



SAILA HUUSKONEN

Recording and Use of Information  
in a Client Information System  
in Child Protection Work



ACADEMIC DISSERTATION

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# ABSTRACT

Client-information systems have been part of social workers' daily work for quite some time. These systems are expected to support work tasks in direct client-work practice but also to provide aggregated information for organizational and societal needs. Evidence as to how recording and use of information in a client-information system (CIS) are integrated into social workers' work tasks is still very scarce, however.

The objective of the thesis is to explore interconnections among social workers, client information, and CIS solutions in child-protection work. The main research question is this: How do social workers record and use information in client-information systems in child-protection work? The question is answered through analysis of three relationships in this setting: user–system, user–information, and information–system.

Data were collected in three Finnish municipal social-service organizations providing in-home services in child protection in 2008. The datasets comprise two types of qualitative data. Firstly, semi-structured interviews were conducted with social workers ( $n = 23$ ), social-work managers ( $n = 7$ ), and system administrators ( $n = 3$ ). Secondly, observation sessions coupled with verbal accounts ( $n = 12$ ) were realized with social workers through a think-aloud method while they used a CIS in their actual work tasks. Analysis was carried out separately for each of four subsidiary studies (I–IV) in the thesis project, each supported by a framing conceptualization involving client process, temporal trajectory, workarounds, and recording process.

The findings indicated that information was recorded and used in various forms and for various purposes in the course of a client process. The social workers were active agents in their relations to information and the CIS. They recorded information selectively, on the basis of intentional and unintentional choices made as the recording process progressed from oral encounter to CIS entries. The information was also used selectively, with social workers employing various distinct kinds of reading tactics. The social workers used workarounds within and outside the CIS to facilitate more effective information interaction: the CIS did not provide an adequate overview of a client case, because of insufficiently developed technical properties but also since information was recorded as time-sliced bits and pieces. The study suggests that social workers' work performance, information, and CIS use are highly dependent on each other.

The thesis makes several general contributions to understanding of task-based information interaction and information behavior as a process. The work also led to practical suggestions for rectification of CIS shortcomings.

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January 1, 2014

Saila Huuskonen



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# LIST OF ORIGINAL PUBLICATIONS

This dissertation comprises the following four publications, which are referred to in the text as studies I–IV.

- I      Huuskonen, S. & Vakkari, P. (2010). Client information system as an everyday information tool in child protection work. *Proceedings of the Third Symposium on Information Interaction in Context (IliX '10)*, New Brunswick, New Jersey, USA, 3–12. doi: 10.1145/1840784.1840788.  
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- II     Huuskonen, S. & Vakkari, P. (2011). Client's temporal trajectory in child protection: Piecing information together in a client information system. *Human–Computer Interaction – INTERACT 2011, Lecture Notes in Computer Science 6949*, 152–169. doi: 10.1007/978-3-642-23768-3\_13.  
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- IV     Huuskonen, S. & Vakkari, P. (2013). Selective clients' trajectories in case files: Information filtering in recording process in child protection. *British Journal of Social Work*, Advance Access published September 24, 2013. doi: 10.1093/bjsw/bct160.

The first author collected the data, performed the data analysis, and was in charge of writing the articles. Professor Pertti Vakkari supervised and commented on the work throughout the research process.



# 1 INTRODUCTION

Information behavior is not a separate phenomenon but associated with various triggering tasks and interests (Vakkari, 2003). For instance, Järvelin and Ingerwersen (2004) suggest that: “information seeking research needs extension towards tasks and technology.” So far, task-based approaches have been exploited primarily in such contexts as molecular medicine (Kumpulainen & Järvelin, 2010; Kumpulainen & Järvelin, 2012), public administration (Byström & Järvelin, 1995; Byström, 1999; Saastamoinen et al., 2012), and software engineering (Freund et al., 2005; Freund, 2008). Although task-based approach has gained a footing over the past couple of decades in information science, we still have only a haphazard, far from comprehensive understanding of how work tasks interact with seeking and use of information.

Human services are a significant part of our society, making a great impact on people’s lives and well-being. Information on clients is needed if the associated service tasks are to be carried out properly. The practitioners operate with client information in face-to-face encounters and by employing client-information systems. Human services offer a unique environment for learning more about task-based information interaction. Implications for further development of recording practices and properties of a client-information system (CIS) can be discovered if practitioners’ interaction with information and the existing technologies are analyzed in depth.

Information science has long been interested in professionals’ information needs and information seeking in general (Case, 2012). Social workers were given particular focus in this connection in the 1970s (Wilson & Streatfield, 1977; Wilson et al., 1979). Regardless of this long tradition in the information behavior research, there is a shortage of studies that analyze information behavior as a process and, especially, information use as part of this process (Vakkari, 2008). In document studies too, it has been pointed out that the production and use of records (i.e., the process), not just their content, should be considered cornerstones in the research (e.g., Prior, 2004).

A lack of studies considering the interplay between technology and work has been acknowledged in social-work research also (Rafferty & Steyaert, 2009). The focus in many previous studies has been on implementation processes as a phenomenon and on social workers’ attitudes and expectations related to a CIS (e.g., Dearman, 2005; Hall et al., 2010; Moses et al., 2003; Savaya & Waysman, 1996; White et al., 2010).

Far less is known about practitioners' ways of interacting with information and client-information systems in their everyday work. Specifically, very few studies examine how information is used.

Recording and CIS use are essential parts of daily work tasks in various branches of social work. The recorded information is vital in supporting direct client-work practice, and, in addition, aggregated information from "on the ground" serves as a knowledge base for the organizational and societal levels (Steyaert, 1997). This study is particularly interested in what takes place in the context of child protection. Integration of a CIS into social-work practice and making it a convenient tool for social workers in the multifaceted, pressure-filled, and sensitive context of child protection is not so straightforward. According to Munro (2005), the design of the tools and technologies should be guided by a realistic picture of the task of child protection and these tools should be assessed in terms of their ability to support practitioners in their work. The tools should match the work task at hand. By exploring the use of these tools in the work tasks, research can inform the design of technologies that better match the practice.

