Analysis of Homecare Nurses' Attitudes towards, Desires for and Perceived Added Value of Tools on a Tablet

Marrit Oost

August 2015

MASTER THESIS

Keywords: ICT, knowledge sharing, homecare nurses, healthcare, homecare

Student number: S1471724
Study: Educational Science & Technology
Faculty: Behavioural Sciences

Graduation committee:

University of Twente: Dr. Hans van der Meij & Dr. Susan McKenney
Carinova: Jan Griepink & Ingrid Schouw

UNIVERSITY OF TWENTE.

EXECUTIVE SUMMARY

De Nederlandse management samenvatting is te vinden na de Engelse samenvatting. The Dutch executive summary can be found after the English summary.

This study was conducted at Carinova Homecare in Deventer, the east of the Netherlands. Since the beginning of 2015, homecare nurses of Carinova started working with tablets. The purpose of the implementation of the tablets was to increase efficiency in the activities of the homecare nurses.

Rationale

Healthcare is becoming more costly due to elderly people living longer and requiring more care (Van der Horst, van Erp & de Jong, 2011; Rijksoverheid, n.d.). Not only do people keep getting older, the Dutch government also stimulates seniors to remain in their own homes for as long as possible (Rijksoverheid, n.d.). Moreover, healthcare is a service that requires multiple practitioners to deliver it completely (Sicotte, Pineault & Lambert, 1993). Hence, it is required that healthcare practitioners work together and share knowledge with each other.

Previous studies have indicated that medical practitioners have used tablets to share knowledge among each other (e.g., Bogossian, Kellett & Mason, 2009). Therefore, it is expected that the tablet can be used as a tool to increase the amount of knowledge sharing and knowledge creation between healthcare professionals and between the homecare nurses of Carinova.

Not only does knowledge sharing and creation contribute to competitive advantages (McEvily, Das & McCabe, 2000), this way of learning is more cost-effective compared to formal trainings and meetings (Azudin, Ismail & Taharali, 2009).

However, current information and communication technology (ICT) systems in healthcare are often inefficient and lack innovation (Estrin & Sim, 2010). Additionally, not much is known about healthcare workers' preferences for tools on tablets. Therefore this study researches homecare nurses' preferences regarding tools on a tablet and their preferred knowledge sharing behaviour.

Research questions

Due to the ambition of ecological validity, qualitative research questions guided this study. Additionally, ecological validity was important because this study aimed at the adoption of the prototypes by the homecare nurses. Additionally, to formulate appropriate guidelines it was required that the participants could share their opinion freely which led to the choice of qualitative research.

Main research question: *Which guidelines can be formulated for tools on a tablet that suit the homecare nurses of Carinova Deventer to support knowledge sharing and knowledge creation?*

Sub-questions:

1. What is the current attitude of the homecare nurses towards tools on a tablet?
2. Which functionalities do the homecare nurses desire for tools on a tablet?
3. What is the perceived added value by the homecare nurses of tools on a tablet?

Aim

The first aim of this study was to formulate guidelines for tools on a tablet that are suitable to homecare nurses to support knowledge sharing and knowledge creation. Additionally, the second aim of this study was to design a prototype for the tablet to support knowledge sharing and knowledge creation between homecare nurses.

Methods

A literature review was conducted based on the next keywords: knowledge sharing and ICT systems in healthcare. Based on this literature review, the interview instrument was developed. The main constructs of the interview instrument were attitudes, perceived usefulness and perceived added value.The participants of this study were seven homecare nurses, a homecare manager and the director of homecare. Appreciative Inquiry and the 4D-model were used as the consultancy approach during the interviews. Qualitative data were generated from the interviews. After transcription, themes in participants' utterances were identified according to the literature review. The utterances were analysed according to the structure of the themes. This systematic analysis focused on keywords in utterances. Codes for utterances emerged bottom-up.

Findings

Digital filing and communication between healthcare practitioners are matters that participants are eager to work with but the system on the tablet does not yet facilitate this. For example, the Electronic Client Dossier (ECD) will be rolled out over the coming year at Carinova. However, efficiency is advocated by all participants and the potential of the ECD is recognized by the homecare nurses. Accordingly, nurses argued the potential of ordering repeat-prescriptions by means of the tablet because it is much faster than making phone calls to the pharmacy and the GP. Additionally, participants would like to have a platform for inter-team role communication to share and create knowledge.

Conclusions

Conditions for digital systems to be utilized by homecare nurses are the following: security, perceived usefulness and perceived ease of use. Conditions for knowledge sharing between homecare nurses are the following: asking questions, networking, social interaction, weak-ties, able to generate new knowledge, enjoyment, support from and facilitation by management and blended learning.

The following guidelines are formulated for tools on a tablet that suit the homecare nurses of Carinova Deventer to support knowledge sharing and knowledge creation:

Guideline #1: Homecare nurses must perceive the new technology as a tool that increases their job performance;
Guideline #2: Control the subjective norm;
Guideline #3: Give the homecare nurses behavioural control;
Guideline #4: Enable digital requests that are logged;
Guideline #5: Keep medical records up-to-date;
Guideline #6: Keep systems secure but simple;
Guideline #7: Provide opportunities to homecare nurses to learn through social interaction.

Research contributions

This study contributed to the knowledge base regarding the preferences of homecare nurses regarding tools on a tablet. Additionally, this study has led to the design of prototypes that reduce the current gaps in ICT systems in healthcare. The prototypes are a platform for knowledge sharing and knowledge creation and a repeat-prescriptions service.

MANAGEMENT SAMENVATTING

Dit onderzoek is uitgevoerd bij Carinova Thuiszorg in Deventer. Sinds het begin van 2015, zijn thuiszorgmedewerkers van Carinova gaan werken met tablets. Het doel van de implementatie van de tablets was het vergroten van efficiëntie in de taken van de thuiszorgmedewerkers.

Aanleiding

Gezondheidszorg wordt steeds duurder omdat oudere mensen steeds langer leven en omdat ze meer zorg nodig hebben (Van der Horst, van Erp & de Jong, 2011; Rijksoverheid, n.d.). Naast dat mensen steeds ouder worden, stimuleert de Nederlandse overheid dat senioren zo lang mogelijk in hun eigen woning kunnen blijven (Rijksoverheid, n.d.). Daarnaast is gezondheidszorg een dienst dat meerdere professionals nodig heeft om cliënten van alle soorten zorg te voorzien (Sicotte, Pineault & Lambert, 1993). Klaarblijkelijk is het voor het volledige zorgproces nodig dat gezondheidszorg professionals samenwerken en kennis met elkaar delen.

Eerdere onderzoeken hebben aangetoond dat medische professionals tablets gebruiken om kennis met elkaar te delen (e.g., Bogossian et al., 2009). Daarom wordt er verwacht dat de tablet gebruikt kan worden om het niveau van kennisdelen en kenniscreatie te verhogen tussen gezondheidszorgprofessionals en tussen de thuiszorgmedewerkers van Carinova.

Kennisdelen en creëren draagt brengt niet alleen competitieve voordelen met zich mee (McEvily, Das & McCabe, 2000), deze manier van leren is meer rendabel vergeleken met formele trainingen en bijeenkomsten (Azudin, Ismail & Taharali, 2009).

Huidige informatie en communicatietechnologie (ICT) systemen in de gezondheidszorg zijn echter vaak inefficiënt en ontbreken aan innovatie (Estrin & Sim, 2010). Daarnaast is er niet veel bekend over de voorkeuren van gezondheidszorg professionals over systemen op tablets. Daarom wordt er in deze studie onderzocht wat de voorkeuren van thuiszorgmedewerkers zijn omtrent systemen op een tablet en hun voorkeur voor kennisdelen.

Onderzoeksvragen

Vanwege de ambitie voor ecologische validiteit zijn er in dit onderzoek kwalitatieve onderzoeksvragen opgesteld. Ecologische validiteit was belangrijk omdat het doel van dit onderzoek was dat de thuiszorgmedewerkers de prototypes zouden overnemen. Daarnaast, om toereikende richtlijnen te formuleren was het noodzakelijk dat gebruikers op een ongedwongen manier hun mening konden uiten, wat geleid heeft tot de keuze van kwalitatief onderzoek.

Onderzoeksvraag: *Welke richtlijnen kunnen geformuleerd worden voor programma's op tablets die toereikend zijn voor de thuiszorgmedewerkers van Carinova Deventer om kennisdelen en kenniscreatie te ondersteunen?*

Sub-vragen:

1. Wat is de huidige houding van de thuiszorgmedewerkers naar programma's op een tablet?
2. Welke functionaliteiten wensen de thuiszorgmedewerkers voor programma's op een tablet?
3. Wat is de waargenomen toegevoegde waarde volgens de thuiszorgmedewerkers van programma's op een tablet?

Doel

Het primaire doel van dit onderzoek was het formuleren van richtlijnen voor programma's op een tablet die toereikend zijn voor thuiszorgmedewerkers om te ondersteunen bij kennisdelen en

kenniscreatie. Daarnaast was het tweede doel van dit onderzoek om een prototype te ontwerpen voor de tablet om kennisdelen en kenniscreatie tussen thuiszorgmedewerkers te stimuleren.

Methodes

Literatuuronderzoek was uitgevoerd op basis van de volgende begrippen: kennisdelen en ICT-systemen in de gezondheidszorg. Op basis van dit literatuuronderzoek was het interviewinstrument ontwikkeld. De hoofdcomponenten van het interviewinstrument waren houdingen, waargenomen nut en waargenomen toegevoegde waarde. De participanten van dit onderzoek waren 7 thuiszorgmedewerkers, een coördinerend wijkverpleegkundige en de directeur thuiszorg. Waarderend onderzoeken en het 4D-model waren gebruikt als consultant aanpak tijdens de interviews. Kwalitatieve data was gegenereerd vanuit de interviews. Na transcriptie werden thema's in de uitingen van participanten geïdentificeerd op basis van het literatuuronderzoek. De uitingen werden geanalyseerd overeenkomstig met de structuur van de thema's. Deze systematische analyse concentreerde zich op begrippen in de uitingen. Codes voor de uitingen zijn bottom-up gegenereerd.

Bevindingen

Digitale verslaglegging en communicatie tussen gezondheidszorg professionals zijn zaken waar participanten graag mee willen werken maar het huidige system op de tablet faciliteert dit nog niet. Bijvoorbeeld het ECD dat volgend jaar door Carinova geïmplementeerd wordt. Efficiëntie wordt door de participanten echter wel voor gepleit en de potentie van het ECD wordt erkend door de thuiszorgmedewerkers. Overeenkomst beargumenteren de thuiszorgmedewerkers de potentie van een herhaalreceptenservice door gebruik van de tablet omdat het veel sneller is dan het maken van telefoontjes naar de apotheek en de huisarts. Daarnaast willen participanten graag een platform voor team-overstijgende rolcommunicatie om kennis te delen en kennis te creëren.

Conclusies

Condities voor digitale systemen voor gebruik door thuiszorgmedewerkers zijn de volgende: beveiliging, waargenomen nut en waargenomen gebruiksgemak. Condities voor kennisdelen en tussen en kennis creëren door thuiszorgmedewerkers zijn de volgende: vragen stellen, netwerken, sociale interacties, zwakke verbindingen, mogelijkheid tot het creëren van nieuwe kennis, plezier, ondersteuning en facilitatie door management en blended leren.

De volgende richtlijnen zijn geformuleerd voor tools op een tablet die toereikend zijn voor de thuiszorgmedewerkers van Carinova Deventer om te ondersteunen bij kennisdelen en kennis creëren:

Richtlijn 1: Thuiszorgmedewerkers moeten de nieuwe technologie waarnemen als een programma dat hun kwaliteit van werk verbetert;
Richtlijn 2: Beheers de subjectieve norm;
Richtlijn 3: Geef de thuiszorgmedewerkers controle over de situatie;
Richtlijn 4: Maak digitale verzoeken mogelijk die worden opgeslagen;
Richtlijn 5: Houdt medische gegevens up-to-date;
Richtlijn 6: Houdt systemen veilig maar simpel;
Richtlijn 7: Biedt mogelijkheden voor thuiszorgmedewerkers om te leren door sociale interactie.

Onderzoeksbijdragen

Dit onderzoek draagt bij aan de huidige kennisbank omtrent de voorkeuren voor programma's op tablets van thuiszorg-medewerkers. Daarnaast heeft dit onderzoek geleid tot het ontwerp van prototypes om huidige hiaten in ICT-systemen in de gezondheidszorg tegen te gaan. De prototypes zijn een platform voor kennisdelen en kenniscreatie en een herhaalreceptenservice.

ACKNOWLEDGEMENTS

This study could not have taken place without the support and guidance of many people. So, I thank you here!

First, I convey my gratitude to the people at Carinova. Jan Griepink, Ingrid Schouw and Evelien van Dorsten have provided me with the opportunity and with guidance during this project at Carinova. Additionally, I hereby thank the homecare nurses in particular for freeing up their time to take part in the interviews. The interviews were very personal and I thank the nurses for their honesty and openness during this study.

Next to this, I could not have come this far without my supervisors of the University of Twente. Whenever I was in need I could ask Dr. Hans van der Meij and Dr. Susan McKenney my questions and they would provide me with valuable critical comments on which I could build my project further.

Also, I like to thank programme coordinator Jan Nelissen and study counsellor Yvonne Luyten for their continued interest and constant involvement in the study programme of Educational Science and Technology (EST). It is by your joint effort and that of other EST professionals that this Master's programme is so successful.

Furthermore, I thank my fellow students of the University of Twente and of the Master EST who acted as great peers especially during the writing of the research proposal. Your comments were very helpful. Their names are Alieke Kostermans, Desirée Parren, Ilona Rensink and Li Meng.

Finally, I like to thank my family for participating in the intense process of this study. They were always positive and interested in what I was doing and provided extensive praise for my hard work. I especially thank my partner in life and other half, Eddy Verschuren, for having faith in my approach and also for pushing me to get to work. Next to this I thank my grandmother, Neeltje Oost-Schulting, oma, for always being interested even though it was difficult for her to comprehend these modern ways of education (I am going to translate this for her!). And last but not least, my 8 year-old stepson, Dominique (Slow Motion) Verschuren, for always making me smile, demanding hugs and giving me energy and especially for keeping my world in perspective.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

The goal of this chapter is to provide an introduction to the study described in this thesis. The study is aimed to research homecare nurses' attitudes, desired functionalities and perceived added value of tools on a tablet. First in paragraph 1.1 the background of the healthcare sector is described. This is followed by the rationale of the study. Subsequently, in paragraph 1.3 the context of healthcare and homecare is described. Paragraph 1.4 addresses the aims of this study and paragraph 1.5 and 1.6 discuss the practical and scientific contribution respectively. The research questions are presented in paragraph 1.7. Conclusively, in paragraph 1.8 a reading guide is displayed to provide a clear overview of this thesis.

1.1 BACKGROUND

This paragraph describes the current healthcare sector challenges. Societal challenges and the sub-domain of homecare are elaborated. Additionally, the concepts of knowledge sharing and knowledge creation are introduced.

1.1.1 Societal challenges in healthcare

The healthcare sector is required to act on many societal challenges. To begin with, healthcare is becoming more costly due to elderly people living longer and requiring more care (Van der Horst, van Erp & de Jong, 2011; Rijksoverheid, n.d.). Next, healthcare expenditures have risen since 1972 and are still rising (Van der Horst et al., 2011) which requires healthcare companies to anticipate the healthcare delivery in a cost-effective way. To control these high costs, healthcare companies want to increase their efficiency, thus they are largely digitalizing their work processes.

1.1.2 Homecare

Examples of homecare duties are general daily activities (Dutch: algemene dagelijkse levensverrichtingen (ADL)) like bathing and dressing clients and providing medication. Additionally, homecare nurses care for clients wounds and they perform complex tasks like insulin injections. Healthcare companies are redesigning the execution of the homecare duties. An example is the implementation of independent teams. Now, the homecare teams' nurses are in control of the tasks and therefore the nurses become more aware of factors like client satisfaction and productivity. A simple example is a nurses route, because the care takes place inside the clients homes, the nurse must take the most efficient route to uphold productivity.

Additionally, healthcare companies (Carinova, Florence, Vilente, etc.) change their vision from 'taking care *of* clients' towards 'making sure *that* clients' (E.g., In voor zorg!: 'van zorgen voor naar zorgen dat', 2014). Thus visions are inspired by clients' self-reliancy.

1.1.3 Knowledge sharing and knowledge creation

Knowledge sharing and creating knowledge lead to a competitive advantage and increases productivity (McEvily et al., 2000). Therefore, it is required that homecare nurses are facilitated to conduct knowledge sharing behaviours to generate new knowledge. Taking these factors into account, it is important to study how homecare nurses want to share knowledge and how technology can aid them in the process.

1.2 RATIONALE AND PROBLEM STATEMENTS

This paragraph addresses the practical and scientific relevance of the study. This will lead to a practical and a scientific problem statement.

1.2.1 Practical relevance

Researching guidelines for tools on tablets is relevant to the practice of healthcare organizations. The current digital age demands that work processes are expedited and therefore digital tools can help the healthcare organizations to maintain their productivity and efficiency. Currently, not much is known about healthcare workers' preferences for tools on tablets. Therefore this study researches homecare nurses' preferences regarding tools on a tablet and their preferred knowledge sharing behaviour.

