, that we could make use of in the rest of the interviews. We defined two reasons for why we wanted to conduct one group interview, instead of several single interviews.

1. From a methodological perspective, a focus group or group interview can provide a broader perspective (Johannessen et al. (2010), and were thought to perhaps disclose views that individual interviews would not reveal. It was also considered that it:

A. Would fit well in at this time, between the initial interviews that had revealed a research questions, and the follow up interviews to this subject.

B. Would be able to provide a broader picture of, or disclose different aspects to the chosen research question from what could be termed as the context providing actor.

2. In practical terms, this was an opportunity for us as students to learn, and it could also of reasons related to this fact be interesting to conduct this as part of our thesis.

Johannessen et al. (2010) emphasize in his definition of focus group interviews, that there are a focus not only on the content of information, but also on the verbal interaction in the group. They also states that these groups usually consist of between 6 and 12 participants. In our
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group there were planned to be only 4 participants, and the main focus with this session was believed to be the information content presented. Still we decided to define it as a focus group interview with the main intention to gather information from MARINTEK regarding aspects concerning the different approaches. There were also planned that one of us would do the interview while the other would act as an observer to capture anything interesting regarding the interaction during the process. Based on this, it could be argued that it was a focus group compared to a more open definition as presented by Silverman (2009);

Focus groups are: “*Group discussions usually based upon stimuli (topics, visual aids) provided by the researcher.*” (Silverman, 2010, p.434)

In the preparation we tried to follow the guide to focus groups given by Johannessen et al. (2010) where it’s emphasized on several issues which should be considered before conducting a focus group. Given situational conditions we should be satisfied with the time the respondents had to spare, and that they felt the need to organize the activity to fit their schedule. There was further thought that the guide for this activity needed to be flexible, given that an ideal situation would be if the informants did much of the talking and discussion among themselves. On the other side if this didn’t happen there was also necessary to be prepared for asking questions and at least guiding the discussion along with our scope. There were also elements with the participating informants that advocated having a well-founded approach. Them being experienced in conducting interviews like this could influence the situation, but at least it could from an overall view seem like a homogeneous group, which according Johannessen et al. (2010) should ease the discussion in these settings. There were also concluded to be important to take control through the opening of this interview by seizing the introduction and after that involving everyone. This was related to the assumed roles present in this group, in terms of that a possible principle role and what Johannessen et al. (2010) refer to as an expert role could come to influence the process.

Based on this we constructed an interview guide, which can be found in the attachments to this study. In an overall view this guide consisted of two main subjects, part from the introduction part with some general questions and closing section. There were also made several subordinate questions to these subjects, to achieve the possibility for both flexibility and process guidance. The two subjects were regarding:

- The process
 - How had this been, what would they have changed, has something been extra productive?
- Concerning the other actors?
 - How were they recruited, influence of their chosen approach, perceived expectations?

Upon arrival we were informed that one of the informants was due to illness were prevented from participating. Part from this, the beginning went more or less as planned and we did feel that we seized the attention. Though there were tried to use eye contact, early involvement and a few times also direct request for others opinion, it can be said to have been some uneven balance in participation in the beginning. We had due to various reasons not sent any form of the interview guide to the informants in advance. This might have been the reason to why we felt as we sometimes struggled to guide the discussion towards our focus, and instead kept ending up with an overall project scope for discussion. It wasn't until we started asking more direct questions that it was succeeded in focusing discussion more in line with our scope regarding the use case. After approximately one hour one of the informants had to leave, due to other pending tasks. Our focus group interview now consisted of only two informants, which of course can be said to not be sufficient. Even if it was not favorable, it at least led to more balanced involvement from the remaining informants and it was still disclosed very interesting information as result of the conversation between the respondents. The interview in total lasted for about one and a half hour.

3.3.2.5 Qualitative in-depth interviews

We were able to conduct four in-depth interviews with the three actors in Use case 1. The process and preparations for this interview were very similar to the ones conducted in the initial interviews. This will therefore be only briefly explained in this phase, by focusing on what was done different. Since most of the informants had been interviewed before, there was a need to create a new interview guide, so that we didn't end up asking more or less the same questions. The reason why the interview guide from the focus group interview was not reused was related to that we wanted to have a bit more specific approach to these interviews. So even if the overall subject was more or less the same, they were adopted and added other subordinate questions. In general the main purpose for these interviews was to explore their chosen approach, why this was chosen, what they perhaps would have done differently and if so why this would be perceived to be better. There was also an important overall focus to the

process of the project, because this could be seen as the project's approach to them. The interview guide can be found among the attachments, but in addition to the introduction the overall subjects for these interviews were:

- The Process
 - The decision to participate, demands, challenges in this process, the demonstrators created, what could have been done differently?
- The chosen approach
 - Why, deliberate, benefits, challenges, what is believed to influence any chosen approach (own or project conditions)?
- Resources
 - Challenges, contribution, financial support, networking?
- Closure
 - Next phase, adjustment of approach, what will you bring from this experience.

It was not sent out an interview guide to the informants this time, but there were sent an e-mail which explained the estimated time, scope and purpose of this interview. We felt this was a sufficient solution, because it told which themes that would be in question, and thereby giving them the possibility to prepare.

3.3 Data analysis

In the methodical literature Johannessen et al. (2010) emphasizes that the overall reason with the analytical phase is to first make some form of data reduction. This can also include systemizing the data, so that it becomes manageable. To get easier access and better overview over the collected data, all the verbal data from all the interviews were transcribed continuously. This meant that the collected data would among others become searchable, but it also played an important role as the initial analysis. Because it was during these actions that we for the first time were able to reflect over and got repeated the information that was gathered. It can also be argued that given that the transcribing was done in immediate proximity of the conducted interviews, it forced us to reflect over the collected data when it was fresh. This was important as we had little time between each data collection process, and each of these processes was intended to influence the successive processes. So the transcribing of the data also played an important role in deciding upon the research question after the initial interviews.

Johannessen et al. (2010) describes three different ways to organize qualitative data. As mentioned earlier our focus with these collection processes was mainly to search for connections between the empirical data. We were based on this more concerned with the

meaning in what was said, rather than what was said literally. This can be compared to what Johannessen et al. (2010) explains as an interpretative understanding of the empirical data. When we started to process the data, we were looking for subjects or themes inside the material that seemed to stand out as important, neglected, disputed, similar or different. In other words we started the analysis by looking for indicators that could be used to create and answer the research question. These indicators were terms that appeared during the process, and were both used to support the development of interview guides and also to categorize the data in the analysis phase. The indicators that were use are listed below.

- Preparations
 - Project experience
 - Expectations
- Start-up
 - Sell in
 - Demands
- Internal vs. external approach
 - Advantage, reason
- Resources
 - Time
 - Financial
- Knowledge sharing
 - Contribution (boundaries)
 - Workshops, demonstrators

Based on our analysis this can be compared to as an attempt to conduct what Johannessen et al. (2010) describes as cross-sectional organizing of data. We try to use these indicators to find connections inside the empirical data. The reason why an approach like this can be argued to have been beneficial is first of all related to the type of data in question. Johannessen et al. (2010, p. 43) states that we often operate with the terms soft and hard data, but that this must be seen in connection to a soft or hard reality. In our case the data is soft, so it was not favorable for quantitative data analysis methods. When it comes to our reality, it's more unclear which definition to use, since it could be hard, based on the direct noticeable effects of some of the aspects with each approach. It could also be argued as soft, based on the uncertainties to how one can measure effect and what can be included in the term approach. On the basis of this it can be argued that we operate inside both of them, but since our intention is to create a contributing perspective to the impact by different approaches to projects, it was at least preferable for us to try and construct a more hard reality, where we focused on some mutual experienced indicators in this case.

3.4 Ethics

When starting to analyze the data, we also needed to be aware of how to protect our sources and treat the information properly. Thagaard (2009) lists three principles to maintain the

ethical guidelines for studies dealing with personal related information. The first of these principles is called informed consent, and is concerned with that informants should be volunteers, and has the right to know what they're participating in (Thagaard, 2009). The second of these principles is related to confidentiality, and states that informants are "... *entitled to that all information they provide will be treated confidentially.*" (Thagaard, 2009, p.27) This also means no information should be traceable back to specific individuals, and therefore often must be made anonymous. The last principle is regarding consequences of participation, and includes that the researcher is responsible that the informants does not have any injuries or sustain other serious strains (Thagaard, 2009). This latter principle has been evaluated as not mentionable relevant in this study, based on the actions we have conducted.

Regarding the first of these two issues, there can also be said to have been few issues regarding the first of them. The informants were all volunteers, and we explained the purpose, reason, and intention of this study to them. We also explained that the data was meant used on a more or less generic level, and therefore it would, e.g. not be used to display how the actors rated each other. Based on this, we should be within the ethical guidelines of informed consent and consequences of participation, but given that this is a use case with few actors, there were more issues related to confidentiality. As Thagaard (2009, p.225) states: "*How can the researcher deal with the principle of anonymity when participants in the study know each other?*"

We had as described above explained in the interviews that our focus was on organizational and project level. So from one view one could argue that the information used in this study would not be personally based, but focused on their statements regarding the organizations and therefore less relevant for confidentiality. This can also for many reasons be an inappropriate approach, since the information could be traceable back to one employee, and therefore perhaps violate the third principle by causing strains for this person. We therefore needed to make some decisions on how to make data anonymous. Our first measure can be seen as the decision not to mentioning the name of the three of the participating actors in the use case. If we look back at Thagaard's question there is no way this would be sufficient to secure confidentiality inside the project. Given that we planned to use the actual name of MARINTEK, the FInest project and also Use case 1, this would also become highly traceable for outsiders. The reason for wanting to mention these names, was related to that we found this to be describing in terms of branch and context understanding for this study. So as we

meant we could satisfy the ethical guidelines through other measures, we went on using these names. MARINTEK also had a special role as our facilitator, and as we had several informants and interviews from them, it would make it easier to keep the demand for anonymity from them. What did we achieve from not mentioning the other actors? The answer is probably not much, but it could perhaps contribute in some ways, and as we didn't see any advantages for this study by mentioning their real names, it was decided to make their names anonymous into Actor 1, 2 and 3. As this being decided as not relevant, it also meant not to describe their business or operations in the case description.

From these three actors we had few informants, so it was plausible to identify individuals behind statements. According to Johannessen et al. (2010) there are then two critical questions that need to be answered, if one chose to continue, is the information sensitive and are they treated manually or not. In our case the information we wanted to use can be said to not be sensitive, and we also treated this information manually. This meant that we either way was not governed by license obligations according to Johannessen et al.'s (2010) description, but as mentioned above, we had also already explained that the data would not be used to describe how each actor assesses one another. It was therefore first decided to not use direct quotes where one actor describes another, but given the number of actors and informants in this use case one quotation could still be traceable back to one individual, even if it was not concerned with how they assess each other. Based on this we decided not to link any direct quotations to a specific one of the three actors, and thereby further complicate that quotations should not be traceable back to individuals among these. Since MARINTEK has a different role in this use case, it would be easier to see which quotations that could be linked to them. Therefore based on that we had more informants from them, which would complicate tracing of information back to individuals, we decided to link quotations from them by their organization name. This is something we also have verified with MARINTEK. This does not cover direct quotations describing other actors in the use case, and if this for some reason should be necessary to e.g. support an actor's impression of own effort, with opinion from another, these kind of quotations will not be linked to a participant in this study. Still we will invoke a possibility to paraphrase these types of quotations if there e.g. is relevant for the understanding who said it.

- Direct quotations from MARINTEK: (Respondent MARINTEK, 2012)
- Direct quotations from actors in use case: (Actor (1,2 or 3) in use case, 2012)
- Direct quotations describing another participant: (Respondent in study, 2012)

According to Thagaard (2009) it should also be considered if and for how long one should keep person identifiable information. We have transcribed all our interviews, and this being a master thesis, we plan to keep them safely stored separately until this assignment is evaluated. When this study has been evaluated this material is planned to be deleted.

3.5 Reliability and validity

According to Johannessen et al. (2010, p. 228) it will: “... *be impossible for another researcher to try and duplicate another qualitative researchers study*”. This means that it can be difficult to prove the reliability of a qualitative study like this. We have through this chapter done our best in doing this by giving an open and detailed description on our process and study. This being a master thesis, there will of course under special circumstances also be possibilities for those responsible for our evaluation to review our material.

Silverman (2010) generally describes validity as another word for truth. To better understand this study against this term, we can start from Johannessen et al. (2010) two types of validity, external validity in form transferability, and construct validity in form of credibility.

3.5.1 Construct validity

According to Johannessen et al. (2010) will this term for a qualitative study mean to which extent it represent the purpose of this study and represent reality. Also in qualitative studies it can be especially important for the researcher to assess if his own epistemological, ontological and professional perspectives have influenced the study (Johannessen et al., 2010). Prior to this master education one of us has a bachelor education in IT-supported Business Administration. The other has a bachelor degree in Telematics from the Norwegian armed forces and worked as an officer and system engineer for computer and telecommunication systems. Since we have been two researchers with different background in this study, it is believed that our pasts not have had any crucial influence on this study, and there can be said to have been maintained what Johannessen et al. (2010, p. 403) states as a *confirmability* in this study. Further there has in this study been tried to achieve triangulation, and there has been used different methods for data collection in form of focus group and semi-structured interviews complemented with a touch of document studies. Still, the used methods cannot be said to strictly fulfill the term triangulation defined by among others Silverman (2010), mainly because there were not conducted a comparison of substantial different type of data. Even so, we feel that there through semi-structured interviews, one focus group and presented

documentation, has been enough variety to give a sufficient credibility to this study. This is related to that there were conducted eight semi-structured interviews in the two latter collection phases and also three extensive conversations all lasting over an hour in the pre study phase, which also though not being transcribed can be regarded as interviews. There were also spent much time going through extensive documentation which was made available about the project, so we feel the basis should be more than enough. Also given that there were little possibilities for large intensive samplings in this use case, due to few informants with relevant information, we feel that we had exploited most of the possibilities available. Regarding the focus group, there was as explained some issues with participants leaving and not showing up. This can of course have reduced the validity for this as a focus group, but we still feel it gave access to important information that perhaps would not have been possible with other methods.

3.5.2 External validity

According to Johannessen et al. (2010) this can in qualitative designs be termed as generality, and is concerned to which extent one succeeds in creating interpretations, terms and explanations that are transferable to other contexts. The scope and focus of this study has been kept at a general level when it comes to the influence of the context. This means that what has been discovered in this study is believed to be valid outside the boundaries of this business segment and industry. The subjects regarding trust, startup processes and importance of interests in projects have been raised previously by researches as among others Cadle & Yeates (2008), Meyerson et al. (1996), Panteli & Duncan (2004) and also in change management theories by researchers as Lunenburg (2010) Cummings & Worley (2009). It is therefore believed that the findings in this study can act as contribution at a more general level by offering a different perspective to previous researched subjects. When it comes to more direct implications of the identified influences of chosen approaches to projects, this is believed to be transferable to situations that are similar to this study's context. This can be seen as SMB's in a mature competitive business participating in a long term multinational technology projects with an uneven balance of organizational size. This is related to that in these settings both the actors and project management level is expected to be torn between the same issues and choices regarding reasons for joining, how to organize oneself and possible difference in focus and project experience.

4. Case study description

This study has examined the different influences from approaches within Use case 1 in the EU-project FInest. In this chapter we will present this use case and important aspects about the project itself and the given approaches from each actor. First it will be given a short description of aspects that gives a contextual understanding of the situation. Thereafter the involved parties in this use case will be described. The information presented here has been disclosed as part of the process in this study.

4.1 General

This chapter will first give an introduction of the FInest project itself and further the actors involved and how they interact today.

4.1.1 The FInest project

FInest (Future Internet enabled Optimization of Transport and Logistics Business Networks) is an ongoing project that looks to improve the transport and logistics for freight of goods and people around in the EU. The project was initiated in April 2011, and has now run for a year. Furthermore, within a period of two years, the projects will reach a preliminary assumed deadline in April 2013 with possibilities of applying for another two year extension.

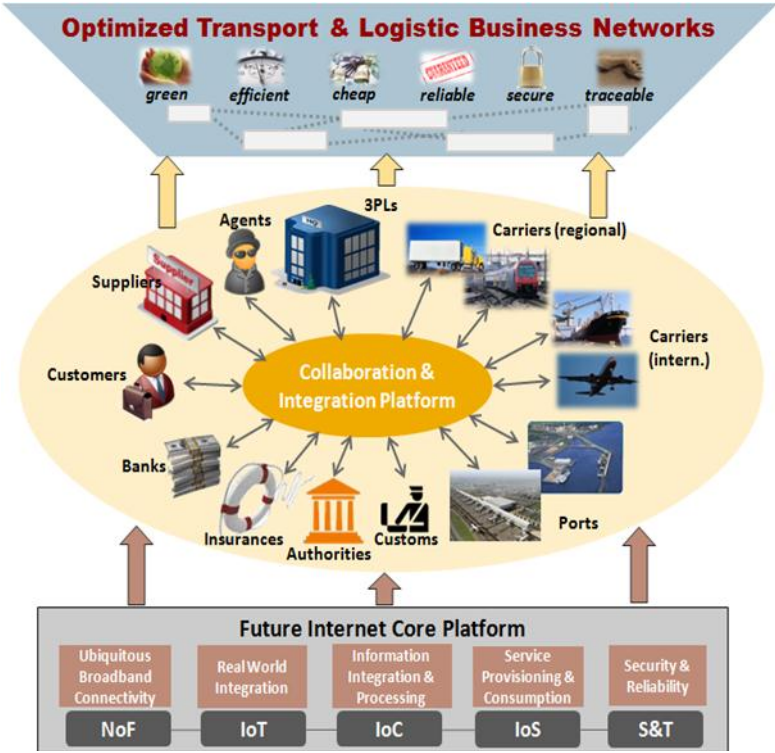


Figure 10 - FInest interaction perspective (FInest, 2012)

The intention behind developing a Future Internet enabled ICT platform is to increase collaboration and integration within international transport and logistics business networks. This will make a great impact on both economic and ecological savings. To realize this collaboration the solution lies in the domain specific extension of the FI PPP (The Future Internet Public-Private Partnership Programme) Core Platform (FInest, 2012). FInest will design a concept prototype for how the system could work in real life use case scenarios. In

the first stage of the project it will only be on paper, but at later stages there will be developed physical software solutions (FInest, 2012). The technical aspects of the platform itself will not be further explained, since the main focus stays on the purpose and possibilities of the technology in this matter.

In an overall setting this project consists of ten work packages (WP), where WP 2 is now under progress, and has been the focus of this study. WP 2 is concerned with creating scenarios for use case specification for the further concept development, and there are developed three use cases in this WP. These three use cases are listed below. (FInest, 2012)

1. Fish transport from Norway to Europe
2. Air Transport of Equipment
3. Global Consumer Good Production and Distribution

4.1.2 SINTEF

SINTEF is one of the largest independent research organizations in Scandinavia (SINTEF, 2012). The organization is a broadly based, multidisciplinary research concern that possesses international top-level expertise in technology, medicine and the social sciences. It is a private driven foundation, but is tightly related to NTNU (Norwegian University of Science and Technology). Approximately 2100 employees work at SINTEF from 67 different countries. 1500 of them are located at the head office in Trondheim and the rest is spread around offices in Oslo, Bergen, Stavanger and Ålesund, in addition to offices in Houston, Texas (USA), Rio de Janeiro (Brasil) and a laboratory in Hirtshals (Denmark) (SINTEF, 2012). About 40 percent of SINTEF's international turnover comes from the EU's research programs, where SINTEF is a leading participant. EU-projects are given high priority, because they believe that it is important to participate in multinational knowledge-generation efforts, and because such projects give them access to interesting networks (SINTEF, 2012). The foundation is mainly divided into the divisions SINTEF ICT, SINTEF Building and Infrastructure, SINTEF Materials and Chemistry and SINTEF Technology and Society. The SINTEF Group also consists of other corporations like MARINTEK, SINTEF Energy Research, SINTEF Fishery and Aquaculture, SINTEF Petroleum Research and SINTEF Holding AS (SINTEF, 2012).

4.2 Use case 1

MARINTEK is responsible for Use case 1, which looks at the scenario of transport of fish from Norway to Europe. The work on these use cases have been divided into 6 planned deliverables (FInest Project, 2012). Three of these deliverables have been made at the time of this study (FInest Project, 2012).

- D2.1 Use case specification Methodology
- D2.2 High level specification of use case scenario
- D2.3 Detailed specification of use case scenarios

In use case 1 there are three participating actors, that could be identified in the category of SMBs (Small and medium businesses). They will be further mentioned as Actor 1, Actor 2 and Actor 3. Throughout the study we'll refer to this use case, as long as nothing else has been said. The feedback from the interviews led to the discovery that the parties involved in Use case 1 have approached the project differently. This implies of how they have chosen to manage the project from within the organization. Further reading in this chapter will give a short presentation of all the actors involved, starting with MARINTEK.