Recording and recording tools are topical in many countries. In Finland, development of information systems and a national client-data repository covering all social care is in progress (see <http://www.thl.fi/sostiedonhallinta>, in Finnish). This national endeavor will guide the coming CIS development and establish a framework for it. Nationwide child-protection information systems have already been implemented in the United States and Great Britain, with British experiences having already shown limited success in this undertaking: the system developed fails to address the needs of practitioners (e.g., Bell & Shaw, 2008; Ince & Griffiths, 2011).

A CIS is much more than a technical device. It has content in itself and also, at root, is assessed on the basis of the quality of the information recorded (Munro, 2005). Social workers have an active role in shaping the content because they are the ones who record the information in the first place. Indeed, a CIS can be understood as consisting of three dynamically interconnected components: a user, an information resource, and an intermediary mechanism between the two (cf. Belkin, 1984). These interconnected components can be approached and analyzed synergistically or as two-way relationships (Toms, 2002).

The present study enriches our understanding of the interaction of users, information, and CIS in one specific work context. It provides new knowledge about information interaction as a two-way process wherein information creation and use exist in a dynamic relationship. The thesis explores **how social workers record and use information in a CIS in their child-protection work** and thus enhances our understanding in several ways. It provides a micro-level analysis of use of a task-specific information system as part of daily work tasks in child protection. It contributes to our

understanding of how the use of the system and information recorded in the system are patterned. It illuminates information behavior as a process and identifies several tactics in recording and information use, and it approaches recording as a process from an oral encounter to the use of the CIS and reveals several reasons for some information being filtered out from the records. The study suggests that the user, information, and information system are not isolated elements but closely interconnected. In sum, a CIS alone does not provide a holistic view of a client case. The view depends also on what gets recorded in the CIS and how that information is interpreted. Social workers as recorders and as information-users thus have an active role.

Information science has been described as an interdisciplinary (Bates, 1999; Saracevic, 1999) and infrastructure-oriented (Sonnenwald, 2013) discipline that contributes to many other fields of study. Fidel (2012) points to one excellent motivation for an interdisciplinary approach in human–information interaction research: real-life phenomena do not honor boundaries between disciplines. This fact is most evident in the present study. The thesis is an interdisciplinary effort whose findings contribute particularly to information science and social-work research.

The articles forming part of this thesis have been published in forums of information science (studies I and III), human–computer interaction (Study II), and social-work research (Study IV). The following approaches were applied in the articles: The first article studied recording and use of information in a CIS in various stages of a client process. The focus in the second article was on the presentation of a client's temporal trajectory in the CIS. The third article depicted social workers as active agents who created their own workarounds to bypass inbuilt constraints and functionality gaps in the CIS. The fourth article explored how information was filtered out from case records in the course of the recording process.

The thesis is organized as follows. The second chapter begins with a brief overview of the characteristics of child protection. Then, the role of recording and client-information systems in social work is discussed. The third chapter reviews empirical studies related to recording and client-information systems in social work. The research environment and the methods employed in this study are addressed in Chapter 4, and the fifth chapter summarizes the major findings from the individual sub-studies (I–IV). Discussion is presented in Chapter 6, and the final chapter shares a few brief notes on conclusions.

## 2 RECORDING AND CLIENT-INFORMATION SYSTEMS IN SOCIAL WORK

The purpose of this chapter is to describe the context wherein the use of a client-information system and the associated recording generally take place. The first part of the chapter gives an overview of the characteristics of child protection in Finland. The second part takes a look at current perspectives regarding the role of recording in the context of work tasks and at the various requirements they impose for recording. Finally, the reader is introduced in brief to the role of client-information systems in the social-services landscape.

### 2.1 The societal context of child protection

The child-protection work is characterized differently in different societies and cultures (Beckett, 2007). Commonly, two approaches to child-protection work have been distinguished: welfare-oriented work seeks to promote the well-being of a child more extensively and respond to the child's and family's needs also in a preventive manner, while protection-oriented work reacts mainly to the existing risks of maltreatment or abuse and to other problematic issues in the child's life. Finnish child protection is welfare-oriented. (Pösö, 2007.) However, even in Finland, child protection has been defined in diverse ways, which depend on the time, context, and actors (Pösö, 2011). For instance, municipalities may have a distinct standpoint in child protection because there are local variations in the distribution of work, organization of services (Heino & Pösö, 2003; Pösö, 2007), and service content and availability (Heino, 2008).

Child protection has been described as a public intervention and involuntary control in private and unique family lives, on the one hand, and as a service, on the other (Pösö, 2007; Pösö, 2010). The services are statutory activities of public authorities, with the major actors being the municipal ones, whose aim is to support families and protect children (Pösö, 2011). The emphasis in child protection is on supportive and open care measures (Hearn et al., 2004) that are voluntary for the families (Jahnukainen et al., 2012). Open care measures include psychosocial, financially oriented, practical

supportive services (Pösö, 2011). The last couple of decades have witnessed a shift from family-oriented services toward more child-centric work. This has resulted in the introduction of some new methods of working with children (e.g., interviewing children and running children's groups). The shift has affected recording practices too. A practice of organizing case files by child's name has come to replace arrangement of files according to custodian's name. (ibid.)

The current version of the Child Welfare Act (417/2007) gave structure to what had been an unclear client-management process (see Heino, 1997) and specified time limits for the service actions, especially at the beginning of the process. The process for clients starts with a child-welfare notification, an application made by a child or guardian(s), or a social worker's attention being drawn to a child by some other means. The process continues with a preliminary assessment, which has to be carried out within seven working days. If there is a need to continue the client process, a structured and more detailed assessment of the child's situation must be realized within the next three months. If the child remains a client after this investigation, a client plan is prepared and services are organized. At some point, the client relationship in open services is terminated, either because there is no need for the services or because open services do not suffice and the child is to be taken into care. (Heino, 2008; Pösö, 2011.)

Statistics testify to children entering child-protection services in Finland in increasing numbers. The figure doubled in the decade between 1997 and 2007 (Heino, 2011), and the trend of increase has continued in the five years since (see Table 1). Currently, over six percent of children up to 20 years of age are receiving child protection open services. There are several explanations for the growth in these statistics: 1) families have more problems; 2) there have been changes in statistics practices and methods of collecting data; 3) legislation has brought changes to, for example, the duty to record cases and to notification duties; 4) the absence of other basic services leads to more children being directed to child protection for at least some help and 5) changes in the cultural norms of seeing childhood and family life (Forsberg & Ritala-Koskinen, 2012).