1.2.2 Scientific relevance

Currently, information and communication technology (ICT) systems in healthcare are often inefficient and lack innovation (Estrin & Sim, 2010). Thus, this study aims to build a prototype for the tablet that reduces this gap. This study builds on previous research (Bogossian et al., 2009; Boruff & Storie, 2014; Estrin & Sim, 2010; Kho, Henderson, Dressler & Kripalani, 2006) in which a tablet is perceived as useful and easily accessible by medical practitioners for learning and sharing knowledge. Additionally, these studies indicate that there is room for improvement of ICT systems in healthcare. Hence, this study aims to design a prototype which is valuable to healthcare practitioners in the homecare context regarding knowledge sharing and knowledge creation.

1.3 CONTEXT

This study took place at "Carinova", a healthcare company in the east of the Netherlands. Carinova Homecare is currently in the process of shifting from reporting on paper to reporting digitally. Among the participants of this study are homecare nurses whose workplaces are within clients' homes. Examples of nurses' tasks contain the washing of clients, administering medication, putting on compression stockings, caring for clients' wounds, et cetera.

Since January, Carinova Homecare has started working with independent homecare teams. With this shift from working with a manager to working as an independent team without a manager, came a Tablet. The tablet is the *Lenovo ThinkPad 10* fitted with an Ultrabook keyboard, including 4G internet coverage and Windows 8. Adoption issues inhibit the transition that is proceeding at Carinova. Next to the standard duties of a homecare nurse, the nurses of the independent teams have different roles: Employee Vitality, Employee Quality and Safety, Employee Ready for the Future and the Employee Planner. These roles are in place according to the vision of Carinova: Next to increasing clients' self-reliance, Carinova believes that the homecare nurses must also become self-reliant.

1.4 AIMS OF THE STUDY

The first aim of this study was to formulate guidelines for tools on a tablet that are suitable to homecare nurses to support knowledge sharing and knowledge creation. Additionally, the second aim of this study was to design a prototype for the tablet to support knowledge sharing and knowledge creation between homecare nurses.

1.5 PRACTICAL CONTRIBUTION

This study investigates if and how homecare nurses would like to word with tablets. Next to this, this it is researched if and how a tablet can contribute to knowledge sharing and knowledge creation. Homecare work is becoming increasingly important due to the greying of the Dutch population. Not only do people keep getting older, the Dutch government also stimulates seniors to remain in their own homes for as long as possible (Rijksoverheid, n.d.). Additionally, due to nationwide budget cuts, the workload of the homecare nurses has to be fulfilled by fewer employees. This leads to the necessity of working more efficiently. Moreover, healthcare is a service that requires multiple practitioners to deliver it completely (Sicotte, Pineault & Lambert, 1993). Thus, to lead to high efficiency and to stimulate knowledge sharing in day-to-day work, healthcare practitioners need to work together. Previous studies have indicated that medical practitioners have used tablets to share knowledge among each other (e.g., Bogossian et al., 2009). Therefore, it is expected that the tablet can be used as a tool to increase knowledge sharing and knowledge creation between healthcare professionals and between the homecare nurses of Carinova.

1.6 SCIENTIFIC CONTRIBUTION

Recent studies have shown that a handheld, such as a tablet, is found useful by medical practitioners to engage in learning (Kho et al., 2006) and sharing knowledge (Wasko & Faraj, 2005). The handheld is found accessible and convenient due to its portability and size (Boruff & Storie, 2014), and therefore it is easy to engage in activities to share knowledge. However, slow network connection and for example touch screen typing are often seen as inhibiting for working efficiently and this leads to frustration by its users (Boruff & Storie, 2014). This study aims to research homecare nurses attitudes towards, desires and perceived added value of a tool for knowledge sharing and knowledge creation. Such information contributes to the knowledge base of homecare nurses' preferences regarding knowledge sharing, knowledge creation and use of tools on tablets.

1.7 RESEARCH QUESTIONS

Due to the ambition of ecological validity, qualitative research questions guided this study. Ecological validity was important because this study aimed at the adoption of the prototypes by the homecare nurses. Additionally, to formulate appropriate guidelines it was required that the participants could share their opinion freely, during interviews and during field days. The ambition was that the participants opened up and that the interviews became personal. Thus, this led to the choice of qualitative research.

Main research question:

Which guidelines can be formulated for tools on a tablet that suit the homecare nurses of Carinova Deventer to support knowledge sharing and knowledge creation?

Sub-questions:

1. What is the current attitude of the homecare nurses towards tools on a tablet?

2. Which functionalities do the homecare nurses desire for tools on a tablet?

3. What is the perceived added value by the homecare nurses of tools on a tablet?

To study the sub-questions, the researcher accompanied homecare nurses during their work during field days. Additionally, interviews were part of the needs and context analysis. Furthermore, literature was reviewed about ICT and knowledge sharing in the context of healthcare and the context of homecare nurses to lay a foundation for the design of the prototypes and to formulate guidelines.

2. THEORETICAL FRAMEWORK

This chapter presents the theoretical framework that guided this study. Paragraph 2.1 introduces the topics under study in this chapter. Subsequently, the key concepts of this study are elaborated in paragraph 2.2, for example 'adoption of ICT' and 'communication'. Paragraph 2.3 summarizes the literature review. Additionally, the consultancy approach is described in paragraph 2.4. Paragraph 2.5 presents the consultancy approach and the chapter concludes with literature-based guidelines for tools on a tablet to facilitate knowledge sharing among homecare nurses in paragraph 2.6.

2.1 INTRODUCTION

The purpose of this theoretical framework is to provide insight into the domains under study. To study knowledge sharing among homecare nurses of Carinova it is important to find out which factors are present in the context of the homecare nurses. The purpose of the tablets is to help the homecare nurses to work more efficiently, prevent mistakes and to improve communication between parties involved with clients, such as the general practitioner, the pharmacist, clients´ families and so forth. This literature review aims build on current findings in literature regarding nurses' preferences and wishes concerning digital tools.

2.2 CRITICAL CONCEPTS

The key concepts in this study are information and communication technology (ICT) systems in healthcare and knowledge sharing in the context of homecare nurses. Knowledge sharing is seen as a form of social interaction in which knowledge is created and shared among colleagues (Russ-Eft, 2011). Engaging in such social interaction of sharing experiences contributes to the professional development of the participants involved (Russ-Eft, 2011). Hence, in the context of homecare nurses, this professional development helps to deal with the demands of modern society. Consequently, ICT innovations are required to facilitate homecare nurses to share their knowledge efficiently.

This literature review brings together recent studies regarding the implementation of technology in the healthcare sector and it focuses on subjects and outcomes relevant to the context of Carinova. The concepts under study are technology acceptance, technology adoption, communication, client care and conditions for systems.

2.2.1 ICT systems in healthcare

In the context of knowledge sharing and ICT systems, social networking tools make creating and sharing knowledge available among employees (Regan & Delaney, 2011). A condition for knowledge sharing, **networking**, is regarded as constructing relationships with people (Eraut, 2004), for example by the use of online platforms that facilitate knowledge sharing. Additionally, another condition, **asking questions**, is a major part of knowledge sharing (Reardon, 2004) which means that employees must be enabled to ask their questions in a place where they will get the answers they need to continue with their work. Conclusively, networking and asking questions by means of an ICT tool, for example by chat or e-mail, seems very suitable due to the requirements of working more efficiently.

At this present time ICT systems in healthcare have a great potential for improvement (Boruff & Storie, 2014; Estrin & Sim, 2010). Estrin and Sim (2010) argue that existing systems are often closed

and rigid which inhibits efficient treatment of clients' conditions. Moreover, they argue that ideally these systems must communicate with each other to lead to innovative application of clients' data (Estrin & Sim, 2010). Thus, ICT systems should facilitate healthcare practitioners to record data (Graham, Estrin, Horvitz, Kohane, Mynatt & Sim, 2011). Graham et al. (2011) argue that "fundamental advances are needed to enable the automated capture and comprehension of context, situations, events, and systems" (p. 3). For example, data about how a client responds to a medication halt are then available in real-time to all healthcare practitioners involved with the client. These kinds of cliental data are often volatile (Graham et al., 2011). Therefore, establishing a timeline regarding the progress of a client is made more manageable by the application of an ICT system because all healthcare practitioners use the same system. In turn, this enables the healthcare practitioners to make better analyses of the data that are captured (Graham et al., 2011) which in the end serves the client's best interests.

2.2.2 Knowledge sharing

Capturing, sharing and applying data enable the multitude of healthcare practitioners to deliver the healthcare service to clients completely. Healthcare practitioners indicate that tablets are a means to share knowledge among colleagues (Bogossian et al., 2009). However, the identified gaps in ICT systems (Boruff & Storie, 2014; Estrin & Sim, 2010; Graham et al., 2011) offer room for development of knowledge sharing systems. Graham et al. (2011) assert that sharing knowledge, methods and tools among healthcare practitioners is facilitated if ICT systems are open systems. Sharing knowledge is therefore seen as critical to advance healthcare efficiency (Graham et al., 2011).

To support the claim by Graham et al. (2011), a recent study indicated that nurses applied online knowledge sharing because they desired a better understanding of up-to-date field knowledge (Hara & Hew, 2007). Additionally, experiences among nurses were discussed through an online environment (Hara & Hew, 2007). Thus, enabling healthcare practitioners to explore their experiences in a collaborative way could increase knowledge sharing. Moreover, a tablet is perceived as useful among healthcare practitioners to engage in learning (Kho et al., 2006) and could therefore be a valuable attribute to support knowledge sharing. Furthermore, experiencing enjoyment in sharing knowledge positively influences someone's knowledge sharing behaviour (Yu, Lu & Liu, 2010).

2.2.3 Technology acceptance

Technology acceptance is the extent of people's willingness or ability to apply technologies in their workplace (Venkatesh, Morris, Davis & Davis, 2003; Wilkowska, Gaul & Ziefle, 2010). For successful implementation of new technologies 'acceptance' is a critical factor (Wilkowska et al., 2010). Nurses are often not used to mobile technology (Venkatesh et al., 2003). However, in the context of Carinova, nurses have already worked with a PDA (Personal Digital Assistant). Hence, this could be of positive influence regarding the implementation of the tablet. It is important for employees to believe that a new technology actually increases their job performance (Davis, 1989). The technology has to be perceived as useful. Additionally, senior female nurses are prone to social influences concerning the implementation of new technologies (Standing & Standing, 2008). This largely fits the context of the nurses at Carinova who are indeed mostly older women.

2.2.4 Adoption

Acceptance of technology and the adoption thereof are closely linked (Benbasat & Barki, 2007). Morris, Venkatesh and Ackerman (2005) argued that the adoption of technology amongst women is influenced by "subjective norm and behavioural control" (p. 50). Subjective norm can be explained as perceived social pressure to comply with expected behaviour and behavioural control entails the

perception of control of a situation (Venkatesh, Morris & Ackerman, 2000). Therefore, to enhance adoption, management should merely have a supporting role (Büchel & Raub, 2002).

To provide control to the homecare nurses, it is advised to let the teams work by a "blended learning" approach. The essence of blended learning is the combination of various training and development methods, including online strategies. As argued by Regan & Delaney (2011) this entails that the nurses are autonomous in their learning.

2.2.5 Communication between healthcare professionals

Communication between healthcare practitioners through e-messaging can be an efficient means of sharing time dependent matters (Melby & Hellesø, 2014). For example, if a client had fallen and has a lot of pain and bruises, the attending homecare nurse can share this through e-messages and request extra visiting slots during the rest of the day and week for monitoring and nursing the client. This can be completed on the tablet swiftly from within the client's home in accordance with the client's wishes. Additionally, the client is informed immediately about the continuation of care. Furthermore, if the homecare nurse sends a request to the client's GP (general practitioner), the request is automatically documented which gives requests more weight (Melby & Hellesø, 2014). However, in the current systems of Carinova this is not yet possible through the system on the tablet.

2.2.6 Client care

A case study of Standing & Standing (2008) indicated that through up-to-date medical records, mobile technology positively affects client care. On the contrary, when communication is ineffective and delayed, client care is affected negatively (McKnight, Stetson, Bakken, Curran & Cimino, 2002).

A goal of the implementation of technology is to improve client care. A possible outcome is fewer hospital visits thanks to technology (Standing & Standing, 2008), for example, digital consultation through Skype, or electronic monitoring of a client's wound (McKnight et al., 2001). Additionally, access to the tablet reduces the reliance on a nurse's memory and leads to fewer mistakes (McKnight et al., 2001).

2.3 SUMMARY

The main concepts addressed were ICT systems in healthcare and knowledge sharing. Subsequently, sub-domains were studied. Paragraph 2.2.1 identified 'networking' and 'asking questions' as key activities for knowledge sharing. Additionally, recent studies argue that existing ICT systems are closed and rigid which inhibits efficient treatment of clients. Paragraph 2.2.2 indicates that recent studies argue that there is room for improvement regarding knowledge sharing tools. Also, a tablet is perceived as a tool that suits knowledge sharing. Paragraph 2.2.3, about technology acceptance, shows that it is employees should believe that a new technology increases their job performance for them to accept the technology. Adoption of technology is addressed in paragraph 2.2.4 and indicates that women are influenced by "subjective norm and behavioural control". These factors could hamper the adoption of technology. Communication between healthcare practitioners is addressed in paragraph 2.2.5 and the study indicates that digital logs of requests between parties gives requests more weight. Therefore nurses feel more secure about requests they make to other healthcare practitioners. Paragraph 2.2.6 indicates that the quality of client care increases because nurses make fewer mistakes and because client data is real-time.

2.4 CONDITIONS

Conditions for digital systems in healthcare and conditions for the knowledge sharing of homecare nurses are addressed in this paragraph.

2.4.1 Conditions for ICT systems in healthcare

Digital systems further efficiency but are bound to important security conditions because of dealings with personal client data. A study about mobile ICT for healthcare argued the following: "Data should be sent over encrypted channels, have strong authentication and authorization, and have the capability for digital signatures to ensure messages are unaltered" (Mendonça, Chen, Stetson, McKnight, Lei & Cimino, p. 636, 2004). These conditions affect user efficiency because of the use of passwords and separate systems. It also raises questions about the use of the tablet, for example, can a nurse create a file about a client on her personal tablet? Can the nurse save it on the tablet or does it have to be uploaded to a secure server?

Additionally, Benbasat and Barki (2007) argue that a condition for adoption is 'perceived usefulness' and 'perceived ease of use' by the target group. Meaning that the homecare nurses must perceive the system or tool as useful to their job and it must also be easy to work with.

2.4.2 Conditions for knowledge sharing

Asking questions, for example by chat, telephone call or e-mail, is essential for knowledge sharing (Reardon, 2004). Additionally, networking allows for relationships to be developed (Eraut, 2004), for example by the use of social networking platforms (Regan & Delaney, 2011). Close relationships are important and therefore interaction between employees should be fostered by promoting face-to-face encounters (Chua, 2003). Moreover, the employees have expressed a desire to learn through social interaction. Von Krogh, Ijicho, and Nonaka (2000) argued: "Good conversations are the cradle of social knowledge in any organization, they allow the first and most essential step of knowledge creation: sharing tacit knowledge within a micro community" (p. 125). Additionally, social interaction does not only foster the transfer of knowledge, it also leads to the generation of new knowledge (Kurtz & Snowden, 2003).

Additionally, a condition for knowledge sharing is that teams from different regions are connected in order to facilitate cross-fertilization (Steinlin, 2005). Accordingly, a long-living argument by Granovetter (1973), known as "the weak-tie theory", is that employees who are otherwise disconnected will not learn from each other. Hence, if you only have groups with strong ties, employees only learn from the same group of employees and "therefore everyone knows what the others know" (Hansen, 1999, p. 2) and no new knowledge is generated.

2.5 CONSULTANCY APPROACH

In line with the research questions the researcher used a qualitative approach to conduct the interviews. The qualitative approach consists of Appreciative Inquiry and the 4D-model.

2.5.1 Appreciative Inquiry

Appreciative Inquiry (AI) offers an approach that builds on the strengths of people and companies. It is aimed at envisioning a future that embraces the creativity and energy of employees. In AI employees are asked what they need to excel in their work and therefore findings lead to more sustainable outcomes (Van der Haar & Hosking, 2004). Often, the 4D-model is applied during AI.

2.5.2 4D-model

The 4D-model consists of four phases: discovery, dream, design and destiny (Cooperrider & Whitney, 2001).

The discovery-phase focuses on the current work activities, for example what is going well and what do you enjoy. Subsequently in the dream-phase the participant is encouraged to think about what could be improved. Then the design-phase focuses on the design of a program or resource to make that dream reality. The design and destiny-phase will be conducted by the researcher through data analysis and the phases will also include participants to provide feedback on the designs to increase sustainability.

The interview instrument was developed during the first stages of the study. Literature about ICT systems in healthcare and knowledge sharing were reviewed to design the interview instrument and led to the concepts 'technology acceptance', 'technology adoption', 'communication', 'client care' and 'conditions for systems'. Because these terms are rather abstract, the 4D-model helps the participants to think freely about the concepts.

