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A Roadmap for the Transition from Paper to Digital Records

Master Thesis

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A Roadmap for the Transition from Paper to Digital Records

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ABSTRACT

Nowadays there are a lot of innovative activities going on in the youth care sector. One of the innovations is using digital client records instead of paper client records and in the future online access to digital records for clients. Before an organisation can make client records accessible through the internet, they have to professionalize and organize the digital client records and their own organisation. Thus when introducing a new working method in an organisation, organisations have to deal with organisational and technical changes. This thesis describes a roadmap which describes the process for transiting from paper to digital records in a youth care organisation where the organisational and technical issues will be taken into account. The DEMO methodology is used to model the organisation undergoing the change. The organisational model produced using this methodology, gives the management a good overview of how the care taking process takes place at the moment and can be used to improve this process if necessary. This model also helps to identify the roles and responsibilities of the actors involved in the organisation. Furthermore this model gives additional contribution to the concept of the Alares 'knowledge environment' which is also used the organisation according to its four components.

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Preface

This document is produced in conjunction with the Master Thesis project as part of the Master programme Computer Science variant Information Architecture at the faculty of Electrical Engineering, Mathematics and Computer Science of the Delft University of Technology in collaboration with the faculty of Technology, Policy and Management. The Information Architecture programme addresses the problem if designing and engineering enterprises including their IT applications. The various courses, especially the TPM courses, have had added value in detecting and solving problems.

This report also symbolizes the end of my study period in Delft. Starting this period with great enthusiasm and expectations, it has finally come to an end and I mark this period as formidable. During my thesis project I came across a lot of problems concerning my residence permit. I could not completely finish my project in the Netherlands and had to go back to Suriname and finish it from there. Though I had all kinds of problems during my project, I did not give up and kept my courage for finishing the project. Therefore I would like to thank of a number of people who gave me their support and effort to successfully complete my Master Thesis project.

First and foremost I would like to thank my supervisors for all their guidance and assistance during the project. This report would not be possible without the support of the university supervisor, Prof. dr. ir. Jan Dietz. I would like to thank the company supervisor of Alares and Cardea, Laurens Waling MSc and Frans Nannes respectively, who provided me with the appropriate information for finishing my project. I would also like to thank Mila Bouwense who took over the responsibility from Laurens for reading this report and giving me feedback in order to improve the quality. Thanks to Ed Magnée who provided me the useful feedback too. Gratitude also goes to Wendy Hildebrand of Alares, who monitored my process during this project and to all the consultants at Alares who provided me the useful advice and help.

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Third, I would like to thank my entire family who supported me my study period. I hereby thank my aunt, Roselien Mahabier-Badal, for offering me the opportunity that I could come to the Netherlands and stay at her home and my grandpa, Ramoud Badal, for giving me financial support. I would also like to thank my uncle, Dhanesh Raghoebier and his wife Wandana, who provide me all the support at finalising my project.

Forth, my gratitude goes to my girlfriend, Wanisha Boedjawan, who supported me from the beginning till the end of my project. She gave me all the time and space to finish my thesis and provided her help in all possible ways. She spoke me inspiring words when I was down and sometimes got stuck during the project. I want to thank her for all the caring and understanding moments during my thesis project.

My appreciation would be incomplete without thanking my mother, Tjietrewatie Badal-Hardwarsing and my father, Tjandreprekash Badal, who gave me the opportunity to study in the Netherlands and who (financially) supported me during my time at Delft. I would also like to thank my younger sister, Radhna Badal, who kept on inspiring during the period of writing my thesis report. Therefore I would like to dedicate this achievement to my parents and sister on whose constant encouragement and love I have relied throughout my time at my study. I am thankful for the way my parents raised me and the lessons they thought me for going through life. With this package I can endure every obstacle in my life.

Vikash R. Badal BSc
Den Haag, the Netherlands
October 4th, 2009

"It's not the strongest of species that survive, nor the most intelligent,

but the one most adaptable to change"

Charels Darwin, 1809-1882

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1 Introduction

In the last few years we have seen some innovations in the youth care sector, showing that we are heading towards the situation where working digitally plays an important role [2]. An example of such an innovation in the youth care sector is digitalizing client records. Other examples of such digitalizing projects are: the electronic child record (Dutch: EKD or DD JGZ), "Verwijsindex Risicojongeren" (VIR) and the electronic patient record (Dutch: EPD). Working with digital records has benefits for both clients and professionals in this sector. The benefits of digital and online records, compared to paper records, will be explained in section 3.2.

Several organisations are ready to make the transition from paper records to digital records and even want to make digital records accessible through the internet. Before an organisation can fully make the transition from paper to digital records, some barriers must be overcome and organisational and technical changes have to be made in the organisation [12]. One such organisation is Cardea Youth Care (in Dutch "Cardea Jeugdzorg"). This thesis focuses on the process of transiting from paper to digital records by Cardea and preparing the introduction of online records for clients in the future. This process concerns the benefits digital records have opposed to paper records, the professionalization of the digitalisation process and digital records. This also holds for a step Cardea wants to make ahead, namely online accessibility of digital records. A condition for making this possible is that digital records must be fully professionalized and that the organisation must be well structured, complete with the right systems. There are many consultancy firms advising organisations involved in digitalisation projects in the youth care sector and Alares is one of them. Alares advises organisations like Cardea in such innovative processes, where organisational and technical changes have to be made.

In section 1.1 gives background information of both the organisations which are of concern in this thesis. Section 1.2 describes the problem Cardea is faced with and section 1.3 describes the research questions and goal I have come up with based on the introduction and the problem stated in section 1.2. The research approach is given in section 1.4 and in concluding the first chapter, section 1.5 gives an overview of this thesis report.

1.1 Background

From an internship at consultancy firm Alares I am involved at Cardea for doing my graduate research. The graduate research is mainly focused on Cardea and the way in which Alares can help this organisation in the process of transiting from paper to digital records and preparing the introduction of online records for clients in the future. This section gives a short description of the two organisations that are involved in this thesis, what kind of organisation they are and what their core business is. For a clear overview this section is divided into two sub sections; the first sub section is about Cardea Youth Care and the second sub section is about consultancy firm Alares.

1.1.1 About Cardea

Cardea Youth Care[1] is a youth care organisation in the region South-Holland North. Each year more than 400 professionals help approximately 2000 children and young people aged from 0 to 23 years with development, behaviour and family problems. The organisation provides ambulatory aid, day aid, 24 hour aid or a combination of these. The vision of Cardea is to offer aid as close as possible to the environment of their clients. This means that Cardea wants to set up campuses at strategic points in the region where they are active. The aid that Cardea provides must be as suitable, effective and efficient as possible and of high quality. For this reason the aid is monitored according to the HKZ[2] standards. Cardea wants to be fully transparent to their clients and therefore Cardea wants to offer the possibility for clients to have insight in their personal records by means of online records. This online record is the digital record of the client only accessible by the client through the internet. Before Cardea can offer this, all client records must be digitalized first.

Cardea offers a wide variety on aid for parents, children and young people in their region. In the care programs of Cardea the complete family and the environment of the child are involved. Cardea works closely with local institutions, child and youth psychiatry and institutions that give (special) education. When providing care Cardea pays attention to questions clients have and the situation in the family. Cardea analysis the situation together with the client and provides the best suitable aid. In the treatment that Cardea handles, the safety of the child or youngster is important.

[1] http://www.cardea.nl/

[2] http://www.hkz.nl/

1.1.2 About Alares

Alares[3] is Latin for aid troops or riders of the allies. Alares is a consultancy firm that gives advice to public and private organisations on the intersection of innovation, information policy and organisation development. Alares is a professional organisation and its professionalism is reflected by the quality of their service and the way they treat their clients. Also in the quality of the internal organisation, environment of the office and the consultants working here. The ambitions of Alares can be found in their growth target, their knowledge environment and their quality systems. The consultants at Alares assist organisations in the Care, Educational, Governmental and Enterprise sector on issues around knowledge and information management.

Alares has given a lot of advice about the implementation of the electronic child record in the care sector. There are some ongoing projects in this sector and one of them is the implementation of the digital record in the youth healthcare sector (DD JGZ) where Alares is involved at. This is a variant of the electronic child record (in Dutch: "Elektronisch Kinddossier") which has to be implemented by the end of 2009 [3]. Alares has considerable expertise about such innovating projects. Within these projects Alares advises organisations by helping them to overcome barriers and make the right organisational and technical changes during an innovation process. For most of these projects Alares uses the concept of the 'knowledge environment' to analyse an organisation.

Alares Knowledge Environment

Based on literature study and case studies Alares developed the concept of the 'knowledge environment'. The Alares 'knowledge environment' provides an integrated approach; it makes organisations like Cardea aware of the developments in the outside world and shows how the internal organisation should act upon these external developments.

The outside world of Cardea consists of the transactional (influential) environment and the contextual environment, with demographical, economical, sociological, technological, ecological and politico logical developments which will have impact on Cardea but that can hardly be influenced. In Appendix B – Alares Knowledge Environment, the Alares 'knowledge environment' is described in more detail. Figure 1 shows the Alares 'knowledge environment' graphically.

[3] http://www.alares.nl/

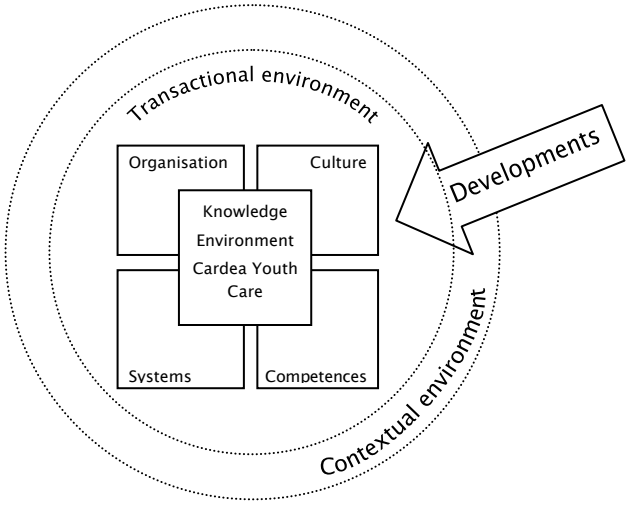

Figure 1 – Alares knowledge environment

The knowledge environment is used in this thesis to set up and categorize the questions and dilemmas during the interviews and the online survey. Based on the information gathered from the interviews, the online survey and literature study, a roadmap (see chapter 5) for the transition from paper to digital records at Cardea is produced. For Cardea to act adequately on developments in their environment there must be a balance in their knowledge environment. This balance is described in chapter 4 according to the four components of the 'knowledge environment' and the information gathered from the interviews and the online survey.

Balance in the Knowledge Environment

Cardea needs the right competence in order to achieve its vision and related goals (organisation structure). In addition, it is supported by a wide range of systems. The use of the appropriate systems and their successful use depend on the prevailing culture within the organisation. In this concept the focus strongly is on the balance between de internal and the external environment. This balance can only occur when the internal environment is in balance, because the external environment itself never is in balance. This means that in order to anticipate to the influences of the external environment on the organisation, Cardea must organize their internal environment. The most important characteristic of the knowledge environment is that Cardea knows how to position itself rapidly and in time in line with changing circumstances.

By balancing the knowledge environment of Cardea they are ready to make the transition from paper to digital and online records and will be ready for upcoming developments in the youth care sector. By setting up the interviews and the online survey based on the knowledge environment, more insight will be given in the perceptions, experiences, ideas and knowledge of the people concerned working with digital and online records.

1.2 Problem Statement

Cardea wants to make the transition from the paper era to the digital era. By doing so, the organisation wants to become a paperless organisation. This was mentioned in one of the interviews, quoted as follows: “we wish to work digitally and further professionalize this process”. Another forthcoming innovation that Cardea wishes to introduce in the near future is to work with online records. With online records are meant digital records which are accessible through the internet for the clients of Cardea. In this way it will be possible for clients to access their own personal record from any location and at any moment in time, but only if they are authorized to do so. Authorization can be granted by a combination of the right username and password. Before making digital records online available for clients, it is recommended that the digital records are professionalized and well organized, because the records will be viewed by clients. So care takers must be aware of what they write and must do this in a professional way. The digital records and the infrastructure must be well organized and ready before making digital records accessible online for clients. This can be done by the system administrator or Cardea can hire professionals that have expertise on this area. The facts described here can easily be supported by the concept of the Alares ‘knowledge environment’ described earlier in sub section 1.1.2. This ‘knowledge environment’ takes the factors organisation, systems, culture and competence into account during organisational and technical changes.

In order to make the service towards their clients even more efficient, effective and qualitatively higher, in the future Cardea also has to make the transition from digital to online records. Besides the benefits digital records have, online records also have benefits for the clients and Cardea itself. Some benefits of online records are described in section 3.2, next to the benefits of digital records. This new way of working has serious impact on all fronts: technical, in the organisation, in the work process and for the professionals themselves. At this moment Cardea has no online records and they would like to have these in the future as quoted from an interview with a manager at Cardea: “we would like to work with online records in the near future, but the priority now lies on how to work with digital records and how we can professionalize them”.

It is important for Cardea to work with digital records and introduce online records in the near future. In this way Cardea can keep up with the innovations in the youth care sector and be one step ahead of other youth care organisations. The main problem that Cardea copes with is that there is not a standard roadmap that describes the transition from paper records to digital records and describes the introduction of online records into their organisation. This roadmap must describe the changes Cardea has to make during the transition process.

Figure 2 illustrates the record types and the steps that are considered in the transition process. Step 1 is the transition from paper to digital records and all the aspects that play an important role during this step. Aspects that play an important role during this step are: professionalization of the digital records by using known techniques for a digital signature and methods for digital archiving. Step 2 is the transition from digital records to online records and all the aspects that play an important role during this step. Important aspects here are: privacy, security, law and legislation rules concerning handling client data.

During this research the focus will be on the process for transiting from paper to digital records at Cardea. The process of professionalizing digital records, investigating the benefits and drawbacks of digital and online records and the barriers during introduction of digital records will be described. Based on this research as well as an online survey and some interviews a suitable roadmap for the transition will be proposed. Although some recommendations will be given on the introduction of online records and transition from digital to online records, the main focus in this thesis is on the transition from paper to digital records (step 1 in Figure 2).

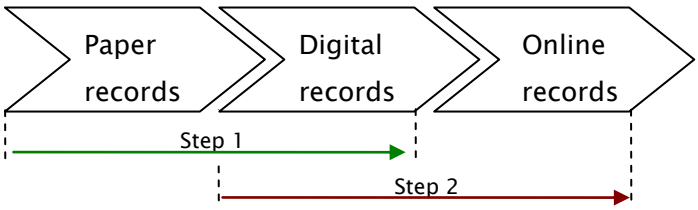

Figure 2 – Record types and innovation process steps

The content of all the three record types is the same and the only difference is the way in which they are presented to the client and employees. A *paper* record consists of the original indication decision sent by BJZ, all the data of a client and all the important reports made of a client during the care taking process. A paper record is a printed version of the digital record, so the digital record must be made according to the rules described in "Beheer van clientendossiers" (Appendix D – Beheer van Cliëntendossiers). A *digital* record is an electronic version of the paper record which does not contain the original indication decision sent by BJZ. This because it is not sent digitally to Cardea, but Cardea wants this to be sent digitally. In this way it can be put directly in its original form in the client registration system (Care4) and nothing has to be retyped by the client administration. The way it is done now is that important parts of the indication decision are typed in Care4 by the client administration. The important parts which are entered in Care4 are the personal information of the client such as country of birth, birth place, nationality, address, phone number(s), general practitioner, school, relations, legal measures, family information, indication data (decision, issued, arrival date, validity) and claims (type, period). This forms the first content of a digital record and a new digital record is created. Care professionals

update this digital record by frequently adding the important reports and notes during the care taking process. The digital records are stored locally in a database and are accessible for every authorized employee of Cardea. An *online* record is a digital record that is accessible online for every authorized client and employee of Cardea at any moment in time and from any location with a computer connected to the internet. With online records clients can follow their treatment online, have online insight in their records, opportunities for self management, view and make appointments in the online client agenda and view the reports made by the professionals and comment on it if formulated incorrectly. With this possibility Cardea makes their organisation transparent for their clients and builds a trust worthy relation with them.

1.3 Research Questions and Goal

Research Question

When an organisation in the youth care sector wants to introduce and use digital and online records, it is almost certain that it has to deal with organisational and technical changes [12]. The new way of working has a large impact on the employees and the organisation itself. The organisation has to be structured in such a way that working with digital and online records does not affect the core business, namely providing child care. The new way of working should make the service towards the clients more efficient, effective and be of higher quality than before.

Based on what is described in the sections above, the next main research question is formulated:

> *"How should the transition from paper to digital records at Cardea be organized?"*

In order to come up with an answer for the main research question we narrowed it down into three sub questions. The three sub questions are formulated as follows:

1. *What should be the content of the three record types?*
2. *What are the benefits and drawbacks of digital and online records for Cardea and their clients?*
3. *Which barriers are identified while introducing digital records and how can they be dealt with?*

Sub question one must clarify the way in which the three record types must be formed, thus clarifying the content of the record types. Every employee must work in a consistent way, so

guidelines must be provided to them that clarify the way in how to build up a record. The second sub question must provide information about what the drawbacks and benefits of digital and online records are. For Cardea it must be clear what these drawbacks and benefits are before implementing them. For clients it also must be clear what benefits they gain when Cardea works with digital records and provides online access to digital records. In the third sub question insight must be gathered about what the barriers are of introducing a new way of working at Cardea and how to deal with these barriers. With other words, what the impact is on the organisation and on the employees when introducing digital records.

Research Goal

The previous sections imply the need of a decent roadmap for the transition from paper to digital records. This roadmap describes the steps that must be taken in order to guide the transition process in a successful way. A transition from paper to digital record can be seen as an organisational change. This roadmap implies the organisational change according to the four components of the Alares 'knowledge environment' described in section 1.1.2. The roadmap must be applicable to organisations in the youth care sector that wish to undergo a similar transition process.

1.4 Research Approach

This section gives a description of how the research will be done and which resources will be used for completing it. In order to provide a solid ground for successful achievement of the research goal, the research is divided into phases because a phased approach can contribute to high-quality results. Each phase can provide clear and concrete results which can be examined and reviewed and give input to the next phase. Phases can be started parallel to each other and in this way it is not really necessary to wait for the previous phase to be completed. In Appendix A one can see a schematic representation of the several phases and the complete plan of my research.

In phase 1 the orientation of both organisations is done to have more insight in what these organisations are and what they do. From this point on the formulation of the research question and research goal is the starting point of the research. It sets out the direction for the research process and therefore the formulation of the research question and research goal is done with great care. I have prepared interviews and made an online survey in this phase. To do this the Alares knowledge environment is used as basis.

In phase 2 interviews are taken and some of the data is used as input to make an organisation model of Cardea. The organisation model is made by means of the DEMO methodology since only DEMO models grasp the implementation independent essence of an

organisation, and this essence would be the right starting point for our research. If an organisation wants to innovate or optimize its core business one can see at a glance where to do this with help of the organisation model. This model also shows where changes in an organisation are made and what effects these changes have for the organisation. In order to really cope with the current and future challenges, a conceptual model of the organisation is needed that is coherent, comprehensive, consistent and concise, and that only shows the essence of the operation of an organisation. By *coherent* we mean that the distinguished aspect models constitute a logical and truly integral whole. By *comprehensive* we mean that all relevant issues are covered, that the whole is complete. By *consistent* we mean that the aspect models are free from contradictions or irregularities. By *concise* we mean that no superfluous matters are contained in it, that the whole is compact and succinct. By *essential* we mean that the conceptual model only shows the essence of the organisation, its deep structure [4].

In phase three the description of the roadmap of the transition from paper to online records is made. The results of the interviews, the online survey and the organisation model are used as input for describing the transition process. The search for some practical examples is done in the youth sector and other sectors, such as the health care sector, and used for describing the transition process. With the information gathered during this phase en phase 2, the answers to the sub questions are given and processed in the roadmap.

The fourth and final phase is the documentation phase where the findings of the previous phases are gathered and put into this thesis report. This thesis finally describes the roadmap for the transition from paper to online records at Cardea.

1.5 Report Structure

The report consists of seven chapters in total. Here a brief description of the contents of each chapter is given.

Chapter 1 gives the preliminaries that give an overall picture of the topic of this research. It introduces all aspects that form the context of the project.

In chapter 2 the organisation model of Cardea is described using the DEMO methodology. Before the organisation model of Cardea is modelled, an introduction to the DEMO theory and methodology is given. After having done this the organisation model can be better understood.

Chapter 3 elaborates on the three sub questions that are introduced in section 1.3. This chapter describes the content of the record types, the benefits and drawbacks of digital and

online records and finally the barriers Cardea faces when introducing digital records into their organisation. Finding answers to these questions is done as described in section 1.4.

In chapter 4 the four components of the Alares 'knowledge environment' form the bases for analysing the gathered information. This chapter elaborates on the transition from paper to digital records and all the issues that play a role during this process (step 1 in Figure 2 – Record types and innovation process steps), i.e. professionalization of digital records, digital signature and archiving (organisational structure), the infrastructure in use (system), the culture of the organisation and the competence of the employees during this transition process. Although the focus is on the transition from paper to digital records, we will also describe some issues concerning the preparation towards online records (step 2 in Figure 2). Examples are the linkage to the EKD, the privacy, security and legislation issues that play an important role when making client records accessible online (organisational structure), how to organize their infrastructure (system), the culture of the organisation and the competence of the employees for introducing online records.

In chapter 5 the roadmap for the transition from paper to digital records is described. The roadmap is divided in several phases and the phases will describe what has to be done in order to realize the transition from paper to digital records. In this thesis we mainly focus on the first step of Figure 2 and give some recommendations on how to realize the second step of Figure 2. The previous chapters are used as input for this chapter.

Finalizing the thesis chapter 6 gives some recommendations and a conclusion based on the findings during this research.

2 Organisation Model

Because this research deals with organisational changes, we first need to have a clear understanding of the organisation we are going to change. We thus need clear understanding of Cardea as an organisation. To better understand Cardea we need to model it in some way that gives us an overview of the organisation, but also the ability to look at specific parts of the organisation in more detail.

Many modelling languages have been developed over time, but the choice for a modelling language depends on its suitability for modelling organisations. While we do not list all possible modelling languages and our reason for not using them, we do state that our reason for choosing DEMO[4] is because it is a methodology specifically designed for the (re-) engineering of organisations.

In sub section 4.1 we analysed Cardea according to the organisation component of the Alares 'knowledge environment'. One of the characteristics of this component is identifying and describing different roles and responsibilities for the employees of the organisation. However this concept does not mention how these roles and responsibilities can be identified. DEMO can support this characteristic by describing the construction model (see sub section 2.3.1) of Cardea, thus being of additional contribution to this characteristic.

In this sub section we look at the benefits we experience from using DEMO, then we explain the theory behind DEMO for the interested reader, and finally we show the several models that DEMO provides us and how these are applied to Cardea.

2.1 DEMO: Benefits

DEMO is an acronym for 'Design & Engineering Methodology for Organisations'. An organisation is viewed to consist of three aspect organisations: the B-organisation (Business), the I-organisation (Information), and the D-organisation (Data). The B-organisation represents the essence of the organisation, since it is completely independent from the way in which this essence is realized and implemented. A full understanding of the B-organisation is the correct starting point in the (re-)engineering of an organisation,

[4] www.demo.nl

which ultimately includes the software used to support the business processes. DEMO has the following beneficial properties:

Essential

DEMO clarifies the essence of an organisation, fully independent from the way in which an organisation is realized and implemented. The way an organisation is implemented changes over time. Models based on implementations therefore have the tendency to become obsolete and disused. The essential model however is an 'X-ray' of the organisation in a very compact form (a few A-4 pages). It is highly stable and always up-to-date even though its actual implementation may be subject to multiple changes over time. When basing all changes on the 'X-ray', the implementation of changes always remains comprehensible and manageable.

Coherent

According to DEMO an organisation consists of a coherent layered integration of three aspect organisations as stated above. These constitute a coherent hierarchy, in which the I-organisation supports the B-organisation and the D-organisation supports the I-organisation. Every organisational change typically regards one of the aspect-organisations. The coherent integration of the three aspect organisations makes (re-)designing and (re-)engineering manageable. With a given (re-)design of the B-organisation, the consequences of this action for the existing information systems, and for the information infrastructure, are easy to monitor and safeguard.

Consistent

The four aspect models of DEMO are perspectives of the same meta-model. Therefore the consistency among the perspectives is naturally safeguarded. A thorough organisational change, such as having professionals working with digital records or offering online accessibility of digital records to clients, will cause changes in the meta-model which will be visible in all four aspect models. Through the mutual consistency of the models the correlation between the processes, the data and the organisation is always clear. The impact of changes in one of the perspectives is always fully and directly visible on the other perspectives; there are no surprises, in the form of unanticipated consequences, during the implementation process.

Complete

The DEMO-transaction is the generic building block for all business processes. In particular it is a general pattern of coordination acts which lead to the creation of one new production fact. One can use it as a template for designing business processes with the assurance that no (relevant) action or information will be accidentally left out. Many actions, especially the promise (e.g. to provide care) and the acceptance (of care) are carried out tacitly and are rarely supported by information systems or workflow systems. Thus they are easily overseen

in change projects. For organisational implementations DEMO supplies a complete and clear definition of competences, authorities and responsibilities. For the information structure DEMO supplies all the essential information which the actors need, or which they create as the executors of transactions.

Modular

During the redesign and restructuring of an organisation most of the trouble comes from the business processes. DEMO shows a business process as a tree structure of transactions; the ideal starting point for decisions about splitting and allying organisations. Then, as every transaction has a universal structure of steps, these transaction steps are the 'atoms' of organisations. It is possible to analyze transactions on this atomic level and to reorder the steps until transactions flow into and out of each other in the way that best suites the desired change. The combination of a transaction and an actor role that executes it then constitutes the 'molecular' building block of organisations.

Objective

DEMO models are objective. Unlike other methods, DEMO does not leave room for 'creativity' of modellers. Two modellers with the same instruction will come back with the same result. Thus DEMO guarantees reproducible models, which are independent from the 'modellers' preconceptions. Equally, if not more, important is that these modellers are also independent from the momentary occupiers of the actor roles (the employees). Information need no longer rely on what is said, but on what has been objectively established to be needed by an actor role. Endless discussions between modellers regarding the accuracy of their 'views' are in the past. DEMO delivers compact and truthful models. All irrelevant information needs can be objectively refused.

2.2 DEMO: Theory

Having explained the need and benefits of DEMO above, we will now explain the DEMO theory and methodology in more detail. It is important to describe the theory in such detail for the reader to get a better understanding of this methodology.

The DEMO theory is described according to the Ψ-theory[5]. The Ψ-theory consists of four axioms: the operation axiom, the transaction axiom, the composition axiom and the distinction axiom and one theorem: the organisation theorem [4]. In the *operation* axiom (sub section 2.2.1) we abstract from the subjects in order to concentrate on the different roles they fulfil. An actor is a subject fulfilling an actor role. Actors perform two kinds of

[5] The Greek letter Ψ is pronounced as PSI, which is taken as an acronym for Performance in Social Interaction.

acts: production acts and coordination acts. By performing production acts they contribute to achieving the purpose or the mission of the organisation. By performing coordination acts they enter into and comply with mutual commitments about production acts. The *transaction* axiom (sub section 2.2.2) states that production and coordination acts occur in generic socionomic patterns, called transactions. The *composition* axiom (sub section 2.2.3) states that every transaction is either embedded in some other transaction or it is a customer transaction or it is a self-activating transaction. The *distinction* axiom (sub section 2.2.3) is about the integrating roles humans play in constituting an organisation. Three human abilities are distinguished, called performa, informa and forma. In sub section 2.2.5 the *organisation* theorem is presented that builds on the four axioms. It states that an organisation is a layered nesting of three homogeneous aspect systems: the B-organisation (from Business), the I-organisation (from Intellect) and the D-organisation (from Documents). These topics will be elaborated on in the subsequent sections.

2.2.1 The Operation Axiom

The *operation axiom* states that the operation of an organisation comes about through the activities of actor roles. Actor roles are basic elements of authority and responsibility, fulfilled by subjects. Subjects fulfil their roles by performing two kinds of acts: production acts and coordination acts. These in turn have definite results: production facts and coordination facts respectively. Figure 3 exhibits the representation of the operation axiom.

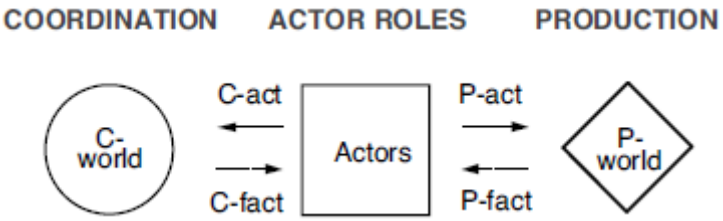

Figure 3 – Representation of the operation axiom

Production acts (P-acts) deliver goods or services to the environment of the organisation [4]. The delivery of goods are realized by means of material acts such as manufacturing, storing and transporting, while the delivery of services are realized by means of immaterial acts such as judging, deciding and appointing. Performing P-acts results in what are termed *production facts* (P-facts) [4]. This is clarified in the context of a general care process. A P-fact would be, for example, 'client C has been registered'. Here the variable C refers to an instance of client registration. The creation of such a P-fact by a corresponding P-act is known as a *transition* in the *production world* (P-world) [4]. The set of P-facts that have been created form the state of the P-world.

Coordination acts (C-acts) are performed by one actor and directed to another actor [4]. They coordinate the execution of production acts using a set of intentions of which *request*, *promise*, *statement* and *acceptance* are the basic intentions in enterprise ontology [4]. A C-act is defined using one of those intentions followed by the P-fact, i.e. the being requested of the P-fact 'client C has been registered'. As with P-acts, the performance of C-acts result in facts called *coordination facts* (C-facts). The creation of C-facts by corresponding C-acts is known as a *transition* in the *coordination world* (C-world) [4].

2.2.2 The Transaction Axiom

The *transaction axiom* states how actor roles and different acts, defined by the operation axiom, are related to each other [4]. C-acts are performed in a certain pattern in order to achieve a particular result, namely a P-fact. This pattern of C-acts is called a *transaction* [4].

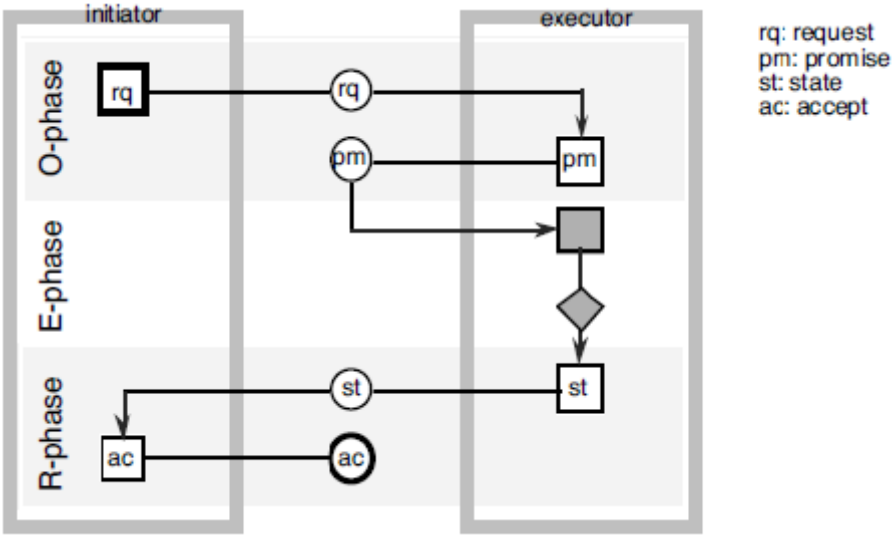

Figure 4 – The basic pattern of a transaction

Figure 4 illustrates a *basic pattern* of a transaction. There are always two actor roles involved in a transaction, namely the *initiator* and the *executor*. To explain the actor roles and acts that are involved in the basic transaction in some more detail, let us again consider the P-fact of the previous section. The P-fact 'client C has been registered' is the result of the transaction. The initiator of this transaction is the client who wants the youth care organisation to register him as a client. This implies that the youth care organisation is the executor of the transaction, since they are the one who can create the P-fact concerned.

The transaction is initiated by a *request* of the client for registering him as a client. The youth care organisation in turn *promises* to register the client by acknowledging the request (i.e. the promise that the P-fact is created). The transaction part discussed up till now is

known as the *order phase* (O-phase) of the transaction. The next phase of the basic transaction pattern is the *execution phase* (E-phase). After the youth care organisation has promised to register the client, the youth care organisation actually registers the client. This holds the performance of a P-act resulting in the P-fact concerned. Then, the youth care organisation *states* that a person is registered as a client, which means that the youth care organisation has handed over the client an overview of the registration. The client in turn *accepts* the fact that he has been registered and completes the transaction. The part where the statement and acceptance of the transaction is done is known as the *result phase* (R-phase).

The basic pattern of a transaction may create the impression that the initiator and the executor always agree on each other during a transaction; in the basic pattern the state act is always followed by the accept act. However, in practice they may also disagree on each other during a transaction. One should not assume that the executor will always promise as a response to a request. Instead of promising, the executor may respond by *declining*, and instead of accepting one may respond to a statement with a *rejection*. For this reason there is an extension of the basic transaction pattern in order to cope with those occurrences. This is called a *standard pattern* of a transaction [4], which is shown in Figure 5.

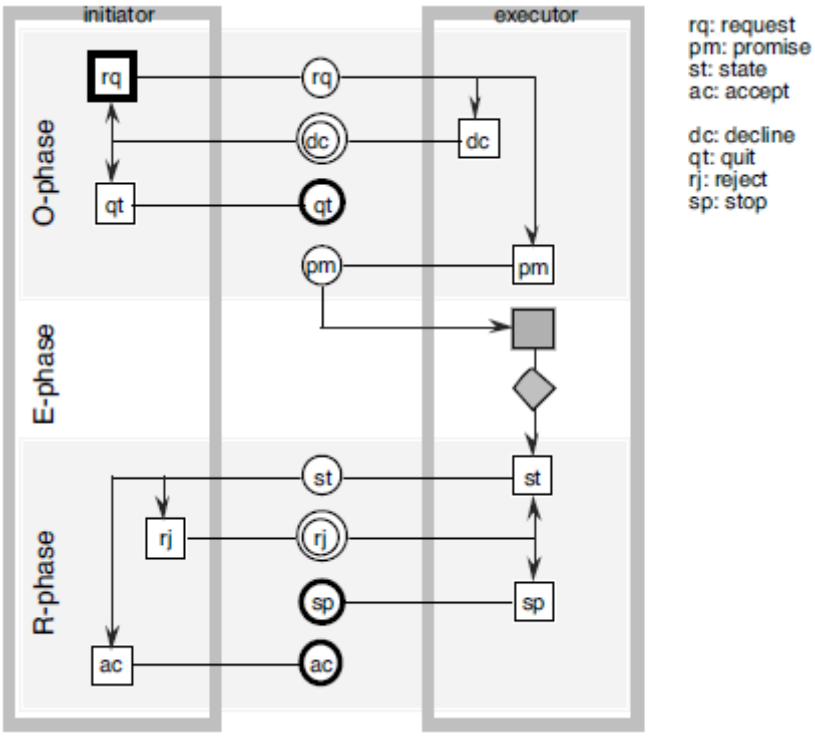

Figure 5 – The standard pattern of a transaction

Disagreements in transactions are indicated with the *decline* and *reject* act which result in the "declined" and "rejected" state respectively. These states are called the *discussion states* [4], meaning that the initiator and the executor of a transaction are in discussion in what

way the transaction can successfully be completed. The discussion may eventually lead to a new attempt to complete the transaction. On the other hand, the transaction might be *quitted* by the initiator or *stopped* by the executor. States resulted from acts included in the basic pattern of a transaction are called *normal states* [4].

As an example for clarification, let us take the declination of the request of a client to the youth care organisation for registering him as a client instead of promising the registration. The youth care organisation could decline the request, because in their opinion the registration was incomplete. This implies a discussion state in the transaction. The client could try to convince the youth care organisation that the registration is done correctly, i.e. that he has provided the correct client information. If and only if the youth care organisation is convinced, will they finally promise to register the client. Otherwise, the client could take back his request for registering by quitting the transaction. The client might reject the registration done by the youth care organisation, which is performed by the state act, instead of accepting it. The reason for this rejection might be that the client noticed incorrect data on the registration overview. In that case the client and the youth care organisation enter a discussion state. The youth care organisation could try to convince the client that they did not write down incorrect data for registering him. If the youth care organisation succeeds in doing so, the client and the youth care organisation agree with each other and the client actually accepts the registration. If the client can not be convinced, the transaction is stopped.

In practice, it is quite usual that either the initiator or the executor of a transaction wants to recall an act. This requires having the possibility to cancel any C-act in the basic pattern at any time and is called the *cancellation pattern* [4]. Four cancellation patterns can be distinguished, namely: cancellation of a request, cancellation of a promise, cancellation of a statement and cancellation of an acceptance. Every cancellation starts with a *cancel* act on which a conditional C-fact is put. This simply means that the cancellation can only be performed if this C-fact exists. As a responce to the performance of a *cancel* act, an *allow* or *refuse* act can be performed indicating whether the cancellation is actually realized.

2.2.3 The Composition Axiom

From sub section 2.2.2 we have learned that the result of a successful transaction is the creation of a P-fact. This sub section describes the way in which these facts are interrelated to each other. The composition axiom states that P-facts can mostly be ordered in a hierarchical parent-child tree structure. It states the fact that for a certain P-fact to be performed, first a number of child P-facts representing performance or production components, must be performed in a recursive way [32]. The composition axiom states that

every transaction is either embedded in some other transaction or it is a customer transaction or it is a self activating transaction [4]. Let us, as an example, take the component structure of the establishment of a patient problem in a policlinic (Figure 6). It shows that in order to establish the medical problem of a patient (P1), a clinical exam has to be done, and an unknown number of laboratory tests, at least one, have to be performed. Also an expert opinion has to be given. Figure 6 also shows that a clinical exam includes one of more clinical tests.

Defining a medical problem can be decomposed using a tree structure as shown in Figure 6. The tree is broken down from left to right, so part P2 is a component of part P1, and P5 is a component of part P2. The number of instances of a part that are contained as components in another part is indicated by *k..n*, where *k* stand for the minimum number and *n* for the maximum number.

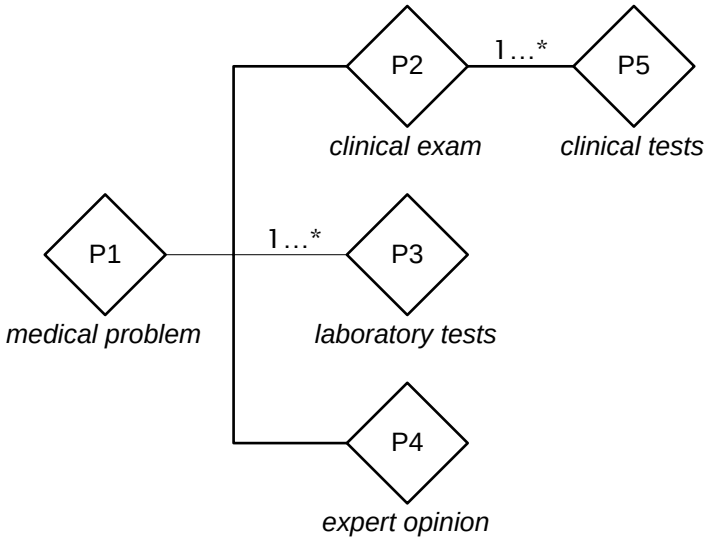

Figure 6 – Component structure of a medical problem

The logical sequence of the component structure of a medical problem puts restrictions on the sequence in which all these transactions are carried through. For example, the completion of part P1 can only be done after parts P2, P3, P4, etc. are produced. This also holds for part P2, where parts P5 must be produced first. Figure 7 shows how the transaction in which an assembly is produced is related to each of the transactions in which a component is produced or acquired.

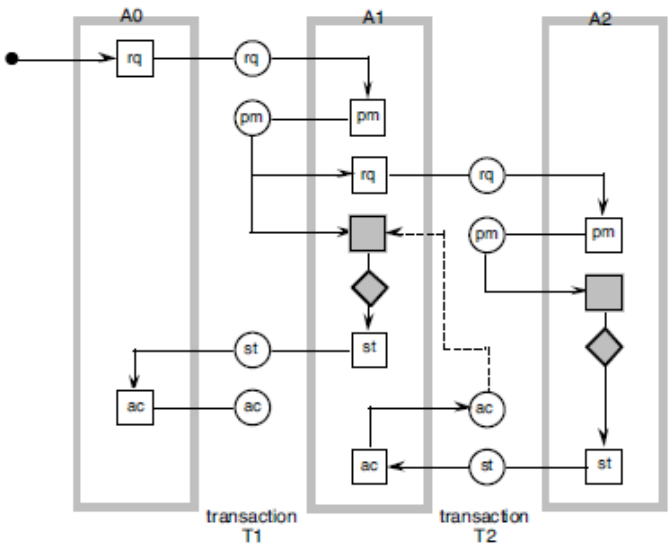

Figure 7 – The structure of enclosing a transaction

In the state "promised" of T1 the executor (A1) performs two acts, namely the execution of the production act (grey box) and the request for a T2, which is executed by actor role A2. This ensures that within every transaction T1, a transaction T2 is started. The dashed arrow from the state "accepted" of T2 to the execution act of T1 means that the execution of T1 has to *wait* for T2 to be completed. This construction is known as an *enclosed* transaction shown in Figure 7. T1 itself is initiated externally denoted by the arrow with a dot on the other end of the shaft. By externally we mean that the initiator is an actor role in the environment of the organisation. If the boundary is extended, T1 could become an internal transaction, with an internal actor as initiator. Given the boundary of an organisation however, there are always a number of transaction types of which the initiator is an environmental actor role.

An example of such an enclosed transaction can be seen in Figure 15 in sub section 2.3.2, which has been produced while modelling Cardea. The same explanation that was given above holds when exploring this figure.

Self-activation refers to *periodic activities*, like control activities. It is another possible way in which a transaction is initiated which is exhibited in Figure 8. In the state "requested" two acts are performed, namely the *promise* of T1 performed by the executor of the T1 (A1) and the other is the request of another T1 performed by the initiator of T1 (A0).

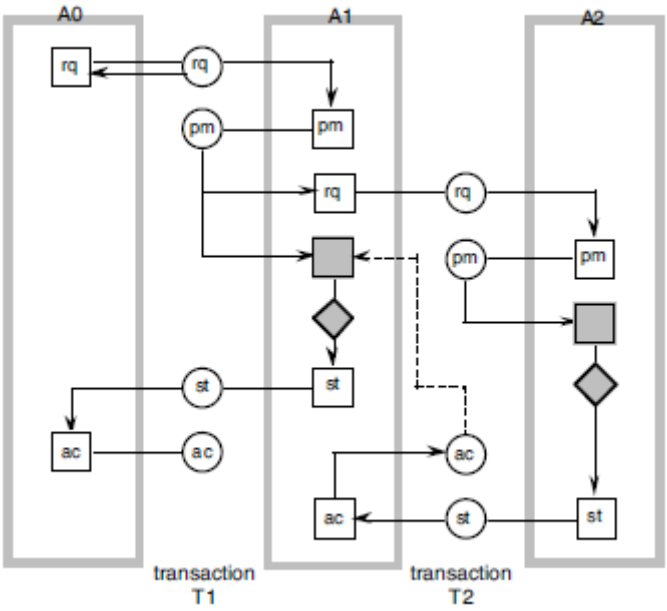

Figure 8 – The structure of self-activation

So the *composition axiom* shown by the two structures in Figure 7 and Figure 8 respectively means that every transaction is either enclosed in some other transaction, or is a customer transaction of the organisation under consideration or it is a self-activation. While modelling Cardea, we have not come up with a self-activating transaction. For this reason we have no applicable example for Cardea.

2.2.4 The Distinction Axiom

The *distinction axiom* states that three distinct *human abilities* play a role in the operation of actors, called *performa*, *informa* and *forma*. These abilities regard communication, creating things, reasoning, as well as information processing [4]. Figure 9 summarizes the distinction axiom.