Table 1. Children in child-protection services in Finland in 2007–2011 (data from <http://www.sotkanet.fi/>)

	2007	2008	2009	2010	2011
Community-based interventions	62,485 4.8%	67,347 5.2%	70,787 5.5%	78,633 6.1%	81,459 6.3%
Placement of children outside the home	16,190 1.2%	16,899 1.2%	16,840 1.2%	17,175 1.3%	17,409 1.3%

There are often several overlapping and context-bounded reasons for entering child-protection services (Pösö, 2010). Typical reasons include parents' substance abuse or mental-health issues and family conflicts but also problematic behavior of adolescents related to trouble in school, crimes, substance abuse, and mental-health concerns (*ibid.*). According to Hearn et al. (2004), child-protection issues are often viewed as pointing to concrete social, emotional, and interaction-related difficulties in the families.

Finnish child-protection services face considerable challenges nowadays. These manifest themselves mostly in relatively high staff turnover (e.g., Kananoja, 2012) and in lack of both financial and human resources (Pösö, 2011). Naturally, these conditions have a direct impact both on clients and on workers. The clients have to wait for the services (*ibid.*), while the workers, in turn, struggle with heavy caseloads<sup>1</sup> and, on account of the associated haste, are forced to focus on working with only the most urgent cases (Pösö & Forsman, 2012) and to prioritize their work tasks (Forsman, 2010).

## 2.2 Recording as a work task in child protection

Commonly, the tasks of social workers are characterized as human-centric when they involve encountering, creating connections with, and cooperating with people (Heino, 2008; Kääriäinen, 2000), including children, with their families, and other professionals and authorities (Pösö & Forsman, 2012). Recommendation from Finland's Ministry of Social Affairs and Health posit a social worker as a leader of a client process who has the following major tasks and responsibilities during that process: deciding whether to open a case or not, preparing a child-welfare assessment and a client plan, preparing and making decisions (e.g., about services and taking into custody), and performing consultation and psychosocial client work. In addition, a social worker is expected to collect and convey wider information about the clients to support general planning work for child protection. (Sarvimäki & Siltaniemi, 2007.)

The Finnish classification of social workers' casework functions presents those activities and measures that social workers carry out in direct interaction with a client. The classification organizes tasks in relation to a client process. The classification comprises 16 major categories, which include tasks such as assessing client's situation, carrying out themed conversation, organizing services, and closing the case. Recording was excluded from the classification because it is not about face-to-face encounters

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1 According to the Finnish social workers' trade union, Talentia, for the tasks to be carried out appropriately, the number of families per social worker should not exceed 30 when there are 1–2 children in a family. The number of client families should be lower if there are more children per family. ([http://www.talentia.fi/files/87/Mitoituksen\\_linjaus.pdf](http://www.talentia.fi/files/87/Mitoituksen_linjaus.pdf))



with a client. Instead, recording, including both reading and writing, was considered a supportive task to direct client work, though its time-consuming nature was recognized. (Kärki, 2007.) Task analysis conducted among child-welfare workers in the USA captured the diversity of work by itemizing over a hundred individual work tasks of the workers. The typology created on the basis of that analysis situated case recording in the wider category of “general tasks in case management – case recording and referrals.” However, when associated with a computer, recording was categorized as “administrative tasks – paperwork”. (Perry & Murphy, 2008; Perry, 2009.)

The instrument used by Finnish social workers’ trade union (see <http://www.talentia.fi/files/65/Mitoitus.pdf>, in Finnish) states what the union deems to constitute a moderate amount of work for social workers and simultaneously defines and takes a stand on the work tasks. The instrument distinguishes between direct client work and indirect client work, which it states should take 60% and 40% of working hours, respectively. Direct client work includes such tasks as appointments with clients, planning, decision-making, and recording. Recording is not defined as a bureaucratic task but placed in the same category as face-to-face encounters with clients. Indirect client work, in turn, includes, for example, organizational meetings and reporting at organization level.

There is only scant evidence as to how social workers actually allocate their work hours across the various tasks and, specifically, how much time they invest, on average, in the recording of a client case. The Finnish research solely refers to a shortage of time for carrying out all of the tasks properly. The prioritization of face-to-face encounters with clients may result in ignoring or postponing recording later (Huuskonen et al., 2010b; Pösö & Forsman, 2012).

British studies depict social workers’ use of time in the past few decades in a somewhat more comprehensive manner. In an interview-based study conducted in the late ’80s and early ’90s in Great Britain, the social workers ( $n = 28$ ) estimated that they spent a fifth of their work time on “paperwork” (Prince, 1996). Roughly two decades later, a survey of some 2,200 British social-work professionals revealed that over half of the workers spent at least 60% of their working hours on “administrative work” as opposed to direct contact with clients (Samuel, 2005). Unfortunately, the report does not explicate in more detail the share of case-related recording in the administrative tasks. Research in 2007–2008 that relied on focus groups with practitioners in child-protection services concluded that indirect and administrative tasks could take up to 80% of work hours, though there was variation (Holmes, 2009).

A recent study based on a sample of 1,153 social workers in the United Kingdom combined survey and time-use diary methods to measure social workers’ use of time. The results indicated that client-related work took approximately three quarters of the

work time and that direct contact with service-users accounted for about 26% of this, case-related recording about 22%, and other case-related tasks 25%. Therefore, the rest of the client-related work, categorized as “sundry,” covered about a quarter of total working hours. Interestingly, social workers using an electronic recording system spent more time on recording than those who did not, with the percentages for the two groups being 23% and 18%, respectively. (Baginsky et al., 2010.) According to Baginsky and colleagues (2010), time spent in face-to-face work with clients has remained relatively static over the years and the changes in the distribution of time use have taken place among the social workers’ other work tasks. The diversity in researchers’ ways of categorizing and defining these other work tasks (ibid.) makes it problematic to assess the trends for time used in recording.