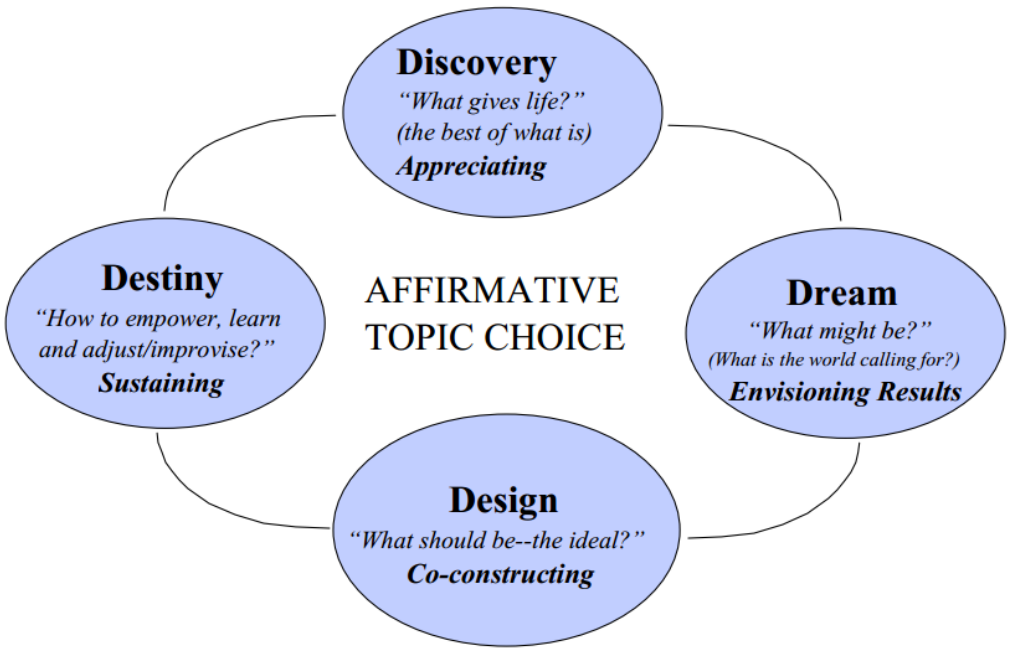

Figure 2.1. 4D-cycle: key stages of appreciative inquiry. *Note.* From "A Positive Revolution in Change: Appreciative Inquiry" by D.L. Cooperrider and D. Whitney, 2001, *Public administration and public policy*, *87*, p. 28.

2.6 LITERATURE-BASED GUIDELINES

Guidelines for tools on a tablet suitable to homecare nurses' knowledge sharing based on the above literature review are formulated for technology acceptance, technology adoption, communication, client care and conditions for systems and knowledge sharing.

2.6.1 Technology acceptance

Guideline #1: Homecare nurses must perceive the new technology as a tool that increases their job performance

The first guideline regards the acceptance of a new technology by homecare nurses. It is expected that nurses' acceptance of a new technology is furthered when they perceive the technology as useful for their job.

2.6.2 Technology adoption

Guideline #2: Control the subjective norm

Elder homecare nurses (mainly women) are influenced by how a new technology is perceived by their social surroundings. When the implementation of a new technology is the expected behaviour, e.g. by other nurses, then a technology is more likely to be adopted by the homecare nurses.

Guideline #3: Give the homecare nurses behavioural control

Provide the nurses with control of the situation regarding the adoption of a new technology. For example, let the homecare nurses decide on a time path regarding the implementation of the tablet and the actions they require during this time (e.g., technology training).

2.6.3 Communication between healthcare practitioners

Guideline #4: Enable digital requests that are logged

As for communication between healthcare practitioners it is useful when requests between different parties are automatically logged. This way the requests that homecare nurses make to for example a GP carry more weight.

2.6.4 Client care

Guideline #5: Keep medical records up-to-date

To uphold client care it is required that clients' medical records are kept up-to-date. Technology (the tablet) can be of support to the homecare nurses' daily practices because they can input data whilst being at a client's home. Additionally, the homecare nurses are able to pull data from the tablet instantly and provide immediate care accordingly (e.g., pulling a protocol).

2.6.5 Conditions for systems

Guideline #6: Keep systems secure but simple

Personal client data must be secure. Additionally, systems must be easily accessible and easily utilized by the homecare nurses. Table 1.1 displays conditions for digital systems to be utilized by homecare nurses.

Table 1.1. **Conditions for systems**

Conditions	Rationale
Security	Encrypted channels, strong authentication and authorization, option for digital signatures (Mendonça et al., 2004).
Perceived usefulness	System must be perceived as useful (Benbasat & Barki, 2007).
Perceived ease of use	Keep systems simple, e.g. few systems and few screens to work with (Benbasat & Barki, 2007).

2.6.6 Conditions for knowledge sharing and knowledge creation

Guideline #7: Provide opportunities to homecare nurses to learn through social interaction

Table 1.2 displays the conditions for knowledge sharing between homecare nurses according to literature.

Table 1.2. **Conditions for social networking aimed at sharing knowledge and knowledge creation**

Condition	Rationale
Asking questions	Ask questions to colleagues (Reardon, 2004).
Networking	Constructing relationships with people (Eraut, 2004).
Social interaction	Good conversations (Von Krogh et al., 2010) can lead to knowledge creation (Kurtz & Snowden, 2003).
Weak-tie theory	Groups are made according to teams, roles and goals filled with employees with weak ties (Granovetter, 1973)
Generate new knowledge	Cross-fertilization (Steinlin, 2005)
Enjoyable	Sharing enjoyable experiences positively influences someone's knowledge sharing behaviour (Yu et al., 2010).
Support and facilitation	Management can be called upon for assistance (Büchel & Raub, 2002).
Blended learning	Combination of various training and development methods: scheduling meetings, events, workshops, sharing articles, experiences, etc. (Regan & Delaney, 2011).

3. METHODS

In this chapter the methods are presented. First the research design is addressed. This is followed by a description of the respondents and sampling method. Next, in paragraph 3.3 the interview instrument is described. Then, in paragraph 3.4 the procedures are explained and to conclude this section the methods of data analyses are presented in paragraph 3.5.

3.1 RESEARCH DESIGN

This study is a needs and context analysis study. The research design is a cross-sectional design. This entails that the respondents are from multiple groups at one point in time (Salkind, 2010). This design suits this study because it allows for data collection from different stakeholders (different organizational levels) and across different homecare teams.

3.2 RESPONDENTS

The participants of this study were seven homecare nurses, a homecare manager and the director of homecare of Carinova in the city of Deventer. First, criterion sampling was applied to select homecare nurses by (a) educational level: Verzorgende C (level 3) and Verpleegkundige (level 4 and 5), and (b) working hours: minimum of 20 hours a week. The purpose of this distinction is to gain insight into how the tablet and its possibilities are experienced among homecare nurses with different educational levels. The criterion of working hours is applied to ensure that the participants use the tablet frequently. Through these sampling techniques, it was expected that the homecare nurses that were interviewed represented most of their colleagues who were not in the study. Additionally, the rationale for interviewing a homecare manager and the homecare director was to increase the probabilities of sustained maintenance.

3.3 INTERVIEW INSTRUMENT

First, a literature review was conducted through the analysis of articles selected by the next keywords: knowledge sharing and ICT systems in healthcare. Then, the full articles were read, which according to Onwuegbuzie, Leech and Collins (2012) is the preferred method of review. Subsequently, relevant information from the articles was chunked and coded. When all information was coded, themes were created (Onwuegbuzie et al., 2012) which provided input for the interview instrument (Appendix A).

The interview instrument was used as a map during the interviews. This interview approach allowed for Appreciative Inquiry and the 4D-model to be applied. In line with this approach, mainly open questions were asked. Additionally, the map indicated when it can be expected that participants provide more answers about a subject or when it is time to switch subjects. Moreover, this approach allowed the participants to direct the interview rather than that the interviewer steers the interview. All in all this approach allowed for a more natural conversation between researcher and participant.

Attitudes, perceived usefulness and perceived added value were the main constructs of the interview instrument. An example of an item is “It would be great if I could have this on the tablet…” and then the participant would be asked to complete the sentence and elaborate. Furthermore, the opening question of the main part of the interview (perceived added value) was “Can you name an advantage

of the tablet?" This allowed for the participants to direct the subject of the interview and thus the researcher knew where the interview was at by looking at the map.

3.4 PROCEDURES

Participants were approached through e-mail and volunteered to take part in the study. The interviews provided input for the analyses and were conducted individually. The first part of the interview was about the nurses' attitudes regarding the tablet, the second part about the desired functionalities of the tablet and the third and main part of the interview was about perceived added value of the tablet. The interviews were sound recorded and transcribed. A prototype was built based on the analyses of the interviews.

Subsequently, all participants (homecare nurses, manager and director) were invited to comment on the prototype. Participants were invited to individual or group meetings or to respond through e-mail to think freely about the design and construction of the prototype. Their input led to adjustments of the prototype. This process was reiterated as found necessary by the researcher and participants to ensure ecological validity and sustainability.

The nature of ethical behaviour from a constructivist point of view included raising awareness of the participants about the topics under study, constructing a balanced representation of views and creating community rapport (Mertens, 2014). The collaborative approach of this study allowed for balance and communication and addressed the ethical considerations of a constructivist approach.

3.5 DATA ANALYSIS

Qualitative data were generated from the interviews. After transcription, themes in participants' utterances were identified according to the literature review. Revision of or addition to the themes was anticipated because the participants are interviewed according to the 4D-cycle. Specific not yet themed utterances about for example dreams and wishes were then constructed. The utterances were analysed according to the structure of the themes. This systematic analysis focused on keywords in utterances and therefore the quality of the data analysis improved because it reduced researcher bias (Muskat, Blackman & Muskat, 2012). An example of a coded and transcribed interview is displayed in Appendix B. The codes that emerged are displayed in Table 3.1.

Table 3.1. **Codes**

Attitude	Perceived usefulness	Perceived added value of the tablet
Intention of use	Lack of clarity	Planning
Adoption	E-learning	Self-reliance
Acceptance	Goal	Roles
Training needs	Simplification	Continuity of work
Anxiety		ECD
Size of tablet		Client monitoring system
Privacy		Repeat-prescriptions
		Photos
		ECD
		Communication

Codes emerged bottom-up. This entails that codes were constructed based on participants utterances. Codenames were kept as close as possible to participants' choice of words.

Second, in line with the Appreciative Inquiry approach relevant examples of participants' utterances were gathered and analysed. For example "the buttons must be clear" or "I want to be able to communicate with my colleagues quickly". These qualitative results also provided input for the design of the prototype.

Finally, field-notes were made by the researcher to uphold the environmental and emotional context of the interviews and work environment. These notes were used to explain participants' utterances and the context of the work environment.

4. FINDINGS

The findings presented in this chapter form the basis for the design of the prototypes. The findings are described in the next paragraphs according to the sub-questions. The findings are summarized in paragraph 4.2 explaining the nurses' desires for a repeat-prescription service and a platform for knowledge sharing and knowledge creation. Finally, in paragraph 4.3 the findings of the nurses' attitudes towards, desires for and perceived added value of tools on a tablet are compared to the literature-based guidelines.

4.1 SUB-QUESTIONS

In this paragraph the sub-questions are addressed.

4.1.1 What is the current attitude of the homecare nurses towards tools on a tablet?

The use of tablets within clients' homes is versatile among the homecare nurses. Some nurses indicate that they leave their tablet at home whilst other nurses use them when they are working with clients. Reasons for not taking the tablet with them vary from a bad internet connection to forgetting passwords and the inability of using systems on the tablet. The nurses who do take the tablet with them explain that they use it to register their planning and send messages to colleagues.

During the interviews nurses of Carinova provided plentiful examples of possibilities for **sharing knowledge**, such as a blog or a digital pin-board. An overview of these data is presented in Appendix C. The nurses view such communication as beneficial to their development and as possibly as enjoyable: "I would always like to learn from my colleagues!" (Field notes, April 16th). However, the nurses indicate that such a virtual community is hard to imagine. Moreover, in large companies like Carinova, it can be hard for the nurses to find each other which can hamper knowledge sharing (Chua, 2003). This problem was recognized by nurses during the interviews.

Concerning the **acceptance** of the tablet there seems to be a difference between the younger generation of nurses and the older generation. The nurses of the older generation do not seem to accept and adopt the tablet. A possible explanation could be linked to the transition from working with the PDA to working with the tablet. Participant #3 reasoned as follows: *"The PDA was easier to work with and well-organized. The advantage was that the PDA had less functionality so you did not have to do so much."* However, when Participant #3 was asked if she could choose to go back to the PDA or work with the tablet the nurse said: *"If the tablet works optimally then I choose the tablet because it has so much potential."* This shows that in the current state the nurse prefers a fully working system but she does have faith that the system will work properly in the future.

Another issue debated by the nurses is that they did not receive sufficient **training**. Some nurses do not know how the tablet works and also cannot use the planning registration system. Field notes May 12th: *"I write down the times (arrival and departure time from a client) on a piece of paper and when I get home my husband puts it in the tablet."* This is contradictory to the purpose of the tablet and results into loss of efficiency and lack of adoption (Standing & Standing, 2008).

Hence, nurses expressed a desire for more **training** for handling the tablet and utilizing systems optimally. Also, nurses stated that they do not receive enough **support** from the helpdesk when they

experience problems. Both issues have been identified as barriers for adoption of mobile technology (Zheng & Yuan, 2006).

Additionally, **clients** indicate that they do not understand why the nurses have tablets. The clients often hear nurses complain that the system does not work or that they do not have an internet connection. This is supported by the nurses who acknowledge that they often complain because of system failures. Hence, clients' attitudes are negatively influenced by the nurses. Some nurses also believe that working with clients becomes less personal due to the tablet and that **client care** is therefore negatively affected. Though this is supported by a previous study (Standing & Standing, 2008), most nurses of Carinova Homecare argue that because of proper preparation before entering a client's home, they have more time to focus on clients and are therefore more likely to adopt the tablet. For example, some nurses in the study of Carinova sustain: *"Before I enter a client's home I read the (client) data on the tablet. Therefore when I walk through the door I know what is expected of me and I can more easily empathize with the client" (e.g., Participant #4).*

4.1.2 Which functionalities do the homecare nurses desire for tools on a tablet?

This paragraph addresses the concepts of knowledge sharing, nursing literature and the goal of the tablet.

Knowledge sharing

Homecare nurses would like to learn from and with colleagues. During the interviews nurses claimed that it was hard for them to find colleagues to learn from and ask questions to. So to aid them a **knowledge sharing** tool can help them to communicate and share and create knowledge. Moreover, this way of learning is more cost-effective compared to formal trainings and meetings (Azudin et al., 2009).

Next to this, knowledge sharing should be fun because it positively influences knowledge sharing behaviour. In line with what some nurses expressed during interviews, they would like to be able to share social happenings as well: *"It's nice to keep everyone up-to-date, for example: Paula is pregnant, congratulations!"*

Furthermore, the independent teams must be in control of the knowledge sharing platform without interference of management. The nurses are the ones who decide what to share and to whom. They can call upon management and ICT for support and facilitation when it is required.

Nursing literature

Additionally, a desire expressed by nurses during interviews was access to medical technical nursing knowledge by means of nursing magazines and professional nursing literature. Knowledge derived from these sources is facilitating to knowledge sharing. Next to this, Carinova benefits from nurses who school themselves and who stay up-to-date with recent nursing innovations.

Goal of the tablet

A versatile answer pallet derived from questions about the goal of the tablet. Whilst nurses mostly indicated that budget cutting is a goal, management argued that the tablet is a supportive tool.

Table 4.1. **Responses regarding the goal of the tablet**

Homecare nurses	
	To work with a new software program which surpluses the planners causing teams to work more independently. And budget cuts.
	Budget cuts and staff reduction.
	Digitalization maybe? They did not tell us a goal.
	Direct access to client data and access to the planning.
Management	
	To support the independent teams and an efficient planning and rostering.
	Tool for planning and registration of time and travel distance. Direct access to client data.

If the goal of the tablet is unclear to the nurses is hampers the adoption of the tablet (Standing & Standing, 2008). Table 4.1 indicates that the goal of management is to increase efficiency, which is in line with the outcomes of the literature review. However, most nurses are unaware of the goal to increase efficiency and therefore do not use the tablet as it was intended by management (planning and rostering).

4.1.3 What is the perceived added value by the homecare nurses of tools on a tablet?

In this paragraph the concepts communication between healthcare practitioners, client care, digital filing, continuity of work, sharing knowledge and creating knowledge are addressed.

Repeat-prescription service

Communication between healthcare practitioners is what all participants would like to see improved (Data presentation: Appendix C). This is supported by Graham et al. (2011) who argue for open systems among practitioners. For example, a nurse has the task to order a repeat-prescription for a client. Currently, the nurse first has to call the prescription-line to order the repeat-prescription. Then the nurse is informed that there is no repeat-prescription available. Consequently she has to phone the client's GP, often being on hold for several minutes. This is just one of many examples where the participants identified the potential of the tablet to increase communication and efficiency. These wishes and desires of the nurses have led to the design of a prototype for a repeat-prescription service embedded in the ECD, which is presented in chapter 5. According to the homecare nurses, this prototype is of added value to clients and nurses because of efficient actions regarding repeat-prescriptions of clients.

Client care

Nurses of Carinova argue that a tablet could help to improve client care. Participant #7: *"It's a large happening for a client to have to go to the hospital. She has to dress up nice, she's worried about the traffic and it will take up the whole day. Also the informal caregiver of the client doesn't have to take the day off."* The participants advocate the use of video calls. Examples that benefit client care are that nurses can double check through a video call if the right amount is set to administer insulin to a client. Additionally, a client can have a video call with a hospital doctor which saves the client a physical trip to the hospital (Standing & Standing, 2008).

