Development of a reflexivity model to stimulate improvement and innovation of telemedicine in a health care organization

Mark Wierenga

Student office UMCG
University of Groningen
Faculty of Economics and Business

university of groningen

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Studentenbureau UMCG

Universitair Medisch Centrum Groningen

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Author	Mark A. Wierenga
Student number	S1838717
Thesis context	Technology and Operations Management Faculty of Economics and Business University of Groningen
Commissioning party	mw. S. Brilstra Quality department, UMCG
Supervisor RUG	dr. H. Broekhuis Technology and Operations Management University of Groningen
Supervisor UMCG	mw. S. Brilstra Quality department, UMCG

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"The reflexivity model is in essence uncomplicated and immediately applicable. Something I did in my own situation". Remon Lurvink, Lurvink interim Management & Consultancy - Change manager for Healthcare organizations.

"Actually I find it kind of strange that we never had something like this before". Physician, UMCG – currently leading a telemedicine project

"The results on which you base your model are recognizable (…) I look forward to see what will become of your model in the future", team leader, UMCG - currently leading a telemedicine project.

"As soon as this reflexivity model is implemented, contact me. I would love to take part with my next project". Physician, UMCG – Leader of a finished telemedicine project and contemplating on a continuation of this project

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Abstract

The aim of this thesis is to stimulate the improvement and innovation of consultation by telemedicine in a health care organization. In spite of the interest of health care organizations in the adoption of telemedicine to support physician's practices or to extend existing services, most telemedicine initiatives do not survive the research phase or they become a failure in daily practice. One reason might be found in the single channel design of these initiatives, for implementing consultation by telemedicine indicates a multi-channel design. Another reason for the low adoption rate of telemedicine initiatives can be the innovation teams. The problem with teams is that they tend to behave in habitual ways, even when faced with evidence that this behavior might be dysfunctional in reaching team goals. An option to break this habitual way is by stimulating team reflexivity. Therefore the goal of this paper is to build a reflexivity model which incorporates the multi-channel approach. To build the reflexivity model, the Action Design Research of Sein et al. (2010) was used. First six influence factors on team reflexivity and four dimensions of the multi-channel approach were distinguished. Current innovation projects where interviewed to determine how these factors and dimensions where present in the teams. The findings suggested that a need for a facilitator, a connector, a mediator and a provider of knowledge. The finding also indicated a lack of a multi-channel approach in the teams. From these findings the research formed model requirements, on which the reflexivity model was designed. The model was evaluated by a feedback group and finalized based on their comments. The model stimulates the reflexive behavior and the use of the multi-channel approach in teams. This will lead to the actual adoption of telemedicine and for a more efficient consultation service. Therefore it is believed that by using this model the use of telemedicine for consultation can be stimulated or improved

1 INTRODUCTION

In general, consultations in healthcare organizations create challenges for patients as well as physicians. Physicians are experiencing overloaded consultation hours in their ambulant clinics while patients are experiencing long travel times for their consultations. A possible solution is the use of virtual channels; a means of communication using advanced telecommunications, information, and multimedia technologies (Sousa & Voss 2006). By using virtual channels for consultation, patients can receive a consultation in other locations than in the hospital. This would reduce the workload on ambulant clinics and could be more convenient for the patients. Telemedicine is defined as the delivery of healthcare services through the use of information and communication technologies where the actors are at different locations (Kidlom et al. 2012). Hence, using virtual channels implies telemedicine. In spite of the interest of health care organizations in the adoption of telemedicine to support physicians practices or to extend existing services (Hu et al. 2002), most telemedicine initiatives do not survive the research phase or they become a failure in daily practice (Broens et al. 2007). In the health care organization under investigation this appears to be the case. Despite interest in and even some pilots that were initiated, no telemedicine initiative for consultations seems to have survived. This raises the question; how sustainable adoption of telemedicine can be achieved?

One reason may be found in the way telemedicine channels are designed. The report RICHTLIJN ONLINE ARTS- PATIENT CONTACT (van Meersbergen 2007) states that by Dutch law, consultations by telemedicine may only occur after at least one face to face consultation for the same condition. A consultation by telemedicine is therefore always part of a set of consultations in which different channels are used. Due to this obligatory face-to-face consultation, a consultation by telemedicine therefore implies that the consultation set is preformed through multiple channels. Hence, while the use of virtual channels for consultation implies telemedicine, it also indicates a multi-channel design. Customers of such a multi-channel service evaluate the service in a holistic way (Shaw & Ivens 2002, Cassab & Maclachlan 2009).

Thus, it is only logical to design telemedicine from a multi-channel perspective and the set of consultations as a whole.

The literature on telemedicine has focused mainly on feasibility, cost and estimated cost savings (Jennett et al. 2003), and not on the multi-channel approach. Therefore this multi-channel approach on the design of telemedicine consultations seems to be relatively new in the literature. The knowledge of the multi-channel approach on telemedicine could increase the adoption of telemedicine consultations and make them more sustainable. This requires the adoption of this knowledge into a health care organization. So how can employees in a health care organization increase their insights on how to develop and implement consultations that are executed through both physical and virtual channels?

Prior research has suggested that the attitudes of key personal are an important factor in technology adoption in an organization (Nickel & Seado 1986, Thong & Yap 1995). This is enforced by the Dutch law (van Meersbergen 2007), which states that the physician is ultimately responsible for the consultations. Therefore it is the physician who ultimately chooses whether or not to develop and use telemedicine for consultations. The focus of this paper is therefore on the physician. Consultation by telemedicine can be seen as an innovation since an innovation is - among others- the intentional introduction and application of an idea or product that is new to that job, work team or organization and which is designed to benefit the job, work team or the organization (West & Farr 1990). Organizations increasingly rely on teams to innovate (Edmondson 1999, West 2002). Therefore the physicians are either leading a team or a part of a team, when it comes to introducing telemedicine for consultations in their practice.

The problem with teams is that they tend to behave in habitual ways, even when faced with evidence that this behavior might be dysfunctional in reaching team or organizational goals (Gersick & Hackman 1990). Hence, providing evidence / reasons to physicians and their teams in why they should use a multi-channel approach for this innovation, is ineffective. The question thus becomes; how to change the behavioral patterns of the physicians into using a multi-channel approach when developing or adopting telemedicine consultations? The perspective of this research on changing the behavioral pattern is by

stimulation an iterative process of reflection planning and adaption, i.e. reflexivity.

Reflexivity is thought of as an iterative process, where these three components form an interwoven circle (Broekhuis & Veldkamp 2007). Higher levels of reflexivity have been found to relate to higher innovation levels (Tjosvold et al. 2004, Schippers et al. 2010). High reflexivity has also been found to improve performance (Carter & West 1998, Schippers et al. 2003). Hence, by stimulating reflexivity in groups of physicians or in medical teams one stimulates behavioral changes of the physicians. This in turns stimulates innovation and improvements of consultation by telemedicine.

Therefore the goal of this paper is to build a reflexivity model which incorporates the multi-channel approach. This model will be build for medical / multi-disciplinary teams or groups of physicians as to simulate the improvement and innovation of the consultation service.

The outline of this paper is as follows. In the next section the theory behind the multi-channel approach and team reflexivity, will be further explained. This will provide the theoretical foundation for this research. The methodology for building the reflexivity model is discussed. This research will build the model based on the theoretical foundation as well as the organization experiences on the theory found. Followed are the results on the organizational experiences. Here the findings are presented, analyzed and translated into building requirements for the model. Next the reflexivity model is presented and explained. To close, the discussion is presented with a conclusion, limitations and suggestions for further research.

2 LITERATURE

For this chapter the scientific literature was consulted for relevant factors on team reflexivity and the dimensions of the multi-channel approach.

2.1 TEAM REFLEXIVITY

Team reflexivity is defined as the extent to which group members overtly reflect upon and communicate about group objectives, strategies (i.e. decision making) and processes and make changes accordingly (West 2000). Therefore reflexivity promotes awareness of objectives, strategies, processes and environments of teams (Schippers et al. 2008). This awareness may lead to the identifications of discrepancies between current and ideal factors in the team's domain (Schippers et al. 2008). The opposite of reflexivity is the use of habitual routines: a group repeatedly exhibits a functional similar pattern of behavior in a given stimulus situation without explicitly selecting it over alternative ways of behaving (Gersick & Hackman 1990). This habitual way can be broken by stimulating reflexivity (Schippers et al. 2008). Reflexivity consists of three stages; reflection, planning and adaption (Broekhuis & Veldkamp 2007). The relation between these stages can be seen in Figure 1.

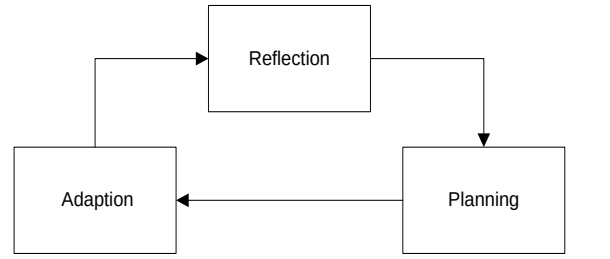

Figure 1 Stages of reflexivity (adopted from West 2000).

2.1.1 STAGES OF REFLEXIVITY

According to West (2000), reflection includes behaviors such as questioning, planning, exploratory learning, analysis, diverse exploration, making use of knowledge explicitly, planfulness, learning at a meta-level, reviewing past events with self-awareness, and coming to terms over time with a new awareness. At the team level, reflection refers to these behaviors in obtaining new insights about processes and performances among all team members (Edmondson 2002). By gaining new insights reflection helps to recognize how present ways of operating may have become obsolete due to environmental changes (Tjosvold 1991). Reflection in groups is not a natural phenomenon; therefore reflection should be stimulated. The methods of stimulating reflection as found in the literature are diverse, one-on-one dialogues (Broekhuis & Veldkamp, 2007), team coaching (Mulec & Roth 2005), reflective journals (Loo & Thorpe 2002) and discussion groups (Platzer et al. 1999).

Planning is seen as the bridge between reflection, and adaption (West 1996), for changing behavior is not achieved by reflection alone. The planning stage is going beyond the stage of reflection and towards action by developing implementation intentions (West 2000). In the planning stage the intentions of the reflection are put into plans. These plans will then be implemented in the adaption stage (Widmer et al. 2009). Weingart (1992) paper shows that planning during task execution occurs relatively more than preplanning. The feedback received during the execution of a plan creates new plans (Freidmann 1966). Hence, planning is as important during the execution of the plan, as the preplanning.

The adaption stage refers to goals-directed behavior relevant to achieving the desired changes in team objective, strategies, processes, organizations or environments identified by the team during the stage of reflection (West 2000). The action carried out by the team leads to new information, which can lead to further reflection, planning and action as an iterative and ongoing process (West 2000). Planning actions towards change is something different than actual performing these actions.