Even though recording has been considered a core part of the professional tasks of a social worker (e.g., Kagle, 1984; Tice, 1998), task descriptions and studies of time use in social work reveal the ambiguous nature of recording in the context of social work as a whole. There seem to be a tendency to distinguish roughly between face-to-face contact with a client and all other work tasks. Recording, then, naturally falls into the latter category. A second dichotomy splits work tasks into “direct client-related work” and “indirect client work.” Recording may thus be considered to be part of direct client work or, alternatively, discussed as an administrative task with no direct connection to client work. The reason for the ambiguous conceptualization of recording may lie in the fact that recording is performed for several purposes. Burton and van den Broek (2009) argue that recently organizational and bureaucratic demands have overridden “accountabilities for professional values and identities.”

According to Kagle (2012), recording is a means to demonstrate accountability. Her definition of accountability covers the facets of action, topics to be covered in records, target audience, and norms to be followed. Social workers are obliged to describe, assess, explain, and evaluate the client’s situation and needs for services, service decisions, actions, processes, and outcomes. The agencies, communities, clients, and profession are those to whom accountability is to be demonstrated. In their recording, social workers are bound by agency policies, legal standards, professional ethics, and values and practice guidelines. (Kagle, 2012.) It seems that accountability is considered mostly to involve recording of information about institutional actions. This gives a “back seat” to the fact that social workers record information about clients’ intimate lives also. Kagle’s (2012) definition acknowledges the existence of multiple audiences for the records (see also Askeland & Payne, 1999). This most likely refers to the multiple purposes of the records: the records can be used, for example, in court to justify taking a child into care (Godzinsky, 2012; Korpinen, 2008), but also people may construct their personal

history through these records (Horrocks & Goddard, 2006; Humphreys & Kertesz, 2012).

The demand for accountability is stressed strongly in the Finnish Child Welfare Act (417/2007), which dictates recording to be a mandatory part of the full client process in §33: “Child welfare workers must note down all information affecting the arrangement of the child welfare measures [...], starting with the initiation of proceedings in the child welfare case [...], and all information necessary for planning, implementing and monitoring the measures.” The other sections of the act specifically identify a child-welfare notification (which must be kept in a separate registry), child-welfare assessment, and client plan as elements that must be compiled in the course of a client process (see Taskinen, 2010). The assessment should contain information about the circumstances in which the child lives and on the guardians’ actions and ability to take care of a child. The plan, in turn, should summarize the child’s circumstances, the need for support, and the services planned. Otherwise, the Child Welfare Act does not elaborate on the content of the documents. Several other laws have sections that regulate both production and use of the records, through comments on the nature, quality, privacy, protection, and accessibility of recorded information, among other factors (see Table 2).

Table 2. Major legislation that regulates recording

Act	Major terms related to recording
Child Welfare Act, 417/2007	<ul style="list-style-type: none"> <li>• Specific statement that child-welfare notifications are to be kept in a separate registry (§25) and a requirement to formulate a child-welfare assessment (§27) and a client plan (§30)</li> <li>• Obligation to record <u>all necessary information</u> throughout the client process involving the client (§33)</li> <li>• Obligation to record restrictive measures in the appropriate manner (§74)</li> </ul>
Personal Data Act, 523/1999	<ul style="list-style-type: none"> <li>• Personal information may be used solely in a manner consistent with the purpose (§7)</li> <li>• The information recorded must be accurate, and <u>only information necessary</u> for the declared purpose may be collected (§9)</li> <li>• A person has the right to access information on his or her personal data file</li> <li>• Erroneous, unnecessary, inadequate, or outdated information must be corrected, removed, or complemented (§29)</li> <li>• Technical and administrative measures must be carried out to make information secure in an appropriate manner (§32)</li> </ul>
Act on the Status and Rights of Social Welfare Clients, 812/2000	<ul style="list-style-type: none"> <li>• A client has the right to receive any relevant decision or agreement on the organization of social services in written form (§6)</li> <li>• A client has the right to become familiar with the information recorded about him or her and to ask for correction of erroneous information (§11)</li> <li>• The client is obliged to supply the information that is needed for organizing and provision of social welfare (§12)</li> <li>• The records are confidential (§14)</li> <li>• The records must contain an associated entry if information is obtained from or vouchsafed to the other parties (§28)</li> </ul>
Act on the Openness of Government Activities, 621/1999	<ul style="list-style-type: none"> <li>• A person has a right of access to his or her personal information contained in an official document (§12)</li> <li>• Client-related records in social work are confidential (§24)</li> </ul>

The codes of ethics for social work have implications for addressing how recording should be competently carried out in social work (Reamer, 2005). Both international (<http://ifsw.org/policies/statement-of-ethical-principles/>) and Finnish codes of ethics (*Arki, arvot, elämä, etiikka*, 2005) for social work place social justice and human rights and dignity as the core principles. The principles stress, for instance, that each person should be treated as “a whole”, clients’ participation should be promoted, and individuals’ empowerment should be encouraged. The paragraphs about professional codes of conduct emphasize the client’s right to privacy and the confidentiality of the client–worker relationship. According to the Finnish ethics guidelines, confidentiality in a client–worker relationship is based also on that how in **words** and actions the practitioner conveys a message about his/her attitude to the client. It follows from this that dignified choice of words should be applied in recording (*ibid.*). These ethical principles have been echoed in recent studies suggesting, for example, that clients ought to have the right to record their own parallel accounts in case records (Vierula, 2012)

and to demand the holistic presentation of the case in client-information systems (e.g., Lie, 1997; Parton, 2009).

Social workers may seek support for their recording practices from two main sets of national practice guidelines (which did not, however, exist when the data collection for the research reported upon here was carried out). Guidelines applicable to all sectors of social services are set forth by a national information-technology project called Tikesos (Laaksonen et al., 2011). It offers a general view of the processing, handling, use, and writing down of client-related information. The guidelines acknowledge that social workers make their own choices when recording details, but the discussion about content returns eventually to the framework established by legislation. The other guide focuses on recording from the child-protection point of view. It is embedded on the Web site of a child-protection handbook (<http://www.sosiaaliportti.fi/fi-fi/lastensuojelukasikirja/>, in Finnish) that is a frequently consulted Internet resource in the field of social work in Finland (see Heikkonen & Ylönen, 2010). This set of guidelines goes through the requirements of the legislation and, in addition, touches upon the challenges of recording in everyday practice. Common to the two guides are a goal of more uniform recording, authority-orientation, and highlighting of the legislation (Vierula, 2013).