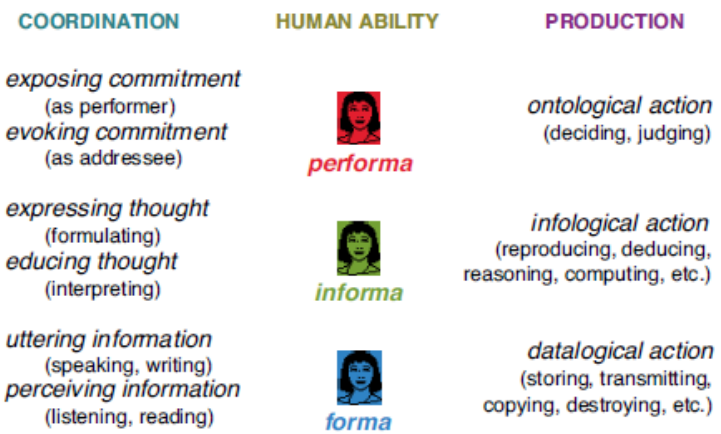

Figure 9 – Summary of the distinction axiom

Forma Ability

On the *coordination* side, the *forma* ability deals with the form aspects of communication and information. Information should be expressed in a particular language or code scheme which both the initiator and the executor of a transaction understand i.e. information written in English or some language they both understand. It is about syntactical understanding. On the *production* side, the *forma* ability deals with the form aspect of communication in terms of data transmission, data or document storage and retrieval or destruction. This type of P-acts is known is a *datalogical* acts. Transactions which contain a datalogical act are referred as *datalogical transactions* or *D-transactions* [4].

Informa Ability

The *informa* ability, on the *coordination* side, deals with the content aspects of communication and information. For a good communication it is necessary that the initiator formulates the information in such a way that the executor can interpret it. In other words, the initiator and the executor should semantically be in agreement with each other and share the same thoughts. This is also called intellectual understanding. On the *production* side, the *informa* ability states that information can be reasoned, computed, reproduced or deduced. These types of P-acts are known as *infological* acts and the transaction that goes along with these acts are called *infological transactions* or *I-transactions* [4].

Perfoma Ability

The *performa* ability, on the coordination side, states that new information and knowledge can be created through communication between the initiator and the executor. This means exposing and evoking commitment and indicates social understanding between the initiator and the executor. On the *production* side, the *performa* ability deals with making decisions, judgments, or creating material things such as products. This type of P-acts is known as *ontological* acts. Transactions which contain an ontological act are referred as *ontological transactions* or *B-transactions* [4]. The performa ability is considered the *essential* human ability for doing business of all kind. The dependencies between the three human abilities in performing a coordination act is shown in Figure 10.

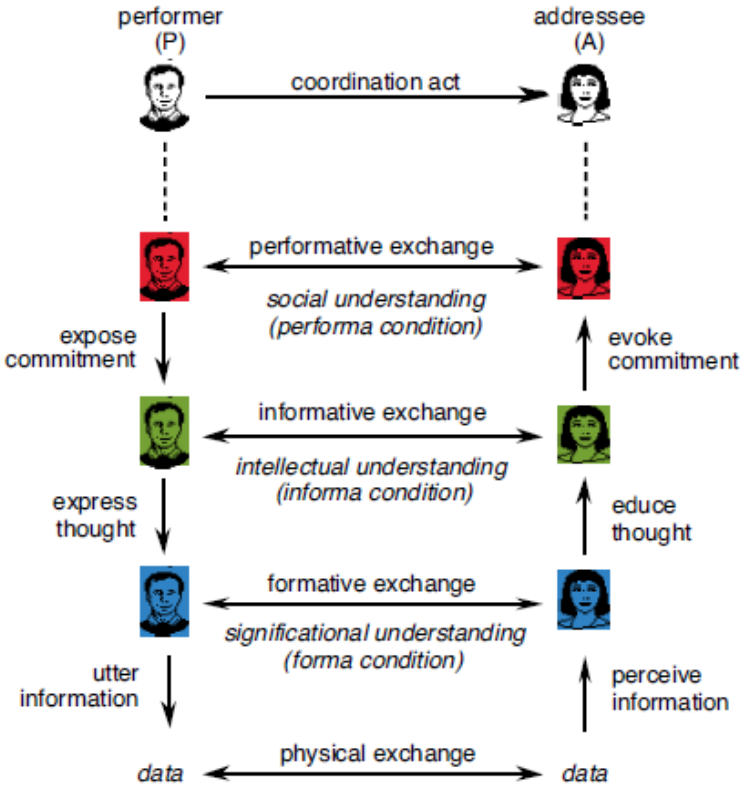

Figure 10 – The process of performing a coordination act

2.2.5 The Organisation Theorem

The *organisation theorem* states that the organisation of an enterprise is a heterogeneous system that is constituted as the layered integration of three homogeneous systems: the *B-organisation* (from Business), the *I-organisation* (from Intellect) and the *D-organisation* (from Document) [4]. Theses homogeneous systems are also known as the *aspect organisations* of the enterprise and represented by Figure 11.

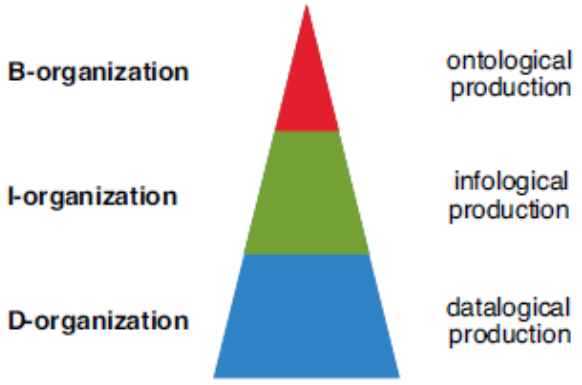

Figure 11 – Representation of the organisation theorem

All these three homogeneous systems are similar as far as the coordination is concerned: the elements are subjects that enter into and comply with commitments towards each other regarding production acts. The only difference is the kind of production: the production in the B-organisation is ontological, the production in the I-organisation is infological and the production in the D-organisation is datalogical. For this reason an organisation is called a heterogeneous system. The triangular shape in Figure 11 means that the knowledge of the B-organisation is the complete knowledge of the essence of the enterprise; all the rest is merely realization and implementation [4].

The *business organisation layer* or *B-organisation layer* is the essential layer of the enterprise. Here the organisation performs interaction in the form of communication and production in order to achieve the goals of the organisation. In other words, the organisation focuses on the products and services that they deliver to their environment. This layer consists of actors who initiate unique operations leading to unique and inevitable results. On this layer actors interact with other social entities (actors) in the system [6]. As an example at Cardea, there is an actor called care starter which orders, after having read the indication decision send by BJZ, the professional to start the care taking process. The transaction between two actors in the system results in new and unique facts, namely that care is being provided to a client.

The *information organisation layer* or *I-organisation layer* is the layer in which information is being processed and is unable to interpret the information. This is only possible in the B-organisation. With information processing we mean calculating and deriving data by means of algorithms in other data. This information is then used by actors of the B-organisation. An example at Cardea is an information transaction that can compute the amount of money Cardea may receive based on the client contact time, kind of care, amount of care (PxQ-systeem).

The *data organisation layer* or *D-organisation layer* is the layer that handles the storage, copying, searching, editing and deleting of data. The transactions on the data layer are primarily responsible for data processing. This means retrieving data needed for or entering data after information processing respectively [6]. An example of a data transaction of Cardea is entering the cooperation agreement contracts into a database table. Actors in this layer are for instance archivists.

2.3 DEMO: Methodology

This section presents the DEMO methodology that has proven to be effective in numerous projects in practice. Some example projects are: INQA quality management system, Air

France Cargo – KLM Cargo Aerospace Logistics, Organisational structure police corps and some more which can be seen on the official DEMO website[6].

A complete organisation model consists of four related aspect models: the construction model, the process model, the action model and the state model. The *construction model* (CM), described in subsection 2.3.1, specifies the construction of the organisation and is related to the *operation axiom* discussed in subsection 2.2.1 [8]. The CM consists of two parts namely the *interaction model* (IAM) and the *interstriction model* (ISM). The *process model* (PM), described in subsection 2.3.2, specifies the transaction patterns of each of the transactions in the CM [8]. The *action model* (AM) is the specification of the action rules that actors follow in fulfilment of their actor roles [8]. The AM will not be discussed further when making the organisation model for Cardea, because it is not relevant for Cardea and thus mentioned only in this part. Subsection 2.3.3 describes the *state model* (SM) which specifies the state space (i.e. the set of allowable states) of both the production world and the coordination world of the organisation [4]. In other words, it contains the conceptual model of all facts that are produced and used.

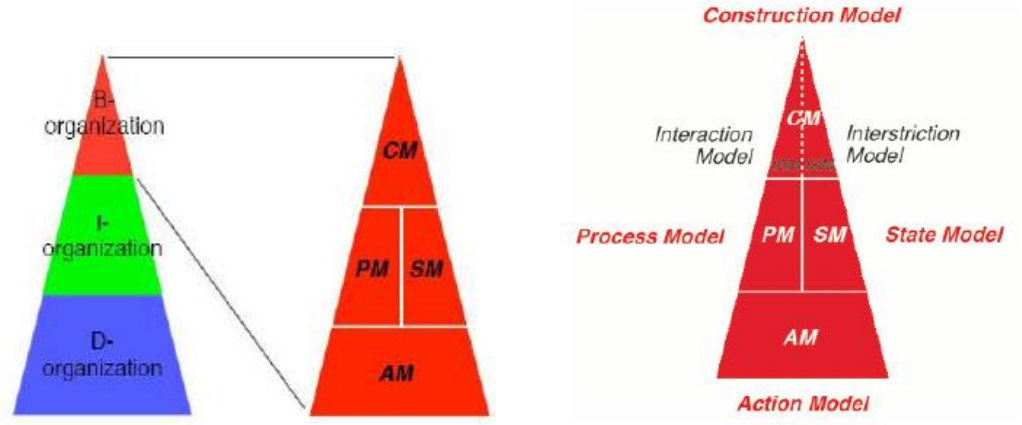

Figure 12 – The ontological aspect models

As was described in subsection 2.2.5 an organisation consists of three layers namely the B-organisation, the I-organisation and the D-organisation. For describing the aspect models we will use the B-organisation as a focus point.

2.3.1 The Construction Model

The *construction model* (CM) specifies the construction of the organisation and is related to the *operation axiom* discussed in subsection 2.2.1 [8]. The CM specifies the identified

[6] www.demo.nl

transaction types and the associated actor roles, as well as the information links between the actor roles and the *information banks* (the collective name for production banks and coordination banks). As can be seen in Figure 12 the CM is on top of the triangle, which means that it is the most concise model and that there is nothing above it. The CM consists of an *interaction model* (IAM) and an *interstriction model* (ISM).

The Interaction Model

The *interaction model* (IAM) specifies the actor roles in the organisation and the transactions that take place between them. The IAM shows the active influencing relationship between actor roles. Environmental actor roles will always be drawn as composite actor roles, even if it is known that an actor role is elementary. The reason for doing this is that we do not know and care whether an environmental actor role is elementary or composite. The interest lies in the kernel of the organisation and can always be represented by one composite actor role. The *interaction structure* of an organisation consists of the transaction types in which the identified actor roles participate as initiator or executor. For this it provides an Actor Transaction Diagram (ATD) and a Transaction Result Table (TRT) [4].

Practical Relevance of the Interaction Model

First, the IAM shows the boundaries of the organisation and the interface transactions with actor roles in the environment. The IAM clarifies who the clients and suppliers are by means of a complete set of transactions. Second, the IAM shows the ontological units of competence, authorization and responsibility. Third, the IAM forms the *organisation map* which gives a clear overview of the organisation and makes it manageable.

The Interstriction Model

The *interstriction model* (ISM) constitutes the right side of the CM. The ISM specifies the relationship between the actor roles in the organisation and the information banks used by them. The ISM shows the passive influencing relationship between actor roles, i.e. the taking account by an actor role of facts produced by other actor roles. The *interstriction structure* of an organisation consists of the *information links* between actor roles and coordination and production banks. The ISM provides an Actor Bank Diagram (ABD) and a Bank Contents Table (BCT). When they are merged into one, the ATD and ABD are called the Organisation Construction Diagram (OCD).

The transaction symbol is now interpreted as the combination of the production and coordination bank that belong to the transaction and is called *elementary*. Like it was for the case for the composite actor role we will consider external banks to be composite, because it is unknown whether it is an elementary bank or the union of two or more elementary banks. The access right of an actor to a bank is represented by a dotted line between the actor and the bank. Because the actors through the information in the banks (with which

they have an information connection) restrict each other's movement (read: decision-making) freedom, the model is called an ISM.

Practical Relevance of the Interstriction Model

What the interstriction model (ISM) adds to the benefits of the IAM is that it shows at the same level of compactness the complete 'passive' system structure, i.e. the information links between actor roles and banks. In addition, it contains the external banks to which the organisation needs to have access. The first practical application of the ISM (in fact, of the full CM) is its being the background for mapping the existing information systems and other ICT applications in an organisation, as the first step in studying the overlap of these systems and finding the activities that are actually not supported by information systems. Second, the abstraction in the ISM from the particular way in which an actor role gets the information that is needed provides a new but very appropriate insight to the relationship between (the fulfiller of) an actor role and the needed information. There are two ways of realizing an information link. One is that the actor seeks for the information needed and the other way is that the actor is informed by the owner of the information or by someone else (someone who is authorized to do so). Third, the issue of ownership of data is made transparent by the CM; every fact is the result of a transaction and every transaction has an initiator and an executor.

Construction Model of Cardea

This sub section describes the organisational model of Cardea based on the theory and methodology described in the previous chapters.

For the term organisation we use the definition of Bemelmans (1998): "An organisation is a partnership between people with their own identity concerning culture and structure. Culture is determined by the norms and values applied within an organisation. Structure is determined by the agreements made within an organisation on tasks and related responsibilities and powers" [23].

The organisation model of Cardea clarifies the communication between the client en Cardea during the care taking process as described in the client route (Appendix E – Client route of Cardea). We have used this client route to identify several actor roles and actors involved during the care taking process.

Two composite actor roles are identified based on the client route, as shown in Table 1.

Nr.	Actor role	Description/Responsibility
CA00	Cardea	Youth care organisation responsible for delivering professional care to client
CA01	Client	Youth (or group of youth) scheduled to receive, receiving, or having received professional care

Table 1 – Composite actors

Table 2 gives an overview of the abbreviations used for the actors and their Dutch translations identified in the care taking process:

English	Dutch translation
Client administrator	Clientenadministratie (CA)
Client administrator of Central Bureau	Clientenadministratie Centraal Bureau (CA-CB)
Admittance coordinator	Opnamecoordinator (OC)
Team leader	Teamleider (TL)
Educationist/psychologist	Orthopedagoog/Psycholoog (OP)
Care provider	Hulpverlener (HV)
Waiting time supervisor	Wachttijdbegeleider (WTB)
Case manager	Casemanager (CM)
Reception	Receptie (R)

Table 2 – Identified actors involved in the client route

Table 3 gives an overview of the actor roles and the role fulfillers identified according to the description of the client route given in Dutch (Appendix E – Client route of Cardea). The role fulfillers are the actors identified, as shown in Table 2. For each actor their responsibilities or a description of what they are doing is given. Each actor can fulfil a specific actor role according to its description or responsibility and is therefore grouped by actor roles. The numbers between brackets correspond to the numbers in the table in the client route. In Appendix G – Actor Analysis Matrix one can see the actor analysis given in Dutch. Based on this actor analysis the ATD and the TRT of the client route at Cardea is produced.

Nr.	Actor role	Description/Responsibility
B-A01	Care provision contractor (OC, OP, HV)	• Withdrawal by customer or WEK (2.4, 3.5) • Sign SWO/VGV/end report by client, CM, HV and OP (3.11, 3.12, 4.2)
B-A02	Indication evaluator (CA-CB, OC, OP, WTB)	• Based on the administrative checklist, evaluate indication. In doubt, discuss with OC (1.2) • Reading and discussing the indication and

		checking it on content. Accept or reject the application (S2, 2.1, 3.1)
B-A03	Care provision scheduler (TL)	• Planning for starting care (3.2) • Deciding end date of care. Discuss end of care with CM (4.1)
B-A04	Client registrar (CA-CB)	• Entering client data in Care4 (1.4) • Entering client data in Care4 with code "high priority" (S3) • Registering a new client in Care4 and making a new client record
B-A05	Care provision deliverer (OC)	• Distribution of client to professional/assign supervisor (3.2)
B-A06	Care program fulfiller (HV)	• Professional starting the actual care process
B-A07	Care program composer	• Setting up a care program for the care process together with the client and the indication decision

Table 3 – Actors with their responsibilities

Table 4 depicts the transactions that Cardea (kernel) executes for its environment and that it initiates in its environment and can also be found in Appendix F – ATD and TRT of Cardea. Figure 13 shows this graphically in a global Actor Transaction Diagram.

	Transaction type		Result type
B-T01	care provision contracting	B-R01	*care provision CP has been contracted*
B-T02	indication evaluation	B-R02	*indication for care provision CP has been evaluated*
B-T03	care provision scheduling	B-R03	*care provision CP has been scheduled*
B-T04	client registration	B-R04	*client CL has been registered*
B-T05	care provision delivery	B-R05	*care provision CP has been delivered*
B-T06	care program fulfilment	B-R06	*care program of care provision CP has been fulfilled*
B-T07	care program composition	B-R07	*care program for care provision CP has been composed*
B-T08	care provision approval	B-R08	*care program of care provision CP has been approved*

Table 4 – Transaction Result Table of Cardea

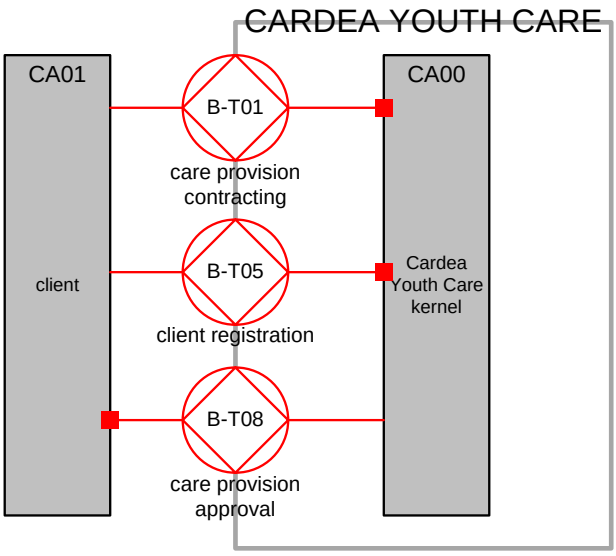

Figure 13 – Global Actor Transaction Diagram of Cardea

Figure 14 gives the complete Organisation Construction Diagram (OCD) and Figure 34 gives an overview of the detailed Actor Transaction Diagram (ATD) of Cardea (see Appendix F – ATD and TRT of Cardea). From Figure 14 one can define six business processes, namely: contracting/evaluation, scheduling, registration, delivery/fulfilment, composition and approval. These processes are described in more detail in sub section 2.3.2.

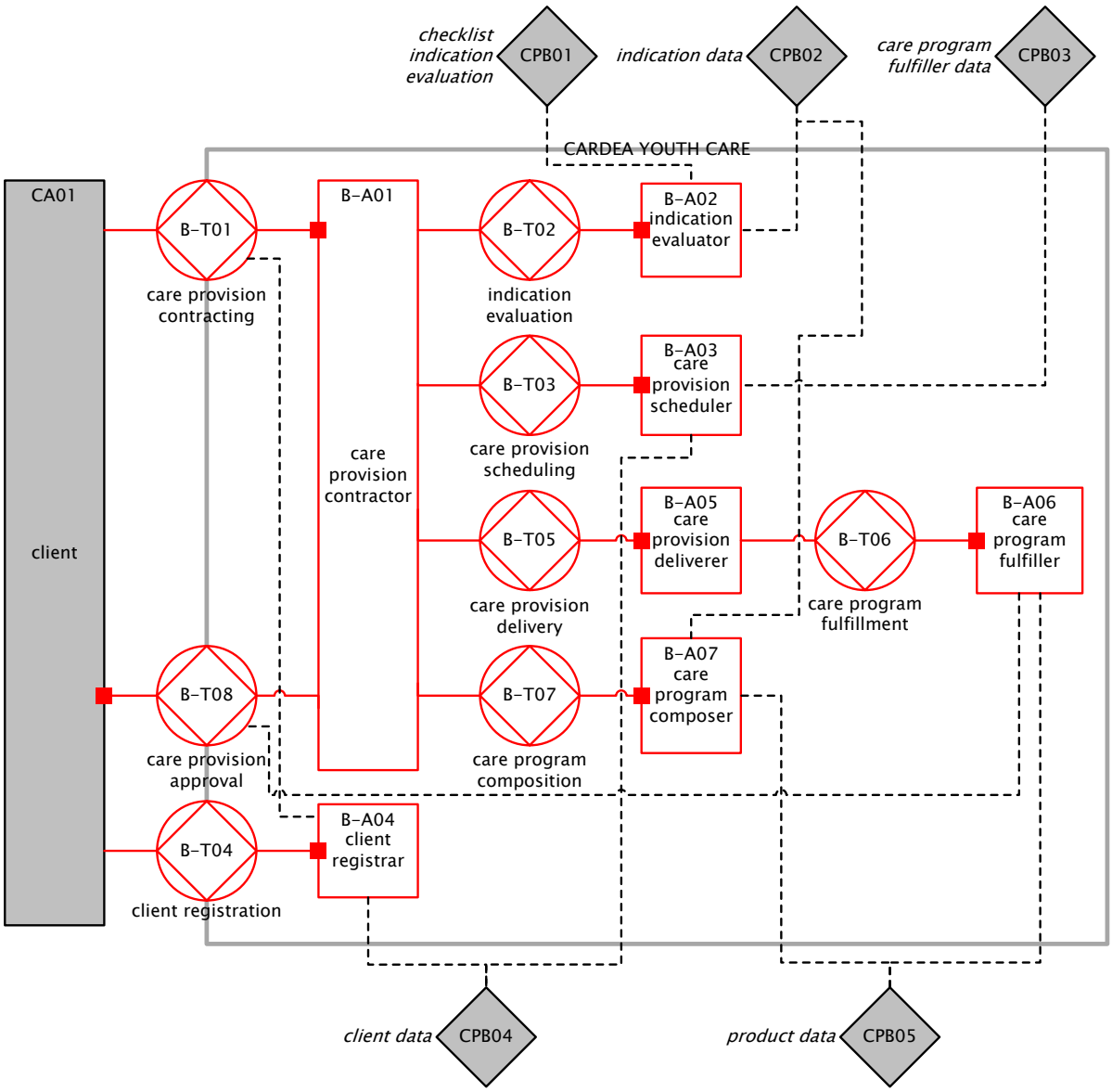

Figure 14 – Organisation Construction Diagram of Cardea

From Figure 14 on can see that there are two internal information links. The first internal information link is between actor role B-A04 *client registrar* and transaction B-T01 *care provision contracting*. Actor role B-A04 uses the information, delivered as a result from B-T01, to register a new client which needs care. Client registration takes place tacitly, which means that whenever a client has been contracted for a care provision, the client is registered by the client administration of Cardea. The client does not explicitly have to ask for a registration, but in practice the client must be modelled in the way we have done here.

The second internal information link is between actor role B-A06 *care program fulfiller* and transaction B-T08 *care provision approval*. Before actor role CA01 accepts the care provision approval, information about the fulfilment of the care program is needed. This information is delivered by actor role B-A06.

Bank#	Bank name	Bank contents	Actor#	Actor role
CBP01	checklist indication evaluation	Cardea checklist	B-A02	indication evaluator
CPB02	indication data	client indications care programs	B-A02 B-A07	Indication evaluator care program composer
CPB03	care program fulfiller data	professional availability	B-A03	care provision scheduler
CPB04	client data	client availability client information	B-A03 B-A04	care provision scheduler client registrar
CPB05	product data	care products	B-A06 B-A07	Care program fulfiller care program composer

Table 5 – Bank Contents Table of Cardea

Figure 14 shows the interstriction relations between actors and external production banks, which are listed in Table 5. The *checklist indication evaluation* (CPB01) is needed by actor role B-A02. Cardea has their own checklist to check whether the indication decision sent by BJZ is complete or does not contain any shortcomings before they can agree upon providing care. If the indication decision is incomplete or contains any shortcomings, it is send back to BJZ and a new indication decision is needed in order to provide care to the client. The *indication data* (CPB02) are needed by both actor role B-A02 and B-A07. Actor role B-A02 needs to know whether the indication decision sent by BJZ is set out correctly. For this they also use their own checklist in order to agree upon providing care to the client. Actor role B-A07 needs to know what kind of care must be provided to the client and in this way actor role B-A07 can compose a suitable program for the client. The *care program fulfiller data* (CPB03) are needed by actor role B-A03, because he needs to know which professional is available at the moment before he can schedule this professional for a care taking process. The *client data* (CPB04) are needed by both actor role B-A03 and B-A04. Actor role B-A03 needs to know which client is registered and couple the client to a professional who will fulfil the care program. Actor role B-A04 needs the right client before he can update the client data. The *product data* (CPB05) are needed by both actor role B-A06 and B-A07. Actor role B-A06 needs to know which care products are in the catalogue in order to eventually add more products to the care program of the client when necessary. Actor role B-A07 needs to know which products are in the catalogue in order to compose a right care program for a client.

2.3.2 The Process Model

The Process Model (PM) specifies the transaction patterns of each of the transactions in the CM. It also shows the causal and conditional relationships between transactions. As such it shows the state and transition space of the coordination world of the organisation. The PM also contains the causal and conditional links between transactions. Most causal links are defined by the generic transaction pattern called the intra-transaction links. An inter-transaction causal link represents that a transaction is initiated from within another transaction. Conditional links represent wait conditions between transaction steps and are always inter-transaction links.

The PM provides a Process Structure Diagram (PSD) and an Information Use Table (IUT). The PM is thus a further detailing of the CM. Once one has achieved the comprehensive overview of the organisation through the CM, the knowledge contained in the PM is overlaid on that knowledge and falls into place. The PM is just put below the CM in the triangle, because it is the first level of detailing the identified transaction types.

The symbol of the C-fact type (a small disk) is pushed, so to speak, onto the symbol of the C-act type (a small box), from which it is created. This is possible since any C-act type has exactly one C-fact type as its result. A similar reasoning holds when pushing the small diamond of the P-fact type onto the small box of the P-act type. The combined symbols represent process steps. In principle, the PSD specifies for every included transaction type the process steps that are allowed to be taken [4].

Practical Relevance of the Process Model

The most important characteristic of the PM is that it shows the deep structure in an organisation, independent of their implementation. First, the PM makes it easier to discuss the re-designing and re-engineering of business processes. It abstracts from the material aspects, both from the real material things that may be produced or transported and from the forms and files that are used for communication between the participants in the business process. Second, the PSD can be used to make workflow diagrams easily and program a workflow management system. Third, the PM shows clearly that a component transaction can be optional or can be made optional. Fourth, the PM can be used to discuss about which actor roles must be assigned with which organisational functions. Fifth, the PM is very useful as the starting point for the requirements engineering regarding supporting information systems. No unnecessary requirements are taken into account, while at the same time it guarantees that nothing will be forgotten. Finally, the PM is a suitable starting point for developing use cases.

Process Model of Cardea

As mentioned in sub section 2.3.2 the PM provides a Process Structure Diagram (PSD) and an Information Use Table (IUT). We will not make the IUT here because it is not relevant and has no added value during this research. When looking at Figure 14 one can identify six business processes, namely:

1. contracting/evaluation
2. scheduling
3. registration
4. delivery/fulfilment
5. composition
6. approval

Figure 15 and Figure 16 show the PSD of business process 1 and 4 graphically. The PSD of business processes 2, 3, 5 and 6 can be found in Appendix H – Process Models.

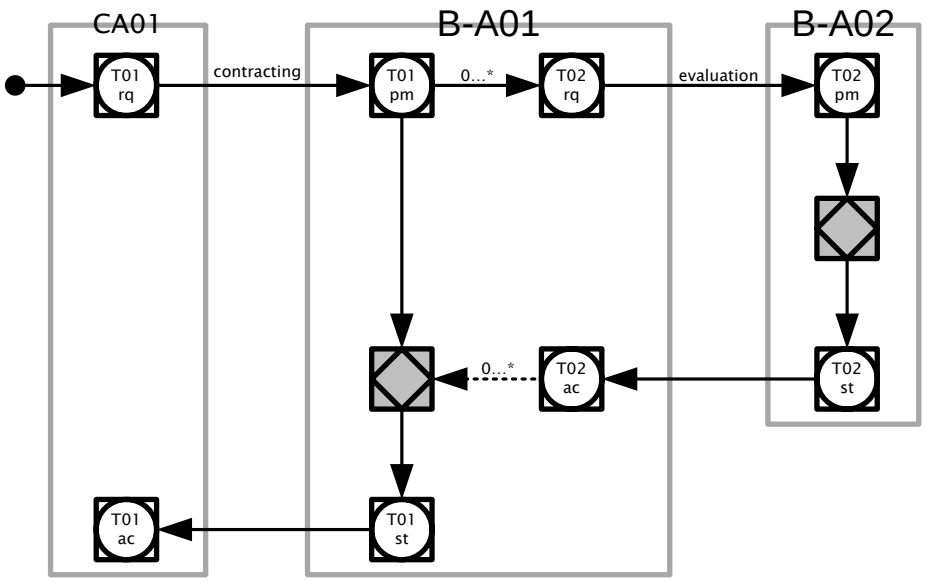

Figure 15 – Process Structure Diagram of business process 1

As one can see in Figure 15, the standard steps in a transaction are connected to each other by causal links; there is a causal link from T01/rq to T01/pm and to every request step. The link to T01/rq is an external link and the causal link to T02/rq is an internal link. By external link we mean that the request of T01 is done by an environmental actor role, in this case composite actor role CA01. By internal link we mean that the request of T02 is done by an internal actor role, e.g. actor role B-A01.

As the outcome of dealing with the C-fact T01/pm, two actions are taken: T02/rq and T01/ex. So when care provisioning contracting is promised, evaluation is requested. A number of transactions T02 are initiated when dealing with T01/pm, indicated by the

cardinality (0...*) for minimally none (0) and maximally an unspecified (*) number respectively. So, zero or more evaluations may be performed. Completing all the transactions T02 is a wait condition for step T01/ex. So, the contracting of a care provision can be executed as soon as the indication decision has been evaluated and accepted.

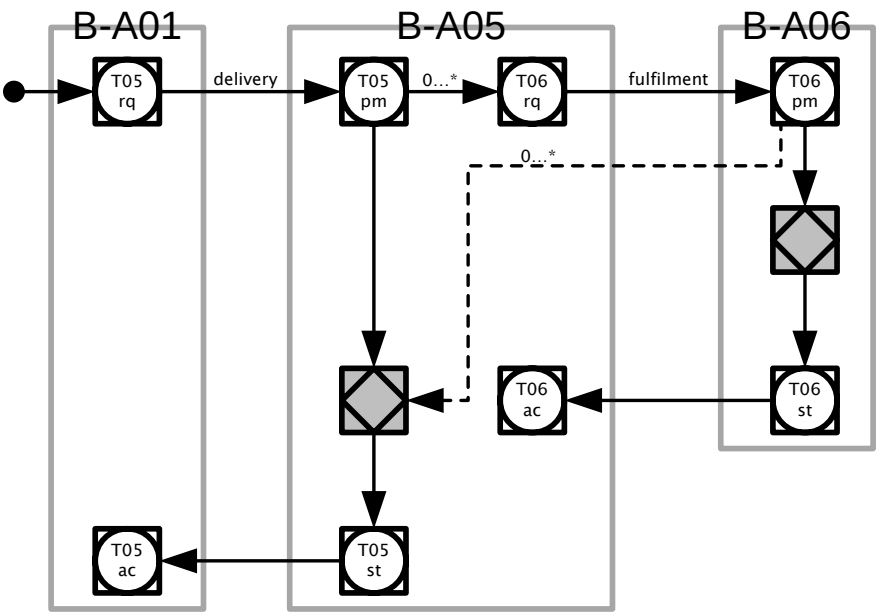

Figure 16 – Process Structure Diagram of business process 4

From Figure 16 one can see examples of an external and an internal causal link for a request, namely T05/rq and T06/rq. The T06/rq takes place after a T05/pm has been done. So after care provision delivery has been promised, care program fulfilment is requested. A direct consequence of a T05/pm is also the step T05/ex, but this step has a conditional link. Step T05/ex can only be performed if step T06/pm has been done. So, the delivery of a case to the professional can only be executed if the fulfiller of the care program promises to fulfil the case.

2.3.3 The State Model

The *state model* (SM) is the specification of the state space of the production and coordination world of an organisation. It holds such things as object classes, fact types, result types, and existential laws. For visualizing these elements the SM provides an Object Fact Diagram (OFD) and an Object Property List (OPL) [8]. The OPL is a neat way of specifying fact types that are proper (mathematical) functions and of which the range is the set of values. Fact types in an OPL are called properties (of object classes) [4].

Practical Relevance of the State Model

First, it is the ideal starting point for developing and maintaining the data dictionary of an organisation. Not only does it provide the concepts that are essential for the organisation, it also helps in conceiving the best concepts. Second, in contrast with current data models, the state model is structured in chunks around the main object types, which are mostly categories. These object types are the variables in the result types of the distinct transaction types. Third, the connections of the result types with the transaction types in which they are created provide the basis for a discussing the issue of data ownership [4].

State Model of Cardea

Figure 17 shows the OFD of Cardea and Table 6 depicts the OPL of Cardea. For Cardea this model can be used to set requirements for a system such working with digital records can be done properly.

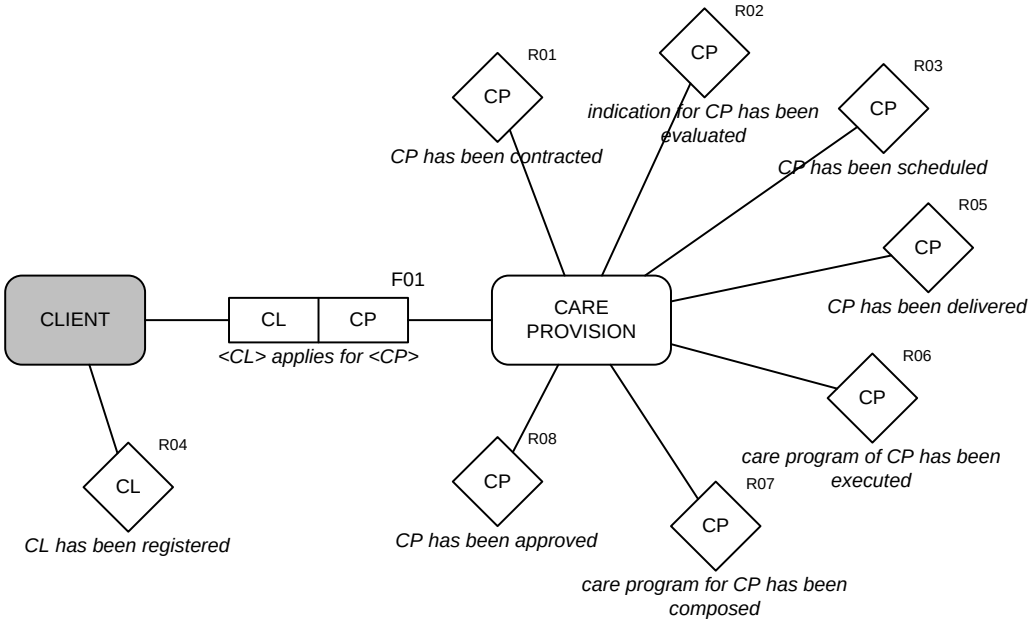

Figure 17 – Object Fact Diagram of Cardea

property type	object class	scale
care_provision_start_date	CARE PROVISION	JULIAN DATE
care_provision_end_date	CARE PROVISION	JULIAN DATE
care_provision _delivery_date	CARE PROVISION	JULIAN DATE
care_duration	CARE PROVISION	#MONTHS
name	CLIENT	NAME
address	CLIENT	ADDRESS
phone_number	CLIENT	NUMBER
date_of_birth	CLIENT	JULIAN DATE
age (*)	CLIENT	NUMBER

Table 6 – Object Property List of Cardea

The asterix between brackets indicates that the property type is a derived statum type. The derivation rule is as follows:

age (CL) = <current_date – date_of_birth(CL), converted for calender>

2.4 Conclusion

This chapter described the way an organisation can be modelled in such a way that the essence of the organisation is clear to everyone, using the DEMO methodology to do so. As stated at the beginning of this chapter, Cardea is being analysed (see chapter 4) based on the four components of the concept of the Alares 'knowledge environment', namely: organisation, systems, culture and competence.

The organisation model described here is of added value to the organisation component of the concept of the 'knowledge environment', because this component has the characteristic of identifying roles and responsibilities of the employees in the organiation and it is not mentioned how to do this. The DEMO methodology describes the way actor roles and responsibilities can be identified, by making an actor analysis matrix. This methodology can also help to identify the several (information) systems in use at the organisation, based on the several transactions and business process models described here.

Togehter with the organisation model of Cardea described here and the way Cardea is analysed in chapter 4, a good base is formed to start the transition process by using the roadmap described in chapter 5.

3 Record Types, Benefits and Barriers

Chapter 3 elaborates on the three sub questions given in section 1.3. For a clear overview this chapter is divided into three sub sections where each of the three sub questions is discussed.

Before the invention of typewriters and later on personal computers, we only had the opportunity to produce handwritten versions of client records. With the invention of the typewriter it was possible to make a transition from hand written or paper client records to a typed form of client records. Although this was not a digital version of the paper record, it was better readable than handwritten records. With the invention of the personal computer it was now possible to make a digital version of the paper record. This is the time when digital records were born and the value of digital records became clear. With the ongoing development of new technology a new era of another record type is born, namely the online record. An online record is a digital record that is accessible through internet.

Behind all these innovations some drawbacks exist when introducing them into an organisation. We also come across some barriers when introducing new ways of working in an organisation. Therefore this chapter is dedicated to these topics. Section 3.1 describes what the content of the three record types should be. In section 3.2 the benefits and drawbacks of digital and online records are described and in section 3.3 the barriers of introducing digital records and how these could be dealt with are described.

3.1 Content Record Types

This section elaborates on the first sub question of section 1.3, namely:

What should be the content of the three record types?

The information used in this section will be conducted from online resources and also at Alares and Cardea.

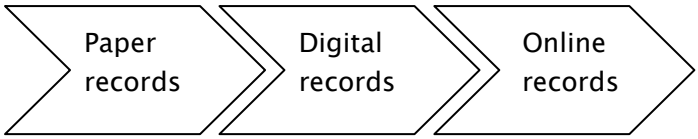

Figure 18 – Record types in the youth care sector

In the youth care sector three record types (Figure 18) can be distinguished namely paper records, digital records and online records. As stated earlier, digital records which are accessible through the internet are called online records and digital records are a digital representation of the paper records. Cardea does not have online records yet, but they want to offer this service to their clients in the future. In this project we do not elaborate on how to introduce online records at Cardea, but we will briefly describe the content of each of record types.

Figure 19 gives an overview of the paper and digital record composition process as done at Cardea. This process can be compared to the DEMO construction model of Cardea (see Figure 14) which also describes the care taking processes, but in a slightly more detailed manner.

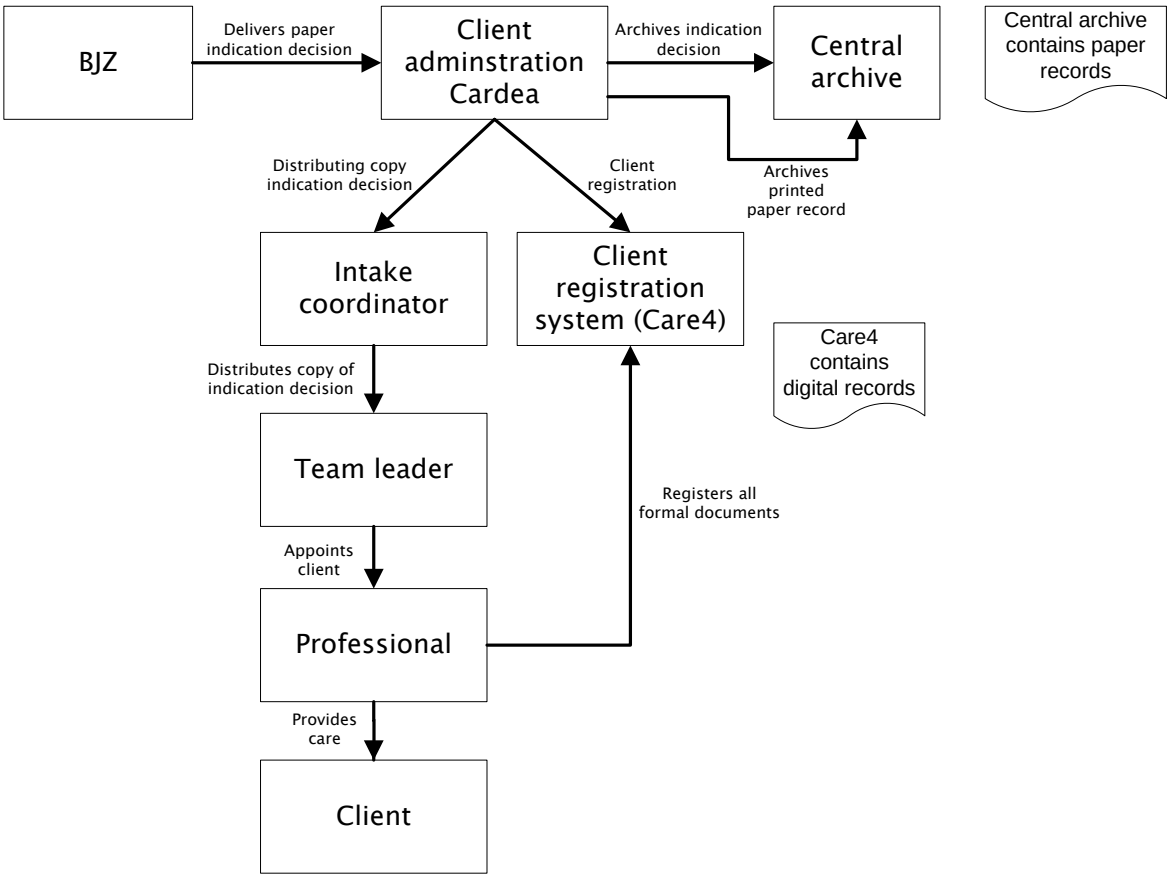

Figure 19 – Paper and digital record composition process

Paper Records

The central administration of Cardea receives a paper version of the indication decision (Dutch: indicatiebesluit) send by Childcare Office (Dutch: Bureau Jeugdzorg (BJZ)), which forms the basis of the composition of a client record. Because the indication decision is received on paper, part of it is registered in Care4. The parts which are registered in Care4 are the personal information of the client such as country of birth, birth place, nationality, address, phone number(s), general practitioner, school, relations, legal measures, family information, indication data (decision, issued, arrival date, validity) and claims (type, period). The central administration distributes a copy of the paper indication decision and archives the original indication decision. This is the start of the composition of a paper record. After the registration the team leader appoints the client a professional who will provide the care. Before the team leader receives the client record, the intake coordinator (OC) searches for a care program suitable for the client. Together with the client the professional creates a care taking plan including the goals they want to reach, which in turn are registered in Care4 and form the digital record. A paper record contains, besides the indication decision, all the personal information of a client and all formal documents, i.e. report of the first conversation, agreement of cooperation, half year progress report and end report if the care taking process has come to an end. The formal documents are from notes made by a professional during meetings with a client in the care taking process. A reason why still paper records are used, is because at the end of the care taking process, a signature must be put by both the professional and client. Also some professionals find it easier to read from paper records. The formal documents are printed out after the care taking process has come to an end. This forms the official paper record of a client and is archived for the period of 10 years, according to the law on Youth Care [13]. Paper records are archived in a filing cabinet at a central place, which is on one of the campuses of Cardea. “People from the client administration bring these records in a secured suitcase to this location”, said one of the interviewed managers. One of the managers also suggested that “there needs to be discussed rather this must be done by an archivist instead”. When clients want to have insight in their records, people working at the client administration search in the archive and bring the paper record of the client in a secured suitcase to the central administration. This is very time consuming, both for the client as well as the administrator. Therefore Cardea wants to work with digital records, because in this way more people can be served and work is done more efficiently.