Homecare nurses of Carinova also argued service to clients during the interviews, by means of **digital filing**, for example Participant #8: *"If you're on holiday for a week and you come back, you don't know what's going on with a client. So first you have to read through the paper file for five minutes, during client time, whilst the client is just sitting there and he already knows what you have got to do. Instead now you can read in on the tablet in your car or before you go to the client."*

As for **continuity of work**, nurses often have to check features of a client's medication. Through the tablet it is very easy for them to access the Carinova Information System (CIS) and read the protocol about the purpose and side effects of the medication. Participant #2 explains: *"If I'm unsure about the side effects of a medicine I can look it up in the tablet."*

Inter-team role communication

There are four roles within independent teams: Employee Vitality, Employee Quality and Safety, Employee Ready for the Future and the Employee Planner. Carinova Homecare consists of almost 100 teams so it is useful if the employees of these teams share knowledge with each other. Inter-team role communication entails that homecare nurses with the same roles, though from different teams, can communicate with each other easily and efficiently.

Sharing knowledge is a concept that most nurses are not aware of. They do already share knowledge, for example via e-mail, but do not consider it learning. There are several roles within the independent teams and the participants advocate for inter-team role communication. With almost 100 independent teams working as separate islands, each team is reinventing the wheel and in this process productivity is hampered. Knowledge that each team apprehends can be documented and shared through the teams to increase efficiency. For example, the current roles within teams are 'Vitality', 'Ready for the future', 'Quality and safety' and 'Planning'. An example of a task is to **create** a 'teamplan' which has to meet Carinova's criteria and conditions. It would be helpful if the nurses in charge of the teamplans, transcending the teams, have a means to communicate with each other and ask each other questions. Therefore the second prototype of this study is a platform for knowledge sharing and knowledge creation, which is presented in chapter 6.

4.2 SUMMARY

Digital filing and communication between healthcare practitioners are matters that participants are eager to work with but the system on the tablet does not yet facilitate this. For example, the Electronic Client Dossier (ECD) will be rolled out over the coming year. However, efficiency is advocated by all participants and the potential of the ECD is recognized by the homecare nurses. Accordingly, nurses argued the potential of ordering repeat-prescriptions by means of the tablet because it is much faster than making phone calls to the pharmacy and the GP. Additionally, participants would like to have a platform for inter-team role communication to share and create knowledge.

5. REPEAT-PRESCRIPTION SERVICE

This chapter presents the design of the repeat-prescription service. The wishes and desires of the participants led to the design of this prototype. The participants expressed such a desire for a program to increase efficiency, that it was the obligation of the researcher to aid to the wishes of the participants. Additionally, this design (paragraph 5.1) is in line with literature to apply open systems in healthcare that allow for communication between healthcare practitioners. In current literature, innovative and communicative systems in healthcare are lacking. In paragraph 5.2 feedback by participants is presented.

5.1 DESIGN OF REPEAT-PRESCRIPTION SERVICE

The rationale for this prototype came directly from the interviews. Participants indicated that the tablet could support efficiency regarding ordering repeat-prescriptions for clients. Currently, when Carinova holds the responsibility over a client's medication the nurse has several tasks when it is observed that a client's medication is running out. Currently, these actions take up a lot of time and this prototype allows for this process to be completed more efficiently.

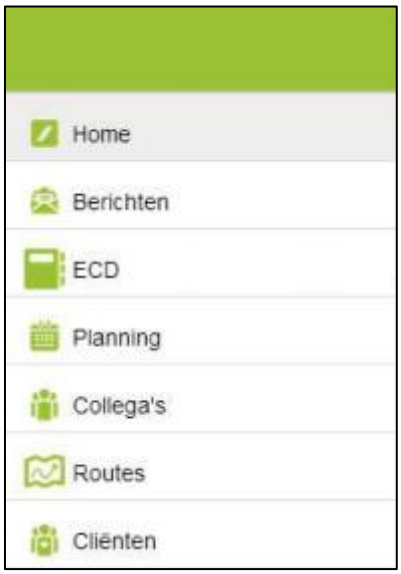

Figure 5.1. Menu in Electronic Client Dossier.

Conditions and design

The repeat-prescription service will be placed in the Electronic Client Dossier (ECD). This menu in the ECD is shown in Figure 5.1. This suits the approach to keep systems simple and furthers adoption by its users. Additionally to literature, this was a request uttered during interviews. An overview of the conditions for the prototype based on desires of nurses is shown in Table 5.1.

Table 5.1. **Conditions for repeat-prescription service**

Conditions	**Implementation**
Security	Tool is embedded in the secure Carinova system
Perceived ease of use	Easy 3-step tool to achieve the goal
Perceived usefulness	Actions are completed within minutes from within the client's home

When a nurse enters the ECD a menu on the left allows for reviewing individual client dossiers. For example the nurse clicks the button 'Cliënten' (clients) and looks up Mr. Leeuw, another menu appears. This menu regards all of Mr. Leeuw's care related business and provides access to his individual care plan through several tabs.

Figure 4 is a page that is added into the ECD under the tab 'Medication'. The far right column indicates 'Stop dates' and the medication that has a stop date will have a button on the right with the option to 're-order'. The re-order button will turn red two weeks before the stop-date to indicate that action by a nurse is required.

#	Start date	Name of medication	Dosage	Stop dates	
1	07-01-2015	Actonel risedronate	500mg	Ongoing	
2	15-01-2015	Lomotil	50mg	Ongoing	
3	27-03-2015	Vaseline	49g	27-06-2015	Order sent
4	04-04-2015	Lopressor	100mg	Ongoing	
5	04-04-2015	Proventi Ventolin	50mg	Ongoing	
6	01-05-2015	Bandages MedEx 2.1	4 packs	01-07-2015	Re-order

Figure 5.2. Frame 1: Overview of a client's current medication.

When the re-order button is pressed the nurse has the option to write a short memo to the GP to go along with the request or to leave the memo-field blank (Figure 5.1). When the nurse presses 'Send' the colour of the 're-order' button changes from red to orange and the text changes to 'Order sent'. This is displayed at row #3 in Figure 5.4.

Medication	Dosage	Stop date	
Bandages MedEx 2.1	4 packs	01-07-2015	Re-order

Memo	Possibly final request for continuation. Evaluation recommended in 4 weeks.

SEND

Figure 5.3. Frame 2: Ordering a repeat-prescription.

The responsibility of the continuation of a repeat-prescription rests with the GP. Therefore, a condition of this prototype is that a request for a repeat-prescription submitted by a homecare nurse

is sent directly to the GP for authorization. In turn, the GP can mark off the request which is updated in the system automatically, informing the pharmacy, the client and the client's homecare team. At that moment the boxes next to the re-ordered medication turn green and the nurse's task is fulfilled, as is displayed in Figure 5.3.

#	Start date	Name of medication	Dosage	Stop dates	
1	07-01-2015	Actonel risedronate	500mg	Ongoing	
2	15-01-2015	Lomotil	50mg	Ongoing	
3	27-03-2015	Vaseline	49g	27-09-2015	Ordered
4	04-04-2015	Lopressor	100mg	Ongoing	
5	04-04-2015	Proventi Ventolin	50mg	Ongoing	
6	01-05-2015	Bandages MedEx 2.1	4 packs	01-08-2015	Ordered

Figure 5.4. Frame 3: Repeat-prescriptions approved by GP.

When the medication has arrived at the client's home, the nurse can mark off for the receipt in the system and the medication overview will be as displayed in Figure 5.5.

#	Start date	Name of medication	Dosage	Stop dates
1	07-01-2015	Actonel risedronate	500mg	Ongoing
2	15-01-2015	Lomotil	50mg	Ongoing
3	27-03-2015	Vaseline	49g	27-09-2015
4	04-04-2015	Lopressor	100mg	Ongoing
5	04-04-2015	Proventi Ventolin	50mg	Ongoing
6	01-05-2015	Bandages MedEx 2.1	4 packs	01-08-2015

Figure 5.5. Frame 4: Signed for receipt of ordered medication.

Then the cycle starts over and two weeks before a stop date the red button of 'Re-order' automatically appears at the medication list, as displayed in Figure 5.3.2. Additionally, on the home screen of the clients ECD a popup appears indicating 'Action required' in the shape of a red exclamation mark when an order is due (Figure 5.6).

Zorgplan	
Anamnese	
Route	
Mantelzorg	
Medicatie	!

Figure 5.6. Display of red exclamation mark next to the tab 'Medicatie'.

5.2 FEEDBACK OF PARTICIPANTS

This paragraph addresses the feedback that participants provided about the design of the repeat-prescription service.

The repeat-prescription service was translated to Dutch for feedback purposes. Three out of nine participants provided feedback on the design which is displayed in Table 5.2. The table includes the variables 'perceived usefulness' and 'perceived ease of use' (Benbasat & Barki, 2007) which further the adoption and acceptance of technology. In the current context perceived usefulness means that the nurses perceive the designs as programs that are useful to them in their work. Perceived ease of use means that the programs are simple and clear to work with.

Table 5.2. **Feedback on repeat-prescription service**

Conditions	**Participant #6**	**Participant #7**	**Participant #9**
Perceived usefulness	The link 'action-order' is handy. Link required to GP and pharmacies.	Quality and safety issues regarding medication. Useful regarding lotions and bandages.	GP and pharmacies must be involved in the design of the program.
Perceived ease of use	Send reminder to the team if a client's medication runs out because the ECD isn't always opened by nurses.	None provided.	Clear and simple.

Table 5.2 demonstrates construction and development requirements. These requirements will be addressed as recommendations in chapter 7.

6. CARIBOOK

Caribook is a tool for sharing and creating knowledge. The design of Caribook (paragraph 6.1) is based on conditions derived from literature and it is based on the desires of the participants. In paragraph 6.2 participants' feedback on the prototype is presented.

6.1 DESIGN OF CARIBOOK

Previous studies argued that a tablet is an excellent means for medical practitioners for sharing and creating knowledge (Bogossian et al., 2009; Boruff & Storie, 2014; Estrin & Sim, 2010; Kho et al., 2006). The conditions for sharing and creating knowledge displayed in Table 6.1 were derived from literature and implemented into the design accordingly.

Table 6.1. **Conditions for a platform aimed at sharing knowledge and creating knowledge**

Conditions	Implementation
Security	Tool is embedded in the secure Carinova system.
Asking questions	Available in groups by updates and chat-function.
Networking	Employees are able to construct relationships with each other
Social interaction	Options for connecting and planning events and meetings.
Weak-tie theory	Groups are made according to teams, roles and goals with nurses from different teams.
Generate new knowledge	Through cross-fertilization and posting updates.
Enjoyable	Option to share also with only your team or close acquaintances Birthdays are embedded in the system.
Support and facilitation	Management can be called upon for assistance.
Blended learning	Options to learn from each other in various ways: scheduling meetings, events, workshops, sharing articles, experiences, etc.

To facilitate inter-team role communication, groups must be made for the four different roles (Vitality, Quality and Safety, Ready for the Future and Planners). In line with cross-fertilization these groups should be formed across the whole Carinova work-area (Figure 6.1), for example 2 nurses from Rijssen-Holten, 2 from Olst-Wijhe, 2 from Hardenberg and 2 from Dalfsen.

Figure 6.1. Carinova homecare work-area

Design

The design of the knowledge sharing tool is called “Caribook”. A screen-print of Caribook is shown in Figure 6.2.

The scenario used to explain the prototype is that of homecare nurse Jannie Jansen who is a member of team 3310. Next to this, her role in the team is Employee Vitality. Accordingly, Jannie is a member of a vitality team which is Vitality team 2.

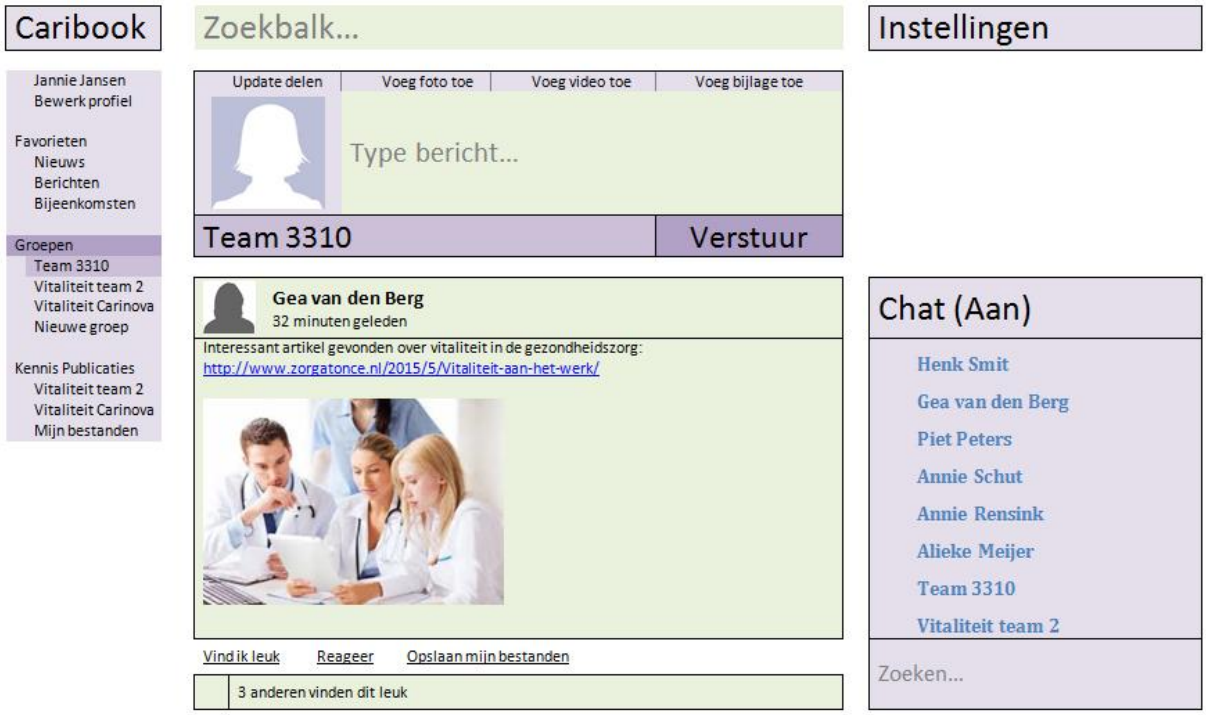

Figure 6.2. Screen-print of Caribook

First, the left menus are described (Figure 6.3). The top left button ‘Caribook’ is the home-button. The home-button is in the top left because the button is easy to find and users are used the home-button being at the top left (Brinck, Gergle & Wood, 2001). Beneath the home-button are some menus and the name of the person who is logged is displayed. In this case, the user is Jannie Jansen. Jannie has the option to edit her profile, for example she can add a profile picture or her mobile phone number. Beneath this are the menus ‘Favourites’, ‘Groups’, and ‘Knowledge Publications’. In the menu Favourites, Jannie has put some menus that she wants easy access to, in this case ‘News’, ‘Messages’ and ‘Meetings’.

Figure 6.3. Left menu of Caribook.

Further down in the Groups menu it is highlighted that Jannie has selected her team, 'Team 3310'. Accordingly, if Jannie wants to write a message, the bar below the message indicates 'Team 3310', meaning that the message she is sending will be sent to 'Team 3310' only. Next, Jannie is a nurse with the role of 'Employee Vitality' and therefore she is a member of the groups 'Vitality team 2' and 'Vitality Carinova'. The purpose of these groups is inter-team role communication. Furthermore, all nurses have the option to create more groups with the button 'New group'. For example if some nurses of a team are assigned to work on a project together.

The menu below Groups is the menu of Knowledge Publications. This menu has all the publications saved that have been published by the groups Jannie is in. Additionally, Jannie has the option to save personal files under the button 'My files'. The reason these menus are in the left menu is because of the purpose of navigation. Often, users naturally look to the left menus to navigate through webpages or social networking sites.

The left menu has a lay-out that is easy to navigate through by the users. According to design guidelines the vertical list helps users to comprehend each link with single eye-movements (Farkas & Farkas, 2000).

Figure 6.4. Middle menu of Caribook.

At the top of the menus in the middle is the 'Search bar'(Figure 6.4). Nurses can use this to search through all of Caribook, for members, publications, groups, news and meetings. A single box for the search bar in which users can search for keywords is advocated by Brinck et al. (2001). Beneath the search-bar is the 'Message box' for sharing updates. Jannie has the option to add photographs, videos or other files to the message. The box containing the group she is in, currently displayed as 'Team 3310' is a dropdown box with the option to change the group she is sending the message to. Once Jannie presses 'Send' the message is posted in the group. Jannie then has the option to edit or delete her message.

Beneath the message box is the 'News area'. Jannie sees that her colleague Gea from team 3310 has shared an article with her team 32 minutes ago. Now Jannie has the option to 'Like' the message, 'Respond' to the message or to 'Save to my files'. Also, Jannie sees that three of her colleagues like Gea's post. The message box and news area are where the focus of the users should be (after all the purpose is to share and create knowledge) and it is therefore placed in the middle of the page (Brinck et al., 2001). Additionally, the name of the person who posted the update is made bold to direct the attention of users to the author of the post.

Figure 6.5. Right menu of Caribook.

The menus on right are 'Settings' and 'Chat' (Figure 6.5). The menu Settings offers Jannie the following: options to set how she wants to receive notifications and options on what she wants to receive notifications about. First, Jannie can choose if the she wants to receive notifications by sounds, e-mail, text-message or all of the above. Second, Jannie can choose if she wants to receive notifications about meetings, birthdays, group activities, or all of the above.