According to Rousu and Holma (1999), social-service organizations should have uniform practices in recording and the recording should follow collectively shared instructions. It is up to the social-service organizations to decide what kind of local instructions about recording to provide to their workers, however. A survey reaching about a fifth of the Finnish municipalities revealed several inadequacies in the local instructions. Only half of the organizations had instructed the workers in recording. A fifth of the remaining respondents referred to plans to do so at some point. The authors of the study assessed that the moderate amount of local instruction could indicate either that recording was not considered important at all or that it was not even performed in the organizations. (Kärki et al., 2012.)

Legislation, professional ethical codes, and practice guidelines provide a framework for recording but do not articulate precisely the content or format for the case records. Ultimately, the social workers themselves must apply discretion (Morén, 1999); make their own judgments about what to include or exclude from the records (Tebb, 1991); and assess, for example, what is “solely the necessary information” or “all the necessary information,” as the legislation expresses it. These themes, of the adequacy and accuracy of recorded information (Burgess, 1928; Moore, 1934) and subjectivity versus requirements for objectivity or factuality of the social-work records (Holbrook, 1983; Richmond, 1917), entered discussion back in the early 20th century and remain timely matters of debate. An early practitioner and theorist of social work, Mary Richmond

(1917), acknowledged that workers' predispositions, including personal and professional habits of thinking, feelings and inclinations, have an impact on how recording is carried out. According to Richmond (1917), social workers' efforts to remain grounded in facts produced records likened to "unstrung beads" because the professionals' "judgement and discernment" had been eliminated along with the subjectivity. Sinko (2004) highlights that interpretation of facts and truth is a vague and multifaceted task by nature. From the angle of jurisprudence, the facts are a matter of observed and verified issues but also good and convincing argumentation in the records counts. The social sciences and human services, in turn, often consider there to be no single truth or fact, with the idea being that there are as many "truths" as there are tellers. The language used by social workers may differ from that of jurisprudence in that it is often careful and discreet, with the entries in the case records perhaps not opening as readily to other than social workers. (ibid.) In the social-work context, recording is about making contentual and linguistic choices.

The content and structure of social-work records have varied over the years. These changes in recording have been intertwined with changes in social-work practices; the profession's theories, methods, and roles (Kagle & Kopels, 2008); and the purposes of the records (Reamer, 2005). The styles of recording also reflect the current goal set and expected outcome of social services (Kuusisto-Niemi, 1999). The history of Finnish social-work recording has been told through shifts in legislation. Recording began to receive more attention in the 1930s in social-work practice when new "service laws" were introduced. The purpose of the records was to control the legitimacy of the actions. Therefore, accuracy and formalities of recording were highlighted. After the Second World War, "case work" and a psychosocial orientation were introduced to the field and, consequently, it became important to describe the "social diagnosis" of the client in the records. The changes in principles and legislation in the 1970s and 1980s resulted in, for instance, highlighting of the client's access to his or her case records and creation of principles addressing how personal details should be recorded. (Laaksonen et al., 2011.) A study by Timms (1972) in a British context similarly demonstrated how recording had undergone various phases as its history unfolded: register-type records (the early nineteenth century), narrative (the second half of the 1800s), process records (the second half of the 1930s), and summary recording. The present tendency in Finland (see <http://www.tikesos.fi/>) and, for example, Great Britain (e.g., Pithouse et al., 2009) seems to be for recording to be guided toward becoming a more structural and standardized presentation of information.

Production of statistical information about clients forms another part of recording. The figures needed on the organizational and municipal level and in the annual national child-welfare statistics have their origins in social workers' recording "on the



ground.” The figures for Finland’s national statistics are compiled in the municipalities and forwarded to the National Institute of Health and Welfare, the body in charge of compiling the statistics. Over the years, the indicators required have varied in line with the changes in legislation. Today, statistics are collected on both the children in open care and children placed outside their home. (Alastalo & Pösö, 2011; Heino & Pösö, 2003.) Current statistics tell about such matters as the number of children in both types of services – broken into two sets by sex – and the number of child-welfare notifications (see, for example, Kuoppala & Säkkinen, 2012). Some problems in the production of statistics in the municipalities have been reported (Heino et al., 2005).

## 2.3 Introduction of client-information systems in social workers’ duties

The “information era” in social work had its beginnings in the 1980s. It ushered in client-information systems, which started to gain ground, replacing pen-and-paper-based client records (Rafferty, 1997). Today client-information systems are assumed to be the most extensively used application of information technology in the human services (Steyaert et al., 1996).

Historical evidence surrounding the adoption of technology or, more specifically, client-information systems in social services in Finland is relatively scarce. A few works report that computer systems of some kind existed in the 1970s, but these systems were meant for administrative tasks such as billing (Kuusisto-Niemi, 1999). A rapid expansion of information technology was seen in the 1980s (Kuusisto-Niemi & Savtschenko, 1996), following international trends in technology development.

The most recent information about the availability of client-information systems in Finland is from a national survey carried out in 2011 on the use of technology in social welfare. Client-information systems seemed to be a ubiquitous part of practice in Finnish municipal social services. Nearly all respondents in the survey had a CIS in use, although there was variation from one service or branch thereof to the next within a given municipality. The range of client-information systems in use was wide, but the markets were shared primarily by two information systems, those of Pro Consona and Efficia, with a 53% and 34% share, respectively. The adoption of these systems was commonplace specifically in child protection too. (Kärki et al., 2012.) The response rate in the survey was relatively low (20%), however, so the results may not give a comprehensive picture of the situation.

Gould (2003) has identified three phases in the development of client-information systems. The first steps were taken in the 1970s with mainframe-based client-index

systems. The next decade was the era of specialist standalone databases that were used in, for example, child-protection services. Integrated management information systems were introduced to social services in the late 1980s. These systems were intended to capture the decisions, activities, and costing implications for the whole organization. (Gould, 2003.) In their overview in the mid-1990s, Steyaert et al. (1996) concluded that the development of client-information systems had progressed only modestly since the introduction of the first such system.