4.2.1 MARINTEK

MARINTEK (the Norwegian Marine Technology Research Institute) performs research, development and research-based advisory services in the maritime sector for companies in the field of marine technology. They develop and verify technological solutions for the shipping and marine equipment industries, for offshore petroleum production and renewable energy (MARINTEK, 2012).

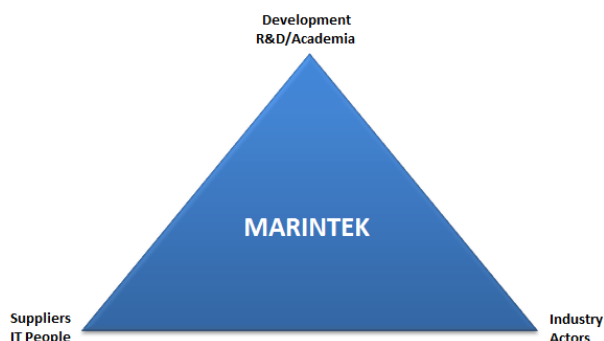


Figure 11 – MARINTEK’s role in the project, sketched out by respondent at interview

MARINTEK is, as mentioned earlier, responsible and has the project leader role for Use case 1, and overall responsible for Work Package 2 in this project. This means that they stand on the outside of the other actors in this project, because they can’t be seen in the same category as future users. In light of this, in many ways they, together with the EU, set the context and framework for this

use case. As illustrated in the figure, MARINTEK acts in many ways as a broker in this case. To come up with a future concept that the users could benefit from, the parties involved need to understand each other. This is exactly what MARINTEK's trying to do, because by having a clear understanding of e.g. the industry's needs, it's easier to communicate with the other two whether it's possible to fulfill them or not. So we can say that the context will therefore affect how well the different approaches work for each of the actors in FInest. Next follow a description of each of the actors involved.

4.2.2 Actor 1

This actor has chosen to approach the project to hire an external resource – a consultant, to handle all activities that are related to the project. Actor 1 is involved in a own project as well, called the E-business project, where they seem to create a close linkage between their business plan and technological strategy. This can according to what was described by Gottschalk (2002), be compared to as Actor 1 has a third level integration between business and IT-strategy, in terms of that they are mutual integrated. As the FInest project started, Actor 1 seem to have been able to create a linkage between their internal project and this project, both interests and using the external consultant to manage both. Actor 1 has further a history of using external consultants as they want to keep the organization small, so it won't draw too much on the wage bills.

4.2.3 Actor 2

Actor 2 dedicated the project tasks to an employee at the administrative level. This person knows the industry quite well, and has worked with MARINTEK on previous projects as well. The project activities are handled by this person, but Actor 2 has also gotten help from MARINTEK to manage this project. MARINTEK's assistance consists mainly of documentation and correspondence. Actor 2 seems further to have had a change in focus towards technology. During the recent years they appear to have pursued implementing and developing technology systems in order to improve their business. On this basis Actor 2 can be said to have a sequential integration (Gottschalk, 2002) between business and IT-strategy.

4.2.4 Actor 3

Actor 3 manages the project from top level position, at the CEO's position to be exact. This actor has very little project experience from before, and as a result MARINTEK assist this actor as well. Though this actor has also, in recent years, implemented some of the same new

systems as other actors, they don't refer to this as project experience and seem to have been little engaged in these processes. There also appear to be little overall thoughts to technology or linkage of it to their business, besides acting as tools to solve daily issues. This leaves them to be identified at level 1 of Administrative integration (Gottschalk, 2002) when it comes to integrating IT-strategy with the overall business strategy

4.2.5 Interaction

To get a better understanding of this case, it can be appropriate to give a description of the basis for this use case and the basic aspects identified regarding the daily interaction between Actor 1, 2 and 3. Today's situation between Actors 1-3, is that there seem to be many instances of interactions. There are some instances of special interaction due to co-location of two of the actors and because the last actor also as a system used for communication to one of these two. But to a large extent this interaction seems to be focused on day to day operational issues, where there are few face to face interactions. One of the actors describes the interaction situation today like this: *"There are a lot of systems and many transactions. In one day there can be up to 100 transactions..."* (Actor in use case, 2012)

There also seem to be a lot of standardized communication between these actors, in form of e-mail, documents, forms and invoices. In every shipping instance there are required a lot of mandatory documentations regarding many different things e.g. customs. So it is mostly when there are complications or special needs for coordination like booking cancellations that there can be appropriate with more synchronous communication. Today these types of incidents are often resolved by the use of telephone or similar, but these interactions seem to have been focused at an operational level and with a day to day focus. What has been revealed both through the data collection of this study and the project itself, is that it is when there occur changes to the interaction, that the need for more or a different type of coordination reveals itself. One of the major scenarios that were chosen to maintain for later phases in the project, is the booking cancellations from Use case 1. So through this, these kinds of issues seem to be representative for the industry and one of the features to be considered for a future interaction system. But what are the actual challenges in these types of situations? According to one of the actors in the use case this is related to: *"... a lot of changes in information and bookings, and also they arrive to late, which causes offsets on working procedures that piles up,..."* (Actor in use case, 2012) So there seem to be in this interaction situation an issue related to the sharing of appropriate information to the relevant parties soon enough. From an

overall view it can seem like sharing of information in this industry to some degree can be linked to flexibility. This is related to that, both actors inside this use case, but also organizations on the outside of this scope in interaction with them, can benefit from others early sharing of information e.g. through increased predictability. But they also seem to benefit from not always sharing information themselves until necessary, because this gives them the possibility for adjustments and last minute changes. Early sharing of information can be seen as a way of restricting these opportunities, given that one can be bound to number of containers, arrival time, departure time and etc. E.g. the fish exporters have not been included in this use case, but there have been stated from more than one of the involved parties in this study, that they seem to take advantage of all their given time and often make last minute changes. This will of course give them the possibility to fill as much as possible in containers or by not cancelling a shipment until the last minute they can get flexibility to handle emerging assignments. So by not sharing they achieve flexibility, while e.g. a vessel might lose the flexibility to fill up on other goods, but in theory this vessel could also obtain some flexibility from not sharing information. Through e.g. not revealing actual departure time it could create slack or by not promising delivery time it could reschedule shipments. This might not be realistic examples, but it illustrates that not sharing information can give flexibility in one way, but most probably also cause problems for others in this business chain. Given that there also seem to be interdependence between these actors, they would probably benefit the most from cooperation. Though it's important to emphasize that cooperation in this instance refers to strategic information, and not e.g. price related information, which can cause other issues. This is not the focus of this study, so it's not enough or meant to be interpreted as a actual diagnose of the situation, but it is only used to describe the current situation in the case. Though based on the discussion above it can perhaps be compared to Pepall, Richards & Norman (2008)'s description of prisoners dilemma, where some of the challenges of today's interaction is linked together by a web of prisoners dilemma's regarding sharing of information. As illustrated to the right in a simultaneous decision game like this, where two companies both will try to avoid being left vulnerable and prefer a unique advantage, they both end up in the blind. Pepall et al. (2008)

		Company A	
		Not share information	Share information
Company B	Not share information	A: In the blind / B: In the Blind	A: Vulnerable / B: Unique advantage
	Share information	A: Unique advantage / B: Vulnerable	A: Competitive advantage / B: Competitive advantage

Figure 12 – Illustration of interaction in case from a prisoner's dilemma perspective

claims one way to resolve prisoners dilemmas like illustrated here, is to change the game. This FInest project can be claimed to be a way of changing the game.

When asked if identified and experienced issues in today's interaction had been tried resolved earlier, there seemed to have been no serious attempt to resolve this on a strategic level. MARINTEK when describing the situation also believes that "... *they have not had any strategy meetings where Actor 1 looks at how they can get better services from Actor 2 for example.*" (Respondent MARINTEK, 2012). According to one of the actors it can be said to have been tried solved previously in different ways, but this has been dominated by each actor focusing on the issue from their own perspective and problems. "*Perhaps we now to a greater extent are looking at this together.*" (Actor in Use case 1, 2012)

From one perspective it can thereby be argued that many of the challenges could perhaps have been tried solved through other procedures, rather than designing and putting the trust in a future information system. Of course, looking at this use case in a vacuum might have been true, but these actors are in no way bound to only interact with each other, and there can be said to be several competitors inside each segment. So even if it might have given a better basis for the development of information system to have proved a workable solution through other procedures, it would probably not be enough in broader setting. In this project they try to define a concept for an Internet enabled system that perhaps can handle these issues in a more overall perspective. Maybe this is the way to go, because as one involved actor puts it:

"There exists many exchanges of information in a proper and orderly manner today, but they occur one on one, rather than being available for everyone involved in the process." (Actor in use case, 2012)

It seems this project addresses important issues regarding the interaction which one has not been able to solve through prior attempts. There seem to might have been some type of lock in effect in old procedures of interaction, and perhaps this new angle to the situation may resolve them. This project can therefore also be said to have had a greater influence than just developing a concept, it seem also to have become an important arena were the actors could share experience. Although, since each actor has chosen a different approach, it will be interesting to see if this has caused a difference in influence on the process in this project.

5. Analysis

5.1 Introduction

As mentioned in the method chapter there were constructed some indicators to first of all help scope the data collection but can also to be used as a basis for this analysis. These indicators will be further processed into what can be described as factors of this study. The research question for this study can be defined as open. These chosen factors are concerned with areas that seem consistently in the available material, and therefore chosen as a method for organizing the data to better answer this research question. In this part of the analysis chapter there will be given a presentation and explanation of these factors which will be the basis of the rest of the analysis process.

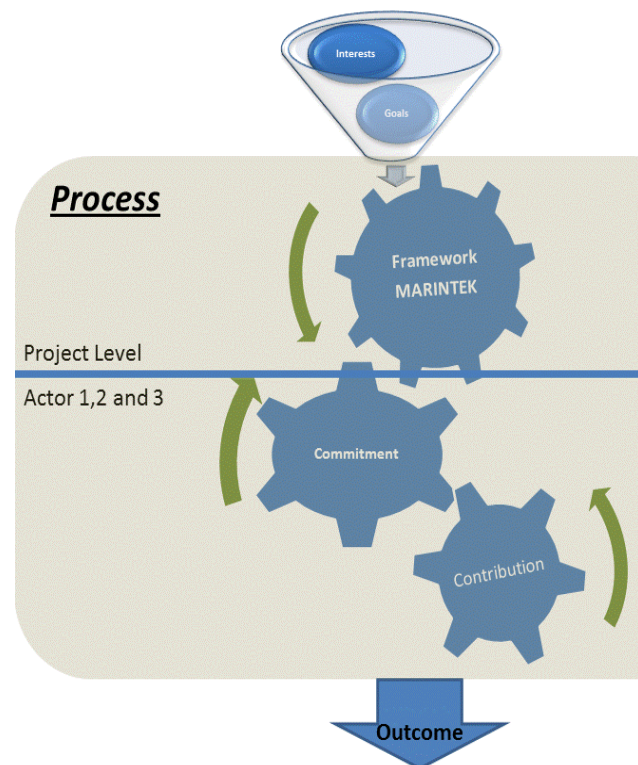


Figure 13 - Factors that can influence the process in the project

There is a common expression regarding not to take information out of its context. In this study the context can be argued to be one of the influencing approaches. This can be argued through the role MARINTEK has of being responsible for this use case. Their chosen approach to this project can thereby be said to have had an impact through conducted actions and facilitations made in this project. Of course their approach and the choices made during the process have also been influenced by guidelines from the rest of the project, but this can in the end be viewed as manifested through their execution of this project. The actors also have an important influence on this project process, and their impact can be viewed through their commitment to the project and their contribution. Therefore it will be focused on the factors, Framework, Commitment and Contribution.

5.1.1 Framework as a factor

As mentioned MARINTEK's role can be believed to have been strongly influenced by other players and common agreements on which this project was based. From the interviews it was also explained how most of the involved actors in Use case 1, saw the overall project leader as an important figure in this project. *"...at the same time there is also a project manager who holds the reins very well, and manages the project..."* (Actor in use case, 2012) This can be viewed as interesting in two manners. First of all it can seem that this project is run by an authoritative leader as this person seems to have made a clear impact all the way to the outlying of Use case 1. Secondly, but most importantly, it illustrates how important it is to keep in mind that though the scope of this study is mainly on the use case, the scope of the actual actors probably is much more related to the project. This means that some subjects discussed later can be argued to have been influenced or viewed by involved actors from a more overall project context, than might be emphasized in following discussion. Anyway MARINTEK's role as use case leader can be seen as important for defining the framework for the execution of this project from the perspective of this study.

To first get a better understanding on how the role of the project and MARINTEK has influenced the process in this scenario, there will be focused on the factor framework. This factor can be said to be based on how the indicator "project process" and other activities like "workshops" have influenced this project through setting some ground rules and facilitating with arenas for interaction. To better describe influence from project and MARINTEK, the factor framework will first try to identify what can be seen as special by this approach. Then it will be seen how certain activities or aspects of the founding and development during the process of this project might have influenced the project.

5.1.2 Commitment as a factor

When there have been made some facilitation from the project's side, the outcome or effect from this is much dependent of how it is welcomed by the other actors. From one side a project that mainly focus on short term effects with a more or less pragmatic view might only see contribution from the participating actors as important, but even this will be bound to something else. The participation actors will be able to influence both the process and indirectly also the outcome long before they even make actual contribution of documents or knowledge into the project. This can among others be related to how the assignments related to this project is prioritized in the organization. To better evaluate how the presence of the

actors in projects like this might have an effect it is appropriate to discuss aspects regarding their *commitment*. In this factor the actors have, based on framework provided by the project, decided to participate, but the effect from how they choose to organize themselves and facilitate for this is interesting. Hennestad et.al (2006) states that in change processes there is a close linkage between commitment and vision, since there is no vision before it is understood and agreed upon in the organization. According to Cummings & Worley (2009, p.164) “*The vision provides a purpose and reason for change and describes the future state.*”, and therefore the actors’ expectations and aspects of chosen approach can be some of the important indicators in this factor. Through the factor commitment there will therefore be seen how and if different approaches can have an effect in form of commitment, and thereby have an influence on the process of the project.

5.1.3 Contribution as a factor

As mentioned, the overall importance from a project's perspective might be related to the knowledge they can obtain from the participating actors. Knowledge sharing might be seen as one of the main fundamental activities in an early stage development project like this one, but this is also a very broad and complex subject that easily can become comprehensive. The focus for this study is to examine the direct influences on the process from the participating actors, and therefore the view is limited to a project based perspective where the different participators are effectors. In this setting what influences the process in terms of knowledge sharing can be related to the transferring of knowledge into the project and thereby covered by contribution from the actors.

According to the illustration by Karlsen & Gottschalk (2008) in figure 1 one can see that it is in an early stage of development projects it can be appropriate to focus on users contribution in the project, since there is high influence and low cost at this phase. The process of the project can be affected through e.g. differences in contribution, and aspects regarding transferring of knowledge to the project. These challenges can be related to Carlile’s (2004) knowledge boundaries or problems of making what Nonaka & Takeuchi (2001) as tacit knowledge into explicit. To find if there are challenges and the impact they imply, it can be appropriate to focus on indicators as project experience, time and also other aspects the situation of today's interaction. By focusing on the factor *contribution* there will be researched if there are differences in how a chosen approach can influence the process of a project through different aspects of contribution.

5.2 Factor - Framework

5.2.1 Findings

From a general perspective can EU-projects often appear to be overwhelming, as it involves many actors. In this project there are 11 participating actors, but according to MARINTEK: *“EU-projects of this size is normally 25 + participants.”* (Respondent MARINTEK, 2012). So the given number of participants in this project can have given better conditions for this project compared to other similar EU-projects, and that is also one of the assumed strengths of this project according to MARINTEK. Because it seem to have been well functioning project, as one of the respondents from MARINTEK describes: *“This is actually one of the best-functioning EU-project I have been involved in”* (Respondent MARINTEK, 2012). What supposedly have made this project stand out, in a positive way, are among others the dialog, commitment, patience and determination by the involved participants. This indicates that the aspects of the involved actors are important for the process also in EU-projects, but among some of the actors there is also an impression that features of the project itself can work as a safety net for small businesses. According to one of the involved actors, there is an impression that the EU has added premises that secure small businesses participation and involvement in the project. A big company cannot simply enforce their opinion on to the project, according to this actor (Actor in the use case, 2012). Apart from this what seem to stand out is the extensive workload that a project like this inflict on the participating actors, and this could according to some of the actors be important for how one should approach these kinds of projects.

As one actor puts it: *“In order to participate in such a large EU-project you need a certain size and expertise if you are to succeed.”* (Actor in use case, 2012). There can of course be different opinions of this, but there seem to be a shared meaning between Actor 1, 2 and 3 that one in a project like this would benefit from prior knowledge and experience to similar processes. At the same time it is important to emphasize the perceived importance of similar processes here, because even if there is a difference between Actor 2 and 3 when it comes to project experience, they both seem to have had some problems with the understanding of scope and purpose in the beginning. This is based on that both explain how this phase of the project was incomprehensible, and that they struggled to comprehend to which extent the initial formalities would influence the project. Actor 1 sees this as one of the advantages by their approach with the external consultant, that they in the beginning were able to understand the process. Furthermore, some aspects of the beginning in these kinds of projects seem to be

very important for the rest of the project. Something that is highlighted is the importance of the initial contract or project description which is made in the beginning of a new project. This first process of defining the project leads to a delivery called Description Of Work (DOW).

“The project description is so important, especially for EU-projects. And what is something called the Description of work, is like the Bible.” (Respondent MARINTEK, 2012).

One important factor that is specified through the DOW is the amount of time each participant will use. There further seem to be a clear linkage between these planned number of hours, received funding and thereby also some of the scope the project has for each participant. As one involved respondent in this study puts it, that when it comes to EU-projects in general, *“...the only measurement is unfortunately the delivered timesheets. It is absurd, because there are many that do nothing, and just write hours.”* (Respondent in study, 2012). The aspects of contribution will be focused on in a factor later in this analysis, but there seem to have been issues related to the indicator *time*. Because many of the actors have emphasized that this project has been hectic, and both Actor 2 and 3 seemed to have struggled finding the time to handle the project assignments. MARINTEK has stated that this project only has a two year horizon compared to four year period as is normal for these kind of project, and that this has had an influence on them. There however also appears to be other reasons why this might have become an issue, as most probably can be related to MARINTEK’s approach given that: *“MARINTEK was responsible for the work package, and therefore it is also MARINTEK which has provided the user guide, suggestions for work, deadlines, how to work and why.”* (Respondent MARINTEK, 2012)

5.2.1.1 MARINTEK’S Approach

First of all MARINTEK claims to have brought some of their methodology and guidelines into the FInest project, *“...based on other previous projects where we have what we call frameworks, that we have used a lot. So we have really had a lot in our backpack that we have brought with us to this, and tried to sell in as a method in the finest project.”* (Respondent MARINTEK, 2012).

This could have been an advantage for Actor 2 in particular, which had participated in a previous project driven by MARINTEK. Still, though this actor seems to have had some advantages from project experience, which will be covered more later on, the methodology

used in those projects does not seem transferable to this project. For instance they (Actor 2) did not seem to understand the purpose of defining an as-is situation.

According to MARINTEK, their approach “...started from the as-is situation, we started from the main challenges, and based on these, scenarios were drawn. That is, we describe how things work today in the business and based on this, we describe why we have these challenges” (Respondent MARINTEK, 2012).

But Actor 2 is not alone in having opinions about the first phase, both Actor 1 and 3 also felt that thing could have been clearer and more structured when it comes to methodology, especially in the beginning. There appear to have been an understanding of this also from MARINTEK’s perspective, but it seems more to have been evaluated as a naturally maturing process.

“I think it actually since the beginning has been an effort to spread information and knowledge so that it would be understandable for the industrial partners. It has been challenging, because one have not understood where this was going. It has been dependent on a maturing process, but if one had been even more conscious of maybe having a type of education in the beginning, this could certainly have been positive.” (Respondent MARINTEK, 2012).

The latter suggestion in this quotation is also supported by the other actors. One of the actors in the use case says that they from the beginning:

“... should perhaps have gotten a better review with MARINTEK of what this project more concretely demanded from us, and what we could expect to end up with. So one could perhaps have used more time in the beginning... and explained better what it really meant to be a part of this project.” (Actor in use case, 2012)

And this leads us to what was mentioned above about the project description and the indicator *sell in*, which has focused on how the project presented and made the other actors join the project.

5.2.1.2 SELL IN

The similarity between Actor 1, 2 and 3 is that they seem to have been picked out randomly for the project. At least this is the overall idea, but it’s not completely random. It seem based

on prior knowledge to the ones who recruited them. *“So there was a network that we had, we took with us, and built a use case around.”* (Respondent MARINTEK, 2012) Actor 2 and MARINTEK had prior knowledge to each other through different projects, and the one who recruited Actor 1 seemed to have a business relationship to them, through being mentioned as a client. Actor 3 appear to have been somewhat as a natural addition to these, having previous linkage to several of the other participants, and also fitting in the chosen business chain with the two others in this use case.