The difficulty of changing health care organizations has been widely acknowledged in empirical studies of health care practice (Oxman et al. 1995). The question arises; how to stimulate actual change. Only one option was found in the literature; the reflexivity method of Broekhuis & Veldkamp (2007). In the Reflexivity Method the reflection stage was done by one-on-one

dialogues between members of the committee and the department. Based on the results of the dialogues, the committee members present an advice to the department, which were discussed in the peer group meeting with all the physicians of the department. This resulted in a report with advice, concluding the planning stage. To simulate the adaption stage, some committee members return after six to nine months to the department. The goal was to see if the intentions of change as defined in the report, where actual made. See the paper of Broekhuis & Veldkamp (2007) for more details on the Reflexivity Method.

2.1.2 Influence factors of reflexivity

In the literature the research searched for factors that stimulate reflexivity in teams. The influence factors found are presented in Table 1. These factors are translated into requirements, which the current teams of physicians should encompass to stimulate reflexivity.

Influence factor	Requirements
Shared vision	Presence of a clear in details described team goal of what the team is trying to achieve.
Transformational leadership	Team leader should motivate the team member to go beyond to go beyond self-interest by creating a compelling vision.
Interactional justice	Any bias or dishonesty against team members should be avoided.
Transactive Memory System (TMS)	It should be clear in the team who know what kind of knowledge. So if needed the knowledge is easily accessed.
Team empowerment	Team should have authority and powers in order to manage and lead itself.
Trust	The team should operate in an environment where members are able to speak open and freely.

Table 1 Influence factors on team reflexivity.

Shared vision was found to be positively related with team reflexivity (Schippers et al. 2008). If teams have a clear team goal they will be better able to reflect, because they will have more of an idea if they are on track in reaching the goal (Locke & Latham 1990). Both Tjosvold et al. (2004) & Dayan & Basarir (2010) found in their papers a positive relationship between goal clarity and team reflexivity. Goal clarity is defined as the precision and details of what the team is trying to achieve (Akgun et al. 2007), which can be seen as a clear team goal. Hence, this research sees goal clarity and shared vision as closely related concepts.

Transformational leadership is an important factor in stimulating team reflexivity, for it creates a stronger shared vision in a team (Schippers et al. 2008). Transformational leadership is a style of leadership that transforms followers by stimulating them to go beyond self-interest through altering their morale, values and ideals and motivating them to perform above expectations (Yukl 1999). An essential part of transformational leadership is communication a compelling vision for it helps in creating a stronger shared vision in the team (Schippers et al. 2008).

Interactional justice was found to be positively related to team reflexivity in the study of Dayan & Basarir (2010). Interactional justice refers to the quality of interpersonal treatment during the enactment of decision making procedures (Bies & Moag 1986). Interactional justice is the perceived justice of the treatment a team member experience in the decision making process. If there is any biased or dishonesty against team members in this process reflexivity would prove to be very difficult (van de Ven 1986).

Transactive memory system (TMS) has been found to be positively related to team reflexivity (Dayan & Di Benedetto 2008). TMS is defined as a blend of the knowledge possessed by each member of the team and a collective awareness of team members about who knows what (Wegner 1986). TMS is assumed by Dayan & Basarir (2010) to provide a knowledge network among team members, allowing the interchange of data, information and knowledge that enhance communication, coordination and contribution of team member while responding to reflexive activities.

The study of Dayan and Basarir (2010) found that team empowerment is positively related to team reflexivity. Team empowerment, refers to the authority and power the team has in

order to manage and lead itself (Manz & Sims 1991). Empowered team feel more confident in their ability, hence they perceive themselves as more capable in adapting to changes in environmental circumstances (Akgun et al. 2007). It reduces or eliminates the feeling of lack of power thereby increasing the team members sense of control and identification (Akgun et al. 2007).

Trust is seen as an important condition for reflexive behavior (Widmer et al. 2009). Widmer et al. (2009) found high correlations between trust and reflexivity. Trust refers to the climate within a team in regard to the expectancy of cooperative and non-harming behavior of other team members (Kramer & Tyler 1996). Team members who trust each other will not be afraid of speaking freely, because they do not think that other team member will take advantage of them (Widmer et al. 2009).

2.1.3 Conceptual model

The influence factors are translated into a conceptual model for team reflexivity, as presented in Figure 2.

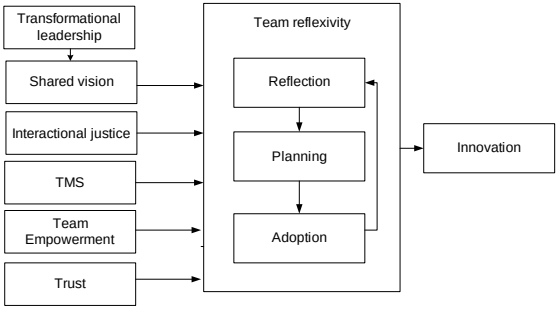

Figure 2 Conceptual model.

2.2 Multi-channel approach

Multi-channel is the use of alternative modes of contact by customers to interact with and obtain service from an organization (Cassab & Maclachlan 2009). In this research the alternative modes are alternative channels (other than the face-to-face channel) for consultations. Together these channels make up the channel set (Sousa & Amorim 2009). In multi-channel approach there are two types of channels, physical- and virtual channels (Payne & Frow 2004, Sousa & Voss 2006). Physical channel is the means of communication with the user employing a physical infrastructure (Sousa & Voss 2006), i.e. face to face service like buying clothes in a clothing shop. Physical channels have the benefits of richness and complexity of customer interaction, the level of security, and their ability to enable customers to touch and test different products (McKnight et al. 2002). A virtual channel is the means of communication using advanced telecommunications, information and multimedia technologies (Sousa & Voss 2006). A virtual channel, telemedicine, has the benefit of increased convenience, transactional efficiency, information availability and accessibility (McKnight et al. 2002). The goal of an organization is to employ both virtual as physical channels to achieve the benefits of both these channels.

2.2.1 Dimensions of the multi-channel approach

The scientific literature was searched for the dimensions on which a multi-channel approach can vary. Three dimensions were found: channel variety, channel redundancy and channel span. Also two factors influencing the dimensions where found: characteristics of input en output and the allocation of service activities to channel. The results and the relation between the dimensions and factors are seen in Figure 3. An arrow stands for; has influence on.

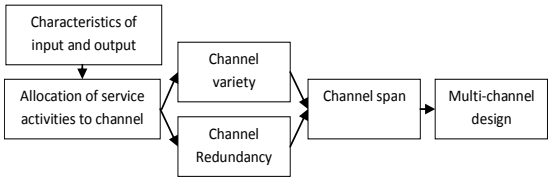

Figure 3 Dimensions of a multi-channel design.

Channel variety is extent to which a service process is present across the channel set (Sousa & Amorim 2009). The channel variety results from the allocation of service activities to channels or the extent to which each channel supports the various interactive service process activities. Some characteristics of the inputs and outputs involved in a service process were found by Sousa & Amorim (2009) to affect these decisions, due to the existing differences in the ability of channels to support different types of process flows. Sousa & Amorim (2009) found for

instance service activities that required user presence. These activities cannot be allocated to a virtual channel.

The channel redundancy is defined as the extent to which service activities are duplicated across the channels that support the service process (Sousa & Amorim 2009). The channel redundancy also results from the allocation of service activities to channel decision.

The channel span is the extent to which existing process flows are cross channel, given a certain allocation of activities to channels (Sousa & Amorim 2009). It is the number of possible paths that the user can follow through the service activities of which the service process is comprised off.

Using these three dimensions, Sousa & Amorim (2009) describe four possible multi-channel designs; generalist, parallel, centralized and constricted. Generalist design is characterized by a high variety, high redundancy and a high span. In such a multi-channel design type, most of the service activities are available in more than one channel. This provides substantial freedom for users to combine different channels to obtain the service. Parallel design is characterized by a high variety, high redundancy and a low span. Such models enable users to use different channels to obtain a service but allow for very limited combinations of different channels, i.e. low switching options. When a channel is chosen by the user, it needs to be carried out to the end of that channel. A centralized model is characterized by a low variety, low redundancy and a low span. This type has few combinations available and tends to have very few channels. In the constricted model is characterized by a high variety, low redundancy and a high span. In this type the user has few combinations available but they tend to span several channels.

2.2.2 User requirements on a multi-channel approach

A multi-channel service objective is to satisfy the users (Montoya-Weiss et al. 2003). The users are seen as the physicians as well as the patient. Therefore this research perspective is that the requirements of the physician as well as the patient should be satisfied in any multi-channel design for consultation. Understanding what the user's requirements on the multi-channel service will be is therefore an important step in any multi-channel design. Several requirements where found in the literature as seen in Table 2. A higher degree for a requirement stands for a higher satisfaction of the user. Thus, obtaining a high degree on all on the requirements should be strived for. Cassab & Maclachlan (2009) research shows that multi-channel users evaluate the quality of the service interface in terms of the service provider's ability on four factors; problem handling, record accuracy, usability and scalability.

User requirements	Definition
Problem handling	**The degree in which the multi-channel service provider can handle the user's problems.**
Usability	**The degree to which the multi-channel provides a functional and helpful interface during the service delivery, with minimal effort to the user.**
Content consistency	**The degree to which every channel informs each other on the user information gathered.** **The degree to which users receive the same response to a query posted through different channels and the degree to which the channels take information gathered in other channels into account.**
Scalability	**The degree to which the user can easily change from one channel to another.**
Independence	**The degree to which users are free to choose between different channels.**
Transparency	**The degree to which users are aware of the existence of all available channels and their awareness of the differences between these options**

Table 2 User requirements.

Problem handling is the degree in which the multi-channel service provider can handles the user's problem. In the case where technology has a assisting or mediating role in delivering the set of consultations, the user cannot fully evaluate the quality of all elements of the contact channel, because the technology remains invisible (Cassab & Maclachlan 2009). Therefore one could assess the performance of a channel that mixes the personal element with technological aides by assessing the performance of the visible portion i.e. the person (Cassab &

Maclachlan 2009). I.e. the user is experiencing difficulties and contacts customer support to help solve these difficulties. The user experience with the support is a big part of the user judgment on the entire service.

Content consistency is the degree to which every channel informs each other on the user information gathered and the degree to which users receive the same response to a query posted through different channels (Sousa & Voss 2006). This definition is strongly related to the term record accuracy, the accuracy of customer records used during service encounters (Cassab & Maclachlan 2009).

Usability stands for the degree to which the multi-channel provides a functional and helpful interface during the service delivery (Cassab & Maclachlan 2009). This is strongly related to the term efficiency from the web-site literature (Cassab & Maclachlan 2009). Efficiency is defined as the ability of the user to get to a site, find their desired service and information associated with it and check out with minimal effort (Zeithalm et al. 2005). Usability is therefore defined as the degree to which the multi-channel provides a functional and helpful interface during the service delivery, with minimal effort for the user.