Digital Records

With the introduction of the new client registration system (Care4) at Cardea, it is possible to work with digital client records. Care4 is the system in which a digital client record is built and thus can be viewed using a computer. Because of this we can speak of a digital record. Employees of Cardea have access to digital records from any computer with internet

connection and Citrix[7] installed on the computer. The content of a digital record is the same as the paper record accept for the indication decision, which is received on paper and partly entered into Care4 by the client administration. Cardea wants BJZ to deliver the indication decision digitally so that the client administration does not have to do this by hand. If BJZ will sent a digital indication decision, the client administration will be freed from entering this in Care4 and care takers are then able to view the original indication decision digitally. This saves the client administration a lot of paper work. Professionals keep up the progress of the care taking process of a client in the digital record until the end of the care.

A digital record is built up when the copy of the indication decision is sent to the campus where the actual care taking process is started. The care taker reads the copy of the indication decision and then contacts the client. From this point on the care taker uses Care4 to file every meeting and conversation with his/her client. Care4 contains several tabs where a care taker can put information in and all these tabs together form a digital record of a client. When a client requests his/her record, only the formal documents are printed for insight. The notes made during the conversation with the client, are not printed out. These are only made as guidance for making the formal documents. Therefore it is important that professionals fill the formal documents in a professional way, meaning that they must keep in mind that they are not the only readers of the record. A digital record thus contains all formal documents obtained during the care taking process, except the original indication decision and a digital signature. Paper records are still used to give client insight to their record. This paper record is the printed version of the digital record created with Care4.

The original indication decision is not part of the digital record, because BJZ does not supply this digitally, but sent it to Cardea on paper. At Cardea people at the central client administration (CA-CB) register the client for the first time in Care4 by filling in the name, address, phone number, birth date and place. This is the start of a new digital client record. What Cardea prefers, according to one of the interviews, is that BJZ sends the indication decision digitally and in such a way that this is compatible with the client registration system used at Cardea. In this way the CA-CB does not have to fill in the client data by hand, but just place the digital indication decision in Care4. This could save the administration time and they could do other work instead. We received this information during one of the interviews.

Online Records

The definition of electronic records for individuals is according to The Markle Foundation's Connecting for Health collaborative, a public-private endeavour: An electronic application

[7] http://www.itworxx.nl/Oplossingen/citrix/tabid/125/Default.aspx

through which individuals can access, manage and share their health information, and that of others for whom they are authorized, in a private, secure, and confidential environment[8].

Development in the digital era has led to a new way of presenting digital records to clients. Instead of printing out the client record for insight, Cardea wants to make it possible for their clients to have online access to their personal client record. The content of these online records should be the same as the digital record and paper record. Clients should be able to see only those parts that are relevant for them to have insight to. With online records clients can have the opportunity to make use of the digital agenda. This agenda shows all the appointments the client has with the professional and the client can also make own appointments. By giving clients online access to their digital record, they can change their personal data, i.e. their name, address and telephone number. They can make comments on the reports made by the professional helping them and follow their care taking process online. They do not have to go to Cardea in person anymore and this saves Cardea a lot of paper work.

A condition to have access to online records is that you need authorization to log on to the system. The introduction of a digital signature can be a start for introducing online accessible records. With the introduction of online records Cardea can create more transparency for their clients.

The next section elaborates on the benefits and drawbacks of digital and online records compared to paper records. The benefits of paper records are thus still mentioned to make the comparison complete and better understandable. We will not go in too much detail about paper records, because for Cardea it is necessary to know what the added value is for working with digital and online records and why they should work with digital records and in the future work with online records.

3.2 Benefits and Drawbacks of Records

In this section the second sub question of section 1.3 is being elaborated on, namely:

> *What are the benefits and drawbacks of digital and online records for Cardea and their clients?*

The introduction of digital and online records has both benefits and drawbacks for employees and clients of Cardea. For an organisation it is necessary to have a clear

[8] David J. Lansky et al Connecting for Health. The personal health working group final report. Markle Foundation; 2003 Jul 1.Web accessed on February 01, 2006.

understanding of what the benefits and drawbacks of digital and online records are before introducing these into their organisation. First the benefits and drawbacks of paper records will be explored and second the benefits and drawback of digital and online records. The benefits of paper records are mentioned, because the benefits and drawbacks of digital and online records will be compared to these. After having described the benefits and drawbacks, these will be mapped to the employees and clients of Cardea. Figure 20 gives an overview of some of the benefits digital and online records have when introduced in an organisation.

Benefits of paper records

Although we are in now in the digital era and all sorts of digital alternatives are available, we still see many people working with paper records [11]. The reason for these people doing this is because paper records have benefits too. Next we will describe the benefits of paper records in some more detail.

- The **ease of using** paper records is far most the biggest. The physical characteristics of paper records or documents allow many things which cannot be achieved by digital documents. Let us for example take the navigating through paper records instead of digital records. Flipping through pages goes quickly, there is an immediate overview of the current location and paper allows flipping in order to search for something and return to the previous point. This because we can use our fingers or other things (tabs) to indicate the previous location.

- The **readability** of paper records is better, because it is the original and most natural form of reading. Let us compare this with a computer screen for example. Staring at and reading from a computer screen is very enervating. The contrast is too weak which in turn worsens your visibility on a long term. One must ask himself if it is wise or healthy to stare at a 'lamp' when working with digital records.

- Another important experience is that during work frequently **multiple documents** are used at the same time. In this way comparisons can be made, look up things quickly etc. Because paper physically exists, one has the opportunity to order documents in such a way that they can be viewed fast, placement of documents can easily be changed and in this way the navigation, comprehension of the text and thus the work itself is very well supported by paper records. With digital records such activities are limited. Often one document at a time can be viewed.

- Making quick **notes** on paper is much faster and easy. It is very useful that we can mark things, set short notes in the margin, etc. when working with paper records. Research has made it clear that these possibilities of making notes on paper contribute enormously in understanding, remembering and rapidly retrieve some pieces of text.

Marked and highlighted notes contrast against the paper document itself and we can easily see the difference between the original text and what has been added by the reader. These kinds of possibilities are very limited supported when using digital records.

- Paper records have another benefit, namely we can **read and write at the same time**. People do this very often during their read activities. They easily switch between the document being read and the one they are writing and can also be done simultaneously. This physical characteristic of paper records is also not available with digital records. We can only work with one document at a time when using digital records and moreover switching between multiple digital records costs more time and effort.

- **Persistency** is also a benefit of paper records. When something is on paper, it just remains on paper and that is a fact. Because it is physical it is safe and means that the document will not just disappear or be changed. Paper records have a passive representation opposed to digital records. With paper records there is no need for a computer and electricity; it is there just ready to be used. It is therefore a complete independent medium.

- A final benefit to mention is that the **physical presence** of objects has an important function. The world remembers things for us just by being there. A stack of paper records on an office desk sends a constant, non interfering message that something must be done with the paper records. The possibility to recognize this message is also a lack that is difficult to replace by digital records.

Drawbacks of paper records

Paper records do not only have benefits but also have some drawbacks on which we will now elaborate [14, 15]. Some of the known drawbacks of paper records can be stated as follows:

- **Readability**: handwritings of people differ and not everyone has a readable handwriting. So if a paper record is passed on to another professional, the possibility of misunderstanding could occur and this could decrease the quality of the care.
- **Regularly** (temporarily) **record loss**: paper records, containing privacy sensitive client data, may get lost by whatever reason. These records can get into hands of people who can harm the privacy of the owner of the paper record.
- Not **structured**: there is no standard way of making paper records, so the composition of the paper record is not always consistent and well structured.
- **Reporting** is time consuming: writing takes time and if someone has written something down and thinks that this is not correct, one has to rewrite this by first destroying the old version. When using digital records the delete button can be used and the correct phrase can be retyped.

- **Storage**: paper records confiscate a lot of space, because of the lawful and physical archiving of records for the period of 10 years.
- **Searching** for something in a paper record takes time, because we have to read almost everything to find what we are looking for. With digital records, we have the option to search for what we are looking for with the help of the search function. Also searching for a paper record when it is archived takes time, because we have to go through all the records. This may take more time when records are not sorted alphabetically.
- Paper is relatively **heavy**: the more pages a record contains, the heavier this can get and professionals do not want to carry heavy records with them (if this was ever allowed).
- **Availability**: when a record is being used by another professional or unit of the organisation, it is unavailable for other professionals.
- **Accessibility**: access to records is determined by the physical presence of the records in the building.

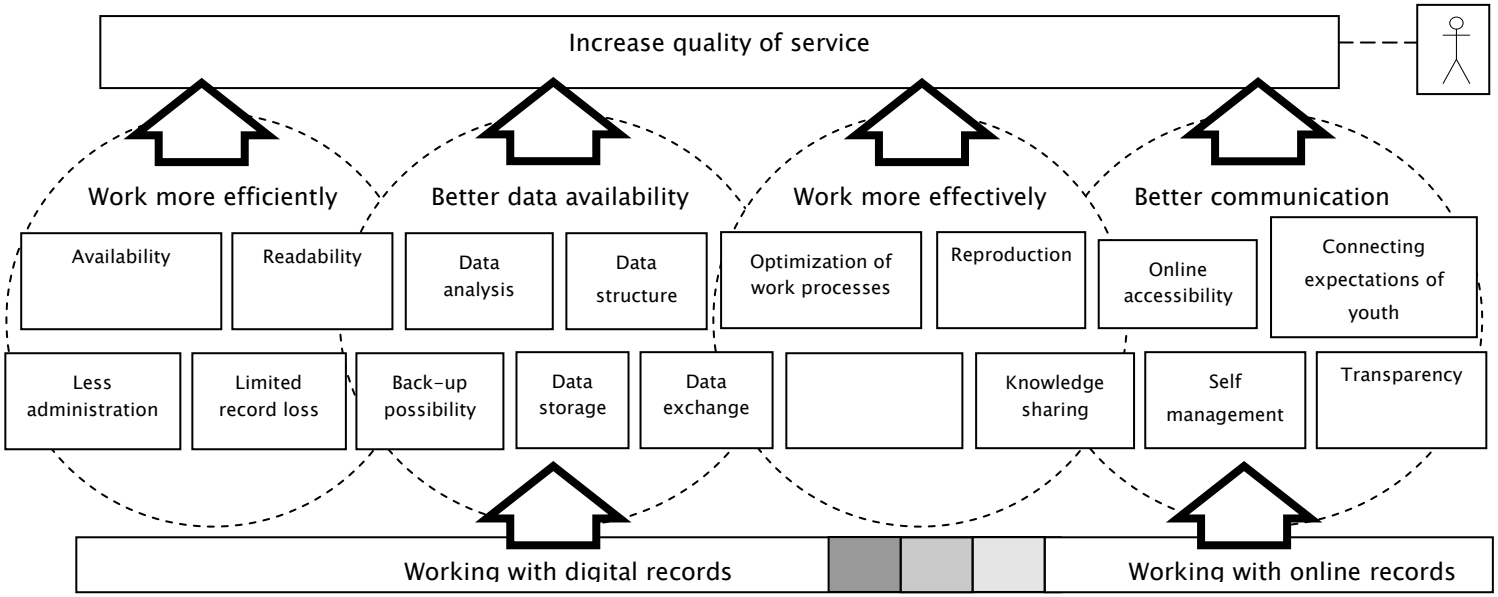

Figure 20 – Overview benefits of digital and online records

The use of digital and online records can lead to an increase of the quality of the service in the youth care sector, as illustrated in Figure 20. This can be reached by working more efficiently, better data availability, work more effectively and better communication towards the clients. Below we will go into more detail on the benefits of digital records followed by the benefits of online records. The drawbacks of these record types are also discussed right after the benefits have been discussed.

Benefits of digital records

The drawbacks of paper records mentioned above can be seen as benefits that digital records provide. These can be extended with some more benefits and are described here in short:

- *Work more efficiently:* the benefits discussed here lead to more efficient working of professionals, because now data is available at any moment and not only during office hours. Professionals do not have to carry paper records with them anymore and this ensures that client records do not get lost too. Readability also leads to working more efficiently, because in this way professionals do not have to spend time in trying to decipher handwritings. Instead, they could spend more time with the client and provide more care. Because the professionals could immediately fill in client records in Care4, secretaries could do other important administrational work instead of typing things over and thus work more efficient. Limited record lost also leads to work more efficient, because a digital record is always available when not deleted physically out of the system. Contrary to this, when a professional has the paper records with him/her and this gets lost, this will not be available anymore.
  - **Availability**: because records are digital and saved on a central place, they are always available for every employee or unit of the organisation.
  - **Accessibility**: because records are stored digitally and thus are physically present in the building, these can be accessed fast and easy by doing a quick search in the system. In order for employees to have access to the digital records, a secure connection is needed which is realized by the Citrix environment.
  - **Readability**: digital records are better readable because they are typed instead of handwritten. This give employees and clients a better overview of the record and records can be read smoothly.
  - **Less administration**: care takers fill in the formal documents and all notes of the client in Care4. By doing this they decrease the work load of the administration and less paper work.
  - **Limited record loss**: records cannot just get lost when they are stored digitally, because in order a digital record to be unavailable, someone must physically delete this out of the system. Not everybody has the authorization to remove a whole record from the system; these are mostly granted to system administrators.

- *Better data availability:* the benefits discussed here lead to better data availability because with using digital records, data is stored in a central place and professionals could access data any time. In order to this, they need authorization through a username and password. This also holds when digital records will be made accessible online.

- **Data analysis**: data could be analyzed better, i.e. by the management because the most important information can be grouped in a dashboard view. The information needed for analysis can be gathered easily and imported in the dashboard.
- **Data structure**: structured data provides a clear overview and more insight for professionals, makes looking up things easier and faster. Because data is only available for professionals in the same profession, data is structured and standardized according to some rules.
- **Back-up possibility**: digital records can easily be backed up on a central server by just making a digital copy of the original record. Original paper records instead have to be copied first and this is very time consuming, because every page has to be copied one by one. Copying in turn expensive, because we will need a printer and cartridge to do this.
- **Data storage**: storing records digitally offers a lot of savings considering space, time and money. For organisations this can be useful, because the presence of physical file cabinets is not needed anymore.
- **Data exchange**: data exchange for internal use is fast, cheap, documents can be sent to multiple people simultaneously and this process is location independent. Also when youngsters go to live in another place, it is easy to exchange records to the youth care organisation in the environment where the client has moved to.

- *Work more effectively:* every organisation wants to keep innovating, especially when new technologies are available. With these benefits described an organisation can work more effectively.
  - **Optimization of work processes**: working with digital records optimizes the work process, because more work can be done in less time. Work that had to be done by hand before can now be done with the help of new information systems.
  - **Reproduction**: making copies of digital records is qualitatively higher and faster than making copies of paper records. Besides the digital to paper reproduction, the digital to digital reproduction is an important innovation.
  - **Knowledge sharing**: exchanging knowledge with organisations involved in the youth sector becomes easy because the information is available digitally and can easily shared with each other. Organisations who use effective working methods could share their knowledge with other organisations that do not do this yet in order to keep up with innovations in the youth sector. In this way organisations could reuse techniques that already have been proven to be effective in this sector.

Drawbacks of digital records

Most of the benefits have been proven in practice, but against all these benefits there are certainly some drawbacks digital records have.

- One of the first drawbacks according to [16] is **privacy**. The risk of information leakage or deliberate abuse can occur and this means that information can get stolen or lost by not handling client data with care. It is also possible that unauthorized people could get insight to private data, which in turn could be used negatively against the person whose data was found.

- The **structuring of data** also has a drawback. By paying more attention to a specific part of data, other data (that may also need attention and is important too) could get less attention or be left out completely. Digital records could create false suggestions of reliability and completeness.

- **Sustainability** of digital records are still not guaranteed. Where the durability of paper records can be guaranteed instead, this is not yet possible for digital records. Standards keep on changing constantly, just as software and hardware do and for this reason it is important that the digital material must be updated from time to time. Digital records thus are dependent on the software and hardware [17].

- Another drawback of digital records is that the **costs** are high for implementing it in an organisation. Updating, periodic replacement of software and hardware and the conversion of existing paper records is also expensive. So the organisation must have the budget to implement and maintain digital records in the organisation.

- Clients see the professional as **computer centred** and **not patient centred**. When professionals are in the middle of a conversation with a client and he/she is immediately making notes, clients may experience this as unprofessional. During one of the interviews with a manager this was one of the drawbacks mentioned.

- Additionally there many **online client record systems**[9]. Streamlining youth care can only be achieved when a single system is used, since two or more systems may not work together. If youth care organisation A uses a different system than the one used at youth care organisation B, records may not be available to the organisation B, or vice versa. Online records may reduce office paperwork, but they may not coordinate care between several treating professionals working at different youth care organisations as they promise to do when different systems are used by each organisation.

- **Data availability**: there is always a computer needed in order to read and edit data or even have data available when we want to manage it. So data availability is dependent on the software and hardware.

[9] http://www.wisegeek.com/what-are-the-disadvantages-of-electronic-medical-records.htm

Benefits of online records

Besides the benefits of digital records, online records add some extra benefits for the organisation and the clients. The extra benefits online records have are:

- *Better communication:*
  - **Connect expectations of youth**: the youth of these days is most of the time online. When they have the possibility to view their record online, this could probably help to increase the quality of the service because they could be more open in discussing their situation. Sometimes people find it more comfortable when they have a personal conversation where the other person cannot be seen.
  - **Online accessibility**: this could be possible for both clients and employees. It is recommended that this happens in a secure and safe way.
  - **Transparency**: by making digital records available online so that clients can see who entered data, where it transferred from and who has viewed it, the organisation shows its clients that it is a transparent organisation. In this way a trust worthy working relationship is created between the youth organisation and the clients.
  - **Self management**: clients can manage their personal data information part, the client agenda (where they can view and make appointments) and probably be able to make notes of their own or report that was has been discussed with the professional, which in turn could be put into the original client record by the professional.

Drawbacks of online records

Some of the drawbacks mentioned for digital records are also applicable for online accessible records. Here are drawbacks that come when making digital records online for clients.

- Besides the privacy issue digital records have, the **security** aspects of digital records that are accessible online are also a drawback. Passwords can be troublesome, abused or swapped. When lost the system can be completely inoperable.

- **Transmission**. The ease of transmission of electronic data can pose a threat to confidentiality and offer potential routes for attack from hackers and computer viruses. Privacy sensitive data is saved and when someone finds the password, data could get into wrong hands. If the system is not secure enough, it can be hacked and if this occurs, privacy sensitive data could fall into the wrong hands and hackers could claim lots of money for not making the information publicly available. Information safety must be guaranteed and if this is not the case, clients will not want to have online accessible records.

- **Financial difficulties** for buying software that is needed to properly offer online accessible records. While organisations want to innovate and keep up with the

developments not all of them have the budget to do so. Sometimes it is even necessary to replace the complete information infrastructure and buy new systems, because the present infrastructure and system cannot be used. Further, the system must be replaced periodically which also costs money.

- **Availability**: if the client has no computer, the online records are of no value for such clients. This also holds for clients who do have a computer, but cannot afford to have internet at home. Further, the availability of the system or network. If it occurs frequently that the system is not available or the system cannot be reached due to network problems, professionals and clients could find it annoying and do not want to make use of this service anymore.
- **Ambiguity**: sometimes the information we wish to store has a degree of inbuilt uncertainty. Electronic records can be inflexible.

Benefits and Drawbacks for Cardea

We have explained the general benefits and drawbacks of digital and online records and here we explain them specifically for Cardea and the clients respectively.

The benefits of digital records for Cardea are: working more effectively and efficiently. This means improving the care taking process, the business process and service towards the clients. By offering online access to client records, Cardea does not have to make a print version when clients want to have insight into their record. Earlier a printed version (paper record), which has privacy sensitive information, was made and could be left in public after the client had insight to it. Other people could use this information negatively against the rightful owner of the paper record. It is worth noticing that for an organisation as Cardea it is necessary that the online accessibility of client records is being offered in a secure way and within certain legal standards, such as the handling of privacy sensitive data of clients. Other benefits that online records have for Cardea are: data availability for analysis, useful links that lead to time savings in administration and above all better readable, always available and structured records opposed to paper records. In short online records can be a useful tool to make the service towards clients more effective, efficient and qualitatively higher.

In practice we see that employees identify different benefits and drawbacks of digital records than the management. Benefits for employees are:

1. Dashboard view of client data: in a dashboard view care takers have a clear view and insight in client data.
2. Less paper records: no more physical carrying of paper records
3. Better readable information: handwritings of people differ and are not always readable. So digital information is better readable and understandable for everyone.

4. Clarifying and reliable by version control: in this way it is possible to see who has provided new data and when this is done.

There are also some drawbacks digital records have for the employees, which are also applicable for online records. These are:

1. Complex authorization and extra login when saving data online.
2. Depends on the availability and proper functioning of the computer and the network.
3. Limited freedom to make notes: when it is obligate to work with digital records, care takers do not have the opportunity to make notes as fast as when working with paper records.
4. Competence of the employee: not all employees have the same skills to work properly with a computer.

For a successful implementation of digital and online records it is important to take these drawbacks into account. The benefits of digital and online records will be visible after these have been implemented with success and are accepted in the organisation. Many benefits can be achieved combined with other projects running at Cardea, i.e. online youth care, communication with other parties in the youth care sector, etc. In short online records offer many benefits in the future: they are a useful tool in the innovation process of the organisation.

Benefits and Drawbacks for Clients

Besides the benefits of digital records mentioned in Figure 20 online records offer more insight and transparency for the clients. Online records give clients the possibility to access their client record at any moment in time and follow the progress of the care taking process online. With the client agenda, which is part of the online record, clients can see when an appointment is scheduled with their care taker. Clients can also manage their personal data in the online record, so that changes in the personal information part can be done by the clients themselves. During the period which clients have to wait for the care taking process to start, they can start viewing the goals they have set together with a professional and that they want to reach at the end of the care taking process. Clients can have contact with professionals and view the several care taking programmes that Cardea has to offer. In order to have access to client records, clients must be authorized to do so. Therefore clients need a username, a password and a secure internet connection. Clients receive a username and password by Cardea but not until they have registered themselves.

The drawbacks mentioned earlier are also applicable for clients. As the list provides not every client has a computer of its own. Because of this the possibility for clients to have access to their record has no added value for them and thus Cardea does not have to invest in this project. Clients must also have the skills to work with a computer and if they are not

able do so, than they will not make us of the online records. So Cardea must have a clear view of the number of clients that have a computer and the competence of their clients using a computer. Clients must be guaranteed that the system in use guarantees the safety of their private data. If this cannot be guaranteed, clients will hesitate to use this system, despite the benefits digital and online records have for them.

3.3 Barriers for Introducing Digital Records

This section elaborates on the third sub question given in section 1.3, namely:

> *Which barriers are identified while introducing digital records and how can they be dealt with?*

In order to perform optimally at any moment, organisations must change more often and faster [23]. Organisations must continuously adapt to changes in their environment and therefore can be seen as real life organisms seeking for an organisational balance. These adaptations bring along changes both for the organisation and the employees [24]. The introduction of digital and online records does not only have benefits and drawbacks but also have barriers. In finding out what the barriers are, we define the impact on the organisation and on the employees and how these barriers can be dealt with.

Impact on the Organisation

By identifying the barriers that can have an impact on the organisation, this impact can be limited and dealt with properly. In order to limit the impact on the organisation as much as possible and to introduce digital records in structured way, an organisation model is made which is described in chapter 2. This model describes the present working method of the organisation and the responsibilities of its employees. Having done this, one can see where changes in the organisation might take place and be ready for this change.

The introduction of digital records into the organisation means a new way of working and has impact on the way the organisation and its employees function [30]. For this a reorganisation of the organisation is needed. Making an organisation model gives more insight in where changes are implemented or where changes must be implemented and what causal effect the introduction of digital records have on both the organisation and the employees.

It is not only important that the introduction of digital and online records in the organisation can be integrated with present developments in the youth (care) sector but to internal projects at Cardea as well. Developments in the youth care sector are: the introduction of

the electronic child record (DD JGZ) and the "Verwijsindex Risicojongeren (VIR)". Internal projects at Cardea, in order to increase the quality of care and the service towards their clients, are: setting up customized care programmes so that clients are helped optimally, bringing care closer to the people by having campuses in the environment of their clients and working together with other partners in the youth sector. Clients that are on the waiting list have the opportunity to gather information online and in this way clients can already start their care process. Cardea employees use email to communicate with clients on the waiting list. Cardea also works with other youth care organisations and they use proven methods from foreign countries in order to increase the care they offer [5]. Cardea has obtained the quality certificate (HKZ) in order to provide high quality care. At Cardea a pilot will start for online youth care where instant messaging (MSN Messenger) will be used. In this way Cardea wants to provide care as optimally as possible.

Impact on the Employees

With the introduction of new working methods an organisation does not only deal with organisational changes but with changes for their employees as well. Working with digital and online records differs in the way of working with paper records and communication is also different. With paper records there is more physical contact and verbal communication takes place more often. But with the use of digital and online records, the communication becomes more non-verbal and the physical contact decreases. In social aspect this causes clients to have less physical contact with their professional during the care process. Working with these records must not differ too much in the way professionals work with paper records. A clear view must be provided of the responsibilities of all the professionals in the organisation. By doing this we can find out the way professionals work at the moment and what their responsibilities are. Every professional must keep their responsibilities after the introduction of digital and online records. Communication between professionals and clients is different when working with digital records instead of paper records. This leads to a process optimization, which in turn leads to an improvement of the services Cardea offers.

It is important to involve the employees of an organisation when the organisation has plans to change the way of working. The professionals must be aware of the changes in an organisation and they have to accept the changing plans in order to let the changes be successful. Involving your employees in the transition process increases the chance of acceptance and success of the project. In order to increase the acceptance of new working methods, it is necessary to involve employees at an early stage. This means that employees must also be involved in phases before the actual development and/or implementation phase [23]. With the involvement of employees the management can discover the ideas and thoughts employees have about plans for changing the way they work at the moment. In this way the organisation shows that they do not only think in favour of the client, but also respects the opinion of their employees. Creating support from employees is seen as a

crucial element in a successful change process. Managers, who are open to ideas and experiences of employees, encourage active support for change. An open attitude of the organisation allows them to use the knowledge of their employees to improve the change process [26].

Resistance is commonly considered to be a standard or even natural reaction to organisational change. It is described as an almost inevitable psychological and organisational response that seems to apply to any kind of change, ranging from rather modest improvements to far-reaching change and organisation transformation. Change and resistance go hand in hand: change implies resistance and resistance means that change is taking place [28]. Barriers which can be distinguished can, on one hand, come from resistance from employees who do not agree upon the introduction of digital records [27]. On the other hand, drawbacks of digital and online records could also form barriers for introducing these into an organisation. Some barriers[10] that we can come across during organisational changes are:

1. *Inadequate Requirements Planning*: Unlike machines that automatically respond to new commands, human beings have emotional and psychological needs. Issuing a new company mandate may not be fully embraced unless sufficient justification and education is undertaken to convince and realign individuals with the new company direction. Entrenched attitudes and beliefs and fear of failure create barriers that organisations need to examine.

2. *Failure to consult The Affected Members*: A natural extension of the failure to plan adequately is excluding or ignoring the deeply affected individuals. The sudden realization that their world is about to be turned upside down can create resentment, anxiety and a resistance to change. Informing the relevant members and soft selling an educational process prior to implementing the changes can assist with the integration process, minimize the risk that resentment will occur and condition the affected members to accept and embrace the change.

3. *Inadequate Training*: With advances in software and technology, applications are becoming increasingly sophisticated and specialized. Basic computer awareness does not always allow the individual to fully absorb the capability of the new application.

Employing the services of specialized personnel to assist with change management can help organisations avoid some of the common barriers to organisational change and assist with organisational decision making process.

[10] http://www.organisational-change-management.com/barriers-to-organisational-change.php

Dealing with barriers

Changing the usual way of working is sometimes necessary to work according to new guidelines, but this does not come automatically. Often there are barriers that must be overcome before new working methods can be adapted in the organisation and by its employees. These barriers are diverse and may relate to lack of knowledge about the new way of working or insufficient motivation convinced of the value of the new way of working, to lack of time and resources, dealing with opposition from colleagues or clients or organisational barriers [25]. Companies can address organisational change and resistance to change by involving the affected individuals in the change process. Communication can be seen as a critical success factor for changes and also determines the quality of cooperation [31]. By soliciting feedback, direct participation in the process can tear down barriers[11]. Encouraging open dialogue, asking for feedback, honouring tradition and active participation by management in the process can help unify an organisation about to undergo organisational change. When organisational restructuring takes place, friendships and team spirit that has been forged over the years can be broken apart by the relocation of employees. The socialization process that comprises part of an organisations culture is an often forgotten during the change process. Companies need to take this into consideration and adopt initiatives to compensate for the fears and stress that sometimes surface.

3.4 Conclusion

By describing the content of the record types, it becomes clear to every employee how to work in a consisten way. In this way employees can work more efficiently and effectively and thus increase the quality of the service. The benefits and drawbacks described here can help decision makers of Cardea to better understand the added value of working with digital records. For the management it also is important to have a clear understanding of what the barriers for introducing a new working method are and how to deal with these barriers. By having made this clear to them in this chapter, it must be easy to decide whether to introduce the new working method or not and how. How the new working method is introduced, is described in chapter 5. But before we the roadmap is described, an analysis of the organisation is made in chapter 4 based on the concept of the 'knowledge environment' of Alares.

[11] http://www.organisational-change-management.com/organisational-change-and-resistance.php

4 Organisational Change: Organisation Analysis

Organisations must be flexible and creative to respond to changes in their environment. Therefore organisational change concerns the management of the organisation in a strategic, structural and cultural sense. *Strategic* changes may cover topics like increasing the production quality and the client orientation or introducing a new technology/product combination, or finding a new and effective way to deal with changes in their environment. These changes can be caused by economic, technological and social developments. *Structural* changes cover topics like ordering tasks and competences more efficiently, hereby aiming at an active and motivating organisation. *Cultural* changes concern the achievement of new ideas, values and standards with respect to the needs of the clients. Derived from this fact, cultural changes also concern new behaviour of the employees of the organisation [30]. Despite the uncertainties and dilemmas it states that mission, strategy and structure are important factors during change processes and should receive great attention. Besides these factors great attention should also be given to the systems and the culture in the organisation [31].

Also in organisations offering care services, like Cardea Youth Care, is it essential to have the service package up to date and guarantee the quality of the service to the clients due to the innovation rate in this sector. These organisations must continuously follow the lifespan of their service and enhance where necessary and therefore they will make use of new technology, usually information technology. The challenge for the service sector lies in the concept of real time/real place, which means availability of services at any time, possibly in many places. The introduction of a system providing information based on the concept of real time/real place, requires a skill of each professional in the (youth) care sector in dealing with the input and output of information systems [30].

Organisational innovation is not only accomplished through modification of structures, technologies and strategies, but also by managing the organisation culture. With organisation culture we mean the set of values, norms and behaviour patterns in an organisation, which guide the actions of the members of the organisation. Organisational innovation is closely linked to result improvement. Processes of innovation are also

processes of quality improvement, strengthening the client focus and improve management [30].

This chapter will focus on the organisational change especially during the transition from paper to digital records at Cardea. The organisational change at Cardea is explored based on the four components of the concept of the Alares 'knowledge environment' described in Appendix B – Alares Knowledge Environment. We will also make use of the outcomes of the online survey and the interviews to elaborate on the organisational change. Section 4.1 describes the structure and the vision of the organisation, the employees and their responsibilities, the communication flow and the several processes within Cardea. The organisation component of the 'knowledge environment' does not clarify how responsibilities of employees can be identified. Because of this deficiency, DEMO delivers an additional contribution to this characteristic and makes the organisation component of the 'knowledge environment' more powerful in analysing organisations. For this reason we made an organisation model (see sub section 2.3.1) of Cardea using the DEMO methodology. Because the way of identifying roles and responsibilities is not mentioned in the concept of the 'knowledge environment' and we already described how to do this using the DEMO methodology, we will not further elaborate on this subject here but go back to sub section 2.3 for more detail. In section 4.2 we will elaborate on the subject of digital signature and digital archiving and which systems to use for these purposes. This section will also elaborate on the several systems used at Cardea and how these can connect to other systems in the youth chain. Section 4.3 elaborates on the culture in the organisation and what the perceptions of the professional are on working with digital records. Finally, section 4.4 will elaborate on the competence of the professionals working with digital records.

4.1 Organisation and Processes

The structure and vision of the organisation are the characteristics that position the organisation in the environment, together withthe roles and responsibilities employees have within the organisation. Changing or taking away one of these characteristics will have a reorganisation as a consequence [33]. In order to clarify the essence of the organisation, an organisation model is made and can be used when the organisation is going to be reorganised. When introducing a new working method or service in the organisation one can see where changes take place when using the organisational model. In this context a new working method is introduced, namely working with digital records. In the future Cardea also wants to make the digital records accessible online for their clients. This will also have a reorganisation as a consequence and the organisation model comes in hand. This model

also defines the communication flow between employees in the organisation and between them and their clients. Besides the communication flow de organisation model also defines the responsibilities employees have in the organisation.

Vision of the Organisation

Vision in this context means looking at the developments in the surrounding of the environment and dealing with these developments which influence the service of the organisation. The vision outlines the future of the organisation of which it expects it will operate in [33]. The vision of Cardea is to work with digital records in order to work more effectively and efficiently and to improve the quality of the service. Another vision of Cardea is to offer online access to digital records to the clients, but before they can achieve this, they have to organize the use of digital records and set the infrastructure for this properly.

Structure of the Organisation

The structure of the organisation determines how and to what extent employees are connected with each other, with customers, with suppliers and with partners. Several structures of an organisation exist, namely: flat organisations, hierarchical organisations, matrix shaped organisations and organisations with their own competence clusters [33]. Cardea is structured as a hierarchical organisation, as can be seen in Figure 21. It gives an overview of the hierarchical authorities, roles and responsibilities, functions and relations within the organisation. This hierarchical structure with multiple layers has as a consequence that communication and decision making may take some time.

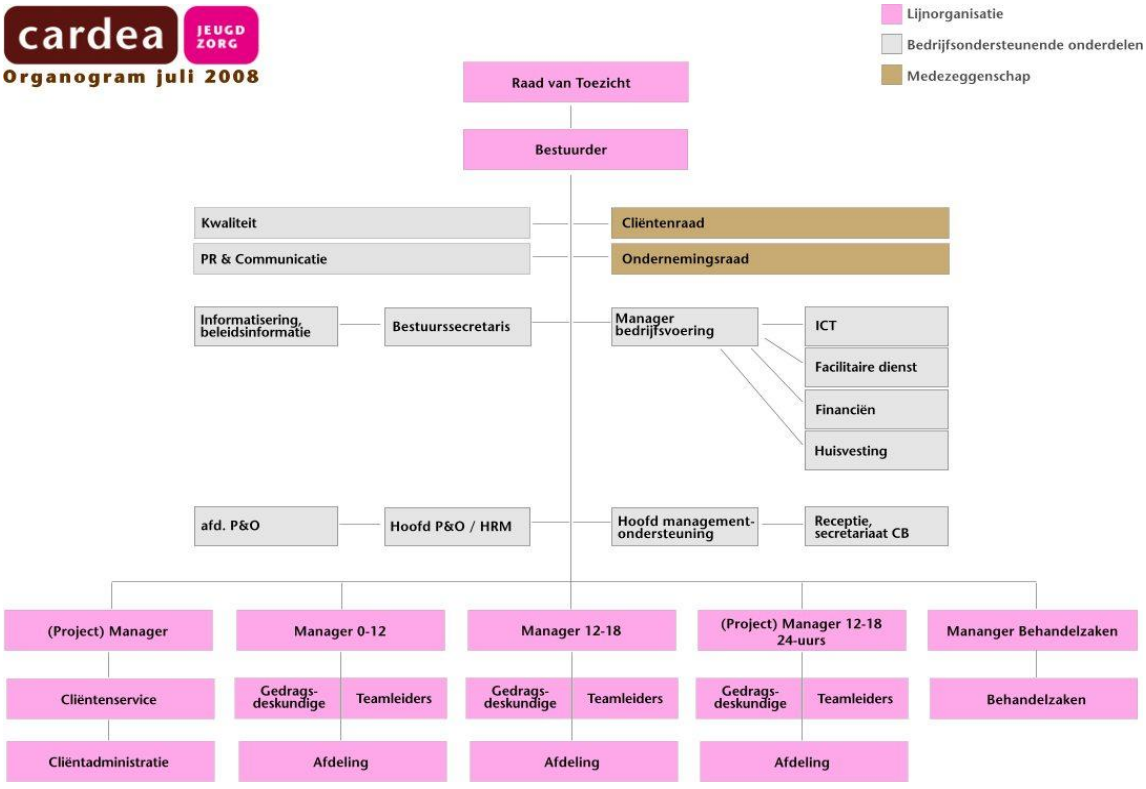

Figure 21 – Organisation chart of Cardea

Digital Records

Digitalisation process

Digitalisation is the process of converting any physical or analogue item into an electronic representation[12]. In this context digitalisation refers to the creation of digital records from paper records by such means of scanning or digital photography. Any digitalisation process should be carefully planned to meet appropriate standards and avoid the need to repeat work. Table 7 – Data conversion variants gives an overview of three possible variants for converting data stored in paper records and making these digitally available. When paper records are digitalized, one must also consider the storage of the original paper records. Once digitalized, paper records still need to be kept archived for the period of ten years, unless the archivist has given the authorization to dispose the original paper record. The ten year period of archiving is determined by law.

For each new client registered at Cardea a digital record is made. Building up a digital client record is outlined in *"Beheer van cliëntendossiers"* (see Appendix D – Beheer van Cliëntendossiers). For registering a client in the client registration system Care4, the client administration of the head office enters the clients personal information (i.e. birth place, birth date, nationality, address, phone number(s), general practitioner, school, relations, legal measures, families and their personal data, indication data (decision, issue date, arrival, validity) and the claims for care (type, period, department). As soon as this information has been set, professionals have access to the digital client record and can work in this record.

In order to have some more insight in what professionals think about the professionalization of digital records, we asked them this question using an online survey. Everyone in the organisation needs to know how to use digital records and how a digital record is composed. Rules must be set according to national and international laws and legislations. This causes the records to be consistent, which in turn makes it easier to work more efficient. Also the exchange of records between other Cardea locations can be done easier.

As Figure 22 shows, more than 70% of the respondents opt for professionalizing the use of digital records. This is a decision which cannot be taken by professionals working with digital records, but must be taken by the head of Cardea ('bestuurder' in Figure 21). Before this subject can be brought to the decision makers, the professionals must discuss this with the team leaders of the several units. These in turn will discuss this with the managers and after this the subject can be sent to the head of Cardea. This is a long way to the decision makers before a decision can be made. This could cause the professionals to choose not to

[12] http://www.archives.qld.gov.au/publications/digitisation/DigiGuideline.pdf

work with digital records or even a new working method, when the decision makers finally decide to introduce the use of digital records at Cardea.

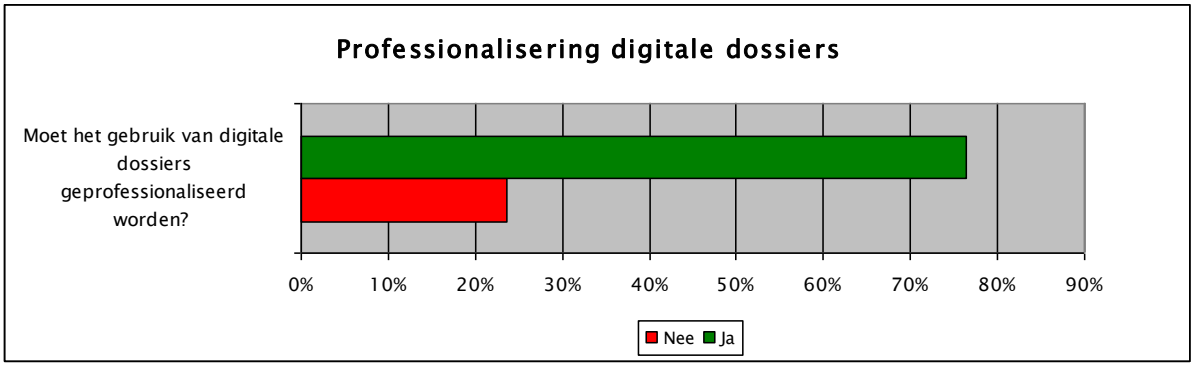

Figure 22 – Professionalization of digital records

Digital Signature[13]

Many organisations nowadays have their work processes automated, which means that work is being done digitally. Although most of the work processes are automated, some steps in the process are necessary to be done in the analogue way. This is the only way to guarantee the juridical certainty of working within legislative rules.

With the introduction of the "Wet Elektronische Handtekening", the "Wet Elektronisch Bestuurlijk Verkeer" and the "Wet Elektronische Handel" this is not necessary anymore. These legislations regulate the legal consequences of digital signatures, including the equivalence of digital signatures to handwritten signatures. In Appendix I1 – Digital Signature one can read in more detail about the legislation on digital signatures and the existing kinds of digital signatures.

A digital signature, in accordance with the legislation, is realized with a digital certificate. Based on this certificate it is possible to apply a digital signature to electronic documents such as email, PDF, Microsoft Office and web forms. Using a digital signature it is not necessary to keep or sent a copy of the electronic documents. Thus this can save much time and money.

At Cardea professionals make reports of the care taking process using Care4. Although Cardea works with digital records, they still use handwritten signatures which must be placed under every important document by the client. For a handwritten signature reports are sent to clients, they put their signature on it and sent it back to Cardea. During one of the interviews we found out that this is very time consuming and clients even forget to sign the documents or sent it back to Cardea. This causes the digital client record to remain incomplete and the client case cannot be closed properly. This is something that Cardea wants to change and where the use of a digital signature is the solution to this problem. In

[13] http://www.diginotar.nl/Producten/Themas/Elektronischehandtekening/tabid/324/Default.aspx

this way they do not have to make a print of the digital record for having the clients signature after the care taking process has ended. This in turn has advantages for Cardea in that they do not have to make a print version first to get a signature and leading to work more efficiently and effectively. It is efficient because there are less paper records and less paper works and it is effective because the documents which must be signed can now be directed to the client immediately when the client data is correct. In the Netherlands a technique for having digital signatures is used called DigiD. This technique is used by citizens for doing business with the government and a similar technique can be used in the (youth) care sector for doing business with their clients. Further research must be done to find an applicable method for the (youth) care sector, because there is not one method which is specifically developed for this sector.

Digital archiving

Cardea has rules for archiving client records and this is described in a document called "Afgesloten dossier". This document decribes how to archive and consult closed cases. Archiving at Cardea is done by the secretary of the central administration. They check each paper record, which is printed out first, on completeness. If everything has been done according to the rules for archiving, the record is transported to the central location where all the client records are archived. Transportation takes place in a coded briefcase on a bycicle by two ladies of the administration. At the central archive building an archive administrator sorts the records in a logical way on a shelf, in order to have a good overview of the archived records. A client record is archived for a period of ten years and destroyed after this period. From an interview with a team leader of the client service, the question arose if it is the task of the client administration to archive client records. From this interview it is clear that archiving the client records is not yet fully organized. Managers at Cardea must argue about this subject and think of having an archivist to archive the records and hink of using a suitable document/record management system. With this system client records can be archived digitally. Digital archiving is a solution for archiving records in a structured way and this must be done according to some legislation (see Appendix I2 – Digital Archiving). By archiving digital information, it can easily be reused and exchanged between employees in the organisation and between organisations [34].

The advantages of digital archiving are obvious: the information is accessible to all parties involved, the organisations are better controllable due to the available information and they can work more efficiently, which in addition also produces a financial advantage besides time savings. However, there are still a number of limitations concerning digital archiving. As an example, while using digital records information can get lost; this can expire the authenticity. Even the management of digital records sometimes has some drawbacks. In addition, digital archiving has as a consequence that information can easily be made public. Therefore, copyright can play a major role in digital archiving.