But there are differences in the episodes regarding how Actor 1, 2 and 3 joined this project. Actor 1 was convinced by another major participant in this project, which operate more in the role as the overall coordinator of this project. It further appears as Actor 1, based on the amount of funding and resources available in this project got a clear indication of the perceived workload to participate. From their point of view it also seemed to have been clear assumptions of what would be expected from them in this project and what were the ambitions of the project, from the project manager’s side. There still appear to have been a bit back and forth before they finally decided to participate, and as a crucial decision point for this, it was stated that they saw both in the long term and short term benefits for themselves by doing so.

Actor 1 and 2 was recruited by MARINTEK and both of them mentioned to have been persuaded in some way to participate. MARINTEK also confirms this in some way, even though there seem to be two different cases, one is more related to bureaucracy than the other. There further appears to have been more focus on the future and opportunities than direct implications for each actor, workload and end state of this project in this initial contact. When it comes to workload there seem to have been an understatement of the perceived extent, but this is something MARINTEK was aware of too as they said that some of it could be explained by last minute changes in the project: *“It was a bit of a surprise to us too, because it was a budget that was adjusted at the last minute. Both we and they were revised up. For our part, it was a good thing, but for the others, we see that there were greater challenges, but we try to support with what we can.”* (Respondent MARINTEK, 2012)

However, they also seem to be aware that this could become an extensive task for these actors already when they tried to persuade them into joining. This led to that both actors were promised assistance from MARINTEK from an early stage and as one of the actors puts it, MARINTEK made it from the beginning seem like *“... that they would help us a lot. Actually,*

it was not revealed until later that we were going to work a reasonable amount in this project.” (Actor in use case, 2012). Both of the actors acknowledge and appreciate the help they have gotten from MARINTEK in this project. Still it also seems clear that this have not been sufficient to give them an early understanding. It seems they did not have a wide understanding to what they were entering into and the consequences this would mean for them. This can be related to the fact that it seems like MARINTEK has done a lot of the preliminary formalities for them, like their enrollment in the DOW and so on. As one of these actors put it: *“We actually gave authority to MARINTEK, that they assured our agreement, if they approved theirs, they would make sure we got what was necessary.”* (Actor in use case, 2012)

From one view, one of the respondents at MARINTEK says that they could have been better to adjust the work tasks which is given to small actors in projects like this, so that they actually have a chance to take part. On the other hand another respondent from MARINTEK explains how this is something they’ve tried this time, and would not do again.

“In the beginning, the aim was to filter some work for the other actors, so that they only could contribute with data. The problem was that this was too big of a job for us. So next time we will plan this differently... We have used too many resources on the coordination work for this use case.” (Respondent MARINTEK, 2012)

So it seems it has been a good intention in MARINTEK’s approach, but given some unforeseen incidents and other aspects, it have led to a non-preferable solution for all of them.

When asked if MARINTEK set any clear demands or similar for participation, both Actor 2 and 3 means that there were not. As one of them answers this question: *“No, not really. I felt that they were looking for a suitable partner...”* (Actor in use case, 2012). Moreover, there appears to have been made no firm demands the other way either, besides the mentioned support that was promised. However, when asked if little demands were necessary for their acceptance to participate, both Actors 2 and 3 thought they would have made the same decision to join if knowing the real expectations to their involvement, but they also both state that they then would have made some changes for how they would approach this project. As one of the actors answer if they had been given the chance to make the choice about participation again, given their knowledge today: *“Yes, then we had come to make the same decision about participating, but perhaps with the knowledge I have now, I would’ve*

organized myself and this work in a slightly different way.” (Actor in use case, 2012) This was also some of what triggered the scope of this study, as both Actor 2 and 3 seemed to wish they had chosen a different approach more like Actor 1’s approach.

5.2.1.3 The Process

MARINTEK and the project have also chosen an approach in terms of how the process after the sell in part had been conducted. In an overall setting, this project has consisted of many different companies from different countries. This can make face to face meetings problematic, and also in this use case the geographical distances have been large. This has led to a lot of other meeting forms, e.g. like many telephone meetings. Like one of the respondents at MARINTEK (2012) states: “...*Conference calls, yes. I have never been involved in a project where it has been so much widespread use of it.*”

In the beginning it was according to MARINTEK an overweight of data collection through interviews to create a situational understanding. Even if MARINTEK through long experience and many projects in this industry, felt they had a good prior understanding of this domain. After a while they also started with some workshops, in the use case and the overall project, where they could get together and work on issues. The reasons for having these workshops, was according to one respondent from MARINTEK; “... *to help us understand the big picture, and then to get them to explain to each other how their process works...*” (Respondent MARINTEK, 2012). So it seems the intention was to make it easier to create a mutual understanding between the involved actors and this can be important, because MARINTEK describes their own role as a kind of translator between people from the industry and IT people.

From the first initial interviews with MARINTEK, these workshops appeared to have been very useful, and worked as a great eye opener for the involved actors, but it soon became clear that all these workshops were not synonymous with unconditional success. From the actors’ point of view, it seemed to have been more effect from the later workshops, than the first ones. It also appeared to have been some difficulties with how these different workshops were conducted. Actor 1 seems to feel that some of the workshops could have had a clearer focus, and that though the last workshops of course have been better, they feel the earlier ones could have been improved as well. It is mentioned that it has been a lack of structure in some of them, and that it seems that the ones where the focus has been more tangible have facilitated

for everybody to contribute, and thereby made the workshops more productive. One of the other actors in this use case also felt that the firsts workshops were on a level which made it hard to get to know the others, but it eventually got better: “*When we came to Amsterdam for two or three months ago, everyone held a presentation, and in a way one began to work towards these demonstrators and stuff, so then it became very productive.*” (Actor in use case, 2012).

In the discussion part it will be seen how MARINTEK through their approach have facilitated for good information sharing and interaction within the triangle as referred to earlier, and how it thereby might have influenced the process.

5.2.2 Discussion

5.2.2.1 The overall context

“*...they will try to develop a FInest or whatever it will be...*” (Actor in use case, 2012).

Let's first start to define what this project actually is and what it is meant to do. From most of the actors in the use case there seem to be an impression that this will in the future develop a type of information sharing system. Where those of the actors which seem to have been most prepared for participating in some way have been able to relate this to own practice and thereby reap extra benefits already. An overall view to this project is more in the direction of developing a common concept for information sharing inside transport services, through exploiting new technological possibilities, and thereby streamline the industry. MARINTEK on the other hand, of course seem to share some of this view, but they also seem to have an underlying agenda of their own of improving their position of the marine freight business in the overall transport industry. “*...thus, our, perhaps not so hidden agenda, it's also there, with trying to make maritime transport so attractive that it moves the market from road to sea*”(Respondent MARINTEK, 2012). All of these perspectives can be said to be right and partials of what actually seems to be in progress, because this project can be viewed as a part of a major emerging change process in this industry. There is an intention to see if one can exploit the Internet to improve information sharing through technology, but a futuristic “*...FInest or whatever it will be..*”, will probably have little to none value if only a few companies wants to share information. So there can encounter a need for creating a future willingness to share information and change today's practice regarding this. Compared to Lewin's change model (Cummings & Worley, 2009), this project can be viewed as a way of conducting the unfreezing step in this change process. This is related to the role of this project

as identifying common challenges throughout the industry, and thereby showing that there are benefits from cooperating. So it can be seen as a technology driven project, since possibilities made available from technology is an important reason for triggering this project. Although, if the main intention was to develop an information system to replace more manual procedures today, then why choose to focus on challenges instead of something in line with the Positive model as Cummings & Worley (2009) describes? A basis like this would imply that it could be better to focus on what actually worked today and try to automate these processes. This can be viewed as an indication that the aim for this project is to do more than just incremental improvements on today's situation, it's meant to create a change. Though there are many reasons as mentioned in the theory chapter to focus on people rather than technology in organizational change, this can be a way of viewing existing procedures in a new perspective. In a way it can be compared to giving an actual reason for opening the black box which Hafnor (2004) describes, where it over the years seems to have been stored a number of procedures and best practices that could benefit from being reevaluated. Though this is not the main focus of this study, it should be emphasized that there probably are more dominant underlying reasons to why the EU have set aside funds for this project than only technological opportunities. This reason can be related to cost efficiency, environmental benefits or aspects regarding the competitive situation, but in the end it seems like one tries to make the industry more transparent.

According to Gustafsson (2007), there also lies indications of a change in mindset regarding information sharing in the transport industry, but the main obstacles on the way to transparency is still related to trust between the actors and recognition of mutual benefits. One issue of making the industry transparent is related to the fact that, *"To some players the lack of information is even the business idea and the very basis of their existence."* (Gustafsson, 2007, p.12). Some of these players are transport agents, which make their living from coordinating transport assignments between segments in the business chains. So for these and many other companies in this industry a future system probably will lead to a need for organizational change as well. E.g. the online booking functionality introduced by airline services, can be said to have been a technical innovation which made some information more accessible for regular users. It can also be said to have changed this industry, and especially implied a need for change to the many booking agencies, which gradually lost their old basis of existence.

So the overall context given by the scope of this project is that the chosen technical focus might be said to be a way to conquer one of the main obstacles Gustafsson (2007) talks about, namely discovering mutual benefits. By focusing on possibilities that lies in the technology, one might have succeeded in creating a neutral ground for addressing challenges like booking cancellations and existing procedures. By doing so it can be said that one have avoided facing some of the anti-programs like Latour (1991) mention related to these issues, and thereby gotten a faster accept for the intended program and statement. This is due to not addressing the problems from a perspective where one seek to see if any of the participants should change their practice, but to rather change the situation by introducing loads through new technology to improve the interaction. Of course it can be argued that these anti-programs like trust issues and so on must be faced sooner or later anyway, but at least this is a way to open the black box and realize that there are mutual issues.

If trust issues are not in focus to be solved, they may still be an important influencer that describes this situation. First this being an EU-project was stated by one of the involved actors to act as a safety net. This can of course be ascribed to the formalities and procedures which can make the process seem objective and predictable. It can however also be described by the understanding that these are only some of many aspects which make participating actors perceive this to have some form of seriousness to it, they have predisposed trust to the process. This being a project could be explained through what Meyerson et al. (1996) term as swift trust, but it seem more appropriate described through what the EU represent. It appears to have given a great level of what Rousseau et al. (1998) describes as institutional trust to this project. What was argued above was that this might not have been enough to encounter the assumed anti programs which could arise. Technology in this setting is what can be seen as bridging together these different groups into recognizing mutual benefits. If addressed with knowledge theory one would be able to describe technology in this setting in the role of boundary objects (Wenger, 1998). However, there does not exist any known linkage to trust theories that fit. Julsrud & Bakke (2007) defines trust brokers as important, but similar to Wenger's (1998) term brokers they emphasize this as being an active role, not to be covered by artifacts. The role that technology serve in this setting as argued in previous section seem much similar to the role of a trust broker which is: "*... a role in a network that is directed towards develop stronger relations between distant units, and develop more cohesive structures within the group.*" (Julsrud & Bakke, 2007, p.161). In a way it can be argued that the technological focus in this setting has created openness towards sharing of information

and linking the actors closer together through focusing on mutual benefits from resolving common discovered challenges. It is therefore argued that technology in this setting has facilitated for trust sharing among different groups by enabling openness and creating a neutral basis for cooperating. By paraphrasing a combination of the known expressions by Wenger (1998) and Julsrud & Bakke (2007), technology can be said to have operated as a form of *trust object*. This focus may have increased the possibility for trust, but it may also have created a difference in understanding, given that technology could be seen as both a tool, arena and outcome. As seen there were differences and ambiguities related to initial understanding among the actors. It will therefore further be discussed if these ambiguities could have been prevented through a different approach from this project.

5.2.2.2 The forming of the network

According to Engwall (2003) there is often a struggle over resources for projects, and “...it is often during the pre-project phase, the most important political basis for project success is settled” (Engwall, 2003, p.804). To get a better understanding on how this phase can influence the project, it can be interesting to examine the indicators regarding sell in and how the participants were chosen. In one way one could use Wenger (1998) COP theory as a fundament to analyze this. This is related to that it seem to fulfill the basic aspects of a COP being that it is a shared domain of interests which these participants seek to elaborate about through activities and practice (Wenger, 2006). Another and perhaps better way of doing this can be to view upon this use case as an actor-network theory, and further examine how the translation process was conducted, meaning how this actor-network was established. This method have been used and recommended by others, given that it covers both the social and technological dimension, and also according to Andrade & Urquhart (2010, p.352) “*ANT analytic dimensions of convergence and devices afford a great deal of insight into the underlying anatomy of the project and its assumptions.*”

5.2.2.3 Step one Problematisation, a present but not finalized OPP

The process is, as explained in the theory chapter consistent of three phases. In one way one could argue that MARINTEK could be viewed as an intermediary in this process and project, given that it according to Hafnor (2004) is through this role that the actors communicate. On the other hand doesn't the intermediary have to be an active participant like Wenger's (1998) term of brokers, and since the scope of this study is mainly focused on the use case it would be more reasonable to define MARINTEK as the focal actor. This is related to the fact that in

this use case, they are the ones representing the project's interest, though influenced from the project management of course, they are responsible for this use case. With this given, and the use case as a focus, the appropriate intermediary should then be represented through the different use case specification documents in this project, D2.1, D2.2 and D2.3. This is because it is through these documents that the actants communicate, and it is surrounding these documents that the interaction is focused. Another vital term in these processes is the OPP or the Obligatory Passage Point, which according to Hafnor (2004) is a position that defines reality. The reality in this project and the keeper of true knowledge must be what one of the respondents referred to as the bible, namely the DOW. This seem to especially important in an EU-project, where the DOW which is settled upon in the beginning, seem to set fundamental guidelines for this project. The DOW can be said to describe “...*exactly what you shall deliver and nothing else...*” (Respondent MARINTEK, 2012). It however does not fit perfectly, since it seems the DOW was not actually decided upon in the first step of problematisation. This is related to that the final modification on this document is dated to 2011-04-08, which is after e.g. when Actor 1 stated that they joined this project and only three days before the first kickoff meeting of this project. So even that it's likely to believe that much was decided upon in the DOW in this first phase, the finalization of this document was not done until after the participants had actually agreed to join the actor-network. However, the goals and intentions of this project are believed to have been decided prior to the finalization of the DOW, e.g. through the project application and so on. Thus, the OPP held some value already in terms of giving direction and goals for this project, but how one should accomplish this was still yet to be decided in the OPP and DOW, through deciding how and what each participant would contribute with. When it comes to the participants though, there are reasons to believe that what had been described in the EU application for this project has had an influence for which participants to choose. As one of the respondents from MARINTEK explains, this use case was actually the “...*first example we used that was actually included in the application*” (Respondent MARINTEK, 2012).

5.2.2.4 Sampling, an opening for informality

Given that this use case was chosen in an early phase, it was also mentioned that the possible actors were naturally given. From one perspective this might seem like the case, but one might also compare it to what in the methodology literature is referred to as convenience sampling (Johannessen, et.al, 2010). This however would mean looking at it in general terms, because all the actors seem to have been elected based on prior knowledge to each other.

Among each other the actors seem to have cooperated for many years, and also made adaptations to ease this cooperation. This is by many described as one of the fundamental aspects of a business relationship, and is by Håkansson & Snehota (1995) described as one of the processes in these relations. Examples of these kinds of adaptations are how Actor 1 and 3 today uses information systems to communicate business related information for coordination. Actor 2 and 3 have integrated a common security system and some of the information from Actor 1 is automatically transferred to Actor 2. Even though they seem to not have been selected to join this project by the same actor, there were as mentioned relations that linked them to these actors. E.g. Actor 2 had participated in previous projects with MARINTEK, so the substance of this relationship can in one way be ascribed mainly to what Håkansson & Snehota (1995) terms as activity links. Whereas Actor 1 on one hand being more connected to their recruiter in a more business transactional way might have had a longer and stronger relationship, which in addition consisted of what Håkansson & Snehota (1995) describes as resource ties and actor bonds. Because according to business relationship theories, the more you invest in a relation, the stronger the relations becomes. This means that Actor 1's relationship might have been characterized by several transactions with their recruiter. Thereby the understanding between those two actors might have increased through a gradual institutionalization as a result of a process in relations called *Routinization* (Håkansson & Snehota (1995)). This is important, because another structural aspect of relations is according to Håkansson & Snehota (1995) *informality*. This gives that a business relation is often characterized by informal understanding and agreement, rather than written contracts. So the sampling may have caused the prior relations to influence how the project was presented for each actor in an unintentional way.

It is not only the understanding which may have been influenced by prior relations as also the trust between the actors may have been affected. It might have evolved a traditional relational based trust between Actor 1 and their recruiter as Rousseau et al. (1998) describe, due to their repeated transactions. There can however also be argued to have been a large amount of trust between the other actors. Although, there initially does not seem to have been enough interactions between them to have created any strong relational trust. This trust might however have been influenced by the fact that there firstly seem to have existed an institutional trust from this being an EU-project, "*If there are pre-existing trusting relations spanning across the distant groups, this may kick-start the development of trust within the group.*" (Julsrud & Bakke, 2007, p.176). Secondly the focus might have opened for what

Meyerson et al. (1996) defines as swift trust, since both actors entered this project demanding and expecting that MARINTEK would help them. Actor 3 may due to swift trust related issues, have had a large institutional trust towards that this being an EU-project and MARINTEK being experienced that they felt little risk. Actor 2 on the other hand, seems to have had almost a relational based trust towards MARINTEK based on success from earlier projects. This relational trust does not seem similar to the trust Actor 1 had, because this seems to have been developed over few interactions and appeared strongly. Based on the context of projects, a kind of relational trust is based on repeated swift trust encounters.

5.2.2.5 Step two Interessement, a need for disclosing consequences

Moving on to the second step, the Interessement step is according to Hafnor (2004) where the focal actor convinces the others to accept its interests. First it can be argued that even if the focal actor is not the same for these three actants in this step, this should have little impact. This is related to that both the actors involved with the sell in actually represented the same OPP, and therefore should represent the same values. Secondly the fact is that the OPP seems to not have been firmly defined yet at this step, may have caused differences in this convincing step anyway. Actor 1 has emphasized that it was made clear from the beginning that this was an extensive project to join. So even though we have not been able to confirm this, it can seem like this was a focus when they were recruited. Actor 2 and 3 have both mentioned that they struggled to understand the purpose of this project in the beginning. This can be an indication that the interests from the focal actor and the OPP were not communicated well enough from their recruiter. Based on this, how come they then both chose to participate, and why did both mention that they first viewed upon the future developing of possibilities for information accessibility as important factor for their participation? Since this can be said to have been perhaps the main stated interest of this project, there are two other reasons why issues may have arisen in this step.

First it can be related to the fact that what seems to have been the basis of these issues may not have originated from misunderstanding of interests. This is based on that their issues from this phase of the project are more related to time, extensiveness of tasks and so on. The issues related to the understanding of purpose, intention and so on, appears to have occurred as more prominent when they actually started working together. So while this step, according to Hafnor (2004) is concerned with convincing the other actors to accept the focal actor interests, what seems to actually would be more productive in the context of development projects is

to convince the actors accept the consequences of the focal actors interests. Consequences are here meant as the implications it would impose for the actors to accept the interest of the focal actor and joining the actor network. So it seems it's not enough to just explain the interest of what one want to achieve, but there should also be a focus on splitting these interests into actual implications for recruited actors.

