UNIVERSITETET I AGDER

Implementing an institutional change in a regional context

A case study of telemedicine implementation and diffusion in Agder.

ALEXANDRE RAMANA BENGBA

SUPERVISORS

Leif Skiftenes Flack
Kirsti Askedal

Executive summary

High life expectancy, aging population and an increasing chronic diseases generates new challenges for the current global healthcare (Brouard, Bardo, Vignot, Bonnet, & Vignot, 2014). Public agencies and business corporates have shown interest in advances technological research and innovation projects to remedy the problem. Innovating in public sector is highly challenging and results shouldn't be taken for granted (Dacin, Goodstein, & Scott, 2002). Further, there is a lack of understanding how public innovations are created (Sørensen & Torfing, 2011).

Theoretically the thesis builds on two strands of theories: institutional entrepreneurship and eHealth. This thesis builds on the assumption that if disposing enough knowledge on institutional entrepreneurship work, public entrepreneurs may be able to plan, organize and facilitate project success. This thesis focuses on "change agents" who initiate divergent changes defined as changes that break the institutional status quo in a field of activity and thereby possibly contribute to transforming existing institutions or creating new ones'(Battilana, Leca, & Boxenbaum, 2009). To investigate how public innovations are created, the following research question was formulated:

> *What are the critical factors enabling institutional entrepreneurs to create and sustain a technological innovation project in regional healthcare context?*

Built on a qualitative case study research, a total of 11 in-depth, thematic interviews were conducted with actors involved in developing a common telemedicine solution for Agder.

The results show how challenging it is to implement change in established organizations. Empirical data indicate that the process of implementing institutional change in a regional context involves a multi-dimensional process of institutional entrepreneurship work including political work, technical work and cultural work. Further, the findings reveal that stakeholder management and a predisposed organizational structure and capabilities are critical factors enabling successful institutional change in large scale health projects. This research adds to the existing institutional entrepreneurship literature by suggesting to add stakeholder management.

Keywords: Institutional change, institutional entrepreneurship, institutional entrepreneurship work, innovation in public sector, eHealth, telemedicine.

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Introduction

Introduction

The growth in lifespan has often led to a higher incidence of chronic-degenerative diseases (e.g. heart disease, diabetes, cancer, Alzheimer's disease etc.) which will lead to an increase need of healthcare resources over time in long-term care (Lopreite & Mauro, 2017). Healthcare organizations worldwide are force to adapt, transform and in some cases completely redefine the way the operate or deliver care services (Mtibaa & Tagina, 2012).

Because information and communication technology (ICT) has been promoted as a route to cost effective, equitable and quality healthcare (Ahmed & al, 2014), actors including governments, research organizations, business corporates driven by the social mission have begun to explore among the diversity of technologies integrations a possibility of networks creation in healthcare sector(de la Torre Díez, Alonso, Hamrioui, López-Coronado, & Cruz, 2018) to respond to these demands. Because products and process innovations (Camisón & Villar-López, 2014), can be designated to support the process of delivering better healthcare services worldwide, new technological solutions should be embraced to effectively enhance service delivery in the health care process, improve quality of care, support health care safety and provide cost-effective health services for patients, organizations and governments(Nasi, Cucciniello, & Guerrazzi, 2015).

Based on this growing recognition of the potential benefits from ICT in health care service delivery, using the traditional model of care delivery which focuses on a face-to-face interaction with an expert, physician or trusted health care provider will no longer solely solve the problem (Oderanti & LI, 2018).

The use of ICT in the health sector popularly known as eHealth, is an emerging field and is considered as one of the most rapidly growing areas in healthcare today (Silva, Rodrigues, de la Torre Díez, López-Coronado, & Saleem, 2015).

Technological innovations in this field has led to new applications for disseminating healthcare services to diverse audiences using innovative interoperable design (Srivastava, Pant, Abraham, & Agrawal, 2015). The field of e-health is a broad and covers topics such as telemedicine, telecare, telehealth, digital participation and many other areas (Oderanti & LI, 2018). Covering all topics within the field was beyond the scope of this study.

Therefore, focus has been directed to telemedicine because of its importance when it comes to implementing mobile health and further because of the availability of a case study enabling research investigation on the topic.

As an innovative method of providing care service to patients with chronic conditions and to those who are unable to travel to major cities for health care, telemedicine technology is believed to play a key role in the future of healthcare ("www.ehcos.com," 2017).

Several studies have identified factors that are associated with successful telemedicine applications. However, telemedicine projects are considered to have a poor record of implementation which is combined with a poor history of adoption (Doarn & Merrell, 2008; Zanaboni, Wootton, & Making, 2012). How come given the great potential of benefits related to telemedicine and enormous investment in innovation and all the opportunities for innovators to succeed, telemedicine projects still have a low rate of adoption?

While searching in the literature, it appeared that because telemedicine solution is considered as a new technology, many healthcare organizations are resistant to adopt it and the new practices it come along with (Rogove, McArthur, Demaerschalk, & Vespa, 2012). The resistance according to him, includes concerns about the feasibility, scientific evidence of the business value, competitions and excessive cost which are discussed in the theoretical background. Beyond the identified issues within the system itself,

Sørensen & Torfing (2011) mentioned in their work another reason that plays a key role when introducing innovation to the public sector. They stated that despite the growing interest in fostering innovations to the public healthcare sector, there is a lack of understanding of how public innovations are created. Innovating in public sector is highly challenged as well as very contested, it shouldn't be taken for granted (Dacin et al., 2002).

The structure of a public sector is based on institutions which by definition refer to a formal public organization or a unit within a public organization, such as a library, a prison or a hospital (Rolfstam, 2012). Because making major changes in any existing system is a collective goal that requires action from both public and private actors with different interests, influence and levels of power (Dacin et al., 2002), introducing innovation in public healthcare is likely require the need for collaborative interaction between different public and private actors is important if not crucial (Sotarauta & Mustikkamäki, 2015).

A rich array of theoretical and empirical insight on how new practices become established via legitimacy and diffusion has been elaborated (Michael & Ellen, 2007). However, little attention has been paid to the origin of how new set of activities emerge and provide a foundation for new practices (Michael & Ellen, 2007). Among the plethora of theories elaborated by neo-institutionalists theories to assess dissemination of innovations, diffusion of innovation theory technically fit the context. The problem with that theory was that diffusion studies more often treats new practices as objects that are adopted or not(Michael & Ellen, 2007). Such approach has been criticized for been too rigid and not paying attention to the work done by "change agents" to disseminate innovations.

As Sørensen & Torfing (2011) stated, innovations have always been driven by social and political actors who are facing specific problems and demands and choose to exploit opportunities. This statement introduces the entrepreneurial role of different actors introducing innovation to the public sector. The idea of public entrepreneur has been embraced by some as an appropriate way to introduce innovations to public sector (Mack, Green, & Vedlitz, 2008). Therefore, institutional entrepreneurship has been proposed as a framework to get insight into the process of change related to a telemedicine dissemination in a regional context. The concept of institutional entrepreneurship specifically features how actors change institutions or institutionalize

a new practice (Thompson, Herrmann, & Hekkert, 2015). However, Thompson et al (2015) pointed out the lack of research explaining how institutional entrepreneurs initiate change. These gaps in the study are considered as a start point for this study's objectives which are presented below.

Research objectives

Given the challenges mentioned above, this thesis analyzes the dynamism of institutional entrepreneurs in implementing institutional change in a healthcare context. The main purpose of the study was to examine how the work done by "change agents" later referred as institutional entrepreneurs can contribute or support the successful conditions for creating, disseminating and sustaining a regional public innovation project. Therefore, two main objectives have been fixed to this study.

The first one was looking for a theoretical understanding of critical factors enabling successful condition to disseminate an innovation project. Furthermore, the institutional change process was discussed.

Secondly the practical contribution of this thesis which was to provide knowledge on how a new practice should/can be institutionalized in a regional context.

Research problem and research question

The research problem of this study builds upon the assumption that when disposing enough knowledge on institutional entrepreneurship work, public entrepreneurs may be able to plan, organize and facilitate a smooth project dissemination. Relating the statement above to this thesis context, it obvious that moving toward any changes in healthcare system by implementing telemedicine is likely to be full of challenges and contestations among involved actors. Because the gap addressed in current knowledge on institutional entrepreneurship work in disseminating innovation projects, the concrete research question for this study is formulated as it follows:

> *What are the critical factors enabling institutional entrepreneurs to create, disseminate and sustain a technological innovation project in regional healthcare context?*

For analysis reasons, the main question was supported by a few sub-questions which each of them is centrally linked to the broad goal of this study. In doing so, this study hopes to give focus and direction to the process of institutional change in a context of telemedicine dissemination. Therefore, following sub questions were elaborated:

1- Who are institutional entrepreneurs in TELMA?
2- What actions are undertaken by them to mobilize resources behind the vision of a common telemedicine in Agder.

Study's structure

A common four section structure have been selected for conducting this study in which:

Section one as the first chapter of this thesis, provides background information for conducting this study. This is done by explaining the underlying motivations for the research, defining the research problem and research questions, delimiting the study objectives and providing an overview of the study structure.

Section two describes the theoretical background supporting this study. this chapter is presented as a review of literature. Theories and topics reviewed in this literature enables a better understanding of institutional entrepreneurship work when changing institutions or diffusing institutional changes. eHealth literature is also reviewed to assess the field of telemedicine. These two strands of literature are first developed separately Then a summary of both fields is presented at the end of the section and is considered as an initial framework and guideline for:

- Analysis of institutional entrepreneurship work in diffusing change and
- Analysis of empirical data generated through the case study presented in section three.

Section three presents the study context by describing the case study, the methods for data collection and data analysis processes. Findings generated through the empirical case study as well are presented in this section.

Finally, section four commonly named discussion, combines both findings from the theoretical knowledge and the empirical data and present them into a conclusion. Evaluation, theoretical and practical implications are then discussed and suggestion for topics for further research are addressed.

Theoretical background

The theory used in this study uses an institutional entrepreneurship lens to understand how institutional entrepreneurs create and disseminate a sustainable innovation in a context of healthcare delivery. Therefore, two strands of literature have been reviewed to support this study: eHealth and institutional entrepreneurship. Since the research focused on the critical factors supporting institutional entrepreneurs in creating and sustaining an innovation project, the theories selected and discussed were seen from the point of view of an institutional change.

The field of eHealth

Aging population and an increasing chronic diseases generate new problems the current global healthcare (Brouard et al., 2014). According to (Prince et al., 2015), the need for medical care will increase in the future which in turn will lead to high healthcare expenditures. Drawn into this context, compelling demands for a fundamental shift in the how healthcare organizations should meet needs of chronic diseases have been formulated worldwide. This situation has brought public agencies and business corporates into a field of advances research and innovation projects to meet these challenges.

The availability of broadband wireless access networks in almost everywhere, has created new possibilities for many network applications and services (de la Torre Díez et al., 2018). Given the burden of chronic diseases targeting the global healthcare system, actors including governments, research companies, business corporates driven by the social mission have begun to explore among the diversity of technologies integrations a possibility of networks creation in healthcare sector(de la Torre Díez et al., 2018). The World Health Organization clearly stated that technology forms the backbone of the services delivered by the health sector ranging from preventing, diagnosing and treating illness and disease(Farahat, Hegazy, & Mowafy, 2018).

Because technology use in health sector is viewed as the most promising tool for improving the overall quality, safety and efficiency of the health delivery system, large

number of technological Solutions have been created to support the delivery of healthcare.

Among the diversity of eHealth solutions, assessing specialized and professional Solutions designed to remotely monitor health conditions of patients suffering or recovering from a wide range of illnesses have been selected. Four services designed to help patients within this group are identified: telehealth, telecare, telemedicine and digital participation services(Oderanti & LI, 2018). As mentioned in the previous chapter, telemedicine was the focus of this study. Therefore, appropriate definition, areas of applications, telemedicine services and benefits are assessed as following.

The concept of telemedicine

For some authors the use of telemedicine can be tracked back to the 1960s, when the National Aeronautics and Space Administration of the United States (NASA) started monitoring vital signs of astronauts during space missions(PAHO, 2016). For others such as Robert H. Eikenboom, some events in the central Australia in 1874 shows that the genesis of telemedicine goes even further back when the newly built telegraph played key role telemedicine in enabling care for wounded person and by uniting a dying person with his wife 2000 kilometers away (Eikelboom, 2012).

Although different authors claim different events and different moments, the concept of telemedicine is the delivery of healthcare services across geographical distance. This method has developed slowly and sporadically until 1990s when ICT revolution arise and triggered a renewed interest in telemedicine(Eikelboom, 2012). Among the multitude of components under the umbrella of eHealth technologies, telemedicine is defined by the world Health Organization as:

> "*The delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities*"("who.int," 2009).