Scalability stands for the ease of which users can change from one channel to another (Cassab & Maclachlan 2009). I.e. when internet banking proved to be too difficult a user can easily access the customer support for doing transactions. This requirement is different from problem handling in the sense that in scalability the user switches channel if deeded unsatisfactory, whereas in problem handling the user seeks assistance to complete the activity in the current channel. Cassab (2009) paper ranked the above factors in importance. In descending order of importance: Problem handling, usability, record accuracy (content consistency) and scalability. But other requirements were also found.

Independence is defined as the degree to which users are free to choice between different channels. This comes from the definition of channel service configuration from Sousa & Voss (2006), which incorporates the degree to which customer have choices in channels. This in turn is based on Bitner et al. (2002) who stated that users, who are forced into using a channel, are displeased.

Transparency is defined as the degree to which users are aware of the existence of all available channels and their awareness of the differences between these options. This definition is based on Sousa & Voss (2006) transparency of channel-service configuration. Which consist of the degree to which customers are aware of the existence of all available channels and associated services and the degree to which customers are aware of differences between services attributes across the different channels.

2.3 Conclusion

The influence factors of team reflexivity have been presented in this chapter. The reflexivity model should stimulate these factors to stimulate team reflexivity and innovation. This chapter also provided the dimensions on which a multi-channel approach could vary. The knowledge of these dimensions should be shared and used in the current teams of physicians. This seems to be essential for a sustainable adoption of consultations by telemedicine. User requirements on any multi-channel design were also found in the literature. These requirements should be incorporated in multi-channel design. The research therefore sees the incorporation of the user requirements as the fourth dimension in the multi-channel approach. The reflexivity model should therefore ensure that the user requirements are translated into a proper multi-channel design. Hence, to build a reflexivity model that incorporates the multi-channel approach. The model will need to incorporate the influence factors of reflexivity and the dimensions of the multi-channel approach as presented in this chapter. The method to achieve such a model is elaborated in the next chapter.

3 METHODOLOGY

The model will be built on the basis of three pillars, namely; the literature of reflexivity in teams, the literature of multi-channel design and lastly the experiences in the healthcare organization. The factors that influence reflexivity in teams of physicians already have been discussed in the literature section of this rapport. This research continues with examining how these factors are currently present in the teams of physicians. The teams examined are teams which are currently trying to implement consultations by telemedicine. The results of these findings will be translated into requirements for the reflexivity model. Resulting into the following research questions:

R1: How are the influence factors of team reflexivity currently present in the medical / multidisciplinary teams of physicians who are now trying to implement consultation by telemedicine and can these findings be translated into requirements on which the reflexivity model will be build?

The literature on the multi-channel approach presented the dimensions of which a multi-channel design may vary. The question arises: how these dimensions are present in the current team of physicians? Are they using these dimensions to design one of the four multi-channel types as described by Sousa & Amorim (2009), and what are the experiences in using or not using these multi-channel dimensions?

Principle	Translation
Theory-Ingrained artifact emphasizes that the design is informed by theories	**In this paper scientific literature is used to indentify influence factors of team reflexivity and the dimensions of multi-channel design. Added to this principle were the experiences with consultations by telemedicine in the project on telemedicine.**
Reciprocal shaping emphasizes the inseparable influences mutually exerted by the two domains: the model and the organizational context	**To improve the adoption of the model, it will be designed into the existing organizational context instead of trying to change the organizational context toward the model.**
Mutually influential roles points to the importance of mutual learning among the different project participants	**The model connects the different persons trying to implements consultation by telemedicine. As to learn and improve together.**
Authentic and concurrent evaluation points to the idea that decisions about designing, shaping, and reshaping the model should be interwoven with ongoing evaluation form the organization	**The research forms a feedback group to evaluate the model during its design.**
Guided emergence emphasizes that the model will reflect not only the preliminary design created by this research but also its ongoing shaping by organizational use, perspectives, and participants	**The model can never be seen as final, but rather as changeable by organizational experiences.**
Formalization of learning, emphases the objective of formalize learning. The situated learning from an ADR project should be further developed into general solution concepts for a class of field problems.	**The knowledge gained by creating the model should be made available in such a way that other projects can implement this knowledge.**

Table 3 Translation of ADR into the research.

The research questions therefore become:

R2: How are the dimensions of a multi-channel design currently present in the design that implement consultations by telemedicine and can these findings be translated into requirements on which the reflexivity model will be build?

R3: How are the patient and physicians requirements currently met in the design of consultations by telemedicine and can these findings be translated into requirements on which the reflexivity model will be build?

The answer on these research questions above will result into requirements for the actual design of the reflexivity model. To develop the reflexivity model, the Action Design Research method of Sein et al. (2011) was adopted. The ADR method builds with the users of the model and thus creates a continuous evaluation of the model. This bottom-up approach of building a model was also advocated by Campbell et al. (2002). They found such an approach to generate trust, goodwill and confidence among the users, as to promote a developmental facilitative and supportive climate, to stimulate changes in clinical practice. Meade & Woodhouse (2000) implemented a similar approach by letting the persons who were affected by their model, cooperate in building the model.

3.1 ADR method

The ADR method contains several principals which need to be satisfied in order to achieve the bottom-up approach.
The ADR principles and how they are translated into this research is presented in Table 3.

3.2 Research phases

These principals where incorporated into the phases of this research. The phases are presented in Figure 4 on the next page.

3.2.1 Orientation

In the orientation phase the first step was to understand the organizational context of the organization, or how the organization operates. The main goal of the orientation was to discover current projects on consultation by telemedicine and to identify experts on reflexivity. The team members of the projects and the experts where categorized in possible respondents for the interview, the feedback group or both. The identification of respondents was harder than originally expected due to structure of the organization. The organization is split up into different departments, that self-governance themselves. The sharing of information and experiences between the departments were limited.

Therefore this research needed to invest a significant amount of time into asking around in the different departments on possible experts or projects. This caused the orientation phase to almost double that of the time originally planned. During this time-span, the scientific literature was examined to understand the factors that influence team reflexivity and the dimensions of multi-channel design. The results from this examination of the literature can be found in chapter two. In the end four projects where found, of which three where still in progress or starting up.

3.2.2 Gathering information

In this phase the respondents for the interview were recruited from the list made in the previous phase. For the in-depth interviews, respondents were recruited from the active projects found in the orientation phase. The in-depth interviews was chosen as a methodology to gather information because it provides more detailed information then what could be gathered trough surveys (Boyce & Neale 2006). The respondents consisted of two physicians and one medical specialist. The physicians role in the project was that of the project leader. The medical specialist was part of the team that supported the team leader in her project. In combination with one expert on reflection, this phase resulted in four in-depth interviews. The results of the interviews can be seen in the added rapport: transcripts.

3.2.3 Analyze

The transcripts from the previous phase where analyzed with the software ATLAS TI, a powerful workbench for qualitative analysis of large bodies of textual data. ATLAS TI was used to code the transcripts as to easily access the relevant quotes for analysis. The quotes provided an answer to the research questions. These findings were translated into requirements for the model, as presented in chapter four. During the analysis the members for the feedback group were also recruited. Two phy-

sicians, one independent change manager and one (non-medical) project leader participated in this group. Form this group one physician had also participated with the interview. The other physician was the leader of the telemedicine project which had ended before this research began. The non-medical project leader came from the same project as the medical specialist from the interviews.

3.2.4 Designing the reflexivity model

The requirements from the previous phase where combined with the requirements from the ADR method as seen in chapter five. This resulted in the building blocks on which the first version of the model was created. This model, seen in appendix, was presented to the members of the feedback group for evaluation. The initial intent was to evaluate every design decision in the model with the entire feedback group together. Due to the busy schedule of the group members this proved impossible. Therefore this research resulted into evaluating the initial design once, individually to the group member. The evaluations were used to reshape the initial model to the reflexivity model presented in this paper, seen in chapter five. The evaluations off the initial design can be seen in appendix.

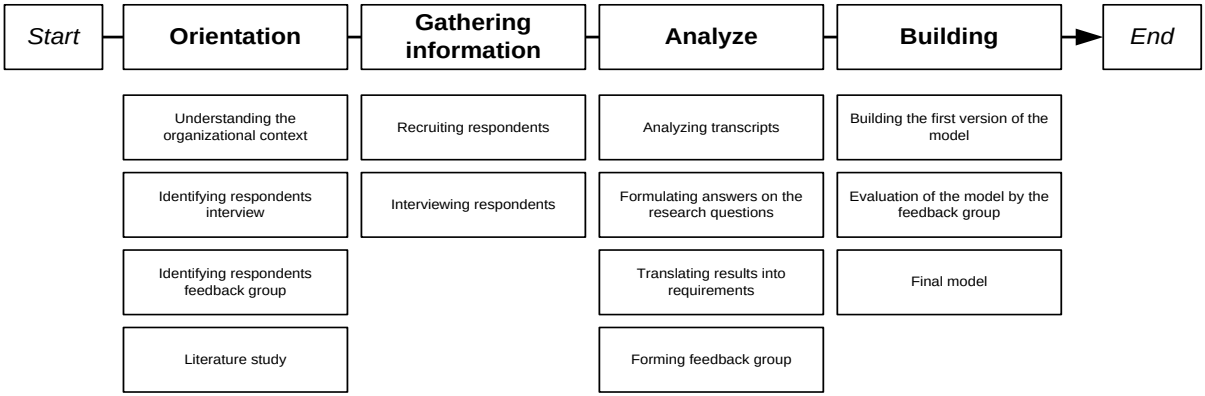

Figure 4 Research phases.

4 RESULTS

This chapter consists of three sections; projects characteristics, the reflexivity results and the multi-channel approach results. The project characteristics are presented to give a general impression of each of the projects examined. The experiences of the current project on the influence factors of team reflexivity are seen in the reflexivity results. The multi-channel result examines the use of the dimensions of the multi-channel approach in each of these projects. The results are translated into model requirements on which the reflexivity model will be build.

4.1 PROJECTS CHARACTERISTICS

The general characteristics of the projects are presented in Table 4.