Online Records

In the future Cardea wants their clients to have online access to their digital client record, so that they can be an organisation which is transparent to their clients. When this is possible, clients have the possibility to manage their personal data, manage the digital agenda in order to make appointments with care takers, read the indication decision, read the agreement of cooperation (SWO), read the process report and read the end report. The client administration submits the indication decision in Care4. The care taker makes a cooperation agreement and fills in the process report that describes the progress of the care taking process. All the important documents are put in Care4 and can be accessed by the employees only of Cardea using a Citrix connection. When online accessibility is realized for employees, the Citrix connection is not needed anymore but employees can logon to the system through the net making using of the https secured connection. When realizing online accessibility of records for clients, they can have access to parts of their record, as some examples are mentioned above.

Online accessibility of client records needs to be organized in a very secure way, because we deal with personal client data which must be kept private. Not everyone must have access to the client record, only the client and the professional involved in the care taking process. This forces the organisation to handle client data with care. In Appendix I3 – Client Data Handling we describe the legislation rules which concerns handling client data in a private manner.

4.2 Systems

When an organisation wants to introduce a new working method, the infrastructure must be inventoried in order to have knowledge of the systems in use. We need to know if the current system can be reused when a new working method is introduced. In order to let the communication between other youth care organisations take place in a good way, agreements must be made about using one client registration system by every organisation.

From interviews we discovered that Cardea makes use of the systems as shown in Figure 23. We used an online survey to get insight in the way employees use these systems. In short we will describe here the use of the most important systems at Cardea. In Appendix C2 – Result Online Survey one can read in more detail about the systems not described here. We also give some data conversion variants which describe the way paper records could be converted into digital records.

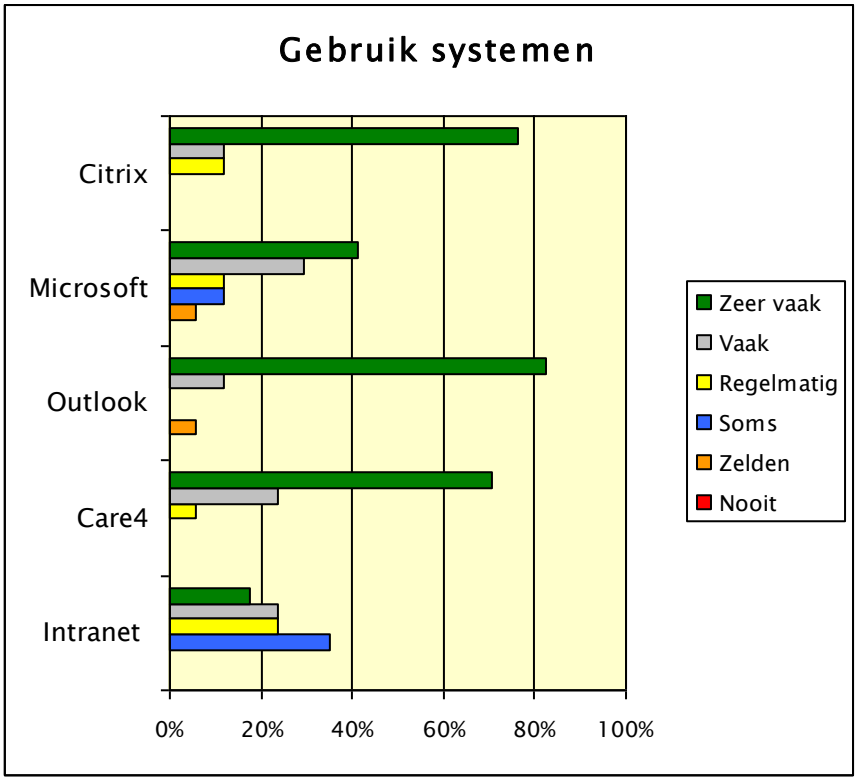

Figure 23 – Usage of the systems

Care4

Care4 is the client registration system used at Cardea and all client data are registered in Care4. Each new client at Cardea gets a digital record when registered for the first time. The composition of a digital record consists of all the facts of the paper version of the indication decision, such as country and place of birth, nationality, address, phone number, doctor, school, relations, legal measures, family and their personal details, indication data (decision, date issued, date arrived, validity) and the claims: kind of claim, period, organisation (if other). The facts are taken over from the original indication decision, because BJZ sends Cardea the indication decision on paper. Cardea wants them to innovate and sent the indication decision digitally, so that this immediately can be put in Care4. In this way the client administration is less charged with retyping the facts from the paper indication decision. With the extra time they have then, other work can be done. There already exists a secured digital communication channel between Cardea and BJZ through which the indication decision can be sent digitally to Cardea. At the time of writing this paper this communication channel between these organisations is still not operable.

As Figure 23 displays, one can see that the client registration system Care4 is used very often (around 70%), because professionals can only register reports and notes in Care4 made during the care taking process. From an interview with a manager we found out that most of the professionals are used to Care4, but that there is also a group of people who cannot work properly with Care4. For these people there are handbooks describing the way

this system works, but some people do not read these handbooks or they do not want to discover by themselves how the system works. At the introduction of Care4 courses were given how to use it, but these must be refreshed after a certain period. Besides this, the management of Cardea decided to have a super-user at each location to help employees who come across problems when working with Care4.

Intranet

The intranet is used by the employees to communicate with each other within Cardea. Through this medium employees can read news items and get all kinds of information concerning their work. Figure 23 shows that less than 40% of the respondents at Cardea use the intranet to receive and find information. In practice not every employee makes use of the intranet, simply because they are not used to it but they must get used to it. This is a so called behavioural change, which will be elaborated in more detail in sub section 4.3. For some of the older employees it takes more time to learn to work with the intranet. This group of employees then read news and gather information in the old fashion way, which is reading the paper version of the news bulletin or asking other employees for information. Another reason for employees not using the intranet very often is because the system is slow and this slows done the intranet and in turn slows down the work the employee must do. Managers at Cardea want to improve the usage of the intranet and they stimulate this to their employees. They do this by automatically starting up the intranet as soon as the employee starts up the computer.

Citrix

Citrix is the systems used to give employees of Cardea access to the systems in use at Cardea, even from outside the Cardea campus. With this secured way of accessibility employees of Cardea can have access to applications as Outlook, the intranet and Microsoft Office. Logging on as a professional, who helps clients during their care taking process, also gives access to Care4 besides the other applications which can be accessed. As Figure 23 shows, more than 70% of respondents use Citrix to access the system from outside. The group of people using Citrix is the professional, because they are the ones who need to have access to Care4 if they are working from outside the Cardea campus. This figure also shows that approximately 10% of the respondents often or regularly use Citrix. The reason for this percentage could be that these are the employees which are not the professionals and are not obligate to use a Citrix connection in order to access the applications at Cardea.

Data Conversion Variants

This part describes some variants for converting data which are stored in paper records. Table 7 gives an overview of three possible variants which Cardea can use to convert data so that they are digitally available. The forth column gives the advantages (+) and disadvantages (-) of the several variants and the rest of the columns speak for themselves.

Variant	Explanation	Method	+/-
No conversion	No conversion of existing data	Not applicable	+ Saving introduction costs (no additional capacity needed) – Information not digitally available – Two working methods (paper and digital) beside each other for a long time, is less efficient – Savings on logistics and physical archiving only on long term
Partial conversion	Conversion of summarized existing data	Cardea employees make a summary of important data from the record	+ Important data is digitally available – Requires additional time of professionals, but more limited than at complete conversion
Complete conversion	Conversion of all data	Scanning data	+ All existing data is readable + Cheaper than retyping – Requires a lot from technical infrastructure and organisation – Insignificant usefulness of scanned documents: poor user friendliness, data are not digitally analysable (for management information or research), handwritings often difficult to read
		Retyping data by Cardea employees	+ All existing data digitally available + Best way to prevent mistakes – Requires additional time of professionals and thus very expensive
		Retyping data by external typists	+ All existing data digitally available + Cheaper than retyping done by Cardea employees – Leads to many errors because handwritings often difficult to read – Still expensive

Table 7 – Data conversion variants

By looking at the advantages and disadvantages of the variants mentioned, partial conversion seems to be the most desirable method. Without the conversion of data stored in paper records, these records will still be used for a long period of time. In this way Cardea keeps on working with two systems (paper en digital records) together with the multiple disadvantages this brings along. In case of partial conversion the organisation must verify which data are taken along in the summary. The main question is what information is relevant to summarize and the answer to this question differs per user [41].

At complete conversion of all records, in all methods, the question arises whether the effort outweighs the usefulness. All the three methods at complete conversion are expensive, and one must consider if it is necessary. When looking at complete conversion, scanning data is

the least expensive method but this method has considerable disadvantages. The answer to the question of usefulness and necessity may be different per user, e.g. a Cardea manager can have a different view on this fact than a policy employee of the municipality [41].

'No conversion' is not an option because this variant has a lot of disadvantages and Cardea wants to work with digital records.

4.3 Culture

Culture is mostly defined as a whole of standards and values, philosophies, ideologies, assumptions and expectations which are shared by the members of a certain group [35]. Hofstede [36] shows that humans possess 'mental programmes' which have fixed patterns of thinking, feeling and actions as a result. According to Hofstede, culture is defined as:

> *The collective programming of the mind which distinguishes the members from one group or category of people from another.*

The culture of an organisation is significantly influenced by the national culture. Hofstede indentifies four value dimensions which play a role:

1. *Distance of power (machtsafstand)*: concerns the degree in which people accept that power has not been divided equally. A high distance of power implies a high degree of acceptance of inequality in power.
2. *Avoidance of uncertainty*: concerns the degree in which people feel uncomfortable with uncertainty and develop working methods to avoid uncertainty.
3. *Individualism*: concerns the degree in which people desire for uniqueness or belong to a strong community.
4. *Masculinity*: concerns the degree in which people focus on achieving goals and assertiveness (masculine culture) or focus on discretion and careful relationships (feminine culture).

The first two dimensions have a strong influence on the look at the organisation by outsiders, while the last two are related to the role of the individual in the organisation and the team spirit within the organisation. From Figure 29 in Appendix C2 – Result Online Survey we can see that the professionals at Cardea are willing to follow courses in order to increase their knowledge for working with digital records, colleagues are willing to help each other when problems occur during working with digital records and that it is clear to the professionals who to ask for help when they cannot resolve problems by themselves. These examples can be categorized in the last two dimensions, because first the professionals at Cardea and its locations feel strongly related to each other during their work and second

Cardea wants to offer the best care as possible. This can be reached only if there is a strong community in the organisation.

Culture concerns group behaviour[14]. Cultural change succeeds by intervening in the interactions and patterns that arise between people. At cultural change the manager himself is the important factor for guiding the change. It is thereby essential that the mentality and the behaviour of the managers correspond with the desired culture that they wish to reach (practice what you preach). Without this match there is no model and without a model the interventions of a manager are unreal and unbelievable in advance. In addition, the manager plays an essential role in creating circumstances and conditions as a result of which people can bring up for discussion.

During an interview with a communications advisor and the manager of O&O we found out that the behaviour of the employees at Cardea must change in order to work more efficient with digital records and the systems at Cardea. Managers must have support from each employee in order to let the project of working with digital records be successful at the introduction. There are some people who do not have the habit to consult the handbooks when coming across problems with the several systems. The cultural aspect is widely present in an organisation and it must be addressed somehow, although it seems hard to change according to the interview.

4.4 Competence

About the concept of competence there is quite some confusion. Because the success of an organisation is determined by the presence of the right competence, it is important to get the definition clear [39]. In this context we therefore use the following definition for competence:

> *'A collection of knowledge, experience and personal skills, whereby a predefined objective can be reached.'*

Competences are very dependent on where the organisation stands for or wants to stand for. Applying competences may include the following benefits[15] for both employees and managers as well:

- The mission and vision of the organisation is implemented correctly
- There is unity in the organisation through the use of a common language

[14] http://123management.nl/0/030_cultuur/a300_cultuur_07_cultuurverandering_succesfactoren.html

[15] http://www.onderwijsarbeidsmarkt.nl/fileadmin/user_upload/2_Wat_zijn_competenties_01.pdf

- The present or potential quality of employees are appreciated
- Differences between people are recognized and the employee may be deployed in a way that suits his situation
- Coaching, training and professional development can be used more targeted
- The effectiveness of coaching, training and professional development can be measured better
- Employees can profile themselves from their own competences
- Employees have visibility on career possibilities and are supported at stipulating their own career wishes

Central Objective[16]

When competences must contribute to the realisation of a predefined objective, it means that the objectives of the organisation should be made clear. It is important to define and describe the business objectives in such a way that it can clearly be analysed what the contribution of the several departments and their employees is in the total process. This means that in the description of the business process a link must be laid between the achievement of the objectives, the process flow and the competences necessary to take the process steps in a responsible way. It is also important to know which influences disturb the process flow. Due to influences from outside the organisation it may be possible that supporting processes must be changed in such a way that new or enhanced competences become necessary. Managing change[17] is aimed at that activity which produces the best output: achieving something in a competent manner. Increasing competence of employees is central to this approach. This is done by teaching (new) things to employees. The most important learning instrument thereby is giving feedback.

Often an organisation is faced with changes, which lacks the essential time to analyse the new or modified competences. The organisations must respond to these changes and they have to do this often on a short term. The pressure rises to such a level that the risk is taken to adapt the business processes, but it is unclear what the impact is for the required competences. The acceptance degree of employees dramatically decreases in such cases, when fulfilment must be given to modified processes. Hereby the quality of fulfilment also decreases because it is still insufficiently known which competences of the employees are expected.

To ensure that organisations can effectively respond to changes, a mechanism must be developed which can analyse beforehand what impact these changes have on the competences. An organisation that wants to work pro-actively with competences must have a clear overview of the impact of the competences on the current processes. It also must be

[16] http://www.zbc.nu/main.asp?ChapterID=4201

[17] http://www.vangorcum.nl/NL_toonBoek.asp?PublID=3261

clear which processes are liable to change and what affect these changes have on the content of the competences. The customer satisfaction and the developments of this must also be known.

This is not an easy task. In addition to distinguishing the different business processes and their mutual dependencies, it is necessary to get a clear overview of which influences can disturb the processes in such a way that competences should be tightened up or even new competences arise.

There is also another factor which is of influence on competences. Achieving objectives is not only dependent on the right competences, but also having the appropriate supporting resources. Resources are also liable to change. At the rate with what modifications in current technology takes place, also modifies the possibilities the resources have in achieving goals. Adequate resources ensure the efficiency, when used correctly. But the problem lies in the correct use of the resources. The skills to make use of the resources must be present. This requires that it must be known what skills employees should have in order to optimally use the available resources. When this is known, it is also necessary to have insight in the skills employees have.

We used an online survey to have insight in which skills employees have for working with digital records. Figure 30 in Appendix C2 – Result Online Survey gives an overview of the result of this online survey. In this appendix one can read in more detail what the findings are and here we only discuss the important findings:

- Older professionals want to increase their skills for working with digital records, while younger professionals do not need trainings.
- Professionals have skills to properly work with Care4 and for some it is not clear how to do so.
- Professionals have enough skills for working and accessing the records from home.
- Some professional still need to improve their skills for working with Care4 and properly registering client data.
- Professionals must have the skills to use the information systems and therefor clear instructions must be available.

4.5 Conclusion

By having analysed the organisation based on the concept of the Alares 'knowledge environment', the findings in this chapter and sub section 2.3 can be used by the management in the inventory and planning phase, as described in the next chapter. Based

on the overview made in the inventory phase, a good planning can be made such that the care taking process is not affected during the transition.

The organisation model of sub section 2.3.1 can be of additional contribution in identifying responsibilities of the employees and in modelling the care taking process, which can not be done by the concept of the 'knowledge environment' on its own. This model can also help to identify the several (informations) systems in use at Cardea with the help of the transactions defined in the organisation model.

We have used an online survey to have more insight in the way employees work now, how the use of the systems is, what culture there is for introducing a new working method and what competences employees have for the new working method. This result shows that employees at Cardea are willing to accept the new working method in the organisation, if this is communicated correctly to them. Employees partly have the skills for working with digital records and are willing to improve their skills by attenting courses. We can also conclude that the systems at Cardea are used by all employees, but with some difficulties because not every employee can use them properly. Care4 however is used by every professional, because this is the system where all information of a client is registered and professionals daily work with clients.

5 Roadmap for Transition

In the previous chapters we first described what the problem is at Cardea, made an organisation model of Cardea using the DEMO methodology, elaborated on the sub questions formulated and gave an outline of what to do during organisational changes by analysing Cardea according to the four components of the concept of the Alares 'knowledge environment'. As stated earlier, the organisational model of Cardea models the essence of the organisation on an abstract and complete level. This model gives a clear overview of the business processes of the organisation and the roles and responsibilities of its employees. The organisational model can be used when a reorganisation at Cardea must take place due to working with digital records. With this model as the basis of introducing the new working method, one can easily see where changes in the organisation take place and which causal effect these changes have.

In this context we consider the transition from paper to digital records as an organisational change. Based on the findings in the previous chapters, we will define a roadmap that describes the transition from paper to digital records. This roadmap defines how to do the transition in a structured way and must be applicable to other youth care organisations, besides Cardea, wanting to undergo a similar transition process.

5.1 A Roadmap for the Transition

The transition project consists of a series of activities which must be carried out in a particular order, whether related to each other or not. By subdividing a project into head activities, a project becomes manageable. This is called the phasing of a project.

The roadmap for the transition from paper to digital records, describes the introduction of digital records at Cardea. This transition project is divided into four phases and each of these phases end with a GO or NO-GO (depending on the quality of the deliverables), as can be seen in

Figure 24. The four phases are: the inventory phase, the planning phase, the transition phase and the evaluation phase. Each phase is used as input for the next phase and one can return to the previous phase, if necessary, before one gets to the transition phase.

The elaboration of the various phases goes from coarse to fine. Alternately backward (from the desired end result) and forward (advancement of phases, what in which order) reasoning is handled for the elaboration.

One must also take into account the unforeseen circumstances during the transition project. For this reason it is recommended to plan time for such activities, for waiting for the implementation of other activities and for extension of previous phases. Plan a start date on which project members could start their work (e.g. x days after approval of the plan of action). It is advisable to agree in advance on which decisions are taken and by whom.

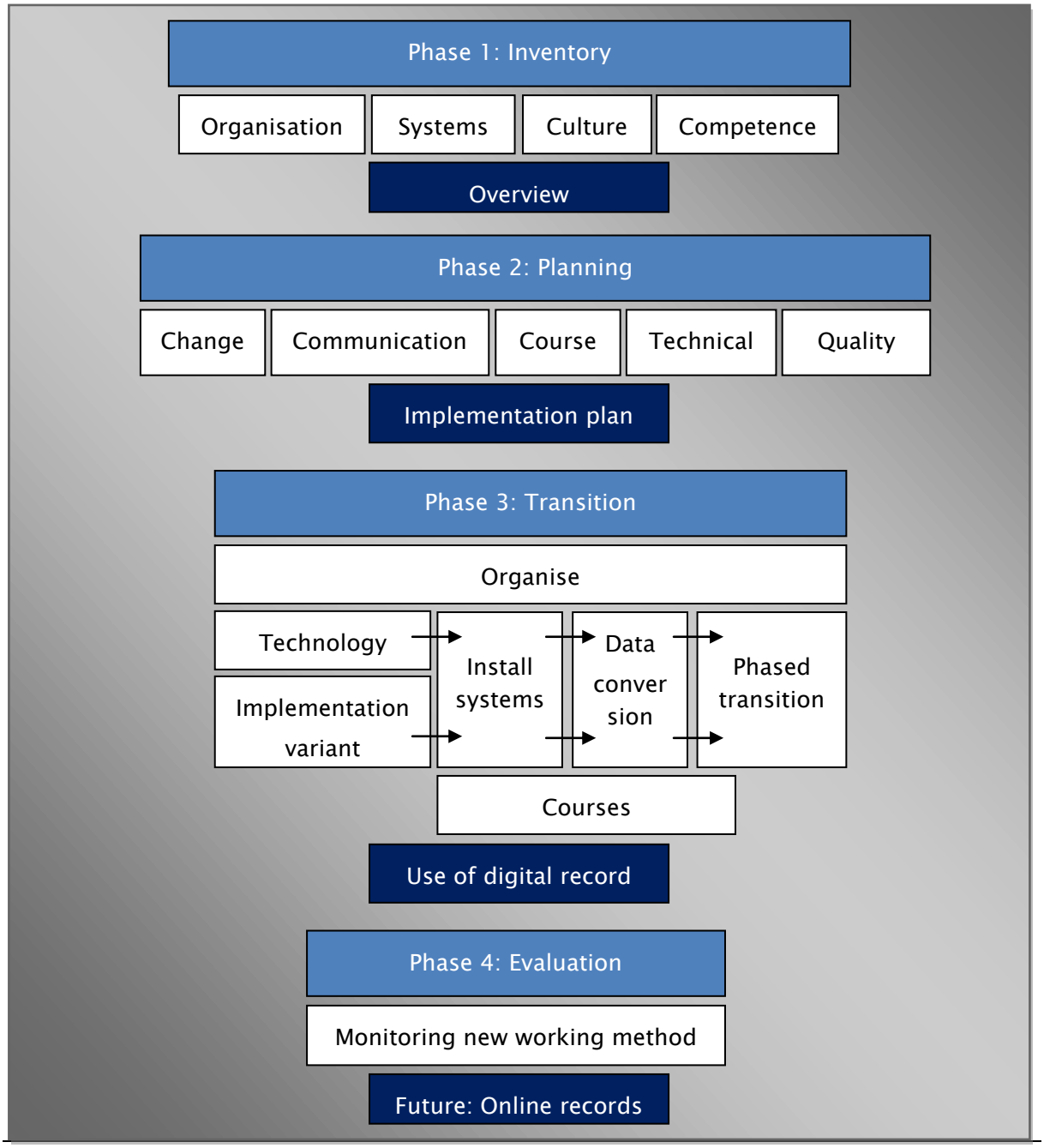

Figure 24 – Roadmap for the transition from paper to digital records

Below the several phases are discussed in more detail.

Phase 1 – Inventory

In this phase an inventory of the organisation must be made according to the four components of the concept of the Alares 'knowledge environment'. These four components are: organisation, systems, culture and competence. At the end of this inventory phase a clear overview is created of the organisation, which can be used to enter the next phase.

By making an inventory of the ***organisation*** we mean that Cardea must look at how the organisation is structured e.g. is there a hierarchical structure or is there another kind of structure (flat, matrix or bureaucratic). The structure of the organisation determines who the decision makers are in the organisation. Also an inventory must be made of how many employees the organisation consists of and what their responsibilities are. Every employee must know their responsibility and maintain this after the switch to working with digital records has been made. For this purpose we have made an organisational model of Cardea where the responsibilities of all the actors are defined. When a new working method is introduced, this model can clearly define the effect of the new working method and can show which actor responsibilities might change. This model could also be used to give recommendations for improving the working method, because some responsibilities could easily be done by an actor that now has a certain responsibility. This causes more efficiency in work.

In this phase the project manager must also see if there is enough time and room for the introduction of digital records. Make use of a sense of urgency, window of opportunity. One must see if there are mutual agreements with partners and see if there are standards used for working methods. An inventory must be made to see if the impact of working with digital records is communicated to externally involved people, namely the clients and the parents of the clients. One must know if the benefit of digital records has been made clear to the professionals who are going to use these records; show the added value of digital records. In short, an inventory must be made of what the needs and wishes are of working with digital records, support must be created among the employees, see whether there are guidelines for paper records which have been digitalised (what must be done with the paper records), is there a guideline for archiving paper and digital records, are there protocols for professionals how to visit clients at home, are the privacy and security issues taken into account for using digital records, etc.

By making an inventory of the ***systems*** in use, it must give a clear overview of the number of computers at the several locations of Cardea. A clear view must be made of how the network

is installed and if this network can be used to support working with digital records. Possibilities of mobile working must be checked so that professionals could make use of laptops when making visits at home of the clients. An ICT helpdesk must be available for those who need help when they have difficulties with the digital records. An application manager is needed for people who have difficulties of working with the applications of the digital records. See if SLA's have been made with suppliers of software and hardware and if there any scenario's written which describe what to do when the system is down and how to act upon this phenomenon. Make an inventory of the systems that can be reused and are ready to be used when online records are introduced. Make an inventory of what the frequency is of the systems in use at Cardea.

When choosing a certain software program, it must be clear if it is user friendly. Software must come with manuals which describe how to work with it and what to do if it does not function properly. The software provider must also be ready to give assistance when the software does not function properly or is not made according to the requirements of the end users. For this, some scenarios can be written what to do if the software does not function properly.

An inventory of the ***culture*** is made using an online survey and the result of this survey is given and extensively discussed in Appendix C2 - Result Online Survey. Concerning the inventory made at Cardea the following was discorverd about the culture. It must be know if employees have a clear understanding of the changes. Professionals must know their workload and clear agreements must be made concerning the new working method. A positive must be created in order to introduce the new working method. All of this can be done by communicating the changes clearly to the employees. Besides this, the management must have full support of their employees in order to introduce the new working method. In order to introduce the new working method successfully, the culture of the organisation must be open to changing projects. This can be created by good communication between the employees and the management.

An inventory of the ***competence*** is made using an online survey and the result of this survey is given and extensively discussed in Appendix C2 - Result Online Survey. Concerning the inventory made at Cardea the following was discovered. The management can use these results to make a good course plan. Along with this, the quality of the care can be increased too. Employees must have ICT skill and skills for working with digital records. Employees with less skill must follow courses in order to improve their skills. Skills can also be improved by describing scenarios for working with digital records, so there must be an inventory made if there are such scenarios. Employees must also have the skills to help their colleagues. These are some of the points one must take into consideration before the next phase can be entered.

Phase 2 – Planning

The second phase of the roadmap considers the planning of the project to make the transition from paper to digital records. This phase considers five sorts of plans, namely: a change plan, a communication plan, a training plan, a technical plan and a quality plan. As a result an implementation plan is created, where an implementation variant is chosen and the next phase can be entered. One can read in more detail about the implementation variants in Appendix J – Implementation Variants.

Below we will give an elucidation of the several plans:

- **Change plan**: the change plan describes how the migration path from paper to digital record will look like. Important aspects in this plan are activities in the preparation, how the transition looks like and in which way the digitalisation of the records take place.
- **Communication plan**: the change plan is announced to the employees of the organisation and the external parties. Communication is a process that takes place in two directions: it is, besides informing the organisation, also obtaining feedback from the employees and using this feedback properly. Communication is important to reduce the distance with and the resistance of the employees in the organisation. The communication plan describes a clear communication structure and which resources are used for internal and external communication (e.g. newsletters, presentations, information days, additional consultations, a liaison, etc.).
- **Training plan**: this training plan gives an overview of the trainings, the educational forms and the training opportunities which are offered to the professionals so that they can prepare themselves of working with the digital records. The objective is to improve the several skills in order to work properly with digital records.
- **Technical plan**: this plan describes the technical steps taken which guarantee the functioning of the digital records. Important elements in the technical plan are the opportunities for mobile working, the ICT support and making performance agreements.
- **Quality plan**: working with digital records means such a change in work processes, that it is important to take the impact on quality of the work into consideration. The quality plan describes how to work with digital records in order to obtain the highest possible quality of service. The quality plan focuses on the way how standardisation is handled. The quality plan is not only aimed at ensuring quality during the transition to working with digital records, but also in monitoring and controlling quality. This means ongoing attention to quality improvement and quality management, which are determined by the concept of the knowledge environment of Alares.

In this phase also a financial overview must be made, which describes the budget of the transition project. Besides the planning and the financial overview of the project, also the packet selection for the several software applications must be made in this phase. The costs for the several applications are also included in the financial overview.

Phase 3 – Transition

This phase describes the transition from paper to digital records, while taking into account the several steps in the previous phases. This is the period where Cardea definitely works with digital records. This means that every new client has a digital record and no paper records are used anymore. An appropriate moment must be chosen for the transition to take place. This moment is e.g. dependent on the availability of the technology. The management must also discuss this moment with the professionals, because they are the ones who are going to use them intensively. They are the ones who need time and space to learn to work with digital records. So for the professionals the best moment for the transition could be when there are not too many clients on the waiting list. On the other hand the transition cannot be postponed for a number of times and the management must choose a target date. At the end of this phase, working with digital records is introduced successfully. Every professional uses a digital record during the care taking process and no paper records are needed anymore.

Organise: The whole transition process is being monitored and organised in such a way that the care taking process is not influenced and that professionals can keep on working.

Technology: The right technology must be chosen in order to work properly with digital records. After the inventory has been done which systems are in use, one can look for the appropriate systems. Systems must be chosen in such a way that Cardea can easily communicate with other youth care organisations. For this reason it is advisable to do research on the technology available for the youth care sector.

Implementation variant: Looking at the implementation variants as described in Appendix J – Implementation Variants, the most suitable variant for Cardea now lies between the minimum and the maximum variant. This because they have paper records which must be digitalised and BJZ does not send the indication decision digitally yet, so that they can start with a digital record. On the other hand new clients are registered Care4 from the start of the care and this forms the digital record of a client. Because we were not able to validate this variant during the research, this variant is just a recommendation according to the currents situation.

Data conversion: In this phase the paper records which are archived for the period of ten years and records of clients who already had a paper record, are also digitalized so that these records can be digitally available for professionals and clients. In this way the

organisation works with one kind of record. By looking at the advantages and disadvantages of the data conversion variants mentioned in Table 7 of sub section 4.2, partial conversion seems to be the most desirable method. Without the conversion of data stored in paper records, these records will still be used for a long period of time. In this way Cardea keeps on working with two systems (paper en digital records) together with the multiple disadvantages this brings along. In case of partial conversion the organisation must verify which data are taken along in the summary.

Courses: Courses are provided to the employees for improving their skills. These can start as soon as the right technology is chosen and parallel with the installation of the systems which are going to be used and during the data conversion period. In this way professionals can learn to work with the system as soon as they have finished their courses.

Phased transition: It is advisable to make the transition from paper to digital records in several phases, because this regards the continuity of the working process. Deficiencies which are detected during the start up phase can be solved in time and have limited impact on the work in this way. Just before the actual transition is started in the whole organisation, the management can decide to start a small pilot with a limited group of professionals to see what the effect is of working with digital records. Only when working with digital records is declared acceptable by this group, the management can decide to implement the transition in the entire organisation. By scaling up the transition per location, employees get the chance to properly prepare for the arrival of the digital records. In this way they hear the stories about working with digital records from enthusiastic leaders. This way of scaling up can also be done per municipality, when digital records are used successfully at leading youth care organisations as Cardea. Further on, the implementation depends on the local situation and the choices the management makes. The management can decide to register all new clients digitally or some contact moments. The next sub section describes some implementation variants from which the management can chose for introducing digital records in their organisation [40].

Phase 4 – Evaluation

The final phase in this roadmap is the evaluation phase in which the whole project is being evaluated to see if the transition has taken place properly and that there were no drawbacks during this process. Feedback is asked from the professionals and everyone who is using the digital records and it is being **monitored** how working with digital records is taking place. The management is continuous looking for new developments in this area and what new implementations have to be done. If the management is satisfied with the way the organisation has introduced and is working with digital records, they will start the preparation for the next step in the trajectory, namely providing online access of the digital

records to their clients. This is a future step that Cardea wants to take, when the digital records are organised well and are ready to be accessed through the internet.

6 Conclusions and Recommendations

6.1 Conclusions

At the beginning of this thesis project it became clear that Cardea wanted to work more efficiently and effectively and to improve the quality of the service towards their clients by introducing digital records. The introduction of a new working method has consequences for the organisation, both on an organisational and technical level. As part of the conclusions, we will enumerate the main contributions of this project.

Approach: Using the DEMO methodology

In order to have a clear understanding of Cardea we need a good methodology to construct an organisational model. This organisational model is made on the ontological level using the DEMO methodology of prof. J.L.G. Dietz. We first described the DEMO methodology as clear as possible in order to let non DEMO specialists get familiar with this methodology. The organisational model clarifies the communication between the client and Cardea during the care taking process according to the client route (Appendix E – Client route of Cardea). The several roles and responsibilities of the employees are identified during the modelling of the organisation. For identifying the roles and responsibilities of the employees we used an actor analysis matrix (Appendix G – Actor Analysis Matrix) where several actor roles and actors are defined. When introducing the new working method, the management can use the organisational model to structure the organisation in such a way that the care taking process is optimized. In this way they can have a clear view on the changes that will take place during the introduction. Several process models (Appendix H – Process Models) are also constructed in order to give a clear understanding of how the care taking process takes place. In order to shorten the waiting list, the management can decide to take actions based on the several process models. Because this methodology also contributes to the organisation component of the concept of the Alares 'knowledge environment', Alares can use this methodology for analysing an organisation according to their concept.

Answers to the sub questions

The main research question was narrowed down to three sub questions. Here we describe what we have concluded by answering these three sub questions.

The first sub question regards what the content of the record types should be according to the management of Cardea. This is to provide the employees a clear view of how to build up a record. We took all three record types (paper, digital and online) into consideration. By describing the content of each of the record types, it is now clear how a record must be build.

The second sub question regards the benefits and drawbacks of digital and online records are for both the organisation and their clients. Figure 20 – Overview benefits of digital and online records gives a clear overview of the benefits digital records have for the organisation and the clients. Based on these benefits Cardea must introduce and use digital records. However clear agreements must be made about the way employees must use the digital records.

The third sub question regards what the barriers are for introducing digital records in the organisation and how one can deal with these barriers. Employees can have difficulties of working with a computer, the systems in use may fail to function properly and employees might not want to support the new working method, because they are used to working with paper records. For this reason some recommendations are given in order to deal with the barriers one can come across. In the whole transition project it is important for the management to properly communicate with their employees and try to involve them in the project from the beginning. Good communication and involvement leads to a success of the project.

Needed changes

We described the organisational change Cardea has to deal with. To analyse the organisational change, we used the concept of the 'knowledge environment' of Alares based on the four components, namely: organisation, systems, culture and competence.

Cardea must have a clear vision and goal in order to successfully introduce digital records into their organisation. They must think how to set the organisation structure in such a way that decision making does not take too long. The hierarchical structure of Cardea does not support fast decision making when the need for it is high. Therefore some responsibilities must be given to department managers. Not all of the decisions must be taken by the highest person in the hierarchy. Some of the crucial decisions can be made by professionals themselves, because they are the ones providing care and have contact with the children. They are the ones who know how urgent it is for the care to be provided to a specific child and what kind of care they need.

According to the result of the online survey almost 75% of the respondents agreed upon professionalising the use of digital records. This is a decision which must be taken as soon as possible; otherwise the employees will have to work with two systems (paper and digital record) side by side. This could cause for confusion by not knowing which system to use.

As the results of the online survey also shows, most of the employees are able to use the systems in use at Cardea but it still is necessary that employees follow trainings for improving their skills to work properly with these systems. All employees must have the skills to work properly with digital records and according to the online survey they are also willing to improve their skills if necessary. Cardea must give employees the opportunity to improve their skills by providing them trainings.

Employees have accepted the new working method at Cardea. According to one of the interviewees it was clear that the working with digital records is more efficient and effective and that it improves the quality of the service. This because now professionals can easily exchange information with each other and clients can easily have access to their record.

Employees must work in a standard way, according to the agreements made with the management. Above this all, it is important that support is created from every employee in order to successfully introduce a new working method. This is also goes for the fact when Cardea wants to make the digital records accessible online for their clients. Employees and especially the clients must accept the online records in the future. But before this can happen, Cardea must properly organise the use of digital records and all the privacy and security issues must be taken into account.

Plan of action: the transition roadmap

Based on the organisational model, the three sub questions and the way the organisation is analysed in order to apply the appropriate changes, a roadmap is developed which describes the transition from paper to digital records. This roadmap describes the transition in a phased manner. A phased transition is chosen, because this regards the continuity of the working process. Deficiencies which are detected during the start up phase can be solved in time and have limited impact on the work in this way. Just before the actual transition is started, the management can decide to start a small pilot with a limited group of professionals to see what the effect is of working with digital records. Only when working with digital records is declared acceptable by this group, the management can decide to implement the transition in the entire organisation.

There are several implementation variants given and Cardea can choose the best applicable variant depending on the situation they are at that moment. Some data conversion variants are given which can be chosen from and Cardea can decide which variant is the most applicable to them.

The roadmap described in this thesis is the answer to the main research question and describes the transition in a structured way. It describes the way the transition from paper to digital records must be organised in such a way that the care towards the clients is not affected during the changes in the organisation. During these changes the service towards the clients still must be efficient, effective and of high quality. The roadmap just described must be validated and when used successfully by Cardea, it can be used by other youth care organisations which want to go through a similar transition processes.

The circumstances, under which this project was carried out, were not that pleasant but still we managed to achieve and set a great report and research. For this reason it was not possible to validate this roadmap during this project.

6.2 Recommendations

This subsection gives the recommendations in order to properly implement digital records into the organisation and how to deal with the impact of implementing digital records. For a good overview we have divided the recommendations into recommendations for organisation, systems, culture and competence. These will be given in the sub sections 6.2.1 through 6.2.4 respectively. Most of the recommendations can be referred to the results of the online survey (Appendix C2 – Result Online Survey), the interviews we had and from information received from Alares. Finally we give some recommendations for future research in sub section 6.2.5.

6.2.1 Recommendations for Organisation

Digital records force a major change in the way of handling records during the work. This obliges Cardea for making new agreements concerning the activities and extensively training the employees in the new working method. This sub section elaborates on recommendations for the organisation that can be taken into consideration during the transition process.

Create time and space for changing activities

Employees, especially new employees, must have enough time to learn to work with digital records. This means that especially the professionals, which have contact with the clients, must have more time for contact moments. In the beginning the contact moments must be extended so that professionals can make use of digital records properly [42].

In order to make the conversion to digital records take place as smooth as possible, extra people are needed in the organisation. This can be solved in several ways, e.g.:

- Additional hours – ask the employees to make some extra hours besides their normal working hours for a short period of time. The expectation is that some of the employees are open for this option.
- Hiring additional workers – especially complete supporting teams to take over the work the employees would do in the additional hours.
- Less and shorter contact moments – temporarily provide care on indication or temporarily limit the care process in order to save some time.
- Work ahead – work ahead now where possible and do research for the upcoming period
- Making clear agreements concerning an efficient way of introducing digital records, without loss of valuable information. Note: here are the high risk children an important point of interest; no information may get lost.

Even with these measurements it is not yet certain whether the production loss can be caught. Therefore it is advisable to keep on looking for creative solutions. Hiring additional workers has a great impact on the employees of Cardea. Offices are often full and for some professionals it is difficult to choose which tasks to handover to these “strangers”. The best solution for professionals is that they enter the data themselves, e.g. at the end of a consultation with a child.

Finally professionals can have some extra time by avoiding other projects as much as possible. During the digitalisation process either other projects must be ended first or new projects must start after the digitalisation project. This gives the management the opportunity to lead the project for the introduction of working with digital records in a good way [42].

Mutual reconciliation and standardisation

Digital records are processed in an equal manner as paper records and data are easily interchangeable. For this standardisation of the working method at all the locations of Cardea and unambiguous data registration is necessary. Because professionals of Cardea work at different locations in the region, they do not see each other that much to make mutual reconciliations about their working methods. Therefore it is advisable to spent extra time for letting professionals make mutual reconciliations during discussions and also give them the opportunity to come up with own solutions. But above this all the management must prevent the proliferation of arising solutions, because this could lead to even more problems instead of a solution to this problem. It is important that the reconciliation also takes place interdisciplinary, because working with digital records makes the cooperation easier with other disciplines. Standardisation makes people work more efficient, effective

and ensures better communication. In this respect, standardisation is an ongoing process aimed at improving the quality of the youth care process. The management is responsible for setting up a clear scope for standardisation.

Communicate the impact with external stakeholders

Working with digital records does not only have an impact on the internal organisation, but the clients (children and parents of the children) and external partners are concerned with the new working method as well. It is the responsibility of Cardea to inform their clients and external partners of the changes. They must know in advance what this new working method means to them, so that they too can prepare themselves for the effect it has on them. Parents of the children are aware of the privacy issues and the electronically stored data of their child. It must be communicated clearly to them how Cardea handles digital records and how the security of these records is arranged. The communication can take place during or after the consultations with the child. For this clear agreements must be made internally how digital records are handled and in turn professionals could communicate this clearly to the parents. Agreements must also be made about what parts of the records are shared with parents and other professionals.

Show the added value

The added values for the quality of the youth care must be clear to everyone involved (see Figure 20 – Overview benefits of digital and online records). One can define the added value on three levels, namely:

- **Added value for the child**: working with digital records is important for the cooperation within disciplines in and between organisations. With the introduction of the new working method, future opportunities are achieved throughout the entire youth chain besides the number of advantages it creates for the youth organisation itself. Now the digital records will only be used by the professionals, but in the future the digital records will be accessible for the clients as well. The use of digital records is also a base when these records will be accessible online for the clients. Using digital records throughout the whole region and country makes it easier for organisations to exchange data from the records or the whole record when a child moves from one region to another. In this way care could be provided in an efficient and fast way.
- **Added value for the organisation**: working with digital records can carry out savings for the administrative management and the logistics. Especially when records must be handed over to organisations to the region where the child has moved to. Since the organisation does not use paper records anymore, this increases the flexibility of the organisation and also provides physical cost savings (paper and room for archiving which the records consume).

- **Added value for the employees:** digital records support professionals during their consultation. Professionals can easily exchange information with each other and immediately have the correct information of the child. They do not have to carry a paper copy of the record when attending a consult outside the organisation. They do not have to search through piles of paper for child information; information can easily be gathered when digitally available. This saves them time in organising paper work.

6.2.2 Recommendations for Systems

The client registration system Care4 was introduced in 2001 and is being used since 2007 by everyone in the organisation. All the computers have this system installed on it, so that everyone has access to it from their own computer. It is important that there are enough computers, so that every employee has one for themselves and do not have to share computers with each other. Professionals, who have consultations at the client's home, must have the possibility to work with a laptop that must be made available by Cardea. Clear appointments must be made who gets a laptop and the management must consider the opportunity to let professionals share laptops with each other. Working with a laptop gives professionals the opportunity to work mobile, but for accessing Care4 on must have an internet connection. For this purpose there are several options [42]:

- When professionals are doing consultations at home, they can make an internet connection by plugging into the fixed network of the location they are at. This has the advantage that the connection is stable and the disadvantage that it requires clear agreements with system administrators and security issue can cause problems. The connection could not be guaranteed as well.
- Make use of UMTS technology: laptops could continuously be wirelessly connected to the internet.
- Make use of GPRS technology: when the UMTS technology fails to work properly, one can make use the GPRS technology using the GPS network. This network is quite slow and will not be user friendly when accessing digital records online.
- It is strongly advisable not to use wireless Wi-Fi networks, because these are very complex in use, have problems with security and are complex to manage.

Employees can log on to the system from outside using a Citrix connection. Therefore it is important that the Citrix connection is set up and works adequately, so that employees can log on to the system at any moment in time and in a secure way. Even when employees are at Cardea locations, they have to log on to the Citrix system before they can work further.

This ensures that everyone works in a secure environment and no unauthorised people can access the computers of the employees.

Besides the right technical infrastructure, direct support for the employee is essential. This means that the administrator must be available any moment for giving support. Administrators must have the opportunity to remotely log on the computers of the employee in order to give assistance. The administrators also give assistance when the system or network is down. They must communicate to the employees how long it will take before the system can be used again and employees must know how they can continue their work during the period when they cannot use the system. For this purpose some scenarios can be written in the manual how to continue working while the system or network is down. The management can decide to have key-users per location so that the employees can ask help to them. The key-users could be professionals who took courses in helping colleagues with problems. The key-users in turn could give feedback to administrators about the problems people get while working with the system.

6.2.3 Recommendations for Culture

The organisational culture at Cardea determines the way how they deal with changes. Employees can lead to success or failure of a change process. The culture determines how employees react internally to changes. To have insight in the prevailing culture within Cardea, an online survey was used and the result is given in Appendix C2 - Result Online Survey. This sub section gives some recommendation how to handle the impact on the employees and how the management can create support from the employees for successful introduction of digital records. The usefulness and necessity of good communication is also shown [42].