Telemedicine applications can be used in almost all specialties within the health sector (PAHO, 2016), it was used at hospitals by general practitioner. However, during the last decade, it has been observed a growing field of distance monitoring applications making

telemedicine available for home- based patients care. In this new application, users may be patients with chronic conditions such as asthma or diabetes that need regular monitoring to achieve or maintain healthy functioning, but they are typically not in an acute phase.

Remote assistance which is considered as a breaking ground for people living with multiple chronic conditions or multimorbidity (Melchiorrea et al., 2017), have multiple services including:

- Telecommunications for remote follow-up, treatment of patients and telemonitoring services for patients with chronic diseases;
- Administrative management of patients including both laboratory test requirements and issues related to billing for service delivery;
- Distance learning for professionals: Due to the scares resources within some fields in the health sector, the use of telecommunication technology can help to fill the gap (Meher, Kurwal, & Suri, 2017) and facilitate distant education of health professionals;
- Evaluation and collaborative research networks: it an assumption that telemedicine enables research by using ICT to share and disseminate best practices and to build knowledge through the actions and reactions of its participants.

According to prince et al (2015), the burden of chronical diseases targeting the global healthcare system, will lead to high care expenditures in the future. Most of the health care budget will be spent in transportation, accommodation in those cities with a health facility. Implementing telemedicine services at the level of social assistance may help to provide comprehensive support and follow-up for chronic and low prevalence diseases(PAHO, 2016).

By enabling remote consultation from primary care to referral to hospital, telemedicine may help facilitating the access to medical care services regardless the geographical location(Qureshi, 2015). Telemedicine contribute to patient empowerment by giving them the ability to positively influence their health by being involve in decision making about their health (Kuijpers, Groen, Aaronson, & van Harten, 2013). With comfortable mobile devices patients could be aware of their diagnostic, disease control and monitoring (Silva et al., 2015).

Theses authors argued further that the use of telemedicine can contributes to facilitate education in preventive medicine particularly, and the whole public health in general. The socio-economic benefit of a telemedicine implementation results in cost saving for healthcare organizations(Hailey, Roine, & Ohinmaa, 2002), less waiting-time for patients (Qureshi, 2015), interoperability within healthcare organizations(PAHO, 2016).

Telemedicine implementation challenges.

As presented above, the use of technology in health sector was viewed as the most promising tool for improving the overall quality, safety and efficiency of the health delivery system. The World Health Organization clearly stated that technology solutions forms the backbone of the services delivered by the health sector ranging from preventing, diagnosing and treating illness and disease(Farahat et al., 2018). Therefore, creating and enabling a smooth interaction across the diverse public health spectrum should be the role played by public eHealth solutions (Vassilakopoulou et al, 2017).

Telemedicine technologies as presented above, are considered to be a viable option in future healthcare delivery by allowing healthcare organizations to provide care in a more economic and comprehensive way (Zanaboni et al., 2012). However, despite enormous investment in innovation and all the opportunities for innovators to succeed, many healthcare innovations projects fail. Though several studies has identified factors that are associated with successful telemedicine applications, telemedicine projects are considered to have a very poor record of implementation which is again combined with a poor history of adoption (Doarn & Merrell, 2008; Zanaboni et al., 2012). Fundamentally for an innovation to be successful, it needs to be sustainable too. Sustainability refer to adoption of the new practice into everyday practice and continue to function after the pilot period runs out (Zanaboni et al., 2012).

The author argued further that "an innovation is considered to be fully adopted when the majority of potential users employ it"; but studies noticed a low rate of adoption of telemedicine applications. Innovation adoption occurs at two societal levels: the individual (where individuals, patients, accept and adopt an innovation) and organizational (where an organization adopt an innovation) level. Because this study later used an institutional entrepreneurship as a lens to investigate the field of telemedicine, the focus was directed on organizational adoption.

The question is what makes it difficult to successfully implement and disseminate innovations in a healthcare context such as telemedicine?

To answer to this question, the problem has been broken down then looking at how innovations such as telemedicine services are created, implemented, disseminated and sustained; what are the forces that influences them and so on.

Because telemedicine is considered as a new emerging new approach or technology, many healthcare organizations may be resistant to adopt the new practices it come along with(Rogove et al., 2012). This resistance according to these authors include concerns about the feasibility, scientific evidence of the business value and excessive cost.

The feasibility: the feasibility of telemedicine according to Bashshur et al (2013) has been investigated in almost all specialties of healthcare delivery. Yet it represents a big concern for telemedicine adopters. Scientific evidence: Some healthcare community still struggle to see the business value of investing in Investment in telemedicine requires evidence to support the value and expected benefits from the perspective of the patient and health service provider and the organization as whole (Kidholm, Clemensen, Caffery, & Smith, 2017). excessive cost: some health communities still question whether this new method of care of care is financially viable or sustainable as currently constituted and financed (Bashshur, Shannon, Krupinski, & Grigsby, 2013). Can the cost of telemedicine services be justified in the overall cost-benefit scheme and will third-party payers reimburse for this type of care soon? It an assumption that as many other emerging technologies, the cost of service will likely continue to decrease, but will it reach a level of affordability?

As studies shows, telemedicine operates in a very dynamic and complex environment. This environment makes it particularly difficult to generate successful and sustainable business models which are necessary for the widespread of telemedicine services (Peters, Blohm, & Leimeister, 2015). Despite the growing interest in fostering innovations to the public healthcare sector, there is a lack of understanding of how public innovations are created (Sørensen & Torfing, 2011).

Eggers & Singh (2009) argued that the problem with innovation in the public sector is not related to the absence of innovation as claimed by some authors but rather the fact that most public innovations are episodic and driven by accidental events that leaves public organizations with a lasting capacity to innovate.

The process of innovation is supposed to be an open process based on intentional actions from different actors aiming to respond to problems and challenges or to exploit new opportunities (Sørensen & Torfing, 2011). This author went further by arguing that innovation has always been driven by social and political actors who are facing specific problems and demands and choose to exploit opportunities. This introduce the entrepreneurial role of different actors in introducing innovation to the public sector. The idea of public entrepreneur has been embraced by some as an appropriate way for introducing innovations to public sector (Mack et al., 2008). Referred as "change agents" institutional entrepreneurs are actors who initiate divergent changes that break the institutional status quo in a field of activity and thereby possibly contribute to transforming existing institutions or creating new ones'(Battilana et al., 2009).

Institutional entrepreneurship

Because public sector innovation often requires collaborative interaction between different public and private actors (politicians, civil servants, experts, private firms, user groups, interest organizations, and community-based associations) (Sotarauta & Mustikkamäki, 2015), this study used institutional entrepreneurship lens which is presented in the next section to understand how public innovations such as telemedicine application are created and disseminated.

Given that the concept of innovation has been used several times in this study, understanding it from a general definition was important. The concept of innovation has many definitions according to the research context.

However, Sørensen & and Torfing (2011) elaborated a definition of the concept which suits the context of this study. For these authors,

> "*innovation is defined as an intentional and proactive process that involves the generation and practical adoption and spread of new and creative ideas, which aim to produce a qualitative change in a specific context".*

When unpacking this definition, it appeared clear that innovation often aims to create change or an attempt to improve the current state of business. Therefore, innovating in public health sector consequentially aims to create change or improvement in public healthcare organizations. Because most of the public services are delivery through public institutions, innovating in public sector is likely going to create institutional change. It appears clear that to understand the dynamic of how innovations are

introduced to the public sector two sets of theories are needed: institutional theory and entrepreneurship.

The concept of Institutional theory explains how organizational behavior is shaped by its surrounding institutional forces (Arasti, Pasvishe, & Motavaseli, 2012).

While entrepreneurship is more about the process of creating something different with value by putting in the necessary financial, psychological, and social risks; and receiving the resulting rewards of monetary and personal satisfaction (Hisrisch & Peters, 1989 cited in (Davidsson, 2005). When these two fields are combined, institutional entrepreneurship raised (IE).

The literature of institutional entrepreneurship builds its foundation on DiMaggio's (1988) observation (Sotarauta & Mustikkamäki, 2015). For these authors, organized actors do not only follow institutions rules but also consciously aim to create them or to transform existing institutions. Therefore, the concept of institutional entrepreneurship provides knowledge of how social actors work to change not only institutions that owns innovation systems, but their own activity as well (Sotarauta & Mustikkamäki, 2015).

According to (Battilana et al., 2009; Jolly, Spodniak, & Raven, 2016) institutional entrepreneurs can be individuals, groups of individuals, organizations and a range of different actors including commercial entrepreneurs, scientists, regulatory agencies, governments and others who are involved in transforming and shaping the development of a new field. To transform or to shape a development of a new field in institutions, it is important to institutions characteristics. Based on Scott framework cited in (Arasti et al., 2012), institutions has been classified into formals and informal institutions within which three categories exist namely regulatory, cognitive and normative whereby:

- Regulatory institutions: represent a set of laws and regulations, government policies formally designed to enforce the structure aimed to support entrepreneurial endeavors(Arasti et al., 2012). Considered as the most formal type, regulatory institutions represent the standards provided by laws and other sanctions(Desa, 2012).
- The normative institutional includes the prevailing sets of standards and values by which entrepreneurial behavior is accepted locally. This dimension of institution is less formal than regulatory institutions (Arasti et al., 2012).

- The cognitive institutional which is about people's underlying beliefs, knowledge and skills necessary for enhancing entrepreneurial initiatives (Arasti et al., 2012). Cognitive institutions represent the most informal of institutions(Desa, 2012).

Because the study deals with innovation in public sector, it is an assumed that any change implemented in public institutions are likely to affect all the three dimensions of an institution. To understand the concept of institutional entrepreneurship in creating institutional change, a process model elaborated by Battilana et al (2009) have been selected for further analysis (see figure 2).

The process model was selected because of the study's context. The study context was exploring how institutional entrepreneurs engage during the process of divergent organizational change. Four elements of the model are highlighted as key conditions enabling institutional change namely fields characteristics, actor's social position, creation of a vision for divergent change and mobilization of allies behind the vison.

Since this study focuses on entrepreneur's critical factors enabling and sustaining change in a context of eHealth, deep analysis of Battilana model was beyond the scope of this study. Therefore, a brief and general description of the model has been undertaken. However, the focus has been put on creating a vision for change and how actors mobilize allies behind the vision. These two areas have been selected because they are assumed to be key activities in a process of implementing a change. For Battilana et al.,2009, enacting any change should start by:

Identifying the field characteristic and actors' social positions

The institutional change is influenced by the level of institutionalization and fragmentation within an institution field. Battilana et al (2009) identified 3 types of levels: high, less and heterogenous fields characteristics. For these authors, when entrepreneurs are working to enact change in a high level of institutionalization field, they should frame a discourse that fit the interest and values of member of the dominant coalition. In a less institutionalized field, entrepreneurs may use other type of strategies such as formulating a vision that aims to establish a common identity specific to the actors who will be part of the new field. When the field is heterogenous or populated

with fragmented groups, institutional entrepreneur needs to find a common ground and a discourse that fit with all the different actors.

However, the role played by actor's social position is likely important for the successful change implementation. Battilana et al (2009) stated that using the institution entrepreneurship social position as a tool can help mobilize individuals to support the divergent organizational change. Previous studies have shown that low status organizations often initiate a divergent organizational change, but recent studies have proved the opposite stating that organizations with high social status are likely to initiate divergent organizational change(Battilana et al., 2009). After assessing the field characteristic and actors' social positions, the next step in the model is to develop a vison for change.

Developing a vision for change

Any case for change start with a vision for change (Battilana et al., 2009). Therefore, developing a vision is the critical first step in effectively managing change. This activity according to (Leah & Shane, 2012) gives a sense of urgency and the necessary levels of motivation required for sustaining the change process.

Because Institutional entrepreneur are people with creative visions and able to foresee a new reality and how to get to it Serina & Timothy (2015), they represent a driving force for a change. When a vision for change is created, the challenging part that follows is about mobilizing resources behind the vision.

Mobilization of allies behind the vision:

The concept of resources mobilization is often related to the institutional entrepreneurship field. In an institutionalization process, the success of institutional entrepreneurs depends on their access to, and their skills in leveraging scarce and critical resources (Leca, Battilana, & Boxenbaum, 2008). Resource mobilization is assessed by (Battilana et al., 2009) as set of activities done to gain others support for and acceptance of new routines.