The Chatbox can be turned on and off. Currently, Jannie has the Chat turned on. By clicking on 'On' the chat turns off, it works the same the other way around. Now, since the chat is turned on, Jannie has the option to chat to anyone on Caribook. The colleagues currently appearing in the list are other nurses she has recently had interactions with. Jannie can find other members by using the 'Search' box. Additionally, it is possible to send chat messages to the groups she is in.

To start a chat with Piet Peters, Jannie clicks on his name. Then, a window will open with in the white area above the chat in which case it does not interfere with the other functionalities of Caribook.

The Chat is positioned at the bottom right of Caribook because it is an additional feature to knowledge sharing and therefore a subsequent focus to the menus in the middle.

6.2 FEEDBACK OF PARTICIPANTS

This paragraph addresses the feedback that participants provided about the design of Caribook. Caribook was made only in Dutch due to the specific context of Carinova.

Three out of nine participants provided feedback on the design which is displayed in 8. The table includes the variables 'perceived usefulness' and 'perceived ease of use' (Benbasat & Barki, 2007) which further the adoption and acceptance of technology. In the current context perceived usefulness means that the nurses perceive the designs as programs that are useful to them in their work. Perceived ease of use means that the programs are simple and clear to work with.

Table 6.2. **Feedback on Caribook**

Conditions	**Participant #6**	**Participant #7**	**Participant #9**
Perceived usefulness	Interactive tool to communicate with colleagues. Handy if you can make subjects regarding knowledge publications to suit your role.	Add information: Sharing photos of team events; Include practicalities for congresses and symposia: carpooling and sharing knowledge afterwards; Display a user's years of employment or years with the team.	Caribook is now limited to homecare nurses. In order to stimulate knowledge sharing throughout Carinova use an organisation-wide platform.
Perceived ease of use	The distinction between news, messages and knowledge publications must be clear to avoid overlap. Hard to type with the keyboard of the tablet.	None provided.	None provided.

Table 6.2 demonstrates construction and development requirements. These requirements will be addressed as recommendations in chapter 7.

7. DISCUSSION

This chapter discusses the findings and limitations of this study. First the conclusions are presented (7.1) in which the aims of the study are revisited and the sub-questions are answered. Paragraph 7.2 addresses the main research question and revisits the literature-based guidelines formulated in chapter 2. Subsequently in paragraph 7.3 contains reflections on the methods applied in this study as well as reflections on the findings in light of existing literature. Furthermore, recommendations based on the findings of the study are presented in paragraph 7.4. Conclusively in paragraph 7.5 concluding remarks are presented regarding the contribution to practice and science.

7.1 CONCLUSIONS

This paragraph presents the conclusions of this study. First the aims of study and the research questions are revisited. Then, paragraph 7.1.2 contains a summary of the findings. Subsequently the research questions are answered in paragraph 7.1.3.

7.1.1 Aims of the study and research questions

The first aim of this study was to provide guidelines for tools on a tablet that are suitable to homecare nurses to support knowledge sharing and knowledge creation. Additionally, the second aim of this study was to design a prototype for the tablet to support knowledge sharing and knowledge creation between homecare nurses.

7.1.2 Summary of findings

Digital filing and communication between healthcare practitioners are matters that participants are eager to work with but the system on the tablet does not yet facilitate this. For example, the Electronic Client Dossier (ECD) will be rolled out over the coming year at Carinova. However, efficiency is advocated by all participants and the potential of the ECD is recognized by the homecare nurses. Accordingly, nurses argued the potential of ordering repeat-prescriptions by means of the tablet because it is much faster than making phone calls to the pharmacy and the GP. Additionally, participants would like to have a platform for inter-team role communication to share and create knowledge.

7.1.3 Research sub-questions answered

First the sub-questions are answered. Each guideline formulated in chapter 2 is addressed in the answers. Then in paragraph 7.2 the main research question is answered.

7.1.3.1 What is the current attitude of the homecare nurses towards tools on a tablet?

Homecare nurses recognize the potential of the tablet and the technology and tools that come with it. In this sense, the nurses have an open mind about the implementation of the technology. However, there are some concerns.

Findings indicate that nurses preferred to have more **training** regarding the tablet. Currently, some nurses argue that they do not fully understand how the tablet works and therefore they do not like to work with the tablet. This claim that the nurses make is in line with previous studies (e.g., Standing

& Standing, 2008) which indicates that lack of training hampers the adoption of technology. More specifically, nurses want more training regarding the tablet itself and also the programs and applications on the tablet. The guideline matching these wishes of the homecare nurses is the following: *Give the homecare nurses behavioural control.* For example, a training on how to use MS Office. Also, nurses feel that the helpdesk can be of more support to them and that they should be allowed to contact the helpdesk sooner (i.e. for simple questions). Again, this is a valid claim supported by previous studies to increase technology adoption (e.g., Zheng & Yuan, 2006). The guideline regarding systems should be taken into account: *Keep systems secure but simple.*

Additionally, concerning the **acceptance** of the tablet there seems to be a difference between the younger generation of nurses and the older generation. The nurses of the older generation do not seem to accept and adopt the tablet. A possible explanation could be linked to the transition from working with the PDA to working with the tablet. The guideline applicable to this situation is the following: *Control the subjective norm.*

Contrarily, regarding **client care**, homecare nurses see that they are now more prepared before entering a client's home. The nurses acknowledge that the ECD contributes to client care and therefore have a positive attitude regarding this technology. Additionally, this is in line with the guideline regarding client care: *Keep medical records up-to-date.*

7.1.3.2 Which functionalities do the homecare nurses desire for tools on a tablet?

The goal of the tablet, repeat-prescription and communication between healthcare practitioners, digital filing and inter-team role communication are addressed in this paragraph.

Goal of (tools on) the tablet

Most nurses are unaware of the goal to increase efficiency and therefore do not use the tablet as it was intended by management (planning and rostering). However, when the nurses acknowledge how the tablet can contribute to their work, they do want to use the tablet to increase efficiency. For example by means of a repeat-prescription service. Arguments that the nurses use is that ordering a repeat-prescription by means of the tablet is much more efficient than making phone calls to the pharmacy and the GP. Also, this is in line with the guideline regarding communication between healthcare professionals: *Enable digital requests that are logged.*

To summarize, the goal of the tablet according to management is to increase efficiency whereas this study indicates that for the homecare nurses the goal was unclear. However, when the nurses envision the potential of the tablet they recognize that increasing efficiency is enabled by means of the tablet.

ECD

Participants are eager to work with digital files. They see the potential of the ECD and are eager to work with a fully implemented ECD.

Sharing and creating knowledge

Additionally, participants would like to have a platform for inter-team role communication to share and create knowledge. Participants recognize that they are not alone in the woven network of Carinova and therefore they would like to learn from colleagues. The nurses argue that it is hard for

them to find colleagues that they can ask questions to and therefore a knowledge sharing platform is desired. Moreover, this is in line with the guideline regarding knowledge sharing and knowledge creation: *Provide opportunities to homecare nurses to learn through social interaction.*

7.1.3.3 What is the perceived added value by the homecare nurses of tools on a tablet?

Client care increases thanks to the systems on the tablet because nurses are more prepared when they enter a client's home. Additionally, nurses can use the technology as a database to call upon knowledge and therefore see the technology as added value to their job performance (Davis, 1989). This is in line with the guideline formulated for technology acceptance: *Homecare nurses must perceive the new technology as a tool that increases their job performance.*

As for **continuity of work**, nurses can access the Carinova Information System (CIS) and read the protocols that they require at that moment.

Communication between healthcare practitioners is what all participants would like to see improved and the participants see that the tablet can help to make this happen. A system that allows healthcare practitioners from different entities to communicate with each other about clients is desired. This approach for communication is supported by Graham et al. (2011) who argue for open systems among practitioners. The participants would like to work with a system like OZO because it allows for shorter lines regarding communication about clients.

7.2 GUIDELINES TO SUPPORT KNOWLEDGE SHARING AND KNOWLEDGE CREATION

The main research question is answered in this paragraph:

Which guidelines can be formulated for tools on a tablet that suit the homecare nurses of Carinova Deventer to support knowledge sharing and knowledge creation?

Table 7.1 summarizes the seven literature-based guidelines by constructs as formulated in chapter 2.

Table 7.1. **Literature-based guidelines**

Construct	**Guidelines**
Technology acceptance	Homecare nurses must perceive the new technology as a tool that increases their job performance
Technology adoption	Control the subjective norm
	Give the homecare nurses behavioural control
Communication	Enable digital requests that are logged
Client care	Keep medical records up-to-date
Conditions for systems	Keep systems secure but simple
Conditions for knowledge sharing and knowledge creation	Provide opportunities to homecare nurses to learn through social interaction

These guidelines are in line with the wishes and desires of the homecare nurses of Carinova, as was studied by means of the sub-questions.

7.3 REFLECTIONS

This paragraph presents the researcher's reflections regarding the method and the findings of this study.

7.3.1 Method

A lot of time during this study was spent on the literature review and the interviews and the analyses thereof. Consequently, there was not much time for the design of the prototypes and its testing. This will be explained in the following sections.

Feedback

Feedback on both designs was provided by the same three participants only. More feedback is desired to enhance implementation and sustainability according to the needs and wishes of the end-users. Now only a narrow picture of needs and wishes based on the prototypes are portrayed. Perhaps more feedback would have been obtained if the participants were asked about how they want to provide feedback in the analysis-phase. In hindsight, the researcher could have asked other people to function as critics, provided they have insight into the context of the study.

Data analysis

During this study the data was analysed by the researcher only. Inter-researcher reliability is therefore not established. This possibly hampers the objectivity of the study's findings, however much caution was taken to enhance objectivity during the coding of the transcripts. The method of data analysis is explained in chapter 3.

Use of tablet and ECD

Because the Electronic Client Dossier is not yet fully implemented it was hard for participants to envision the potential of the tablet. However, due to the method of Appreciative Inquiry and the application of the 4D-model (discover, dream, desire and destiny) the nurses were able to think positively about the potential of the tablet. Perhaps this study can acquire more focused results in the future when nurses have more experience in working with the tablet and the ECD.

Appreciative Inquiry and 4D-model

The choice for AI and the application of the 4D-model turned out to be very suitable to this study. The 4D-model allowed participants to experience different the different phases of discovery, dream, desire and destiny during the interviews. The AI approach was not only suitable to this method, it also fitted well with the participants of this study. Probably because homecare nurses are by nature sociable people and like to feel valued for their opinions. This suited the qualitative nature of this study very well.

Prototypes

If there had been more time, this study could have produced more versions of the prototypes. Consequently, only one version of each prototype was presented to the participants. This was a deliberate choice by the researcher because the focus of the study lay with participants' needs and desires and the analyses of their needs and desires.

7.3.2 Findings in light of existing literature

The guidelines that are formulated are in line with existing literature and are suitable to the context of Carinova and the participants of this study. It was striking to see that the complaints of homecare nurses already had foundation in existing literature which helped to build a strong case to argue for the homecare nurses needs and desires.

An interesting finding of this study is regarding nurses' perception of how a tablet influences client care. According to a previous study (Standing & Standing, 2008) working with clients becomes less personal due to the tablet. However, most nurses of Carinova Homecare argue that because of proper preparation before entering a client's home, they have more time to focus on clients and care becomes more personal.

7.4 RECOMMENDATIONS

This paragraph presents the recommendations based on the experiences of this study.

Blended learning

An issue argued by the homecare nurses was the matter of how the tablet was implemented. The nurses did not have say in the time path nor in the trainings aligned with the implementation of the tablet and learning how to work with a tablet. According to literature and the guidelines that this study formulated, a suitable approach is that of blended learning. This means that the nurses decide how they want to receive training for the tablet, tools and systems on the tablet (Regan & Delaney, 2011).

Repeat-prescription service

Needs and wishes of GP's and pharmacists should be researched to discuss adoption and implementation of the repeat-prescription service. Additionally, within Carinova Homecare, ICT should be involved in the construction of the program for **implementation into the ECD**. Furthermore, regarding quality and safety issues, it should be investigated whether the medication safety bar is upheld by such a program on the tablet. However, if the repeat-prescription of a client concerns lotions or bandages such safety protocols are not required. Therefore it is worth investigating what the options are regarding quality and safety and repeat-prescriptions. It is not advised to separate the repeat-prescriptions for medication and other appliances such as bandages because this complicates the work processes of nurses (guideline simplicity).

Because the repeat-prescription service is a simple design, it is recommended to study this design further with a small focus group scattered throughout the Carinova work area. Self-selection of participants is advised to reach the early adapters.

Caribook

The feedback provided by participants was very positive and Caribook is perceived as useful. This perceived usefulness is one of the conditions for adoption by its users. Currently, Caribook has basic functionalities to support knowledge sharing. Not only does knowledge sharing and creation contribute to competitive advantages (McEvily et al., 2000), this way of learning is more cost-effective compared to formal trainings and meetings (Azudin et al., 2009).

Feedback of participants indicates that participants see much potential for a wider application of Caribook (functionalities and organisation-wide). However, it is not recommended to spread Caribook with too many functionalities initially. Also, it is not advised to spread Caribook during

testing throughout the whole of Carinova (e.g. Woonzorg). The reasoning behind this is that Caribook is currently designed to the needs of Homecare only and the nurses of Woonzorg did not participate in this study.

During testing the focus must remain with sharing knowledge, creating knowledge and its components (sharing, networking, asking questions). First, the nurses have to learn how to use Caribook and its functionalities regarding knowledge sharing and knowledge creation without distractions. Awareness by nurses of the purpose of Caribook is the first goal. However, in line with the guidelines, some fun components like birthdays should be included to appeal to the nurses interests.

In a later stage of the evaluation other functionalities could be applied, for example practicalities like carpooling when attending events.

For the testing phase, it is important to research how do nurses want to reflect, this could be individually, digitally, face-to-face, through questionnaires, in groups, etc.

7.5 CONCLUDING REMARKS

This paragraph presents the contribution of this study to practice and science.

7.5.1 *Practical contribution*

The healthcare sector faces the necessity to work more efficiently, therefore this study formulated practical guidelines that healthcare organizations can use to develop ICT tools that suit the needs of homecare nurses regarding knowledge sharing and knowledge creation. These guidelines are presented in Table 7.1.

7.5.2 *Scientific contribution*

This study aimed to build efficient and innovative prototypes for the tablet. This study built on previous research (Bogossian et al., 2009; Boruff & Storie, 2014; Estrin & Sim, 2010; Kho et al., 2006) in which a tablet was perceived as useful and easily accessible by medical practitioners for **learning and sharing knowledge** (Wasko & Faraj, 2005). A tablet is found accessible and convenient due to its portability and size (Boruff & Storie, 2014), and therefore it is easy to engage in activities to share and create knowledge. Hence, in this study the tablet was chosen as the tool to design the prototypes for.

Caribook

The prototype built for knowledge sharing and knowledge creation in this study was Caribook. Caribook was designed according to guidelines based on literature, hence, accessibility and simplicity were key in the design. Additionally, Graham et al. (2011) assert that sharing knowledge, methods and tools among healthcare practitioners is facilitated if ICT systems are open systems. This study investigated homecare nurses' desires for tools on a tablet and as such this study confirmed that nurses have the desire to increase efficiency and communicate effortlessly with other healthcare practitioners.

Repeat-prescription service

The repeat-prescription service was not an initial aim of this study, however the design of the prototype is innovative and adds to previous studies to produce efficient tools to enhance communication between healthcare practitioners. The guidelines on which the repeat-prescription service is based have potential implications for future tools like this. Specifically the guideline to *keep systems secure but simple*. Questions arise about in what kind of system a tool like this will be placed. Is it possible to make an external system or is it better to place it within existing systems? In the context of Carinova the tool would be placed within the ECD. Consequently, all healthcare parties that are involved with clients are already in the system. Therefore, such a tool upholds the security standards already in place and it is also easy for healthcare practitioners access.

Client care

The finding of this study regarding nurses' perception of how a tablet influences client care is not in accordance with previous studies. According to Standing and Standing (2008) working with clients becomes less personal due to a tablet. However, the findings of this study suggest that tablet usage could, in fact, increase personalization. This is based on the participant observation that proper preparation before entering a client's home allows for more time for clients when they arrive at the client's home. Thus, care becomes more personal. Both the Standing & Standing study and the current study were of qualitative nature, therefore, because of the contradictions it is interesting to study this concept further. Perhaps in future studies clients' perceptions regarding this matter can also be studied. Not only are the clients the ones who receive the care, it is expected that in the future clients will also use tablets. Questions arise about how clients can be involved to increase the quality of care. What are the clients' preferences regarding the use of tablets and do clients envision that a tablet could be of added value?

7.5.3 *Closing arguments*

We live in a world in which healthcare is under great duress due to governmental budget cuts. This study contributed to the knowledge base to find ways to increase healthcare efficiency. Concurrently, the prototypes and the guidelines of this study offer an opportunity to study further how and if homecare nurses' knowledge sharing behaviour is influenced by the use of tablets.

REFERENCES

Azudin, N., Ismail, M. N., & Taherali, Z. (2009). Knowledge sharing among workers: a study on their contribution through informal communication in Cyberjaya, Malaysia. *Knowledge Management & E-Learning: An International Journal (KM&EL)*, *1*(2), 139-162.

Benbasat, I., & Barki, H. (2007). Quo vadis TAM?. *Journal of the association for information systems*, *8*(4), 7.

Bogossian, F.E., Kellett, S. E., & Mason, B. (2009). The use of tablet PCs to access an electronic portfolio in the clinical setting: A pilot study using undergraduate nursing students. *Nurse education today*, *29*(2), 246-253.