Admittance of the impact on the employees

The client record is used throughout the daily work of a professional and forms the basis for every activity. Therefore the introduction a digital version of the paper record has consequences for the activities. During interviews and the online survey it was clear that professionals fear the fact that the system may not function properly during consultations. Using a laptop decreases the professionalism towards the clients, because during a consult there will be a laptop or computer between them. One must consider carefully where to put the laptop during the consultation, while talking to the client and registering at the same time. Professionals are also concerned about the overview of and the entry of data. It is important that no data gets lost. Professionals want to provide as much care as possible and they do not want to spend too much time and effort in learning a new working method. This can lead to less contact with the children.

Ensure usage of digital records

Employees, who are using the digital records for the first time, need more time to enter data into Care4 because it is new to them. Also older professionals will have difficulties for working with digital records, because they were not born in the digital era. Some even are not willing to learn to work with digital records. This resistance was discovered during the online survey under the professionals who are concerned with digital records daily. It is very important to give this group of professionals enough time to learn to work with the digital records. They must practice the basic computer skills first before working with digital records. Every individual has their own way of getting used to the digital records and depends on the fear of technology and the negative impact on the quality of work. The management must clearly communicate that the introduction of the new working method will take place in phases. Employees must not fear to make mistakes when learning to work with the digital records and need the opportunity to do this in their own tempo.

Admit increasing workload

There are several ongoing projects at Cardea. When employees are concerned with multiple (changing) projects at the same time, this could for stress because they will have to learn to work with several things at the same time. Therefore it is important that the management admits the increasing workload and introduces new working methods one step at a time. It is also important to work with one system as soon as possible. Employees are concerned about the fact of working with two systems (paper and digital records) simultaneously.

Communicate clearly with employees

Communicating clearly to every employee is a key to success. It is important to react on questions coming from the employees about the changes the management wants to realise. The quality of the communication towards the employees must be taken into account during change processes. In practice, communication takes place on a layered level depending on the position of the employee in the hierarchy because not every employee has meetings frequently. Some of the employees see each other more often than others. By using proper communication resources, employees get a better impression of the plans of the management. Through discussions with employees it is possible to clarify uncertainties and ambiguities. This can be done by organising a plenary session and giving a presentation about the plans for changes, by walking through to the several departments, attend meetings of the departments or make some time to have a talk in the corridor. By clearly communicating the added value of digital records and the way it will be used, gives the employees a feeling of trust and is the chance of acceptance very big. Also by involving the employees from the beginning of the change project, increases the chance of acceptance.

Make clear agreements around activities

In order to successfully introduce the digital records, employees must feel comfortable working with the new system. For this reason clear agreements about roles and responsibilities are necessary. Agreements made concerning working with digital records must be communicated concretely and on time, so that employees know how to work properly with them. Make sure that there is no ambiguity during and after the project, but pragmatically make clear to everyone what is going on and what is expected of everyone. It is advisable to put these agreements on paper, so that one can refer to them at any moment in time. It is important to involve employees when making decisions, to listen to their comments and take these into the process. Often the most valuable information is present within the organisation itself; employees carry the knowledge of the organisation. Employees find it very important to get trust from the management. So communication is not only about informing the employees, but also listening to what employees have to say about dissatisfaction and show notion for difficult situations. Only in this way the digital records can be accepted in the whole organisation.

Give confidence and create a positive environment

In general, employees derive their identity from their professionalism. Most of the employees feel save when working with paper records, because this is what they were used to for years when providing care. They get the idea that by working with digital records, they will not be able to work properly when the system is not accessible. It is important that employees have sufficient confidence in the technology, by realising a number of technical boundary conditions and making it possible to discuss the distrust.

Employees, who have their doubts about working with digital records, can be stimulated by employees who do have trust that working with digital records will be successful. The management can decide to set the employees with a positive attitude as key-users and use these key-users to encourage their colleagues to work with digital records. Seeing the added value of working with digital records makes the employees more enthusiastic for accepting the new working method.

Cultural change is a long term process

For working with digital records, employees must undergo a cultural change. Forming a new culture is not without any bumps. The current culture is deeply rooted into the departments and is reflected into every employee. Culture is the set of habits, institutes, symbols and values deeply rooted in department and individual and not easy to change. Employees are used to work in a particular way and feel comfortable with it. Therefore it is important for the management to know that the actual acceptance of working with digital records may take more time, instead of the realisation that the digital records already exists in the organisation. The working method changes inevitably, but for a change in habit, attitude

and behaviour more time is necessary. The start of such a cultural change is done by creating a clear vision. By taking employees along in this vision in an inspiring way, makes the organisation enthusiastic to achieve this goal together.

6.2.4 Recommendations for Competence

Working with digital records requires new skills and both managers and employees need to follow courses and trainings. Skills can be defined on three levels: basic ICT skills, skills for working with digital records and skills in the field of standardisation. The management can make a training plan in order to give the employees the opportunity to improve these skills.

Encourage individual practicing of basic ICT skills

In 2001 Care4 was introduced for the first time and this was the moment some employees needed to level up their ICT skills. According to the online survey, we can see that most of the employees have good skills working with MS Office applications and Outlook. Still it is there are some employees which must improve their skills, because the mutual level of difference is rather high. Employees must have basic ICT skills and must have the opportunity to update these skills within a certain period of time. It is advisable to stimulate employees to practice with the several programmes in use at Cardea in order to level up their skills. This is partly the responsibility of the employee himself and partly of the management. The management can have some moments in a year for employees to go on trainings or refresh their skills. During an interview it was clear that professionals are willing to take time to improve their skills when the management offers them the time to do so. Employees could also make use of e-learning possibilities to test their ICT skills, which can be done at home in their own spare time.

Use key-users to train digital record skills

It is important for employees to learn how to work with Care4. This client registration system forms the digital record of a client. It must be clear to the employees where they can find and register client data. Besides this it is also important for professionals to know how to work with Care4 during a consult and not lose the contact with the client, because some of the professionals will work on a laptop and will be filling in the information immediately in the system. A possible way is to have some key-users in the organisation, which are enthusiastic of working with digital records and have the necessary ICT skills. These key-users are willing to share the knowledge with and help their colleagues to improve their ICT skills. The key-users are the ones who are sent for trainings and learn how to work with the new system. These key-users in turn provide trainings at the several Cardea locations and share their knowledge with their colleagues. The employees accept the instructions better than when a typical ICT trainer would provide the course, because the key-user him-

/herself uses the system in his/her daily work. By having some key-users who are trained in using the system properly and are able to train their colleagues (the concept of train-the-trainer), also saves Cardea some money. In addition, the training of the colleagues gives the key-users the opportunity to master all the skill for working with the digital records.

The key-users are the first ones coming across the imperfections of the digital records and they can give ideas for possible improvements. So it is advisable to involve key-users at the evaluation process in order to come up with suggestions for improvements of the system and the working methods.

Provide adequate space for standardisation

Working with digital records must be done according to agreed standards. For a clear overview it is necessary to register data in an unambiguous manner. It is important that employees make mutual agreements about the way digital records are used and how registration takes place. Standardisation is not pleasant to everyone and influences the freedom of work for employees, because in this way professionals do not have the freedom to make notes where ever they want (e.g. on a piece of paper). When standardisation improves the quality of the youth care, employees are willing to invest their time in working with digital records.

Encourage to help each other

To make the transition towards working with digital records instead of paper records requires teamwork. Everyone must be able to help each other, trust each other and the system and provide tips. The key-users are a good step in this direction and they must always be contactable when other employees need help. The introduction of the digital records is successful, only when all employees accept and use the digital records. For this reason it is important to set common goals and aim to achieve these goals together with the employees. It is important that experienced colleagues share their knowledge with less experienced colleagues and this must be done every day. The management can facilitate this to and reward the key-users.

6.2.5 Recommendations for Future Research

Future research must be conducted in order to describe the proper transition from digital to online records, by using the roadmap that is a result of this research project. At the time the project was being carried out, there was no digital signature method yet designed applicable in the (youth) care sector. This can be a good research project in the future to find out what method or system can be developed for using a digital signature applicable in the (youth) care sector. For now the DigiD method can be used, but for it must be studied into what

extend this method is applicable to be used in this sector. Also research can be done for finding a suitable document management system in order to archive client records in the youth care sector. Archiving records in this sector must be done according to some specific rules and legislations. One can also think of a research which can be conducted in order to come up with a good client registration and communication system which can be used by all the youth care organisations in the youth care sector in the Netherlands. This system can than easily be scaled up to a national level and be used for the electronic child record systems the Dutch government wants to introduce from the 1st of January 2010.

Another problem that Cardea coped with is that professionals make a copy of parts of the digital record and bring this along with them to a consultation. In order to solve this problem, it is recommended that Cardea provides laptops to the professionals who must go on consultation at the client's home. By providing laptops professionals could log on from the location where they are. But this option must be taken into good consideration because it is about sensitive data that must be entered into Care4 using an internet connection. The security issues play an important role here and therefore research must be done on this subject. This also holds for the online accessibility of digital records that Cardea wants to provide in the future. Here one must think of a secured internet connection for the employees and the clients. The privacy and security issues must be taken into account.

In this thesis the focus is laid on the process for making the transition from paper to digital record. A thorough study on the transition from digital to online records can be done in another thesis project.

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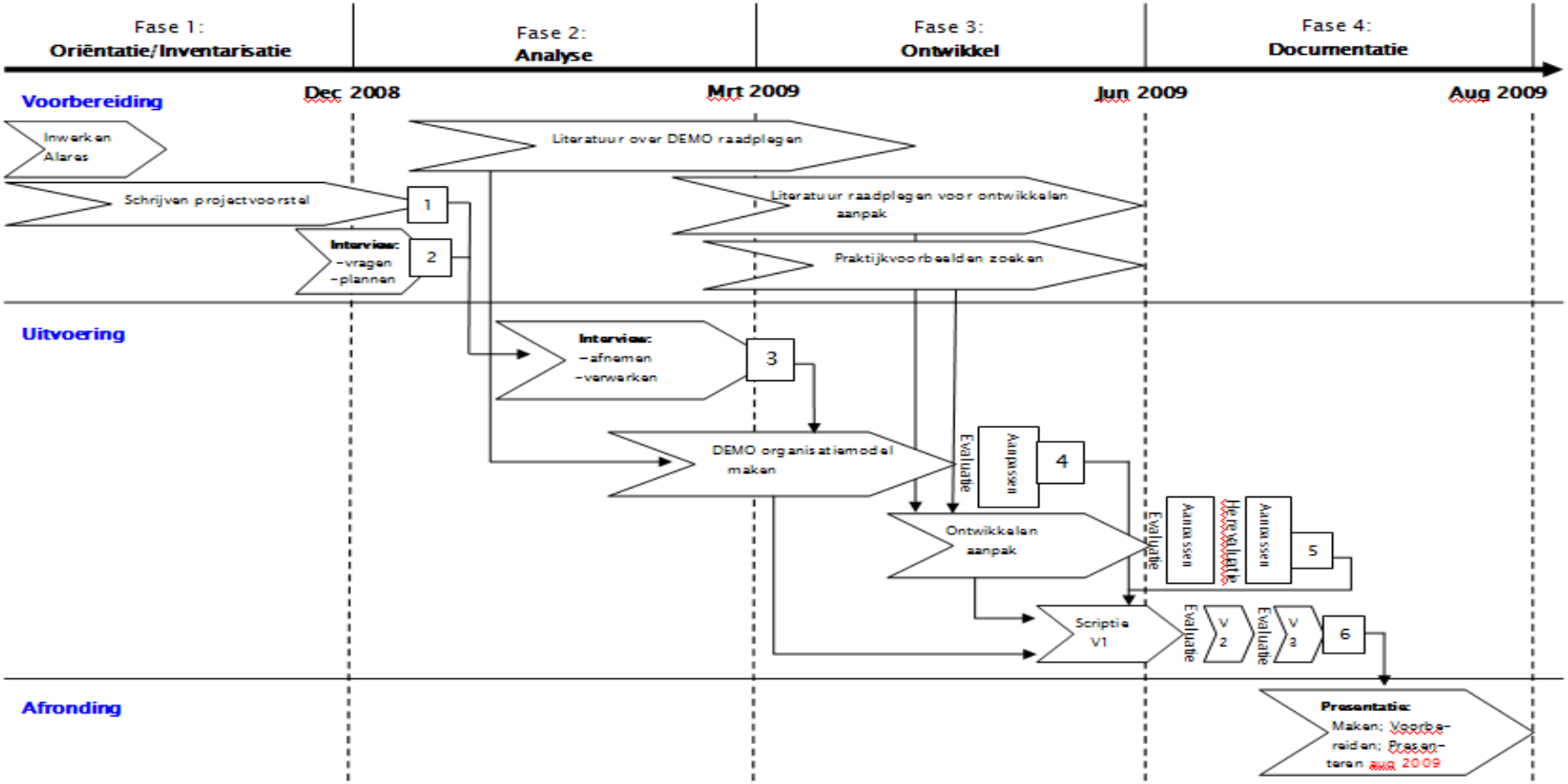
Abbreviations

BJZ	–	Bureau Jeugdzorg
BW	–	Burgerlijk Wetboek
CA	–	Cliëntenadministratie
CA-CB	–	Cliëntenadministratie Centraal Bureau
CBP	–	College Bescherming Persoonsgegevens
CM	–	Casemanager
DDJGZ	–	Digitaal Dossier Jeugdgezondheidszorg
EKD	–	Elektronisch Kinddossier
EPD	–	Elektronisch Patiëntendossier
HKZ	–	Harmonisatie Kwaliteitsbeoordeling in de Zorgsector
HV	–	Hulpverlener
HVP	–	Hulpverleningsplan
OC	–	Opnamecoördinator
OP	–	Orthopedagoog/Psycholoog
SWO	–	Samenwerkingsovereenkomst
TL	–	Teamleider
VIR	–	Verwijsindex Risicojongeren
VGV	–	Voortgangsverslag
VWG	–	Verslag van het wachtlijstgesprek
WEK	–	Wachten eigen keus
WGBO	–	Geneeskundige Behandelingsovereenkomst
WBP	–	Wet Bescherming Persoonsgegevens
WTB	–	Wachttijdbegeleider

Appendix A – Planning



Appendix B – Alares Knowledge Environment

According to Alares the 'knowledge environment' consists of the contextual and the transactional environment. The 'knowledge environment' further consists of four components: the organisation (vision, mission and organisation structure), the systems (i.e. quality and ICT systems), the culture and the competence of the organisation and its employees. In order to achieve the vision and goals of the organisation they must have the right competences with a wide range of (ICT) systems as a support. The successful use of the systems is again dependent on the culture of the organisation. Figure 25 gives an overview of the 'knowledge environment' of Cardea Youth Care. For the interviews and online survey the knowledge environment is used to structure the questions according to the four components.

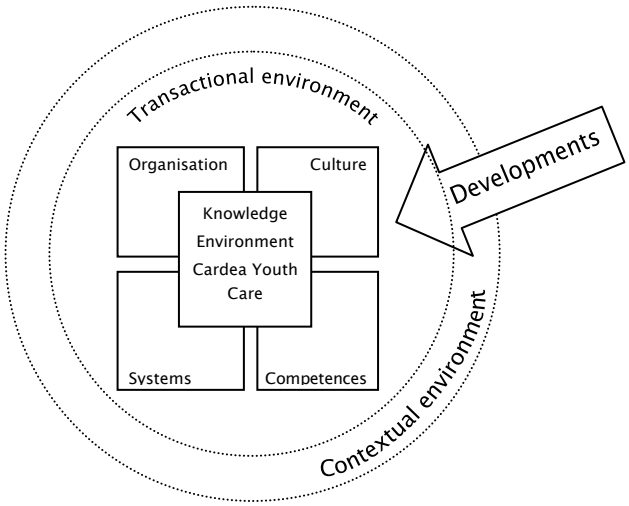


Figure 25 – 'Knowledge environment' of Cardea Youth Care

Alares believes that an organisation functions optimally when the four components are balanced and when the organisation looks at developments both internally and externally. For an organisation like Cardea Youth Care to function properly, it is important to follow developments in their environment and to interpret them into their organisation and the projects being carried out.

In the 'knowledge environment' the focus lays on the balance between the internal en external environments. This balance arises at the moment the internal environment is in balance, because the external environment never is in balance. With this we mean that in order to anticipate to the influences of the external environment, Cardea must make organisational changes their internal environment. Cardea must do so because they cannot have influence on the external environment. With a balanced knowledge environment Cardea knows how to position itself against changes in their surroundings and is able to cope with these changes.

Environment

It is important to follow (new) developments in the surrounding environment of the organisation and find out which can be used in the own organisation. Therefore two types of environments are distinguished in the knowledge environment: the transactional and the contextual environment. The organisation has limited influence on rural developments in the contextual environment but has influence on organisations they directly work within the transactional environment. During the findings and analysis for new developments in the environment it is demanding to be properly organized, create a culture with external orientation, have competences to implement new developments and have systems to monitor developments. Having explained the out of the box thinking and discovered the outside world, the internal components of the knowledge environment are described.

Organisation

The organisation consists of elements that define the charisma and image of the organisation. When removing or changing one of these elements a reorganisation is needed. Characteristics are the vision, mission and structure of the organisation. The vision gives a clear view of the image an organisation has of the future. The future of the environment in which an organisation operates in a couple of years changes continuously. For this reason it is important for an organisation to keep on innovating and implementing new developments. The mission of an organisation is influenced by the ongoing vision the organisation has. Mission and vision are dynamically coupled to each other. The mission has to be adjusted according to the vision, which is an influence from outside the organisation. The structure of an organisation defines the way in which employees, clients, suppliers and partners are connected to each other. The way the organisation is arranged (i.e. flat, hierarchical, as a matrix of bureaucratically) determines the freedom of power in the organisation. Organisations which have knowledge are characterized by a high degree of autonomy of professionals with some distance towards the management. For this reason it is important to create clarity in decision makings, powers, roles and responsibilities.

Systems

Systems in an organisation are a tool for supporting new developments in an organisation. Many systems are implemented without taking the added value into account for the final

user with the result that the implemented system is not used optimally. In order to integrate new systems into the way professionals work in the organisation and to be user friendly, it is important that employees are involved at an early stage when the system has to be developed and chosen. In this way changes to the developed system can be done during the implementing process and not after the system has been delivered. When introducing new systems in an organisation, the implementers look at possibilities to integrate with existing systems. They also look at the technical complexity of the infrastructure if this can be reused. The success of the use of new systems are not set by the technical aspects, but by the right way of using it and embedding it in the organisation.

Culture

The culture of an organisation determines the way an organisation is and can be managed. Organisational changes, i.e. transiting from paper to digital records, are a long-term process that must be handled accurately. It is important to know what the prevailing culture is within the organisation in order to properly work with digital and (in the future with) online records. A lot of organisations show resistance against developments and organisational changes. The success of new developments and organisational changes relies on the fact that there is less resistance from people within the organisation. So this has to do with the culture within the organisation, the way employees accept new ways of working. By analyzing the culture within the organisation more insight can be given of the present and the desired culture. Every employee has its own view on culture, images and desires that determine the self-image of the organisation.

Competences

The competences of an organisation are the most determining element of the knowledge environment. They provide the ability for an organisation to act in specific areas. Knowledge of the competences is necessary in order to assess whether the organisation can indeed achieve their goals. Competences on both personal levels (function description and competence profiles of employees) as well as on general level (the generic core competences of the organisation) are needed to translate external developments into the internal organisation. Some of the important competences an organisation must have in order to function properly within their dynamical context are: flexibility, creativity, quality awareness, innovative thought and awareness of new technologies and developments.

Appendix C – Summary: Interviews and Online Survey

This appendix elaborates on the interviews and online survey we had and made in order to come up with a good problem definition and have more insight in the situation at Cardea respectively. gives an overview of the interviewed key persons and a short summary of the interviews. The content of the summary can be taken into account by the management when introducing digital records at Cardea. Appendix C2 – Result Online Survey gives the result of the online survey held under several professional working with digital records at the moment. In both setting up the interview and the online survey, the concept of the Alares 'knowledge environment' was used to categorise the questions. In this way a good overview was created to gather as much information as possible for setting up the roadmap applicable to Cardea.

Appendix C1 – Interview Summary

During the analysis phase (see the overview of the planning in Appendix A – Planning), interviews with key persons from Cardea have been taken. Table 8 gives an overview of the persons who have been interviewed.

	Interviewee	Function	Interview date
1	Frans Nannes Joop van der Weijden	Project manager client service Team leader client service	02-02-2009
2	Marga Stokman Erika van Thiel	Manager O&O PR-communications advisor	02-02-2009
3	Remco den Hollander	Administrator client registration system (Care4)	10-02-2009
4	Johan ter Maaten Harald Posthumus	Responsible for ICT Responsible for record shaping	10-02-2009
5	Leja Blokland-Kuin	Youth care professional	10-03-2009

Table 8 – Overview of interviewees

Each of these interviews, except the 4th interview, is summarized and is presented in Dutch this appendix. As mentioned before, this summary can be used by the management when

making decisions for the introduction of digital records. The first interview elaborates more on the organisational structure and also on the record type and Care4. The second interview elaborates on the digitalisation process, the record types and Care4. During the third interview more information was gathered about the systems in use and some information on the culture and competences for using the systems. The fifth interview elaborates on the way the use of digital records is organised for the professionals and what their competences are. Also some information about their culture and the record types is presented.

Samenvatting uitgewerkte interview Frans en Joop

- **Cliëntenservice:**
  - Krijgt alle (papieren) indicatiebesluiten van BJZ binnen, aanvragen uit het preventieve en bijzondere veld.
  - Stuurt indicatiebesluit na registratie hiervan naar verschillende campussen en 24 uurs voorzieningen. Vanaf hier begint dossieropbouw plaats.
- **Bewaartermijn:**
  - 10 jaar (wet op de Jeugdzorg) na beëindiging van hulpverlening. Tot op heden meest complete dossier nog op papier, omdat indicatiebesluit tot op heden nog op papier aangeleverd door BJZ. Sinds 2000 vindt digitale dossieropbouw plaats in Care4.
  - Wat gebeurt er met het dossier na het bewaartermijn van 10 jaar? Hoe ga je om met klantenbestanden als je een dossier hebt vernietigd? Worden klantenbestanden bijgehouden? Geen idee hoe lang dossiers en klantenbestanden in Care4 bewaard moeten blijven. Richtlijnen hiervoor staan niet beschreven.
- **Cliëntenadministratie:**
  - Ontfermd zich over afgesloten dossiers. Afgesloten dossiers van het afgelopen worden één jaar lang bewaard op het Centraal Bureau. Dit wordt gedaan omdat sommige zaken herstart worden en soms hebben cliënten vragen over hun zaak.
  - Zorgt voor distributie van dossiers.
  - Dat dossiers in een map staan, in de kast gaan en op de fiets naar centrale archief worden gebracht op de v.d. Helmlaan. Niet de kerntaak van de cliëntenadministratie, maar moet door een andere afdeling of archivaris gedaan worden of misschien digitaal gearchiveerd worden.
- **Centraal archief:**
  - Opslag van alle dossiers van de voorgaande jaren.
  - Niet iedereen moet toegang hebben tot (gearchiveerde) dossiers. Er dient eerst toestemming gegeven te zijn voor inzage ,dit in verband met privacy gevoeligheid.
  - Efficiëntere manier van opslaag van dossier nodig. Welke makkelijkere ideeën of constructies/methoden zijn er om dit te doen?
  - Digitale archivering → is dit juridisch mogelijk?
  - Archivaris misschien wel nodig.
  - Papieren archief bevat ook alles wat in het digitale dossier staat, behalve het verslag tabje maar wel formele documenten (HVP).
  - Digitaal archiveren van dossiers neemt minder fysieke ruimte in beslag en heeft meer eenduidigheid.
- **Dossiervorming/opbouw:**
  - Moet voldoen aan bepaalde indeling (zeven tabbladen en logische indeling) → staat beschreven in handboek.
  - Drie componenten van belang: de logistiek, de inhoud en archivering nieuwe stijl.
  - Digitale dossiers gemaakt in Care4; bevat hulpverleningsplan en gepersonaliseerd op cliënt. Medewerkers verbonden aan cliënt hebben alleen toegangsrechten tot dossier.
  - Externe stukken worden gescand en geplaatst in dossier, indien deze ontbreken of moeten worden toegevoegd. Care4 bevat een compleet dossier.
  - Medewerkers moeten voldoen aan bepaalde competenties hoe het dossier op te bouwen en deze daarna op een professionele manier te presenteren.
  - Bevat: samenwerkingsovereenkomst (binnen zes weken), voortgangsgesprek (half jaar), eindverslag.
  - Uniforme dossieropbouw nodig voor iedere campus. Digitaal beter aan te sturen middels digitale format die voor iedere campus moet gelden.
- **Professionalisering digitale dossiers:**

- **Probleem**: digitale handtekening ontbreekt van betrokkenen bij hulpverleningstraject en wat zijn de mogelijkheden om dit te realiseren.
- Volledig digitaal werken is gewenst.

- **Digitale dossiers:**
  - Gemiddeld vijf keer per jaar.
  - Inzage niet door iedereen.
  - In blauwboekje staat beschreven hoe er met cliëntgegevens omgegaan moet worden.
  - Door cliënt: gefilterde weergave, maar in hoeverre is filteren rechtmatig.
  - Cliënten willen slechts weten wat er over hun in een dossier wordt genoteerd.
  - Niet bekend of het mogelijk is dat cliënten hun dossier digitaal kunnen inzien.
  - Inhoud moet op een professionele manier invulling gegeven worden.
  - VECTIZ standaarden bij GGZ, Care4 gebouwd op deze standaarden, herkent dit en maakt automatisch digitaal dossier.
- **Care4:**
  - Bevat digitale dossiers, cliëntcontacttijd, formele verslagen.
  - *Tab cliëntagenda:*
    - Inhoud: datum en duur gesprek, met wie, hoeveel deelnemers en eventueel kort verslag maar geen beleid hiervoor. Verslag wel of niet in het dossier plaatsen?
    - Alles wat de cliëntenservice in de cliëntagenda zet, behoort ook tot het dossier.
  - *Tab verslaglegging:*
    - Bevat werkaantekeningen van hulpverleners en niet toegankelijk voor cliënten. Beter digitaal beleid nodig. Dit beleid zou uitgebreid antwoorden moeten geven op vragen als: wanneer is een dossier een dossier?, wie heeft toegang tot dossier?, wanneer spreekt men van werkaantekeningen?, hoe moet er omgegaan worden met tab verslaglegging? etc.
    - Criteria voor wanneer een dossier een dossier is, is helder maar moet duidelijker beschreven worden.
    - Medewerkers moeten erop letten wat ze in het dossier noteren, omdat het dossier opgevraagd kan worden door cliënten.
- **Online dossiers:**
  - 24/7 beschikbaarheid van cliëntgegevens door cliënten en medewerkers.
  - Zichtbaar voor cliënten: doelen, status hulpverlening, wat er over hem/haar staat in het dossier.
  - In eerste instantie mogen cliënten niets toevoegen in het online dossier, maar in de toekomst moeten ze de mogelijkheid hebben reacties te plaatsen over hetgeen in hun dossier.
  - Mogelijk dat online dossiers de werkdruk van medewerkers verlichten.
  - Maakt het mogelijk om digitale handtekening (DigiD) te plaatsen of cliënt kan vink plaatsen bij 'ik ga akkoord met..,' document, zodat hulpverlening wordt afgesloten en (digitaal) gearchiveerd.
  - Vermindert het gebruik van toners en papier, is ruimte besparend, makkelijk te zoeken en te ordenen/sorteren.
- **Algemene opmerkingen:**
  - Medewerkers mogen niet meer met papieren dossiers op pad en is digitaal werken dus een prima optie, zodat medewerkers van iedere locatie een dossier kunnen oproepen. Medewerker heeft er baat bij als hij op afstand in Citrix kan.
  - Cardea wil een transparante dienstverlening hebben richting de cliënten door dossiers 24/7 online beschikbaar te stellen.
  - Medewerkers voelen mogelijk extra werkdruk als meer cliënten hun dossier op gaan vragen als Cardea dossiers online beschikbaar stelt.
  - Managers/leidinggevenden willen overzicht van waar of bij wie een dossier is.
  - BJZ moet indicatiebesluit digitaal aanleveren; spoor ligt er al maar kan nog niet bereden worden vanwege Europese normen. BJZ moet de organisatie ook zodanig inrichten hierop.
  - Indicatiebesluit moet volgens landelijke (al officieel) en provinciale standaarden (nog niet officieel) opgesteld worden. Nu heeft BJZ met elke jeugdzorginstelling aparte afspraken over de aanlevering hiervan. Dus geen standaarden die gehanteerd worden.
  - Zorgprogramma moet ook gestandaardiseerd worden.
  - PxQ systeem: belangrijk bij zorgaanbod.
  - Geen uitspraken door MT over afschaffing papieren dossiers.
  - Cardea goed op weg met digitaliseren en nog enkele trainingen nodig om hiermee om te gaan.

Kernwoorden: archief, archivaris, beleid, bewaartermijn, Care4, competenties, digitale dossiers, digitalisering, digitale handtekening, eenduidigheid, indicatiebesluit, online dossiers, professionalisering, rechtmatigheid, standaardisatie, transparantie, werkdruk.

Samenvatting uitgewerkte interview Marga en Erika

- **Digitaliseringsproces:**
  - Erika weet niet wat haar rol is binnen dit proces en heeft geen idee hoe traject zou moeten lopen. Heeft ervaring met digitale omgevingen, klanten en communicatie (i.v.m. online dossiers straks) naar buiten toe.
  - Is organisatieverandering en hoe ervaren medewerkers dit.
- **Intranet:**
  - Gedragsverandering verloopt niet helemaal goed omdat medewerkers het niet gewend zijn om zelf op intranet te gaan; gewenningstraject nodig.
  - Taak MT om mensen te attenderen dat informatie te vinden is op intranet en deze ook te (actief) gebruiken. Medewerkers hebben niet de gewoonte om informatie hier vandaan te halen.
  - Automatisch opgestart ter stimulering van gebruik en extra mail met berichten die op intranet te vinden zijn. Moet tot constante stroom van intranet gebruikers leiden. Geen natuurlijk proces bij medewerkers; ook cultuur aspect binnen Cardea dat veranderd moet worden.
- **Papieren dossiers:**
  - Nog wel gebruikt door medewerkers en liggen dan ook in de laden van medewerkers, omdat ze het makkelijk vinden om te lezen.
- **Digitale dossiers:**
  - Wordt gebruikt bij hulpverleningsproces. Al een paar jaar gewend om alles in de computer te hebben staan.
  - Bevat alle gevoerde gesprekken, behalve i-chat of msn gesprekken. Deze moeten ook gedocumenteerd worden, maar nog geen manier hoe dit te doen.
  - In Care4 gezet en hulpverleners werken samen in één dossier (indien dezelfde cliënt).
  - Hoofddossier, plan van aanpak en voortgangsevaluatiegesprekken.
  - **Voordelen**: efficiëntie, maken van afspraken makkelijker (per mail of sms), laagdrempeliger.
- **Professionalisering digitale dossiers:**
  - Digitale handtekening gewenst.
  - Bereikbaarheid voor hulpverleners en cliënten.
  - Wijze van noteren in het digitale dossier door hulpverleners; cliënten hebben inzage in dossier en digitale dossier is representatie naar cliënt toe van zijn/haar dossier.
  - Gespreksverslagen ook in het digitale dossier zetten.
  - Digitale registratie door hulpverleners verloopt niet altijd probleemloos.
  - Digitale dossiervorming kost veel tijd bij navraag aan hulpverleners.
  - Meer trainingen nodig om medewerkers op weg te helpen met Care4 en digitale dossiers. Er is niet goed nagedacht over hoeveel trainingen er nodig zouden zijn om mens helemaal goed te laten werken met digitale dossiers. Misschien moeten medewerkers gedwongen meerdere (zes) trainingen te volgen.
  - Goed te gebruiken bij groepsbehandeling om ervaringen te delen.
  - Wordt nog te weinig door medewerkers geroepen om digitaal te werken.
- **Care4:**
  - Iets anders dan intranet en langer in gebruik (3-4 jaar). Medewerkers gewend aan Care4.
  - Cliëntinformatie hierin kwijt.
  - Enkele hulpverleners hebben moeite hun weg binnen Care4 te vinden. Kunnen wel het hulpverleningsplan invullen maar het scoren van doelen (vorig jaar ingevoerd) kost wat tijd en daar lopen velen mee vast.
  - Trainingen plannen om doelen te scoren in Care4. Hebben aan het begin wel trainingen gehad, maar voor allerlei onderdelen die toen gedaan moesten worden.
  - Trainingen voor doelenrealisatie zullen gegeven worden hoe te registreren in Care4.
  - Super-user op iedere locatie ter ondersteuning van medewerkers; er is ook een helpdesk beschikbaar voor vragen, maar deze wordt soms overbelast.
  - Handleiding is beschikbaar, maar medewerkers bellen liever naar de helpdesk in plaats van zelf te zoeken naar een oplossing voor hun probleem. Cultuurgegeven dat heerst bij Cardea.
  - Care4 werd middels een project met projectleider en projectplan geïntroduceerd. **Struikelpunt:** traagheid computers en hierdoor uit Care4 gegooid (niet goed van te voren over nagedacht) en is het niet overzien en gefaciliteerd. Door traagheid van Care4 wordt men uit het systeem gegooid en zijn medewerkers er

gauw klaar mee. Traagheid van het systeem leidt ertoe dat mensen bij de oude manier van werken blijven hangen. Het maken van lijstjes met gegevens wordt nog steeds gemaakt, terwijl dit uit Care4 te halen is.
    - **Nadeel**: slechte bereikbaarheid/beschikbaarheid, traagheid, moeilijk op te starten, duurt lang voor het opgestart is, agendabeheer lastig, niet betrouwbaar.
    - Care4 (cliëntregistratie) moet gebruikt worden door teamleiders om hulpverleners te monitoren, maar dit gaat ook nog niet goed. Slechts een paar teamleiders gebruiken het systeem om hulpverleners te monitoren.
    - Door onbetrouwbaarheid van systeem werken medewerkers niet direct hiermee. Verslagen worden eerst in een WORD document en daarna gekopieerd in het daarvoor bestemde tab. Kost tijd en medewerkers zijn dan uitgekeken op het systeem.
- **Online diensten:**
    - Webbased programma waar vragenlijst online te vinden is waarmee problemen geïnventariseerd en effecten van hulp gemeten worden. Programma hiervoor is er wel, alleen kan gebruik hiervan nog op zich laten wachten omdat er nagedacht moe worden over privacy, inlogmethoden, inlogcodes etc.
    - Minder werk voor secretaresses als vragenlijst online ingevuld wordt door cliënt.
    - Cliënten dwingen je om digitaal te werken en online diensten aan te bieden.
    - Digitale handtekening via deze route plaatsen bij hulpverlenerplannen; **Voordelen** Cardea en hulpverleners: leesbaarder, minder papier, makkelijker voor Cardea, winst voor hulpverleners, zorgt voor efficiëntie, online agenda (inzage voor zowel hulpverleners als cliënten), online beschikbaar van dossier wanneer bij cliënt thuis, bereikbaarheid dossiers, sneller werken, cliënten durven meer te zeggen dan wanneer face-to-face contact, laagdrempeliger voor cliënten, mee gaan met de tijd, sneller verkeer, inzage door cliënt, snellere verwerking van gesprekken door hulpverlener, cliënten feedback kan sneller, mailtjes tussendoor, het is de manier van communiceren. **Nadeel**: als cliënt niet handig met email verkeer kan omgaan, cliënten gaan makkelijker schelden.
    - Alles wat digitaal nu beschikbaar is kan online toegankelijk gemaakt worden en samen met hulpverlener kan de cliënt hier doorheen lopen.
    - Wat zijn de technische mogelijkheden voor het bieden van online diensten? Hierbij moet men denken aan privacy en informatie/gegevens beveiliging. Technische haalbaarheidsstudie nodig hiervoor.
    - Online dossiers zijn innovatieve ontwikkelen waarvan er nog geen concreet werkende voorbeelden beschikbaar zijn. Mensen moeten online dossiers wel accepteren alvorens het een succes wordt.
    - Hulpverleners hebben vaker email contact met cliënten en deze dienst kan helpen de terugkoppeling naar de cliënt toe sneller te laten plaatsvinden.
    - De pilot online jeugdzorg is een goede ervaring om te weten te komen of het online beschikbaar stellen van dossiers een kans van slagen heeft. Goede basis nodig om dossiers online beschikbaar te stellen, kwestie van tijd dus voordat het aanslaat bij medewerkers en cliënten.
    - Middels online dossiers kunnen cliënten beetjes bij beetjes lezen over de vorderingen binnen het hulptraject.
- **Algemene opmerkingen:**
    - Gewenningstraject nodig om intranet en Care4 op te starten bij aanvang werk.
    - Weinig ervaring met doelen scoren in Care4 en gaan niet zelf op zoek naar hoe het moet.
    - Medewerkers moeten gestimuleerd worden om problemen zelf op te lossen, bijvoorbeeld door de handleiding te gebruiken of op internet naar een oplossing te zoeken of hulp zoeken bij een collega. Het is een kwestie van opvoeden van de medewerkers. Maar medewerkers ervaren dit als storend, omdat hun hoofdtaak is om cliënten te helpen en geen technische problemen op te lossen. Cultuur aspect zit diep in de organisatie en blijkt lastig te veranderen.
    - Cliënten willen vaker dingen digitaal of vullen dingen vaker via internet in. Dit stimuleert medewerkers om klantgerichter te werken.
    - Digitaal verkeer steeds meer in gebruikt d.m.v. sms, chat en mail.
    - Inloggen op het systeem door hulpverleners gebeurd nu nog vanuit de computer van de cliënt bij huisbezoeken. Nog geen laptops beschikbaar voor huisbezoeken.
    - Nut of voordeel laptop besproken; maar sommige hulpverleners vinden het niet professioneel om achter een laptop te zitten en tijdens de ontmoeting met de cliënt een verslag te gaan schrijven. Wel interessant om met laptop te werken als je online vragenlijst direct kan laten invullen. Een laptop creëert wel een zakelijke sfeer.
    - Discipline en tijd van hulpverleners vereist hoe te noteren in het dossier.
    - Competenties: oudere groep lastig om te scholen.

- Tijdschrijven is iets waar medewerkers niet van houden.
- ICT faciliteiten moeten in orde zijn alvorens de stap naar digitaal en online dossiers gemaakt kan worden.
- Ondersteuning om digitaal te werken is nog niet optimaal. Het systeem op andere locaties is traag, waardoor het intranet ook traag wordt.
- Het online dossier systeem moet gelinkt worden aan het online jeugdzorg platform/applicatie. Online jeugdzorg is een ander traject, staat los van Citrix. Cliënten moeten via online jeugdzorg applicatie informatie beschikbaar gesteld krijgen en niet op Citrix komen. Medewerkers zullen een bijdrage moeten leveren om digitaal informatie via de online jeugdzorg applicatie beschikbaar te stellen. Dit is best complex en er moet goed over nagedacht worden hoe de online jeugdzorg applicatie te ontwikkelen en implementeren.
- Persoonlijk contact niet helemaal te vervangen en dat is ook niet de bedoeling.
- Alleen nagedacht over hulpverleningsprogramma. Zie ook voor informatie hierover verslavingszorg.
- Goede communicatie naar buiten toe als cliënten 24/7 over hun dossier kunnen beschikken en inzage hierin hebben. Primair doel als het gaat om online hulpverlening en daar wil Cardea een stapje op vooruit zijn.
- Organisatie en cultuur verandering waarin Cardea wel gelooft.

Samenvatting uitgewerkte interview Remco

- **Indicatiebesluit**
  - Nog niet digitaal aangeleverd door BJZ. Kan digitaal in WORD, JPEG of PDF maar WORD versie beter want dan makkelijker te bewerken.
  - Kopie hiervan opgestuurd naar verschillende campussen en origineel op het CB.
  - Alleen het indicatiebesluit wordt geregistreerd in het systeem door administratie.
  - Hulpverleners willen graag dat indicatiebesluit digitaal beschikbaar is. Nu worden delen die nodig zijn, overgetikt uit het indicatiebesluit.
  - Digitale indicatiebesluit zorgt voor winst, omdat er makkelijk bewerkt (kopiëren en plakken) kan worden. **Voordeel:** vanaf elke werkplek te benaderen.
  - Indicatiebesluit wordt niet ingescand en gezet in het dossier, maar delen ervan. Als cliëntenadministratie alle velden in Care4 gaat invullen (kan wel), dan zijn ze per cliënt langer bezig en als er niets met de informatie gedaan wordt, dan is hun werk nutteloos geweest.
  - Indicatiebesluit invoeren is nu ook al tijdrovend.
  - Het indicatiebesluit digitaal krijgen is een wens, maar ontlast hiermee de cliëntenadministratie niet.
- **Care4**
  - Gebruikt sinds 2001 door enkelen en sinds 2007 gebruikt door iedereen binnen Cardea.
  - Het cliëntenregistratiesysteem bij Cardea: bevat gegevens over cliënt verdeelt over allerlei tabjes.
  - Tab indicatiebesluit: bevat indicatiebesluit ingevoerd door cliëntenadministratie. Tevens begin van het digitale dossier van een cliënt.
  - Tab digitaal dossier: regels toevoegen en één daarvan is indicatiebesluit (hierin aangeven dat het indicatiebesluit er is). Hierin kan ook een gescande papieren indicatie aan worden toegevoegd, maar dit wordt niet gedaan, omdat het extra tijd werk is voor cliëntenadministratie en niemand vond het belangrijk. Deze tab is een digitale weerspiegeling van wat er in het papieren dossier staat.
  - Tab cliëntagenda: bevat contactgegevens van en -momenten met cliënten.
  - Tab standaard brieven: standaardbrieven voor sturen naar ouders van cliënten.
  - Tab verslaglegging: bevat allen officiële verslagen; HVP-onderdelen (voorblad, SWO, eindverslag, gespreksverslagen).
  - Tab verslag: plaatsen van werkaantekeningen.
  - Tab zorgaanbod: klaargezet wat BJZ samen met het besluit van Cardea welke zorg een cliënt met de gegeven problemen nodig heeft. In dit tabje wordt ingevoerd dat dit programma met deze producten een oplossing zou kunnen bieden aan de cliënt met het gegeven probleem. Cliëntenadministratie vult deze tab.
  - Is van huis uit te benaderen.
  - Geen online functionaliteit in Care4.
  - Onderdelen uit het digitale dossier worden in Care4 aangemaakt en behoort tot het digitale dossier.
  - Bevat digitale dossiers en blijven hierin bewaard.
  - Care4 is deel van digitaal dossier en hulpverleners kunnen hierin kijken.