Institutional change:

The process of institutional change according to (Battilana et al., 2009), goes through fields characteristics and actors' social position, the development of vision and the process of mobilizing allies behind the vision. When this process is well managed, it will result to an institutional change which is the change expected. Before discussing

institutional change, there is a need for understanding the nature or the meaning of an institution is and what is an institutional change.

The notion of "institution" is a discussed topic in many disciplines and not common definition to the term was to find. Based on Scott (2001) work cited in (Pop, Leroi-Werelds, Roijakkers, & Andreassen, 2018), institutions are "humanly devised rules, norms, and beliefs that enable and constrain action and make social life predictable and meaningful". In sociology Fabio Ronjas defined institutions as stable patterns of behavior that define, govern, and constrain actions (Rojas, 2013). Because there is not consensus on a common definition of the term, using the context in which the term will be analyzed provided a clear definition. This thesis was assessing institutions in a context of public healthcare organizations. Therefore, institutions can be defined as organizations or other formal social structure that governs a field of action. It may be a hospital, university etc.

The concept around institutional entrepreneurship and institutional work suggest that actors can (Mohammed et al.)actively influence and build institutions (Frow, McColl-Kennedy, & Payne, 2016). Specifically, actor's actions lead to institutional change which is generally defined as a change in an entire organization. At its deepest understanding, institutional change refers to changes in the idea that govern institutions. As these idea changes, rules, practices, behavior, policies and outcomes shift as well. The new institution or the transformed one may have a new procedure, policies, rules and so on.
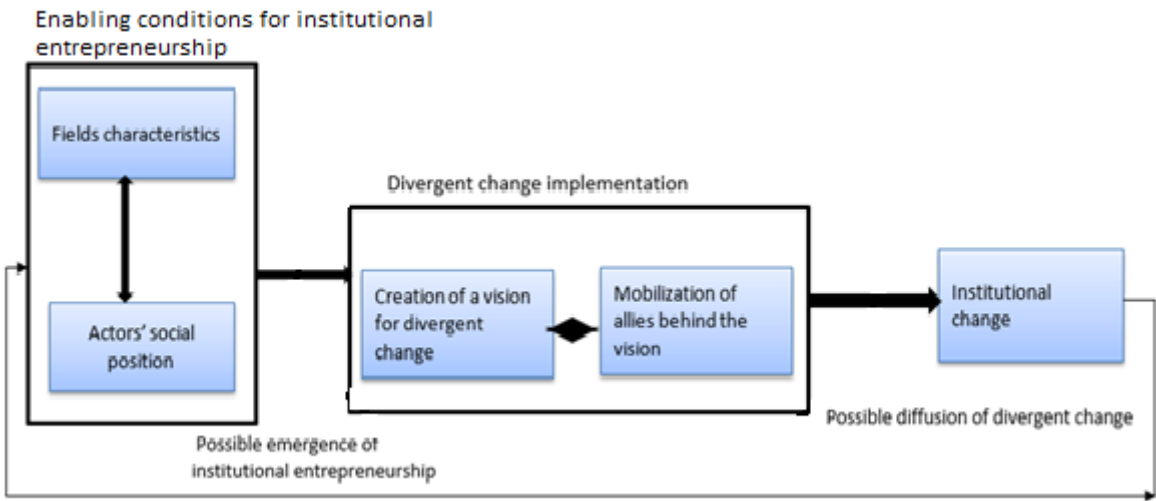
Figure 1. 1: Process model of institutional change (Battilana et al., 2009).

Because the process of divergent change implementation was selected as "the meat" of this thesis, extended literature search regarding creation of a vision for divergent change and resource mobilization has been undertaken to uncover entrepreneur's actions when creating and mobilizing resources behind their vision for change.

Creation of a vision for change

As it has been mentioned earlier, any case for change start by a vision for change (Battilana et al., 2009). Vision statements are very important for organizational transformation and business success (Gulati, Mikhail, Morgan, & Sittig, 2016). Therefore, developing a vision is the critical first step in effectively managing change because according to (Leah & Shane, 2012), it gives a sense of urgency and the necessary levels of motivation required for sustaining the process of change. Vision allows leaders and stakeholders to think about their hopes and aspirations for the organization's future (Gulati et al., 2016).

However, the success of an innovation project does not depend only on developing a vision and following it. Being able to instrument the vision, formulate it into something realistic, and then share it as well are key elements when developing a vision (Gobble, 2015).

Because Institutional entrepreneur are people with creative visions and able to foresee a new reality and how to get to it (Serina & Timothy, 2015), they represent a driving force for a change. Therefore, it critical for the entrepreneur to be able to show the same passion, energy and dedication and drive the vision to the wider audience and team.

The entrepreneurial vision should be concrete and provide details about the idea, addressing customer demographics and geographic location, as well as product/service markets. As some says, whenever the vision gets spread across the organization, it translates into culture (https://www.entrepreneur.com).

Mobilizing allies behind the vision

The concept of resources mobilization is often related to institutional entrepreneurship field. In an institutionalization process, the success of institutional entrepreneurs depends on their access to, and their skills in leveraging scarce and critical resources

(Leca et al., 2008). Resource mobilization is assessed by (Battilana et al., 2009) as set of activities done to gain others support for and acceptance of new routines.

According to (Leca et al., 2008), two types of resources exists in institutional literature. Tangible resources such as employees, financial and material assets and intangible resources such as knowledge, reputation, and social capital used by institutional entrepreneurs when developing their strategies to influence the institutional field. Which resource is most used depend on the context in which the entrepreneur is operating in.

However, regardless of the type of resources three distinct resource mobilization strategies have been identified by (Wahid & Maung, 2013) namely convening, leveraging, and accumulating. Building on Dorado 2005 work cited in (Wahid & Maung, 2013) these strategies are not mutually and may even occurs at the same time but one of them normally dominate during the process. General description of these strategies is done below:

The convening process: Resources mobilization within this activity is done through collaborative arrangement as a precondition for institutional change (Dorado, 2005). This means that many actors agreed together to create new institutions or transform existing ones.

The leveraging process: when conducting this activity, resources such as legitimacy and support are mobilize using framing. Battilana et al (2009) identified three frames that are commonly used by entrepreneurs during the leveraging process: diagnostic framing, prognostic framing and motivational framing:

Diagnostic framing: Focuses on blame. From (Suddaby & Greenwood, 2005) diary cited in (Battilana et al., 2009), core activities here are bringing to light failures within the existing organization or broader field or exposing problems with current institutionalized practices.

Prognostic framing: while diagnostic frame focuses on blame, prognostic in return is about promoting the new idea as something greater than previous ideas. While diagnostic and prognostic framing involves a diagnosis of the root causes within an existing system and promotion of goals and perceived value for a new realization (Smith et al., 2016),

Motivational framing is more about providing to the wider audiences' good reason to support the new vision that is being promoted (Battilana et al., 2009).

Accumulating process: In this phase, support is gained over time through the actions and interactions of various actors. This result in a dominant and reliable design which is then diffused. Given these strategies used by institutional entrepreneurs to mobilize resources behind the vision of change, the question was what are the core activities within these strategies? Simply said what do institutional entrepreneurs does to implement the change?

While (Thompson et al., 2015) named it institutional change strategies, (Kevin, 2011) assessed it as dynamic capabilities of institutional entrepreneurship, (Jolly et al., 2016) used the term institutional entrepreneurship work to define efforts done by entrepreneurs to enact institutional change (Appendix). Though terminology used by these authors differ, the content of their findings was based on the institutional entrepreneurship literature.

Due to frequents similarities among these findings, this study has tried to merged findings into categories and sub-categories. Reason for doing so was to get a clear overview of work or strategies done by institutional entrepreneurs to influence regulative, normative and cognitive dimension of an institutional change. The work categories and sub-categories which include political work, technical work and cultural work are described below:

Political work

Generally performed by actors such as politicians, governmental organizations, regulatory agencies, professional agencies, industry associations, trade unions, lobbyists, unions and advocacy organizations, political work is often done at the regulative dimension of an institution. The concept of political work refers to efforts done by various actors to influence the development of rules, property rights and regulations in a community(Jolly et al., 2016). Therefore, understanding this concept helps us to think of politic work as a purposeful activity that attract attention to the transformations it makes in people, things and ideas and to the trajectories by which it unfolds("www.aog.ed.ac.uk," 2013).

Activities within this package include advocating new practices, creating new alliances and coalitions, aligning other actors towards common interests and developing new rules and regulations(Jolly et al., 2016). Therefore, it's seems more logic to agree with (Kevin, 2011) stating that seeking the support of senior politicians may confer status

and positive identity for the upcoming institutional change. Political work according to (Markus & André, 2008) gives a social foundation on which an institution can be built on. However, it doesn't provide a detailed model of how an institution should function. Therefore, the need for technical work which is a requirement to support political work is needed.

Technical work

Generally, technical work within entrepreneurship is done by actors with technocratic competences(Jolly et al., 2016). Actors in this context according to(Markus & André, 2008), includes government departments, professional organizations, consultancy organizations, firms, research institutions, universities, standards organizations, independent think tanks, scientists, consultants, and professional associations etc.

Often aimed at a cognitive dimension of institutions, technical work is about developing new mental models, new standards, elaborating benchmarking principles, creating linkages with existing institutionalized practices, educating actors with necessary skills to support the change(Jolly et al., 2016). Building a network of partners that can contribute with resources to support the work of the institutional entrepreneur is crucial.

Therefore, building networks and brokering relationships to ensuring an inclusive and unbiased approach for change has been identified by (Kevin, 2011) as important technical work. Ideal partners entrepreneurs should be looking for can be organizations that already conform to the new institutional norms and recruit them to help in the process of diffusing it (Kevin, 2011). He mentioned further that the ability for institutional entrepreneurs to make stakeholder feel that they are a part of a broad coalition of actors will ease the coalition building and increase participation of actors(Kevin, 2011).

Cultural work

Aimed at a normative dimension of an institution, cultural work refers to symbolic actions done to ensure that emerging institutional change fit with the broader social beliefs (Markus & André, 2008). Media, public relation experts, advertising agencies, social movements, consumer groups, civil society, professional associations, public intellectuals and ordinary citizens are among actors performing thee institutional cultural work(Kevin, 2011).

For (Kevin, 2011), the main role of cultural work focuses on institutional diffusion and the creation of legitimacy. This work is done by framing the new institutional arrangement in ways that target a broad audience and broad cultural values (Jolly et al., 2016). Key activities in this package includes promoting local ownership, emphasizing rational evidence, communicating across organizational cultures, demonstrating commitment(Kevin, 2011). These activities are described as following:

Promoting local ownership

The dynamic capability of encouraging local ownership of the new institutional norms and beliefs amongst other stakeholders is crucial for success(Kevin, 2011). According to him, institutional entrepreneurs usually lacks resources and must often rely on others stakeholder to spread the new norms and values forward. Therefore, being able to create local ownership for a change in the institutional field amongst other stakeholders is important.

The process of institutional change creates tensions within institutions: The tension between too much control and leadership and too little control and leadership. According to (Kevin, 2011) too much control and leadership by institutional entrepreneur were seen as not allowing other participants and stakeholders to become fully involved and take ownership of adopting new norms and assumptions and promoting these to others.

Too little control and leadership from entrepreneurs may be considered as a lack of fully commitment to the institutional change. disposing a solid process management capability when promoting local ownership (Battilana et al., 2009) is an effective tool within this activity.

Communicating across organizational cultures

To ensure that their messages and actions are understood as much as possible, institutional entrepreneurs will need the cross-cultural knowledge. The capability to understand logics behind different sectoral groups (i.e. private sector, development organization and government) and to communicate with each organization with language, signals and signs that they will understand may reduce resistance or misunderstanding of the change(Kevin, 2011).

Emphasizing rational evidence

The nature of institutional entrepreneurship work is to drive change in norms, values and assumptions. Mobilizing elements that are is perceived as rational evidence is

essential to legitimate the messages of the institutional entrepreneur and to help actors adopt new norms, beliefs and practices(Kevin, 2011).

Demonstrating commitment.

According to (Greenwood et al., 2008) work cited in (Kevin, 2011), organizations respond to the pressure by checking up if the norms and beliefs generated in society fit with the institutional field. Therefore, if actions undertaken to conform to new institutional norms conflict with other deeply held beliefs such as technical efficiency, a disconnect among stakeholder will emerge(Kevin, 2011). Institutional entrepreneurs aiming to build and maintain legitimacy among stakeholder, should demonstrate an effective commitment to the change they propose.