The results indicate that the teams for implementing consultations by telemedicine are small groups receiving limited support, with the exception being project two. Project two has gathered support from external parties. The three projects all are executed in different medical specialism, but some resemblances between the projects can be found. For example, the

	Project 1	Project 2	Project 3
Targeted patients	Patients with a possible allergic condition	Long term patients who are discharged from the hospital and start their revalidation at home.	Long term cancer patients with a stable condition
Medical specialty	Allergology	Revalidation	Oncology
Leader	The physician	The project leader (non-physicians)	One of the physician, who is in a PHD course
Project teams	One physician	Two medical specialist one non-medical project leader	Three physicians
Support	One ICT advisor	Health insurance companies for financial aid Professor from the university of Groningen for help in the service design A coach who coaches the employees using the telemedicine Company of the software used for telemedicine, in bettering the software to user demands	ICT unit from the own department communicate needs to the general ICT department.
Time reserved	None, project is done in the free time of the physician	Team has full time available for the project	Part of the PhD research course from the physician in the lead
Status	Recently had first consultation by telemedicine	Field test in progress with 60 patients	Expected start up in January

Table 4 Projects characteristics.

targeted patient groups from projects two and three are similar, namely long-term patients. In the team composition some resemblances and differences are found. The project teams in project one and three are in contrast to project two, led by a physician. All three projects have different time reserved, ranging from none in project one, to full time availability in project two. The three projects are all in different phases, ranging from the preparation phase, as seen in project three to the field testing phase, as seen in project two.

4.2 REFLEXIVITY RESULTS

4.2.1 SHARED VISION

To understand the experiences of shared vision in the projects. This research examines their goal and the detail on achieving these goals. First the project goals are presented in Table 5.

Project 1	Quotes
Reduction in patient travel time **Reduction in space needed for consultations** **Reduction in overall time needed for consultations.**	**My patients consist of mostly young adults. They have a job and well, a consult in the hospital takes up a lot of their time. These patients sometime have to come from the islands or from Zwolle. They need to travel two to three hours in total for a consultation of 10 minutes. If I was the patient, I would definitely ask for alternatives.** **If the physician can work out of his own office, if he doesn't have to physically receive patients. Well you do not need someone at the desk and you don't need someone to be available for arranging stuff. This saves time.**
Project 2	Quotes
Better guide the patient in adjusting at home after the clinical revalidation. **Reduction of cost for the service as a whole**	**A co-worker did a promotion research on the combination of clinical revalidation and revalidation at home. One of the results that came from this research was that our patients are experiencing a black hole when they return home after the clinical revalidation. Someone was needed to guide them to this part in their revalidation process. The concept of the coach (and consultations by IPad) was thusly invented.** **In the end what we want, is to prevent a stacking of health care delivery to the patient. Maybe that is not here in our part of the process but somewhere later on. We want to achieve that fewer professionals from the first line are needed and thus reduce the cost in the service chain.**
Project 3	Quotes
Reducing the pressure on the consultation hours **Reducing patient travel time** **Research the feasibility of the video-channel for consultation.**	**The patient numbers are growing but the number of physicians stays the same. That is why we try to make our consultations more efficient. This is one of the reasons why we want to use video consultations. The second reason comes from our patients. They have to travel up to two hours for a consultation where they mention the same discomforts as the previous consult. Therefore we need something different for consulting these stable patient groups.** **We also are doing a feasibility research. If this works with in this patient group we want to expand these types of consultations to other patients groups. We want to introduce these consultations in small steps. Firstly, we want our physicians to gain experience with the video consulting.**

Table 5 Projects goals

The projects all state clear goals and what the goals should provide, i.e. the reduction in patient travel times in project one and three. The goals from project one and three are all specified to the consultation service. Project two seems to transcend this view by stating their goals towards the entire chain of revalidation, including other organizations. This research then looked at the details the projects can provide in achieving these goals. The findings are presented in Table 6.

Project	Quotes
1	I thought we will also implement that here too. I thought it was that easy. But the practice destroyed that image, you run into a couple of things.
2	Four times a year, we have a meeting withal the specialists. In these meetings we discussed the experiences so far. What are we running into, what isn't going so well? This can be on the content but also on the process level. In these meeting a number of priorities are identified. The project leader then translates them into steps we need to take. Some of these steps are taken over by the specialist, some by the project leader and some by me. Funny thing is that when you answer one question it always creates new questions.
3	For this project we all got an IPad, because we needed a computer with a webcam and sound. This was not available in every room. Unfortunately the webcam system is not working properly on our IPads. On a normal computer we have functions to manage the conversation, but on the IPad we miss these functions.

Table 6 Details on achieving the goals

Project two seems to have clear vision of the details of the goal. By having different meetings with the specialists involved, they have a system in place that identify and plan solutions for the obstacles. Such a system was not found in project one and three. Project one seems to oversimplified the process of implementing telemedicine for consultation. Project three decisions also seem not to be thoroughly thought through. An explanation to the lack of detail in project one and three was found in the transcript, the results are presented in Table 7.

Project	Quotes
1	You run into the fact that you have to find out everything for yourself. So I just installed the program myself. With my girlfriend at home on the IPad, I figured out how to use the program by myself. That is the way it goes. (Interviewer): So your pilot is based purely on your own experience, there is no one in the hospital facilitating you? Exactly, they do encourage this, but I have to do everything on my own.
3	For us it is the world upside down. Normally if we use a new treatment, it has been extensively tested. Now we are using something without knowing how we should do it and what the effects are. (Interviewer): So you miss a facilitator? Yes, he is missing. Everyone is separately handling this. The physicians, the ICT on the sideline. There is no one who coordinates this. Personally I think the ICT are the ones who should take on this responsibility, because they are the department who understand the safety issues of the systems.

Table 7 Explanation off the lack of details

Project three clearly states a need for a facilitator who guides the physicians through the process. The same statement seems to be present in project one, who mention needing to do everything on his own. As project three mentioned they are not trained in leading an innovation project. If the physicians are not trained in leading an innovation projects, it is logical that they need support. If this support cannot be found, it is understandable that a lack of details in achieving the goal emergences.

So well the overall goals is clear in all the projects, two of the projects seem to lack details in achieving their goal. Therefore the shared vision of the projects can suffer, resulting in a negative effect team reflexivity and ultimately in innovation. Hence, the first model requirement is defined as:

The reflexivity model should help the physicians in determining and executing the details of achieving the project goals.

4.2.2 Transformational leadership

To examine the transformational leadership, the transcripts where examined to determine what the qualities of the leader of the reflexivity model should possess. These results are seen in Table 8.

Project one and tree seems to have a clear need for an independent leader who can connects people between the different departments, who over sees the whole picture. In project two this role seems to be filled by the project leader. This arise the question why such a need for a connector exist? Therefore this research examined the transcripts of project one and three to provide an answer. The results are seen in Table 9.

Project	Quotes
1	**If it someone from above me or below me in the hierarchy, I would not care. Just someone independent and thus without any interest in the different departments, someone who reflects with me on my projects.** **It could be someone from just below the board of directors, but who is not on the board or in the sector level. I think that would be ideal. Someone who can find all the different lines, interest and can combine them**
2	**(Interviewer): There seems to be a lot of interest in the organization, but everyone seems to reinvent the wheel. There seems to be nobody who centralized all the knowledge on this field?** **I am certain we have done that, but for more information you should talk to our project leader.** **(Interviewer): So the project leader facilitates the meeting, so everyone can talk about the obstacles and in this meeting a planning is made in who takes on which obstacle?** **Yes, a lot of these things lay with the project leader; coaches need to be able to do their coaching work.**
3	**I don't think you should put too much on the plate of the physicians. He is only the user and not the one who oversees everything.** **So someone and It does not matter if he is from the ICT or that he has a different role in the organization, but someone who oversees the whole picture. Who has contact with the physicians, the ICT, the clinic etc.**

Table 8 Qualities needed in the leader of the model

Project	Quotes
1	**The culture is such that every sector has its own goal. This means that If I drop these obstacles at the seventh floor, they will have a totally different view.** **We also do not have a platform or a forum at which we can share these ideas. Or something in where other people can help me think about my project. Actually we (the sectors) are all little islands**
3	**Everyone is separately tackling this. The physicians, the ICT on the sideline. There is no one who really coordinates these efforts.**

Table 9 Explanations on the need of a connector.

Project one states the island structure of the organization, which this research also encountered in the orientation phase, as a possible cause. This is also encountered in project three which states a fragmented push towards telemedicine for innovation. To overcome these obstacles the leader of the reflexivity model should stimulate experts and projects to alter their attitude of working only for their own island. This attitude change is a style of leadership called the transformational leader, which states the importance of training in transformation leadership. This will have a positive effect on team reflexivity and therefore on innovation. Hence,

To reach across the different departments the leader of the reflexivity model should be a transformational leader.

4.2.3 Interactional justice

To understand current experiences on interactional justice, the transcripts where examined for information on a perceived feeling of being treated dishonestly or biased. The results are seen in Table 10 on the next page.

Project	Quotes
1	**FaceTalk was unfortunately not available to me. I was forced to use WebEx, because we a license for this program and its deemed safe, which FaceTalk was not. Apparently that is very important.** **I think because web-cam consults are using internet. There somewhat of an unsafe odor attached to the internet. Not surprisingly because it is something new.**
2	**No feeling of biased or dishonest treatment was found.**
3	**Off course we have requirements. We can think of what we want the design to be, but it is not adopted. This decision lay with the ICT department, they have the final word. Frustrating because you want to move forward.**

Table 10 Feelings of being treated biased.

In project two no information was found that indicated a perceived feeling of dishonestly, this in contrast with project one and three. In these projects a feeling of frustration was clearly seen towards the ICT department, due to the fact that the where forced into a system they did not chose. Talking with the ICT department is determined that the reason that the preferred program was denied, was due to the data stream going toward America and back. This research then asked the physicians if they knew about this reason. They did not, but understood the problem with the data stream going to America. Still no effort was made to look for another system that satisfied the ICT department requirements as well as the physicians. The feeling of injustice seems thus to be from a miscommunication in reasons why the preferred system did not work and due to the fact no 'good' alternative was given or searched. This caused tensions between both parties, while both parties are essential in the implementation of consultation by telemedicine. If there is tension between the groups, this would have negative impact on team reflexivity and thusly have a negative effect on innovation. Therefore this research formulated the following model requirement:

The reflexivity model should provide a platform where general decisions on telemedicine can be explained and where tensions arise, mediate.

4.2.4 TMS

To determine the experiences on TMS, this research looked for information in the (lack of) difficulty in finding relevant knowledge, i.e. an implementation specialist. The findings are presented in Table 11.

Project	Quotes
1	**We are inviting the wheel for the hospital.** **I know this guy in sector A, an ICT advisor, but he only works for sector A. Thus he is not working for the hospital.** **Funny how you come to ideas like this. I had not thought of it before but a something like an internal consultation bureau. With people who have expertise on implementing certain issues. Who can give me some input on my projects** **(Interviewer): and connect between departments?** **Yes!**
2	**Some people say we are a case manager and in some way that is true, but we are more than that. A case manager only has an overall view on the parties involved and makes them work together towards a common goal. As a Coach, you try to be more than this. Off course a large part of my task are that of a case manager, but we also know that the knowledge on acquired brain impairment in the first line is inadequate. Therefore we are trying to share our knowledge with the first line, the professionals and other persons involved in the revalidation. Like neighbors or family members.**
3	**While setting up this project I immediately noticed that there are now predecessors. There are no protocols written and I really have to invent the wheel myself.** **Our ICT are currently the ones who are trying to centralize the knowledge and to control it. Also to contact the general ICT but doctor wide there is not much shared.**

Table 11 Experiences on TMS.