  - Gebruiksvriendelijkheid: persoonlijke mening; werkt redelijk met soms problemen met het netwerk en Care4 zelf. Per locatie verschilt het ook hoe mensen het ervaren om dit systeem te gebruiken → dit kan te maken met de server die er op locatie staat of met de verbinding.
  - Het aangeleverde indicatiebesluit (WORD) voldoet niet aan Care4 standaarden. Het zou heel intelligent zijn als het WORD document via een soort import in Care4 ingelezen en op de goede plek gezet kan worden. Vooralsnog moet er een menselijk oog overheen.
- **Toegang Care4**
  - Beheerders, teamleiders, hulpverleners en cliëntenadministratie hebben toegang en vullen het dossier.
  - Cliëntenadministratie:
    - voert papieren indicatiebesluit in tab indicatiebesluit in, maakt cliënten aan, voert in wat voor zorg cliënt krijgt, cliënthulp gestart of op wachtlijst, voert mutaties door,
    - Geen ontlasting van cliëntenadministratie bij digitale aanlevering van indicatiebesluit door BJZ.
    - Beheerders kunnen altijd in afgesloten dossiers en hulpverleners verliezen de toegangsrechten voor een afgesloten dossier.
- **Citrix**
  - Beveiligde manier van inloggen op afstand voor medewerkers.
  - Care4 te benaderen vanuit huis middels Citrix en deze bepaalt ook welke applicaties medewerkers kunnen zien. Als je als hulpverlener inlogt, kan je Care4 benaderen.
  - Sommige medewerkers werken vanuit huis, omdat ze daar minder last hebben van netwerk uitval en dus Care4 en andere systemen kunnen benaderen.
- **Papieren dossier**
  - Gedistribueerd en dossier ligt op de administratie van de cliënt.
  - Papieren dossier nog steeds leidend in hulpverleningsproces.
  - Papieren dossiers worden niet actief gescand.
- **Digitale dossier**
  - Afspiegeling van het papieren dossier.
  - Digitale dossiers blijven in Care4 bewaard en gaan er niet uit.
- **Professionalisering digitale dossier**
  - Digitale handtekening ontbreekt in het digitale dossier, omdat de mogelijkheid hiervoor nog niet bestaat of is doorgevoerd bij Cardea. Wel ideeën hierover maar nog geen concrete die van de grond komen. Afgeronde papieren dossier bevat handtekening, maar digitaal dossier niet en deze blijft open staan. Alleen in papieren dossier te zien dat hulptraject is afgerond.
  - Digitaliseringsproces: weet niet hoe het gebeurd.
- **Online dossier**
  - Nog niet nagedacht over het feit dat dit op korte termijn kan, dus ook niet nagedacht over toegangsrechten voor cliënten in Care4.
  - Actieve handeling om gegevens uit Care4 beschikbaar te stellen voor cliënten. Zoeken welke applicatie dit ondersteunt. Er is geen export functionaliteit in Care4 om dit te realiseren en ook niet op korte termijn.
  - Vereist tijd (jaren) om alles geregeld te hebben om digitaal dossier online beschikbaar te stellen. Wel kunnen delen van het digitaal dossier online beschikbaar gesteld worden.
  - Cliënten zouden het hulpverleningsplan (deel van het digitaal dossier) mogen inzien via de online applicatie.
  - Cliëntagenda zichtbaar en toegankelijk maken.
  - Misschien tabje verslag (werkaantekeningen) zichtbaar maken. Dan moeten hulpverleners erop letten wat ze noteren en hoe ze dingen noteren.
- **Cultuur**
  - Manier van schrijven in het dossier moet op professionele wijze gebeuren (mentaliteitskwestie), omdat dit aan de cliënt gepresenteerd wordt en later via online dossiers ook zichtbaar wordt voor cliënten.
- **Competenties**
  - Trainingen verzorgd aan iedereen om dit systeem te gebruiken.
  - Handleiding geschreven over het systeem en hoe ermee om te gaan, maar niet door iedereen even duidelijk. De handleiding is stapsgewijs geschreven met screenshots, de handleiding is dus vrij duidelijk.
  - Niveau van medewerkers om met een computer om te gaan verschilt. Dit kan te maken hebben met leeftijd, interesse en andere dingen.
- **Algemene opmerkingen**

- Geen duidelijke verantwoordelijke voor het nemen van beslissingen over innovatieve ideeën. Er moet een duidelijker beleid komen over wie beslissingen neemt.
- Handig om een commissie met teamleider, hulpverlener, gedragswetenschapper, cliëntadministratie en manager te hebben die gaat nadenken over hoe dingen vast te leggen in het systeem (handleiding voor medewerkers).
- Op het moment dat het dossier definitief is, mag er niets meer gewijzigd worden en is het dossier niet meer toegankelijk om wijzigingen aan te brengen. Papieren en digitaal dossier mogen niet van elkaar verschillen. Cliëntenadministratie zet bij opgesloten dossiers regels bij voor wat er af en definitief is in het digitaal dossier.
- Belangrijk om goed te registreren in Care4, omdat ze in het PxQ traject zitten. PxQ vormt de basis voor de financiering van Cardea (dit systeem bepaalt hoe de gemeente/provincie geld verdeelt aan zorginstellingen). Heeft betrekking met alles binnen Cardea (P&O, salarisadministratie, financiën).
- Werkaantekeningen zouden ook gelijk in tab verslaglegging ingevoerd kunnen worden i.p.v. eerst in tab verslag.
- Het probleem met computers weerhoudt mensen ervan om digitaal te werken. Hulpverleners willen vooral mensen helpen en geen gedoe met computers hebben.
- Geen strakke richtlijnen voor als een cliënt afgesloten is, wat er dan met het dossier moet gebeuren.
- Cliëntenadministratie is al zwaar belast en kan geen extra werk permitteren (invullen alle gegevens in Care4). Er zouden meer mensen ingehuurd moeten worden als de MT dit wil hebben.
- Het belangrijkste verschil in een ingescande indicatiebesluit als PDF erin hangen is dat Care4 het eigenhandig ingevoerde indicatiebesluit zelf koppelingen legt tussen bepaalde zorg die geboden wordt en een aanspraak. Een cliënt krijgt een indicatie mee en daarop staat welke aanspraak die maakt op welke zorg en die moet corresponderen met de zorg die op het indicatiebesluit staat. Het moet wel matchen.
- Ontlasten van de cliëntenadministratie is gewenst, ook de administratie zelf wil dit maar nog geen adequate oplossing hiervoor.

Samenvatting uitgewerkte interview Leja

- **Organisatie**
  - Handig als laptop ter plekke beschikbaar om aantekeningen en gespreksverslagen (zes weken na start hulp en half jaarlijks verslag) in te voeren in Care4.
  - Laptop is handig als je de hele dag onderweg bent, zodat je dan tussendoor kan werken indien je niet meer op kantoor komt.
  - Hulpverleners hebben gevraagd naar laptops om hiermee te kunnen werken als ze buiten de deur zijn.
  - Stimuleert om digitaal te werken maar het is wettelijk verplicht om papieren dossier te hebben.
  - Communicatie met cliënten vindt zowel telefonisch als persoonlijk plaats; of de mogelijkheid bestaat om te chatten, dat is onbekend.
  - Archivering van dossiers vindt plaats door het secretariaat. Het einde van de hulpverlening moet geregistreerd worden bij de administratie en deze doet dan de archivering.
  - Het kwaliteitshandboek beschrijft hoe een dossier gevormd moet worden en het secretariaat doet een eerste opzet van dossiervorming.
  - Cliëntnummers worden gebruikt om cliënten te zoeken in Care4 en om dossiers van cliënten te lichten.
  - Werkinstructies zijn duidelijk opgesteld voor medewerkers.
- **Cultuur**
  - Niet iedereen wil van thuis uit werken, dus mensen willen ook meestal niet leren wat de mogelijkheden hiervoor zijn. Op kantoor wordt er al genoeg gewerkt.
  - Mensen willen wel met laptops werken, vooral de jongere generatie.
  - Mensen zijn bereid trainingen te volgen om te kunnen werken met het systeem.
  - Sommigen vinden het een tijdsinvestering om trainingen te volgen, omdat ze lang doen over doen om wat te leren. Meestal zijn het de wat oudere mensen en ze willen het liefst zoveel mogelijk mensen helpen die hulp nodig hebben.
  - Mensen moeten er een gewoonte van maken om aantekeningen zo snel mogelijk in te voeren in Care4. Sommigen doen het alleen in het weekend omdat ze het door de weeks druk hebben met cliënten bezoeken.
  - Er zullen wel mensen zijn die het papieren dossier prefereren boven het digitale dossier. Verschilt per individu.
  - Medewerkers helpen elkaar bij vragen en problemen over en met het systeem.

  - Aantekeningen verwerken in het digitale dossier moet op een zodanige manier gebeuren dat cliënten het direct kunnen lezen. Hiermee wordt bedoeld dat hulpverleners verslagen op een professionele manier schrijven.
  - Sommige hulpverleners vullen de dossier achteraf (aan het eind van de werkweek) in, omdat ze het druk hebben met bezoeken. Weer anderen vullen de gemaakte aantekeningen op dezelfde dag in het dossier. Dit verschilt dus per persoon en om achterstanden te voorkomen, moet de MT daar duidelijkheid in scheppen voor een termijn dat aantekeningen verwerkt moeten worden.
  - Niet alle medewerkers zullen blij geweest zijn met de komst van digitale dossiers → dus enige tegenwerking/weerstand.
- **Competenties**
  - Niet iedereen weet hoe met Citrix te werken.
  - De jongere generatie kan makkelijker en sneller met laptops omgaan; weinig training nodig, terwijl de oudere generatie meer trainingen nodig heeft.
  - Sommige collega's vinden het moeilijk om met Care4 te werken; meestal een persoonlijke issue.
  - Trainingen beschikbaar om competentie te vergroten en om te leren werken met digitale dossiers. Medewerkers kunnen ook zelf vragen naar mogelijkheden voor trainingen om zo hun competenties te verhogen.
  - De een beschikt over meer computervaardigheden dan de ander. Over het algemeen goed.
- **Papieren dossiers**
  - Deze krijgen ze doorgestuurd vanuit het Centraal Bureau met een kopie van het indicatiebesluit. Het hele hulpverleningsplan komt uiteindelijk in het papieren dossier.
  - Niet het officiële papier dossier mee tijdens cliëntbezoek, slechts aantekeningen hieruit.
  - Hulpverleners mogen het papieren dossier nergens meenemen; indien ze het doen, moeten ze het anonimiseren.
  - Hierbij was de agenda niet duidelijk geregistreerd en het overzicht ontbrak.
- **Digitaal dossiers**
  - In Care4; begin van het digitale dossier, nadat deze bij de verschillende campussen zijn uitgedeeld aan de hulpverleners.
  - Hulpverleners vullen het digitaal dossier in Care4 aan met aantekeningen en verslagen die ze maken uit contacten met cliënten.
  - Bestaat uit het hulpverleningsplan, cliëntagenda, mutaties, indicatie (ingevoerd door cliëntenadministratie).
  - Handig voor als meerdere hulpverleners met één cliënt werken, dan is digitaal dossier makkelijk te bereiken door alle hulpverleners doordat hij centraal is opgeslagen.
  - Alleen gebruikt door hulpverleners. Cliënten komen hier niet in aanmerking mee en volgens mij weten cliënten niet dat ze een digitaal dossier hebben. Cliënten kunnen lezen slechts de formele documenten en hebben verder geen weet van hoe dossiers worden opgebouwd en opgeslagen.
  - Bij de introductie is er aandacht besteed aan wat de voordelen zijn.
  - Zorgen voor duidelijkere registratie en overzicht.
- **Online dossiers**
  - Denkt op zich dat het goed zou kunnen werken, nadat het duidelijk is wat een online dossier inhoudt en is.
  - Cliëntagenda: indien online mogelijk, dan moeten goede afspraken zijn wat de cliënt precies kan doen en mag zien hierin. Er mogen geen wijzigingen gepleegd worden door cliënten → Privacy en security aspecten van belang hierbij en maakt hiermee de organisatie transparant.
  - Nadeel: als cliënt geen computer (meestal hebben niet alle cliënten één) of internet heeft, dan is het dossier niet te benaderen.
  - Voordeel: cliënten op wachtlijst kunnen alvast doelstellingen zien en een deel van het hulpverleningstraject ingaan.
  - Kunnen voordelen hebben voor cliënten, mits ze over een computer beschikken, de beveiliging goeds, hetgeen van hun verwachte wordt duidelijk is voor hun, de werking van het systeem goed uitgelegd is aan hun, het systeem goed werkt en bereikbaar is.
  - De voorwaarden van online dossiers moeten duidelijk zijn voor iedereen.
- **Care4**
  - Lastig als Care4 niet werkt en niet te benaderen is, dan kunnen er geen aantekeningen en verslagen verwerkt worden.

  - Bevat alle praktische- en cliëntgegevens ingevoerd door cliëntenadministratie.
  - Te benaderen via Citrix vanuit elke plek met internetverbinding; iedereen heeft daar inlog gegevens voor.
  - Alle aantekeningen moeten geregistreerd worden in Care4.
  - Prettig om mee te werken, prettig om te hebben, is gebruiksvriendelijk, makkelijk dingen in te vinden maar je moet het wel even door hebben.
  - Gebruikt binnen de hele organisatie, dus ook op alle Cardea campussen.
  - Care4 is van huis te benaderen en hulpverleners kunnen gemaakte aantekeningen van huis uit invullen.
  - Om Care4 te gebruiken moet het systeem werken, moet het systeem en moeten er computers beschikbaar zijn.
  - Tijdens invoer getraind en nieuwe medewerkers worden gekoppeld aan medewerkers die er langer mee werken. Ook handleidingen uitgereikt aan nieuwe medewerkers.
  - De voordelen van Care4 zijn duidelijk verteld en waarom het belangrijk is om hiermee te werken.
- **Knelpunten**
  - Niet digitaal aanleveren indicatiebesluit door BJZ, wel gewenst.
  - Care4 soms slecht te benaderen doordat verbinding of netwerk plat ligt. Gevolg: er kan niet gewerkt worden → dit is wel frustrerend.
  - Care4 voor sommige collega's een beetje ingewikkeld.
- **Algemene opmerkingen**
  - Lastig dat indicatiebesluit nog niet digitaal wordt aangeleverd.
  - Zowel digitale als papieren dossier gebruikt.
  - Bij start van hulp leest men eerst datgene wat door BJZ is gestuurd.
  - Bij gezinsgesprekken worden aantekeningen pas achteraf ingevoerd.
  - Alle nieuwe medewerkers krijgen gelijk trainingen om met Care4 te kunnen werken. Dus die beginnen gelijk ook digitaal te werken → verplicht gesteld door MT.
  - Onduidelijk of er zowel digitale als papieren dossiers moeten zijn, maar daar komt wel steeds meer duidelijkheid over.
  - Handtekening: krijgen van een handtekening door ouders van een cliënt duurt soms lang, vandaar digitale handtekening wel gewenst. Bij ontbreken van een handtekening kan BJZ de hulpverlening niet goed afsluiten.
  - Handleiding: over Care4 beschikbaar en mensen raadplegen deze meestal wel. Hangt van het probleem af om de handleiding te raadplegen.
  - Goede afspraken nodig als online dossiers worden aangeboden.
  - Dossiers mogen eigenlijk niet uitgeprint worden en als medewerkers het toch doen, moet het geanonimiseerd worden.
  - Er zijn regels opgesteld hoe om te gaan met cliëntendossiers en -gegevens → staat allemaal beschreven in het kwaliteitshandboek. E-mailen van delen van het dossier mag, maar pas na toestemming.
  - Ideeën van medewerkers worden meegenomen bij innovatie trajecten.
  - De uitleg van online dossiers aan cliënten moet besproken worden → zijn hulpverleners verantwoordelijk hiervoor of moet een hulpverlener zich bezig houden met hulpverlenen → dit is nog niet helder.

Medewerkers staan open voor innovatieve veranderingen, maar het moet goed geïntroduceerd en uitgelegd worden. Dit omdat medewerkers al genoeg werk hebben tijdens hun normale werkzaamheden en ze niet nog extra willen leren hoe om te gaan met een nieuwe werkwijze.

Appendix C2 – Result Online Survey

We have used this online survey to get insight in the opinions of the professionals who actually work with and make use of digital records. We also asked them to give their opinion about the use of online records in the future. The online survey was sent to 28 professionals who very often deal with digital records and a total of 17 people did actually fill in the online survey. The reason for the remaining 11 people not filling in the online survey is unknown.

We think that they either did not complete the online survey or completed it after the deadline for filling in the online survey. We used the results of the 17 completely filled in survey and discuss the results here. All the results are given in percentages.

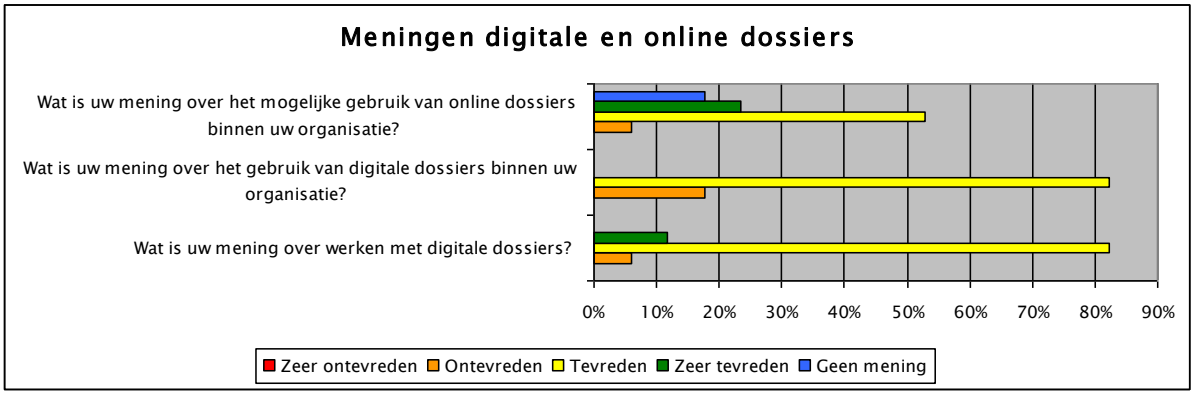


Figure 26 – Opinion about use of digital and online records

Figure 26 shows the results of the three introductory questions of the online survey. One can see that the opinion of working and using digital records lies between 10% – 85%. This clearly shows that the introduction of digital records is more than welcome in the organisation and that the professionals are satisfied with working with digital records. However looking at working with online accessible records in the future, the opinions of the respondents are different. Here we see that less than 10% are not satisfied with the possible use of online records and that more than 15% has no meaning about the use of online records. This because probably the respondents have no experience with online records or the difference between digital and online records was not clear to some respondents or maybe for some other reason.

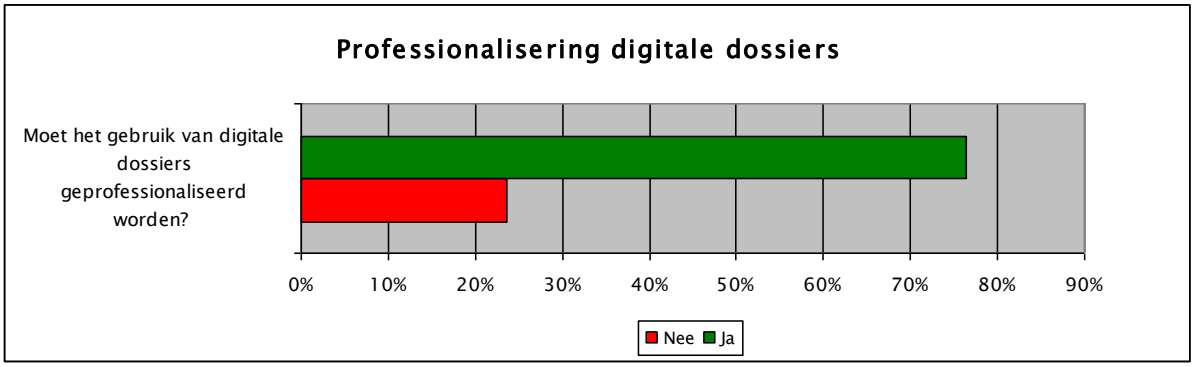


Figure 27 – Professionalization of digital records

As Figure 27 shows more than 70% of the respondents opt for professionalization of digital records. By professionalization of digital records we mean the use of digital signatures, which are not present at the moment in the digital records. Further on one can think of ways for digitally archiving client records, using digital records in a professional and standard way, such that the communication with other youth care organisations in the youth care

sector can take place optimally. This obligates Cardea to set rules for the use of digital records according to national and international laws and regulations.

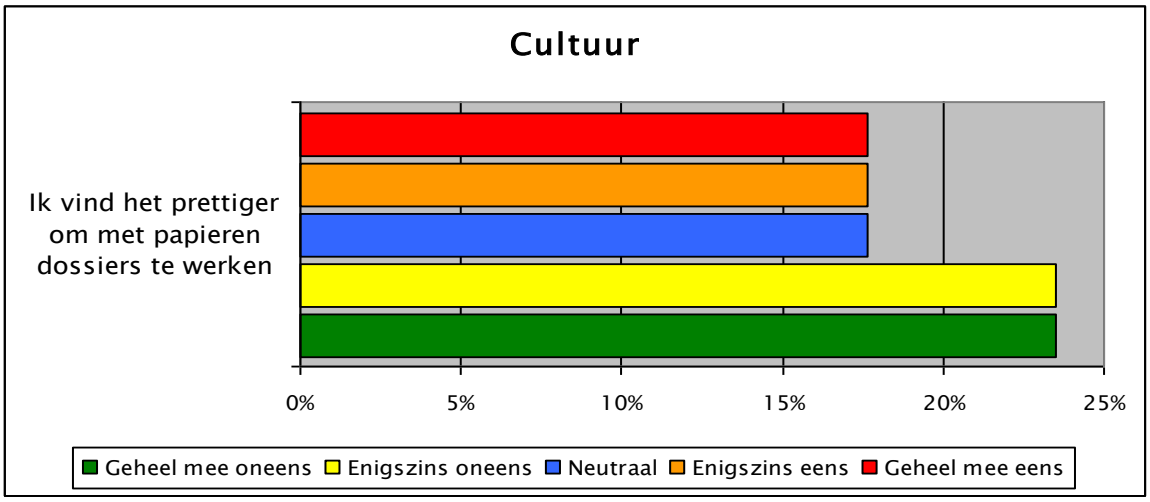


Figure 28 – Culture: working with paper records

As Figure 28 shows, about 48% of the respondents do not agree working with paper records, about 34% of the respondents do agree working with paper records and about 17% of the respondents are neutral about this statement. We have chosen yellow and green for this statement to indicate the opinion of the respondents so that one can see that there are employees at Cardea who are willing to work with digital records. This is a positive sign for the managers and decision makers at Cardea, because in this way they can stimulate more employees for working with digital records. Some reasons for the respondents rather wanting to work with paper records are:

- paper records give a better overview and come in hand when writing a report
- working with digital records is not always efficient, because the computer sometimes gives problems or the network is down or Care4 is not accessible
- reading from paper is comfortable than reading from the computer screen

Figure 29 shows the result of the opinions of the respondents working with digital records. From this figure we see that between 6% and 65% of the respondents:

- (fully) agree with working with digital records
- are willing to follow courses for improving their skills for working with digital records
- are not dependent on the sphere within the organisation for working with digital records
- are helping their fellow colleagues when they have problems concerning digital records
- first use the handbook for working with digital records before going to their colleagues for help or the helpdesk

- know who to ask for help concerning ICT problems

The most important thing that Figure 29 shows is that approximately 87% of the respondents (fully) agree with the statement that working with digital records increase the affectivity, the efficiency and the quality of the service towards the clients. About 70% of the respondents (fully) agree with the statement that client information is well documented and can easily be found. Further on we see that about 70% of the respondents (fully) agree with the statement that clear agreements are made of which client information are allowed to share with others. An important comment can be made when looking at the opinion of the respondents on the statement that professionals store client information in a consistent way. We see that almost 40% of the respondents (fully) not agree with this and that about 24% of the respondents have a neutral opinion about this statement. This is something where the managers must take a look at, because it is important that this client information is being stored in a consistent way concerning the fact that data must be exchanged with others.

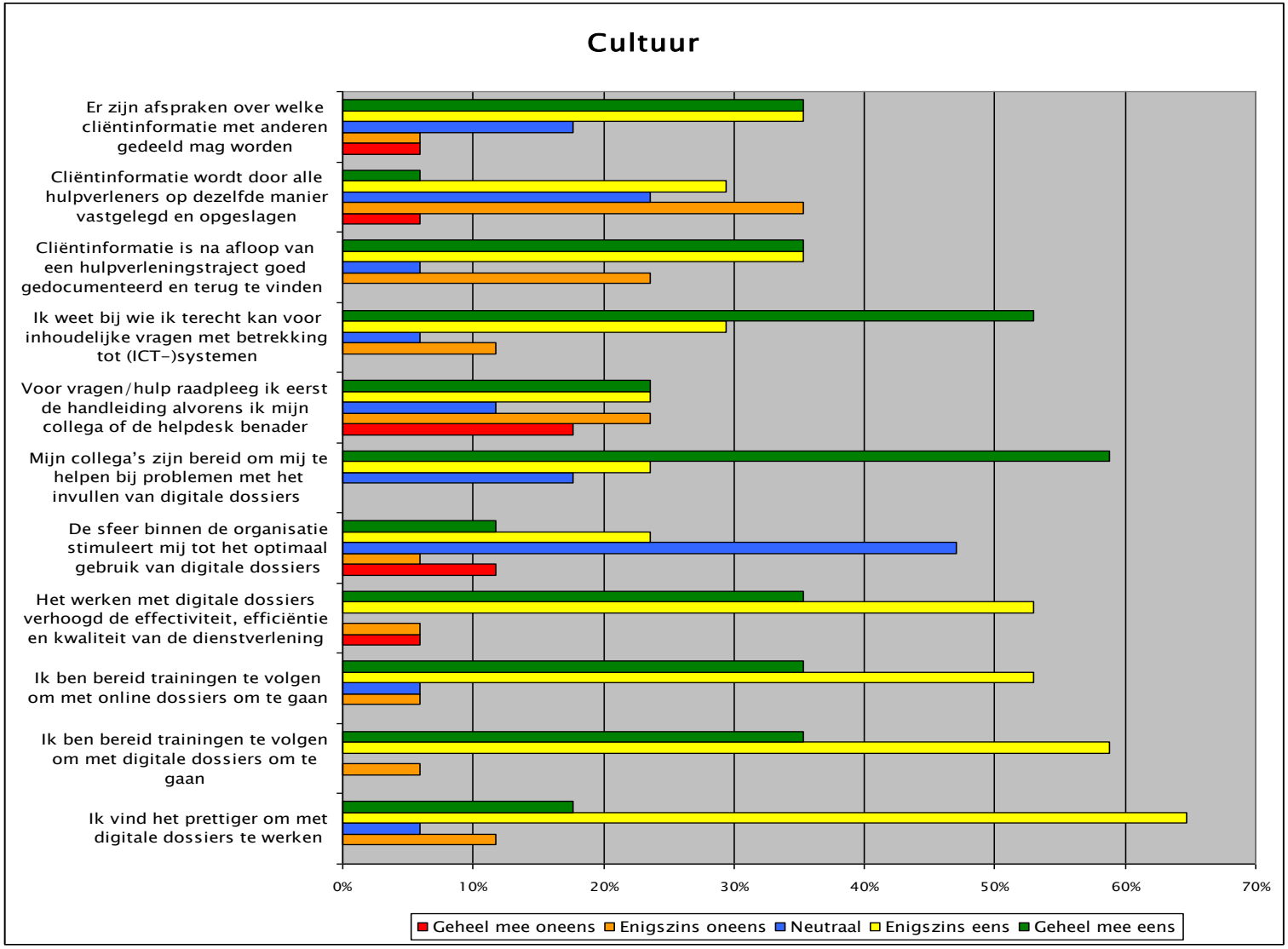


Figure 29 – Culture: working with digital records

Toelichting Cultuur
Papierwerk vaak onoverzichtelijk. Digitaal meer privacyvriendelijk
ik vind het belangrijk dat het eenduidig wordt gebruikt. goede afspraken over zijn die iedereen weet.
De afspraken mogen duidelijker worden. Het is niet altijd efficiënter werken, aangezien de computer nog wel eens problemen heeft. Het is sneller omdat je tegelijk in dezelfde bestanden kunt werken en lezen.
wat moet ik er meer over zeggen?
Hoe wij moeten werken met het digitale dossier wordt goed uitgelegd en van tijd tot tijd in teamvergaderingen besproken. Het HKZ geeft duidelijk aan welke informatie gedeeld mag worden met derden
het werkt sneller, je kan beter samenwerken, privacy blijft weer een aandachtspunt...
Het netwerk werkt vaak niet, waardoor het niet handig is om met digitale dossiers te werken. het zou wel handig zijn als dat zo was. Ik ben niet bereid om training te volgen, naar mijn idee moet het systeem zo simpel zijn dat het voor zich spreekt.
1. Handig om erbij te hebben als je een verslag aan het schrijven bent. 2.Digitale dossier, kunnen mijn collega's in en aanvullen. 3. Training is altijd goed om je ervaringen uit te breiden. 4. zie 3. 5. Is duidelijk en inzichtelijk. 6. Het is een stuk van je takenpakket, hoort er gewoon bij. 7. Wanneer is vragen heb, kan ik altijd bij mijn collega's terecht. 8. Vraag eerst collega's die op kantoor zitten. Lukt het dan niet, helpdesk. Vind ik persoonlijk makkelijker als handleiding. 9. Hebben we een duidelijke mail van gehad. Hoe, wat, waar voor vragen. 10. Goed terug te vinden via digitale dossier en op papier. 11. Binnen ons team wordt het door iedereen het zelfde gedaan. Of dit voor andere teams het zelfde is, weet ik niet. 12. ja
Het is efficiënt om met digitale dossiers te werken. Collega's helpen elkaar . Op het ogenblik is de helpdesk niet optimaal.
stelling 6 HVP formulierenset wordt te vaak aangepast bevordert optimaal gebruik niet Heeft ook invloed op de manier waarop informatie wordt vastgelegd. Verder denk ik dat we met elkaar nog moeten werken aan eenduidig documenteren van trajecten en info vastleggen
online dossiers ben ik onbekend mee, dus eigenlijk weet ik niet of mijn antwoord correct kan zijn.
Om te beginnen staat er een storende taalfout in vraag 5 Digitale dossiervorming schiet vaak zijn doel voorbij. Het is meten op de millimeter en kost vaak te veel tijd. ten koste van het uitvoerende werk.
Ik ben bereid trainingen te volgen, mits ik daar voldoende tijd voor krijg. Het zou wel wat opleveren, want je hoeft niet meer met cliëntgegevens over straat (bijv. als ouders aanpassingen gemaakt hebben in een schriftelijk verslag). Het zou helpen als bij het digitale dossier ook meldingen worden gedaan in de trant van 'binnen 3 maanden verloopt de 12 maanden zorg aan deze client'. Ik probeer bij het invullen van bepaalde dingen altijd zelf hoe het werkt, lukt het niet en er is een handleiding dan gebruik ik deze. Mocht er een collega in de buurt zijn dan kan ik, bij weinig tijd, deze ook raadplegen. Laatst ben ik van cliënten uit 2008 nog nagegaan of alles van het HVP compleet was. Ik wist het in eerste instantie niet te vinden, maar blijkt dat van alle voorgaande jaren de dossiers (van DOJ) boven in het computerhok liggen.
Wat is het verschil tussen digitaal dossier en online dossier in de praktijk? Zonder antwoord op deze vraag is deze enquête voor mij lastig in te vullen, ik ga er voor het gemak vanuit dat dit qua ermee werken hetzelfde is, zo zal ik de enquête dus ook invullen. Handleiding, welke handleiding? We hebben al vaak aangegeven wat evt. problemen zijn met care 4, bij diverse mensen maar wachten al een jaar op verbetering. Toegang tot cliëntinformatie na afsluiting is lastig omdat je als hulpverlener al weer "ontkoppeld" wordt, dus niet meer bij gegevens kan
Invoeren van veel dingen zou door een cliënten administratie gedaan moeten worden.
* Op papier leest het makkelijker * Werkt efficiënter en kost minder papier * Mocht dit nodig zijn * Mocht dit nodig zijn * Zeker de efficiëntie, kwaliteit betwijfel ik * Je moet wel, heeft geen positieve sfeer * Enkele collega's weten hier goed mee te werken, anderen zijn nog zoekend * Meestal vind ik het zelf uit en anders vraag ik het eerst aan collega's voor ik de helpdesk inschakel * Ik weet het wel, maar zit nog niet in mijn systeem dat hier een centraal punt (tel en e-mail) voor is. * Doordat nog niet iedereen secuur mee om gaat. * Velen zijn nog zoekend * weet ik eigenlijk niet zo goed
we weten niet welke info gedeeld mag worden met anderen, dit is wel kwalijk i.v.m. privacy.

Table 9 – Comments on the statements concerning culture in the organisation

Table 9 gives an overview of all the comments (in Dutch) put by the respondents concerning the culture in the organisation on working with digital records. Overall we conclude that the respondents find it pleasant to work with digital records, except when the drawbacks of computers or the unavailability of the network or system occurs.

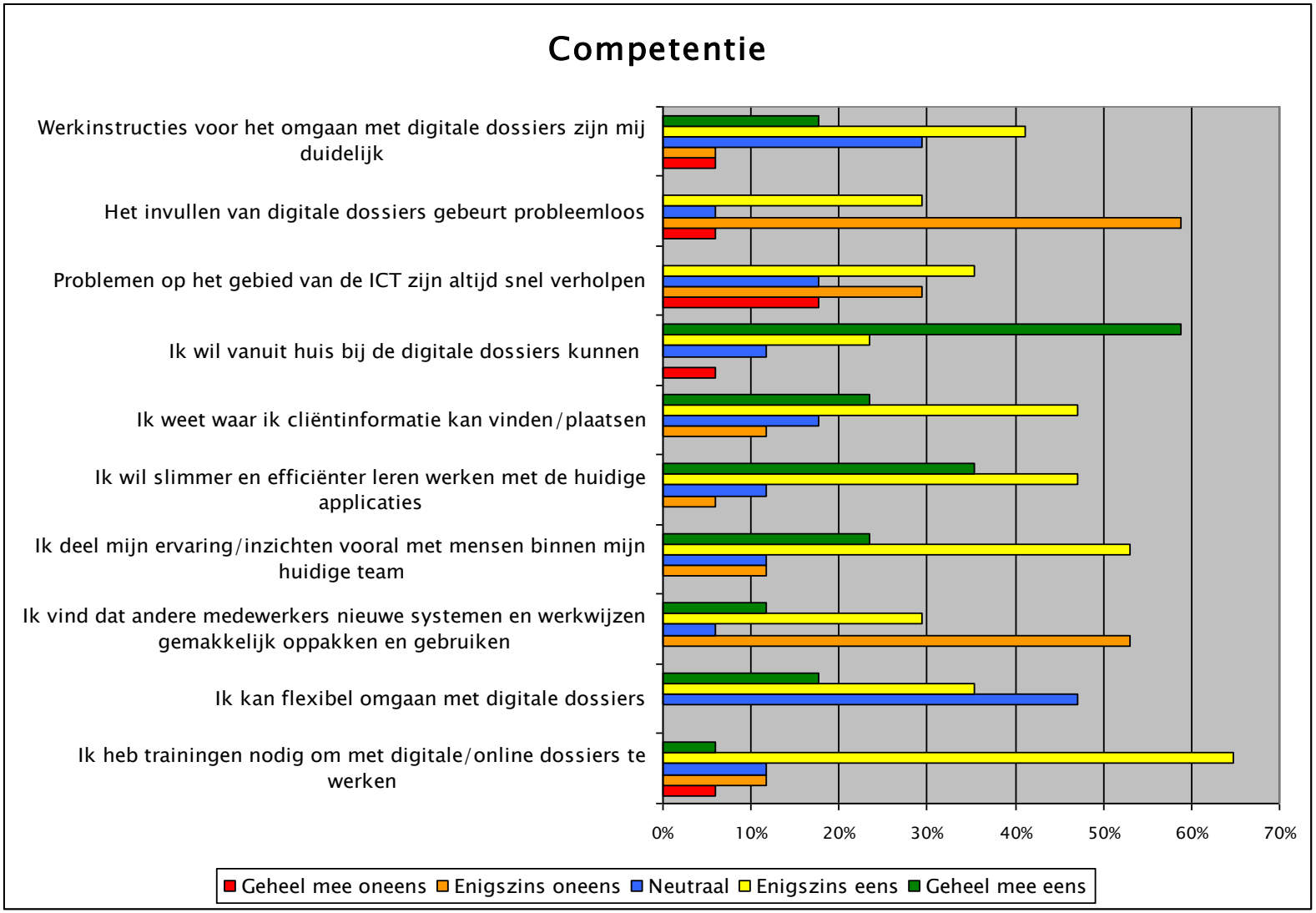


Figure 30 – Competences: working with digital records

Figure 30 shows the result of the opinions on the statements given by the respondents concerning their competences about working with digital records. We first discuss the most statements we consider most important and where the managers must act upon.

- We can see that approximately 70% of the respondents (fully) agree that they need be training in order to work with digital records. The reason for this percentage maybe because it is a group of professionals who are employed more than ten years and first only worked with paper records and most recently started to work with digital records. Around 18% thinks that they do not really need training for working with digital records. The reason for this percentage maybe because this is the group of professionals who are employed less than four years and immediately started to work with digital records. New employees, especially new professionals, immediately learn to work with digital records and are most of the time younger people who can find their way easier in the digital world.

- Around 70% of the respondents (fully) agree with the statement that they know where to find and place client information. The respondents who disagree (around 12%) with statement must learn to do this properly and it is the task of the management to take care of this.

- About 82% of the respondents (fully) agree with the statement that they want to work from home and in this way have access to the digital records. Now professionals have access to the digital records by making use of the Citrix environment to log on to the system. Professionals can then make reports from home in Care4 and fill in the client agenda.

- About 46% of the respondents (fully) disagree with the statement that problems concerning the ICT are quickly resolved. The network or system falls out very often and this is frustrating for professionals busy filling reports in Care4. They must retype everything and this is very time consuming. The management must train the employees who go over network and other problems. This can be done by certifying the employees of concern.

- About 65% of the respondents (fully) disagree with the statement that filling in the digital records happen without problems. From Table 10 one can see a clear comment on this statement that because of regular changes, some ambiguity still exists and causes problems when filling in digital records. The impropriate functioning of the system also can be the cause of problems for filling in digital records. This must be an eye opener for the management to not let changes take place that often and they also must take care that the system functions properly, so that professionals can fill in the records without any problems. About 29% of the

respondents agree with this statement and about 17% have a neutral opinion about this statement. This because these respondents have not come across that much problems that they could not fill in the digital records.

- About 58% of the respondents (fully) agree with the statement that work instructions for dealing with digital records are clear to them. From Table 10 a respondent commented that work instructions are now mailed or can be found through a link to the work instructions. But still around 12% of the respondents (fully) disagree with this statement, as one can read in the comments given in Table 10, e.g.: clarity could be better, some adjustments are unnecessary, communication and information must be better and information must be short but clear, because information overload is not motivating to read all of it.

Here we discuss the less important statements, but where the management still must take into account in order to successfully work with digital records at Cardae. We will again use the result of the survey concerning the competence given in Figure 30.

- We see that about 53% of the respondents (fully) agree with the statement that they can work flexibly with digital records.
- Around 52% of the respondents disagree with the statement that other professionals easily adapt and use new systems or working methods. This because it takes time to learn to work with new systems or working methods. One respondent commented to introduce new systems or working methods one after each other, so that adaptation can take place in a better way.
- About 76% (fully) agree with the statement that they share skills with professionals within their own team. About 12% do not only share their skills within their own team of professionals, but they also share their skills with colleagues working in other teams.
- About 82% of the respondents (fully) agree with the statement that they want to learn to work smarter and more efficiently with the current applications.

Toelichting Competentie
Probleemoplossing ICT is de laatste tijd verbeterd; per saldo doen zich nog te veel problemen voor: uitval netwerk, bijwerken netwerk tijdens kantooruren; overbelasting netwerk (?)
duidelijkheid kan beter.
Er zijn wel vaker problemen met het systeem, dit roept erg veel frustratie op en extra tijd die je moet besteden aan bijv. opnieuw verslagen schrijven die opeens verdwenen zijn.
niets aan toe te voegen
Met ons systeem kunnen wij via Citrix de dossiers thuis ook al digitaal bekijken, dit is een pluspunt, zo kun je de rapportage ook thuis maken en cliëntagenda's invullen
werkinstructies zijn nu vaak via de mail of een link te vinden. training lijkt mij makkelijker.. er is een overkill aan

trainingen geweest hierdoor maak ik meer overuren en wil ik ook wel eens gewoon werken...
De ICT laat wel eens op zich wachten en werkt verre van optimaal, mijn inziens. Het systeem wordt vaak tijdens werktijden geüpdate of reset. Dit lijkt mij bij de grotere bedrijven ook niet realistisch.
1. heb 1 training gehad en dat was voldoende. Af en toe bij nieuwe ontwikkelingen krijgen we uitleg via mail en collega. 2. gaat goed. 3. Ja gaat goed 4. Wij overleggen binnen het team 5. niet echt, maar misschien handig 6. weet naar mijn mening aardig waar ik de info moet plaatsen/ vinden 7. Erg handig om vanuit huis te werken 8. Gaat beter 9. doordat alles regelmatig veranderd, is er soms wat onduidelijkheid 10. wel duidelijk, maar vind sommige aanpassingen onnodig.
Lijkt me voor zichzelf te spreken
Ik vind dat we er altijd hard aan moeten werken om nieuwe systemen en werkwijzen op te pakken. Kost tijd en energie, die moet er ook ingestoken worden om het goed te gaan doen. Bij invoeren nieuwe systemen hier ook tijd voor vrij maken, zorgen dat er niet te veel andere dingen (trainingen, invoeren nieuwe methoden enz.) naast lopen zodat lopen zodat mensen voldoende ruimte hebben om het goed op te pakken
het voordeel van digitale dossiers is de bereikbaarheid ervan op afstand, d.w.z. ook toegankelijk buiten het kantoor, zoals vanuit huis of via een laptop
Gebruiksvriendelijker systemen zijn m.i. gewenst. Driedubbel inloggen, doorklikken, toevoegen, zoeken, slepen in een kwetsbaar systeem is onprettig.
Er staat veel omschreven in het HKZ handboek. Hier kan je terugvinden wat wanneer af moet zijn van het Cardea HVP (dossier). Als ik ergens tegenaan loop, dan bespreek ik dit met collega's, mochten die op dat moment in de buurt zijn. Bij de start van Care 4 gebruik wilde het nog weleens zo zijn dat ik vragen kreeg van anderen uit een ander team.
betere communicatie en voorlichting!
Het systeem moet hanteerbaar zijn en gemakkelijk in te voeren zijn. Niet teveel en te ingewikkeld. Ik werk het liefst met mensen ik ben geen ICT en wil zeker geen kantoorbaan hebben. Of alles vanachter een bureau gaan doen
* Volgens mij niet * Ik vind reasonable mij weg erin * Nee ik pak het wel makkelijk op, help vaak een collega als ze er niet uit komen * Nee zowel met teamgenoten, maar ook met collega's waar ik mee samenwerk. * Als het sneller en slimmer kan wil ik dit graag weten * Over het algemeen weet ik het wel te vinden * Maar dit kan ook * Computer kan erg traag zijn en dit kost altijd tijd om dit te verhelpen * Als het systeem niet mee werkt gebeurd dit niet probleemloos * geen toelichting
het kan altijd beter, niet meer info maar korter. de hele lappen tekst die je soms krijgt als er iets veranderd is in care 4 zijn storend en niet motiverend

Table 10 – Comments on the statements concerning competences

Table 10 gives an overview of all the comments (in Dutch) put by the respondents concerning the statements given in the online survey about the competences of the employees in the organisation. As stated earlier this survey was set to get more insight in the competence of the employees and will be used to give recommendations to the management. From these comments we can conclude the professionals have the skills to work with digital records, but there are still some professionals who need to be trained to gain their knowledge of using digital records properly.