Secondly the fact the OPP was not firmly decided upon may have caused the previous relationship between the actors to become important. One reason for this can be ascribed to the relations they had with their recruiter. As mentioned above as a result of the routinization of their relation over several transactions, there might have been easier for Actor 1 and their recruiter to understand each other. If they didn't have what Carlile (2004) describes as a knowledge boundary at a semantic level, it would have led them to have the same understanding of what was said. Thereby based on what was explained to Actor 1, they may have been able to deduce the consequences this would mean for them. It might also have been easier for Actor 1's recruiter to share the consequences to them and for Actor 1 to believe them based on the assumed strong existing trust. As argued above there was believed to be a weaker business relation between MARINTEK and Actor 2 or 3. This could mean that they had a knowledge boundary at either a semantic or syntactic level. This would have led them to not be able to comprehend the information that was transmitted, or given a semantic boundary led them to have a different understanding of what was said. Given the previous transactions and assumed relation between MARINTEK and Actor 2, this would have opened for a more informal approach based on this being a structural aspect of these kinds of relationships. This is also supported by statements from Actor 2, where they claim that even though they were unsure, they felt some safety given that MARINTEK knew them through earlier cooperation and therefore had good knowledge about them. This is also a sign on how the perceived trust between them has been important, and appears to have been of some form of relational character. This can be said given that it's not calculative or based on information given, and it's not based solely on the role that MARINTEK plays, it seems mostly based on their prior interactions. It also seem that this was important in Actor 2's decision to participate, and they further stated that they got the understanding from MARINTEK that this project would be similar to the earlier conducted projects. Regarding trust issues, this show how their trust though being perceived relational and strong, is assumed to have been developed rapidly like swift trust in different projects, and therefore based on this context. MARINTEK also states that they used their network to recruit participants, and though there was a need for some

persuasion, it seems much was resolved through what they term as “*Gentlemen's agreements...*” (Respondent MARINTEK, 2012). This is normal in business relationships, and can be compared to how Narayandes & Rangan (2004) describes buyer-seller relationships in mature industrial markets where;

“... the more powerful party will prefer an informal agreement...the weaker party (which has the power neither to structure a formal agreement nor to set up formal safeguards to protect its investments) will initially attempt to construct a psychological agreement that paves the way for subsequent formalization.” (Narayandes & Rangan, 2004, p.68)

From Actor 3's perspective they probably felt little to no possibility to structure any formal constraints to their participation. Thereby their demand for support from MARINTEK can be viewed as a way of constructing some form of psychological agreement to protect themselves. This also shows how the trust between these two can be said to have been little weaker and much more role based. This way of appealing to a psychological agreement can be seen as one way of requesting more trust. It's almost like was seen important in situated trust (Panteli & Duncan, 2004), but through not being signed by either party, it seems to only rely on institutional trust to the EU and that MARINTEK through their role will follow this agreement. It is though interesting to see that this psychological agreement actually appears to have had a great impact, and MARINTEK stated that they would not do the same again because it made their job as a coordinator too extensive.

So in a situation where the focal actor approaches former acquaintances to participate without a firmly predefined OPP or DOW, aspects of their previous relation becomes a powerful source of influence. This is related to that if there does not exist a DOW, which can show the participants exactly what to expect, the interpretation of what this mean will be more or less established based on their relation. Further, the possible differences in how this is perceived which seems to might have been the issue in this use case, is influenced by the knowledge boundaries between the focal actor and the participants. The focal actor must be aware of these boundaries, and how they should approach them, in order to succeed in communicating the consequences of their interests. MARINTEK has in this scenario, probably based on their previous experience with EU-projects, explained what to them seemed as appropriate. However, Actor 2 which have no earlier experience with EU-projects, seem to have based their understanding towards earlier cooperation with MARINTEK. This can indicate that there might have been a semantic knowledge boundary (Carlile, 2004), given that they might

have thought they perceived things similar, but may have had a different understanding of what the interest of the focal actor would imply. So therefore to prevent this, the focal actor could try to deduce what consequences their interests would imply for possible participants and communicate these as well. The reason for why there is a perceived need to actively focus on consequences is because they can cause misunderstandings, and interest on the other hand will occur as a natural focus in persuasion process.

5.2.2.6 Step three Enrollment and perhaps a need for the fourth step

Latour (1991) has a focus on actor network to be something where it seems like the focal actor possesses significant power. There is an opening for negotiation of interests in this view, but all in all the idea seem to be to accept the interests of the focal actor. Like in Latour's (1991) hotel director example, the idea is that the others should follow his interests. It's little or no opening related to why the customers don't want to leave their key or if they could work towards finding a mutual best way solution where the actual problem of the disappearing keys was discussed. So there are a lot of power related to the focal actor and his interests, but the focal actor's position is secured through being manifested in the OPP, which holds a position of power through being the manager of true knowledge (Hafnor 2004). So if the Enrollment step seems quite simple, being that it basically just implies the participants' acceptance, it also may have had a major influence. This is based on that it appears from this step to have been a decided approach from the participants. So there probably are more related to this step as well, but it has to do more with aspects of the other users, of how they have organized themselves and so on. This will be discussed beneath in the factor commitment, but further it seems as the premises for the network could be constructed, and this have influenced the next important step. This is because there appears to have been an additional step to this translation process, where it has been decided how to cooperate in the network through the OPP. This study is not the first to seek for an additional step in the translation process, also Andrade & Urquhart (2010) uses a fourth step in their study called *Mobilisation*. This is according to Andrade & Urquhart (2010) the step where the actants start to represent the interests of the focal actor and network, and become a spokesperson for them. This involves the, "*use of a set of methods to ensure that allied spokespersons act according to the agreement and do not betray the initiators' interests*" (Mähring et al., 2004, p. 214; Used by; Andrade & Urquhart, 2010, p.363). This seem to be very transferable to our situation, where it up to now only have been focused on making the actor accept to participate, but there still is a need to secure this in form of guidelines. These guidelines can then be compared to the finalization of the OPP or

the DOW, where each participant is bound to the network in form of a defined scope for their contribution.

5.2.2.7 Step four, Mobilisation, agreeing upon the OPP

By not settling the OPP in advance, it can seem as an attempt to achieve what Orlikowski (1992) describes as an open approach and preventing the distinction in time and space between the developers and users. So if the OPP was not decided upon until now, and this is an important power position, then this should have been positive for user involvement. Still, like described in the findings part, what was negotiated in step two, Actor 2 and 3 let MARINTEK conduct this last phase on their behalf. Of course it can be argued how much influence these actors would have been able to make in this process, but none the less, they at least gave up their possibility to influence this. Given the issues in step 2, there neither seems to have been a shared understanding for what would have been their interests in this process, and thereby could have been maintained by MARINTEK. This means that much of this can be ascribed back to misunderstanding in step 2, but then also explained by trust related issue. Because both of them trusted MARINTEK to conduct this process on their behalf, and they both trusted MARINTEK to know their interests. What happened then was the trust broken or is it more correct to describe this as an instance of some kind of misplaced use of trust? The latter one is the most likely explanation, because no one seems to have caused this on purpose. It appears that Actor 2 perceived that their relational trust was right, but failed to understand that this trust had been developed in special circumstances, and therefore appear not directly transferable to this context. It seem it would have been more preferable with a more calculative approach, where given information in this specific situation had been used to assess the situation. The same can be said about Actor 3, who on their side somehow may have based their decisions on institutional trust rather than calculative trust or the context specific information presented to them. There was of course this issue with the stated late changes in budget, but it is in no way a reason for these issues, but rather a result or consequence of an unfortunate process. MARINTEK may have done what they did with a good intention, but in the end they ended up helping Actor 2 and 3 to miss the probably most important phase of this actor network creation.

5.2.2.8 Summing up network creation

One fundamental word from this part of the discussion is consequences. By sampling the participants the way they did, MARINTEK exploited their earlier networks, but were unaware

or did not pay enough attention to consequences this might imply. They had of course no problem convincing Actor 2 to accept their interests, given the previous trust between them, but should perhaps have chosen a less positivistic approach. By this it is meant that they should have made more demands early, to ensure that the consequences of joining this network became clear. Both Actor 2 and 3 have responded that they would have joined this project even if there were made more demands, but it would have led them to change their approach. In a way, though being different in many aspects of this study and the study of Andrade & Urquhart (2010) have disclosed many of the same issues. In their case the OPP was tried defined from the beginning, but it failed and step 2 led to that not all participants understood the interests or intentions. In their case (Andrade & Urquhart, 2010), it led to a difference in commitment from the actants, which will be examined later, but also in the end to the network failing.

In our case, it has been shown that if the focal actor in projects focuses on selling its interests, this can lead to misunderstanding of which consequences this can cause to a participant. The risk of this is larger if these two have a prior relation. The why, as in why the focal actor in a project does this, can perhaps be ascribed to a strong wish to secure the joining of the participants he or she has already decided to be worth sharing their interests with. As seen in this case, they still however would have joined if the demands were higher, but what would be preferred by having a participant which can't deliver what you want or not having this participant at all? It can be compared to the figure shown earlier by Karlsen & Gottschalk (2008), it is in the beginning of projects the costs are low and the possibilities to influence are large. Anyway there has been shown that it could be beneficial to focus more on consequences of interests than just the actual interests. Cadle & Yeates (2008) says that when working with consultants in IT development settings it's important for the customers to understand the limitations of what can be achieved. From this study's perspective it's in some way very much alike, as it is about describing the honest version of the scope and limitations of the project. This thereby means showing the term, "*What's in it for me?*" to the possible participants from two sides, both gains and sacrifices. In this study the network didn't or hasn't yet been anywhere near failing, and one of the reasons for this can be related to that the participants had a chance to contribute into the OPP and DOW. Actor 2 and 3 did not take this chance probably a lot related to issues of the existing trust towards this project, and seem to have struggled as a result of this, but this will be discussed in more detail in the next factors. Still, not settling this in advance it still might cause a bigger mutual ownership feeling from

the actors towards the OPP, it at least can be said that all the actors in their own ways had acknowledged and agreed upon the OPP. For project management level this is a way of releasing control, since they're the focal actor, but it has been shown to be positive. It might just be what fundamentally separated this process from the one in Andrade & Urquhart (2010) case, which failed. So not defining a firm OPP on beforehand, can be an important way for the management level to create flexibility. Said in other words, be firm from the beginning on the *what* in OPP, and explain consequences of this, but also do like in this case and keep an opening for negotiation about the *how* in the OPP. Then it's also important that the management level embraces the fact that the OPP holds this kind of a power. MARINTEK knew its importance from earlier participation in EU-projects, but clearly wasn't conscious to it when they "helped" Actor 2 and 3 to miss out on this part. Perhaps MARINTEK got too focused on their own agenda, the budgets were at least set intentionally high to show relevance, because if not "...then the EU would say that they have so little participation, that why on earth are those involved" (Respondent MARINTEK, 2012). So, maybe as shown what one actor stated in the findings, you need a certain size to participate in EU-projects, or perhaps one just need a certain degree of involvement, but nevertheless one should be able to control this. By not forcing all the actors to get involved in settling the OPP, they removed their chance to control their own basis of existence in the network, which can be linked to many of the initial problems. So to sum up, even if there have been displayed many differences between the ANT translation process and what has happened here, an illustration to how the project was started based on the translation process in ANT is shown beneath.

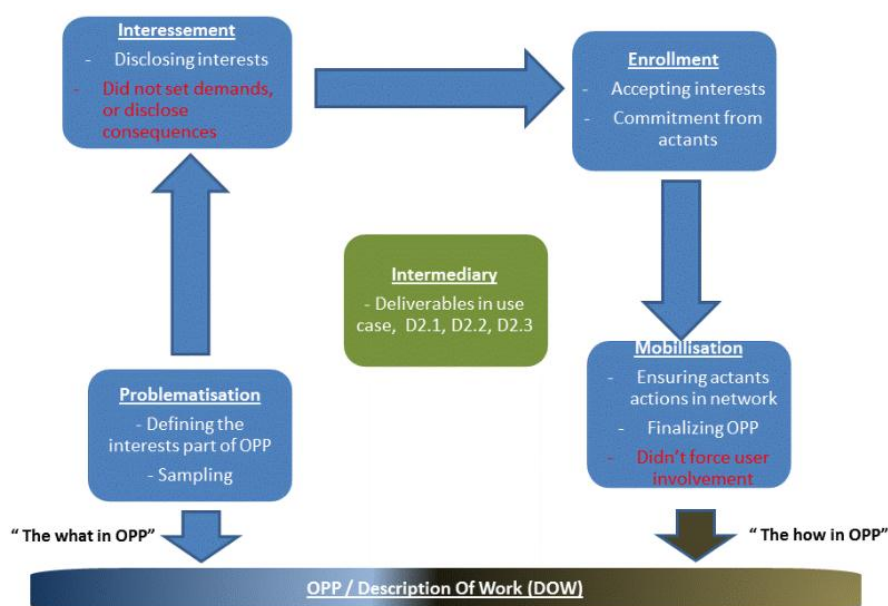


Figure 14 - Translation process revised

5.2.2.9 Managing the process

“... it is surprising how many details are still unresolved when the actual project starts, and it is up to the project manager to wrestle these to the ground during start-up.” (Cadle & Yeates, 2008, p.95-96)

According to Turner & Müller (2003) a project's objectives need to be SMART, Specific, Measurable, Achievable, Realistic and Timelined. These objectives in projects are shared by many theories and according to Cadle & Yeates (2008) in order to achieve this the project manager must among others communicate a clear vision and negotiate the objectives with subordinates. This process can be said to have been tried accomplished through the pre- phase explained above. The last point they highlight is that *“You must be prepared to reconsider the way you planned to go about things”* (Cadle & Yeates, 2008, p. 368). From the empirical data it becomes clear that all the actors in the use case thought things could have been handled differently in the beginning. Even MARINTEK stated that they saw this problem, but feel it was and needed to be, resolved by a maturing process. They also stated that a better education in the beginning might had improved the situation. So perhaps it is that easy, the confusion Actor 2 and 3 experienced in the beginning, where they didn't understand the purpose and meaning of defining the as is situation and so on, could have been resolved by early education? It would probably not have exacerbated the situation, but it's not enough to conclude upon either.

MARINTEK has already stated that they feel they have taken on too much work for the participating actors in this use case already, and would probably have had difficulties educating them as well. This start up difficulties could however perhaps also be ascribed to the point Cadle & Yeates (2008) highlighted, namely be prepared to reconsider planned approach. In the interviews in this study some of the respondents were asked surrounding requirements to the participants and if it should be necessary for them to understand the EU and the project management level way of communicating. Because it seems like this project has been approached with a pre-planned way of conducting the process. Even if Actor 1 seem to feel that it has been some differences and not always a coordinated methodology used by MARINTEK and others at their level in the project. Nevertheless, there are no doubt that the method and language in it was not adjusted to fit the participators, though it appears more adapted to fit the project task and the coordinating level. In a way it seems like one is trying to say to the involved actors; *“Tell us what you know, but do in the way we want and in our*

words.” Should it be obligatory for a participating actor to communicate to the project by adapting to their terms and language, or should the project try to find some middle way? Of course in one way it can be said to have been what MARINTEK tried to do, by filtering the work or in a way trying to translate information between the project and the participating actors. This can be compared to as in one way taking on the role as a broker between several COP’s, and it is understandable that MARINTEK concluded this to be too extensive. Also in a complex project like this it should seem necessary to have some form of common structure to the information, e.g. regarding how, when and where it is to be shared. Therefore it might seem more appropriate for the actors to translate their own knowledge into the project, by using their chosen common way of doing so. If not, the job of coordinators in projects like this with many participants would become undesirable, having to understand and operate several way of communicating. However choosing a method only a few understands can be just as ineffective and the challenge is perhaps in finding a suited common form for communicating. Again, if the initial form fails one should perhaps reconsider planned approach.

This might be claimed to have happened in this setting, given that the understanding during the process seem to have increased. As MARINTEK stated the understanding matured, but this thus not seems to be an adequate explanation. Up to now, it has perhaps been a focus on what MARINTEK could have done better, which there are as shown some issues of, despite the well-functioning project. Furthermore, one should also embrace the fact that they have done a lot right in this project, and one of these things might have led to development of understanding. As Wenger (1998, s 112), states “*One way to enrich the boundary encounter is to visit a practice.*”, and this is perhaps exactly what was done by the workshops. This gave the actors in the use cases, and IT people an opportunity to meet. In other words it created an arena for the involved parties as shown in figure 11. The positive effects of bringing people together can also be compared to what Kraut et al. (2002) explains about the effect of proximity as shown in figure 5. On the other hand has not all of the workshops was regarded as positive, Actor 1 basically seem to feel somewhat annoyed over the first ones, perhaps because not everybody made a big contribution in their eyes. Furthermore, it’s possible that not everybody was able to make good contribution in the early ones, given that it seemed to have been a lack of firm intention with them. This will be discussed more in detail on the factor contribution later on, but one actor stated that they have got a lot out of the workshops,

but mostly that the one in Amsterdam was a turning point to the better. What happened in Amsterdam?

From the meeting log we got from MARINTEK, it at least seemed like all the actors in this use case had a get together and prepared, but the empirical data also shows that this was when they started focusing on more concrete issues, and got introduced to the demonstrators. This will be more thoroughly discussed in later factors, but it seems this may have helped breaking things into more understandable blocks for all the actors. This can have made it easier for them to participate by having a common understand way of communicating, and thereby increased the outcome of the workshop. There seem to have been an overweight of a more or less vague overall focus up to now, with a long time horizon. By turning the focus over to creating these demonstrators it seems the situation have become more concrete for all the involved parties. Moreover, by communicating that it might be only some or a few of the demonstrators that would be brought on to the next phase in the project, it might have created a motivational effect. Perhaps it can be compared to Kotter's (1996) focus on creating quick wins, but it at least gave a more concrete time horizon and workable scope for the participants.

As seen it is important to find a common way of communicating, or at least be prepared to make adjustments if one hasn't succeeded from the beginning. It then might be fruitful to gather the involved parties in an face to face workshop, but this in itself does not appear to be sufficient. If the approach up to this point hasn't worked, than transferring the same scope, language and so on into a new setting of workshops may not help. It does not seem to have solved the issues in this case at least, and Cadle & Yeates (2008) advice to be prepared to reconsider your planned approach implies more than just changing the settings in this scenario. In this case there were knowledge boundaries that Carlile (2004) explains which needed to be addressed. They were perhaps solved by the shift in focus to more concrete business related issues, and not so much by addressing the actual knowledge boundary. By this it is meant that the reason for this improvement seem to be more influenced by the change of subject to an area where the actors were more similar regarding semantics and syntax. If the focus should switch back to a more concept related focus again, these knowledge boundaries might arise yet again. So again, by not using enough time and not addressing the pre phase of the project involving the creation of the network appropriate, one might overlook knowledge boundaries which can be hard to resolve consciously in later phases where the

focus has shifted to production and contribution. To get a better understanding of this, it will now be focused on how this has affected the approach from the different participants which again may have influenced this project.

5.3 Factor - Commitment

5.3.1 Findings

As mentioned in the case study description, the actors manage this project in different ways. The way they have approached the project seems to have had an impact on their commitment in FInest. Based on the data collected every actor appears to feel that the use of an external consultant has been a clever approach. “... *a resource like this (external consultant), could spend more time with the project tasks, done things more thoroughly and maybe done a better job.*” (Actor in use case, 2012). What’s interesting in this matter is therefore to look at if there really is a correlation between the result of chosen approach and degree of commitment.

5.3.1.1 Choice of approach

At the beginning of the project, everyone involved signed a contract stating their commitment. This agreement set some demands towards the actors that they are required to follow. As this show the actors’ commitment, it’s interesting that one of the actors, as stated earlier in this study, said the following: “*We actually gave authority to MARINTEK, that they assured our agreement...*” (Actor in use case, 2012). One way to look at this is that they are committed to the project through the contract, but to not participate in the contract agreement could be a sign of less commitment. It’s possible that this has something to do with why the actors chose the approach that they did. It seems that Actor 2’s intention at first was to engage the top management and another leader as well, but they didn’t have time to participate. As mentioned earlier, this actor ended up participating with an employee from the administration to manage the project. MARINTEK has good knowledge about Actor 2 based on earlier projects done together, and thereby they offered to assist them in the project. Actor 1 had a different view on their choice of approach, as they already had experience with use of consultants before. It further seems as the actor had thought of the amount of resources and attention this project would demand, and saw it therefore necessary to bring someone in on the project as they did not have capacity to do it in-house. At the same time this actor also had another project going, an E-business project, which the consultant already was a part of. Based on data gathered it seems as this actor took the FInest project seriously as they’ve integrated this project in other strategic work they’re running. When Actor 3 was asked why

their approach was chosen the answer was that it seemed like the natural thing to do base on that he was best suited of the ones that worked there. In addition they also said that the operational level had already too much to do, so the choice had to end up at the CEO. Like Actor 2, Actor 3 has also gotten support from MARINTEK in this project.

5.3.1.2 Expectations

All the actors seem to have had some kind understanding of what this first phase of the project is going to end up with. They all expect to contribute data that can generate to a functional system prototype concept. It's not for later phases that actual development and testing of a physical system will happen. Though they presumably got the same expectations towards the project now, there seem to have been differences regarding this up to now and they also seem to have different expectations for themselves. Actor 2 expected to find possible solutions that could have positive effects on their business, and further they saw an opportunity to use what they've experienced from earlier projects in relation to this project. Innovation seems to be quite important to Actor 2. Actor 1 sees it pretty much the same way that they expected to illuminate operational challenges that they have. They hope to get a discussion, some innovation processes, and to look upon possible alternative solutions to these challenges. In addition and perhaps most interesting is that they believe that this future system could change the whole maritime industry. Even further, this actor also sees this as an opportunity to get free publicity because of the project's scope. Actor 3 does also seem to have big curiosity to this project, and are motivated by the perceived creative and effective solutions, but at the same time they did not appear to exactly know what to expect in the beginning. From the interviews it seems that they in the beginning were unsure of what could be gained from participation and just went along without knowing. This can be related as mentioned in the previous factor to much confusion in the startup of this project. As shown the actors have had different expectations to what they could gain from the project, which further could have influenced the motivation towards the project.