The goal of project two seems to be wider, as previous discussed. They are trying to fulfill the role of a knowledge platform, sharing knowledge on the patient condition throughout the entire revalidation service. In project one, the island structure is stated as an obstacle in recruiting an ICT advisor. This means that relevant information is not available. Project three also seems to experience the same lack of sharing, stating that their ICT unit is trying to counter this obstacle by trying to centralize and control the knowledge. Project three also states that physicians wide, not much information is shared. Therefore it is not surprisingly that both project one and three state that they are inventing the wheel for the hospital and seem unaware of each other efforts. Therefore this research states that to improve the innovation of telemedicine, the model should connect the different projects and experts with each other. This would improve the TMS, for knowledge is more easily found. Another effect of the connecting project together is that a common push towards the innovation of telemedicine can be achieved. This does raise the question if projects want to share information and work together on adopting telemedicine. It is understandable that a certain hesitation in protecting ones knowledge exist. Therefore this research asked the respondents if connecting the different project would provide added value for their projects. The results are presented in Table 12. The results are clear, all the projects see added value in connecting the different projects and working towards a common goal; the implementation of consultations by telemedicine. Hence,

The reflexivity model should connect the different projects on telemedicine, and should arrange the input from relevant experts and other sources of knowledge.

Project	Quotes
1	**Off course that would be superb.**
2	**Yes, I certainly think it would create added value to the project. One person sees less than a group of people. As long as everyone has the same interest, that we can deliver better care to our patients. If that interest is the main focus, you can create a safe climate where intervention and reflection can be made. Thus a cross pollination or co creation can occur.**
3	**I think that in the start-up phase where I am right now, it would certainly be useful. I think it would work better than doing all by yourself. (..) Together you can sit down and discuss what I could bring us, what do we think and what must we do to get it functional in the organization. Later on it is better to reflect in your own group.**

Table 12 **Added value in connecting projects.**

4.2.5 Team empowerment

To determine the team empowerment of the projects, the authority level experienced by the project teams was examined. The findings are presented in Table 13.

Project	Quotes
1	**(Interviewer): So your project is based on your own experiences, not facilitated by the hospital. Yes, the encourage it, but I have to do everything myself. (Interviewer): If I hear this correctly you already have to put in considerable time and effort in your daily routine. Yes, this project is extra. This project is on top of my daily routine, but I do it because I enjoy it.**
2	**There are no predetermined job responsibilities. That kind of exciting, it is a lot of experimenting. Of course not every person enjoys such freedom. Personally I see it as challenge, because you cannot do much wrong.**
3	**There is no one who has done this before. There are demands on the system we want to use but not on the process itself. (Interviewer): Seems to be nice to be given the freedom to determine your own approach because it more your own thing Yes! Certainly, it is my project.**

Table 13 **Authority in the projects.**

Project three clearly stated a high authority, where the project can decide the process of innovating telemedicine. This freedom is also seen in project two, which is seen by the respondent as exciting and challenging. Project one stated that they have to do everything themselves without any help. This implies that project one decides his own project process. Therefore, the results indicate that all projects have a high authority. According to the theory in chapter two, this will have positive effect on the team reflexivity and thusly on innovation. This positive effect on innovation should not be diminished. Therefore this research believes that the current project structure of the projects should stay intact. The physicians should stay the leaders of their own project, despite their lack of training on leading innovation projects. Hence,

The reflexivity model does not take over the projects from the physicians.

4.2.6 Trust

The model of Broekhuis & Veldkamp (2007) created a reflection climate by reflecting in groups of two, where both the respondents were from the same level in the hierarchy of the organization. Therefore this research assumed that the hierarchy plays a significant role in creating a safe reflection climate. Information on this assumption was searched for in the transcripts. The results of this examination can be seen in Table 14. Project one sees no problem in reflecting with organization members from other hierarchal levels. The same notion is stated by project three, which do state that the reflection in such a case must be useful. Project three clearly stated against the notion on hierarchy stated by project one and three. The results seem thus somewhat mixed. This research turned to the expert on reflection for a clarification of these results.

The expert stated that '*As long as all the participants have the same interest <…>. You can create a safe environment where intervention and reflection can happen'.* Hence, the following model requirement:

The participants in the reflexivity model should consist of members with the same interest; implementing consultations by telemedicine.

Project	Quotes
1	**I do not see a problem if you talk about things like this. Off course if the reflection is about changing policies in the daily practice. Then were talking about higher levels in the hierarchy and then in such a situation I think you might be right.**
2	**Well in this location everything is much more next to each other then below each other (horizontal versus vertical organizational structure). (Interviewer): Thus creating a climate of reflecting learning and improvement? Yes! Your dare to open up, to be vulnerable. You dare to talk about thing you find difficult. Another person can then tell his opinion freely, this creates a learning environment for all.** **When you have to reflect with someone higher in rank. You don't really dare to open up. What if he judges you because of it? It just would not work**
3	**I talked to a professor from the clinical genetics and a physician researcher. So the people who are interested in this subject are simply approachable. Off course the conversation has to be functional, but if it is functional, it does not pose a problem.**

Table 14 Views on hierarchy in combination with reflection.

4.3 Multi-channel results

It is common that the patient receives multiple consultations for his condition. Therefore a set of consultations exist. In this set of consultations, each consultation has its own goal and functions. Hence, the first step in a multi-channel design for consultations by telemedicine is the formalization of the consultation goals. Returning to the literature on multichannel, the consultation goals can be seen as the service activities and the consultations set as the service. The formulization of the consultation goals is therefore firstly examined in the transcripts. The next step is to look if the projects critically reflected on their channels per consultation goal. In the literature this research was able to define a list of user requirements for the multi-channel design. Each of the projects is examined to see if they formulated user requirements and how they translated the patient requirements into their project.

4.3.1 Formulation of consultation goals

To determine if the consultation goals where formulated, this research looked for information in the transcripts on the consultation goals. The results are presented in Table 15.

Project	Quotes
1	**This is something we do not really think off, but should be something we consider.**
2	**Sometimes the goal is not that tangible, that concrete. We expected in the beginning that our consultation would be more on a practical nature. Patients who say the advice in the clinic was nice and all but here in my own home this is not working. We expected that on a distance we looked at these problems and give our patients some tips. We now know that our patients are more struggling with their new position in society. How should I deal with all the limitations I have now. These questions are on a totally different level than we expected.** **(Interviewer); So the goal of the consultation is not clear from the start, it is something that is determined during the consultation themselves.** **Yes, exactly**
3	**We do not want patients in this project who say I think my condition is worsening you have to examine me. These telemedicine consults have to be with stable patients. We want to use video consulting for a chit chat with the patients that they can tell us what bothers them and what their complaints are.** **(Interviewer): So you only focus on the control consultations, is everything is going as expected?** **Yes!**

Table 15 Formulation of the consultation goals

In project one there has been no effort to describe the consultation goals. In the second project a consultation goal was defined, but revised after the first experiences in the pilot. In project three a clear focus was found on one consultation goal, the control consultation. In all the projects no information was found that indicated that projects determined details for their different consultation goals. To achieve a consultation goal certain requirements need to be met, i.e. transfer of non-verbal communication between patient and the physician, this seems to be missing in the projects.

4.3.2 Channels for consultation

Three channels where identified by the respondents as a possibility for their consultations, namely: face-to-face, telephone and web-cam. To determine if the projects critically looked at their channels, the interviews focused on if the project had determined what a channel can and cannot deliver. The results are seen in Table 16.

Project	Quotes
1	**When people walk into your clinic, you can immediately tell if they are happy with the treatment or not. That is something you miss when you use the telephone. What is also difficult with the telephone consult is that you cannot see if a patient understands you. Normally you see that on their faces.** **Sometimes, well regularly, patients forget they have a consult. In the mean time you wait 15 min for no reason at all. For us this is valuable time. Therefore we really want an waiting room functionality in the web-cam consultations (The respondent wanted the system to provide information on whether the patient has logged on and if not the ability to proceed to the next appointed, like a normal waiting room in the clinics).**
2	**Nonverbal information is helpful, but I also contact patients by phone, e-mail and even the chat. This does have limitations because you miss the non-verbal information which you cannot read. It forces you to check up on things.** **I choose the telephone as least as possible, but some people do not have a computer or IPad. Also when the app crashes you have a good back-up. But when people have a computer or IPad. I always chose for the webcam, so we can see each other.**

3	**We hear a lot from our patient if we cannot do the consultation by phone, which we rather not. It is just not that useable. You get so much information when you see a patient. How is his skin color, do they walk smoothly, are they well rested or are they tired. The impression the patient makes tells me a lot and you cannot see that trough the phone. This goes two-way, the patients also does not see my body languages. The telephone is just not a useful channel, it creates more questions and therefore the patient has to return anyhow.** **Preferably we want a telemedicine system where the patients are situated below each other. They are ranked in order of the time, just like in the 'normal 'clinic.**

Table 16 Channels for consultations

No documentation was found that indicated that the projects looked at what their channels can deliver and what they cannot deliver. Based on their experience, the respondents determine what does not work and what does. The telephone use is always compared to the face-to-face channel, but no information was found on what the telephone could deliver or was excellent in providing. Still this channel is used in all the projects. This research does find information on what the web-cam channel should provide these seems based on the limitations of the telephone, as seems to be implied in project one and three.

4.3.3 User requirements

To see if the projects had identified their own user requirements for their multi-channel design, the transcripts where searched for information if the projects mapped there user requirements. The results are seen in Table 17.

Project one and three have not defined user requirements. Project three seems to identify some requirements, but quickly dismisses them because they believe that the internal stripling with the ICT department causes them to be of no use. Only project two actually formed a program of requirements. This program was the selection criteria on which a provider was chosen. The requirements do seem to be based purely on the web-cam channel, not the multi-channel design. Therefore it seems to be only used to determine a provider, not as an input for designing their multi-channel consultation design.

Project	Quotes
1	**I have not really considered that there are requirements I need to satisfy. We see it more as a replacement for our face-to-face consults**
2	**We quickly came to the conclusion that we needed something that was not there yet. That why we first used Skype, while in the meantime the application was developed. For this application design the experiences of the coaches where formed into a program of requirements. This program was sent to different providers. One of these parties proved superior in cost and in achieving the set of requirements in the program. If you want to know more I would advise you to contact the project leader, she led this process.**
3	**(Interviewer): To me it would seem there are some requirements you have? Off course we have requirements. We can think of what we want the design to be, but it is not quickly adopted. This decision on which program we use, lies with the ICT department. They have the final word, frustrating because you want to move on with your project.**

Table 17 Formulation of user requirements

4.3.4 Requirements in reference to patients

How the patient requirements where translated into the projects, is presented in Table 18.