Theoretical summary

Through the theoretical background presented in this chapter, the field of eHealth have been assessed by presenting existing knowledge on the current global health challenges and how organizations and healthcare organizations are working to respond to these challenges. The use of ICT in health have been proposed as an important tool to improve healthcare service delivery in the future. To do so, implementing and diffusing technological healthcare innovations in public health was found to be a route to effectively manage the burden of chronic and severe diseases targeting the global health. However, studies showed that despite the growing recognition of technological benefit in health, innovating in public health is still a challenging task.

Number of studies have investigated why most of telemedicine projects still have a low rate of adoption. Factors such as telemedicine cost effectiveness, rational evidence skepticism around a new product have been identified as lagging factors for telemedicine adoption.

This thesis built on an assumption that the outcomes of an innovation project will be successful if innovators referred as IE dispose a consistent knowledge on how new practices should be introduce in an institution. Therefore, institutional entrepreneurship has been selected as a lens to investigate the process of creating institutional change by creating, disseminating and sustaining an ICT innovation project. The literature of institutional entrepreneurship contributed to map work categories and sub activities undertaken by agents of change to enact institutional change in a context

of healthcare delivery. The work categories identified which include political, technical and cultural work represent a framework for analysis of empirical data.

To use the framework for analysis of empirical data, a set of code will be organized under the work categories that have been jointly developed by putting together existing knowledge on institutional entrepreneurship work. This approach creates a structure for empirical data and will help to reduce/summarize the data in a way that can support answering the research questions. According to (Gale, Heath, Cameron, Rashid, & Redwood, 2013), this method sits within a broad family of analysis methods often termed thematic analysis or qualitative content analysis which are presented in the next chapter.

Main categories	Sub-categories	Themes
Creating a vision for change (Battilana et al., 2009; Gulati et al., 2016; Leca et al., 2008)	Purpose for change	Need for creative strategies, need for change in institutional context, demands of turnaround.(Battilana et al., 2009; Gulati et al., 2016; Leah & Shane, 2012)
Mobilizing allies behind the vision (Battilana et al., 2009)	Political work	Advocating new practice (Leca et al., 2008)
		Aligning Actors toward common interests (Jolly, 2017; Kevin, 2011; Markus & André, 2008)
		Creating new alliances and coalitions (Jolly, 2017; Kevin, 2011; Markus & André, 2008)
	Technical work	Contract (Jolly et al., 2016)
		Processes (Jolly et al., 2016; Kevin, 2011)
		Inclusion (Kevin, 2011)
		Educating Actors (Jolly et al., 2016; Markus & André, 2008)
	Cultural work	Promoting local ownership (Kevin, 2011; Markus & André, 2008)
		Communicating across org. culture (Battilana et al., 2009; Kevin, 2011; Markus & André, 2008)
		Emphasizing on rational evidence (Kevin, 2011)
		Demonstrating commitment (Battilana et al., 2009; Kevin, 2011)

Table1. 1: Theoretical background summary

Method

This chapter describes the methodology used to conduct this study. Here are described the research design, case selection, data collection sources and procedures. Furthermore, a detail data analysis method used to answer the research questions and findings generated through the case study are presented.

Research design

Two broad research approaches are well known in social science namely qualitative and quantitative approach. The choice of which approach one should go for when doing a research depends on the nature of the study. This thesis used three strategies to select the most appropriate approach for the research study namely the contextual strategy and the social science strategy.

Within the social science, (Kaplan & Maxwell, 1994) argue that the goal of understanding a phenomenon from the point of view of the participants, its social and institutional context is largely lost when textual data are quantified. So, using a qualitative approach offer benefits such as being open-ended, flexible and allowing the use of rich data for the purposes of exploratory analysis (Melissa, Jeffrey, & Philip, 2012).

Within the institutional change, Forbes & Kirsch (2011) argued that when studying the emergence of innovations and industries as well as for understanding interactions between organizations in their broader historical, political and economic contexts, qualitative case studies are very useful. "A case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context; specially when the boundaries between phenomenon and context are not clear" (Oates, 2012). Melissa et al (2012) also argued that when the focus of a study is to understand how actors adapt their strategies according to constraints in their institutional environment, in-depth interviews, field visits and participant observations which are the basics for qualitative case studies are beneficial. Finally, it has been observed that the

> "*field of health and wellbeing scholarship has a strong tradition of qualitative research and rightly so. Qualitative research offers rich and compelling insights into the real worlds, experiences, and perspectives of patients and health care professionals in ways that are completely different to, but also sometimes*

> *complimentary to the knowledge we can obtain through quantitative methods"(Braun & Clarke, 2014).*

Therefore, given the exploratory nature of the research question, available materials and the aim to explore institutional entrepreneurship work in creating and sustaining innovations in public healthcare organizations, this thesis used a single case following a qualitative case study approach.

Case selection

Case selection is considered as an important task within a case study research. As one chooses cases, one also elaborates an agenda for studying those cases. To select a case in case study research, two variables are important: (1) a representative sample and (2) useful variation on the dimensions of theoretical interest (Seawright & Gerring, 2008). So, one's choice of cases is driven by the way a case goes along with these two dimensions within the population of interest.

The case selected for this thesis is an ICT innovation project named TELMA (telemedicine Agder). TELMA is a collaborative joint project between the municipalities Kristiansand, Farsund, Arendal with the aim to implement a common telemedicine solution in Agder region.

The goal of this study is to contribute to institutional entrepreneurship literature and to gain more insights in the process undertaken by entrepreneurs to implement an ICT innovation in healthcare sector. Interviewing project innovators or institutional entrepreneurs for TELMA complied with the condition of representative sample.

Because TELMA is running in an institutional context (public healthcare), it a smart case to investigate the work of institutional entrepreneurs in creating and sustaining an ICT innovation project. This goes along with the second condition for case study selection.

Data collection

According to Cavaye 1996 work cited in (Ponelis, 2015), a case study method is known for its flexibility and adaptability that allows the use of single or multiple methods of data collection to investigate a research problem. However, any data collection method depends mostly on the type of the research question and the type of information that are expected. The research question in this thesis was oriented on the process of implementing institutional change in a healthcare context. To investigate and analyze

issues around the research question, both primary and secondary data have been used to get insight into institutional entrepreneurship work in creating and sustaining an innovation project.

The secondary data as presented in the theoretical background was collected within existing literature on institutional entrepreneurship and telemedicine. Yin (2009) already argued that the primary data source in both qualitative research and case studies is interviews. Therefore, primary data for this thesis comes from interviews. However, because the current study aims to get insight into the process of implementing an institution change, getting closer to actors involved in the process of implementing change, getting their opinions, perspectives and nuances can be named as a personal motivation for selecting individual interview as a method for collecting empirical data. Additional data were also collected from other archival sources such as project documents, discussion with project member etc.

To respond to the research question, a series of ten in-depth interviews has been conducted during the scope time of this thesis. The study further opted for a Semi-structured interview because it provide room to explore new and relevant issues that emerge during the interview (Ponelis, 2015).

Because respondents had different responsibilities within the project which fits with themes and concepts identified in the theoretical background, topic of discussion in first elaborated interviews seemed abstract and complex. (see an example below).

> *As an institutional entrepreneur how do you mobilize resources behind TELMA's vision?*

Therefore, a thematic interview method was then selected. This method helped to structuring the interview based on identified theoretical themes and get the discussion to flow and move forward while keeping a clear focus (Braun, Clarke, & Rance, 2014). Examples of themes discussed during the interviews are (promotion of local ownership, telemedicine cost effectiveness, patient's inclusion, creation of alliances).

All interview guides related to this thesis are to find under appendix. These interview guides designed to capture the context, content and process within institutional entrepreneurship in TELMA has been sent to informants a day prior to the interview so the informant could be prepared. Each round of interview was voice recorded with the interviewee permission. Confidentiality of interviews and data was clearly articulate and

respected while completing this thesis. The interviews had an average of thirty minutes to one-hour duration.

The sample selected for data collection are at senior level in their respective organization and had considerable knowledge and experience related to the project. They were chosen based on many criteria but the predominant criteria sound as it follows:

- Informants should represent the organization and the cluster they are working for,
- They should have a previous experiences and knowledge on e-Health technology implementation projects

Fortunately, all informants were involved in the United4Health project presented earlier. Therefore, had a necessary background information about the theme and the project in general.

These interviewees have been categorized into 3 groups ABC whereby:

A: Employee of a consulting company

B: Employees of a public service namely a local municipality

C: Employees of the regional organization considered as negotiators

ID	Organization	Role definition
A	Consulting company in interoperability in public sector and industries.	Research, project manager
B	Public service at a local municipality	Project manager assistant / e-Health advisory
B1	Public service at a local municipality	Project member: processes
B2	Public service at a local municipality	Project member/partner: inclusion
B3	Public service at a local municipality	Project member/ Partner
C	Regional association for development and promotion of local innovation projects	Regional negotiator

Table 2. 1: Overview of the selected interviewees

Data analysis

The collected data for this study has been analyzed by focusing on two keys elements identified in the institutional entrepreneurship process model (creating a vision for divergent change and mobilization of allies behind the vision). These elements were the most perceived and discussed by different informants during the interviews. During the analysis process it has been examined the influence of each of these elements when enabling an institutional change.

As one of the several qualitative methods available, content analysis has been used for this study. This method has been selected because of the flexibility it offers to analyze data from a multifaceted (Elo & Kyngäs, 2008).

The analysis followed the phases for content analysis presented by Elo et al (2014): 1) data preparation,2) data organization and 3) reporting of the results. A deductive approach of content analysis has been applied with the purpose to test an earlier theory in a different situation or to compare categories at different time periods (Elo & Kyngäs, 2008). For this study the purpose of the content analysis was to test an earlier process model of institutional entrepreneurship in a context of a regional telemedicine implementation. In addition to this method, an iterative analysis process of data which require to review and analyze data several times has been used during the analysis phase.

During the analysis process, the following steps have been subject of several iterations rounds which helped to gradually understand the data along with the theoretical process model of institutional entrepreneurship:

Data preparation:

The first task performed in this section was to prepare the data. Oates (2012) defined this process as getting "all your materials in similar format- on the same sized sheet of paper". Activities during this step included:

- o Total transcription of audio tapes, interviews notes, and other data prior the analysis. This gave a wide margin of data when writing report.
- o A duplicate copy of all transcribed data has been made to ensure the availability of data and further ensure the continuity of the study if unwanted situation were to happen.
- o Each paragraph was indexed with the perception of the content in that paragraph.

- o The cloud database OneDrive provided by the university has been used to store encrypted data and all documents related to the study. To keep track on them, a filing system helped to keep documents in a safe place and made it easy to find them when needed.

Data organization

The first task here was to go through the data for the first time in a transcribed format. Thematic data organization approach which includes identifying, analyzing and reporting patterns within data (Oates, 2012) has been used. So, identifying key themes in the data was a start point during this step. This activity was done by segmentation. Oates (2012) identified two segments that can be used to identify key themes.

1- Segment that have no relation to the overall research purpose have been excluded.

2- Segments that gave descriptive information relevant to describe the research context for sensors, mentors and the wide community were identified.

Then each segment was grouped into categories based on the framework of process model of institutional entrepreneurship. To do so, the transcribed data from informants was examined several times and then coded into first order codes. First order codes were then matched into second order concepts which were related to the general meaning of each code. Finally, a general pattern started to appear matching with the theoretical findings: a conceptual framework for analysis have been elaborated as shown in the fig. below.
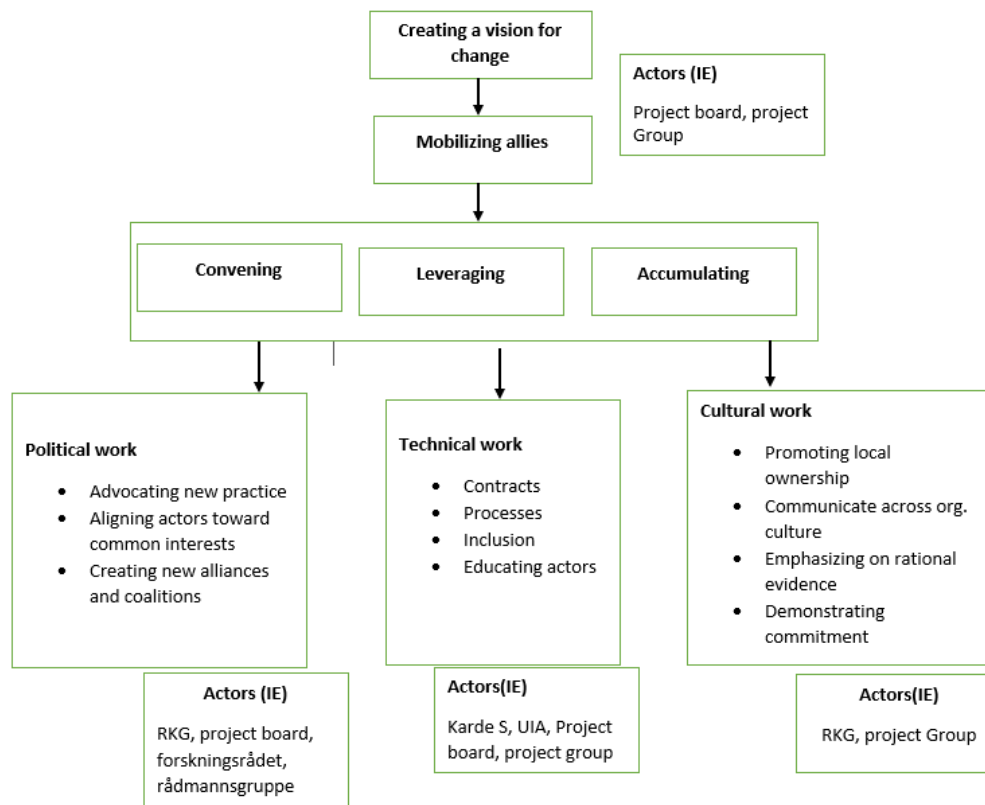
Figure 2. 1: Conceptual model for analysis of empirical findings.