Developments in client-information systems in social services often arise from the complex and interactive relationship between technological opportunities and national social policy. Coding, classification, and more structured format of client records have been considered as a means of providing comparable information that can be used both at local level and in national policymaking. (Steyaert & Gould, 1999.) The goal of uniform information is obvious still today, in the current nationwide client-information system development projects that have taken place in, for example, Finland (Tikesos), Great Britain (the Integrated Children's System), and the United States (SACWIS). The Tikesos project (see <http://www.tikesos.fi/>) started in 2005 and was completed in 2011. The project sought to improve compatibility of client information between diverse information systems, harmonize client information with terminological work and specifications of information content, and create a national enterprise architecture (Paakkanen et al., 2012). Implementation of the final outcomes for the project is still on the way. The aforementioned Integrated Children's System (ICS) and Statewide Automated Child Welfare Information System (SACWIS), in turn, have already been introduced to the field. The messages from these two fields involved echo each other: the system is burdensome to use, and the information collected has little utility for a front-line worker (Bell & Shaw, 2008; Schwartz et al., 2008). Specifically, ICS has been subject to a substantial amount of research, which is reviewed in greater detail in Section 3.2.

Discussion of client-information systems has produced quite contradictory conclusions. Their potential has been acknowledged, but it seems that even more often their threats to social-work practice have been pointed out. The juxtaposition becomes especially apparent in three core areas, involving the nature of the work, the information recorded, and privacy issues:

- 1) Client-information systems increase the work's efficacy, rationality, and transparency (Kirk & Reid, 2002), yet the work is de-professionalized and depersonalized (Parrott & Madoc-Jones, 2008), complex tasks are operationalized with narrow terms (Murphy & Pardeck, 1992), and communication and work processes are changed (Garrett, 2005; Parton, 2008; Sapey, 1997).



- 2) Client-information systems can capture rich information, in large quantities (Kirk & Reid, 2002) yet at the same time pose a threat to holistic and narrative information (Parton, 2009). Information is forced into a specific format (Sapey, 1997), facts are overemphasized (Murphy & Pardeck, 1992), and much of the information collected is irrelevant to the practitioners (Rafferty, 1997).
- 3) Client-information systems provide an opportunity for clients to control their information and even produce information on their own on the records (Tregeagle & Darcy, 2008), but a CIS has panoptic potential to control people's lives (Dowty, 2008; Peckover et al., 2008).

Hope is pinned on appropriately designed information technology to improve work conditions in social work (Baginsky et al., 2010). Technical aspects are obviously important – ensuring that the recording can be carried out in a reasonably fluent manner – but they are not the sole concern in the information systems' development. The quality of the recorded information too should be taken into account: "Any ICT system is only as good as the data that are entered" (Munro, 2005, 386). The above quote is apt, drawing together three core issues: the information system; the information itself; and action which obviously includes the person recording (i.e., entering) the information in the system. The requirements for "good data" in child protection are varied. Those who work with clients often need to gain comprehensive understanding about a client case over time (e.g., Wastell & White, 2013). At the societal level, there is a need to follow the children's path through the child-protection process (Pösö, 2007), which includes, among other elements, comprehensive information about child-welfare notifications and the services provided (Kananoja, 2012).

Table 3 summarizes the multifaceted context wherein recording in a client-information system takes place. The context is presented as four layers: societal, municipal, organizational, and that of the individual. This division is based on Hasenfeld's (2000) notion that human services consist of four moral layers. The table is divided in two columns which describe the characteristics of child protection and the norms that regulate recording and CIS. The personal life of a client is part of the context, too (Pösö, 2010) and can be counted to be part of the individual layer. The context is dynamic – the problems, the content of the work (Pösö, 1997), and practices in child protection change over time (Pösö, 2010).

Table 3. Child protection as a context for recording and use of a client-information system

	Characteristics of child protection	Norms
Society	<ul style="list-style-type: none"> <li>• Child welfare vs. child protection orientation in work</li> <li>• Intertwined nature of social policy and technological opportunities (via a national information technology project)</li> <li>• Requirements to provide aggregated information for child-protection statistics for national level</li> <li>• Understanding of the role and purpose of recording (e.g., administration vs. client work)</li> </ul>	<ul style="list-style-type: none"> <li>• Legislation such as the Child Welfare Act, Personal Data Act, Act on the Status and Rights of Social Welfare Clients, and Act on the Openness of Government Activities</li> <li>• Professional codes of ethics</li> </ul>
Municipality	<ul style="list-style-type: none"> <li>• Social welfare as part of municipal administration</li> <li>• Variation in the delivery, organization, and availability of social services</li> <li>• The municipality as a statistical unit in national child-welfare statistics</li> </ul>	<ul style="list-style-type: none"> <li>• Requirements and goals set by municipal boards</li> </ul>
Organization	<ul style="list-style-type: none"> <li>• Diversity of ways to organize work tasks</li> <li>• Workers with different roles (social workers, managers, and system administrators)</li> </ul>	<ul style="list-style-type: none"> <li>• Organizational guidelines for recording</li> </ul>
Individual worker	<ul style="list-style-type: none"> <li>• Social workers' domain expertise and technological expertise, etc.</li> </ul>	

The next section provides more detail on the empirical studies that have examined recording and the use of client-information systems in the field of social work.

## 3 LITERATURE REVIEW

The first part of this chapter presents empirical studies of recording in social work. These studies can be described as falling into three major groups (see Prior, 2004; Prior, 2007): 1) the studies analyzing the actual records, 2) those discussing production of the records, and 3) studies examining use of the records both by the practitioners and by the clients. The largest body of research focuses on the content of the records, typically using discourse analysis as a research strategy. While research has given some attention to the production of the records in practice, the practitioners' use of the records has only been touched upon briefly. The studies that look at post-care adults accessing their care records depict how the records are reused in another temporal context (Hertzum, 1999) by varied audiences (Askeland & Payne, 1999).

The second part of the chapter reviews the studies of client-information systems specifically. Rafferty and Steyaert (2009) point out that evidence about how social workers engage with client-information systems, and technology in general, is scarce. There were two waves of this research. The first took place in the 1980s and into the early 1990s when computers were introduced to and became more common in social-work practice. The second wave of research was seen in recent years (*ibid.*), most of it conducted in the stages of development and implementation of client-information systems. The recent implementation of the Integrated Children's System in Great Britain has generated a vast body of research that highlights how requirements set by national policies are brought to the field. The focus of existing research has thus left a relatively large amount of room for exploring how client-information systems are used after the implementation stage.