Boruff, J.T., & Storie, D. (2014). Mobile devices in medicine: a survey of how medical students, residents, and faculty use smartphones and other mobile devices to find information. *Journal of the Medical Library Association: JMLA*, *102*(1), 22-30.

Brinck, T., Gergle, D., & Wood, S. D. (2001). *Usability for the Web: designing Web sites that work*. Morgan Kaufmann.

Büchel, B., & Raub, S. (2002). Building knowledge-creating value networks. European Management Journal, 20(6), 587-596.

Chua, A. (2003). Knowledge sharing: A game people play. *Aslib Proceedings, 55*(3), 117 – 129.

Cooperrider, D. L., & Whitney, D. (2001). A positive revolution in change: Appreciative inquiry. *Public administration and public policy*, 87, 611-630.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS quarterly*, 319-340.

Eraut, M. (2004). Informal learning in the workplace. *Studies in continuing education, 26*(2), 247-273.

Estrin, D., & Sim, I. (2010). Open mHealth architecture: an engine for health care innovation. Science (Washington), *330*(6005), 759-760.

Farkas, D.K. & Farkas, J.B. (2000). Guidelines for designing web navigation. Technical Communication, 47(3), 341-358

Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, 1360-1380.

Graham, S., Estrin, D., Horvitz, E., Kohane, I., Mynatt, E., & Sim, I. (2011). Information technology research challenges for healthcare: From discovery to delivery. *ACM SIGHIT Record*, *1*(1), 4-9.

Hansen, M. T. (1999). The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Administrative science quarterly*, *44*(1), 82-111.

Hara, N., & Hew, K.F. (2007). Knowledge-sharing in an online community of health-care professionals. *Information Technology & People*, *20*(3), 235-261.

Van der Haar, D. & Hosking, D., M. (2004). Evaluating Appreciative Inquiry: A Relational Constructionist Perspective. *Human relations, 57*(8), 1017-1036.

Van der Horst, A., van Erp, F., & de Jong, J. (2011). Trends in gezondheid en zorg. *CPB Policy Brief*, (2011/11).

In voor zorg!, (2014). *Van 'zorgen voor' naar 'zorgen dat' bij Florence.* Retrieved August 8th 2015. http://www.invoorzorg.nl/ivz/interview-van-zorgen-voor-naar-zorgen-dat-bij-florence.html

Kho, A., Henderson, L. E., Dressler, D. D., & Kripalani, S. (2006). Use of handheld computers in medical education. *Journal of general internal medicine*, *21*(5), 531-537.

Kurtz, C. F., & Snowden, D. J. (2003). The new dynamics of strategy: Sense-making in a complex and complicated world. IBM systems journal, 42(3), 462-483.

McEvily, S. K., Das, S., & McCabe, K. (2000). Avoiding competence substitution through knowledge sharing. Academy of Management Review, 25(2), 294-311.

McKenney, S.E., & Reeves, T. C. (2013). *Conducting educational design research*. Routledge.

McKnight, L. K., Stetson, P. D., Bakken, S., Curran, C., & Cimino, J. J. (2002). Perceived information needs and communication difficulties of inpatient physicians and nurses. *Journal of the American Medical Informatics Association*, *9*(Supplement 6), S64-S69.

Melby, L., & Hellesø, R. (2014). Introducing electronic messaging in Norwegian healthcare: Unintended consequences for interprofessional collaboration.*International journal of medical informatics*, *83*(5), 343-353.

Mendonça, E. A., Chen, E. S., Stetson, P. D., McKnight, L. K., Lei, J., & Cimino, J. J. (2004). Approach to mobile information and communication for health care. International journal of medical informatics, 73(7), 631-638.

Mertens, D. M. (2014). *Research and evaluation in education and psychology*. Sage.

Morris, M. G., Venkatesh, V., & Ackerman, P. L. (2005). Gender and age differences in employee decisions about new technology: An extension to the theory of planned behavior. *Engineering Management, IEEE Transactions on*,*52*(1), 69-84.

Muskat, M., Blackman, D. A., & Muskat, B. (2012). Mixed methods: Combining expert interviews, cross-impact analysis and scenario development.*The Electronic Journal of Business Research Methods*, *10*(1), 9-21.

Norris, B., Currie, L., & Lecko, C. (2012). The importance of applying human factors to nursing practice. *Nursing Standard*, *26*(32), 36-40.

Onwuegbuzie, A. J., Leech, N. L., & Collins, K. M. (2012). Qualitative analysis techniques for the review of the literature. *The qualitative report*, *17*(28), 1-28.

Reardon, R. F. (2004). Informal learning after organizational change. *Journal of Workplace Learning*, *16*(7), 385-395.

Regan, E., & Delaney, C. (2011). Brave New Workplace: The Impact of Technology on Location and Job Structures, *The SAGE handbook of workplace learning*, 431-442. London: SAGE Publications Ltd.

Rijksoverheid, (n.d.). *Langer zelfstandig wonen ouderen.* Retrieved January 24, 2015, from http://www.rijksoverheid.nl/onderwerpen/ouderenzorg/ouderen-langer-zelfstandig-wonen.

Russ-Eft, D. (2011). Towards a meta-theory of learning and performance. In M. Malloch, L. Cairns, K. Evans, & B. O'Connor (Eds.), *The SAGE handbook of workplace learning,* 120-132. London: SAGE Publications Ltd.

Salkind, N. J. (Ed.). (2010). *Encyclopedia of research design* (Vol. 1). Sage.

Sicotte, C, Pineault, R., & Lambert, J. (1993). Medical team interdependence as a determinant of use of clinical resources. *Health services research*, *28*(5), 599-609.

Smith, P.L. & Ragan, T.J. (2005). *Instructional design (3rd ed.).* Hoboken, New York: John Wiley & Sons.

Standing, S., & Standing, C. (2008). Mobile technology and healthcare: the adoption issues and systemic problems. *International journal of electronic healthcare*, *4*(3-4), 221-235.

Steinlin, M. (2005). Knowledge management Feng Shui: Designing knowledge sharing-friendly office space*. KM4D Journal, 1*(2), 108-112.

Venkatesh, V., Morris, M. G., & Ackerman, P. L. (2000). A longitudinal field investigation of gender differences in individual technology adoption decision-making processes. *Organizational behavior and human decision processes*,*83*(1), 33-60.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Von Krogh, G., Ichijo, K., & Nonaka, I. (2000). *Enabling knowledge creation: How to unlock the mystery of tacit knowledge and release the power of innovation*. Oxford University Press.

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS quarterly*, 35-57.

Wilkowska, W., Gaul, S., & Ziefle, M. (2010). *A Small but Significant Difference–The Role of Gender on Acceptance of Medical Assistive Technologies* (pp. 82-100). Springer Berlin Heidelberg.

Yu, T. K., Lu, L. C., & Liu, T. F. (2010). Exploring factors that influence knowledge sharing behavior via weblogs. *Computers in Human Behavior*, *26*(1), 32-41.

Zheng, W., & Yuan, Y. (2006). Identifying the differences between stationary office support and mobile work support: a conceptual framework. *International Journal of Mobile Communications*, *5*(1), 107-122.

APPENDICES

Appendix A: Interview instrument

Attitude regarding the tablet		Perceived usefulness	
Acceptance: how do you want to learn to handle the tablet?		What can you do now that you couldn't do before you had the tablet?	
Awareness of functionality		It would be great if I could have this on the tablet…	

How can the tablet contribute to work improvement?

Perceived added value of the tablet					
Digital filing	Communication between parties	Client care	Acquiring and sharing knowledge with colleagues	Continuity of work	
Client data is real-time available to all parties involved	More efficient	Fewer hospital visits	Goals of knowledge sharing	Calling upon instruction and knowledge	
Conditions Obstructions	Conditions Obstructions	Conditions Obstructions	Conditions Obstructions	Conditions Obstructions	
Automatic documentation of requests ➔ gives requests more weight	F2f-communication is necessary (for example to maintain relationships between nurses and GP's)	(Fear) Less personal attention to clients	Practice - Fun/fulfilment - A lot/little - Virtual community	Concrete examples of tasks (for example putting on compression stockings or giving a client an injection)	
	Fewer errors by nurses because of immediate access to information and the possibility of communication.				

Houding t.o.v. de tablet	Waargenomen bruikbaarheid / doel van de tablet
Acceptatie: hoe wil je leren om met de tablet om te gaan?	Wat kan je nu wel dat je niet kon voordat je de tablet had?
Bewustzijn van functionaliteit	Het zou mooi zijn als ik dit op de tablet kon krijgen…

Hoe kan de tablet bijdragen aan werkverbetering?

Toegevoegde waarde / mogelijke opbrengsten van de tablet

Dossiervorming	Communicatie tussen partijen	Verzorging van cliënten	Vergaren en delen van kennis met collega's	Continuïteit van het werk	
Cliëntdata is realtime en beschikbaar voor alle betrokkenen	Efficiënter	Minder ziekenhuisbezoek	Doel van kennisdelen	Oproepen van instructiemateriaal	
Voorwaarden Belemmeringen	Voorwaarden Belemmeringen	Voorwaarden Belemmeringen	Voorwaarden Belemmeringen	Voorwaarden Belemmeringen	
Automatische documentatie van verzoeken ➔ geeft een verzoek meer gewicht	F2f-communicatie nodig voor onderhouden van relaties (bijv. tussen verzorging en huisarts)	(Angst) Minder persoonlijke aandacht voor cliënten	Praktijk - Plezier/voldoening - Veel/weinig - Virtuele community	Concrete voorbeelden verpleegtechnisch handelen (bijv. schoonmaken van injectienaald, infuus aanbrengen)	
	Minder fouten door verzorging vanwege toegang tot informatie en mogelijkheid tot communicatie				

Appendix B: Coded and transcribed interview

Transcript 3. Verzorgende C			
#	I/P	Uiting	Code
1.	I	Wat betekende dat voor jou toen de tablet werd ingevoerd?	
2.	P	Ik zal even zeggen hiervoor hadden we de pda. Daar was ik helemaal gestresst van. Ik ben echt anti-techniek. Ze noemen me superdigibeet. Dus daar liet ik me helemaal gek door maken. En toen kwam de tablet en toen dacht ik 'nou, ik heb die pda geleerd ik heb je pc geleerd dit gaat me ook lukken.'	Intentie
3.	I	En?	
4.	P	Het is mijn ding niet en wordt het nooit. Ik vond het systeem zoals het kwam, we geen goede voorlichting gehad hebben. wel hoe je het moet instellen maar niet hoe ga je er mee om.	Voorlichting
5.	I	Bedoel je ook het systeem, het planningssysteem, je route, dat soort dingen?	
6.	P	Ja het werken met het ding kwam niet aan de orde. Alleen het instellen. En toen hadden we heel veel tijd dat het niet goed werkte. Dat vind ik veel onrust geven. Want dat weet ik niet of het aan mij ligt en dat maakt je onzeker.	Voorlichting
7.	I	Dat begrijp ik.	
8.	P	En je moet ook denken er wordt hard aan gewerkt iedereen doet zijn best om het systeem goed te krijgen.	Acceptatie
9.	P	Het heeft ook geen zin om je nog te verzetten tegen deze dingen. Het hoort erbij. Het is de tijd. Het is communicatie van nu. Zo moet je er mee omgaan.	Acceptatie
10.	I	Je hebt een hele positieve instelling.	
11.	P	Ja ik vind het meer een nuchtere instelling maar het wordt nooit mijn ding. Geef mij maar een papiertje dat neem ik ook 10x makkelijker op. Als ik wat gelezen heb dat hangt en zit erin, en tablet lees ik overheen. Dan lees ik berichten wel 3x en dan denk ik ooooh ja.	Intentie
12.	I	Kan je een voorbeeld geven dat je je tablet gebruikt tijdens je werk?	
13.	P	Ik toets hem keurig in en uit voor de tijd. We doen geen bereikbare diensten dus je hoeft niet meer op te zoeken wie ergens naar toe gaat. Eerder ging je nog wel eens kijken als clienten vroegen van wie komt er morgen en hoe laat. We hebben afgesproken dat we dat niet meer doen. Dus dat hoeft ook niet meer. Verder gebruik je hem eigenlijk voor je lijst en in en uit klokken.	Adoptie
14.	P	Alleen voor mijn werk ga ik altijd kijken bij wie ik werk, of er berichten zijn.	Adoptie
15.	I	En dat is ook op de tablet?	
16.	P	Ja.	
17.	I	Dus voordat je begint aan je dienst ga je eerst kijken van wat staat me te wachten vandaag of zijn er nog vragen gesteld?	
18.	P	Ja. Even de berichten door en de routes, wie er ook werken, wie bereikbaar zijn, dat soort dingen.	Adoptie
19.	I	En je hebt ook een mobieltje erbij gekregen, wat vind je daarvan?	
20.	P	Prima.	Adoptie
21.	I	Gebruik je ook?	
22.	P	Ja.	Adoptie

23.	I	En als je mocht kiezen tussen de PDA en nu de tablet en de mobiel, wat kies je dan?	
24.	P	Dan ga ik er vanuit het tabletsysteem werkt, dat ie doet wat ie moet doen… Tablet met telefoon.	Acceptatie
25.	I	Hoe komt dat?	
26.	P	Ik denk vanwege de mogelijkheden.	Intentie
27.	I	Mogelijkheden die de pda niet had?	
28.	P	Ja.	Acceptatie
29.	I	Wat voor mogelijkheden zijn dat?	
30.	P	Andere manier van berichten. Ik vind het nu nog onoverzichtelijk. Veel te veel plekken	Onoverzichtelijk
31.	I	Je weet niet waar je moet zoeken?	
32.	P	En je kunt ze niet verwijderen. Dus er staan ontzettend veel berichten in.	Onoverzichtelijk
33.	P	Ja ik heb het ook doorgegeven en ze zeiden 'we gaan er echt aan werken maar we hebben andere prioriteiten'.	
34.	I	Maar je zegt de berichten dat is nu beter dan op de pda?	
35.	P	De mogelijkheden zijn meer denk ik. Je kunt groepsapps of hoe heet het, dat had je toen niet erop en daar zie ik voordelen in omdat we in groepen werken. Dan kun je per groepje je berichten doen. Het apparaat is wat groter je moet gewoon je tas mee dat is een **nadeel** maar het werkt rustiger.	Communicatie Formaat
36.	I	Het heeft voor- en nadelen?	
37.	P	Ja het andere apparaatje was handzamer en het voordeel was dat je er minder mee kon want dan hoefde je ook minder!	Adoptie
38.	I	Dat is zo! Goed beredeneerd!	
39.	I	Je zei meer mogelijkheden, we hadden het over de berichten. Heb je nog meer ideeën van mogelijkheden. Wat kan de tablet voor jou?	
40.	P	Je hebt je planning vind ik vrij duidelijk. Het is overzichtelijk en je kan op je tablet makkelijker je planning afhandelen.	Planning Ease of use
41.	I	Zijn er nog dingen die je zou willen leren om beter om te gaan met de tablet?	
42.	P	Ja ik heb gewoon de cursus gemist en dat moesten we heel veel van elkaar leren. Zo van, je moet ruilen maar dan had je geen verbinding en dan kon je niet ruilen. En dan kwam er iemand die zei je kunt veel beter annuleren en dan moet je er even inzetten hoe je clienten ging zoeken en tijden verdelen hadden we met zijn allen niet door. Dat vind ik heel jammer. Dat dat niet is geweest.	Voorlichting
43.	I	En nog steeds is het een beetje vaag als ik het zo hoor?	
44.	P	Ja wat we er mee doen kun je zelf prima ontdekken.	Adoptie
45.	P	Alleen nog 1 ding, kunnen ze de updates automatiseren, dat ze vanzelf gaan?	Voorlichting
46.	I	Ik zal het meenemen!	
47.	P	Mijn computer heb ik daarop ingesteld. Altijd updates met dat ding.	
48.	I	Je pc thuis doet dat automatisch?	
49.	P	Ja	
50.	I	Maar je tablet doet dat niet?	
51.	P	Nee. Dat heb ik ergens automatisch updates instellen. Maar zo'n tablet moet dat gewoon kunnen.	Voorlichting
52.	I	Ja dat lijkt mij ook. Maar je weet niet hoe?	