Reporting findings

This step turned to be one of the most important one as it provided explanations to identified patterns which were important when testing them to the original framework. Testing empirical findings to the theoretical framework focused to find out if any confirmation or contradiction to the existing literature on institutional entrepreneurship can be identified. To do so, empirical results have been systematically reported with attention paid to how connections between the raw data and results should be reported. Conclusions have been formed, limitations of the study described and suggestions for further research presented. Suggestions for transferability haven't been proposed because it down to the reader's judgment as whether or not the reported results are transferable to another context (Elo et al., 2014). To preserve the authenticity of expressions and choice of words, analysis process was conducted in informant's original language (Norwegian). Citations and their interpretations haven't been translated to English not until the end of the analysis process. Original context, meaning and interpretations of respondent's answers were therefore never lost during the analysis process.

Validity and reliability

Validity

Validity refers to the extent of which a research study measures what it intends to measure (Bengtsson, 2016). An attempt to compare validity and reliability (which is assessed next), one may conclude that validity is the most important. The reason of saying so, is that if the results of a study is not valid, it hardly matters if it is reliable. If the results of a study don't measure what we were supposed to measure then the results cannot be used to answer the research question, which is the main purpose when conducting a study. These results are then meaningless and cannot be used to make generalization. So, to be able to answer the research question, the research conducted need to be valid.

Validity demand to perform a critical review of information sources (Bengtsson, 2016). An example here was to find out whether the correct units were chosen for interviews and whether they provided true and accurate information. Conducting a critical evaluation of the study's data categories in the analysis part is an essential factor for further analysis and findings of the research. Two categories have been chosen for analysis in this study. These categories matched with the categories identified in the theoretical framework.

An issue that may threat the validity of this study is the chosen framework. It has been given a thought if this study would have gotten to the same results if another framework (for example organizational change, change management, innovation etc.) has been chosen. This study used a hermeneutic approach to analyzed collected data. This approach is based on interpretation of someone else 's interpretation of the phenomenon under study and it subject to research bias. To strengthen this study's validity, following strategy have been undertaken.

Triangulation: defined as the use of more than one method to collect data on the same topic (Heale & Forbes, 2013). According to these authors this a good way of ensuring the validity of the study. Primary data and secondary data have been used to conduct this study. Within the primary data which have been collected by the researcher, different sample have been interviewed.

According to Heale & Forbes (2013), the combination of findings from two or many informants provides a more comprehensive picture of the result. As it has been already mentioned that interview transcript has been make available for respondents, so they

can validate the researcher interpretation of their interpretations. This strengthen this study's validity. Because primary and secondary data have been collected following a systematic and documented process, it is far easier to confirm whether the data is valid and reliable. In this case, the observations are valid as well as reliable.

Reliability

Often criticized for lacking scientific rigor, poor method justification, lack of transparency in analytical procedures, findings from qualitative research often appears as a collection of personal opinions subject to researcher bias (Noble & Smith, 2015). Therefore, assessing carefully the reliability of study findings requires judgements about the 'soundness' of the research in relation to the application and appropriateness of the methods undertaken and the integrity of the final conclusions (Noble & Smith, 2015).

Referring to which extend the study findings and investigations procedures are accurate to answer the research question, following strategies have been applied to ensure the reliability of this study:

I have been the main instrument used for data collection, analysis and interpretation of collected data. This approach is risky and subject to researcher bias. Kvale 1997 stated that researcher applying this approach may be partial when analyzing data and may only select evidences that support their own opinions and ignore other pieces of data that may be relevant to the study. Therefore, the importance of clarifying explicitly the methods that have been used and reflect on how these may affect the results. During the whole process of this master thesis, frequent engagement, brain storming and discussions with mentors have been undertaken and has been important to reduce research bias.

Ethical considerations

Ethical tensions and considerations are part of the everyday practice of doing research. (Guillemin & Gillam, 2004)argue that although procedural ethics is not able to inform and guide all aspects of research practice, it does serve a valuable function in forcing us

to consider and reflect on the fundamental guiding principles that govern research integrity.

The first ethical consideration was to fully endorse the ethical code of the university of Agder. This mean being aware of the responsibility to be sensitive and respectful toward research participant and their basic human right. Particularly, for ethical reasons, seeking for participants consent before interviewing them has been a good way of doing. As a part of that consent interviews transcripts have been always made available to participants so they can confirm or remove any part of the interview they don't want to be included in the analysis, interpretation and research report.

When conducting a research study where participants can be identified through sensitive and non-sensitives information, it is a requirement that the study should be notify to the Norwegian Data center for approval. This thesis is a part of an ongoing research project. Therefore, this extended scope has been notified to NSD and consequently has been written within research regulations.

Findings.

Results

This chapter present key findings from analyzed interview data. The analysis was focused on understanding factors that were considered as critical when implementing institutional change in a healthcare context. The section starts by presenting the case to provide an introductory information about the project (TELMA) and all its environmental practice and effort to develop a common telemedicine solution in Agder. The findings from the interview data along with translated excerpts from the interviews, are presented after the case description according to the two primary factors from the theoretical framework (creating a vision for change and mobilizing allies behind the vision). As part of findings, this chapter provides answers to research questions which formed a basis for discussion and further work.

Case presentation

The background of TELMA can be traced back to autumn 2012, when Sørlandet Hospital (SSHF), University of Agder (UIA), in cooperation with the National Center for Collaboration and Telemedicine in Tromsø and the University Hospital in Northern Norway, has been granted funding to participate to the "United4Health" project ". Funded by the European Union, United 4 Health "(U4H) project aimed to implement large scale telemedicine follow-up for patients suffering from chronic obstructive pulmonary disease (COPD), diabetes or heart failure. The project had for purpose to improve life quality and increase responsibility for own health among patients suffering from COPD, and as well as reducing the number of hospital re-admissions. Another background of TELMA is the VERDIKT project aiming to demonstrate that COPD patients can be monitored and followed up using telemedicine technology where municipal health services are responsible for daily patient follow-up.

Both projects were completed in 2015 and evaluation of U4H & VERDIKT indicates that telemedicine follow-up has the potential to prevent unnecessary rehabilitation and greatly contributes to the safety and interpretation of symptoms and treatment. However, partners involved in the project has gain knowledge and identified the need

for further research and development both in terms of technological solutions and organizational conditions.

Thought telemedicine solutions for distance follow-up of patient suffering from COPD is used and anchored in primary healthcare services, previous test on a large scale in Norwegian context haven't been undertaken. Testing such solution on a large scale was considered as an important factor that may contribute to get to the collaborative reform. Therefore, TELMA project further developed an ambition of a future model for telemedicine interaction for all 30 municipalities in Agder and Sørlandet Hospital HF for monitoring patients with chronic diseases and comorbidity.

TELMA is a collaborative joint project between the municipalities Kristiansand, Farsund and Arendal, Sørlandet Hospital, University of Agder, Siemens Healthineers AS and Karde AS. The main objective of the project was to test and evaluate a common telemedicine solution for distance monitoring of patients with chronic disorders and comorbidity in Agder region, which will improve healthcare delivery and effective use of health personnel resources.

Divergent experiences related to the use of telemedicine solutions for chronic groups and patients with complex disorders has been identified is previous studies. However, most studies have been conducted in countries where the healthcare system is organized differently than the Norwegian one. Therefore, a need for more knowledge about the effect of telemedicine follow-up of chronic groups and patients with comorbidity in an integrated cross-organizational service have been expressed. Therefore, the project's goal aims to:

1- Test and evaluate current work tools that may be useful to health professionals working on distance monitoring.

2- Enter a cooperation agreement with municipalities in Agder who wishes to offer telemedicine follow-up to patients in their respective municipality.

3- Develop service design and patient progress, including procedures for recruiting patients from municipalities and hospitals.

4- Find out which patient group in TELMA gets the most out of distance monitoring.

5- Establish knowledge about potential benefit and the prerequisites that must be used to achieve benefit in ordinary operations.

6- Include adequate numbers of patients in each user group to test and evaluate the service.

Implementing telemedicine solutions involves technological innovation as technology must be adapted to health architecture and different patient record systems. This conversion to technology made TELMA a service innovation as one tries out new ways to deliver services. The expected benefits from a common telemedicine in Agder are formulated as following:

1- Cost-effective use of health and care services (hospital, emergency room, GP and home care services)
2- Safety and control so that the patient experiences a better quality of life
3- Increased interaction between actors following follow-up of patients with chronic health failure
4- Cost-effective operation, procurement and support of the chosen technical solution.
5- Experiences and models in the terms of best practices that have high transferability value at national and international level.
6- Increased competence in the region through follow-up of patients with chronic health failure.

To realize this vision, three telemedicine centers (TMS) have been implemented in three respective municipalities (Kristiansand, Farsund and Arendal). Note that the center of Arendal have been implemented in autumn 2018. These telemedicine centers have for purpose to disseminate telemedicine services to municipalities around them. To do so, the project follows a delimitation based on regional division. Five regions have been created in the region of Agder (see the figure below):
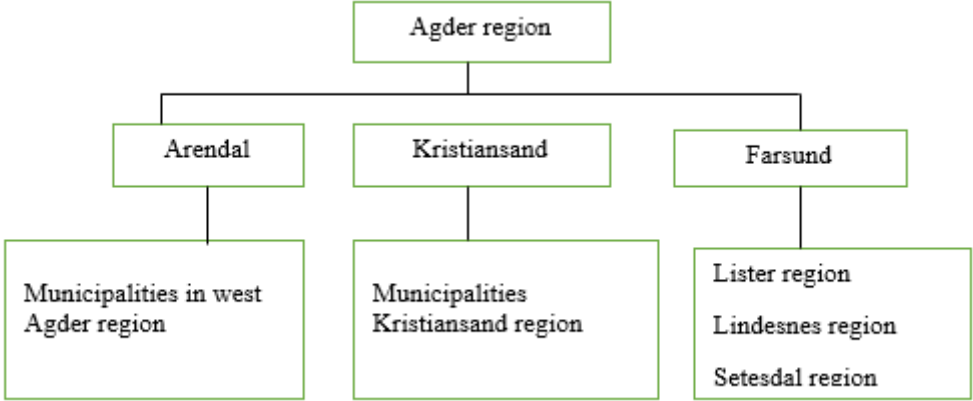

Figure 2. 2: Agder delimitation for TELMA

The question that drives this study relates to how projects initiators referred in this study as institutional entrepreneurs mobilize all municipalities in Agder behind the "great" vision of telemedicine service delivery. Simply, how do they convince municipalities to buy telemedicine service from different stations.

Despite the potential benefits of TELMA, it has been very challenging to get other municipalities to participate. This lack of participation from municipalities led to lack of patients making it difficult if not impossible to test the and evaluate the project. One of the reasons most municipalities framed was the participatory price linked to the solution. To participate to the project, municipalities had to pay a monthly fee to remotely monitor their patients. As they have insufficient understanding of what telemedicine is, they were not willing to undertake an unnecessary investment. Some expressed they skepticism toward the new solution as they have no evidence that the such project will deliver expected benefits. A poor communication mechanism and poor mechanism for anchoring the business idea by top management in respective organizations has been observed during the project. Those challenges have contributed to drag down the project.