### 3.1 Recording in social work

#### 3.1.1 The records as a starting point

The information in a case file accumulates piece by piece over the client's temporal trajectory. A survey study following children's ( $n = 140$ ) first two years in child-protection services explored the amount of information recorded in case files. The study

revealed that the children who had been taken into care had, on average, many more entries in their case report than children who remained in in-home services or whose case had been terminated, with the average number of entries being 84, 30, and 19, respectively. The children taken into care also had more recorded decisions ( $x = 11$ ) than did the children in the other two groups ( $x = 4$  and  $x = 3$ ). The vast amount of information recorded in cases of children being taken into care was presumed to reflect, on the one hand, the rapid tempo of work activities and, on the other, social workers' anticipation of a situation of taking into custody and an accordant need for more detailed records. (Huuskonen et al., 2010a.) Hall, Slembrouck, and Sarangi (2006) also have found that entries grow more detailed at critical moments.

Discourse analytical study of Finnish child-protection case files ( $n = 20$ ) has demonstrated the existence of several parallel themes in the records. Among these are a child's care, coping with everyday life, cooperation with authorities and others, concern, and parents' responsibilities. The records captured the viewpoints and opinions of several people, which were used to add to the credibility of the records. (Kääriäinen, 2003.)

Floersch (2000) compared oral and written narratives of the same cases in mental-health services. The results indicated that written case notes were brief and repetitive and only partially represented the case. The records did not capture the situated knowledge of workers; they neither commented on nor provided explanations of why something had happened. (ibid.) Cumming and colleagues (2007) conducted a retrospective audit of 156 medical records used also by hospital-based social workers to record social-work-related issues. The analysis revealed that the recorded information did not capture the full variety of social-work practice but practice was inadequately recorded and reflected in the text (ibid.).

Hennum's (2011) discourse analysis of Norwegian child-protection records ( $n = 50$ ) highlighted that the records were loaded with descriptive details, with a focus on psychological reports and descriptions of the deviance and abnormal events in the client's life. Hennum's (2011) strongly put conclusion was that the records provided mass-produced and standardized stories about victimized children, abusive parents, and anomalies of life. The deviant nature of a client or events can be represented via various strategies, as Margolin's (1992) analysis of official records ( $n = 120$ ) of cases of possible child abuse has demonstrated. The verbal details accrued, the description of abnormalities, and the weight on children's testimony were used in labeling of suspects and provision of evidence of possible violence and sexual abuse (ibid.). Urek (2005) explored narrative strategies that were used to construct "the unsuitable mother" in one particular social-work account. The moral narratives were created via contrasting

of the mother and foster parents or of the individual stages in the case, as with a child's situation before and after placement in foster care (*ibid.*).

A small body of literature has investigated how children are represented in child-protection records. Mäenpää and Törrönen (1996) analyzed 50 case files of children who had been taken into care. For the most part, the entries in the case files depicted the cooperation with other authorities and actions to support parents, while the children's issues and opinions were either missing or described from adults' point of view. The children's visibility in the records did increase when placement in care was actualized and the children were moved from in-home services into foster care. (*ibid.*) Some British studies similarly concluded that children's voices have been omitted from case files (Holland, 2001; Preston-Shoot, 2003). Holland (2001) examined the portrayal of children in British comprehensive assessment reports ( $n = 16$ ), with the results showing that the presentation of children was rather flat and inadequate because it was mediated through adults' perspectives and actions. Older children were more likely to get their perspectives included in the assessments (*ibid.*). Kääriäinen (2006), on the contrary, argued that the children were visible in the case files ( $n = 20$ ) of those taken into care. The children directly spoke about, for example, their activities, experiences, hopes, and relations to parents, and the entries captured children's utterances both as direct quotations and indirectly. Children were made visible also through social workers' observations and in professionals' and other adults' talk about children. The presence of the children in the entries increased after they entered care or reached 12 years of age. (*Ibid.*) These studies, hence, suggest that critical turning points and passing of the pre-teen years render the children more present in the records. One explanation for children's limited presence in the records can be sought from the temporal context of these studies too: some studies were conducted over a decade ago, and when the shift from family- to child-focused child protection had not yet taken place (see Pösö, 2011).

Numerous studies have argued that clients' voices are silenced or totally omitted from the records (Hall et al., 1997; Hennum, 2011; Urek, 2005). Roose et al. (2009) scrutinized 56 progress reports in child and family social work. They explored what issues were presented in the reports and where and how clients' perspectives were visible there. Issues presented were associated with four major themes: problems in upbringing, the client's feelings and background, expectations for the care and child-protection intervention, and expectations related to the future. The clients' opinion was not consistently recorded in the space reserved for it; that space could instead contain the workers' point of view, or clients' opinions were scattered throughout the report. The clients' perspectives were written in the discourse of social-work, and direct quotations from clients were used as a rhetorical strategy to justify social-work actions. (*Ibid.*)

Tiililä (2007) examined the textual features of decisions on transport services ( $n = 55$ ) in social work. The research was complemented with interviews of the workers responsible for making the decisions ( $n = 4$ ). The textual analysis revealed that strict rules regulated the formulation of the decisions. Standard, prepared text extracted from a computer system facilitated “mass production,” made the language uniform, and made the decisions legally acceptable. The workers, however, balanced multiple demands and employed delicate linguistic details and sophisticated politeness strategies to make the text better suited to details of individual cases. Intertextual analysis revealed that medical statements were used to justify decisions. The research concluded that inadequate resources were allocated for recording and that the workers should be enabled to make better use of their professional competence in recording. (Ibid.)

Client-related plans are commonly made as part of social-work practice. Günther and Raitakari (2008) explored the elements and textual devices in the client plans ( $n = 14$ ) made in supportive-housing units. The plans all seemed to follow the same three-step pattern: an eligible client was first described through a problematic life situation and previous services, then grounds for extending or terminating the time in supported housing were assessed, and finally positive changes were presented. The choices of words provided an impression of a controlled client process. The study concluded that plans were made from an organizational point of view to justify intervention to varied audiences (ibid.).