53.	P	Nee! Kijk zo'n 1000, 1500 man hoeft dat dan niet meer te doen. Dan kunnen ze toch even een programmaatje doen.	Voorlichting
54.	I	Ja inderdaad er zijn mensen die weten niet hoe het moet, of het automatisch kan en er zijn mensen die vergeten het en dan wordt de tablet niet meer geupdate en dan werken de systemen niet meer dus dan zou het beter zijn als het in 1x gebeurt.	
55.	P	Ja automatisch bij iedereen.	Voorlichting
56.	I	Ja daar gaat het om hè, automatisch, daarom hebben we die tablet.	
57.	P	Precies!	
58.	I	Oke. Heel goed punt.	
59.	P	Vond ik zelf ook.	
60.	I	In jouw beleving, wat is volgens jou het doel van de tablet?	
61.	P	Ik denk geldbesparing. En personeelsbesparing. Ik denk dat dat het doel is.	Doel
62.	I	Duidelijk.	
63.	I	En wat kan je nu wel dat je niet kon voordat je de tablet had?	
64.	P	In het werk?	
65.	I	Ja.	
66.	P	Misschien ben je wat snel met je onderzoek, want wat er in zit dat is een clientendossier en die is bijna nog niet ingevuld. Dan klik je een cliënt aan maar dan staat er niet veel in.	ECD
67.	I	Misschien een korte anamnese?	
68.	P	Zelfs dat nog niet. En ik denk dat we daar veel mogelijkheden liggen als we daarmee kunnen gaan werken, gaan werken.	ECD
69.	I	Daar zie jij mogelijkheden.	
70.	P	Beslist. Ja. Want dan hoef je niet eerst naar de cliënt om de zorgmap. Want volgens mij is het uiteindelijke doel om de zorgmap af te schaffen.	ECD
71.	I	Dat denk ik ook.	
72.	P	Heb ik een beetje mijn twijfels over ik vind niet dat je alles digitaal moet doen. Het moet dicht bij de Mensen blijven. Mensen hebben recht om het zelf in te kijken. Die kijken niet in jouw tablet.	Toegankelijkheid
73.	I	Dat klopt.	
74.	P	En dat vind ik het grote nadeel eraan. De eigen rechten van mensen. Dus ik vind dat je de zorgmap moet blijven gebruiken maar daar ben ik misschien een eenling in.	Toegankelijkheid
75.	I	Dat weet ik niet.	
76.	P	Maar daar zie ik voordelen in. Dan kun je van tevoren inlezen of wat toevoegen.	ECD
77.	I	Wat opmerkingen toevoegen?	
78.	P	Ja. En ik dacht het uiteindelijke doel ook was dat andere hulpverleners digitaal ermee samen gingen.	OZO
79.	P	Dat vind ik nu een voordeel als een nadeel.	
80.	I	Want?	
81.	P	Ik denk dat heel veel dingen algemeen kunnen worden en wat je gelezen hebt vorm je een oordeel over. En ga je met alle hulpverleners op 1 systeem zitten wordt het oordeel eenzijdig. Ben ik bang voor. Misschien voor niks.	ECD
82.	I	Ik begrijp wel hoe je denkt. Want je leest iets op een bepaalde manier en als iedereen het op dezelfde manier leest dan raak je	

		misschien wat creativiteit kwijt of je eigen zienswijze.	
83.	P	Ja. Een heel simpel voorbeeld. Bijvoorbeeld mr is vergeetachtig. Je hebt meteen een beeld en je gaat er ook naar handelen. En als je gaat ontdekken dat iemand vergeetachtig is dan zie je waar wel, waar niet. Wat weet ie wel wat weet ie niet. Als je het gelezen hebt is al een stukje van je ontdekking weg. En ga je dat over alle hulpverleners inzichtelijk maken zie ik ook nadelen.	ECD
84.	I	Je moet mensen hun eigen oordeel laten vellen, is dat wat je bedoelt?	
85.	P	Ja. En over het systeem, heb ik mijn bedenkingen dat die dingen toch best veel nadelen kunnen hebben.	ECD
86.	I	Dus dan als ik even hardop denk. Dan zou het of zo moeten zijn dat je zegt elke hulpverlener die leest het maar is zich bewust van vooroordelen. Of sommige dingen zet je er gewoon niet in.	
87.	P	Ja is meer mijn sterke ding. Want nu heb je bijvoorbeeld een rapportage alles staat erin. Maar zo'n rapportage zou ik zeker niet onder alle hulpverleners verspreiden. Een evaluatie kan wel maar bijvoorbeeld een rapportage niet want dat is een momentopname. Nu denk ik in de toekomst waar het systeem naartoe moet.	OZO
88.	I	Heel goed heel kritisch dat is belangrijk.	
89.	P	Ja!	
90.	I	Dan gaan we het hebben over dossiervorming. Al beetje over gehad. Gebeurt digitaal. Wat zijn de voorwaarden voor digitale dossiervorming?	
91.	P	Ik vind allereerst wat ik net ook genoemd heb dat een cliënt inzicht heeft of kopieen of het na kan lezen. Hoe dan ook. Er zal iets op papier moeten of we moeten alle clienten tablets geven. Sommige clienten hebben computers.	Toegankelijkheid
92.	P	En verder vind ik 1 systeem van rapporteren beter. Dan moet alles op 1 systeem.	ECD
93.	I	Dus dat je niet meer op verschillende plekken gaat rapporteren?	
94.	P	Ik bedoel dat iedereen die ermee werkt op dezelfde manier het systeem gebruikt. Volgens duidelijke afspraken en richtlijnen.	ECD
95.	I	Wat is een voordeel van het digitale dossier?	
96.	P	Voordeel vind ik dat je je kunt inlezen. Bij een cliënt is vaak toch heen en weer. Dat je een beeld hebt van tevoren. Verder vind ik het voordeel als team, je collega's weten het ook.	ECD
97.	I	Ik denk de communicatie is makkelijker over de clienten?	
98.	P	Ja. Breder. Zo kun je het samenvatten.	ECD
99.	I	En stel nu dat de huisarts, mantelzorger, apotheker, in het dossier kunnen. Wat voor voordelen zou dat kunnen opleveren?	
100.	P	Weinig.	OZO
101.	I	Weinig? Dus wel iets?	
102.	P	Ja. Ik ben altijd heel sterk voor dat we veel meer met de HV gingen samenwerken omdat je een HV is er een hele morgen en krijgt veel meer signalen. Ik vind het heel jammer dat het nu uit elkaar ligt. Dus daar zie ik de voordelen wel.	
103.	P	Vroeger hadden we ook 1 map.	
104.	I	Ook voor de huishouding?	
105.	P	Ja. Jammer dat het uit elkaar getrokken is.	
106.	P	Verder met huisartsen apotheker weet ik veel wat ontneem je de	Privacy

		cliënt het recht, kijk niet iedereen hoeft te weten of iemand in de broek plast.	
107.	I	De cliënt beslist zelf wie toegang heeft tot het dossier. Als de cliënt toestemming heeft gegeven krijgt die persoon alles mee. Maar je kan het niet telkens aan en uit blijven zetten.	
108.	P	Maar stel bij psychische begeleiding of fysiotherapeut. Ik kan me voorstellen dat je dan niet alles kwijt wil maar dat je bijvoorbeeld zegt dit en dat mogen ze weten, veel pijn, die dingen kunnen toegevoegde waarde hebben. maar of een fysio nou weet of je in de broek geplast hebt is niet van belang. Dus ik denk dat je enorm veel privacy issues hebt.	Privacy
109.	I	Ozo verbind zorg? Dat is het platform waar iedereen inzit. Alleen partijen zitten erin waarvan de cliënt toestemming geeft. Dus privacy is voor getekend door de cliënt. Is dat wat je bedoelt?	
110.	P	Ja ik denk het wel.	OZO
111.	I	Heb jij wel eens contact met een huisarts van een cliënt.	
112.	P	Ik probeer het altijd door de cliënt te laten doen maar soms wel.	Zelfredzaamheid
113.	I	Kan je een voorbeeld geven?	
114.	P	Pas nog. Maagbloeding. Er was al 1 van de kinderen en toen kwam de huisarts binnen.	Huisarts
115.	I	En als je een huisarts belt of een assistent. Heb je dan nog wel eens last van problemen of dat je ze niet te pakken krijgt?	
116.	P	Nee over het algemeen zijn ze goed bereikbaar. Op maandagmorgen moet je wel eens 3x bellen, maar het is reëel.	Huisarts
117.	I	Digitaal verzoek aan huisarts. Verzorgende zei, ten eerste moet ik de huisarts bereiken, 3x bellen, lang in de wacht, je stelt de vraag, maar je doet het telefonisch en soms wordt je verzoek vergeten. Doordat ik het verstuur via de tablet staat het meteen zwart op wit en de huisarts kan het pas afvinken op het moment dat hij het werk gedaan heeft. Kan je je daar iets bij voorstellen?	
118.	P	Ja. Ik vind het een voordeel op simpele dingen, bijvoorbeeld een herhalingsrecept. Dat is ideaal. Het is een nadeel en zou zelfs langer kunnen duren doordat nu telefonisch krijg je altijd vragen. Ze hebben een vaste riedel aan vragen. Dan heb je geen contact gehad, maar dan zou er een bericht terug kunnen komen en dan ben jij al niet meer bij de cliënt.	Herhaalrecept
119.	I	Dus dan gaat er weer een dag overheen?	
120.	P	Ja.	
121.	I	Heel kritisch!	
122.	P	Ook voor een nadelen hoor. Want als je iemand spreekt dan krijg je altijd iets wat je net niet vertelt.	Bellen
123.	I	Dus voor simpele dingen wel, complexere dingen niet. Dan is het beter telefonisch of f2f.	
124.	P	Ja. De helft van de tijd heb je toch of de huisarts langs kan komen. Kan hij even komen kijken.	Bellen
125.	P	Of er moet een vragenlijst zijn die je in kan vullen. Een simpele vragenlijst die je snel in kan vullen. Kijk stel dat ik een diabetische wond zie, en ik kan een lijst afvinken van is het rood, blauw of groen, of is er koorts of wat ook dan vind ik dat het kan. Want dan heeft de huisarts de informatie die hij wil. Maar complexe problemen, telefonisch.	Huisarts

126.	P	En het is persoonlijk toch?	Bellen
127.	I	Je hebt beter contact?	
128.	P	Maar ook een cliënt die al jaren heel benauwd is of zo en je belt is wat anders die voor het eerst benauwd is. En die dingen komen digitaal niet allemaal over.	Bellen
129.	I	Er gaat digitaal veel verloren?	
130.	P	Ja.	
131.	I	Dat zijn gevaren waar ik denk ikzelf en anderen misschien heel makkelijk over denken, van even via de tablet. Maar je hebt gelijk, veel belangrijke informatie wordt niet meegezonden.	
132.	P	Nee! En wat ik net ook zei, het persoonlijke, wat bij de 1 gevaarlijk is hoeft bij een ander niet iets voor te stellen. En een huisarts kent een cliënt en ik ook en even overleggen vind ik meer voordelen hebben dan digitaal, soms. Maar bijvoorbeeld jij een rode teen ofzo kan je zo 10 vragen over invullen, diabetes, koorts, weet ik veel wat. Daar zie ik voordelen in.	Huisarts
133.	I	Van het bellen is het lastige dat je wel bij de cliënt moet zijn en de ander moet op dat moment beschikbaar zijn. Je moet een beetje geluk hebben denk ik?	
134.	P	Ja.	
135.	I	Het is wel een uitdaging denk ik. Aan de ene kant digitaal dan doe je het en je bent klaar en je gaat verder met je werk. En als je moet bellen en er wordt niet opgenomen dan loop je eigenlijk ergens tegenaan.	
136.	P	Ja.	
137.	I	En het digitale is niet zo compleet als het bellen.	
138.	P	Nee.	
139.	I	Dus het is een weegschaal hè?	
140.	P	Ja ik kan me voorstellen dat het hartstikke leuk is om dit onderzoek te doen!	
141.	I	Het doel is dat ik iets ontwerp voor op de tablet dat jouw werk en van je collega's makkelijker kan maken. Het moet niet alleen makkelijker zijn. Het moet ook kritisch zijn en volledig. Dus ik vind het heel leuk wat je allemaal te zeggen hebt.	
142.	P	Bij ons in het team Anna en Loes enzo die zijn niveau 5 en ik ben gewoon C. maar dat maakt ook echt verschil qua kennis qua werk wat je hebt.	Adoptie
143.	I	Maar dat is juist leuk dan krijg ik meer beeld van wat speelt er nu bij jullie allemaal.	
144.	I	Volgende stukje gaat over communicatie. Ik heb hier staan, persoonlijk contact, f2f. goede relatie onderhouden bijv. tussen verzorging en de huisarts. Heb jij daar wel eens iets van gemerkt, over contact met de huisarts? Kun je daar iets over vertellen.?	
145.	P	Tot nu toe altijd telefonisch of persoonlijk. Ja over het algemeen gaat dat goed. en me ook wel duidelijk maken.	Bellen
146.	I	Goed om te horen.	
147.	I	Verzorging van de clienten. Daar draait het om. Het uiteindelijke doel zou moeten zijn de verzorging van de clienten. Wat draagt de tablet bij aan de verzorging van de clienten?	
148.	P	Ik denk een snellere informatievoorziening. En breder.	Informatie-voorziening

149.	I	Bredere informatievoorziening?	
150.	P	Ja.	
151.	I	Kun je voorbeelden noemen?	
152.	P	Je kunt je van tevoren op de tablet inlezen. Anders moest je afwachten wat er in de map staat. Sneller denk ik, voorbeeld, als een cliënt overlijdt dan heb je dat gewoon als kennis, dat kun je op de tablet zetten, mevrouw is overleden. Is soms heel waardevol.	ECD
153.	P	Clienten die afzeggen, dan kan je zien waarom die niet op de lijst staat.	ECD
154.	P	Het is heel praktisch die dingen en straks als het meer ingevuld is, bepaalde aandachtspuntjes of je kunt iets nalezen.	ECD
155.	I	En wat merkt de cliënt nu van de tablet?	
156.	P	Ze mopperen veel! En ze zijn daar veel eensgezind in!	Acceptatie
157.	I	Dat krijg jij terug van de clienten?	
158.	P	Ja!	
159.	I	Ook positieve dingen?	
160.	P	Wat clienten positief vinden aan de tablet?	
161.	I	Weet ik niet of die er zijn, wat merk jij ervan?	
162.	P	Nou ik vind ze niet erg positief maar ik denk dat wij daar verantwoordelijk voor zijn.	Acceptatie
163.	I	De berichten die zij horen?	
164.	P	Ja we mopperen alleen maar “we kunnen er niet in, hij doet het niet” en we zeggen niet ‘oh wat een fijn ding’! Hahahaha.	Acceptatie
165.	P	Dat nemen ze kwakkeloos over.	
166.	I	Maar zie jij dan misschien mogelijkheden dat de tablet invloed heeft op de clienten, de verzorging van?	
167.	P	Weinig. Hier in de wijk werken we heel veel met oudere mensen. Weinig hebben maar een computer dus voor hun is het een ver van me bed show, jullie werken er maar mee. Eerder waren ze ook op de hoogte, toen werd er veel meer gebeld, veel persoonlijker gedaan.	Acceptatie
168.	I	En stel nou dat je bent bij een cliënt, en de cliënt heeft een wond, een complexere wond. Je weet niet precies hoe je daar mee verder moet op dat moment. Wat kan de tablet op dat moment voor jou doen.	
169.	P	Dan ga ik kijken wie er op dat moment aan het werk is als ziekenverzorgende en meestal vraag ik van ken je er één van? Dan ga ik weer bellen want een bericht wordt onder het werk niet gelezen. Op de pda vaak wel want dan ging er een tingeltje.	ECD Bellen
170.	P	en soms kijk ik in een lijst of ik zoek de bereikbare dienst op.	
171.	I	Wat zou je zelf doen om erachter te komen hoe je die wond behandelt?	
172.	P	Wij mogen dat niet hè, als het een complexe wond is die gaat sowieso naar de wijk. Want ik ben een verzorgende dus dat ga ik altijd overleggen.	
173.	P	Wij mogen wel als hun zijn geweest en we hebben een plannetje gemaakt dan mogen we het wel doen maar niet zomaar. Dan kan er wel meteen iemand komen van het team. En dan kun je wel gelijk tegen de cliënt zeggen van nou vanmiddag komen ze even kijken.	Continuïteit
174.	I	Kennis delen met je collega’s. nieuwe kennis en ervaringen delen. Je zegt zelf je zit al jaren in het vak. 35 jaar. Deel je wel eens kennis	

		met je collega's?	
175.	P	Ja ik denk op het overleg dat dat een doel is. Clientenoverleg. Tot nu toe hadden we steeds bijscholingen enzo en dat wordt e-learning. Ben ik niet over te spreken. Ook overleggen van of je belt iemand van 'goh ik ben daar geweest wat vond jij ervan'.	E-Learning
176.	I	Kan je een voorbeeld geven?	
177.	P	Iemand die echt niet fit is en je bent er een paar keer geweest en je kunt er geen vinger opleggen en het geeft geen goed gevoel, dan heb je wel eens dat je even een collega belt. Dan heb je niet iets concreets om de huisarts te bellen en toch klopt het niet. Verder deel je ook veel kennis met een cliënt. Die heeft vaak prima inzicht in verleden 'heb ik een keer eerder gehad en toen…' ja je hebt andere deskundigheden zoals van de fysiotherapeut van die vraagjes tussendoor dat vind ik ook heel interessant.	Bellen Andere deskundigheden
178.	P	En hoe kan je de tablet gebruiken om kennis te delen met je collega's?	
179.	I	Met je collega's… je hebt de e-learning maar dat is van bovenaf naar ons.	E-learning
180.	P	Je eigen team, jouw collega's, wat kan de tablet betekenen voor je?	
181.	I	Via de berichten kan je opmerkingen maken. Maar is nu nog vaak eenzijdig. Dan heb je niet reacties erop.	Berichten
182.	P	En wat zou je graag willen dat je wel kon doen?	
183.	I	Komen we weer op hetzelfde punt. Nu ga ik vaak een hogere deskundigheid bellen en je krijgt informatie. Dit zou je natuurlijk in de tablet kunnen zetten maar dat vind ik dan eigenlijk iets meer voor de verpleegkundigen enzo. daar zie ik het wel een rol in spelen. Cliënt is diabeet en kortademig, maar beetje complex en een wondje aan de voet. Verpleegkundige is geweest die vertrouwt dat niet goed en na advies wordt dit behandeld. En als ze dan even een kennis stukje aan die cliënt wordt geplakt, van dit en dat en dat, ziekte, wondje, wordt zo behandeld, dan denk je, 'oh ja!' daar kun je wat van leren.	Memo-ec
184.	P	Of bijvoorbeeld iets psychiatrisch of zo dat je andere deskundigheden kunt gebruiken, zou een mooi kennisstukje kunnen worden. Maar dan wel afgeschermd.	Memo-ec
185.	I	Dat is iets tussen de collega's?	
186.	P	Ja als team, een beveiligd stuk.	
187.	I	Ja. Natuurlijk. Dus als ik jou zo hoor wil je dan dat je zelf kan kiezen met wie je dat doet? Dus je kan kiezen van ik heb wat meegemaakt en dan deel je het met je team. Maar het kan ook zoiets specifieks zijn dat je zegt van 'he ik vraag het aan de verpleegkundige'?	
188.	P	Ja maar dan denk ik wel dat als de verpleegkundige zegt van 'we lopen daar allemaal een beetje dit is voor iedereen leuk om te weten ik koppel daar een kennisstukje aan' dan kan het hele team van 'oh ja!" en je bent weer wakker en er staan punten in waar je zelf nooit aan gedacht hebt.	Memo-ec
189.	I	Ja dat is kennis delen.	
190.	P	Ja! En daar zie ik persoonsgericht wel, dat er veel meer kan!	Intentie
191.	I	Mooi om te horen want het houdt niet op bij 1 of 2 personen als je dan echt wat leert en dit is leuk voor iedereen en hier worden we allemaal slimmer van!	