Many of the actors found it tough to understand everything about the project at first. The project has run for approximately one year at this stage of the project, and it was thereby interesting to ask the actors whether their expectations had changed since the beginning. As already mentioned Actor 3 did not really have any expectations before they joined the project. On the basis of this, their expectations seem to have changed in a way that the concept has become clearer to them during the project. Actor 1 on the other hand, doesn't seem to have

changed their main expectations towards the project. The response from Actor 1 regarding this question was that they seem to be satisfied with the project development, which could imply that the project has met their expectations. Actor 2 seems to have had a small epiphany, from only expecting technical innovation to get a broader view of the industry in light of the other international partners. As a result of positive feedback of one project delivery, the faith in this project appears to have grown for this actor.

5.3.1.3 Would they have changed approach?

Actor 2 and 3 were asked if they would have chosen a different approach, if they knew then what they know now. The response to this question was that they would have chosen an approach similar to Actor 1's, based on that a resource like this could have done a more thorough job. Still, when asked whether they would change approach for the next phase of the project, the response differ from the previous. One of these actors responded: *"We would participate in the next phase as well, but then we will request a smaller part in this... It has to be more adapted to our possibilities to participate."* (Actor in use case, 2012). Further this actor means that more funds from the EU could have made it easier to hire a consultant, but still an action like that would most likely have meant an investment from them as well, perhaps a good one. The other actor had the following response: *"If the project gets more demanding, we'll maybe need to cooperate with the other actor and engage an external resource to manage the project for us."* (Actor in use case, 2012). It seems as this actor will only change approach if the project gets more intensive, and even if it does, it appears as this actor doesn't think of their own gains, but takes action based on what the other actor do. This shows how both Actor 2 and 3 have thought that they should have considered a consultant, and this seem to be linked to wanting the same flexibility Actor 1 has had up to now. None of them has seriously considered changing their approach during this first phase, and both seem to have a disposition towards first wanting to try out their old approach in the event of them participating in the next phase. Actor 1 that uses an external resource appears to be quite satisfied with their approach, and they further thinks that it would be necessary to continue the same way to keep track with the project. When MARINTEK were asked if they thought the approach chosen by Actor 1 would have worked for Actor 2 and 3, they answered *no*, and further that *"...you could have had someone who could relieve them, but not in the same way..."* (Respondent MARINTEK, 2012). The reason for this is stated to be that these are a bit different businesses than Actor 1, and also what the project need is this business experienced knowledge, which consultants most likely does not possess. They also think that

an internal resource would be better prepared to understand and see opportunities for this project in the context of parent organization. Actor 1 thinks their approach would have worked for the others as well, but also emphasizes the importance of seeing the project in context of the organization, and that this is important if they should bring in external resources. One respondent further thinks that this is why Actor 1 have succeeded in their approach, apart from having a consultant with prior knowledge to them, namely because they had a clear understanding of what they wanted when joining this project and brought in a consultant.

5.3.1.4 Financial support

The project description (DOW) has also shown indications on degree of commitment, and especially when it comes to financial support. Actor 1 has applied for themselves, but it appears that MARINTEK has applied on behalf of the other two. It would not be appropriate to illustrate this by using the given table with exact amounts from the document. Instead it will be presented as “who got most” in this study.

Information from the project description shows that MARINTEK requested the same amount of funding for both Actor 2 and 3, while Actor 1 requested for less than these two. According to one representative from MARINTEK: *“It was set aside big amounts of resources to every participant in the application. It was almost budgeted that one would have its own position in this (project).”* (Respondent MARINTEK, 2012).

5.3.1.5 Involvement

Another sign of commitment could be the way the actors engages the rest of the organization in the project. By involving the organization one could get feedback and new ideas for the organization’s contribution into the project. As already mentioned does Actor 1 have a strategy of their own with the E-business project, where they try to see this project up against FInest. The response from this actor regarding involvement of the organization, make it seem that the consultant manages to involve the organization in some ways. The CEO get reports about any news from the consultant, and they meet regularly. The rest of the organization gets the reports through e-mail that they can read for themselves. To some degree this could be viewed as a good step towards involvement, but it doesn’t appear as the organization have good routines on knowledge development as the employees are not required to read them. Based on these findings, there are believed to be mainly the consultant and the CEO that truly

knows about the intention of the project. At Actor 3 there's only the CEO involved, and according to themselves isn't there anyone else that know much about the project. Ever since the beginning of the project, the representative from Actor 2 has managed the project alone. This person seems to have informed others at the operational level about the project, but they have not participated that much. MARINTEK has however interviewed these employees, but they have not been involved since. According to the actor itself, the plan for further participation in the project is to engage another person which is more connected to the operational level.

In the following discussion, the findings will be further explained to discover whether the different choice of approach is related to difference in commitment.

5.3.2 Discussion

As mentioned in the previous factor, the FInest project can be seen as a change effort of the whole industry, which implies that this will affect the organizations involved. Earlier it has been discussed how MARINTEK has approached this project. Now it will be discussed the approach of the actors as a sign of commitment.

5.3.2.1 Managing the project externally vs. internally

On the basis of the previous factor discussed, it's obvious that the framework around the project has given the actors some indication of how they should approach the project. According to Scott & Hascall (2003), it is a difference in when an organization should be using external vs. internal consultants. As Table 1 shows, it depends on aspects of the organization and project which is recommended. In one way it could be advised manage this project with help from an external consultant partly to match the expectations from the project in accordance with time. Viewed against the bulletins made by Scott & Hascall (2003) of when it is advised to use external consultants, lack of time is not one of them. So why did Actor 1 chose to hire a consultant? As mentioned in the discussion of the factor framework, it appears as Actor 1's recruiter could have had some influence on Actor 1's commitment. The recruiter seem to have succeeded in communicating real aspects of the project to Actor 1 and thereby managed to give them high expectations towards the EU-project and what they could gain from it as well. As Actor 1 seems to have been convinced by the consequences of the project, they needed to manage the project somehow, and the choice fell on an external consultant. This could thereby be viewed as a sign of big commitment, because this shows

that they wanted to be a part of this project, but is it really a big sign of commitment in their case?

On one hand it could be easy to draw that conclusion that it is a big sign of commitment, hence they after all have invested in a consultant from their own pocket, though with some help from the EU. As mentioned however, has Actor 1 a history of hiring consultants as a part of their strategy, given that they don't want a big organization. On the basis of this discovery, one could thereby say that they would have chosen to hire a consultant anyway regardless of the aspects of this project, and therefore the effort of hiring a consultant doesn't appear to be a large sign of commitment after all in their case. Also though it can be argued that this nevertheless is showing commitment through creating slack or dedicating resources, this is not solely the case in this scenario. The consultant in this case was not dedicated to this project, and can therefore in various ways not be seen as a commitment effort from an overall point of view. Still, in some way Actor 1 has done something right with their approach, as the other actors has stated that they would've hired an external consultant if they could do it all over again, but would a similar approach work for them? Respondents from MARINTEK seems to be divided about this question, some feeling it would help others thinking that it's not a good idea. It further appears to be a fear question since Actor 1's approach doesn't seem to have directly caused an increased commitment. Then would have this type of approach changed the other actors' commitment? Maybe the potential difference in commitment regarding this has more to do with how one exploit a consultant. This will be discussed further later in this chapter.

What's common for Actor 2 and 3 is that they've used an internal resource, one from top management level and the other from administration. According to Scott & Hascall (2003), it's wise to use an internal consultant in situations where knowledge and cost are important factors based on the fact that: "... *external change agents lack an understanding of the company's history, operating procedures, and personnel.*" (Lunenburg, 2010, p.1) As already mentioned in the framework chapter, the actors are originally supposed to participate with knowledge to enlighten the challenges the industry experience. So in relation to Scott & Hascall's (2003) statement it has not been a bad choice to approach the project by managing the project internally, given that an internal consultant knows the business better than any external resource. These two actors could thereby be said to have committed to the project in the right way.

As mentioned, Actor 2 has deliberately chosen an employee to manage the project. A very resourceful employee in this context and their scale given that this person seems to have been strongly involved in the company's earlier projects. This could indicate a strong commitment from Actor 2, but given that it is just delegated down in the hierarchy could also show lack of management involvement. From this perspective Actor 3 can appear to have a strong commitment, based on that they had top level management strongly involved in the project, but on the other side chose the CEO at Actor 3 to manage the project himself, as it seems more because this was the most natural thing to do. On the basis of this, one could argue that Actor 2 has shown a bigger sign of commitment than Actor 3 as Actor 2 has delegated the project responsibility to a suitable and administrative level and thereby dedicated resources to the project. This way of dedicating resources could actually indicate the same amount of commitment as Actor 1's hiring of a consultant. Since both have set aside resources, but in their different ways based on organizational aspects which can be linked to Scott & Hascall (2003), but like Actor 1, Actor 2's resource was not dedicated solely to this project. In fact this person seemed to have many other different roles perhaps based on being a resourceful person. However, it is not possible to say if this is one or the other in terms a sign of commitment.

More interesting is that both Actor 2 and 3 has, in terms of money, actually gotten a great deal in the DOW, even if they didn't make their own demands. Since there should be a close linkage between work time and money in projects like this, it could imply more commitment from these actors than Actor 1 who applied for less. There is however clear indications that these numbers are not transferable to commitment and one of the actors have stated that they wished they could have given some of their funding to MARINTEK. That Actor 1 applied for less, and still hired a consultant could thereby show more commitment than Actor 2 and 3, but if the other actors hired a consultant, would that imply that they showed more commitment? Some respondents at MARINTEK meant as shown in the findings that an external resource was not preferable for these two actors, but both these arguments have failed. First both MARINTEK and these two actors have expressed that they might have needed some more guidance to this process. According to Scott & Hascall (2003) this is one of the reasons for choosing an external consultant. So these two actors wouldn't just blindly transfer their knowledge into the project, and in a way this should not either be their sole reason for participating. Secondly it seems that especially Actor 3 were not able to see this project in their own context in the beginning, because they didn't understand the scope and purpose of

the project. What MARINTEK has tried to do is in some ways to act as an external consultant for Actor 2 and 3 in this project.

So basically all the actors chose to seek for help in managing their participation in this project. That MARINTEK due to a heavy workload was not able to help Actor 2 and 3 as much as needed, have created a difference in this support. If Actor 2 and 3 should've hired a consultant, it still seems as they wouldn't have a good basis, based on what Actor 1 described as important in terms of setting some own goals. Moreover, one of the other two actors also sees this as a potential risk by choosing an external consultant: *"It would've been easier to just lean on the consultant and to not have to think much by ourselves. One would've had inputs, but the consultant would've come up with the solutions. But as it is now, we need to come up with the solutions ourselves."* (Actor in use case, 2012). This shows that just hiring a consultant might have actually decreased commitment, if it not done based on the right intentions and appropriate basis. Actor 2 might have had some intention and plan with this project, but perhaps not enough in the beginning. Furthermore, Actor 3 did not seem to have the appropriate level of understanding to hire a consultant to secure their needs in this project.

Based on the discussion so far it seems as commitment does not mainly come by whether one chooses to manage the project externally or internally. It has more to do with what one does with the chosen approach. In this case all the participants' choices could have indicated high level of commitment, as the reasons for their choices and how they conducted their approach seems to be important. From this perspective it also shows that the approach of Actor 1 could most probably have worked for Actor 2 and 3 as well, but it would not automatically have given the same result.

5.3.2.2 Relation between involvement of the whole organization and time capacity

In change management theory it is important to emphasize the involvement of the organization. As this project could be looked upon as a change effort, it's according to Cummings & Worley (2009), necessary for organizations to involve employees in the change process if they want the project to be successful. The findings show that Actor 1 tries to involve the organization by distributing project reports via e-mail, but at the same time it's not required for the staff to read it. Actor 2 and 3 are pretty much stuck all alone with the project and has not involved the rest of the organization. Cummings & Worley (2009) says the following about involvement: *"Involvement in planning the changes increases the likelihood*

that members' interests and needs will be accounted for during the intervention. Consequently, participants will be committed to implementing the changes because doing so will suit their interests and meet their needs." (Cummings & Worley, 2009, p.167). This statement clearly shows that involvement is important, but in change management theory this is very much related to an organizational focus. This study has a project focus and therefore the influence is related to the approach towards the project - not the organization. Stating this, one can argue that involvement of the rest of the organization will not directly affect the commitment to the process in this setting. Still it might have an influence on other aspects, and be a sign in terms of contribution which is discussed in the next factor.

The actors in this study have showed different degree of involvement. Actor 1 runs the project externally and the other two has gotten help from MARINTEK to handle some of the tasks in the project. This indicates that *time capacity* could be a resource issue as all of them don't have the capacity to do it in-house. According to Tidd and Bessant (2009), routines are important to manage innovation processes, as routines makes it easier to manage resources, for both how to coordinate and distribute them. "*Success in innovation appears to depend upon two key ingredients: technical resources (people, equipment, knowledge, money, etc.) and the capabilities in the organization to manage them.*" (Tidd and Bessant, 2009, p.70). As the actors has little time to spare, it could then have something to do with that it's difficult for SMBs to manage projects of this size? According to both Actor 2 and 3, they feel that they should've hired an external consultant, because they've had so much else to do. Lunenburg's (2010) characteristic of energy could reflect this situation, as these two actors don't have much time to participate. So based on Tidd and Bessant's (2009) statements it seems as that the actors being SMBs, without either an IT- or project unit, they haven't found the time to be as much involved as they have wanted to be. By acknowledging this fact, one could argue that the actors got external help as they needed slack to cope with other tasks internally. Actor 2 tried to dedicate a resource to this project from administrative level, but it also seems as the other actors as well struggle with the fact that they are small organizations due to that they don't have dedicated personnel to handle project matters. The dedicated person at Actor 2 is therefore not released from his primary duties to handle the project. On the basis of this it appears as managing projects externally or internally could both have positive and negative aspects by it, but an external approach could be a way of getting slack to be able to manage projects. The term creating slack then be described according to Lunenburg's (2010) characteristics as releasing energy in an organization through appropriate structuring.

Next it will be discussed whether the actors' approach have shown different degree of commitment by the way it's been exploited.

5.3.2.3 Passive or active - the role of own interests

One aspect that differ the two actors from Actor 1 when it comes to commitment, is on the basis of the discovery that Actor 2 and 3 gave MARINTEK the responsibility in securing their contract at the start of the project. One could argue that by not participating in the contract agreements, that one either doesn't care much or that they perhaps have trust towards MARINTEK to ensure that their needs are met. MARINTEK could be further seen as an agent for them in this situation. According to Thompson (2012) there are some disadvantages with using agents to handle negotiations. The most problematic aspect with agents is that: "*... the agent's interests may be at odds with those of the principals (in this case, the actors).*" (Thompson, 2012, p.252). In this case it however seems that Actor 2 has an advantage compared to Actor 3, as MARINTEK has worked with Actor 2 before. The reason why this can be an advantage is because when MARINTEK negotiates on behalf of Actor 2, they will then possibly have a better understanding of their business and needs to make a better deal for them. Actor 3 has not worked with MARINTEK before, so to let someone that one has never even worked with to negotiate a deal, could be, as Thompson (2012) puts it, risky as their interests might not match. That both of the actors, especially Actor 3, do not seem to be worried about this issue could be a sign of lack of commitment and interest. As explained in the framework factor, both of them seemed to have struggled because of this contract issue. That being said as a possible sign of lack of commitment, it can also be a sign mostly of great trust to MARINTEK and little knowledge about this kind of paperwork. This trust to MARINTEK however as explained in previous factor was at least for Actor 2's part somewhat bound to a different context, and this is much of what these trust issues that have been mentioned could have arisen from. This is a project and authors like Meyerson et al. (1996) and Panteli & Duncan (2004) have tried to emphasize that there is some form of uniqueness in these kinds of situations when it comes to trust. In this case not participating in the contract signing part may not be proven to have been a low sign of commitment, but it seems to at least have shaped the following interaction. If compared to the study by Panteli & Duncan (2004) and situated trust, this can actually be seen as abstaining from the most important activity influencing trust in projects, namely the contract signing. It seems almost ironic that perceived trust might have actually prevented appropriate participation in the most important trust related activity. Because it appears that even though trust is assumed

beneficial in projects, one should not forget the strong context related aspects of a project. Therefore it seems preferable to keep an calculative approach to projects startups, or to take into account the time and context specific issues it would be more appropriate with a situated trust based approach, which could secure a better basis for the project. All in all, by not securing their own demands into the project, it seemed to have been a somewhat low initial commitment from these two actors. At least it has influenced their commitment and approach later on.

“It’s important that everyone has a clear goal for why they participate, that one just doesn’t act passively by only transferring knowledge into the project.” (Respondent in study, 2012). This statement clearly shows that the respondent thinks it’s important to play an active role in projects if one wishes to expect anything in return. Cummings & Worley (2009) states that organizations have various expectations about the result of a change effort, but they further also say that these expectations can play an important role in generating motivation for change. As the findings shows there are big differences in expectations among the actors, when e.g. Actor 3 didn’t know what to expect in the beginning, which can be related to not setting own demands into the project. Could it as well have something to do with that they weren’t perhaps motivated enough?

Cummings & Worley states the following: *“When members expect success, they are likely to develop a greater commitment to the change process and to direct more energy into the constructive behaviors needed to implement it.”* (Cummings & Worley, 2009, p.166). This can also be seen in relation to Kotter’s (1996) first step in his eight stage model towards successful change. The first step undertakes the importance to establish a sense of urgency to change. With this Kotter (1996) means that in order to make change, it’s needed to get the people that will be affected by the change in on it as well. As this could be seen up against the previous statement, that if one manages to get people in on the change, they’ll be automatically more committed to the change effort (Kotter, 1996). As it appears as Actor 3 didn’t have any expectations, neither success nor failure, it could seem as this have affected Actor 3’s degree of commitment. Moreover, as the respondent stated earlier, Actor 3 could then be identified as having a passive role that only transfer knowledge into the project, and doesn’t see gains for themselves from participating. This passive role can then be another way of saying that Actor 3 haven’t been committed to the change, given that they haven’t created

an urgency to change through identifying own goals in this process. So it seems having own interests in a project like this is a crucial way for creating an active and committed approach.

5.3.2.4 Linking interests and creating motivation

Looking towards the use case, it seems to be a big contrast between the actors in this study, especially between Actor 1 and Actor 3. As Actor 1 has a clear motivation for participating in FInest, through their E-business strategy, and Actor 3 didn't really seem to know what to expect the first months. This could be seen in relation to Gottschalk's (2002) theory on the degree of integration between IT-strategy and business strategy as it could then be related to the degree of commitment as well. MARINTEK also seem to have an understanding to this: *"One have to think of the gains as well, and to see the opportunities for themselves (the actors). Thus what this project could help them with that they could relate to their own business plan and practice further."* (Respondent MARINTEK, 2012). Since Actor 1 has acted this way, one could imagine that by having an IT-strategy integrated with the business strategy that they also have a vision that matches the project's vision. Cummings & Worley (2009) speaks of visions as something that creates a set of expectations towards the future, and based on Actor 1's participation in the project, it's obvious that they've had a matching vision that has made it easier for them than the others in the beginning. If the other two actors didn't have the same linkage between IT- and business strategy, did they see any particular reason at all for participating?

That's a fair question as also Packendorff (1995) points out in his research where he finds many organizations to not really know why they initiate projects, and says further: *"... expectations concerning the nature of the project are formed among the project team members, based on their previous assignments of a similar kind or on the rhetorics (including plans and budgets) of the project to come."* (Packendorff, 1995, p.329). As mentioned has MARINTEK and Actor 2 worked together before and MARINTEK told them that the FInest project was going to be similar as the previous one. Based on the quotation above and MARINTEK's promise to Actor 2, one could thereby state that Actor 2 have gotten expectations towards this project based on earlier projects they've been a part of, and further based these expectations to this project as well. Experience from other projects can be useful, but Engwall (2003) points out that "No project is an island", as all projects are affected by their own context. Since a project is not something isolated, a perceived assumption made by Actor 2 that this project would be similar to prior projects failed. Actor 2 on one hand is very

interested in technology aspects, and on the basis of that Actor 2 had participated in earlier projects, they probably approached this as a more regular technology development project. So they seem to have had a linkage between their technology plan and this project, but perhaps not any linkage to the overall business plan. This created a mismatch and they didn't know what was going on in the beginning, which could be ascribed to the reasons that when they entered the project, their expectations were not met at all.

Another possible angle towards this can be that especially Actor 3 sees the FInest project more as a tool and not as a temporary organization (Packendorff, 1995). Actor 2 has on the other hand managed the project more as a temporary organization, as they've tried to relate solutions from other projects they've been a part of, up against this project as well. In Actor 3's case, if they've seen the project more as a temporary organization they could have felt more commitment towards it, as the temporary organization gives more responsibility and flexibility to manage unforeseen matters (Packendorff, 1995). Kotter (1996) also relates the term responsibility to commitment. So as Actor 3 seem to have managed the project more as an island (Engwall, 2003), they might not have the same commitment towards the project as the other two. Hennestad (2006) states that when managing change, one have to know how one's going to get there. Without knowing: "... *it's more difficult to know what to do.*" (Hennestad et al., 2006, p.143). This could be related to what Actor 2 and 3 has been feeling during this project as they have not understood what exactly was going on. It's thereby understandable that it's difficult to commit to something that one doesn't understand. The degree of commitment could therefore be related to the degree of understanding as well. Then maybe these actors should have understood the project better to be able to show more commitment?