To solve this issue, the project board has decided to reorganize the project. This action which led to a new analysis of the cost benefit of the project, changes in existing project goal, resulted in total removal of participation cost. This change was probably the most important step that rescue the project to fall apart. Many municipalities have joined the project when they got notified that it was free to participate to the project. when writing this thesis, it wasn't all municipalities within Agder that joined the project. The project still has one more year life-time, there is a hope and expectations that all municipalities will join the project which will enables test and evaluation.

Creating a vison for change

This first component in Battilana's framework has for purpose to understand the intentions that lies behind the decision to develop a common telemedicine solution in Agder. To get insight about this area, respondents were asked to reflect on following questions:

- According to you what was the background for TELMA Project?
- Who came with the initiative about creating a common telemedicine solution for Agder?
- What was the main arguments behind TELMA project?
- What or whom were the main driving forces behind the idea of TELMA?

According to respondent B#, background for TELMA project can be assessed at two levels: the social health level and the institutional level.

At a social level, aging population and an increasing chronic disease have been considered as one of the major challenges within the Norwegian healthcare system.

It has then been observed that patients suffering from chronic diseases and multimorbidity and their relatives lacks the necessary health care and social support in a complex daily life ranging from lack of information, need for preventive and maintenance illness strategies, lack of training for help to deal with complex illness disorders. At an institutional perspective, the respondent argued that healthcare organizations still struggle designing a patient- centered services, lack of medical service coordination among healthcare organizations. All these lacks result in an inefficient healthcare delivery and an increasing healthcare expenditure. To deal with these challenges, new practices and changes must be introduced to the sector. A strategic use of technological solutions offers opportunities to create a common and comprehensive solution to deal with the burden of chronical diseases have been mentioned by respondent A#B#C#. These background motivations have been strengthened by result of previous e-Health project.

As it has been suggested earlier, TELMA is basically built on experience gained from two completed projects in 2015 namely the EU project United4Health (U4H) and NFR VERDIKT which focused on Collaborative Point-of-Care Services in Agder. After project completion, the project board expressed the need for further research in medical distance monitoring.

> *"We saw that there was a need for more testing and research in the field of medical distance monitoring. Therefore, we sent an application to the Norwegian research council expressing a need for further research".* Respondent A#

The Norwegian research council approved the application and granted applicants financial sponsorship for their project referred here as TELMA. Since any case for change starts by creating a vision for change, TELMA's vision was the development and diffusion of a common telemedicine solution for Agder region. The solution is supposed to improve healthcare delivery while reducing the use of healthcare resources. It is assumed that telemedicine solution will assist patients within Agder that suffers of chronic diseases and comorbidity. Practically, patients will be monitored by medical measures devices, video and tele consultations with healthcare personal working in one of telemedicine centers.

> *"Our vision is to develop a common telemedicine solution for all thirty municipalities within Agder. The solution is expected to deliver better and comprehensive healthcare services for patients while effectively improve the use of resources".* Respondent B#

This vision has been elaborated in a collaborative way including two municipalities (Kristiansand and Farsund) with the support of the project board and partners. A third municipality Arendal municipality joined the project later and implement a telemedicine center. Given the fact that these actors were involved at an earlier phase, they represent the main driving force behind the idea of implementing a regional telemedicine solution in Agder.

One interesting finding when working on empirical data was the alignment of TELMA's vision which fit into the national ambition of developing medical distance monitoring services in Norwegian healthcare. For TELMA project team, this ambition is supposed to help immensely in determining the future of medical distance follow-up services. The outcomes of that ambition are supposed to come as a result of TELMA's goals which includes: Exploring and testing which patient groups should benefit most from telemedicine follow-up services, then by exploring and trying out new service designs including procedures for patient's recruitment both from hospitals, general practitioner (GP) or from municipal healthcare services and finally by testing and evaluating the underlying technology and infrastructure so that hospitals, municipalities and GP in Agder can interact in a way that provides both good service quality as well as the socio-economic benefits from telemedicine.

Analysis of these goals indicated that the vision shows a possible, idealized future of better healthcare services at a lower cost combined with high rate of patient satisfaction. According to respondent B# lower cost will results from reducing patient's transportation cost, reducing patients' hospitalizations, reducing personal resource use. Patient satisfaction in turn will be realized by detecting and treating diseases at an early phase, less time in waiting rooms, smooth access to specialist and the opportunity to control and master own illness. However, having a vision was/is not enough. Communicating and sharing TELMA's vision has been a key focus of entrepreneurs involved in the project. Therefore, institutional entrepreneurs must work to cast and recast TELMA's vision in a way that stakeholders such as municipalities get inspired to participate and follow the vision. The next section presents results from the work undertaken by institutional entrepreneurs to mobilize support the vision.

Mobilizing allies behind the vision

The next step for institutional entrepreneurs in the change process after creating a vision for change and communicating it to actual stakeholders is mobilizing allies behind the vison. Mobilizing followers includes activities which assist institutional entrepreneurs to get others' support and approval for the new practice. This second component in Battilana's framework has for purpose to understand actions undertaken by institutional entrepreneurs to mobilize support behind the idea of developing a common telemedicine solution in Agder. Analysis and results related to this part are presented according to the theoretical background (political work, technical work and cultural work).

Political work

During analysis related to the political work, it was very important to examine the complex relationships between institutions, political elites and citizens and see how their interactions shape institutional reforms. Because the project was financed by the Norwegian research council, political influence hasn't been undertaken. However, working closely with political elites was very important as they represent a crucial support for the project if the project was about to go live.

"No political decision was at the foundation of TELMA. Because local political elites are often involved in deciding upon healthcare expenditures and budgets, getting support from them is very important if not crucial in a case where telemedicine services should be implemented as an integrated service within the local healthcare system. We involve them by informing them about the project and the business value of it". Respondent B#

Local political elite in Agder exercise their power through decisions they make about healthcare expenditure in local or regional institutions, institutional entrepreneurs designed an information work combined with a discourse that were particularly addressed to local politicians to gain their support. They firmly believed that if these local elite support the project, it will ease the diffusion of it and consequentially engage many municipalities to participate to the project. Despite the strategical involvement of local political elites, none of expected municipalities has shown their interest to participate to the project.

Aligning actors toward common interest

Telemedicine Agder is expected to serve a large purpose namely remotely delivering healthcare services to patients within the region. Therefore, having support from different actors in Agder is important for the project. However, to gain support, actors need to be aligned towards a common interest.

TELMA project involve a diverse group of participants or actors with different interest when it comes to telemedicine services. This plurality of actors often makes it challenging to align them towards a common interest. Therefore, the project group has elaborated a stakeholder analysis which basically identified and list all actors that may affect or be affected by the project. Done at a detail level, result from stakeholder's analysis gave a list of thirty-three (33) actors (Appendix Nr2). After mapping all stakeholders according to their level of interest and involvement to the development of a telemedicine solution, the project group designed an information work for each actor.

"It is very important that we all look in the same direction. So that, we can build on strong relations based on mutual and shared benefits" respondent A#

Empirical data shows that to align stakeholders, actor's consultation has been used as the main strategy. TELMA started by consulting actors by holding presentations, interviews and workshops, meeting to inform them further about the project and direction to choose and finally motivate and empower actors to support the project strategy.

It has been found that the process to inform stakeholders about the project was facilitate by an external organ namely the regional coordination group (RKG). RKG is a regional group working specially to develop, implement and promote e-health wealth technologies in Agder. So, whenever TELMA has a need for informing stakeholders, they contact RKG which as a project facilitator, plan and invite chosen stakeholders for a meeting. By doing so they contribute in helping TELMA achieve its objective of aligning actors behind the vision.

Creating new alliances and coalition for implementing the institutional change

To create new alliances and coalition for TELMA, interviewee B# stated that the process was facilitated by the context of the project. Because the project is launched within a regional context, all involved actors as well as municipalities have had contact with each other through prior established formal or informal relationship.

To provide more clarification, the respondent indicated that prior established relationships during the prior completed project United4health were crucial for the formation of a local project network which led to the project start.

Because the project's ambition is to develop a future model for telemedicine interaction for all 30 municipalities in Agder and the regional hospital (Sørlandet hospital), three telemedicine centers have been implemented in the region. These centers located in three different municipalities with a wide range of geographical distance, are considered as a coalition with a main purpose to dispatch telemedicine services across the region. Following a political delimitation of Agder region, five sub regions are created within the main region. Therefore, the municipalities hosting a service centers have a mission to disseminate telemedicine services to municipalities within its region referred her as cluster. The delimitation is described as following:

1- The municipality of Farsund responsible for regions Lister, Lindesnes and Setesdal.
2- The Municipality of Kristiansand responsible for regions Kristiansand
3- The municipality of Arendal responsible for the whole eastern Agder.

The purpose of creating alliance for TELMA was to achieve a joint strategical goal and leveraging resources, other form for alliances within the institution of Agder has been identified namely partners.

The university of Agder which represent an institutional research providing research on benefits realization or the business value of TELMA; Karde AS Karde an innovation-based advisory company assist TELMA by providing an organizational interoperability consultancy; Siemens Healthinneers a giant medical technology company, provides the technological tool for telemedicine services; Forskningsrådet a Norwegian research Council which promote research provides means (financial) to launch research projects such as TELMA; Sørlandet Sykehus a regional healthcare organization provides health related resources such as patients, nurses, GP and infrastructures to pilot the project and finally Kristiansand Kommune a local municipality which has also sponsored the project and played a vital role among project initiators.

Understanding the nature of this alliance helps to understand how each part contribute to the project. Though these organizations came together to create a unique entity to develop a common telemedicine in Agder, it is worth to mention that each of these organization keeps its individual identity and internal control. In other word TELMA do not identify itself to the University or to the regional Hospital and so on.

Technical work

Contract

As introduced earlier, the idea behind TELMA is the development of a common telemedicine solution for Agder. Technically telemedicine services will be dispatched to Agder municipalities through three telemedicine centers. To support and control agreements coming from different municipalities, a detailed cooperation contract outlining the full understanding of the business relationship has been elaborated. The document also referred as contract is a four pages document with key concept ranging from:

The general presentation of telemedicine solution for Agder; project's management and organization; responsibility and task allocation between a telemedicine center (TMS) municipality and the collaborative municipality; confidentiality; data processing agreement; economy; quality assurance; complaints; disputes; Duration of the agreement.

"The fact that we have a contract is very important because it clearly present what's expected of both parts. A well-designed contract such as the one TELMA has, provides clarity to the project group, the partners and collaborative municipalities in their mission for developing TELMA. "respondent 2#.

For any municipality to be part of the collaborative project TELMA, the municipality should sign a collaborative agreement or contract. Collaborative agreement can only be signed at one of the three telemedicine centers. To make it easier for municipalities to get telemedicine services, it has been decided that municipalities should operate within its cluster as presented below:

- Municipalities within Lister region, Lindesnes region and Setesdal region should collaborate with TMS Municipality Farsund.
- Municipalities within Kristiansand region should collaborate with the TMS Municipality Kristiansand
- Municipalities within Aust-Agder region should collaborate with the TMS municipality Arendal.

When the project was launched in 2015, there was a cost related to telemedicine services. Municipalities that wanted to remotely follow-up their patients should pay 15 000 NOK per patients/year. After running the project for three years, none of the municipalities within clusters have signed a project participation contract. Only the TMS Farsund managed to have some patients during these years.

Was Farsund municipality doing something different to get municipalities within its cluster to undersign the contract? No; The fact was that during the previous U4H project, Farsund had patients from neighborhood municipalities that were moved over to TELMA. Because patient within Farsund region had almost the same GP and specialist based in Farsund, the transfer of patients from U4H to TELMA was done smoothly.

In September 2018, the lack of patients due to lack of participating municipalities made it challenging for TELMA to test and evaluate the solution. The project group revised the project and removed the participating cost. To join the project was then free for fee. A new contract has been elaborated taking in account the new changes and sent to municipalities. Six weeks later, seven municipalities were registered to participate to the project. when asked the reason behind this change, interviewee 2# answered that because municipalities were willing to participate to the project because it they didn't have to pay for it.

It appears clearly that the participatory cost was a hinder to the project evolution. Some of the municipalities stated that participatory cost for a research project wasn't included in their administration's portfolio and therefore hindered them to undertake that expenditure. The resilience of some participants was associated with the lack of scientific evidence regarding clinical and economic benefits of telemedicine (why should we pay for something we don't really know works?).

The fact that seven municipalities agreed to participate to the project six week after the participatory fee were taken away indicate that the financial nature of the participation was the root problem to the project evolution.