192.	P	Ja!	
193.	P	Dan gaan we het met elkaar delen.	
194.	P	Het kan ook iets heel simpels zijn die cliënt heeft een nieuw soort puffer. Even het uitlegje erbij 'oh ja nieuwe puffer!'	Memo-ec
195.	I	Zulke kleine dingen maken het werken dan weer wat makkelijker.	
196.	P	Precies en het verruimt je blik. Bijvoorbeeld nieuw incontinentiemateriaal wat de uitvinding van de eeuw is weet je wel, 'oh ja! Even kijken!'. Beetje prikkelend mag het ook wel zijn.	Memo-ec
197.	I	Ik denk dat dat ook een doel van de tablet is, dat het je wat uitdaagt en dat het jouw werk makkelijker maakt. Oke nou mooi om te horen.	
198.	I	Kennisdeling is plezierig en geeft voldoening en dat hoor ik ook bij jou terug. Zie jij eventueel nog belemmeringen in het delen van kennis met collega's?	
199.	P	Ja, te veel. Het legt heel veel druk op je privéleven.	Privé
200.	I	Hoe dan?	
201.	P	Kennis en informatie is wat anders. Ik vind dat je heel veel informatie binnen krijgt wat je moet weten natuurlijk wat met nieuwe tijden te maken heeft. Maar te veel.	Onoverzichtelijk
202.	I	Dat merk je nu al?	
203.	P	Ja.	
204.	I	Kan je een voorbeeld geven wat krijg je binnen?	
205.	P	Je mail. Daar heb je van collega's, notulen, nieuwe werkgroepje, oh nee dat hebben we op een app staan. Carien, nieuws vanuit de organisatie. Ik las het eerder altijd en ik merk nu dat ik alleen nog maar koppen lees. Ik denk ooh daar ga ik niet aan.	Onoverzichtelijk
206.	I	Carien die nieuwsbrief bedoel je?	
207.	P	Ja.	Onoverzichtelijk
208.	I	Nu kom ik er ook niet meer aan toe. Het is te veel.	
209.	P	Ja en dat komt denk ik ook door alles. Met je team heb je een appje. We gaan donderdag lunchen dat staat er ook tussen. Er ontgaat je ook veel. Het is rommelig het is niet overzichtelijk. Het staat onder een kopje maar niet meer.	Onoverzichtelijk
210.	I	En wat je zegt je kan het niet verwijderen?	
211.	P	Nee het blijft dan staan.	Onoverzichtelijk
212.	I	Dus als je iets hebt wat je niet meer hoeft te zien kan je het niet weg doen? Daardoor wordt het teveel.	
213.	P	Ja. Want er staat een bericht van begin maart nieuwe cliënt die en die. Die is inmiddels wel aardig ingeburgerd! Dat drukte je eerder weg met de PDA. Ik heb het gevraagd hoor en het komt nog wel, dat je dat kunt verwijderen. Die mogelijkheid willen ze maken. Het is heel gemakkelijk om informatie erop te zetten waarvan je af kunt vragen of het iets toevoegt.	Onoverzichtelijk
214.	I	Dat is het vraagstuk, je hebt iets wat je wil delen maar, is het van waarde?	
215.	P	Ja. Precies en de mogelijkheden zijn eindeloos. Maar, ons geheugen niet he! Eerst ook wel!	Acceptatie
216.	I	Nu denk ik aan iets anders. Ons geheugen is niet eindeloos maar de tablet heeft wel alle informatie. Dat is denk ik nog een voordeel als je bij een cliënt bent en je denk hoe zat dat ook alweer, pak je de tablet.	

217.	P	Ja. Klopt.	Continuïteit
218.	I	Heb je dat wel eens gedaan?	
219.	P	Ja, er was een nieuwe cliënt vorige week en dan denk ik oh daar stond iets bij. Moest je achterom? Er was wat mee. Was ik dan even vergeten en dan kon ik het even opzoeken. Maar het zou gewoon in het dossier moeten zijn, niet overal in berichtjes!	Continuïteit
220.	I	Dat stond in een mailtje?	
221.	P	Ja dat stond nu allemaal in de mail. Dat wordt nog niet verwerkt in het dossier.	ECD
222.	I	Dat is raar!	
223.	P	Maar die dossiers zijn we nog niet zo hard mee bezig maar dat is ook heel veel op het moment op. De clubjes alles wordt opgestart.	ECD
224.	I	De clubjes?	
225.	P	Ja met de groepen, allemaal een taak gekregen. Vitaliteit medewerker, planner e.d.	Rollen
226.	P	En de tablet die veel problemen heeft, dat nodigt niet echt uit.	
227.	P	Dus ik denk dat als we een stuk verder er mee zijn dat het dan echt kan werken. Nu is het nog onoverzichtelijk overal de berichtjes. En het idee van 'heb ik alles wel gelezen?'.	Onoverzichtelijk Anxiety
228.	I	Ja, je gaat twijfelen aan jezelf.	
229.	P	En je slaat het niet op. En dat vind ik een nadeel van de tablet kijk als je iets hoort of zoiets dan moet je het opslaan, je wilt het onthouden of niet. Met een tablet, kan je het vergeten en kan je het wel weer nalezen.	Intentie
230.	I	Je denkt van het zal wel?	
231.	P	Ja!	
232.	I	Continuïteit van het werk. Beetje al behandeld. Wat ik net probeerde over te hebben was het oproepen van instructiemateriaal. Bijv. je bent bij een cliënt, cliënt heeft een wond, je weet niet hoe je verder moet. Je kan dan in het systeem van carinova een filmpje oproepen daarover. Is dat iets waar jij mogelijkheden in ziet?	
233.	P	Ja beslist.	
234.	I	Kan je voorbeelden noemen?	
235.	P	Ik denk dat het nog komt maar bijv. stel dat je ernstige dingen hebt, een diabetische voet met zwarte tenen en een heel naar uitziend iets en je kunt met die tablet een foto maken en sturen naar een huisarts of iemand die al onder behandeling is van een specialist of zo. Dat kan voor een cliënt heel veel voordelen hebben dan hoeft ie een keer niet naar het ziekenhuis of de huisarts/specialist kan zeggen van oh dat wil ik zien.	Cliëntzorg
236.	P	Maar je kunt ook, het specialistische, bijvoorbeeld met foto's, als je mooie dingen hebt, 1x in de week ofzo een foto of wonden genezen. Dan kan je beelden toevoegen.	Zorgmonitoring
237.	I	En dan heb je ook de mogelijkheid om een soort van casus van te maken.	
238.	P	Ja!!!	
239.	I	Je legt een verslag vast over de genezing.	
240.	P	En daar zie ik veel voordelen in. Omschrijven is soms heel moeilijk en als je van een lelijke wond een foto hebt en je ziet bijvoorbeeld nou je hebt het hiermee behandeld en na drie weken was het zus	Zorgmonitoring

		en toen gingen we het daarmee behandelen dan kun je een volgende keer, daarbij zie ik zeker voor hoger opgeleiden veel voordelen.	
241.	I	Hele mooi.	
242.	P	Daar zou ik nog wel wat meer mogelijkheden voor de foto zien.	Foto
243.	I	Je ziet mogelijkheden om foto's te maken.	
244.	P	Ja! Niet te veel. Hahahaha. Ik zie dat wel breder.	
245.	I	Een hele goeie, en dan is het belangrijk dat de batterij niet op is.	
246.	P	Als je hem gewoon oplaadt heb je geen lege batterij!	
247.	I	Geen problemen mee?	
248.	P	Nee uit het werk gelijk aan de opladen en geen problemen. Eigen schuld hoor.	Adoptie
249.	I	Dus je zegt daar moet je gewoon zelf voor zorgen dat de batterij goed opgeladen is?	
250.	P	Ja! Je moet ook zelf dat je er eten in stopt om te blijven lopen.	
251.	I	Het ligt dus niet aan de tablet.	
252.	P	Nee hoor volgens mij kun je er vrij lang , ik dacht wel 24 uur mee doen. Het is gewoon een routine.	
253.	I	1 laatste vraag, als jij Carinova een tip mocht geven over de tablet. Wat zou dat dan zijn?	
254.	P	Maak hem simpeler. Minder onderdelen, beter bij elkaar, clientgegevens, dossiervorming want er zit een goed dossier in. Registratie ook onder 1 been. Maar daar hoort ook je Cura systeem bij zodat je kunt zien wat voor uren er gerekend zijn. Niet al die wachtwoorden. Maak het simpel. Er werken zoveel man mee, hou het klein dan wordt er goed mee gewerkt. En dan kan er nog een boot aan informatie in als je het gewoon onder 1 ding kunt vinden en niet overal.	Systeem Simplification

Appendix C: Data presentation

Subject	Utterances	Participants
Repeat-prescriptions	**Participant #1:** At this moment not yet. Because then a pharmacist or GP should also have access to the system. The only thing you can do now is through e-mail. Dutch: Op dit moment nog niet. Want dan zou een apotheker of een huisarts ook in het systeem moeten kunnen. Het enige wat je wel zou kunnen is via de mail. Als je een adres hebt van een apotheker of een huisarts zou je dat via de mail kunnen doen. **Participant #2:** Still by telephone if we need to contact the GP and then often you speak to the assistant but first you are on hold so it should be different and better and faster. Dutch: Dat gaat telefonisch nog als we contact met de huisarts willen en vaak heb je dan contact met de assistente en dan sta je eerst in de wacht dus dat moet ook anders en beter en sneller. **Participant #3:** Requests to GP. I think it is an advantage for simple things, for example a repeat-prescription. Dutch: Verzoeken aan een huisarts. Ik vind het een voordeel op simpele dingen, bijvoorbeeld een herhalingsrecept. **Participant #4:** But if you want to do it quickly, even if it is just request a medicine, then you have to go through a prescription phone line or you don't know if someone still has a repeat-prescription. First you call the pharmacy "no she doesn't have a repeat-prescription" then you have to call the GP. So if you could do this all at once. A repeat-prescription service, you would have to login for the clients. But of the clients that we hold responsibility over the medication that we would have insight into the repeat-prescriptions. Dutch: Maar als je het allemaal even snel wil doen, al is het maar een medicijn aanvragen, dan moet dan weer via een receptenlijn of dan weet je niet of iemand nog een herhaalrecept hebt. Dan bel je eerst de apotheek 'nee die heeft geen herhaling' dan moet je de huisarts weer bellen. Dus als je dat allemaal gelijk zou kunnen zien. Een herhaalrecepten service, zou je voor die mensen moeten inloggen. Maar als je van de mensen van wie wij de medicatie overnemen dat we daarvan inzicht hebben in de herhaalrecepten. **Participant #6:** I would connect everything in the ECD. That is secure. I understood that they are already working with this in Raalte (…) that if a nurse has a question about medication that a pharmacist or GP can respond to that. Ik zou alles koppelen in het ecd. Dat is dan beveiligd. En ik begreep dat ze in Raalte (…) als een vpg een vraag heeft over medicatie dat een apotheker of huisarts daarop kan reageren.	1, 2, 3, 4, 6, 8

	Participant #8: If the GP's could enter the system, for non-urgent matters that is fine. Dutch: Als de huisartsen in zo'n systeem kunnen, dan niet dringende vragen dat is dan wel prima.	
Team-transcending role communication	**Participant 1:** Now it is often by coincidence, or that someone takes the initiative. You should provide more structure. And you should do it in small groups otherwise it's too agitating. For example a blog in which you ask questions where everyone can help each other. That would be something positive. That you can ask your question somewhere and that whoever of the team knows the answer will answer it. Dutch: Het is nu toch vaak 'toevallig', of dat iemand het initiatief neemt om dat te doen. Je zou daar meer structuur in moeten brengen. Dat je bij elkaar komt. Je moet het doen in kleine groepjes anders wordt het te onrustig. Bijvoorbeeld een blog waarin je vragen stelt waarbij iedereen elkaar kan helpen. Dat zou wel iets positiefs zijn. Dat je gewoon ergens je vraag kan stellen en dat wie dan ook in het team die het antwoord weet daar dan antwoord op geeft. **Participant 2:** A pin-board! A team pin-board would be handy! Because now I have to print it out so if this could be done digitally that would be great. And it would be nice if other colleagues could too, that you can put 'teamnews' on it, like who is pregnant or who is sick and that we sent a card. Because now not everybody is up-to-date because you do not always see each other at work. Sometimes only once in four weeks for the team meeting. Some have just started a new course so they can put new developments on the pin-board. That would be nice. Also that you can read nursing literature. There is a lot of literature out there for nurses that would be really nice. Dutch: Een prikbord! Een teamprikbord zou wel handig zijn! Nu print ik het uit en hang ik het op en als het op een digitaal prikbord zou kunnen dan zou dat wel mooi zijn. En het zou leuk zijn als andere collega's het ook kunnen, dat je er teamnieuwtjes op kan zetten. Zoiets van die is zwanger of die is ziek, we hebben een kaartje gedaan. Want nu is niet iedereen op de hoogte maar dan kun je zoiets wel gebruiken. Want in de wijk zie je elkaar niet altijd. Soms maar 1x in de vier weken voor het teamoverleg. Een paar zijn net met een opleiding begonnen dat ze dan nieuwe ontwikkelingen erop kunnen zetten. Dat zou leuk zijn. Dat je vakliteratuur kan lezen op de tablet. Er is heel veel vakliteratuur voor verpleegkundigen en er zitten heel veel leuke dingen tussen. **Participant 3:** Through the messages you can make remarks. But this is often just one-way. Then you don't get responses. Dutch: Via de berichten kan je opmerkingen maken. Maar is nu nog	1, 2, 3, 4, 5 6, 7, 9

	vaak eenzijdig. Dan heb je niet reacties erop. **Participant 4:** We did the pilot for independent teams and I was in the role 'ready for the future', and things that we ran into last year I now hear from other teams around us, that they have run into the exact same problems. Dutch: Wij hebben de pilot zelfstandige teams gedaan en ik zat in de rol 'klaar voor de toekomst', en dingen waar wij vorig jaar tegenaan zijn gelopen en dan hoor ik nu van teams om ons heen, dat die tegen precies dezelfde dingen aanlopen. **Participant #5:** What I did just this morning, I received a message about setting indications like when you can give someone food but you cannot heat it. Then I sent a message to everyone to inform them. So that they know what kind of indication I cannot make. Despite the fact that it does not involve their direct work. Dutch: Wat ik vanmorgen nog heb gedaan , ik kreeg een bericht over indicaties stellen wanneer je iemand eten mag geven maar je mag het niet warm maken. Toen heb ik een bericht gedaan naar iedereen voor informatie. Zodat ze weten wat voor indicatie ik niet mag stellen. Ondanks dat ze in hun directe werk er niet per se iets mee hoeven. **Participant #6:** Sometimes you need a stepping-stone to see an example. Like what does a completely filled in concept teamplan look like? That people think 'o right so that is the intention that is what we have got to do.' Dutch: Soms heb je een kapstok nodig om een keer een voorbeeld te zien. Bijvoorbeeld hoe ziet een ingevuld concept teamplan eruit. Dat mensen denken 'o, dat is de bedoeling dat moeten we gaan doen'. **Participant #7:** And you could use that for how to execute a role, scopes, tips. "I have got this problem who has dealt with this before?" Then you use each other expertise. Then you throw it at the group. Dutch: En dan zou je dat kunnen gebruiken voor hoe je een rol invoert, kaders, tips. "Ik zit hiermee wie is dit eerder tegengekomen?" Dan maak je gebruik van elkaars deskundigheid. Dan gooi je het in je groep. **Participant #9:** It is difficult how teams connect. The risk of working with independent teams is that they all reinvent the wheel. So a tablet could be more of a place for sharing information. If it is about learning, the employees could look in each other's kitchen, learning from the questions that others have. I think that could be very helpful. Dutch: Het is moeilijk hoe teams zich met elkaar verbinden. Het	

	risico met zelfstandige teams is dat ze allemaal hun eigen wiel uitvinden. Dus een tablet zou nog veel meer een informatieplek kunnen zijn waar informatie gedeeld zou kunnen worden. Een tablet zou voor medewerkers, als het om leren gaat, meekijken in elkaars keuken, leren van de vragen die anderen hebben. ik denk dat dat heel helpend zou kunnen zijn.	