Project	Quotes
1	**I was forced to use WebEx because we have a license with this provider. So I experimented with WebEx myself. WebEx kind of works. I send an email to the patient. The patient clicks on the link in the e-mail and a connection is made. Also it is deemed safe, which seems to be very important.**
2	**What we understand from our focus groups is that our patients would like to have contact with other patients. Someone who is going through the same stuff they are. This is something we are looking into (i.e. Two patients contacting each other by IPad under guidance of the project).**

3	**Well the system I had to use (WebEx), is supposed to be well known. But if I look at the ease of use, I am very disappointed. I tried it myself; if I was a patient what kind of steps do I need to do? Sometimes the screen is not working, than the sound is suddenly off and then I suddenly have to press a button somewhere. It is just not that easy to use.**

Table 18 Formulation of user requirements

In project one and three the patient requirement comes more from the 'if I were a patient' perspective. The requirements seem to be formulated without the participation of the patients. Project two is different in the sense that they implemented focus groups, as to actively evaluate and search for areas of improvement in their service.

4.3.5 Combining the consultation goals and the channels

This research further examined whether or not the projects had combined the consultation goals and channels when designing their service. In the projects no information was found that would indicate that they did so. Using the previous results from this paragraph, this result was to be expected. From all the dimensions of multi-channel only the consultation goal seemed to be defined in two of the three projects. None of the projects seem to critically look at the channels and the user requirements where only defined in one project. Even when the critical look at the channels is only missing, this combination is not possible. A single channel design thus seems to be present in the projects. As stated in the introduction, a single channel focus could be a reason for the low adoption rate of telemedicine projects. Hence, these steps are essential in a telemedicine project. Therefore, this research defined the following model requirement:

In the reflexivity model the multi-channel approach should have a prominent spot

5 REFLEXIVITY MODEL

The requirements from the results (chapter 4) and the requirements from the ADR method (chapter 3), provides the foundation for the reflexivity model. These requirements were used to design the first version of the reflexivity model, as seen in appendix one. This version was evaluated by the members of the feedback group. The comments, see appendix two, were used to redesign the model. Resulting in the reflexivity model presented in this chapter.

This chapter will first elaborate on how the requirements where designed into the model. Second, the model itself is presented in combination with additional information on the different steps in the model. Lastly, the model will be described in more detail by focusing first on the different roles that are represented in the model.

Requirements	Design choice
The reflexivity model should help the physicians in determining and executing the details of achieving the project goals.	**The first reflection of the projects will be on the multi-channel approach and the relevant dimensions. This will provide the projects with the building blocks to design their service. This design made, will results into a plan of achieving this design. This plan consists of the details of achieving the project goal.**
In the reflexivity model the multi-channel approach should have a prominent spot.	
The reflexivity model should connect the different projects on telemedicine, and should arrange the input from relevant experts and other sources of knowledge.	**The model introduces an innovation platform to the organization. The goal of the platform is to reach across the different departments. The platform should be independent and therefore be situated besides the different departments (medical and staff) in the organizational hierarchy.** **To connect the projects a focus group is created which contains the leaders of the projects on telemedicine. The focus group will provide each other feedback on their design and will work together on common obstacles.**
To reach across the different departments the leader of the reflexivity model should be a transformational leader.	**Members of the innovation platform will be trained in transformational leadership.**
The reflexivity model should provide a platform where general decisions on telemedicine can be explained and where tensions arise, mediate.	**Reflection points are introduced in the model. The reflection points are ideal in communicating the reasoning behind decisions made in the organization. If this decision is unsatisfying to the projects the platform will assume the role of a mediator and look for a suitable alternative.**
The reflexivity model does not take over the projects from the physicians.	**The reflexivity model leaves the leadership of the projects intact, but supports them and combines the different projects by forming a focus group.**
The participants in the reflexivity model should consist of members with the same interest; implementing consultations by telemedicine	**The focus group participants / projects are selected on their interest in implementing telemedicine.**
The reflexivity model should be built into the current organizational context instead of trying to change it.	**The only adjustment in the organizational context is the forming of an innovation platform. It therefore adds to the current organization instead of trying to change it.**
The reflexivity model is never in its final form and should provide an opportunity to reshape the model.	**An evaluation step is added to continually improve the model.**
The reflexivity model should formalize what is learned in the process and make it easily available for all.	**The innovation platform is responsible for collecting and sharing the knowledge learned.**

Table 19 Design choices

5.1 TRANSLATION OF THE REQUIREMENTS

The requirements gained from previous chapters are translated into design choices, as seen in Table 19.

5.2 THE REFLEXIVITY MODEL

The reflexivity model is presented in Figure 5.

The model starts with connecting the different telemedicine projects initiated by physicians or other organizational members, to the innovation platform. The main incentives for the physicians to participate are the providence of guidance, the connection with peers and the discussions that are possible with these peers on telemedicine.

The innovation platform first task is to recruit a minimum of two and a maximum of four projects. From the projects a focus group is created consisting of only the leaders of the projects, as large groups can cause the discussions to become inefficient. Also the leaders can implement the knowledge and insights gained during this model, more easily in their own team /projects. To level expectations on what can be expected from the platform and to introduce the focus group members to each other, the innovation platform organizes a first meeting with the focus group participants.

After the first meeting, the focus group members will return to their own projects teams. In their own teams the projects will individually reflect on the dimensions of the multi-channel approach. The goal is to describe and (re)design their set of consultations, and as such their service as a whole. This reflection progress is facilitated and guided by the platform, but the reflection self is carried out by the individual project teams connected to the platform. In other words a maximum of four separated reflections are conducted by the four projects connected to the platform.

The research sees the set of consultation as the service; thereby it sees the consultation goals in the set as the service activities. Therefore the projects first need to describe the different goals in their consultation set and how these goals are related. An example of possible consultation goals can be found in appendix three, an example of the relationship between the goals can be seen in appendix four. Next, the project teams should decide which goals can or should be executed using different communication modes or channels.

This requires insight on the abilities that are needed to satisfy the consultation goals and the abilities that the channels can satisfy. The abilities are thus the characteristics of the in and output of the consultation goals. Appendix five shows an example of the abilities of the consultation goals.

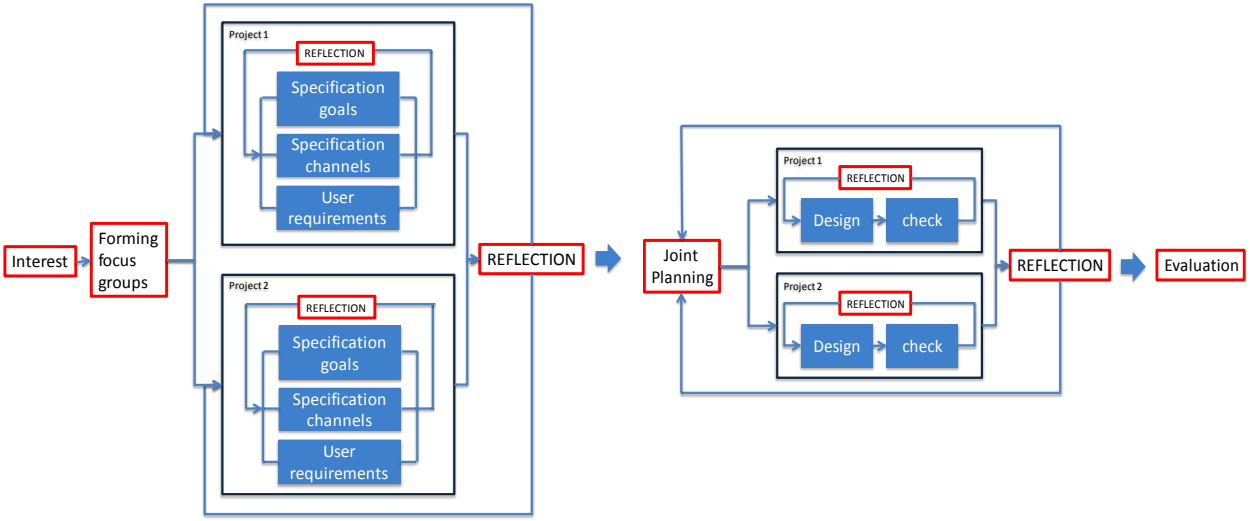

Figure 5 The reflexivity model.

After the specification of the consultation goals is complete and the projects have critically looked at the channels for the service delivery and the abilities they can provide, the projects need to determine the user requirements of their multi-channel service. The user requirements consist of the requirements of the physicians and other staff members as well as the patients. A set of user requirements for the multi-channel service has been presented in paragraph 2.2.2. Other factors also need to be taken into consideration. Well these factors might vary in the different telemedicine projects, there are no less important. A set of possible factors is presented in Table 20.

By knowing what is needed (abilities of the consultation goals), what is demanded (user requirements), what the channels can deliver (abilities of the channels) and what is possible (external factors), the projects can now (re)design their consultation service. Returning to the literature, this step is seen as the channel redundancy; the extent to which service activities (consultation goals) are duplicated across the channels. By determining the channel redundancy, the projects will determine how the service is presented across the channels: the channel variety. The channel span or the number of possible paths the user can follow in the service can therefore also be calculated. This will result into one of the four multi-channel designs as defined by Sousa & Amorim (2009). Having developed a service design, the projects can determine what they need to do before the service design can become reality. These are seen as the intentions, see paragraph 2.1.1, of the projects. The intentions as stated in the literature result from the reflection stage.

The platform task is to collects the intentions from the maximum of four project groups. The platform should indentify commonalties in these intentions. Now the first reflection with the focus group will be conducted. First, the focus group members present the results of the previous reflection they did with their own teams. The project leaders are therefore provided with the possibility to receive feedback by peers .This can provide new insights, resulting in a new reflection in their own team. The platform now presents the commonalties found in the intentions of the different projects. The goals is to incite a discussion on the priorities of these intentions provide and divided them among the platform and the members of the focus group, creating a joint planning.

After the joint planning is made, the members of the focus group will return to their own teams. They will design the intentions given to them into plans and will put these plan into action. After completion of a plan, the creation of new intentions and thus new plans is inevitable, according to planning stage of reflexivity discussed in paragraph 2.1.1. Therefore, the platform should regularly contact the physicians to check on and guide them in this process.