Inclusion (stakeholder inclusiveness)

Inclusion may have different meanings according to different fields of studies. In a context of TELMA, inclusion refers to extend of engagement, participation or involvement of different actors in the project. Inclusion for TELMA implies creating opportunities for all involved groups to take part in decision making. Therefore, any activity undertaken have a clear objective for a given group. This activity is taking in account three group of actors namely 'patients', 'users' and 'public' inclusion briefly discussed below. The key activity for inclusion was based on information. The inclusion manager starts the process of inclusion by identifying the targeted group and then elaborate information designed to this group.

Patient inclusion: The benefit of patient inclusion according to interviewee C# have been proven in many studies.

> *"By including patients, it allows them to access services and to be fully and effectively involved in all activities related to their own health and care. Therefore, patient inclusion has been a fundamental activity in the process of telemedicine implementation in Agder".*

The process of patient inclusion has been elaborated by the project board and is usable across all municipalities. Each TMS has one employee responsible of patient inclusion within its cluster. The work related to patient inclusion were focus on educating, informing and training patients. The activities are described in the next sub-category.

Users inclusion: User in the context of TELMA refer to health personal (nurses, GP) and actors that assist patients in monitoring illness. For healthcare organizations to fully benefit from telemedicine services, user's inclusion at an early phase is needed. Because they are close to both the patient and the technology, including them as an integrated part of the project has been important for TELMA.

Strategies used for user inclusion include general information of nurses and GP at the local hospital, discussing opportunities and challenging related to the innovation, collecting feedback and working on it. TELMA has gotten feedbacks from healthcare personal who sees the innovation as something positive that will support their daily routines. However, some of them are having a concern about effectivity. According to this late mentioned group, adding telemedicine services in a daily routine will increase the work load as they must learn and get trained to the new practice while they are working with the old one. This may in the beginning lead to confusions among practices which will translate into ineffectiveness at a workplace.

Stakeholders inclusion

Public inclusion in TELMA context, refers to information work done for a broad number of actors. These actors range from GP, public managers and leaders, families (patients dependents), nurses etc. The purpose of doing this work was to diffuse the idea of a common telemedicine in Agder among this public group. Public mangers are a vital target for inclusion because as they dispose political power to frame further the vision of TELMA. However, it has been observed that municipalities are not well informed on the phenomenon from a perspective of public mangers.

Meaning that there is still a lot to do to anchor the vision of TELMA to other municipalities. This anchoring work was supposed to be facilitated by public leaders in each municipality. Information meetings with top management of different municipalities was the road to go stated respondent B#. Further the level of stakeholder inclusion or engagement impact the result. Are they active in decision-making process or are they there to provide information and feedbacks, does some of their suggestions taken in account? Etc.

Training and educating actors

Educating and training involved actors is seen as an opportunity to expand the knowledge base of telemedicine to the wide community. In TELMA's context, both health personal and patients received an education based on telemedicine services. Health personals who receives the necessary training becomes more aware of safety practices and proper procedures for basic tasks related to telemedicine services and consequentially becomes better in performing his/her job. Patients with chronic disease and getting telemedicine service will probably be using a device to communicate with the TMS such as application that should be downloaded on their mobile phone, computer portals that they can access etc. Because patients don't have the same level of knowledge that healthcare personals do, they need a consistent training and education.

The output of educating patients often gives patients and their families the opportunity to identify illness symptoms, control and master their own illness before health crisis happen. It has been reported that health personal and GP or specialists are giving three days training about the telemedicine in its general context. However, for health personal working in a TMS receive an additional training day focusing particularly on the technical use of tools for measurement, tele and video consultations etc.

Most of patient training and education are done by nurses. However, TELMA arrange a meeting where patients and their families can attend. Patients, with the support of their families and/or caregivers, need to be fully informed about the opportunity to make decisions about care over both the short and long terms.

Cultural work.

The purpose for analyzing cultural work was to frame the new institutional arrangement in ways that target a broad audience and broad cultural values. Key activities in this package includes promoting local ownership, emphasizing rational evidence, communicating across organizational cultures, demonstrating commitment. To present findings related to this area, respondents were asked to reflect to the following questions:

- Research shows that when peoples or organizations feel having ownership on a business, they are likely willing to participate or collaborate. Do you have any strategy to promote local ownership to TELMA and if yes how?
- Do you show the evidence of telemedicine benefits to other municipalities?
- What is/are channels used to communicate across organizations?

- How do you show your commitment to the project to the diversity of stakeholders?

Promoting local ownership

Local ownership is critically important to develop a common telemedicine solution in Agder and particularly to give local patients a new way to deal with illnesses within the region. Placing local stakeholders in the center of the project may increase chances for sustainability. A participatory program where the local actors participate in the development of a telemedicine has been used in TELMA. Because the project's aim is to test and evaluate how a telemedicine solution will be beneficial for the region, it was critical that municipalities in Agder participate to the project. This participation will provide a consistent data for analysis is the solution is beneficial of not. So, by participating to the project with patients, local stakeholders are technically getting ownership of the project.

> *"We are promoting local ownership of TELMA to all stakeholder. However, to fully get the ownership of TELMA, municipalities need to participate with patients, so we can get enough data to analyze and evaluate the project".* respondent B#

Though local ownership is critically important to develop a common telemedicine solution in Agder and particularly to give local patients a new way to deal with illnesses, it was very important not to view local ownership as an engagement between a municipality and a telemedicine center (TMS) but an engagement that encompasses the whole region of Agder.

Communicating across organizational culture

To fulfill both internal and shared partnership goals in TELMA, communicating across organizational culture was important to spread out the new vision among different levels of institutions. Communicating among organization was facilitated through complex coordination, communication, information-sharing, cooperation processes. IE in TELMA had access to the various formal and informal information networks such as reports, meetings and mingling to drives the cross organizational communication. For instance, informal communication such as phone calls, messages and spontaneous meetings facilitated the information exchange easily. Formal communication has been done through web-based project-platform (SharePoint), written templates and documents, project website.

Though it seems that TELMA was using enough tools to communicate across organizational culture, empirical data indicated that the project faced a communication challenge. The struggle to communicate the strategy down to the collaborative partners such as municipalities and the role they play in that collaboration has affected the project.

> *"We have to keep working hard with communication and anchoring the idea of TELMA"* Respondent B#.

Emphasizing rational evidences.

Evidence is commonly perceived as a proof supporting a claim a belief or a statement. Emphasizing on rational evidences related to TELMA refers to show stakeholders (participating municipalities) any proof of evidence confirming that a common telemedicne solution will deliver expected or framed benefits. This has been very challenging for the project group as they have no proof supporting the benefits of TELMA. When interviewees 2,4,5# were asked if they were presenting proof to participating municipalities, answers were almost the same:

> *"we wish we had any evidence to present but we don't. Therefore, we encourage many municipalities to participate with patients, so we can have enough more data to analyze the phenomenon before drawing conclusions. That's the purpose of TELMA."*

Demonstrating commitment.

Showing commitment to an idea or a vision has a vital importance for any project. it builds trust among the stakeholders. Commitment from the project group fuels their responsibility which translated into proactive actions and behaviors.

To demonstrate its commitment towards the project, IE in TELMA has done various actions reported in empirical findings. These actions range from showing a strong will to assist at all level of the project ranging from helping each other within the project, communicating and updating all affected groups during the project is another way to demonstrate commitment (knowledge sharing about evolution in each cluster), finding out what may motivate municipalities to participate to the project and provide it, empowering them.

"We are seeing the business value of TELMA and we believe that a common telemedicine solution will be beneficial for Agder. Therefore, we are committed to anchor this vision among our stakeholders". Respondent 2#

Showing the value of a win-win mentality to stakeholders has been used as a strategy by the project. Empirical data indicate that in contact with critical stakeholders, TELMA tries to explain that participating to the project will ensure that all parties will walk out of TELMA with a win. Participating to the project will enables evaluation and help to find out if the project is beneficial or not. If results show a positive benefit of a common telemedicine, the municipalities have contributed to the project and knows the business value of it, processes and knowledge related to telemedicine. However, if after evaluation results shows that a common telemedicine is not beneficial, then municipalities don't need to implement the solution and therefore avoid unnecessary future health expenditures.

Summary of findings.

To answer the research questions, this thesis used findings to start answering sub-questions which contributed to answer the main question. Two sub-questions were formulated in chapter one namely: Who are the institutional entrepreneurs in TELMA and what are the actions undertaken by them to mobilize resources and institutionalize telemedicine's beliefs, practices and activities within Agder region?

<u>Who are institutional entrepreneurs in TELMA?</u>

To identified institutional entrepreneurs of TELMA, analysis of actors according to their implication in implementing the promoted change has been undertaken. The analysis has classified actors base on human agency perspective of Gidden discussed by (Eteläpelto, Vähäsantanen, Hökkä, & Paloniemi, 2013). Gidden's definition of Human agency fit with the context of institutional entrepreneur in a way that both highlight the power of individuals as necessary conditions to create something. Therefore, this thesis has classified actors involves in TELMA in four categories namely project formulators, mediators, executors and facilitators. The table below resume institutional entrepreneurs' identification.

Actors classification	Involved actors (institutional entrepreneurs)
Formulators	Sørlandet Sykehus, Kristiansand Kommune, University of Agder
Mediators	RKG, top management
Executors	Project team, Healthineers
Facilitators	Norwegian research Council, Sørlandet Sykehus, local politicians, municipalities, patients, RKG.

Table 3. 1: Institutional entrepreneurs' identification.

NB: Formulators: actors involved in the development of an idea or a current problem into a project with a purpose to get to an investment decision.

Mediators: actors helping to address the relationship between two or several entities.

Executors: The main responsibility of project executors is to carry out the project in accordance with the formulated project plan

What actions are undertaken by institutional entrepreneurs to mobilize resources behind the vision of TELMA.

During the process of resource mobilization behind TELMA, network and community resources were two main resources that has been mobilized. Much of actions undertaken to mobilize these resources were based on establishing a collaborative relationship with all involved actors to convince them that participating to the project is beneficial for all stakeholder. The framework used for analysis already provides a picture of actions undertaken to mobilize resources. However, activities done by institutional entrepreneurs were added to the framework giving a clear overview of what has been done to gather support behind TELMA. While the two first columns covers actions identified by theory, the last one specifically highlights what has been done by TELMA's entrepreneurs. A table summarizing these actions are presented below.

Institutional entrepreneurship work	Actions	Activities
Political work	➢ Advocating telemedicine practices ➢ Creating new alliances and coalitions ➢ Aligning actors toward common interest	➢ Stakeholders consultations ➢ Presentations ➢ Meetings ➢ Interviews ➢ workshop
Technical work	➢ Collaboration agreement (contract) ➢ Actors inclusion ➢ Educating actors	➢ Educating and training patients, users and the broad community
Cultural work	➢ Promoting local ownership ➢ Communicating across organizations ➢ Demonstrating commitment	➢ Municipalities participation ➢ SharePoint, reports, meetings, mingling, messages, emails communication with stakeholders ➢ Motivating and empowering municipalities ➢ Regular updates and communication with stakeholder ➢ Framing a win-win mentality

Table 4. 1: Summary of institutional entrepreneurship work in TELMA.

To identify critical factors enabling institutional entrepreneurs to create, disseminate and sustain a technological innovation project in regional healthcare context, analysis of entrepreneur's activity has been done. Stakeholder management appeared to be a critical factor to the successful project delivery. Stakeholder management often allows project teams to create actions that result into an effective participation of relevant stakeholders in projects. Among the plurality of actions undertaken by TELMA's institutional entrepreneurs, three factors have been identified as underestimated: clear communication of the vision to stakeholders, stakeholder's involvement at an early phase, assessment of stakeholders needs and constraints to the project.

Another result identified during analysis of empirical data indicate another factor which seems to correlate with unsuccessful stakeholder management. The organizational structure of the project team and stakeholders indicate that both stakeholder and project team were not prepared enough to engage or be engaged in a large-scale project in terms of structure and capacity.

Discussion

Discussion

This section covers the explanatory part of the research study based on empirical findings and the theoretical background. The discussion will be based on two main dimensions of the process model outlined in Battilana (2009): creating a vision for change and mobilizing allies behind the vision.

The narrative in the previous chapter shows how TELMA project can be considered as a significant case of institutional entrepreneurship. The project team came with a vision to test and evaluate a common telemedicine solution for municipalities in Agder which is supposed to improve healthcare delivery and effective use of health personnel resources. Though the vision sounds great and beneficial for the community, it hasn't got support from stakeholders (municipalities). The project has met resistance and inertia from its expected stakeholders. This supports the argument framed by Doarn and Merrell (2008); Zanaboni et al (2012) that telemedicine projects are considered to have a very poor record of implementation which is combined with a poor history of adoption.