This can further be related to Cadle & Yeates' (2008) start-up phase of projects, which explains that this is the phase of the project where the users have most impact by expressing their needs. If one isn't committed at this stage, it will be even more difficult to shape the final product later on. This could be seen against the latest delivery in the FInest project, where it's been sealed out which challenges among the actors that's been chosen for further exploration in the project.

To-be Scenario	Focus	Use Case lead
1	Handling of Late Booking Cancellation	UC1
2	Resource Coordination	UC1
3	Real-Time Event Handling	UC2
4	E-Planning	UC3
5	Automated Shipment Tracking	UC3

Figure 15 - Selected “to-be” scenarios

This figure shows that there’s been selected two “to-be” scenarios from Use case 1, that will be further processed in the FInest project. What’s interesting is however that one of these challenges is directly related to Actor 1’s business, while the second one is directly related to Actor 2’s business. This leaves Actor 3 with no to-be scenario that is directly related to their business. The reason they’ve gotten in this situation could be the lack of understanding in the beginning of the project. However, Actor 3 can still play a part in the project, given that they are very much indirectly affected by the challenges that the other two actors have. It seems as the better solutions for the other two, means less issues for Actor 3 too. Nevertheless, Cadle & Yeates (2008) points out that it is it harder to influence the process at a later stage, so as Actor 3 didn’t get a to-be scenario of their own they might also have less influence on the solutions of these to-be scenarios, hence in the end it’s not their physical solution to use. As it appears, not being actively engaged and having a clear understanding from the beginning can have consequences at a later stage of the process. It’s then interesting to ask why have Actor 1 had a better understanding than the other two actors. Could it possibly have something to do with that an intangible system was too difficult to relate to at this phase of the project? As mentioned by Cadle & Yeates (2008), it’s in the early phases of a project that the users can have the most influence. So perhaps both Actor 2 and 3 were under the assumption that a physical system is so far ahead, that they felt it wasn’t necessary at this point to show engagement towards it? If this was the case, it’s no wonder why especially Actor 3 haven’t gotten a to-be scenario of their own, as they feel they had little understanding in the beginning of the project, but this could be the project manager’s responsibility as well.

As mentioned in the beginning of this section it can though be difficult to engage in something one doesn’t understand. This being the case and in a situation of little understanding among Actor 2 and 3, it perhaps became easy to transfer control and tasks over to MARINTEK. Devos and Buelens (2003) (used by Alper Ertürk, 2008, p.463) clearly states that a project manager has a responsibility towards getting the users on the same page of common interests: *“A lack of attention to employees’ psychological responses to*

organizational change is the most important cause in the failure of change programs in almost all cultures.” But has MARINTEK thought of it as their responsibility? That just might be it. They perhaps haven’t, as according to MARINTEK itself, they have grasped over too much in the project. In one way this can be compared to the Hydropower project, as the project manager in that scenario managed the project with too much control. This is exactly what Packendorff (1995) says relating to seeing projects as temporary organizations. Seeing projects as temporary organizations is all about giving more responsibility to the employees, and less control at top management level. MARINTEK has therefore perhaps taken too much control of the project in Actor 2 and 3’s case, which may answer that the actors feel they didn’t have a good understanding in the beginning. Cadle & Yeates states the following around approaches to system developments: *“This lack of user involvement and “ownership” of the system often resulted in a poor quality system and an abdication of responsibility by the users and blame for the developers.”* (Cadle & Yeates, 2008, p.76). Maybe the actors simply didn’t get any feeling of ownership towards the project? If the actors had felt more ownership, it might have led them to participate more (Packendorff, 1995). Actor 1 is the actor that really feels that they’ve participated in this project, and don’t regret their choice of approach. It’s thereby fair to say that the reason why they feel it this way could be because of that they’ve had total responsibility of managing the project by themselves. Among the other two actors there seem to have been a feeling that they could have done more in the project. So in that way, one could state that if MARINTEK hadn’t assisted the actors as much, Actor 2 and 3 would’ve felt more responsibility that further could have led to the feeling of ownership and thereby resulting in commitment. Though higher demand and less involvement from MARINTEK could have improved the situation, they can’t solely be ascribed the actual cause. As one of the two actors states that they: *“Feel that there are too few who has ownership to the project based on the way we’ve done it.”* (Actor in use case, 2012). So for Actor 2 and 3 there is as shown in this factor also and crucial need to define their own assumed gains from participations and organize thereafter. So the lack of ownership might be ascribed to failing to integrate the ideas of this project into the interests of the company. The actors have thereby themselves not facilitated enough for creating ownership, but the aspects of the project has not further improved the situation by creating an opening to tag along in the beginning.

This factor was first initiated to discuss whether the approach itself could be a sign of commitment. Through this discussion one could argue that there’s more to it than committing

to the project externally or internally. It appears as it has more to do with the context of the project and how well the actors themselves have been able to see own gains for participating. This is based mostly of that it appear as having a clear IT-strategy in relation to the business strategy could have made it easier to keep track of the project since the beginning. In addition it seems as time capacity affects the degree of commitment, as the choice of external help releases time to cope with other primary tasks. Further it seems as the project manager could have influenced Actor 2 and 3's commitment. MARINTEK has perhaps given them too much help, which further has resulted in the actors feeling less responsibility and ownership towards the project.

How the actors' commitment has contributed to the project will be examined next.

5.4 Factor - Contribution

5.4.1 Findings

As shown in the factors above, the approach from MARINTEK may have caused a difference in understanding among the actors, and the chosen approach from these actors may have caused a difference in commitment. Both these two aspects can be said to be important, but what really is believed to make the effect of the different approaches visible in the project is contribution. Their different basis for this project will most likely influence the process, but the demands from the project to this factor seem to have been the same. Because even if some of the participants in this project are large multinational companies, "*... the actors here in Norway have to contribute on the same level as them. There is no distinction on expectations from the EU.*" (Respondent MARINTEK, 2012). Just because they are meant to contribute in the same way, doesn't mean that everybody have succeeded in doing so. Like it was mentioned in the previous factor, both Actor 1 and 2 had succeeded in getting the scenario they focused on into the next phase of the project, so thereby they both can be said to have made contribution that has influenced the process. It's also important to emphasize that the actors in this use case is perceived to have contributed well in an overall context of this project. As one respondent at MARINTEK explains the Norwegian actors' effort "*... yes, they've contributed really well into the project.*" (Respondent MARINTEK, 2012). There is however a need to look more closely at contribution, and if this can be linked to their approaches or not, and if these scenarios represent contribution in general. Because there seem to have been some overall difference in contribution throughout the use case, between

the actors. Actor 3 for instance seems to feel that they could have contributed more if they had the time and resources, and this is also an understanding shared by others in the study, as one respondent in this study explains when asked if there are perceived differences in contributions: *“What I note is that they (Actor 3) have contributed far less than ...(Actor 1) and less than ...(Actor 2)...”* (Respondent in study, 2012).

One of the indicators that was identified to might differ among the actors and thereby perceived to influence, was related to the difference in process understanding and number of previous projects. This indicator was defined as project experience.

5.4.1.1 Project experience

“We have actually used a lot of what we have done in other projects into FINEST...” (Actor in use case, 2012).

This indicates that previous experience appears to have been thought to have had an influence of this actor's presence in the use case, but if this affects contribution is perhaps more doubtful, especially if one should focus on it from the perspective of what the project most obvious need from the actors. *“...consumers are domain knowledge. So it's the knowledge of what they actually do from day to day, whether what they require.”* (Respondent MARINTEK, 2012). In this setting it seems project experience should not be necessary to be able to transfer knowledge into the project, because what's demanded is the business knowledge, but as seen in factors above, it isn't just to transfer knowledge into the project. Much indicates that there is a need for something more, and it seems that there has been an advantage with prior knowledge to projects. All the participants for instance got help in conducting the initial paperwork, Actor 1 from a hiring a consultant and Actor 2 and 3 from MARINTEK. As one actor puts it:

“And one sees that you will need a certain experience to deal with all the information that came from the project. If you do not have the experience, you can so easily drown...” (Actor in use case, 2012). There have also been identified that both Actor 2 and 3 had trouble understanding things in the beginning. This can be related to both project related jargon and methodical issues, but one should not ignore the simplest of problems as well. Language can also have been a problem, and not only as some form of theoretical interpretation of the term language, but like one actor puts it:

“...it's in English and all sorts of stuff like that too, which may help to make it even more difficult.” (Actor in use case, 2012)

It further seems that there is a clear distinction in project experience among these actors. Actor 1 which uses a dedicated consultant, have a lot of experience with projects through this person, but Actor 1 also seem to have prior knowledge to technology projects themselves. Actor 2 on the other hand appears to have much recent project experience from many projects with a sole focus on technological solutions. Actor 3 has had less experience from IT projects, and mentioned to have participating in one recent IT project, but this project was as it seems not aimed to develop any new solution they'd requested. In fact according to Actor 3, all the IT systems they use today are standard, so there seem to be little to no unique IT systems from own development processes at this actor. In one way this could indicate that there is little knowledge towards IT development and so on at Actor 3, but there also might be some difference in how one describes things as well. Because it's interesting to see that Actor 1 and 3 have both implemented the same IT system for communication. At Actor 1 this is described as an experience from a major IT implementation process while Actor 3 does not express this as any experience and the implementation is more or less camouflaged behind them only using standard systems.

As the actors all seems to have learned a great deal from participating in this process, and especially Actor 2 and 3 now claim to have gotten a better understanding, it could be appropriate to examine early contribution to see if differences were prominent. In the documents made available from the process in this use case, there seem to be differences especially from the project kick off for this use case conducted 04.05.2011. According to the documented intention for this meeting, one of the activities was that each actor should hold a presentation, where they among others should explain expectations to this project. These presentations can be viewed as their first contribution to this project, and it shows that they apparently had a different way of conducting this. Actor 1's presentation, like all the others focuses on their business, goals and so on, but they also seem to link this up against the future. What's special about this presentation is that it, probably based on their ongoing project, displays a technology driven business plan of some form, and has an overall conceptual and schematic focus to the opportunities. Actor 2's presentation on the other hand has a much more actual IT system focus. This displays a focus toward what seems to be more related with technical solutions, and opportunities. While Actor 3's presentation seems to be a lot more

standard in terms of business presentations. It presents their business and organization in very general way, where the presentation itself seems to be one that could fit for many different scenarios. So there seem to have been differences in how they approached this first presentation, and there also seem to be differences in their communicated expectations to this project noted by MARINTEK in the “minutes of meeting” report. This is what is noted on each of the actors’ expectations.

- Actor 1: - Concrete results from the project. A better idea of what the cooperation and integration platform will look like
- Actor 2: - Efficient and effective systems for exchange of information are a prerequisite for quality of service
- Actor 3: - Learning and tangible outcome from the project.
 - Contribute to increase the attractiveness of the maritime industry.

(2011-05-03, MINUTES OF MEETING conducted 04.05.2011 (1030- 1600), made available by MARINTEK)

This is important, because expectations may also have been influenced by experience and in itself also influenced contribution. Like one respondent puts it when explaining the perceived better contribution from Actor 2 compared to Actor 3. “...but there has been a mix of that we have concentrated more on the solution that ... (Actor 2) wanted to focus on in the project.” (Respondent in study, 2012). So expectations and contribution also seem to be linked together, and there appears to be differences when it comes to both of them. Based on the importance of expectations and interests from the commitment factor, one could deduce that Actor 1’s approach with using an external resource would be beneficial among others based on access to project experience, but there are also some issues that contradict using an external resource, one of them is related to what MARINTEK explained as this person's difficulties in having the business knowledge which they needed. Another issue might be related to what one of the actors thinks would be important if using external resource. “That he promote what we want to get into the project, right? It is things like that will be important.” (Actor in use case, 2012). Based on the statement, there are also issues related to possible differences in agenda by using an external resource, but the collected data from this study has not been able to identify any problems linked to differences in interests, expectations or agendas between Actor 1 and the consultant. Actor 1’s use of external consultant appears to have reaped positive benefits based on the consultant’s prior knowledge

to them and their industry especially, but there seems to exist important issues to consider when deciding to hire an external consultant.

When asked if an external resource could have helped also Actor 2 and 3, one respondent at MARINTEK says yes, “...because they don’t lack the interest and they don’t lack the knowledge. If they only had actually had the time to read things, contribute and all, I think it would have helped a lot.” (Respondent MARINTEK, 2012). So the indicator time seem to might be important to investigate in order to understand differences in contribution.

5.4.1.2 TIME

This was asked the leader for one of the actors involved in this use case: “For smaller companies, may it be time or knowledge about projects which is the largest obstacle?”

The leader responded: “Time.” (Respondent in study, 2012).

So it seems from both this resolute answer and the quotation above from one respondent at MARINTEK that time is an important influencer. There has already been shown that both Actor 2 and 3 has expressed that time has been an issue. Actor 1 seems to not have expressed the same issues about time. The consultant also expresses that Actor 1’s assumed reason for bringing in him is more related to the knowledge he possess rather than the flexibility in time he might create. This actor also appears to would have struggled with time and also seems to have been influenced by time issues. For instance the provided reason for not being able to get employees from Actor 1 to answer a short survey in the beginning for this study was reported to be lack of time. Compared to this there were not reported to be any problems to get access to employees from Actor 2 and 3. Though might being caused by other reasons it should not be neglected, and might be an important finding. Because the time aspect was strongly emphasized from Actor 1 when we tried to get access to the organization, and this could be an indicator of an issue that maybe has influenced the contribution to the project as well. There are however no statements in the empirical data which indicates that the project have struggled getting access to information from this actor, but in addition it seems that most of the information has gone through the consultant. The consultant also states this as one of the advantages by using a role like him in terms of that he can time his access to the staff, and thereby better adjust the involvement of the users to fit their best schedule. So in one way this consultant can be seen to both protect the employees from too much noise, but on the other hand also as some form of a trigger that can coordinate the appropriate involvement of

them. And this involvement of the rest of the organization is also something that Actor 2 and 3 has reported as an issue. As one actor puts it when describing assumed positive effects of using a consultant, “...I believe that such a person could have been able to engage more employees from us.” (Actor in use case, 2012).

And further: “We don’t really got time to sit down for two hours and go through stuff... As a result we don’t get good processes internally to pull on lots of people...” (Actor in use case, 2012) The above parts show how time influence on contribution as a factor of which knowledge a project can access in the organization, but in addition it also has another aspect which is related more to availability and the extent of the responses one contribute with. This is important among others because, “The EU-project has some demands of commitment to be present at certain meetings, and other things, and that can be challenging for SMB’s.” (Respondent MARINTEK, 2012). Actor 1 seems to have had a high degree of presence in this project, in terms of being available for comments and so on. This can also be said about the other two actors, but especially one of them appears to over time have evolved into getting less engaged in their responses. This means that the requested responses to information they are provided, have been commented to get more comparable to acknowledgements than contribution.

But time could also be important in more extensive tasks and deliverables. As mentioned, both Actor 2 and 3 have expressed lack of time in this project. One of the actors also explains how their contributions: “...could have been more thorough and been even better quality on what we have done.” (Actor in use case, 2012). So there are indications that more time could have improved these contributions through more time in preparing and ensuring the quality of the contribution. In the end however, the biggest effect of time in this context seem to not be connected to the quality of contribution, but more in the line of budgeted expectations in the project compared to available resources. To better understand the quality of contribution and differences it can be more appropriate to examine important arenas for information sharing.

5.4.1.3 Workshops

As seen in the discussion of the first factor, there were identified a difference in effect of the different workshops. The workshop in Amsterdam which involved the whole project seems to stand out as a turning point when it comes to perceived quality. One of the things that are mentioned to be special in this workshop is among others the shift in focus towards

constructing the demonstrators. These demonstrators appear, according to MARINTEK, to have become an important element as the desired result from these workshops. The reason for this seemed to have been that they needed a way to better translate the needs of the business into an understanding for the IT people. As one of them describes the role of the demonstrators:

“...it's a kind way to bridge the difference in comprehension between the corners of the triangle.” (As illustrated in figure 10) (Respondent MARINTEK, 2012). The role of the demonstrators seem to have been viewed as important by the other actors as well, perhaps especially by Actor 2. Because as a curiosity one can see that during the interviews with this actor they mention the word of demonstrators 13 times, which is much more than the other actors and more often than they mention words like future, futuristic, workshops, process and cooperation. Though the other actors also see the work on these demonstrators as important, and one of the other actors explain the role of these demonstrators as: *“With them, you have sort of visualized what you think about the future... So these demonstrators have helped specifying and visualizing.”* (Actor in use case, 2012)

So this indicates that these demonstrators have an important role in way of supporting the communication, and though: *“... a demonstrator at this stage is just a means of communication.”* (Actor in use case, 2012), it may also be an important influencer through this role. First of all there appears to have been an important way of creating mutual understanding among different branches, but there also seem to be much more related to them among others they seem to have gotten an important role for securing what will be focused on in next phase of the project. This is related to that some of the constructed demonstrators were to be chosen for further work in the next phase, through being an illustration of the selected scenarios. In relation to this one actor was asked the following: *“But when you get things into the demonstrators, do you feel that it is then secured in the project?”* The answer was quite clear: *“Yes, yes, yes...”* (Actor in Use case, 2012). So these demonstrators can be seen as one of the ways to really secure one's contribution in the project, and thereby one of the ways to really make an impact. However, for some actors like Actor 2, these demonstrators appears to also have a value beyond this, because as they put it, if the demonstrator isn't chosen for further work in this project, they can still use it to illustrate their intended to-be situation. So in a way this can for Actor 2 be seen as a conceptual illustrator for their technological vision.

5.4.2 Discussion

Johnson, Scholes & Whittington (2008) explains in their book “Exploring Corporate Strategy” how managers in innovation processes need to create a balance between *technology push* and *market pull*. In an overall setting this can be said to be what one tries to achieve in this scenario, where the opportunities in future Internet work could be seen as technology push, and the meaning of the use cases is to create some form of market pull. The market pull term is important for accessing experience generated knowledge and securing that the innovation is kept relevant for the industry. Even if this is an overall context that can be said to be a market pull, there are also different ways to transfer this knowledge into the project. When referring to transferring of knowledge in the context of information system, it is also often common to separate between the two principles, push and pull. E.g. one can for instance compare this situation to a database being the actors, where information is stored, and an application being the project, which intention is to exploit the stored information. The application can then pull information from the database, which can seem to have been done in this project in form of conducted interviews. The information can on the other hand also be pushed from the database into the application when it is facilitated for this, which e.g. can be compared to the contribution made through the workshops in this scenario. The further discussion of contribution will thereby be divided into focusing on these two principles, pull and push.

5.4.2.1 Information pull

The term pull relates to in which way the project has been able to pull information from the actors, based on the approach they’ve chosen and examine if there’s any difference in contribution.

Could there be any difference in how much information the project is able to pull out of an external vs. internal agent as used by Actor 2 and 3? The question is raised on the basis of that an external consultant could be looked upon as a broker (Wenger, 1998) facilitating the practice of the project into the organization. The CEO at Actor 1 seems to have cooperated with the consultant when it’s a need for domain specific knowledge to the project. Based on this tight relation between them, one could state that Actor 1 follows Lunenburg’s (2010) term of having a good linkage to the organization through the CEO. Further, on the basis that the CEO possesses more knowledge of the industry than the consultant, one should assume there’s a limit of what the project could pull out of the consultant vice versa the CEO because

of tacit knowledge (Nonaka & Takeuchi, 2001). As tacit knowledge is difficult to describe and teach others, there's likely to assume that the CEO will leave out information when he shares knowledge with the consultant. The CEO will of course assist the consultant as much as possible, but according to Nonaka & Takeuchi (2001) one always possess tacit knowledge that can lead to that the project in this case could get less rich information from the consultant than directly from the CEO. Another issue is Lunenburg's (2010) characteristic proximity, and if an external approach has generated understanding and collaboration by working tighter with the employees. In our case the consultant might seem to have worked as a form of gatekeeper prevent access to the employees, but this can also be positive for protecting employees in a hectic situation. Therefore it may have been seen as the external approach through coordinating appropriate access to employees develops a customized proximity. There are no indications that the project had any problems getting access to the employees, but when we initially approach Actor 1, they offered that the consultant would answer about issues regarding the project on their behalf. If this was the situation towards the project as well, the agenda of the consultant might become decisive, and one should be aware the possible implications this might cause. This can in some situations lead to that the consultant answer based on his perceived understanding of the situation, rather than providing access to the organization. Based on the discussion around this issue, one could further argue that the project can have pulled richer information from the other two actors, as there's no intermediary between the project and the organization.