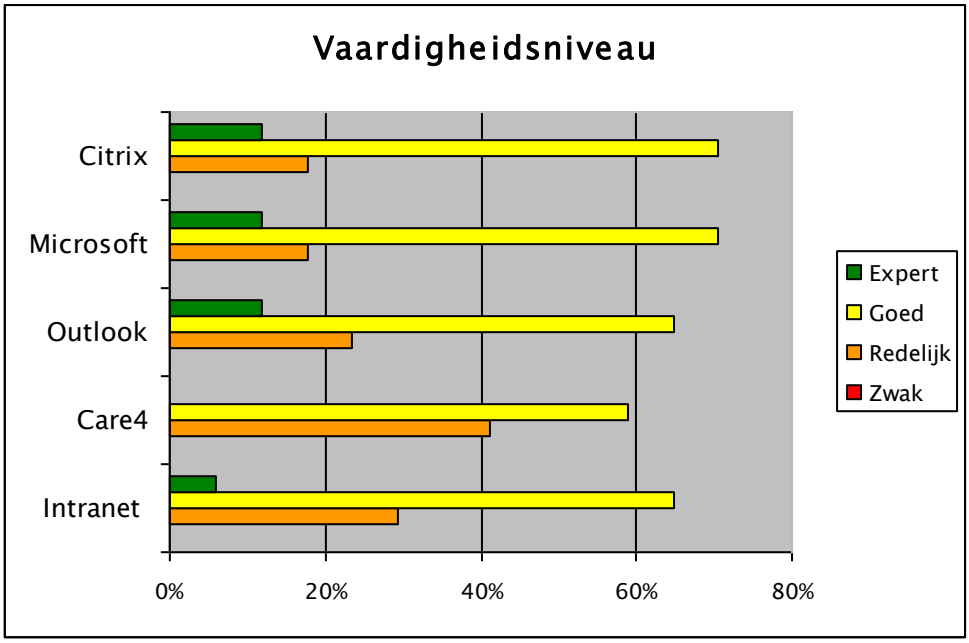


Figure 31 – Skill level

Figure 31 shows the result of the statement about the skills of the respondents on the systems used at Cardea and Table 11 depicts the comments of the respondents on these statements. From this figure we can see that between 3% – 63% of the respondents qualify their skill of using the *Intranet* from being reasonable to expert. From the result on this statement, we can conclude that knowing how to use the intranet is not a problem for the respondents but that not every respondent has imbedded in its routine work to use it daily. This could also be concluded according to one of the interviews we had, that not everyone is using the intranet according to the way the management thought it would be used. It is something that the management must stimulate to do. Between 41% – 58% of the respondents qualify their skill of working with *Care4* from being reasonable to good. Between 12% – 63% of the respondents qualified the use of *Outlook* as being expert, good or reasonable. Between 12% – 71% of the respondents qualify their skill of working with *Microsoft Office* applications as being expert, good or reasonable. Between 12% – 71% of the respondents qualify their skill of working with *Citrix* as being expert, good or reasonable. Looking at the skill level of using Care4 we can recommend the management to increase this level, because this is the most important system in use at Cardea, especially by the professionals.

Toelichting Vaardigheidsniveau
Verschillende systemen worden steeds gebruiksvriendelijker.
ben tevreden.
Ik ben vanaf het begin goed betrokken bij het gebruik van Care4, verder kan ik goed overweg met de gebruikte systemen.
voldoende vaardigheden
Ik ben, op een paar kleine details na, heel tevreden over hoe ik met de systemen kan werken.

ik gebruik outlook (nog) niet. Ik ben weinig op kantoor, dus een digitale agenda is voor mij dan niet handig.
ik kan er prima in werken
Intranet: soms een beetje een zoekplaatje waar alles staat. Care-4: door constante aanpassingen, soms wat onduidelijk Microsoft: prima Citrix: prima
Werk al lange tijd met de systemen
het meest thuis in outlook en word, niet zo in Excel
ik ben niet zo'n digi-expert, maar wel voldoende om m'n werk te kunnen doen.
Cursussen gevolgd, hulp van collega"s
De meest gebruikelijke dingen, zoals cliëntagenda en HVP aanmaken, zijn voor mij vanzelfsprekend. Ik weet hoe ik de wachtlijst van de training Weerbaarheid in kan zien, enz. Word gebruik ik al langer, is geen probleem voor mij. Bij Excel gaat het gebruik goed, zolang ik zelf geen tabellen o.i.d. aan hoef te maken. Bij outlook weet ik de te mailen persoon te vinden en hoe ik een kamer kan reserveren. Eigenlijk gebruik ik outlook alleen om te mailen en ontvangen mails te lezen.
heeft bijvoorbeeld lang geduurd voordat ik (zelf en met een beetje hulp van collega's) heb uitgevogeld hoe je een digitale handtekening standaard onder je mailtjes kan zetten. Het is tot op heden niet gelukt om het Cardea-logootje bij te voegen.
Ik kan reasonable uit de voeten met het systeem al vindt ik Care4 te veel van het goede. Andere systemen werk je meestaal buiten je werk ook mee maar Care 4 niet
Ben overal goed van op de hoogte hoe het werkt.
ik heb het moeten leren, maar het is best handzaam genoeg (ook voor iemand die niet echte interesse heeft in computers)

Table 11 – Comments on the statements concerning the skill level

Overall we can conclude that the skill level of the respondents is qualified as being good. This can also be concluded when reading the comments of Table 11, but increasing the skill level of an employee is never too much to do. The culture of the organisation must therefore be a culture where people are willing to learn and improve their skill level when necessary. Besides this, the management must stimulate their employees and offer them to do so.

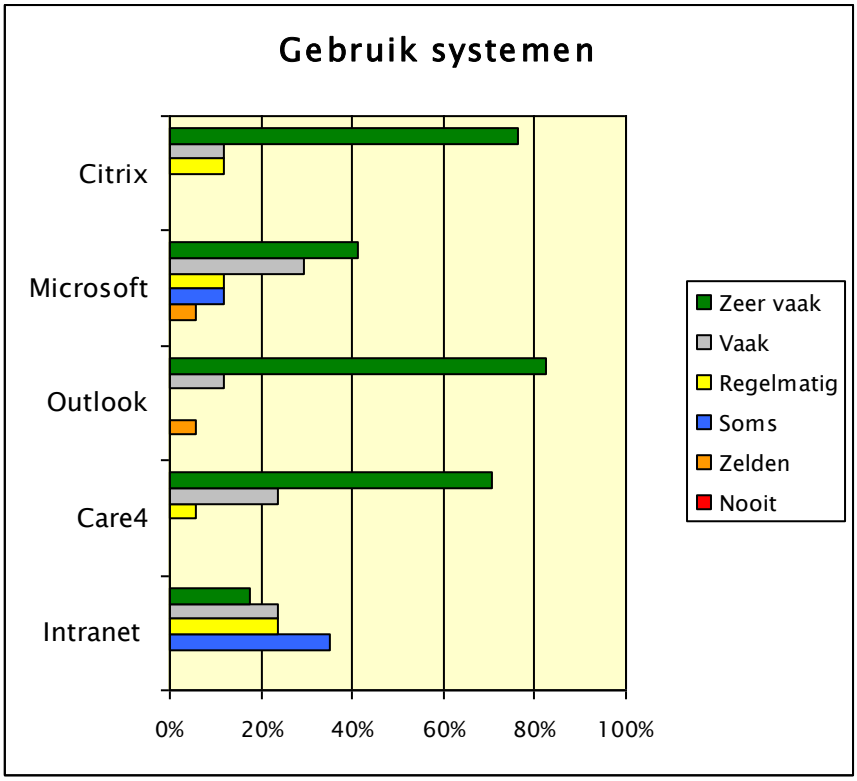


Figure 32 – Use of the systems

Figure 32 graphically shows the result on the opinion of the respondents on the statements of the systems in use at Cardea. From this figure we see that between 17% – 33% of the respondents (very) frequently or regularly use the *Intranet*, but about 35% of the respondents sometimes make use of the *Intranet*. Between 4% – 70% of the respondents the respondents regularly and (very) frequently make use of *Care4*. The reason for this is that all professionals must use Care4 to register all client data. The use of Care4 must be in combination with Citrix, that is the reason why the use of *Citrix* is between 12% – 77%. Only around 3% of the respondents occasionally use *Outlook* and on the other hand between 12% – 82% of the respondents (very) frequently use *Outlook*. The reason for this result is because most of the respondents use Outlook for reading and sending mails and for making appointments in the Outlook agenda. Between 12% – 41% of the respondents use *Microsoft Office* applications to make reports, about 12% sometimes use it and about 4% occasionally use it.

Toelichting gebruik systemen
Dagelijks meermalig gebruik
ben tevreden
Vooral mail en documenten in Care4 gebruik ik veel. Excel bijna nooit.
Al het werk verloopt via Citrix
Registreren en rapporteren gebeurt voornamelijk in care4, wij zijn hier als gezinsbegeleiders dus heel vaak mee aan het werk. Contact verloopt grotendeels via de email en ook de onze agenda staat in Outlook.
zie vorige vraag

spreekt voor zich
Intranet: af en toe bekijken Care-4: dagelijks om te registreren Outlook: dagelijks mailverkeer Microsoft: dagelijks, verslagen schrijven Citrix: Log je dagelijks via in
IK gebruik alles
Excel weinig, lastig programma
care-4 is alleen bereikbaar via Citrix evenals intranet
Is verplicht.
Iedere dag open ik op zijn minst mijn mail, waarvoor ik ook Citrix moet openen. Daarnaast probeer ik altijd mijn contacten te registreren in care 4, maar afhankelijk van hoe druk ik het heb lukt het mij de ene dag wel en de andere dag niet om in te loggen.
geen
Eigenlijk werk ik te vaak met deze producten. Face to face is voor mij belangrijk niet een scherm. Dit zou ondersteuning moeten bieden meer niet
Care-4 en outlook daar werk ik het meest mee
al met al ben ik best vaak bezig ermee. het bevalt prima. het is heel erg als het uitvalt en je zit midden in een verslag.

Table 12 – Comments on the statements concerning the use of the systems

Table 12 gives an overview of the comments on the statements concerning the use of the systems. From this table we see that Care4 is used by almost all of the respondents every day and that everyone needs to log on to Citrix before they have access to Care4 and the Intranet. One important comment can be seen, namely the respondent who commented that working face to face with a client is more important for him/her instead of using a computer during a consult with a client. It is the task of the management to decide how professionals should work and professionals need to agree on this decision.

In the online survey we had some open questions where respondents could give their own answers. The following tables give an overview of the answers conducted and we will elaborate on some of these questions. The questions and answers are in Dutch and we will not translate them, because it is not necessary to do so for this thesis.

Hoe ervaart u het werken met digitale dossiers?
Was in het begin zeker door de kinderziekten en ingeboren allergie voor geautomatiseerde systemen erg wennen. Door meer en duidelijker instructie, gebruikshandleidingen en verbetering van en sneller oplossen van voorkomende problemen ben ik nu blij met de verschillende systemen. kanttekening blijft, dat het veel van de beschikbare werktijd opslokt en niet altijd duidelijk is wie baat heeft bij bepaalde registraties of verslagleggingen. Moet geen doel in zich worden!!!
prima tot nu toe, handig dat je overal in kan.
Goed, passend bij de tijd
oké. Niet altijd even praktisch.
goed, positief, je hebt snel een overzicht over de geboden hulp (bijvoorbeeld door de dagrapportage van een kind digitaal te kunnen lezen)
voor de werkers fijn, in de jongerenraad is dit onderwerp besproken, ze vinden het geen goed idee. Ze zullen goed geïnformeerd moeten worden (alle cliënten)
niet optimaal
Kost veel tijd, maar moet en wel goed te doen.

Het is overzichtelijk en fijn systeem
Erg handig, overal waar een computer staat kan je in het dossier. Jammer dat indicaties nog niet digitaal zijn.
handig, maar pas optimaal als alle cliëntinformatie ook in het digitale dossier is terug te vinden. Dat is nog niet het geval
Vaak ergerlijk, onvriendelijk voor Alpha mensen
Soms is het systeem traag en ben je ergens mee bezig, waarop je eruit gegooid wordt -> alles weg en voor niets gedaan. Dus enerzijds kan het soms frustrerend werken als het netwerk behoorlijk bezet is. Anderzijds vind ik het een goede zaak, omdat het altijd inzichtelijk is.
het zou handig kunnen zijn en heeft een hoop voordelen qua efficiëntie en het creëren van 1 lijn in dossiervorming, maar.....
Aan de ene kant is alles voorhanden. en werk je snel met het vinden van informatie. aan de anderen kant zit er veel tijd in het invoeren. Tijd die ik in het verleden opvulde met ontwikkelen van dingen binnen trainingen.
Prettig, voorkomt allemaal los papier. Alleen als je papier documenten krijgt is het lastig, omdat dit niet te verweken is in het digitale dossier alleen een verwijzing.
goed

Table 13 – Experience of working with digital records

From the answers given to the question given in Table 13, some are important for the management to take into consideration, namely:

1. it is not always that practical
2. it is good for the professionals, but the youth council does not like the idea. It is necessary to inform all clients that Cardea is working with digital records
3. It is not optimal
4. it is time consuming, but it has to be done and it is good to do
5. it is unfortunate that the indication is not send digitally yet
6. useful, but best if all client information can also be found in the digital record. This is not yet the case
7. often irritating, unfriendly for Alpha people
8. system is sometimes slow and when system is down and the work is not saved, everything is lost. All the time spent was useful then
9. it takes a lot of time for filling in the client records in Care4. This time could be spent to increase the knowledge and take courses
10. inconvenient to work with paper documents, because the paper document can only be referred to in the digital record

Welke problemen komt u tegen bij het invullen van digitale dossiers?
Veelal storingen van het systeem, zoals: ontoegankelijkheid van systeem, vastlopen computers (met soms als gevolg verlies van data= heel vervelend); te veel tijd nodig voor oplossing problemen.
dat mensen het niet allemaal doen, in sommige dossiers niets digitaal
Dat het systeem niet altijd goed werkt
Sommige dingen lijken zeer nutteloos
weinig problemen en anders weet ik de helpdesk te vinden
ruimte voor extra info. nu zijn het standaard invul formulieren

onnodig vastlopen van het programma, niet goed opslaan van gegevens, niet zelf kunnen wijzingen van gegevens, gegevens zijn niet up to date, niet alle gegevens kunnen opgeslagen worden (school, docent, e-mail adressen etc.)
Er zijn regelmatig veranderingen in de registratie. Hierdoor soms verwarrend welk formulier in te vullen en hoe. Door het veranderen van de registratie, kun je sommige dingen niet meer gebruiken bij het invullen.
Wanneer applicaties toegevoegd worden is het even wennen bijv. in Care-4
Mensen hebben soms nog moeite (ik ook) omdat ze nog niet alle toepassingen beheersen. Niet iedereen doet het hetzelfde maar daar is hiervoor al naar gevraagd
soms instabiel en care-4 wordt niet ondersteund door de mogelijkheden van word of open office (een nadeel dus)
Onlogische stappen, kwetsbare systemen
Dubbel werk. Invullen van de doelen in standaarddoelenrealisatie. Dit doe je ook al soort van in het HVP, maar dit wordt niet automatisch doorgevoerd naar deze verslagen. Daarnaast kan je heel goed de namen anonimiseren, maar als je het dan terug wil draaien, dan komt de naam er in hoofdletters te staan (via MENU, BEWERKEN, VERVANGEN)
....het systeem is in praktijk niet altijd even toegankelijk dus daardoor tijdrovend en soms ronduit frustrerend. Bijv. als bepaalde constructies of hulp na afsluiting/nazorg niet geregistreerd kunnen worden. Soms betekent dit dat er dus geen cliëntcontacttijd geregistreerd wordt die wel degelijk gemaakt is. Flexibeler systeem, meer keuzemogelijkheden of ruimte om zelf in te vullen, bijvoorbeeld kopje "anders" zou kunnen helpen. Ook hulpverleners minimaal 6 maanden na afsluiting gekoppeld houden aan cliënten i.v.m. evt. nazorg of bereikbaarheid zou handig zijn en een hoop geregel schelen.
Zoeken naar waar stond dat ook al weer!
Ik vind dat de verslaglegging bij cliëntcontact in Care-4 erg kleine letters hebben, waardoor het mij extra moeite kost om mij te concentreren op het lezen van de tekst. Ook vind ik het vervelend dat er niet een contact journaal uitgeprint of gelezen kan worden. Nu moet ik elk client contact apart aan klikken om het te kunnen lezen. Ik zou graag een overzicht willen hebben van de verslaglegging van een bepaalde periode.
soms werkt het systeem niet goed of valt de care 4 uit, dat is een ramp.

Table 14 – Problems during filling in digital records

Table 14 gives an overview of the problems professionals come across when filling in digital records. All the answers given to this question should be taken into consideration by the management in order to improve the use of digital records. The system and network must work properly in order to let professionals use Care4 optimally. If the system is not built according to the requirements of the professionals, they will not use it and as a consequence start to work with paper records again.

Welke knelpunten/moeilijkheden/beperkingen komt u tegen bij het werken met digitale dossiers?
Zie boven + in samenwerkingstrajecten tussen verschillende projecten en/of disciplines is het systeem nog niet voor iedereen toegankelijk.
geen
Vooral het, gezien de privacy, doorgeven van de informatie aan ouders
elke keer als het programma geüpdate wordt, kan er minder mee.
Al genoemd: voor rapportage van externen (BJZ, aan Cardea verbonden onderwijs, therapeuten) moet je toch het geschreven dossier raadplegen.
mijn werktijd... kost veel tijd.
zie vorige vraag
Beperkte invul mogelijkheden bij het invullen van de cliëntagenda. Bijvoorbeeld bij het kopje soort contact.
Het systeem kan soms langzaam opstarten
Nog niet 100 % thuis in de systemen, ik zou graag hogere toegankelijkheid (autorisatie) willen, kijken naar

autorisatie van de verschillende functiegroepen lijkt me wenselijk.
geen word ondersteuning, dus, alleen, hoe heet zo iets, platte tekst.
Soms geen toegang, vaak abracadabra hoe het digitale gebruikt moet worden, Cursussen nodig.
Als er een document open staat kan je niet kijken in de cliëntagenda zonder het document eerst af te sluiten. Tenzij je op negeren drukt, maar ik weet niet of dit de bedoeling is. Soms lijkt het erop dat, sinds dossiers digitaal aangelegd worden, er steeds meer gerapporteerd moet worden. Het gevaar is dat mensen klachten ontwikkelen en meer weerzin ontwikkelen, omdat contacttijd (ook voor mij) belangrijker ervaren wordt.
zie boven
Servers die plat liggen, afhankelijk van de snelheid van de computer.
Zie antwoord bij bovenstaande antwoord
uitval van computer, verschillende formats

Table 15 – Bottlenecks/difficulties/limitations during working with digital records

Table 15 gives an overview of the answers given to the question which bottlenecks/difficulties/limitations professionals come across when working with digital records. All of these answers are important for the management, but we pointed out the ones which must be taking into account, namely:

1. during collaborative tracks between different projects or disciplines, the system is not accessible for everyone
2. concerning privacy issues, the forwarding of client information to the parents
3. for reporting to externals, paper records must still be conducted
4. limited input options for filling in the client agenda

Welk effect heeft het werken met digitale dossiers gebracht ten opzichte van het werken met papieren dossiers?
- Vergroting efficiëntie. - Na verloop van tijd tijdswinst. - Grotere toegankelijkheid voor verschillende disciplines. - Vergroting veiligheid.
gemak, overal erbij kunnen
Positief: sneller toegang met meerdere hulpverleners tot dezelfde documenten. **Negatief**: afhankelijk van de computer, dus als er iets mee is kan je niks. Hoe ouders betrekken zonder privacy regels te overschrijden?
Het is makkelijker voor nieuwe betrokken HVL in te zien
tijdsbesparing, meer direct overzicht over de geboden hulp
samenwerking wordt beter privacy wordt minder
thuiswerken is makkelijker/mogelijk terugzoeken van doelen en kopiëren hiervan is makkelijker met meerdere mensen tegelijk werken voor dezelfde cliënt je kunt het dossier altijd vinden **negatief** effect, als het niet werkt kun je dus niets meer doen
Digitale dossier is handig, want er kan niks kwijt raken. Papieren dossier is soms handig om ernaast te hebben bij het schrijven van verslagen en even snel iets na te kijken.
als het internet uitvalt kun je niet werken. Het is makkelijk op te slaan/snel te openen.
positief: efficiency, je blijft goed op de hoogte van wat er speelt rondom cliënten en wat alle betrokken hulpverleners hierin doen. Al het registreren en rapporteren kost wel weer ontzettend veel tijd en leidt wellicht tot vermindering cliëntcontacttijd. Dit is niet wenselijk zorgen dat we zoeken naar een goede balans hierin
voordeel: digitale dossiers vallen onder de privacyregels. **voordeel**: ook vanuit huis toegang tot cliëntdossiers (thuiswerken) **nadeel**: niet alle cliëntinformatie zit in huidig digitaal dossier, zoals BJZ indicatie. **nadeel**: tijdens typen, informatie-invoer in digitaal dossier, geen papieren naslagwerk waaruit gewerkt kan worden.
Positief: beter beveiligd **Negatief**: een nieuw, stroef aanvoelend systeem leren

Altijd en overal kan je het dossier inzien (als er een pc in de buurt is). Er is beter zicht op het werk dat je afgeleverd hebt als hv'er. In **negatieve** zin zou het zo kunnen zijn dat er nu meer gerapporteerd moet worden.
minder stapels, meer overzicht meer tijd kwijt aan allerlei administratieve handelingen.
Alles voorhanden en inzichtelijk, snel. Lezen vanaf een computer is lastiger.
Het positieve vindt ik vooral bij trajecten, omdat de betrokken hulpverleners goed op de hoogte van elkaars werkzaamheden kunnen zijn, zonder dat je hier extra tijd aan moet spenderen door telefoongesprek of e-mail. Dit vergt wel dat de hulpverleners zelf initiatief nemen om te lezen.
positief: snel, effectiever **negatief**: je moet de hele computer openen voor het opzoeken van gegevens. omslachtig

Table 16 – Effect created of working with digital records in relation with paper records

Table 16 gives an overview of the answers concerning the question which effect was created of working with digital records in relation with working with paper records. Looking at the answers given, we see that although there is a positive effect created there are also some negative effects. We will mention the effects which must be taken into consideration by the management:

1. if the system or network is down, professionals cannot do their work properly
2. how can parents be involved without exceeding privacy rules
3. working with digital records, decreases the client contact time
4. learn to work with a new system
5. need a computer to work and reading from a computer is not fine

Wat is uw perceptie over het werken met digitale dossiers?
Na aanvankelijke scepsis nu tevreden.
goed
Goed
principe is goed, de werkbaarheid ervan kan beter.
Ik vind dit een goede ontwikkeling
sneller en effectiever.
noodzakelijk
Kost veel tijd al het registreren, maar vind het digitale dossier wel handig met het oog op dat je makkelijk in het dossier kan van cliënten van naaste collega's om te registeren als je iets gedaan hebt. Hierdoor is iedereen altijd op de hoogte van de stand van zaken.
Het is beter dan analoog
goed maar let op tijdsinvestering, niet meer registreren dan nodig is
handig en functioneel
Overschat en kwetsbaar door ICT
Het werken met digitale dossiers is handig. Mede doordat je, waar nodig een bestand aan kan maken die je samen met de cliënt maakt. Zo sluit je nog meer aan bij de cliënt. Gegevens zijn gemakkelijk in te zien en na te lezen. Daarnaast kunnen betrokken personen binnen Cardea het dossier inzien.
wat is het verschil tussen online en digitaal in praktijk?
Het is een snelle manier van werken, alles is voorhanden. Alleen de invoer zou meer door anderen gedaan moeten worden.
Iedereen moet hier nog goed het nut van inzien en het gemak van ondervinden
prima

Table 17 – Perceptions about working with digital records

Table 17 gives an overview of the perceptions about working with digital records. We can see that overall the perceptions are positive, but there are some negative perceptions as well. These are: the workability can be improved, registering takes time and overestimated and vulnerable through ICT.

Wat is uw perceptie over het werken met online dossiers?
Geen ervaring mee
goed
Kan een toevoeging zijn als dit betekent dat alle betrokken hulpverleners, ook van andere instellingen, bij bepaalde stukken kunnen
?
Ik weet niet wat hiermee bedoeld wordt, wat is het verschil met digitale dossiers?
is dit wel goed beveiligd en weten de cliënten hiervan af??
belangrijk voor een goede samenwerking met partners, maar moet wel veilig gebeuren
handig. kun je overal werken
Je kunt er op verschillende plekken bij. Het is gevoelig voor storing
efficiënt om op verschillende plekken te kunnen werken en je op de hoogte te kunnen houden van de voortgang
wat zijn dat?
Geen ervaring mee.
Ik weet niet goed wat bedoeld wordt met online dossier...???
wat is het verschil tussen online en digitaal in praktijk?
Handig en inzichtelijk.
Idem
prima, hoe zit het me de privacy gevoeligheid?

Table 18 – Perceptions about working with online records

Table 18 gives an overview of the perception about working with online records. For some of the respondents it was not clear what the difference is between a digital and an online record and therefore respondent with answers as seen in the table. The privacy issues are again mentioned and also the accessibility of online records. This must be taken into consideration by the management when introducing online records.

Noem enkele voor- en nadelen van papieren dossiers.
Letterlijk tastbaar
nadeel: kan gaan zwerven, **voordeel**; handig bij het maken van verslagen
Voordelen: Altijd bereikbaar en beschikbaar **Nadelen**: Moet veel heen en weer gestuurd worden als je er samen in werkt. Moeilijker om even een kleine aanpassing te doen.
Ligt op een locatie, niet voor iedereen in te Zien. Minder overzichtelijk.
voor: inclusief handtekeningen van cliënten, completer **nadeel**: lastiger om op te zoeken
minder overzichtelijk je kan het niet mee naar huis nemen privacy gevoelig
voordelen: leest makkelijker, aantekeningen bijplaatsen **nadelen**: 1 persoon tegelijk, weg=weg, overtypen i.p.v. copy-paste, onoverzichtelijker
nadelen: kwijt raken, kwaliteit (scheuren, vies worden) **voordelen**: handig tijdens vergaderingen, bij het schrijven van verslagen.
Ze zijn tastbaar makkelijk mee te nemen Je kunt ze kwijt raken Bij brand zijn ze weg
papieren dossiers mogen niet mee in de tas naar een andere werkplek, lastig als je op verschillende plekken moet

werken. papier leest wel makkelijker
naslagwerk, dat tijdens werken in care-4, naast de computer gelegd kan worden, **nadeel**: formeel alleen toegankelijk op bepaalde daarvoor aangewezen locaties.
Positief: overzichtelijk, fysiek aanwezig, beter met cliënten te bespreken
Hier kan je nagaan of verslagen al dan wel/niet ondertekend zijn. Mocht de server eruit liggen, dan kan altijd nog het papieren dossier ingekeken worden. Een **nadeel** is dat het privacygevoeliger is. Er moet meer gelet worden op hoe je het verstuurt, meeneemt en opbergt.
zie boven
Geen papier, niet mogelijk laten liggen van dossiers(privé) Snel in te zien. Niet afhankelijk van cliëntadministratie, altijd inzichtelijk. **Na** moeilijker te lezen via computer. Altijd een computer nodig
Voordeel: makkelijker te lezen **Nadeel**: Kost papier, slingert makkelijker rond
gevaar voor kwijtraken gemakkelijk in te kijken

Table 19 – Benefits and drawbacks of paper records

Noem enkele voor- en nadelen van digitale dossiers.
Zie hiervoor
als internet eruit ligt, kun je nergens bij.
Eerder genoemd
Niet zo werkzaam programma. Kost extra tijd om in te vullen. Beter toegankelijk Overzichtelijker
voor: heb ik al genoemd **nadeel**: het dossier is vaak niet compleet, handtekening van cliënt moet toch op papier komen
overzichtelijk betere samenwerking onderling
zie omgekeerde vorige vraag
veel werk het registreren
gevoelig voor storing makkelijk te openen Makkelijk en snel te versturen
overregistratie, moet altijd een computer bij de hand hebben en anders aantekeningen maken en later in dossier zetten. Dat is weer niet efficiënt
geen tastbaar naslagwerk. **voordeel**: als dossier 100% compleet is, kan tekst gekopieerd worden in bijvoorbeeld verslagen, etc.
Nadeel: moeilijk met client te bespreken, dan moet je er een papieren document van maken....
De server kan eruit liggen en dan kan je er niet op werken. Maar het geeft wel de ruimte om waar nodig bestanden te mailen. Zonder dat het 'op straat komt'.
...
.
Voordeel: Alles bij elkaar en iedereen die toegevoegd is kan er in kijken **Nadeel**: Minder makkelijker te lezen van beeldscherm
omslachtig met het openen zeer praktische met knippen en plakken, snel

Table 20 – Benefits and drawbacks of digital records

Noem enkele voor- en nadelen van online dossiers.
geen ervaring mee
dit is toch het zelfde?
eerder genoemd
Geen idee, wat is het verschil??
??
externe samenwerking bv jeugdzorg en ggz. onpersoonlijk: geschreven taal kan anders worden geïnterpreteerd dan spreektaal. iedere werker heeft een andere invalshoek

goede afstemming partners, maar wel gevoelig voor inbraak
overal in te kijken. Voordeel
Makkelijk bereikbaar hoe te beveiligen?
Bereikbaarheid van de dossiers is **voordeel** *Mogelijkheden*:In de toekomst wellicht ook inzetten in hulpverlening en communicatie met cliënten **nadeel**: veiligheid moet wel heel goed geregeld worden
weet ik niet
Geen ervaring mee
??
privacygevoeligheid en beveiliging tegen misbruik door hackers moet zeer veel aandacht krijgen vind ik
.
Voordeel: ook op andere plekken buiten werkplek te bekijken **Nadeel**: Hackers kunnen bij dossier
hoe veilig is dit?

Table 21 – Benefits and drawbacks of online records

The benefits and drawbacks (see Table 19, Table 20, Table 21) of the several record types mentioned by the respondents speak for themselves. We have mentioned almost all of these benefits and drawbacks in sub section 3.2. Together with those benefits and drawbacks and the ones mentioned here, the management must decide whether to keep on innovating and using the digital records more professionally and in the future make use of online accessibility of digital records by clients.

Welke verwachtingen/ideeën heeft u voor het werken met digitale dossiers?
Vergroting van de efficiency en gebruiksvriendelijkheid
dat het makkelijker wordt voor iedereen
geen
Beter/handzamer programma Alleen in moeten vullen wat nuttig is voor het gezin. Betere communicatie wat er met de info uit Care4 wordt gedaan.
geen
sneller, effectiever.
dat het werkt
Dat de kinderziektes eruit gaan en het werkt.
Het zal makkelijker zijn en sneller werken
idee: alleen contact e.d. registreren wat nuttig is voor client en hulpverleners, dus kritisch bekijken wat moet van de wet en hoe dit nuttig kan zijn
completere dossiers en hopelijk meer tekstmogelijkheden om verslagen of dagrapporten leesbaarder te maken
In de zorg wordt het werken aan dossiers verminderd en tijd voor cliënten vergroot. Gaat over twee jaar in de jeugdzorg ook gebeuren
Meer en waar dan ook de mogelijkheid hebben om bepaalde informatie op te zoeken, dan wel toe te voegen. Meer ondersteunend in de zin van plannen van HVP gesprekken, versturen van C-toets en evt. verlenging van indicaties.
zie boven
Dat er meer door anderen wordt ingevoerd
Dat het steeds gebuiksvriendelijker wordt
dat het handig is als jeugdzorg zijn dossiers digitaal gaat aanleveren

Table 22 – Expectations/ideas for working with digital records

Table 22 gives an overview of the expectations/ideas respondents have when working with digital records. From this table we see that professionals want to work more efficiently and effectively, that everyone must be able to use Care4, professionals must properly use Care4 and that the systems are user friendly.

Welke verwachtingen/ideeën heeft u voor het werken met online dossiers?
Geen ervaring mee
gemak, eenduidigheid
geen
Geen.
??
dat dit heel goed geïntroduceerd wordt naar cliënten en medewerkers
dat de communicatie met BJZ sneller en efficiënter gaat
zie boven en verder geen
Je kunt ook thuis werken en dat is fijn
Misschien in de toekomst dus toepassingsmogelijkheden voor hulpverlening
geen idee
Zal kwetsbaar blijken.
???
zie boven
niets
Steeds beter beveiligd wordt
zelfde

Table 23 – Expectations/ ideas for working with online records

Table 23 gives an overview of the answers given to the expectations/ideas respondents have when working with online records. Here we see that some respondents did not give an answer to this question, because it was unclear to them what the difference is between a digital and an online record. Respondents, who did answer this question, gave answers such as: it must be introduced well to clients and employees, after introduction the communication with BJZ must increase, working from home is fine etc. Again we see that one of the respondents mentioned that the security of the records must be guaranteed.

Appendix D – Beheer van Cliëntendossiers

Onderwerp	Beheer van cliëntendossiers
Domein en eigenaar	Privacy cliënten, Bestuurder
Ingangsdatum	Augustus 2007
Versie	1
Akkoord	MT
Inhoud	Richtlijnen toegankelijkheid cliëntendossiers De indeling van het cliëntendossier Registratie van informatieverstrekking aan de cliënt Als laatste:
Evaluatiedatum	November 2009

Cardea registreert tijdens de uitvoering van de zorgverlening gegevens van cliënten, om verschillende redenen. De registratie van gegevens vindt plaats conform de wettelijke bepalingen en afgesproken richtlijnen. De richtlijnen staan beschreven in: Omgang met cliëntgegevens in de jeugdzorg, uitgegeven in 2003 door het Ministerie van Volksgezondheid, Welzijn en sport.

In het document beheer van cliëntendossiers zijn de deze richtlijnen vertaald in praktische afspraken conform intern beleid over de inhoud en toegankelijkheid van het cliëntendossier. Het is de taak en verantwoordelijkheid van de sectormanagers en teamleiders hierop toe te zien en ervoor zorg te dragen dat aan de richtlijnen wordt voldaan.

Richtlijnen toegankelijkheid cliëntendossier

- Nieuwe dossiers komen binnen op het Centraal bureau.
- Aanmeldingsdossiers met indicatie worden op het Centraal bureau bewaard.
- Cliëntendossiers (werkdossiers) worden op een aantal locaties opgeslagen: Campus Oudere Jeugd, Campus Lisse, Campus Leiden, Campus Katwijk, Campus Alphen aan den Rijn en de afzonderlijke residentiele projecten.
- Dossiers worden bewaard in afsluitbare kasten.
- Ruimtes waar dossierkasten staan zijn niet vrij toegankelijk voor onbevoegden.
- Een dossier of delen ervan verlaat nooit de locatie.
- Het toezicht op de dossierkasten wordt in principe uitgevoegd door de secretariaatsmedewerker van de locatie. Op de residentiele projecten is de aanwezig pedagogisch medewerker verantwoordelijk voor het toezicht op de dossiers.
- Afspraken over de toegang tot de dossiers tijdens de afwezigheid van de secretariaatsmedewerkers zijn per locatie gemaakt en schriftelijk vastgelegd.
- Raadplegen van een dossier kan alleen plaatsvinden door een aan de behandeling verbonden pedagogisch medewerkers en gezinsbegeleider, teamleiders en gedragswetenschappers

- Wanneer een dossier mee genomen wordt naar een werkruimte, wordt dit vastgelegd in formulier inzage dossier (zie bijlage).
- Na einde zorg worden de dossiers 10 jaar in een centrale opslag bewaard, daarna worden deze vernietigd.

De indeling van het cliëntendossier

De dossiers zijn voor cliënten en hulpverleners leesbaar en begrijpelijk en kennen onderstaande vastgestelde indeling.

Op de voorkant van het dossier de naam van de cliënt, het cliëntnummer en naam van de trajectbegeleider. Als eerste de registratieformulieren, het formulier voor inzage in dossiers en de checklist informatieverstrekking aan cliënt.

De inhoud van het dossier is verder als volgt:

- *Algemene gegevens*, met daarin ook de gegevens van casemanager, gezinsvoogd of dergelijke, gegevens uit Care 4.
- De meest *Recente indicatiegegevens* en het indicatiebesluit.
- Het *Hulpverleningsplan,* van de getekende SWO, voortgangsverslagen, afstemming met module tot de werkplannen.

  Het HVP bestaat uit de volgende onderdelen:

Verslag wachtlijst gesprek	indien van toepassing
Samenwerkingsovereenkomst	verplicht
Afstemming met module	indien van toepassing
Werkplan van het gezin	indien van toepassing
Werkplan van de jeugdige	indien van toepassing
Verslag driehoeksgesprek	indien van toepassing
Verslag gezinsgesprek	indien van toepassing
Verslag coachingsgesprek	indien van toepassing
Voortgangsverslag	verplicht
Eindverslag	verplicht

- *Eerdere gegevens,* zoals onderzoek en diagnostiek, school of medische gegevens, inclusief de getekende toestemmingsverklaring voor het opvragen van gegevens.
- *Correspondentie*, zowel interne als externe.
- *Registratie contacten* en geboden hulp.
- Relevante *Achtergrond informatie* betreffende het gezin of gezinsleden.

Registratie van informatieverstrekking aan de cliënt

De cliënt ontvangt, mondeling en schriftelijke informatie over Cardea. We informeren de cliënt over ondermeer het cliëntenbeleid, vertrouwenspersoon, de cliëntenraad, klachtenprocedure, huisregels, privacyregeling en het dossierbeheer.

We voldoen hiermee aan onze verplichting, mits we aantoonbaar maken welke informatie aangeboden is.

- Deze informatieverstrekking vindt op verschillende momenten en waar nodig in verschillende gesprekken plaats.
- Er wordt nagegaan of de cliënt de verstrekte informatie heeft begrepen.
- Als er een wettelijke vertegenwoordiger is namens de jongere, dan wordt deze hierin betrokken.
- In het cliëntendossier wordt vastgelegd welke informatie aan de cliënt is verstrekt, door wie en op welk moment.
- Zie Checklist informatieverstrekking aan cliënt

Inzagerecht, leeftijdbepalingen en uitzonderingen

De cliënt heeft recht op inzage in zijn dossier en omdat contactjournaals of registratie van verrichtingen tot het dossier behoren, zijn deze ook ter inzage. De persoonlijke werkaantekeningen behoren niet tot het dossier en zijn dus niet ter inzage, tenzij de werkers zijn aantekeningen schriftelijk of mondeling aan een ander heeft verstrekt. Het recht op inzage betekent dat de cliënt ook recht heeft op een kopie van het dossier of delen daaruit. Voor het verstrekken van een kopie mag een reasonablee vergoeding worden gevraagd.

Leeftijdbepalingen:

- Is de jeugdige jonger dan 12 jaar oefenen ouders met gezag over hun kind het inzagerecht voor hun kind uit. Is er één ouder met gezag en één ouder zonder gezag, dan oefent alleen de gezagsouder het inzagerecht uit;
- Bij jongeren in de leeftijd van 12 tot 16 jaar hebben de ouders met gezag en de jeugdige beiden inzagerecht en
- Is de jeugdige 16 jaar of ouder dan oefent alleen hij zelf het inzagerecht uit en is inzage door ouders alleen mogelijk na toestemming van de jeugdige.
  Is de jeugdige volgens de werker 'niet in staat in staat tot een reasonablee waardering van zijn belangen' dan oefenen de ouders die gezag over hem uitoefenen het inzagerecht voor hem uit.

Inzage kan geweigerd worden als:

- De belangen van de jeugdige geschaad worden, bijv bij een vermoeden van mishandeling;
- Voor zover de privacy van een ander geschaad wordt en dit privacybelang zwaarwegend is en
- Indien de jeugdige volgens de werker 'niet in staat is tot een reasonablee waardering van zijn belangen ter zake', bijvoorbeeld een verstandelijk geestelijke gehandicapte jeugdige of in geval van een wel erg zwaar probleem voor een jeugdige van die leeftijd.

Als laatste:

Voor het geven van toestemming opvragen gegevens bij derden heeft Cardea een standaard formulier. Alle formulieren voor toestemming, inzage of dergelijke worden in het dossier opgeslagen.

Als de begeleiding stopt wordt het dossier gesloten en volgens de afspraken Afgesloten dossier gearchiveerd.

Bijlage:

Registratieformulier voor inzage, raadplegen of lenen van het dossier of onderdelen daarvan.

- Raadplegen van een dossier kan alleen plaatsvinden door een aan de behandeling of begeleiding verbonden pedagogisch medewerkers, teamleiders en gedragswetenschappers.
- Wanneer een dossier mee genomen wordt naar een werkruimte, wordt dit vastgelegd in onderstaand formulier inzage dossier. Het dossier dient voor het einde van de dag weer geretourneerd te worden.
- Het toezicht op de dossiers wordt in principe uitgevoegd door de secretariaatsmedewerker van de locatie. Op de residentiele projecten is de aanwezig pedagogisch medewerker verantwoordelijk voor het toezicht op de dossiers.

Locatie:

Datum	Naam en functie raadpleger/lener	Uitgifte tijd	Retourtijd en paraaf

Appendix E – Client route of Cardea

Below one can find the client route in its original form (in Dutch), which was sent by Cardea to the author of this report. The red, green and blue highlighted sentences correspond to the ontological, infological and datalogical level of the DEMO methodology described in sub section 2.2.5. This clientroute describes the formal procedures and processes around the care Cardea provides to their clients. This client route is used to monitor the quality and the throughput time of the care provided and to achieve improvements based on this monitoring. This client route is used to make the ontological organisational model of Cardea, which describe the formal care taking processes. The organisational model can be seen in Figure 14 in sub section 0. The infological and datalogical level are not discussed, but are part of the ontological processes.

Inleiding

De Cliëntroute van Cardea heeft tot doel de formele procedures en processen rondom de hulpverlening van Cardea te stroomlijnen. Dat gebeurt door het afspreken van eenduidige processen en het vastleggen van de belangrijkste momenten in die processen. Dit maakt het bovendien mogelijk om de belangrijkste aspecten van de kwaliteit en doorlooptijd van de hulpverlening te volgen, en op basis daarvan verbeteringen te realiseren. Deze cliëntroute is daarom vooral geschreven voor de hulpverleners van Cardea en hun leidinggevenden.

Bij het samenstellen van deze cliëntroute is zo zorgvuldig mogelijk te werk gegaan om optimaal gebruik te maken van de inzichten in de verschillende projecten. Begonnen is met inventarisatie van de cliëntroute in de meeste projecten. Op basis daarvan is één cliëntroute gekozen die besproken is met de gedragswetenschappers en teamleiders. Het resultaat daarvan is besproken met sectormanagers, beleidsmedewerker en managementteam.

In mei 2006 is de conceptversie van de huidige cliëntroute door het MT op hoofdlijnen akkoord bevonden. Sindsdien zijn de details uitgewerkt en aangevuld, zijn doorlooptijden en normen toegevoegd en is de cliëntroute getoetst aan de huidige wetgeving.

Deze cliëntroute is echter óók een ideaalvisie op de werkprocessen binnen Cardea, voor de cliënt én voor de medewerkers. Als een gezin of jongere zich meldt bij Bureau Jeugdzorg is de nood hoog. Ideaal is het als:

- Het indicatiebesluit zo snel mogelijk bij Cardea belandt;
- De medewerker van Cardea binnen twee weken met de hem of haar toegewezen cliënt contact opneemt en zo snel mogelijk begint met de hulp.
- er duidelijke afspraken zijn gemaakt én nagekomen over wachttijd, start, duur en einde van het traject;
- en dit hele proces correct en tijdig is vastgelegd in, onder andere, Care4.

Ideaal? Jazeker.
Haalbaar? Eveneens, al kan dat even duren.

Samenvatting en uitleg cliëntroute

De cliëntroute beschrijft de gang van de cliënt en zijn dossier door de organisatie, inclusief het vastleggen van de stappen in CARE-4. Bovendien zijn de kwaliteitsnormen en de gewenste doorlooptijden vastgelegd. Omdat processen regelmatig veranderen (bv. nieuwe automatiseringsprogramma, beleidswijzigingen, etc.) is het altijd noodzakelijk de laatste versie van de route te gebruiken. De datum van de versie staat in de voettekst.

De cliëntroute wordt beheerd door de manager primair proces. Wijzigingen en/of aanvullingen worden eerst goedgekeurd door het management voordat deze in de route worden verwerkt.

De cliëntroute geldt voor alle projecten van Cardea met uitzondering van crisishulpverlening waar achteraf een indicatie wordt gesteld.

Elk project heeft een meer gedetailleerde beschrijving van het primaire proces. Deze routes moeten aansluiten op de algemene cliëntroute van Cardea.

Proces 0. Indicatie stellen

Nadat een indicatiebesluit is afgegeven door BJZ, wordt dit met onderliggende verslagen naar Cardea opgestuurd. Dit indicatiebesluit met onderliggende verslagen wordt naar de cliënt en Cardea opgestuurd.

Proces 1. Verwerken van de aanmelding

Het indicatiebesluit en de onderliggende verslagen wordt door de cliëntenadministratie in CARE-4 ingevoerd, er wordt een dossier aangemaakt en een kopie gaat naar de teamleiders. De cliëntenadministratie checkt de indicatie op volledigheid.

Proces S. Spoedroute

Als apart proces is in deze cliëntroute de spoedroute beschreven: een snelle procedure tussen indicatiestelling en uitvoering van de zorg.

De indicatiecommissie kan een indicatiebesluit met spoed of urgentie afgeven. Hiermee wordt een advies gegeven over de maximale uitstel van zorg. De opnamecoördinator zal samen met de desbetreffende teamleider en eventueel orthopedagoog bekijken wanneer en hoe de cliënt zorg kan krijgen. De zorg wordt zo snel mogelijk gestart.