Empirical data indicated that institutional entrepreneurs has applied the conditions presented in Battilana's et al (2009) process model of implementing divergent change. However, stakeholder's resilience allowed a critical discussion to which extend these conditions were well applied. Therefore, discussing empirical findings considering Battilana's framework may identified areas of failures or inconsistency that can be addressed.

Creating a vision for divergent change

As it has been mentioned in the theoretical background, any case for change start by a vision for change (Battilana et al., 2009). However, Gobble, 2015 stated that the success of a project does not rely only on developing a vision and following it. Being able to instrument the vision, formulate it into something realistic, and then sharing it are perceived as key elements when developing a vision.

Though the vision of TELMA has been introduced with a positive spirit of providing a better healthcare delivery to the community of Agder by developing a common telemedicine solution, the project has faced challenges in a form of non-participation from other municipalities. Findings do clearly show that the resilience of certain

municipalities was related to the fact that they had insufficient knowledge and understanding about the promoted change. This situation indicated that the vision was not formulated in a way that followers can understand, approve, and finally pursue it as suggested by Battilana et (2009). This is a result of poor communication mechanism to design a concrete entrepreneurial vision that provides details about the change promoted (Gobble, 2015). This thesis argues that involving all stakeholders in Agder when designing and creating the vision of a common telemedicine solution for Agder would have reduced the issue of insufficient knowledge.

As TELMA's institutional entrepreneurs were facing issue of non-participation from municipalities, they engaged themselves intro the process of change suggested by Battilana et al (2009) stating that for a change process, institutional entrepreneurs should modify the existing practices and create a vision which the followers can understand, approve, and finally pursue it. A process which required the reframing of the vision, the problem and the overall goal and objectives of the project. The collective new vision begun to be understood after a long and iterative communication process.

Mobilizing allies behind the vision

The next step for institutional entrepreneurs in the change process after creating a vision for change and communicating it to actual stakeholders is mobilizing allies behind the vison. Mobilizing followers includes activities which assist institutional entrepreneurs to get others' support and approval for the new practice. As mentioned above, the theoretical background has identified three dimensions of work including political, technical and cultural work (Jolly et al., 2016; Kevin, 2011; Thompson et al., 2015) that may assist IE to gather support behind the vision. Theses dimensions have been undertaken by TELMAS's institutional entrepreneurs. However, to which extend these works dimensions have been well done are to be discuss.

Political work

The political work according to Jolly et al (2016) refers to efforts done by various actors to influence the development of rules, property rights and regulations in a community. Core activities within this package range from advocating new practices, creating new

alliances and coalitions, inclusion of local political elites, aligning other actors towards common interests and developing new rules and regulations. Empirical data indicated that IE in TELMA has undertaken these activities. However, this thesis points out that the process of creating new alliance and coalitions in TELMA has lacked a strategical analysis. Alliances should have been created taking in account representants from all municipalities in Agder rather than selecting only three of them. The thesis argues that involving all Agder stakeholder at an early phase when designing the research project would have given different results. Municipalities would have been motivated to actively participate during the project rather to be a potential customer of telemedicine services from a telemedicine provider. J Oates et al (2017) argued in that sense stating that when developing new sustainable management solutions, it is important that these are led by stakeholders themselves since they are more likely to feel personal investment, ownership, and buy-in to the process, resulting in more effective behavior change and compliance. It is believed that a regional alliance involving stakeholders from all municipalities in Agder, would have eased the process of alignment toward common interest.

The resilience of municipalities to participate to the project that has been identified in our findings indicate that a none stakeholder alignment. Because they are not aligned towards a common interest, they were resistant to participate to the project.

In cases where actors have divergent interest, objectives cannot properly be met (Buerkler, 2013). One can understand here that alignment of different organizations, as well as alignment of any corporate strategy with the expectations and interests involved stakeholders is considered as a key solution for building sustainable innovation project. To do so, consistent and open communication is needed across the plurality of involved actors to build trust, assure mutual objectives and create common motivations (Hoffmann & Lutz, 2014).

Technical work

Technical work which is aimed at a cognitive dimension of institutions, refers to developing new mental models, new standards, elaborating benchmarking principles, creating linkages with existing institutionalized practices, educating actors with

necessary skills to support the change (Jolly et al., 2016). To support and control agreements between the project and different municipalities, a detailed cooperation contract outlining the full understanding of the business relationship has been elaborated. Surprisingly the contract acted against its purpose because findings shows that the participatory fee related to the project was the major barrier for the project. This situation contributed to identify the economic environment as one of the major barriers to telemedicine implementation. International literature has also described economic environment as a barrier of telemedicine implementation (Tracy, Rheuban, Waters, DeVany, & Whitten, 2008). The cost of a telemedicine equipment is high and requires finances to implement and drift the solution. Therefore, a participatory fee can be understood as a mean to solve these issues. However, as the project hired a consultancy agency (Karde AS) with competences in how to run a research project, the agency would have known that including any economical factor in contract related to emerging fields is likely to decrease the chances of its adoption.

Educating actors with necessary skills to support the change (Jolly et al., 2016) has been identified as one of the core activities in technical work. The output of educating patients often gives patients and their families the opportunity to identify illness symptoms, control and master their own illness before health crisis happen. Health personals who receives the necessary training becomes more aware of safety practices and proper procedures for basic tasks related to telemedicine services and consequentially becomes better in performing the job. Results shows that health personal, general practitioners and specialists are giving three days training about telemedicine in its general context. Health personal working in a TMS receive the same training combined with an additional training day focusing particularly on the technical use of tools for measurement, tele and video consultations etc. If the solution simple and user friendly, this study argues that these training days are not enough to provide health personal and patients with the necessary knowledge to successfully perform their task. Therefore, consistent training and education can be suggested as a way forward.

Cultural work

Cultural work according to Jolly et al (2016) focuses on institutional diffusion and the creation of legitimacy by framing the new institutional practice in ways that appeal to

wider audiences and wider cultural values. Key activities in this package includes promoting local ownership, emphasizing rational evidence, communicating across organizational cultures, demonstrating commitment (Kevin, 2011). These activities have been done by TELMA's institutional entrepreneurs. However, to which extend these works contributed to mobilize allies behind vision are discussed as following:

According to Kevin (2011), institutional entrepreneurs usually lacks resources and must often rely on others stakeholder to spread the new norms and values forward. Kevin (2011) argued further that the dynamic capability of motivating local ownership of the new institutional norms and beliefs amongst stakeholders is crucial for the project success. Local ownership in TELMA have been promoted through participation. Though participation can be taken to promote local ownership, this study argues that an early inclusion of municipalities in decision making would have strengthen the local ownership among stakeholders. Therefore, this study agrees with the idea that community ownership can be associated with a local social acceptance, and the inclusion of local stakeholders can positively influence community acceptance (Enevoldsen & Sovacool, 2016).

To ensure that their messages and actions are understood as much as possible, institutional entrepreneurs will need the cross-cultural knowledge. The capability to understand logics behind different sectoral groups (i.e. private sector, development organization and government) and to communicate with each organization with language, signals and signs that they will understand may reduce resistance or misunderstanding of the change (Kevin, 2011). Results shows that institutional entrepreneurs in TELMA has used.

Conclusion.

The goal of this study was to investigate the process of implementing institutional change in a regional healthcare context using institutional entrepreneurship lens. Empirical data from TELMA pilot project helped to assess and interpret the process of institutional change by analyzing critical factors that are believed to have a great impact on a creation, implementation and sustainability of a technologic innovation project.

Results found out that this process involves a multi-dimensional process of institutional entrepreneurship work including political work, technical work and cultural work. Furthermore, each of these works require different actions and activities. Finally, stakeholder's management has been identified as one of the critical factors enabling implementation of institutional change. Within the broad field of stakeholder management, focusing in three factors were identified as important if not crucial namely a clear communication of the vision with stakeholders, stakeholder's involvement at an early phase of the project and deep assessment of stakeholder's needs and constraints to the project. The organizational structure of the project team and stakeholders indicate that both stakeholder and project team were not prepared enough to affect or to be affected by large-scale innovations project in terms of structure and capacity. Furthermore, this research adds to existing institutional entrepreneurship literature by linking stakeholder management and the organizational structure both project team and stakeholders.

Limitations.

One of the most apparent limitation of this study is the generalizability of the results. Due to the qualitative research approach, the findings of this study are not generalizable to populations or universes, but rather to theoretical propositions (Yin 2009).

The focus of TELMA's single case study was to examine the conditions enabling institutional entrepreneurs to create and sustain a technological innovation project. Based on Battilana (2009), It can be argued that four factors are required in the process of implementing institutional change. This thesis has used only two of the components in Battilana's framework making the analysis limited for a range of knowledge. Therefore, future work is needed to complement the generalizability of this thesis results and conclusions.

Another limitation of the study is also the quality and amount of data available. The pilot project started in 2015 and have two area of research: the technological part and the organizational part. Because of the time limit of a master thesis, covering all existing data in the field was beyond the scope of this thesis. Therefore, the organizational part has been chosen. It assumed that the consistence of this thesis would have been different if both parts were covered.

Though telemedicine projects have been previously launched in Norway, no data focusing on a regional context exist reducing the opportunity to investigate the same phenomenon from existing knowledge and to compare results.

The non-use of software for analysis may limit the understanding of the actors' perspectives or feelings. The research question itself may be subject of limitation if some important aspect has been left when defining the research question.

Implications.

Practical implications.

It recommended that project teams use insight that not only creating a vision for change and implementing a service innovation project are enough to mobilize stakeholders behind large scale innovation projects. Stakeholders management turned to be important meaning that to interact with actors that affect or been affected by the project, it is crucial that a clear communication of a vision, involvement at an early phase, assessment of needs and constraint to the project should be undertaken. To do so, disposing adequate knowledge of stakeholder management aspects, theories and model can help institutional entrepreneurs to improve the knowledge of project teams. This may contribute to a better stakeholder's engagement then participation which translates into better result with less issues from project's stakeholders.

When it comes to organizational structure, this thesis recommends project teams to ensure that they have a full capacity of resources (human, infrastructure, financial resources) and internal knowledge to elaborated functional requirements (contract and other documents) before sharing their vision with stakeholder. Project teams should ensure that both the project team and involved stakeholders are prepared to affect and to be affected by a large-scale health project.

Implication for further research

This research adds to existing institutional entrepreneurship literature by connecting stakeholder management and the organizational structure both project team and stakeholders. Therefore, it is recommended that future scientific research should investigate more about the knowledge gap between the field of institutional entrepreneurship and stakeholder management in the process of implementing large scale innovation projects. It is recommended that further studies should investigate as well organizational structures and capabilities enabling both projects teams and stakeholders to participate in a process of implementing institutional change in regional context.

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Appendix

Interview Guide

Background information

1- Can you describe your function and experience within your company?

- Function

- Responsibility

- Education

- Work experience in your company

- Work experience

2- What is your role and responsibility within the project?

- Role

- Responsibility

Topic one: About TELMA and Creation of a vision for change:

- What is the vision behind TELMA project?

- Why do you think that vision is needed?

- Do you share that vision?

Topic two: Mobilization of allies behind the vision of change

1- Political work

- Is there any political influence behind the introduction of TELMA in Agder?

- How was the alliance Kristiansand - Farsund-Arendal formed?

2- Technical work

- What was the purpose with a collaborative agreement?

- How could that contract contribute to mobilize support from other municipalities to participate to the project?

- Do you think that patient inclusion has any impact on whether the municipalities participate to the project? If so, how?

- Introducing telemedicine services will change the way health services are delivery. This will require training and education. Do you have any routines for training of employees and or patients?

3- Cultural work

- Studies believe that promoting local ownership may motivate actors to get to participate to innovation projects. Is this something you have considered?
  If so, how or what are you doing to promote local ownership?

- An inter- organizational project such as TELMA requires a good communication flow among involves actors. How do you communicate? What is central to the communication?

- Telemedicine solution is relatively new, and people may be skeptical about the service yet. One way to solve this is to prove to actors that telemedicine is beneficial. Do you have any proof that TELMA can deliver expected benefits?
- How do you convince other municipalities to connect to the service?
- Commitment is important to mobilize support behind the vision. How do you show your commitment to TELMA? What actions or activities are you engaged in to show your commitment to the project?
- What types of comments do you receive from the different municipalities approached?
- Do you have any suggestion that contribute to mobilize municipalities to participate to the project?

✓ You are working on TELMA processes. What can you say about your work on processes?

✓ Is this a process related to diffuse telemedicine services to other municipalities?

✓ Data indicate that Farsund is delivering telemedicine services to some patients. Is that right?

✓ What was the motivation these municipalities must participate to the project?

Status update interviews has been conducted several times with project manager and status update questions are not taken in the list above.