Still, even if it seems Actor 2 and 3 had the opportunity to contribute with richer information based on the discussion above, it doesn't necessary make it so. The representative at Actor 2 and 3 have described that they struggled to actively involve anyone else from the organization. There seem also to have been other issues preventing them from contributing with their tacit knowledge throughout the process. As it appears that all the actors have accessed little of the tacit knowledge from all participants, why weren't there conducted more interviews with the organization? Because it can seem as the project has only pulled the most transferable information out of the actors, which Brown and Duguid (2001) describes as "leaky" knowledge. The project has thereby not gone into the debt of the actors' knowledge base, which can have generated less contribution to the project.

However, in this project there might not be necessary with no more than leaky knowledge. As mentioned this is a concept development project that has a scope on a two year period. In this

early phase there might therefore not be as important to gather more information than they already have gotten to enlighten the challenges the actors perceive. In addition it also takes time to physically meet face to face as well, and that's also a part of the issue in this project - the actors don't have much time to spare. On the basis of this, one could argue that the project has gathered as much information as they could under the given circumstances, and that there seem to have been little difference in influence from information gathered based on the pull principle from the chosen approaches.

5.4.2.2 Information push

To examine how the actors have conducted their contribution more actively, or in terms of the push principle, it's appropriate to do this in context to the workshops. This can be seen combined to what Nonaka & Takeuchi (2001) describes as the combination phase, where the actors have made their information explicit and which is then transferred into the explicit scenarios and deliverables of the project. In the findings there were shown how it was differences in the presentations conducted at the first workshop. There has also been shown earlier that Actor 1 felt that the outcome of the most recent workshops has been more productive due to more contribution from all the participants. So what caused the differences in these workshops, was it resolved and how and for whom? These are all valid questions that need to be answered.

First of all let's start with the first internal workshop for this use case, which was presented in the findings section. What was identified in the first factor seems to be confirmed in terms of that it was differences in the understanding of what this project would resolve among the users. According to the expectations, Actor 1 is the only one not expecting something tangible to be produced in the initial expectations. Though they hope for concrete ideas they don't try to specify this, because there seem to be something diffuse in what can actually be resolved. From this and their PowerPoint presentation, it appears as they operate on a conceptual level. Actor 2 and 3 seem to expect much more tangible solution from this project, which could indicate that they saw this much more as a traditional system development project than Actor 1. But there are also a major difference between these two actors, and how they seem to perceive this project. Whereas Actor 3 in some way share an opinion with both Actor 1 and 2, in terms of having a diffuse expectation in alignment with Actor 1 and expect something tangible in accordance with Actor 2. Actor 2 seems to be somewhat predisposed from their recent and earlier projects with MARINTEK, and has very concrete system expectations. This

is also identifiable in the presentation given by both these actors. Actor 3 seems to have, based on the PowerPoint file have presented a general presentation which seem to reveal no directions either way from what they expect, whereas Actor 2's presentation seem to have presented their current systems, interfaces and system expectations for the technical solution, but why is this important?

As presented earlier it can be seen as a natural maturing process, and it can't be denied that the ultimate goal for this project is to make this futuristic system a reality. From one perspective it can even be claimed that these issues belong under the framework factor. Because it can be argued that the project used too much time in the beginning focusing on trivial formalities and out of proportion visionary ideas and it wasn't until the focus got more tangible that the real need for the actors presented itself. From a project perspective it can of course be claimed to be in these specific scenario developments that the experience from the industry really becomes important. However, in accordance with Johnson et al. (2008) and their market pull and technology push terms this could end up being preferable for neither of the parties. For the industry this could mean not being able to influence in the important early phase where the direction is decided. On the other hand if this direction is decided without any actual user involvement and too much technology push influence, it might end up starting in the wrong direction. Because this important early phase can be seen as deciding upon the goal for this project, or creating some form of shared vision in the project.

“At its simplest level, a shared vision is the answer to the question, ‘What do we want to create?’” (Senge, 1992, p.206)

So this first phase would seem to have benefitted from all the participants' contribution, but why did this not happen? Above there was used a quotation by Senge, and he might present an explanation to this as well. According to Senge (1992) our understanding of the world and actions in it are influenced through ingrained assumptions and generalizations which can be termed as *mental models*. These mental models can be one way to start understanding this early difference in contribution and also explain the perceived difference in knowledge boundaries. Then by comparing the first workshop situation to Carlile's (2004) knowledge boundaries there seems to be differences, but let's first define the groundwork made by MARINTEK in this setting. Because the perspective can in a practical setting *“...describe the ‘mismatches’ that can occur between the type of boundary faced and the type or capacity of the process used...”* (Carlile, 2004, p.560). Therefore in the framework there were disclosed

some issues, and what especially seem relevant to this situation can be identified in part of the quotation where MARINTEK explain their method “...started from the as-is situation, we started from the main challenges, and based on these scenarios..” (Respondent Marintek, 2012). What this illustrates is the impression that MARINTEK approached this project defining a method, and the intention was that the actors would `only` transfer knowledge into the project. They thereby assumed that the actors had the same understanding of projects and that all the participants would give the right introduction to chosen method and operate on the same syntax. This approach is described by Carlile (2002) as a syntactical approach where the focus is on processing information and transfer of knowledge, and is in the end what MARINTEK’s approach can be described like. However by looking at the first PowerPoint presentation that MARINTEK held in the first kickoff meeting, one can argue that this is not the case. This is based on the second slide in this presentation which defines the objectives of this meeting, where it among others is emphasized that they shall clarify objectives, expectations, and develops a common understanding of the project. This does not look as a syntactical approach at all, but it still is what they ended up with. Their intention seems based on this to most likely have been more towards a pragmatic approach, but this was not what they succeeded in doing. After the agenda slide their fourth slide is shown below and as an illustration to why some of the actors might perceive this as complex.

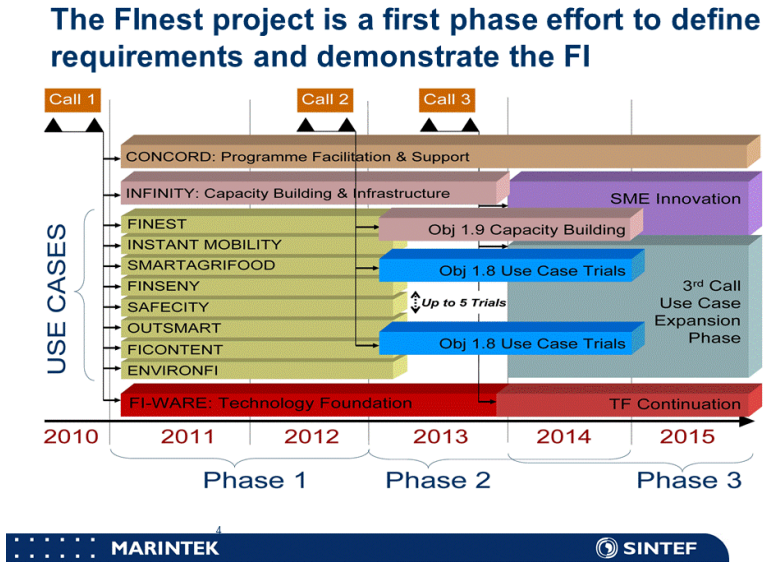


Figure 16 – Illustration of the project complexity, from presentation provided by MARINTEK, 2012

What this is believed to illustrate is how they tried to communicate the intention of the project by using their syntax, and it’s understandable that some actors might find this

comprehensible. Either way what is reflected in the rest of the empirical data is that MARINTEK did not succeed in creating this mutual understanding and seem to have ended up with a syntactical approach. This can be ascribed to be natural, because as Carlile (2002) explains the need for changing approach arises when novelty increases. For MARINTEK they had been involved in many similar projects, so they probably perceived less novelty in the situation than some of the users. This can also base on what Carlile (2004) describes as path dependency creates competence traps, since there were novelty present in the situation which was not stressed, and knowledge and methods from previous experience was just reused.

It's not just MARINTEK who have been affected by their previous experience, but also the expectations from the actors have influenced this situation. Because much of this issues can be related to the fact that the actors didn't understand what MARINTEK tried to communicate. According to Senge: "*...new insights fail to get put into practice because they conflict with deeply held internal images of how the world works, images that limit us to familiar ways of thinking and acting.*" (Senge, 1992, p.174). Actor 2 for instance seems based on their presentation to have had a technological understanding. Further their novelty in this situation can be said to have been some, but not too large due to earlier cooperation with MARINTEK. It seems that they actually believed they understood what this project was supposed to do, and therefore they seem to have been surprised when the reality didn't meet their expectations in the beginning. It can thereby be claimed that there was a semantic knowledge boundary between MARINTEK and Actor 2, due to the difference in understanding and what appears to have been ambiguities in the communication. Actor 3 didn't seem to have these ambiguities, because as mentioned they didn't seem to have any clear interests or ideas about what this could lead to in the beginning, which they also confirm themselves in the interviews. According to Carlile you have a pragmatic knowledge boundary when "*...the novelty presents results in different interests among actors that have to be resolved.*" (Carlile, 2004, p.559). So the boundary between MARINTEK and Actor 3 can be described to be pragmatic, due to high novelty at least for Actor 3 and very little to no clear mutual identified interests. Actor 1 on the other hand who have claimed to handle this situation without the large difficulties, seem to have been more fitted for MARINTEK's approach. They seem to have understood the method offered by MARINTEK, and also contributed in the early phase. As described in the findings section their presentation was also on a conceptual level that appears to have matched the initial level of the project. Their involvement has also been described from others as targeted and active from the beginning.

This indicates low novelty in their situation and a more syntactic boundary, which can be illustrated below in Carlile's (2004) illustration of knowledge boundaries.

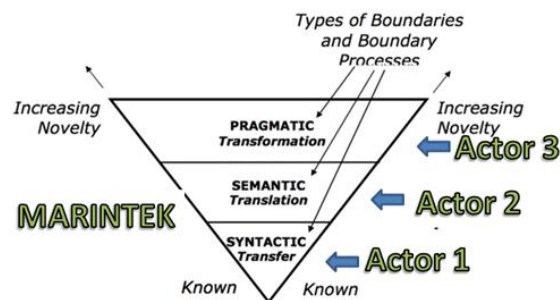


Figure 17 – Revised knowledge boundary levels based on figure 7 (Carlile, 2004)

So it seems as MARINTEK actually faced three different knowledge boundaries. This can then explain why Actor 1 might have felt that they contributed more than the others in the beginning and also why the first workshops wasn't considered to be that productive. Through their consultant they understood the syntax which MARINTEK hoped to facilitate for the transfer of knowledge with, but through the syntactical approach Actor 2 and 3 wasn't able to contribute in the same way. They would have needed to get the information transformed or translated.

One way to translate information can be through using Wenger's (1998) term as *brokers*. In one way one can view this use case group as the encounter of different COP's which can be seen as separated by the knowledge boundaries mentioned above. So this broker should be able to translate information between these boundaries, and can be compared to what both MARINTEK and the consultant at Actor 1 tried to do. Because according to Actor 1 this was their first EU-project as well, and though having some well-defined interests and started some concept thinking prior to this project. It is reason to believe that they would have been faced with the same type of boundary as Actor 2. This is related to that given their lack of experience to these types of projects they much similar to Actor 2, would not have been able to understand much of the initial discussion related to method and formalities. So they appear to in a way have been working with a dedicated external broker which have translated the information to and from them and thereby made them able to operate with what can be perceived as a syntactic boundary. This can be said to have been what MARINTEK tried to do as well, but why isn't this perceived to have given the same effect? According to the empirical data, Actor 2 felt they struggled in the beginning and it wasn't until the discussions got more practical in the later workshops that they felt on top of things. The same can more or

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less be said about Actor 3. So even if these issues in early contribution are not in any way prominent or identifiable in the responses from MARINTEK, though there were stated to have been clear differences among the actors that further appear to be relevant based on all the other collected data. The question then is ‘why’?

MARINTEK did have a good understanding of at least Actor 2’s business, and the communication between them appears to have been comprehensible. From MARINTEK’s comments about Actor 2, there shouldn’t either be any reasons why they couldn’t contribute that much in the early phases, because they are described to having “...*a slightly greater sense of seeing the big picture... seeing things more from a domain perspective...*” (Respondent MARINTEK, 2012). From Carlile (2004)’s perspective one can based on the illustration above perhaps understand why MARINTEK wasn’t able to translate information successfully between the project and Actor 3, because the boundary was more demandable and information needed to be transformed. The reason why it didn’t work between Actor 2 and the project either, can appear to be related to the likelihood that information was in fact never translated. Because as mentioned in the first factor, MARINTEK stated that they filtered some work for these actors, and that it became comprehensible. It seems MARINTEK didn’t appear as a broker, because they in one way actually didn’t introduce one practice into another as Wenger (1998) defines it, they just more or less represented one practice in another. “...*very often it has been such that MARINTEK has done it, collected data, made the presentation, summed up, made reports and suggestions for things as well, then we sent this to our partners..*” (Respondent MARINTEK, 2012). So the reason why MARINTEK doesn’t feel that Actor 2 and 3 have contributed too little in the beginning can be because they did much of this for them. Actor 2 and 3 of course in some way must have made the business knowledge available, but at the same time they were probably not able to link this up against what was going on in the project. This can further have caused Actor 1 to feel that these two actors could have contributed more in the first workshops, since they didn’t get the discussions and interaction they might had wished for. The fact that MARINTEK had a lot to do in this phase may have influenced this. Because it seems if they should be able to translate this to Actor 2 it might have demanded more effort regarding time and etc., given that they would have needed closer interaction in order to introduce the practices to each other. For Actor 3 the demands appear to might be needed to have become even more extensive. It also seems that this also would have meant MARINTEK having more knowledge and focus toward Actor 3’s business first, in order to define their interests.

Further one can focus on the Amsterdam workshop and these demonstrators which were mentioned earlier, because there seem to be a genuine feeling among all the actors that they have been important in some form. Also when Actor 1 and 2 were asked if they felt they had contributed in this project, they both used the demonstrators to substantiate their answer for having felt that they did. As shown, one of the actors really felt that these demonstrators had some power in terms of securing their interests and contribution into the project. These demonstrators can be very much compared against the inscription term in ANT, which is “...*a process in which non-human elements (artifacts) are created to ensure the operator's interests..*” (Hafnor, 2004, p.15). So they are important in securing the actors statement into the project, but their role seem to go beyond securing interests. The demonstrators can also in a way be compared to Wenger’s (1998) reification term, where it (the demonstrators) has a reality of its own and have acted as a boundary object on which the actors have organized their interaction. So given that one in this phase can say that Actor 1 and 2 in one way have more similar level of contribution, perhaps these demonstrators can be ascribed this increase in quality of Actor 2’s contribution. This can also be ascribed to change in focus in the project. Because when starting to focus on more tangible solutions Actor 2’s previous experience became more relevant and the degree of novelty might have been reduced. This change in focus may have made the knowledge boundary between the project and Actor 2 move towards a more syntactic level. These demonstrators can then offer this shared syntax between the IT people and Actor 2, through giving them a way to organize the interaction and illustrate their interests. According to Actor 3’s own statement they also got a much better understanding from these demonstrators, and it has made the interaction in this project easier, but even though Actor 3 also have been said to contribute, there is an impression that they did not have the same effect from these demonstrators. The main reason for this can be ascribed to that Actor 3 didn’t have their own demonstrator in focus, and as one respondent stated that Actor 2 appears to have benefitted from the focus being on what they wanted.

So in a way the demonstrators seem to have created some kind of common ground for communicating, but what was inscribed in them was based on earlier phases, and this meant that Actor 3 did not achieve their interest into an own demonstrator. This can be related to them having a more pragmatic knowledge boundary and not managing to define a link between one owns interests and the projects. This has influenced the further process in this project, given that the demonstrators have made the scenarios and focus of further phases in the project. This way of viewing upon the demonstrators, tells us that they consist of some

form of power in this setting as representing certain interests on which they are constructed. This can be compared to other researchers as well, for instance Phelps & Reddy (2009, p.127) researching construction project teams found that “...individuals that serve as the managers of boundary objects control how shared information is interpreted and captured within the boundary object and consequently what information is available to the project in the future.”

So even if the knowledge of the actors in one way can be said to not be important until things was made more tangible and that they just could transfer their business knowledge into these scenarios, it’s not that simple. Because the opportunity for the actors to influence the process of this project with their contribution, seem to have been made possible by the demonstrators which was shaped by earlier phases. In one way these demonstrators and shift in focus was what actually resolved the knowledge boundary, but to get an influencing effect when given this support, these artifacts would have been needed to be inscribed with knowledge and interest from the business. This can perhaps be transferrable to other types of external support like consultants as well, in terms of inscribing the company’s agenda into this resource. So MARINTEK didn’t have enough time and resources to act as an external resource for Actor 3, and the demonstrators weren’t inscribed with enough of their interest to give great influencing effect on the process.

Based on this knowledge about industry and time to involve oneself seem to be important when speaking of external support. Cummings & Worley (2009) illustrates how consultants can approach a situation differently by either focusing on own knowledge or clients knowledge.

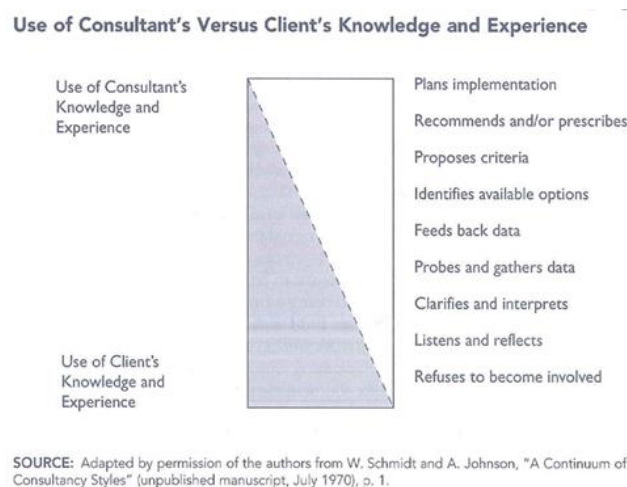


Figure 18 - Use of consultants (Cummings & Worley, 2009)

From this study it seems that to secure contribution the approach should be somewhat given by the prior knowledge and different approaches of the actors. In the framework factor it was emphasized that the focal actor should communicate the consequences of its interests. This can be seen as a way of showing what approach the project will have and what the actors can expect. In this setting the method and language have made this seem like a syntactical approach, which did not fit the knowledge boundaries of Actor 2 and 3. This difference between boundary and approach need to be handled somehow and there is probably no best way in these cases. If MARINTEK had chosen or managed to conduct a different approach in terms of method it still would have missed two actors. E.g. a pragmatic approach would perhaps have been time consuming and caused frustration among Actor 1 and 2, but through not focusing on demands and consequences in the beginning there were given no chance to the actors to adjust their approach. The support which was tried offered from MARINTEK was not felt sufficient for Actor 2 and 3. However by translating Actor 2's interest into the project in an early phase, it seems to at least perhaps have been a crucial support for securing Actor 2's possibility to influence at a later phase, even if Actor 2 may not have understood what was going on at this point. So in a way there can be assumed to be a correlation between the knowledge boundary between the project and the actors approach. If the novelty is large for an actor towards a project, there seem to be a greater need for the external support to have knowledge about the industry and devote enough time. In a way it can be illustrated like below, where if there is a pragmatic boundary between the project and the actor, and there not is an appropriate approach from the projects side. The external support need to invest time and knowledge into the situation and make it seem as a syntactic boundary between them and the industry. If the industry on the other hand has a syntactic boundary towards the project, an external support can be more different from the actor and perhaps introduce creativity through a different perspective.

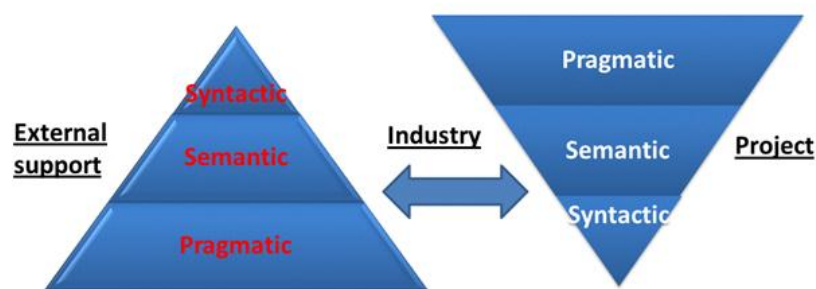


Figure 19 - New perspective towards two dimensions of knowledge boundaries, based on figure 7 (Carlile, 2004)

In figure 18 Carlile (2004)'s illustration of knowledge boundaries has been used as a basis to illustrate what explained above.