Proces 2. Begeleiden van de cliënt tijdens de wachttijd

In situaties dat niet direct zorg kan worden geboden wordt de cliënt gedurende de wachttijd begeleid. Hiermee kan de cliënt al kennis maken met Cardea. Er wordt tevens overlegd over hoe de cliënt de wachttijd overbrugt. De cliënt kan overwegen of hij wil wachten op de zorg bij Cardea of dat hij de aanmelding intrekt. Dit wordt vastgelegd in een wachttijdverslag.

Proces 3. Uitvoeren van de zorg

In dit proces wordt de geïndiceerde zorg aan de cliënt gegeven. De in de route beschreven procedures zijn gericht op; gesprekken, verslagen, dossiervorming, standaardbrieven, verstrekken informatie aan cliënt en informatie uitwisseling met BJZ.

Proces 4. Afsluiten van de zorg

Na de uitvoering van de zorg wordt deze afgesloten met een eindgesprek en een eindverslag. Het dossier wordt door de cliëntadministratie aangevuld en voor 10 jaar bewaard.

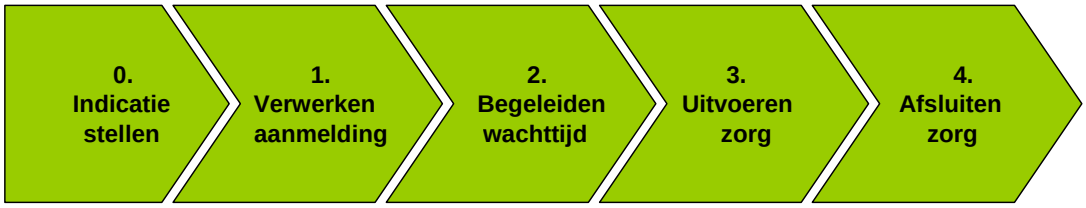
Afkortingen

De in dit document gebruikte afkortingen betekenen het volgende:

CA;	Cliëntenadministratie
CA-CB;	Cliëntenadministratie Centraal Bureau
OC;	Opnamecoördinator
TL ;	Teamleider
OP;	Orthopedagoog/ Psycholoog
HV;	Hulpverlener
WTB:	wachttijdbegeleider
BJZ;	Bureau Jeugdzorg
CM;	Casemanager
VWG;	Verslag van het Wachtlijstgesprek

SWO; Samenwerkingsovereenkomst
VGV; Voortgangsverslag
HVP; Hulpverleningsplan
WEK; Wachten Eigen Keus

Proces 0: Indicatie stellen



Doel

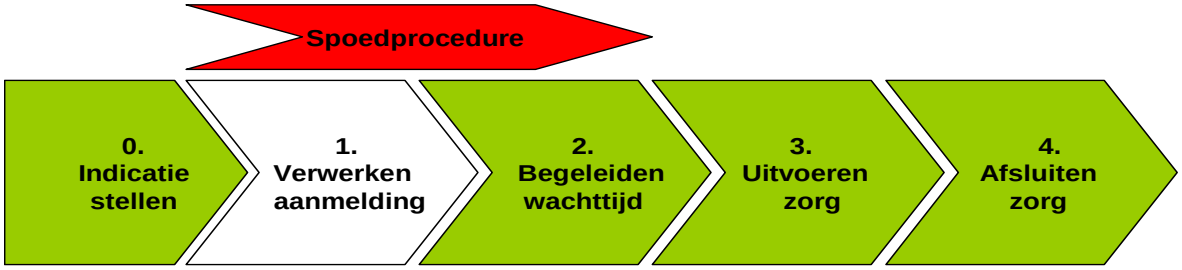
De cliënt heeft een juiste indicatie voor de benodigde hulp.

Verantwoordelijkheid

De verantwoording ligt bij Bureau Jeugdzorg.

Nr.	Activiteit	Omschrijving	Wie
0.1	Aanmelding	De cliënt meldt zich aan bij bureau jeugdzorg	cliënt
0.2	Screening Advies	-Zonodig vindt er bij BJZ een screening plaats -Aan de hand van de screening volgt er een advies -Advies wordt besproken met de cliënt	BJZ
0.3	Indicatiebesluit	-Wanneer dit advies geïndiceerde jeugdhulpverlening betreft wordt de onderbouwing geïndiceerde zorg behandeld door de indicatiecommissie -Deze geeft na goedkeuring een indicatiebesluit af, hierin staan; Hulpvraag, de functie(s): observatiediagnostiek, jeugdhulp met of zonder verblijf, doelen korte/ lange termijn -De indicatiestelling en het indicatiebesluit worden met toestemming van ouders en kind opgestuurd naar Cardea -Of de ouders sturen zelf het indicatiebesluit op naar Cardea	BJZ
0.4	Brief en indicatie versturen	Er wordt door BJZ de indicatie en een brief gestuurd naar ouders en kind waarin het besluit vermeld word inclusief naam, adres en telefoonnummer van de zorgaanbieder	BJZ

Proces 1: verwerken van de aanmelding



Doel

De registratie van de aanmeldingen worden op een gestructureerde manier verwerkt. De gegevens worden geregistreerd ter bevordering van sturing en kwaliteitscontrole.

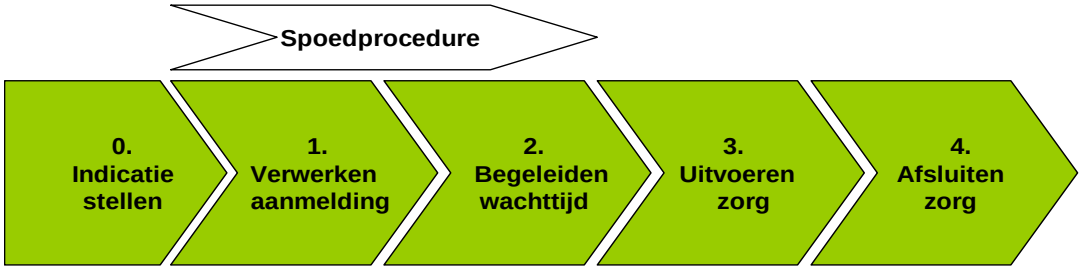
Verantwoordelijkheid

Eindverantwoordelijk voor dit proces is de manager primair proces. De OC houdt toezicht op het proces en bewaakt het.

Normale route				
Nr	**Activiteit**	**Omschrijving**	**Wie**	**Tijd**
1.1	Binnenkomen indicatie	-Het indicatiebesluit en de onderbouwing komen binnen bij Cardea -Doorgeven aan CA	Receptie	
1.2	Beoordelen indicatie	Aan de hand van de administratieve checklist de indicatie beoordelen. → B-T02 Bij twijfel bespreken met de OC Inhoudelijke beoordeling volgt in stap 2.1 / 3.1	CA-CB / OC	
		Zie procedure beoordelen indicatie Zie checklist beoordelen indicatie		
1.3	Mailen van de namen van de ingekomen indicaties	E-mailen van de namen met de bijbehorende indicaties naar de OC en TL	CA-CB	
1.4	Invoeren gegevens in CARE-4	-De cliëntgegevens invoeren in CARE-4 → B-T05 → CLIENT REGISTRATIE BIJ 1E AANMELDING, DAAROM B-T05	CA-CB	
1.5	-Ontvangst bevestiging sturen -Informatie	-Ouders (altijd) en jongeren 12+ ontvangstbevestiging sturen. -Checklist informatieverstrekking aan cliënt invullen en bij het dossier voegen	CA-CB	

	sturen			
1.6	Gegevens naar TL	Kopie van het dossier naar desbetreffende TL / campus sturen	CA-CB	
1.7	Dossier vormen	Origineel dossier op Centraal Bureau houden Zie document `Beheer van cliënten dossiers`	CA-CB	Uiterlijk eerstvolgende werkdag voor 17.00 u
Ga verder naar 2.1; begeleiden van de cliënt tijdens de wachttijd of Ga verder naar 3.1; uitvoeren van de zorg, als er geen sprake is van een wachttijd				

Proces S: de spoedroute



Deze spoedprocedure is een versnelde route tussen indicatiestelling en uitvoer van de zorg. Deze procedure omvat niet de route van de crisishulpverlening van Cardea.

Doel

De registratie van de aanmeldingen worden op een gestructureerde manier verwerkt. De gegevens worden geregistreerd ter bevordering van sturing en kwaliteitscontrole. De hulp start zo spoedig mogelijk.

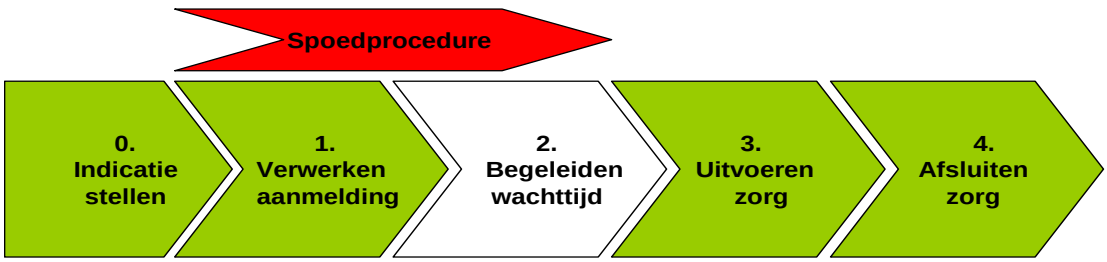
Verantwoordelijkheid

Eindverantwoordelijk voor dit proces is de manager primair proces. De OC houdt toezicht op het proces en bewaakt het.

Spoedroute (S)				
Nr.	**Activiteit**	**Omschrijving**	**Wie**	**Tijd**

S1	Binnenkomen van de indicatie	-De indicatie komt per fax binnen bij Cardea of -De indicatie komt met een genummerde envelop binnen met in groen `SPOED` erop -De fax / envelop wordt aan de OC overhandigd	Receptie	
S2	Doorlezen, doorspreken en beoordelen van de spoed-aanvraag	-Lezen en bespreken van de indicatie -Accepteren of afwijzen van de aanvraag → B-T02 Zie procedure beoordelen indicatie Zie checklist beoordelen indicatie	OC	
S3	-Invoeren -gegevens naar TL	-De gegevens worden ingevoerd in CARE-4, de code spoed toevoegen → B-T05 → CLIENT REGISTRATIE BIJ 1E AANMELDING, DAAROM B-T05 -De gegevens naar de desbetreffende TL	CA-CB	Uiterlijk eerstvolgende werkdag voor 17.00u
S4	Dossier vormen	Origineel dossier op Centraal dossier houden	CA-CB	
S5	Contact opnemen	Jongere wordt zo spoedig mogelijk geholpen	HV	Binnen 5 dagen
Ga verder naar 2.3; begeleiden van de cliënt tijdens de wachttijd of Ga verder naar 3.1; uitvoeren van de zorg, als er geen sprake is van een wachttijd				

Proces 2: begeleiden cliënt tijdens de wachttijd



Doel

De cliënt zo zorgvuldig mogelijk begeleiden gedurende de wachttijd. De cliënt is

geïnformeerd over Cardea en de wachttijd en samen met de cliënt wordt bekeken hoe de wachttijd overbrugd gaat worden.

Verantwoordelijkheid

De opnamecoördinator is proceseigenaar. Inhoudelijk is de Orthopedagoog/Psycholoog verantwoordelijk.

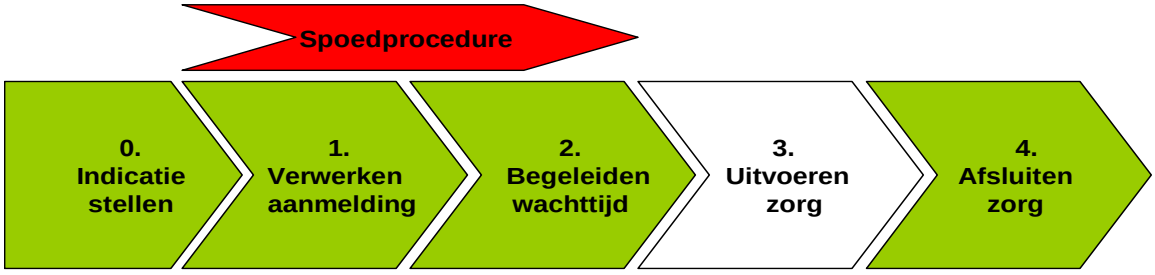
Nr	Activiteit	Omschrijving	Wie	Tijd
2.1	Beoordelen indicatie	-De indicatie lezen en checken op de inhoudelijke criteria → B-T02 Zie procedure beoordelen indicatie Zie inhoudelijke checklist beoordelen indicatie	OP of WTB onder verantwoording van de OP	Binnen 2 weken na binnenkomst indicatie
2.2	Wachtlijst gesprek	Wanneer wachttijd is voor cliënt; wachtlijstgesprek met de cliënt voeren. Dit wordt gedaan volgens de gestelde afspraak; face-to-face of telefonisch Zie werkinstructie wachtlijstgesprek	WTB Cliënt Evt. CM	Zo spoedig mogelijk. Uiterlijk binnen 8 weken na binnenkomst indicatie
2.3	-Maken en bespreken VWG -Doorgeven VWG	- Op basis van de gegevens uit het wachtlijstgesprek een Verslag van het WachtlijstGesprek maken in CARE-4 -Het VWG bespreken met de cliënt - VWG naar cliënt en BJZ opsturen - VWG doorgeven aan de CA Zie HVP Handleiding	WTB	Binnen 2 weken na het gesprek
2.4	Terugtrekking door de cliënt of WEK	Wanneer de cliënt geen gebruik wil maken van de zorg of nog wil wachten dit overleggen met CM → B-T01 → ONDERDEEL VAN T01 (CANCELLATION) Zie werkinstructie Terugtrekking Zie werkinstructie WEK / Zorgpauze	HV	Zo snel mogelijk
2.5	Overbrugging wachttijd	-De wachttijd naar de geïndiceerde zorg wordt overbrugd volgens de afspraken met de cliënt		

Ga verder naar 3.3; uitvoeren van de zorg, planning van de start

Urgentie

Wanneer de situatie van de cliënt zodanig wijzigt dat uitstel van de hulp niet verantwoord is zal er urgentie worden verleend. De hulp zal zo snel mogelijk worden gestart.

Proces 3: uitvoeren van de zorg



Doel

De uitvoering heeft tot doel de cliënt te begeleiden en hen helpen de (vooraf) gestelde doelen te behalen. Gegevens worden geregistreerd ter verbetering van de kwaliteit en ter verantwoording aan financierders.

Verantwoordelijkheid

Manager primair proces is proceseigenaar. De TL van de locatie / het project is verantwoordelijk voor de uitvoer van dit proces. Inhoudelijk is de OP verantwoordelijk.

Wanneer er geen wachttijd is begin bij 3.1
Wanneer er een wachttijd is geweest, begin bij 3.2

Nr	Activiteit	Omschrijving	Wie	Tijd
3.1	Beoordelen indicatie	-De indicatie lezen en checken op de inhoudelijke criteria → B-T02 -De TL wordt geïnformeerd en geadviseerd -Inhoudelijk acceptatie of afwijzing van de indicatie → B-T02 Zie werkinstructie beoordelen indicatie Zie inhoudelijke checklist beoordelen indicatie	OP	Binnen 2 weken na binnenkomst indicatie
3.2	-Planning van de start - Uitdelen van de cliënt aan HV - Invoeren datum uitdelen	-Bij constatering van ruimte in het caseload-overzicht, cliënt inplannen voor de hulp → B-T03 -Uitdelen van de cliënt aan hulpverlener / aanwijzen trajectbegeleider → B-T06 -Invoeren in CARE4 datum van uitdelen en naam HV / trajectbegeleider	TL	Na wachttijd 4 weken voor de start

3.3	Voorbereiding 1e gesprek	-Lezen indicatiebesluit -Uitnodigen van cliënt voor 1e gesprek -CM uitnodigen of informeren over de start	HV	Tot max. 2 weken na uitdeling
3.4	1e gesprek (face-to-face)	Face-to-face contact met de cliënt in het kader van opstarten van zorg Zie instructie gesprekken primair proces	HV	Binnen 8 weken na binnenkomst indicatie Na wachttijd zo spoedig mogelijk
3.5	-Terugtrekking of WEK door de cliënt -Doorgeven van de gegegevens	-Wanneer de cliënt geen gebruik meer wil maken van de zorg of nog wil wachten dit overleggen met CM → B-T01 → ONDERDEEL VAN T01 (CANCELLATION) -De WEK of terugtrekkingsgegevens doorgeven aan de CA met het formulier 'Terugtrekking-Wachten Eigen keus- Zorgpauze' Zie werkinstructie Terugtrekking Zie werkinstructie WEK / Zorgpauze Zie formulieren CARE-4	HV	Zo snel mogelijk
3.6	Gegevens verwerken	-WEK of terugtrekkinggegevens invoeren in CARE-4 -Brief WEK of terugtrekking sturen naar ouders / jongere en cc BJZ -Bij terugtrekking; indicatie terugsturen naar BJZ	CA	Binnen 2 werkdagen na binnenkomst formulier
3.7	Startgegevens doorgeven	Het formulier `registratieformulier start' invullen en doorgeven aan CA	HV	Binnen 2 werkdag

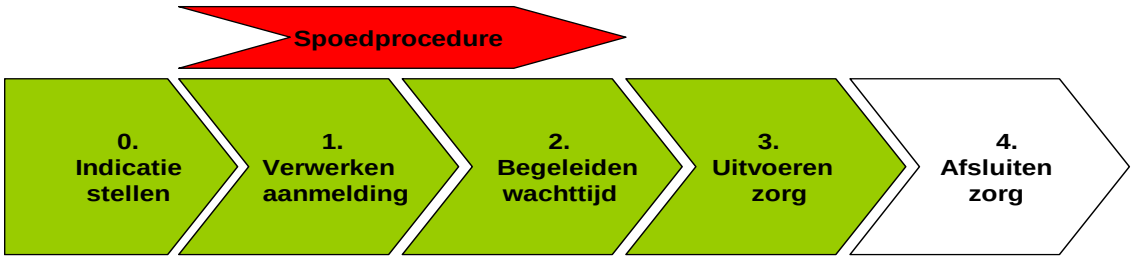
		Zie registratieformulieren Zie uitleg registratieformulieren		en na 1e face-to-face gesprek
3.8	-Gegevens invoeren -Dossier vormen -Brieven en informatie sturen	-Startgegevens invoeren in CARE-4 -Geplande einddatum invoeren in CARE-4 -Dossier maken van de indicatie en de andere gegevens samen met het controleformulier. -Personen en instanties (iig BJZ) welke zijn doorgegeven, brief sturen over start van de hulp Zie document `Beheer van cliënt dossiers`	CA	Binnen 2 werkdagen na binnenkomst formulier
3.9	Contact Registratie	Tijdstip en duur van elk face to face contact in CARE-4 invoeren	HV	Binnen 2 werkdagen bij elk face-to-face contact
3.10	aanwezigheidregistratie	Voor jongeren op de groep in CARE-4 de aanwezigheid / afwezigheid bijhouden	HV	
3.11	-Maken, bespreken en ondertekenen SWO -Dossier vormen	-Volgens de instructie de SWO schrijven in CARE-4 -De SWO bespreken met en ondertekenen door de cliënt, CM, HV en evt. OP → B-T10 -De ondertekende SWO opsturen aan de cliënt, de CM en bij het dossier voegen Zie HVP Handleiding	HV	Binnen 2 (tot max. 6) weken na 1e face-to-face gesprek
3.12	-Maken, bespreken en ondertekenen VGV -Dossier vormen	-Volgens afspraak een (volgend) VGV schrijven in CARE-4 nav een voortgangsgesprek -Dit VGV bespreken met en ondertekenen door de cliënt, CM, HV en evt. OP → B-T10 -Het ondertekende VGV doorgegeven aan de cliënt, de CM en bij het dossier voegen Zie HVP Handleiding	HV	Periodiek, min. elk half jaar

3.13	Mutaties doorgeven	Bij verandering van gegevens of mutaties het formulier `aanvullende of gemuteerde gegevens`(bv; adreswijziging, meer/ minder dagen op de groep) invullen en doorgeven aan de CA Zie registratieformulieren Zie uitleg registratieformulieren	HV	Bij mutatie binnen 2 werkdagen
3.14	-Mutatie invoeren	De mutatie in CARE-4 invoeren	CA	Binnen 2 dagen na ontvangst mutatie
Ga verder naar 4.1; afsluiten van de zorg				

Opmerking:
Wanneer tijdens de zorg een intensieve CM nodig is of een onderzoek gewenst is deze aanvragen via de OC. Wanneer een aanvullend of een andere indicatie nodig is dit met de cliënt en de CM bespreken. Wanneer de hulp langer gaat duren dan de gestelde termijn in het indicatiebesluit dit 4 weken voor afloop van het indicatiebesluit met de cliënt/ CM overleggen.

Zie werkinstructie aanvraag intensief CM
Zie werkinstructie aanvraag diagnostiek

Proces 4: afsluiten van de zorg



Doel
Een eenduidige manier van afsluiten van de zorg van ieder hulpverleningstraject. Gegevens worden geregistreerd ter bevordering van sturing en kwaliteitscontrole.

Verantwoordelijkheid
Manager primair proces is proceseigenaar. De TL van het project is verantwoordelijk voor de uitvoer van dit proces. Inhoudelijk is de OP verantwoordelijk.

Nr	Activiteit	Omschrijving	Wie	Tijd
4.1	Besluit einde zorg	-Vaststellen van de einddatum → B-T04 -Einde zorg bespreken met CM	TL	
		Bij uitzetting / ongepland vertrek; zie werkinstructie ongepland vertrek		
4.2	-Maken, bespreken en ondertekenen eindverslag -Dossier vormen	-Eindverslag schrijven in CARE-4 -Eindverslag bespreken met en ondertekenen door de cliënt, CM, HV en evt. OP → B-T10 -Het ondertekende eindverslag doorgeven aan de cliënt, de CM en bij het dossier voegen	HV	Bij einde hulpverlening Binnen 2 weken
		Zie HVP Handleiding		
4.3	Gegevens doorgeven	-Met het registratieformulier `eindformulier` de cliëntgegevens doorgeven aan de CA	HV	Binnen 2 werkdagen na einde hulpverlening
		Zie registratieformulieren Zie uitleg registratieformulieren		
4.4	-Invoeren in CARE-4 -Brieven sturen	-Eindgegevens invoeren in CARE-4 -Personen en instanties (iig BJZ) welke zijn doorgegeven brief sturen dat de hulp gestopt is	CA	Binnen 2 werkdagen
4.5	Dossier bewaren	-Wanneer de jongere geen verdere hulp binnen Cardea krijgt; dossier naar CB -De gegevens blijven voor 10 jaar bewaard in het archief	CA	
		Zie document `Beheer van cliënten dossiers`		

Als laatste

De verschillende processen en processtappen van de cliëntroute worden gevolgd in de reguliere managementrapportages om zicht te houden op de voortgang en kwaliteit van het proces. De belangrijkste indicatoren en normen van het primaire proces zijn te vinden in het document `Managementrapportage en meten van processen`.

Deze route is voor elke cliënt binnen Cardea, tenzij door wet- en regelgeving anders wordt beslist of met uitdrukkelijke toestemming van de manager.

Appendix F – ATD and TRT of Cardea

In Figure 33 one can see the global ATD of Cardea. Here we see the three main business processes which are carried out between Cardea and their clients.

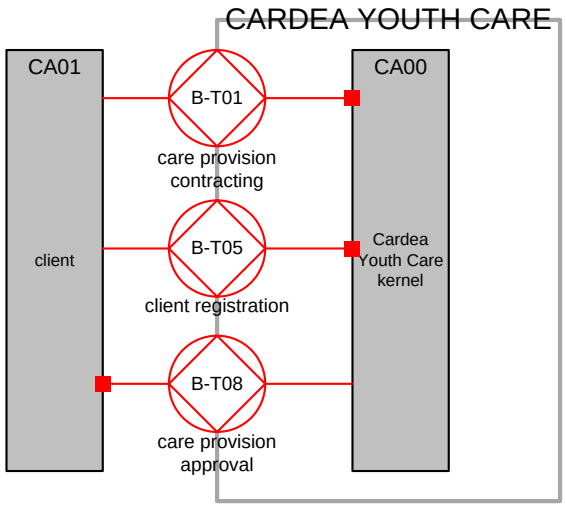


Figure 33 – Global ATD of Cardea

	Transaction type		Result type
B-T01	care provision contracting	B-R01	*care provision CP has been contracted*
B-T02	indication evaluation	B-R02	*indication for care provision CP has been evaluated*
B-T03	care provision scheduling	B-R03	*care provision CP has been scheduled*
B-T04	client registration	B-R04	*client CL has been registered*
B-T05	care provision delivery	B-R05	*care provision CP has been delivered*
B-T06	care program fulfilment	B-R06	*care program of care provision CP has been fulfilled*
B-T07	care program composition	B-R07	*care program for care provision CP has been composed*
B-T08	care provision approval	B-R08	*care program of care provision CP has been approved*

Table 24 – TRT of Cardea

Table 24 depicts the transactions that Cardea (kernel) executes for and that it initiates in its environment. Together with the actor analysis matrix and the organisation component of the concept of the Alares 'knowledge environment', the several actor roles and responsibilities can be defined within the organisation. Along with this TRT and the actor analysis matrix the detailed ATD of Cardea is given, as can be seen in Figure 34.

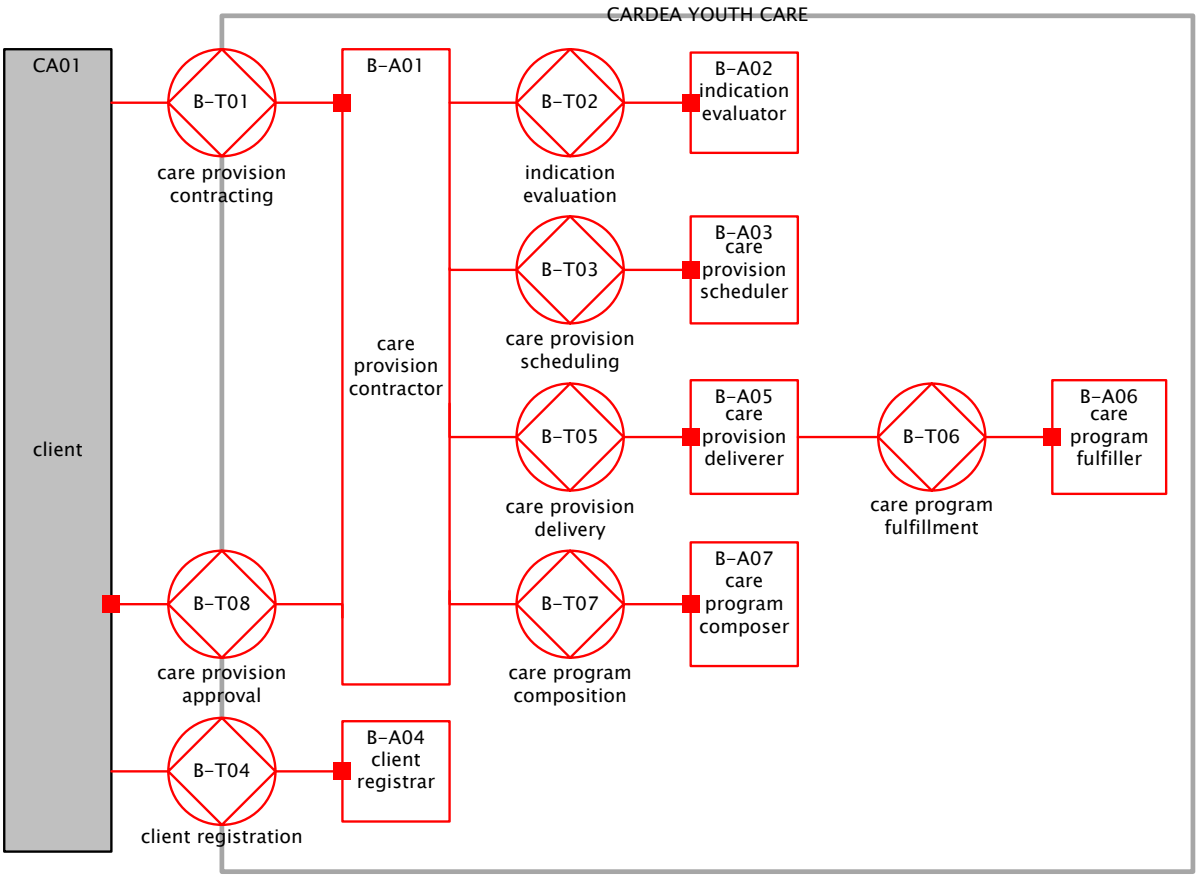


Figure 34 – Detailed ATD of Cardea

Appendix G – Actor Analysis Matrix

In DEMO an actor role is defined as:"Actor roles are elementary chunks of authority and responsibility, fulfilled by subjects" [4]. In other words, an actor role can only have one responsibility. Consequently, a single glance at Table 25 should make clear which responsibility is linked to a certain actor/position. This actor analysis matrix can be used to analyse the organisation according to the organisation component of the concept of the Alares 'knowledge environment'. This component defines the organisational structure and identifies the responsibilities/roles employees have in the organisation. The actor analysis is done according to the client route, which can be found in Appendix E – Client route of Cardea and is not translated into English because it has no added value when translated. Each actor/position is grouped into actor roles according to its responsibilities. Each actor can fulfil more than one actor role and each actor role can have more than one actor, but there is only one actor who has the main responsibility of a specific actor role. Each actor role either initiates or executes a transaction, as can be seen in Figure 34. There where there is a delegated responsible actor, it is advisable to only have one actor being the main responsible one. This is to take away the ambiguity of who is mainly responsible for some activities.

Legenda:

E = main responsibility

X = delegated responsibility (one can see from the table that the CA-CB can evaluate the indication, but the main responsibility still lies at the OC)

Nr.	Actor rol	CA	CA-CB	OC	TL	OP	HV	WTB	CM	R	Verantwoordelijkheden
B-A01	Zorgvoorziening		X	E							• Committeren aan verlenen zorg

	contracterende										• Terugtrekking door de cliënt of WEK (2.4, 3.5) → ONDERDEEL VAN B-T01 (CANCELATION)
B-A02	Indicatie beoordelende		X	E		X		X			• Aan de hand van administratieve checklist indicatie beoordelen. Bij twijfel bespreken met OC (1.2) • Lezen en bespreken van de indicatie. Accepteren of afwijzen van de aanvraag (S2,3.1) • Indicatie lezen en checken op inhoudelijke criteria (2.1,3.1)
B-A03	Start hulp plannende				E						• Bij constatering van ruimte in caseload overzicht, cliënt inplannen voor hulp (3.2) • Vaststellen einddatum. Eind zorg bespreken met CM (4.1)
B-A04	Client registrerende		E								• Cliëntgegevens invoeren in CARE-4 (1.4) • Gegevens worden ingevoerd in Care4, code spoed toevoegen (S3)
B-A05	Zorg voorzienende						E				• Uitdelen van cliënt aan HV (3.2) → Het aannemen om hulp te verzorgen
B-A06	Hulpprogramma uitvoerende						E				• Het verzorgen van de hulp
B-A07	Hulpprogramma opstellende			E	X						• Samen met de cliënt en de aansprakelijkheid in het indicatiebesluit wordt het hulpprogramma opgesteld

Table 25 – Actor Analysis Matrix

Appendix H – Process Models

Here one can find all the six business processes graphically shown in a process step diagram. The six business processes of Cardea are:

1. contracting/evaluation
2. scheduling
3. registration
4. delivery/fulfilment
5. composition
6. approval

These models are made to give a better understanding of the several business process steps and can be used to optimize these processes if necessary. By optimizing the business process steps, Cardea can improve the quality of their services thus professionalising their services.

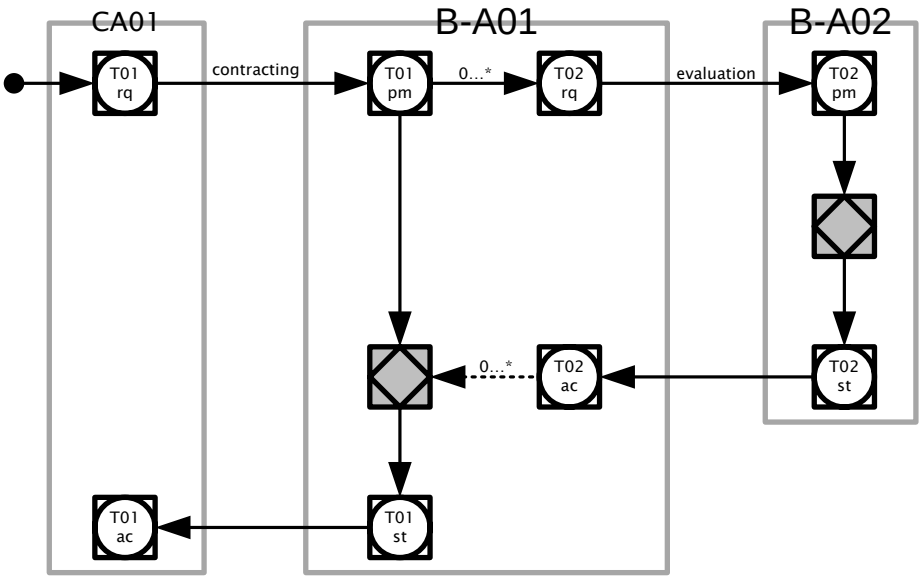


Figure 35 – PSD of business process 1 of Cardea

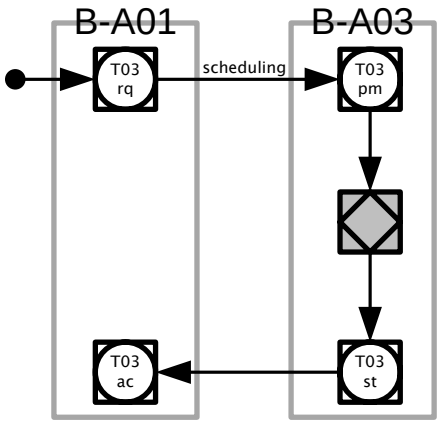


Figure 36 – PSD of business process 2 of Cardea

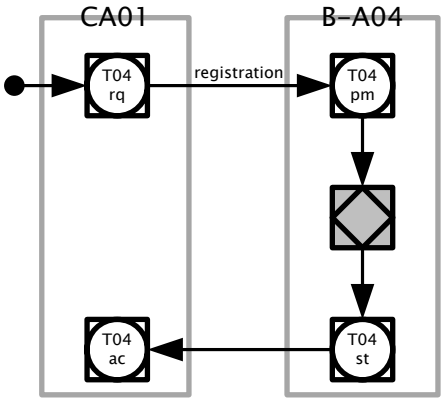


Figure 37 – PSD of business process 3 of Cardea

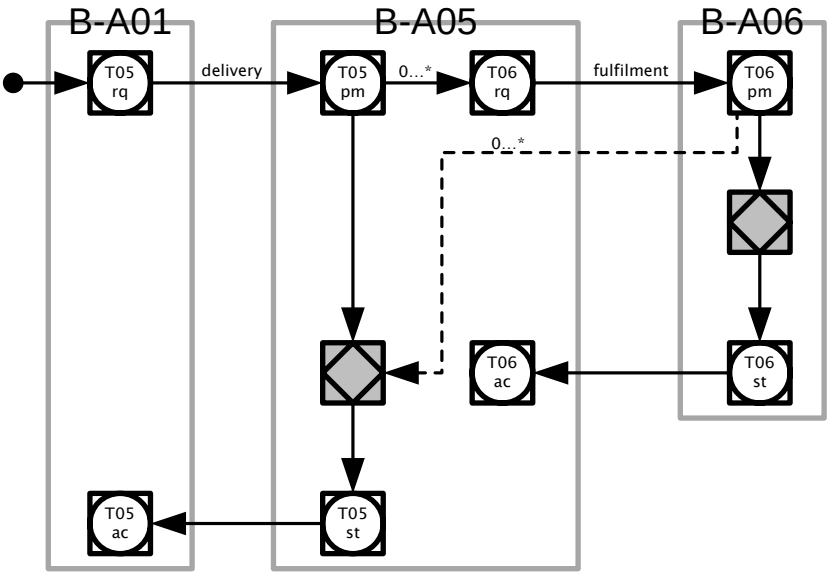


Figure 38 – PSD of business process 4 of Cardea

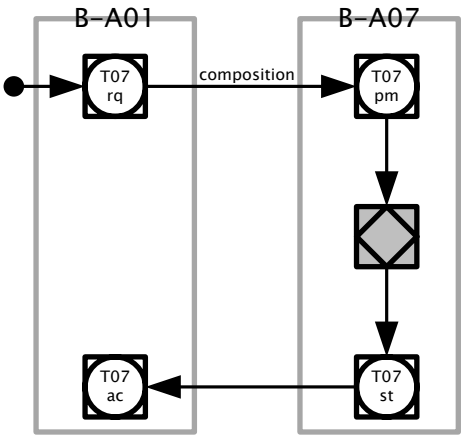


Figure 39 – PSD of business process 5 of Cardea

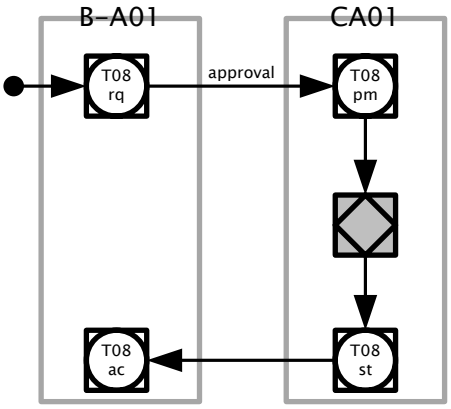


Figure 40 – PSD of business process 6 of Cardea

Appendix I – Legislations

Appendix I1 – Digital Signature describes the legislations on digital signatures and the several kinds of digital signatures defined. Appendix I2 – Digital Archiving describes the legislation rule on digital archiving. By taking these legislations into account, Cardea can decide if they are ready to introduce a digital signature for their digital records. Furthermore they can check wether the current digital archiving method is according to the legislation described here. During this project we did not carry out a very deep research on the subject of digital signature and digital archiving, but we did mention because we found it necessary to take into consideration. Appendix I3 – Client Data Handling describes the legislation concerning handling client data.

Appendix I1 – Digital Signature

Legislation

The "Wet Elektronische Handtekening" is used since May 8th, 2003. This law concerned the adjustment of the Civil Code of Law (Burgerlijk Wetboek) and the Telecommunication law. The purpose of a digital signature is to provide:

- certainty concerning the identity of the sender of electronic data (authenticity)
- certainty concerning the immutability of transmitted electronic data (integrity)

The definition of the digital signature can be found in art. 15a book 3 BW. Below one can see the definition for **digital signature** according to book 3 BW (art. 15a) in Dutch:

> *"Een elektronische handtekening heeft dezelfde rechtsgevolgen als een handgeschreven handtekening, indien de methode die daarbij is gebruikt voor authentificatie voldoende betrouwbaar is, gelet op het doel waarvoor de elektronische gegevens werden gebruikt en op alle overige omstandigheden van het geval."*

This definition says that a digital signature has the same juridical consequences as a handwritten signature if and only if the method used for authentication is trustworthy enough, regarding the objective for which the digital data was used and on all other circumstances for that case. In other words a digital signature is a signature that consists of

digital data which are attached to or are logically associated with other digital data and which are used as a way for authentication. This means that if a signature does not match this definition for a digital signature, we cannot speak of a digital signature. As an example one can think of: a username/password combination, clicking 'agreed' or 'order' on a website or sending along a scanned signature.

Three kinds of digital signatures can be distinguished:

1. the basic digital signature
2. the advanced digital signature
3. the qualified digital signature

The basic digital signature

This signature consists of digital data which are attached to or logically associated with other digital data and is used as a way for authentication.

The advanced digital signature

This signature has four requirements:

- the signature is uniquely attached to the signer
- the signature makes it possible to identify the signer
- the signature is established by ways of which the signer has full control
- the signature is connected to the digital document of concern in such a way that every adjustment of the date done afterwards can be traced

The qualified digital signature

This is an advanced digital signature which also:

- uses a certificate issued by a Certification Service Provider ("Certificatiedienstverlener (TTP)) which is a member of the Opta.
- has been commented by TTP as qualified
- has been made in a secured way by using e.g. a smartcard, a usb token
- includes checking the identity face-to-face of the future user and not by e.g. by mail with a copy of his/her identification

What is the difference?

The qualified digital signature is equal to the handwritten signature according to the evidence law (bewijsrechtelijk opzicht): the validity is adopted. If someone claims that the signature is false, this should then be proven by the counterpart. Of other digital signatures, the signer is responsible for proving that the used signature is sufficiently reliable and valid, unless the court sets a reverse burden of proof.

Appendix I2 – Digital Archiving

Legislation[18]

Based on the "Archiefwet 1995" and the "Archiefbesluit 1995" records must be in a good, orderly and accessible state and kept up to the moment that they can be destroyed on basis of determined disposal list. This holds for both paper and digital records; laws and legislations make no distinction and are therefore applicable to both.

Appendix I3 – Client Data Handling

Privacy

With the introduction of online records Cardea must take the privacy aspects into account. They have to deal with legislation and regulation issues before they can implement online records. The "Wet op Geneeskundige Behandelingsovereenkomst (WGBO)" and the "Wet Bescherming Persoonsgegevens (WBP)" are the most important legislations that are of importance, because these regulations focus on the way an organisation must handle privacy sensitive data. The "College Bescherming Persoonsgegevens (CBP)" is the organisation which ensures that these laws are applied. Client data must not be available for everyone because also have the right for privacy and that their data is being handled with care. Before someone else than the care taker of a client wants to read the client record, clients need to give explicit permission to do so. Professionals on the other hand have to take their responsibilities and keep the professional secrecy in mind. This secrecy says that every professional has to handle client data with care and must not provide any client information under no circumstances. Because of this privacy issue working with digital records has impact on the organisation in the sense that they have to organize this and ensure the privacy of their clients. If the privacy of client data cannot be guaranteed, clients will be against the use of online records.

[18] http://www.ejure.nl/dossier_id=303/f_dossier/dossier.html

Appendix J – Implementation Variants

Cardea wants to introduce digital records into their organisation, but how will they do this in the work area of the organisation? In order to do this many choices can be made. One can think of first introducing it at one location at a time or at all of the locations at once. One can also think of the fact that employees will register all activities digitally from a certain moment in time or will certain contact moments be registered digitally only. The choices regarding the introduction of digital records are part of the implementation plan. Because many aspects play a role during the introduction, many different implementation variants are conceivable. Some of these alternatives are obvious than others and the best option depends on the local situation. This sub section gives some implementation variants which describe how digital records can be introduced in the organisation [41].

Many implementation variants can be distinguished, whereby we describe a "minimum" and a "maximum" variant which serve as a (theoretical) starting point; they reflect the theoretical extremes and all other variants can be described between these extremes. In practice, these starting points are less realistic because the benefits outweigh the disadvantages of these variants. Table 26 gives an overview of the minimum and maximum implementation variant.

Starting point for implementation variants		Consequences
Minimum	▪ Digitise every contact moment for each new child starting from e.g. January 2010 ▪ Keep on working with paper records ▪ Not convert existing data	▪ Time to market is very long. Without conversion data last paper records remains until 2033 (this is when children who are 1 year old in 2010 become 23 years of age). Two working methods for a very long time ▪ Less seizure on the organisation, but because there are many contact moments in the first life year, it still has considerable implementation work (in the sense of training personnel, sufficiently adequately equipped workplaces) ▪ Advantage (gradual growth) does not outweigh the drawbacks of his approach

Maximum	▪ Digital registration of all activities between 0 – 23 years of age from e.g. January 2010 ▪ Convert existing data	▪ Rapid realisation of the goal: total digitalisation in 2010 ▪ Very large seizure on the organisation and finances ▪ Is complete conversion useful and necessary in relation to the large effort it demands?

Table 26 – Minimum and maximum implementation variants

One can think of any possible variants within these two extremes, depending on the local situation the organisation is at the moment they want to introduce working with digital records.