When enough progress has been made, the focus group is called in to present their progress and plans to the other members of the focus group. This gives an opportunity to reflect on the progress, on new insights and on new intentions or obstacles. Thereby creating a cycle of reflection, planning and adaption, Hence, a reflexivity cycle, is created. There will be a point when all the major obstacles / intentions have been overcome and only project specific obstacles may be left. If this is the case, the focus group has no common ground anymore and can be dissolved. The innovation platform will still act as a consultant to the connected projects.

Due to the reflexivity cycle in the model it is impossible to determine the time the model needs from start to finish. Because it is not predetermined how many times the cycle is repeated until no common ground is left. This research expects the first full cycle to take up three months, with an additional month for every repeat of the cycle.

The final step is an evaluation after the group had been dissolved. The evaluation point is placed at six months the ending of the focus group. This research took this period of time from the model of Broekhuis & Veldkamp (2007). The evaluation point gives the focus group members the opportunity to revisit each other and to see how they have progressed. Furthermore, it gives the innovation platform an opportunity to evaluate the reflexivity model based on the experiences. These experiences will then be used by the platform to improve the reflexivity model. This corresponds with an ADR requirement that one never should see a model as final, but always in a form off ongoing change.

Factor	Explanation
Technology accessibility	**One can imagine a channel that might be preferable after examining the multi-channel dimension, but might prove ineffective because patients / physician accessibility to the technology required, is limited**
Law	**As stated before the Dutch law requires at least one face to face consultation before a consultation by telemedicine can take place. The law can thus limit the channel option for the consultation goals. Also the law can make some channels less attractive, i.e. the telephone consults. In the discussion this research will return to this point.**
Cost	**Every project is limited in the available funds that are allocated to the project. Therefore the design of the consultation set is limited by the funds it needs to achieve the design.**
Patient group characteristics	**The different patients groups can impact the channels. One can image that elderly might not be accustomed in using web-cam technology. Questions arise; Do we train them? Do we discard the web-cam channel altogether?**
Facilities	**Choosing i.e. to allocate consultation goals to the web-cam channel not only means that the users must have the technology available, but also a quite room. Physicians offices are commonly shared, so new office space is required.**
Support	**Technology malfunction are due to happens. Persons /solutions need to be in place to solve these malfunctions and provide an alternative channel during the malfunction.**

Table 20 External factor in designing a multi-channel design.

5.3 Roles in the reflexivity model

In the reflexivity model there are three parties involved: the innovation platform, the physicians and other users of telemedicine and the focus group. The roles are discussed in more detail below.

5.3.1 Innovation platform

Essential in this model is the formation of an innovation platform for consultation by telemedicine. The platform will function as a guide and facilitator to the leaders of the telemedicine projects. The project leaders, the focus group participant members will be the ambassadors of the telemedicine in their own departments. They know from experience that telemedicine as a form of consultation is more than viable. Therefore, they can convince their peers of the benefits of using telemedicine, based on their experience. During this process the innovation platform acts as a consultant, providing advice to the projects when needed. Hence, the innovation platform sets the innovation process in motion and guides this process towards the implementation of telemedicine.

The innovation platform will have multiple duties; that of a facilitator, a connector, a mediator and as a provider of knowledge.

As a facilitator the innovation platform attends to the lack of guidance that the physicians are experiencing. By providing a facilitator to the projects, the innovation platform helps the physicians in formulating the details in achieving their project goal(s). Also this provides the opportunity to use the multi-channel approach into the projects. This approach will be the basis of formulating the details on achieving the project goals, ensuring a service designed from a multi-channel perspective and a higher shared vision. By creating a higher shared vision, the team reflexivity will be positively affected and thusly it stimulated the innovation of telemedicine.

The innovation platform also works as a connector between departments. The island structure of the organization causes difficulties in finding the right people in the organization, i.e. experts on ICT applications. Physicians find it hard to find one other and experts relevant to their projects. The innovation platform should thus actively search for and identify the location of knowledge about telemedicine in the organization. This will give the platform the ability to inject the projects with relevant knowledge. By acting as the connector, the platform stimulates the TMS of the project teams, therefore achieving a higher team reflexivity. Due to the organization structure it is

essential that the platform members need to be trained in transformational leadership in order to change the attitudes of the organizational members and overcome their island perspective.

Not only should the innovation platform know where the knowledge is. Knowledge gained during the process of this model should be centralized and shared. The platform will need to write down the knowledge gained during the process and translate this information to lessons learned. These lessons learned should be provided to similar projects. This will prove to be essential because pitfalls in previous projects can be avoided. Saving these project teams time, frustration and energy. But before the platform can share the knowledge it has gained, the physicians should be aware of the platform. Therefore it is important for the platform profiles itself in the organization. They should be present at meeting and informal get together, just to show what they are and what type of knowledge they have and that they are more than willing to share. Interest in telemedicine can thus be guided form the beginning. Furthermore, by writing down the knowledge gained, the model itself can be improved to better suit the organization. These lessons can prove essential in other models. This satisfies the ADR requirements formalization of learning and guided emergence.

The platform also acts as a mediator. During this research frustrations between physicians and the ICT department were found. These frustrations were caused by a decision of the ICT to not approve a certain program for telemedicine, proposed by the physicians. The frustration seemed to be caused by a simple miscommunication and by the lack of a suitable alternative, see paragraph 4.2.3 for further details. By understanding why certain decisions are made, communicating these decisions to all stakeholders and looking for satisfying solutions, the platform will prevent a negative impact on interactional justice. In other works, by working as a mediator the platform will dull frustrations between departments, so they can reflect / work together towards innovation. For both parties are essential in the innovation of telemedicine.

5.3.2 Physicians and other organizational members using telemedicine

The physicians are usually the leaders of the project teams busy with implementing telemedicine for consultations in their own department. Even so, the physicians lack the knowledge and experience to lead an innovation project. Nonetheless, this model states that their leadership should stay intact. The high authority the physicians currently enjoy in their projects creates a positive effect on team empowerment. This creates a positive effect on team reflexivity and thusly on innovation. By taking away their leadership, one takes away a part of the authority. In the end this has negative effect on the innovation. Therefore, this research opts for adding a facilitator as stated in the previous paragraph. This platform takes over the obstacles the physicians are currently experiencing in their projects. The goal is to let physicians stay the physicians. The physicians, therefore, identify obstacles and communicate these problems with the innovation platform to obtain solutions.

5.3.3 The focus group

In the current situation, every project is trying to re-invent the wheel. Far more can be achieved when the projects are working together, thus creating a shared push towards innovation. While some areas of innovation are department specific, similarities can be found, i.e. a web-cam consultation software. By combining the projects with a focus group, a sharing of information can be achieved. Also the focus group can take up shared obstacles or intention. Together the members of the focus group in combination with the platform can divide these intentions and come to a joint planning, thereby creating a common push towards innovation.

Furthermore, it gives the platform the ability to easily introduce experts / knowledge to the projects in the discussions of the feedback group. Therefore, it creates a more efficient process for innovation. Participants of the focus group are the leaders of the projects, generally this means the physicians. They all have the same interest; obtaining the benefits of implementing telemedicine. The common interest, according to the expert on reflection, creates a safe climate for reflecting. The safe climate provides a positive effect on trust. This creates a positive influence on team reflexivity and innovation.

6 Discussion

This research set out to develop a reflexivity model for the stimulation and improvement of consultations by telemedicine. To design the model this research adopted three pillars; the literature on team reflexivity, the literature on the multi-channel approach and the experiences of the health care organization. The research examined how factors and dimensions found in the literature are currently present in the innovations teams. The results on the factors of reflexivity indicated that well some factors like team empowerment where well established in the current innovation teams, other factor like TMS and shared vision needed to be strengthened. The results also indicated that the use of the multi-channel approach was minimal, which can lead to a lower adoption rate of the telemedicine initiatives. These findings were translated into requirements, which in turn where used to make design choices in the development of the model. The research thereby answered the research questions stated in chapter three.

The combination of the multi-channel approach and the team reflexivity factors on telemedicine is to the best of this research knowledge, new in the scientific literature. The model presented in this research, therefore adds to the existing literature on telemedicine, by presenting a new approach for a sustainable adoption of consultations by telemedicine. In this approach the reflexivity model stimulates team reflexivity to stimulate innovation, the use of telemedicine for consultation. As chapter one already mentioned; sustainable adoption of telemedicine is hard to achieve. A possible reason is the single channel design of the consultation service, also found in the current projects. Therefore the multi-channel approach has a prominent place in the reflexivity model. Hence, by stimulation team reflexivity the model stimulates the use of telemedicine and by using the multi-channel approach, the model stimulated the sustainable adoption of telemedicine.

The multi-channel approach is a general approach in designing services. It is therefore also applicable in other areas then telemedicine. Off course the service activities are differently defined than as the consultation goals in this research. The literature on team reflexivity is also not defined to telemedicine alone. Therefore this model not telemedicine specific and can also be applicable in other areas of innovation.

This research advice is therefore to strive for an innovation platform that is used by the physicians as a suggestion box. The physicians mentioned what they want to improve with their project, the innovation platform combines this interest with peers and used the reflexivity model connect the physicians and commonly achieve innovation.

Unfortunate this research is not without its limitations. Indentifying the projects on telemedicine proved more difficult than expected. The organization structure caused the members of the organization to know that there where projects on telemedicine, but these members contain no knowledge in which departments these projects are executed or by whom. This meant that a considerable amount of time was spent on talking to as many people as possible, for a lead on these projects and, moreover, following up on these leads. The lack of the centralization of this information caused the orientation phase of this research to take up much more time than expected. In the end only four in-depth interviews were conducted, containing only three projects currently busy with telemedicine. By using in-depth interviews they did provided the research with rich information on experiences in implementing telemedicine. According to Stensakker (2008) this information is valuable for the process of changing health care organizations or implementing telemedicine for consultations. Hence, the small amount of interviews is not seen as a large limitation of the research.

All projects found where on implementing web-cam consultations, while telemedicine consist of much more than only web-cam channel. After reviewing the transcripts an explanation was found in the current declaration system of the Dutch healthcare. As one respondent mentioned: *'Well we do use the telephone for consultation sometimes, but financially it is not attractive'.* In the current declaration system, only web-cam and face-to-face is declarable and thus visibly gain income. Therefore in the current system there is no incentive to stimulate telephone consults, even if they are in some cases more efficient. Hence, this research states that this declaration system seems to have a negative influence on the stimulation of telemedicine. For why invest money and effort in stimulating more efficient channels, if the results are that part of the consultation

service might be more efficient, but gain no more income. This encourages further research to this subject.