To sum up, the focal actor can be faced with different knowledge boundaries in a project like this, and the best they can do to secure contribution, might be to communicate their approach and demands. From this study it seems like as long as the interests in some way is secured into the project, an actor can still manage to influence the process through contribution eventually even if facing a semantic boundary in the beginning. On the other hand if faced with a pragmatic boundary there will not be defined matching interests and the influence on the process is not possible unless an extra effort is made from either side. Make no mistake, this actor may still contribute to the project, to support others ideas and so on, but they seem not to be able to influence the process of the project through their contribution. It appears that Actor 3 in this case, might have limited their contribution, by not having acknowledged the actual opportunities technology can provide in their business. They did perhaps thereby not manage to see direct future benefits for this technology and did have fewer opinions on how it should be designed.

“...because the most crucial mental models in any organization are those shared by key decision makers. Those models, if unexamined, limit an organization's range of actions to what is familiar...” (Senge, 1992, p. 186) So not having a defined strategic approach that makes an appropriate link between own interests and intention for participation might limit the possibility to influence a process in projects like this, through contribution. This further seems important for both sides in a project like this. Demands are important also for contribution. By not setting the right demands and communicating the consequences of participation in projects, the project management level might neglect identifying the knowledge boundaries present. Moreover, it appears to be opposite of what some might believe, this should not mature naturally. The greater the novelty is, the more important an early focus on it can be to secure the possibility to influence the process. There is as seen however an evolvment between the actors in projects like this, since some of the knowledge boundaries seems to have been reduced, but the process appear very much path dependent, which means that prior input might affect later possibilities to influence. So one way an actor through its approach can shape its contribution is to make demands before participating. This might help clarifying the boundaries in this cooperation. What seem to be crucial is for the project and actor to align interests and agree upon some form of shared vision. What has been

shown in this discussion is that the approach from the project is important, and the presented arena can offer as much support as the use of external resources. In this case Actor 2 was able to contribute at more or less the same level as Actor 1 when the knowledge boundary was resolved by the use of demonstrators and change in focus. Both Actor 2 and 3 have considered using an external consultant, but as shown there is no one solution fit all according to this. It has been illustrated that regarding contribution this can be dependent on the boundary they are faced with towards the project. A shared resource between Actor 2 and 3 would demand great skills of this resource, because it would be faced with two different boundaries. It should also be mentioned that eventual different agendas might become more important when bringing in support to handle a pragmatic boundary towards projects like this. This is related to that a resource like this would first of all have to create a bridge between company interests and projects intention.

6. Conclusion

The purpose of this study has been to examine the following research question:

“How can the approach from participating actors influence the process of an early stage, in IT driven development projects?”

The project management level can be seen to set the framework of a project. In an overall setting it has been shown that the fact that this is an EU-project might have facilitated a form of institutional trust. Further the technology-focused approach though not being favorable in many change management theories, might have had a positive impact. There has been offered a perspective of seeing technology in these settings in the same context as trust brokers as facilitating and creating an opportunity for information sharing. This is through being some form of a trust object that enables bridging the actors together and facing an issue from a more neutral perspective, in an industry and situation where one with a different approach could have been faced with many anti-programs. This being said, the further process of this project can be described as successful in many ways, but there have also been identified aspects of the project’s approach that might have caused an inappropriate influence on the process.

Bygrave & Zacharakis (2010) links what George Bernard Shaw said about love affairs towards businesses and exit strategies: *“Any fool can start one, it takes a genius to end one successfully.”* But in terms of projects this famous quotation may also manifest what actually has been described as the major promoter for issues in projects, the urgent need to once and for all replace also the “Any fool’s” at project start-ups with “geniuses”. Because it might paint a wrong picture to refer to start-up procedures and initial paper work in projects as formalities. If you are to build a house you probably won’t refer to the initial foundation and leveling work as formalities, and make it seem like it doesn’t matter how it’s done. It has been shown that though the power of the description of work (DOW) in these types of projects has been recognized as a controlling mechanism in an ongoing process. The importance of this from the beginning and the benefits of user involvement in it, have on the other hand been more neglected.

It has been shown in this study is how there might be appropriate for the process that both managers and participants have a bit more open approach. It seems that a seller approach from the manager, where the actors are convinced into joining, might have caused

misunderstandings which further have led to the failure of not identifying knowledge boundaries. In addition, the sampling of participants also is an influencer on the effect from chosen approach to sell in. By using former business relations one might risk being vulnerable for effects of informality. While very few theories appears to focus on potential disadvantages of trust, this study shows that in this setting, a type of rapidly developed relational trust based on previous project success or too much institutional trust might have negative influence on the process. Trust in the initial phase does not seem to be only positive if one isn't aware of the implications. A more appropriate approach would be to have a more calculative and honest approach by focusing on consequences of the interests. In other words though trust is important in later settings, one should not let trust shape out the foundation of a project. All parties being more calculative in this phase will give a better chance to really consider each other's intentions. This is important for many reasons, but it is at least one of the things that make it possible for the participants to identify which approach the project has. In terms of knowledge boundaries this can give the actors an early opportunity to adjust their approach. Furthermore, though there has been much focus on early phases in projects, this also seem important, because none of the involved actors in this study have made any actual efforts to change approach, even though two of them wished they had done things differently. Workshops and making people work face to face have many benefits, and appears to have given this project and the participants several gains, but when it comes to conquering knowledge boundaries this proved to not be sufficient. Transferring issues and differences in understanding from one arena to another, does not automatically seem to resolve the issues. In this case the change in focus and introducing a boundary object reduced the boundaries and improved contribution. Though it should be emphasized that this contribution seemed again influenced by the power possessed by the demonstrators, as a result of interests they were inscribed with.

Another important initial aspect that was identified is how this project opened for participators opportunity to influence the DOW, through controlling how one was supposed to participate. Unfortunately not recognizing the importance of this job, two of the actors seem to have let their recruiter handle this issue. Though the manager level in the project might have been given an opportunity to secure that the participators is involved according to their agenda, this has been shown to not be preferable for neither of them. When managers did them this favor, they actually may have reduced these actors' commitment to the project through removing their feeling of responsibility and ownership. By creating an opening to tag along and not

forcing actors to claim their responsibility in the beginning of the project, one have in many ways set the scene in terms of commitment and it has possibly created the opportunity for actors to blame external factors. Because many of the issues identified can be ascribed to the actors themselves especially when it comes to commitment. It seems that actors which have had some clear expectations, benefits both in terms of commitment and contribution. Having well-defined interests and expectations is a way of choosing a more active approach towards a project. This means that when it comes to projects a skewed vision is better than not defining a vision. In contribution a skewed vision might lead to misunderstanding and semantic boundaries, but this is possible to resolve and anyway one seem to have a better chance of influencing later phases in the process through this approach. In terms of commitment, it might lead to a lack of motivation due to expectations not being met, but not defining a vision isn't any better. Expectations lead to a more active role, which in terms is important to influence the process. So the most important aspects of the actors' approach in order to influence the process, seems related to having a clear intention of what could be gained from participation and linking this to own business. In these conceptual settings an approach where there is a defined link between IT-strategy and business strategy, appears to be important for creating early understanding and commitment. According to the levels of linkage that Gottschalk (2002) describes, the actor defined at level 2 seem more predisposed to influence the process through contribution than commitment, while the actor defined at level 3 have influenced through both. In terms of actors' approach, this study has shown that the difference does not solely lie in bringing in an external consultant, and that a choice like this does not guarantee success. One aspect which has been shown to be positive from this is that it enables an opportunity for SMB's to create sufficient slack in organization for managing participation in projects like this. Of course an approach like this may offer knowledge which can help contribution into the project, but this implies this resource being adjusted to the boundary between the actor and the project.

“In order to participate in such a large EU-project you need a certain size and expertise if you are to succeed.” (Actor in use case, 2012). We mean that in order to participate in projects like this, you need to join on your own premises, knowing the consequences, with a well-founded and communicated reason and act thereafter.

7. References

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Attachments

Attachment 1 - Intervjuguide for innledende intervju

Kort beskrivelse

Detter er intervjuguiden for de første innledende intervjuene, som har til hensikt å skape en forståelse av situasjonen, og videre hjelpe til med å spisse oppgaven inn mot temaet. Det er tiltenkt at vi med denne guiden skal ha en semi-strukturert tilnærming, da vi håper å benytte dette til å skape et bilde av situasjonen. Spørsmålene under er derfor bygd opp som temaer vi ønsker å belyse, men som ikke nødvendigvis må kjøres i rekkefølge.

Introduksjon

Hvem er vi:

- To masterstudenter TØH/ HIST : Master i ledelse av teknologi
- Bakgrunn fra Bachelor IT- støttet bedriftsutvikling og bachelor telmatikk.

Masteroppgaven:

- Mellommenneskelig / prosess tilnærming til innføring av IT-systemer. Hva påvirkes
- Hvordan har slik prosjektet slik det har blitt kjørt til nå, påvirket aktørene og output.

Opptak/ anonymisering:

- Innhente samtykke til opptak av intervju

Dette intervjuet:

- Hvilke forventninger har de ulike aktørene til prosjektet
- Hvordan har de oppfattet prosessen så langt
- Hvordan ser de for seg at fremtidig situasjon vil bli.

Generelle spørsmål

Din rolle?

- Navn, alder
- Rolle i bedriften
- Hvor lenge har du jobbet i bedriften.
- Rolle i prosjektet.

Kort om organisasjonen, og tidligere kjennskap til liknende prosjekter.:

(Hvem er dere, og hvordan er deres forhold til IT systemer og IT prosjekter.)

- Mange ansatte, stor/ liten medium
- Ofte involvert i system utviklingsprosjekter?
 - o Vært involvert i liknende prosjekter mellom flere org i nyere tid?
 - o Har dere enkelte faste i bedriften som følger opp slike prosjekter?
- Vil du si at bedriften er godt vant med bruk av IT systemer?

Samhandlingssituasjon i dag

Hvordan foregår interaksjonen mellom aktørene i dag? (Hvilket media benyttes?)

- Benyttes det telefoni, IT eller andre systemer?
- Eksisterer det F2F møter regelmessig, eller kun ved gitte situasjoner?
 - o Møtes aktørene ofte?
 - o Gjelder det alle nivå i bedriften?
- Hvordan vil du si dagens måte fungerer?
 - o Ser du noen utfordringer med dagens måte å interagere på?
- Er det mye av dagens samhandlingssituasjon som kunne vært standardisert?
 - o Er noen av interaksjonene som vanskelig kan standardiseres?

Hvor godt kjenner aktørene til hverandre/ foregår interaksjonen ofte?

- Er det nivåer i bedriften/ roller som kommuniserer ofte med noen motstående ut av de andre aktørene?
- Hva tror du er de største utfordringene til de andre aktørene med dagens løsning?

Prosjektet

Hvordan ble dere introdusert for prosjektet

- Hvordan fikk dere kjennskap til prosjektet?
- Hva gjorde at dere valgte å delta?
 - o Hadde de andre aktørens deltakelse noe å si for at dere valgte å bli med?
- Hva er deres rolle i prosjektet?(hvorfor ble dere spurt om å delta?)

Forventninger til prosjektet

- Hva forventer dere å få ut av prosjektet, systemmessig.
- Har forventningene endret seg over tid?
- Hvordan ser du for deg at prosjektet kan endre samhandlingssituasjonen på?
 - o Måten å interagere mot de andre aktørene på?

- Hvordan dere operer? (Push/ pull information)
- Ser du noen utfordringer ved informasjon deling for fremtidig løsning?
- Vil fremtidig løsning kunne forbedre samhandlingen mot særlig en del av kjeden?
- Vil hele bedriften bli berørt av prosjektet?
 - Eller er det bare enkelte nivåer i bedriften?

Prosessten (Hvordan har det vært å delta i prosjektet, har det gitt noen gevinster allerede?)

- Tid; Krever prosjektet mye involvering av dere? Hva er tanken rundt dette?
- Er det andre elementer i kjeden eller aktører som burde vært involvert?
- Har hele bedriften deres vært involvert i prosjektet?
- Er prosjektet et samtale emne i bedriften? Alle nivåer?
 - Hvor godt føler du bedriften kjenner til prosjektet?
- Har det vært initiativ i prosjektet du særlig føler har vært positiv?
 - Har dere fått noen gevinster allerede?
 - Er kunnskapen om de andre aktørene blitt bedre som følge av prosjektet?
 - Hva er deres syn på de workshopene som har vært gjennomført?
- Føler du at deres innspill har hatt noe å si, eller vil ha noe å si?
 - Har dette endret seg?
- Skiller dette prosjektet seg fra andre liknende prosjekt dere har vært involvert i?
 - Hvordan, på hvilken måte?
- Føler du at FINEST som et stort EU-prosjekt har innvirket noe på prosessen?

Avslutning

Eventuelt, andre ting ved dette prosjektet som burde vært belyst?

- Hvordan er bransjen, sett opp mot denne endringen?
- Er det en bransje i endring?

Mulighet for flere intervju:

- Mulighet for intervju i uke 12/13
- Mulighet for å snakke med andre innad i organisasjonen.
- Helst noen med et annet perspektiv, eks operativt nivå.

Attachment 2 - Intervjuguide gruppeintervju med MARINTEK

Introduksjon

Hvem er vi:

- Fortelle litt om oss, 2 masterstudenter → TØH → MLT
- Bakgrunn fra Bachelor IT- støttet bedriftsutvikling og bachelor telematikk.

Masteroppgaven:

Masteravhandling levert av dere →FINEST (Use case 1) som casestudie/fokus.

- Overordnet med samhandlingsfokus (mellommenneskelig/prosess tilnærming innføring av IT-Systemer)
- spissing→ påvirkning av ulik tilnærming til prosjektet.
- Ikke fokus på tekniske løsninger, eller spesifikt hvordan de ulike aktørene operer.

Opptak/ anonymisering:

- Innhente samtykke til opptak av intervju
- Intervjuet vil ikke tilbakeføres til personnivå, (anonymisert), men sammen med andre gjennomførte intervju kunne tilbakeføres til MARINTEK.

Dette intervjuet:

Har allerede kjørt innledende intervju med Agathe og de tre andre aktørene i Use case 1, så dette benyttes for å se nærmere på hvordan prosessen i prosjektet har vært, og hvilken innvirkning de ulike tilnærmingene fra deltakende aktører har hatt.

- Hvordan har tilnærmingen til prosjektet vært fra de ulike aktørene?
- Hvordan har dere oppfattet prosessen så langt?
- Hvordan kan dette påvirke fremtidig situasjon.
- Samtale/ diskusjon, ikke strukturert liste med spørsmål.
 - o Få flere perspektiv på tema, utfra deres ulike oppfatninger.

Generelle spørsmål om Prosjektet

- Kort runde, hvilken rolle har dere i prosjektet?

- Hvis flere nivå i prosjektet, «BRA», flere perspektiv og oppfatninger. *
- Generelt hvordan er oppfatningen av dette prosjektet?
- Noe dere vil trekke frem som utfordrende med slike typer prosjekt?

Proessen i prosjektet

Hvordan har prosessen i prosjektet vært, og er det enkelte elementer som vil fremheves som spesielt produktive?

- Er det noe dere føler dere har gjort annerledes denne gang, i forhold til andre prosjekter?
 - Hvor styrt har dere vært i forhold til prosess?
- Hvordan har kommunikasjonen vært i prosjektet?
 - Innad, nedover(til de andre aktørene)?
- Er det noe dere føler har fungert bedre/ dårligere denne gangen?
- Hvordan har workshopene fungert?
 - Er det spesielle workshop, eller møter som dere har føler har fungert bra?
 - Er det forhold ved disse som dere vil trekke frem som suksesskriterier?
- Hvis dere skulle gjort det igjen, ville dere endret på noe?
 - Hva, hvorfor?
- Prosessen videre, viktige ting som gjenstår?
 - Forhold som er viktige for at dette skal lykkes, eks frafall av aktører eller lignende?

Rundt aktørene i Use case 1

Hvorfor/hvordan ble disse med?

- Hvorfor ble disse valgt?
 - Krav til de som skulle være med?
- Hvordan ble prosjektet solgt inn, hvorfor ble disse valgt?
 - Trengte noen av aktørene overtaling for å delta?

Tilnærming til prosjektet, har evt ulike tilnærminger gitt merkbare forskjeller?

- Har det vært forskjeller i hva de har bidratt med?
 - Hvorfor?
 - Har noen av aktørene hatt større innflytelse?

- Tror dere det har vært krevende for aktørene å delta i prosjektet?
 - Har dere hatt tilgang til flere hos hver aktør?
 - Har dette gitt noe utslag?
 - Skulle dere hatt mer tid med noen aktører?
 - Er det noen del av bransjen dere føler ikke er dekket godt nok?
- Hvordan har bidragene vært i forhold til lignende prosjekt tidligere?
 - Forskjeller, hvorfor og hvordan?

Utbytte, eller forventet utbytte av å være med i prosjektet?

- Tror dere de vil kunne få forskjellig utbytte av prosjektet?
 - Hvor godt føler dere at de kjenner til prosjektet?
- Hvordan tror dere forventningene til aktørene er?
 - Har de endret seg over tid?
 - Tror dere de «viste» hva de gikk til?
 - Er de reelle og like blant aktørene?
- Hvilke hovedgevinster tror dere de vil ha av å være med?
- Er det noen av aktørene som særlig kan bli berørt av en fremtidig endring?

Hvordan kunne aktørene tilnærmet seg prosjektet bedre?

- Tror dere at noen av aktørene kunne vært bedre tilpasset deltakelse i prosjektet?
 - Hvordan, hvorfor?
- To av aktørene har nevnt muligheten for at de kunne hentet inn ekstern/ekstra hjelp ifb med prosjektet, hvilke utslag tror dere dette kunne gitt?
 - Utfordringer/fordeler
 - Hva hvis de gikk sammen om en ekstra ressurs?
 - Fordeler for Aktør 2 og 3 ved at de bruker ledelsen direkte inn i prosjektet, i stedet for en ekstern konsulent?
 - Konsekvenser i ettertid?

Avslutning

- Andre synspunkter på prosjektet?
 - Vil det endre bransjen?
- Er det spesielle forhold som gjør dette prosjektet vanskelig i denne bransjen?
- Ser dere sammenlikninger fra dette prosjektet opp mot andre slike prosjekter?

Attachment 3 - Intervjuguide dybdeintervju med aktørene

Introduksjon

Hvem er vi

- Masterstudenter ved HIST/TØH/MLT
- Bakgrunn fra Bachelor IT-støttet bedriftsutvikling HIST, Bachelor Telematikk Forsvaret

Masteroppgaven

- Fokus, samhandling, hvilke utslag ulike tilpasninger til prosjektet har hatt, og vil kunne få?
- Mellommenneskelig nivå, ikke teknisk fokus på løsninger eller i detalj hvordan samhandling foregår.

Anonymitet/ Opptak

- Ikke sporbart på personnivå.
- OK med lydopptak?

Dette intervjuet

- Prosesstilnærming
- Ressurser

Generelt

Proessen

- Tok det lang tid før dere bestemte dere for å bli med i prosjektet? Måtte dere overtales?
 - o Er det gitt noen krav til deltagelse i prosjektet?
 - Hvis ja, hva var årsaken til dette?
- Ser du noen fordeler/ulemper ved de andres tilnærming inn i prosjektet, hvis vi ser på personlig involvering kontra innleid konsulent? Hva er fordelene/ulempene ved deres tilnærming?
- Hvordan opplever du bidraget deres inn i prosjektet opp mot de andres?
 - o Hvis dårlig, hvorfor det?

Tilnærming.

- Hvorfor ble denne tilnærmingen valgt?
 - o Bevisst valg?
 - o Fordeler med egen tilnærming?
 - o Hvilken ekstra gevinst for dere med denne tilnærmingen?
 - o Er det spesielt for enkelte initiativ i prosjektet dere har en fordel, (i starten av prosess, workshop)
 - o Ser dere noen fordeler for fremtiden?
 - o Lagring/ tilbakeføring av kunnskap?
- Utfordringer med egen tilnærming?
 - o Har tilnærmingen ikke alltid strukket til, hvorfor?
 - o Ser dere noen utfordringer for fremtiden?
 - o Lagring/ tilbakeføring av kunnskap?
- Hvordan ville tilnærmingen passet for andre/ Hvorfor tror du andre har valgt en annen tilnærming?
- Finnes det forutsetninger som taler for en bestemt tilnærming?
 - o Har omfanget eller typen prosjekt mest/noe å si for tilnærming?

Ressurser

- Hva er den største utfordringen ved å delta i prosjektet?
- Får dere bidratt like mye som dere har lyst til?
 - o Opplever dere at de som bidrar mer har større innflytelse i prosjektet?
- Og ved å delta i EU-prosjekt får man finansiell støtte, tror du ytterligere midler kunne hjulpet dere å bidra enda mer?

Langsiktig

- Hva blir viktig i neste fase av prosjektet?
- Hva har dere lært av denne prosessen som dere kan ta med tilbake i organisasjon?
Har dere rutiner på hvordan dere skal håndtere det dere har lært?