The plan for the feedback group needed to be altered during the course of this research. The original plan was to invite all the members of the group to multiple meetings. In these meeting the design choices would be presented to the group members and evaluated by group discussions. Thus, evaluating and re-building the model one design choice at a time. Unfortunate this proved impossible, due to the busy schedule of the feed-back group participants. In order to establish a meeting with the entire feedback group, a meeting needed to be planned three months in advance. Due to the limited time of the research, this was not an option. Therefore the model was evaluated by individually letting the group members evaluate the entire model. This is in contrast with the ADR model (Sein et al. 2011), which promotes a continuous evaluation of the design by the users. The research is aware that this principle of the ADR model was not achieved and thus has a negative effect on the model. Yet it is believed that designing from the user's perspective and multiple evaluations by the users, this effect is reduced. Also it is the view of this research that that by still forming the feedback group, the other principles of ADR where achieved.

In the end it is believed that by using this model the use of telemedicine for consultation can be stimulated or improved. The major obstacles, the lack of sharing knowledge and lack of guidance can be overcome and reflexive behavior can be stimulated. Together with the multi-channel approach this will lead to the sustainable adoption of telemedicine and a more efficient consultation service.

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Appendix

Due to the length of the transcripts, this research chose not to include the transcripts in the appendix. Instead in presents the transcripts in a different rapport called; Transcripts. If the reader wants to examine the transcripts he/she is referred to this rapport.

The appendix contains the following:

1. Preliminary Reflexivity model
2. Reflexivity model evaluation
3. Possible consultation goals
4. Possible relationship between the consultation goals.
5. Possible consultation goals abilities

APPENDIX 1 PRELIMINARY REFLEXIVITY MODEL

The first model creates on the basis of the model requirements, is presented in Figure 6.

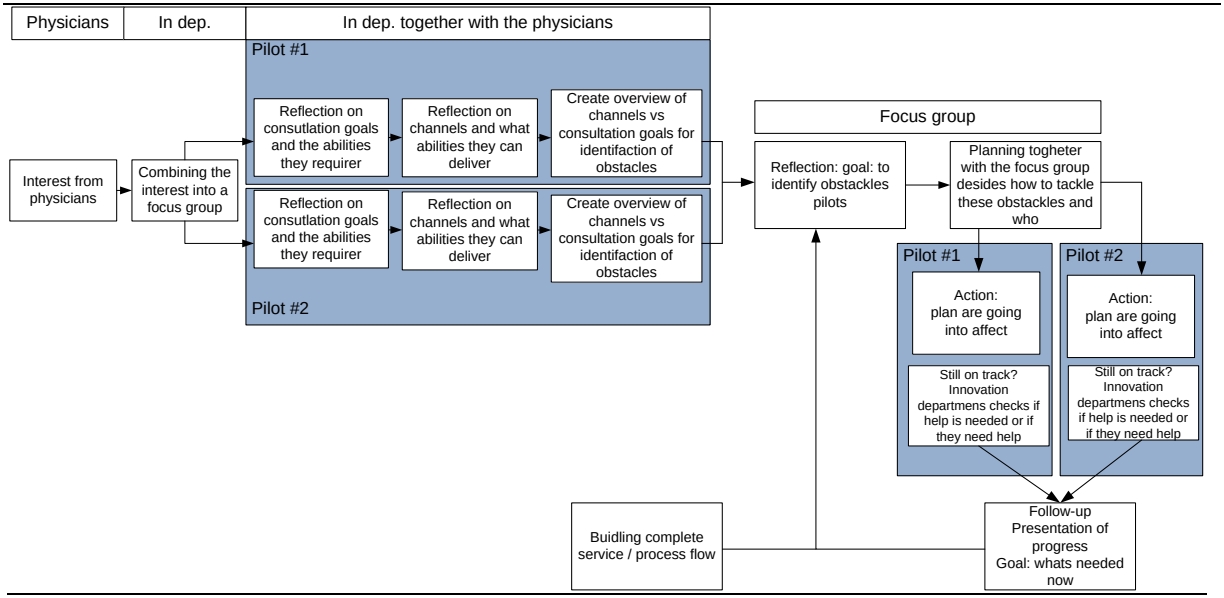

Figure 6 Preliminary reflexivity model.

The comments of the feedback group on the preliminary model are presented in Table 21-24.

Respondent 1	Physician & project leader on a project already finished.
+	-
Continuous external feedback by the platform	Model is somewhat cluttered. Too much information in the model itself.
Combining projects and working together on getting tele-medicine done.	Missing the multi-channel dimensions somewhat. Is immediately clear to me where they are.
Centralizing telemedicine	
For my last project this would have been perfect. It would have saved me so much from problems	
Let get this in practice, I currently discussing cooperation with another department on telemedicine. We would love to join.	

Table 21 Evaluation 1.

Respondent 2	Physician and project leader
+	-
Reflection with and on each other	I am missing an evaluation moment. I would love to see the projects after a certain period of time. Just to see what happened with their projects. What did we learn?
Sharing of knowledge	
Experts are contacted together not one by one.	
Centralization of the effort.	
Use of scientific theory can prove valuable for the adop-tion by the organization.	

Table 22 Evaluation 2.

Respondent 3	Project leader
+	-
Centralizing the knowledge	I am missing an explicit mentioning of the patient requirements.
Centralizing the documentation	I would like to see the patient more involved
Working together for a common push towards telemedicine.	Still think support from ICT will be difficult because they are extremely occupied with the implementation of the EPD.
I see the Multi-channel approach as valuable to my project.	

Table 23 Evaluation 3.

Respondent 4	Change manager
+	-
The multi-channel approach.	A good model fit on the back off a coaster. Your model does not. The essence is good, something I will take with me, but make the model more simplistic, easer to grasp.
The model is easy to understand	
In essence of the model is quite easy, therefore its immediately applicable.	
Working together.	

Table 23 Evaluation 4.

APPENDIX 3 POSSIBLE RELATIONSHIP BETWEEN THE CONSULTATION GOALS

Based on the remark from one respondent, an example of the relationship between goals can be made. As the respondent clarified; "In the second consultation you tell the patient the results that we have found and on this basis you will form a treatment plan (inform consultation). But when you see a patient for a long period of time, the consultation becomes a control consultation. You ask the patient if they experienced any trouble, for example side effects on their medicine and based on this information you can change your treatment plan". (…) Yet this can change per patient. Imagine if the condition deteriorates, then you have to do new tests, resulting in more test results (inform consultation). When the patient condition stabilized again, the consultations are mainly about control (control consultation). The coaching consults are unique in the sense that the clinical part of their treatment is already finished. Now they are coping with their condition at home, for example a paralyzed arm. The coaching consultations are therefore after the patient has been discharged from the hospital. This resulted in an example presented in Figure 7.

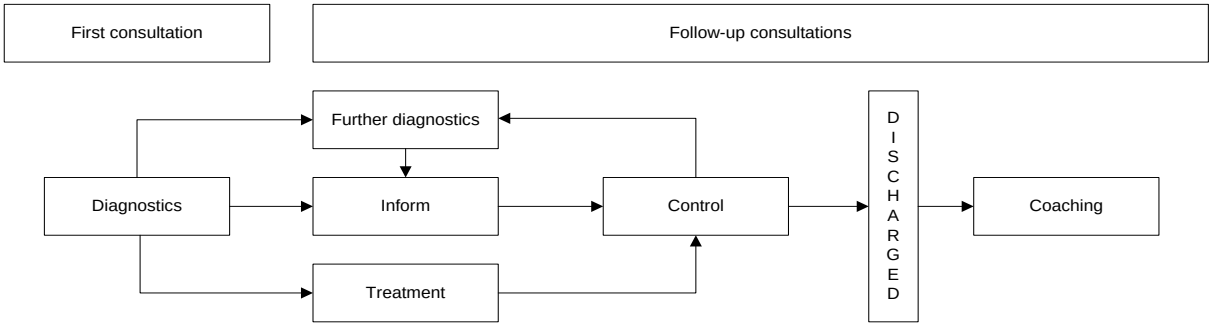

Figure 7 Preliminary reflexivity model

APPENDIX 4 POSSIBLE CONSULTATION GOALS

From the transcripts some consultation goals could be determined. To kick start the reflection on consultation goals, these are presented in Table 25.

Goal for the consultation	Explanation
Diagnostic	**This is always the first consultation. The goal of the diagnostic consult is to determine the patient problems and to diagnose the condition which causes these problem(s). If possible a treatment plan will be designed or a test plan will be formulated to determine the condition.**
Quote	**'The first consultation is always to see what the patient problems and what we are going to do to counter this'.**
Further diagnostic	**The goal of the consultation is to determine the patient condition, which after the first consultation is not yet clear. Thus helping to design a treatment plan.**
Quote	**'Sometimes we do not yet know the diagnoses after the first consultation. That's why we need to ask additional questions or do additional test'.**
Treatment	**Physical actions done by the physician are needed to treat the condition or to determine to whether or not the patient condition is progressing/ declining**
Quote	**'If someone has a bad eczema, a sever skin condition, not even a video consultation will do. Often I will need to feel to determine if the condition is improving'**
Inform	**The goal is to communicate test results and other new information about the condition of the patient or the treatment of this condition, to the patient.**
Quote	**'In the second consult you inform the patient about the result we have found. On basis of these results, a treatment plan is made'**
Control	**The goal is to check up on the patient to know if the treatment plan is working, or the condition of the patient is progressing as expected.**
Quote	**'Together with the patient you determine if the treatment is working'**
Coaching	**The goal isn't tangible yet, is becomes clear in the consult with the patient. In the broadest form, the goal is to coach the patients into regaining independence as much as possible.**
Quotes	**'It's about learning things themselves and if that not possible, to do things on in a different way. True their network, with appliance or true a different course'** **'It's mostly also about being heard. Not just to make a treatment plan, but that you discuss thing together"**

Table 25 Consultation goals.

APPENDIX 5 POSSIBLE CONSULTATION GOAL ABILITIES

From the transcripts some consultation goals abilities could also be determined, these are presented in Table 26.

Consultation goals	Abilities needed	Mandatory / Preferred
Diagnostic	Creating an informal atmosphere for a chit chat	Mandatory
	Physical examine or touch the patient	Mandatory
	Delivering and receiving verbal information	Mandatory
	Delivering and receiving non-verbal information	Mandatory
Further diagnostic	Creating an informal atmosphere for a chit chat	Mandatory
	Physical examine or touch the patient	Mandatory
	Delivering and receiving verbal information	Mandatory
	Delivering and receiving non-verbal information	Mandatory
Treatment	Physical examine or touch the patient	Mandatory
Inform consultation	Delivering and receiving verbal information	Mandatory
	Delivering and receiving non-verbal information	Preferred
	Visually showing test results	Preferred
Control consultation	Creating an informal atmosphere for a chit chat.	Mandatory
	Delivering and receiving verbal information	Mandatory
	Delivering and receiving non-verbal information	Mandatory
Coaching consultation	Delivering and receiving verbal information	Mandatory
	Delivering and receiving non-verbal information	Preferred

Table 26 Abilities needed in the consultation goals