### 3.1.2 Documents in action – production and use of information

Social workers’ ambivalent attitudes and perceptions of the recording have been discussed in several studies. A British study portrayed recording as considered, on one hand, pointless yet, simultaneously, a necessary professional task and a way to demonstrate professional competence (O’Rourke, 2010). The worker’s concern that time invested in recording is spent away from direct work with a client (e.g., O’Brien et al., 1992) seems to indicate that priority is given to face-to-face work with clients. The limited time resources and the prioritization of encounters with clients resulted in postponing and falling behind in recording (Huuskonen et al., 2010b; Kagle, 1993), recording solely the absolute necessities (Davis-Mendelow, 1998) and thus paring down the details (O’Rourke, 2010).

Social workers are uncertain sometimes as to how much information, in what level of detail, should be included in the records. British social workers, for instance, were afraid that a seemingly insignificant detail that one has neglected might turn out to be valuable information in the future (ibid.). The research also indicated that increased use

of details can be purposeful in certain situations. The gravity of a case has an impact on the decision to record in general (Prince, 1996), and, in practice, social workers may be motivated to record things in more detail to “cover their butt” and meet accountability standards imposed by, among others, the courts (e.g., Davis-Mendelow, 1998; Kagle, 1993).

Studies have indicated that social workers find it inconvenient to address certain topics in the records. This was true specifically for their professional assessments (O’Rourke, 2010), opinions, speculation, advice (Davis-Mendelow, 1998), and tacit knowledge about a client (Räsänen, 2012). According to Räsänen (2012), social workers referred to the importance of fact-based recording, but the workers did not explicate what this factual recording meant. Rustin (2005), in turn, has argued that omitting the tacit dimension from the records can be seen as avoidance of thought. O’Rourke (2010) found that social workers considered it difficult to record their clients’ intimate and possibly embarrassing issues because they were aware that clients too might read the records. The balancing act related to whether to include possibly delicate issues in the records resulted in a compromise solution involving issues being recorded in careful, restrained, and veiled language (*ibid.*) from which the workers hoped colleagues would be able to read implicit messages hidden between the lines (Davis-Mendelow, 1998).

Often, social workers are also required to produce statistical information for administrative purposes as part of their recording tasks. Research has revealed tension between the information needs in administration and those in front-line practice. Social workers have been skeptical about the value of the information collected, because, for them, it did not say anything meaningful about the work (O’Rourke, 2010). A Canadian ethnographic study similarly highlighted that social workers considered required information to be irrelevant and, furthermore, found it intrusive that they had to record information about, for example, clients’ income and religion (Davis-Mendelow, 1998). According to O’Brien et al. (1992), discomfort with collecting clients’ intimate information for administrative purposes was linked to concerns of harming clients’ privacy and uncertainty about the ultimate intention in collection of such information.

There is very little evidence of how much social workers use recorded information in their work. Studies report that more time is being devoted to recording (e.g., Samuel, 2005), but attention is not given to what happens after that: records’ use. According to research in the field of British social services in the ’70s, slightly over half of the front-line social workers used client records daily and a fifth of the workers weekly (Wilson et al., 1979).

A case study based on a questionnaire and non-participant observations among Israeli practitioners shed some light on tactics in reading of paper-based records. The social workers used the records in such situations as when preparing for an appointment with



a client. Often, the social workers were unable to determine precisely what information they were looking for; therefore, they browsed the physical files and scanned through pieces of information, then read more fully only those parts of the records they had identified and assessed as being relevant. (Monnickendam et al., 1994.)

The literature suggests that the information recorded does not entirely match social workers' work-task-related information needs. The appropriate amount of detail seems to be an ambivalent issue. O'Rourke's (2010) interviews with social workers ( $n = 50$ ) indicated that records can be overloaded with information. This was found to result in difficulties in accessing relevant information easily within the limited time available for reading. The other extreme in the amount of detail was demonstrated in the Victoria Climbié case – involving the tragic death of a child in Great Britain – in which disturbing observations and several other relevant details were completely absent from the records and, consequently, the seriousness of the issues was not conveyed to readers (Rustin, 2005).

The research of Monnickendam et al. (1994) demonstrated that recorded information did not adequately support decision-making and that social workers therefore had to supplement it with verbal information from colleagues. The components absent were, specifically, grounds for evaluations and the rationale behind past actions (ibid.). Davis-Mendelow (1998) similarly argued that social workers relied on their colleagues to provide them with further insight and opinions about a client's case history.

Studies about clients reading their records give an alternative perspective on what kind of information practitioners should record and how. Young people who were currently or recently in care wished to find in their records stories and anecdotes of the kind that family members might share with each other and remarks about their strengths or interests (Kertesz et al., 2012). Adults who had been taken into care as children sought answers to questions such as why they had been in care and what had happened (Horrocks & Goddard, 2006) so that they could construct a personal history (Pugh & Schofield, 1999) and make sense of their identity (Humphreys & Kertesz, 2012). The clients, however, often found the record incomplete (Murray & Humphreys, 2012; Sköld et al., 2012) and lacking a story of the life and voice of a child (Swain & Musgrove, 2012). Vierula (2012; 2013), in turn, explored parents' experiences of recording practices in child protection. Her research demonstrated that parents have various kinds of relationships with records: secondary (that is, being meaningless for clients), practically oriented, traumatic, and oppressive ones. In the two latter cases, the records were reminders of unpleasant events (ibid.).



## 3.2 Client-information systems in social work

### 3.2.1 Factors explaining the use of a CIS and satisfaction with it

Previous research has been interested mostly in the factors that explain the CIS use seen among social workers. These studies are examined briefly from the angles of three interconnected components: the user, the information, and the CIS as an intermediary mechanism between the two (cf. Belkin, 1984).

Studies have demonstrated that workers' skill and familiarity with computers may influence the utilization of information systems: greater skills and experience are correlated with increased utilization (Carrilio, 2007; Carrilio, 2008). While workers' skills and confidence in using information technology vary (e.g., Peckover et al., 2009), quite often these skills still seem to be inadequate (Pithouse et al., 2009). The lack of appropriate technology skills has been explained by the fact that the workers seldom receive proper training in use of the information systems. A survey among Australian social workers in the government agency Centrelink revealed that, while the workers used several technologies daily, half of them had not received any formal instruction in those tools' use and, more interestingly, over 70% of the workers lacked training in use of the CIS (Humphries & Camilleri, 2002). Several studies have concluded that workers should be prepared with computer and system operating skills while the systems are still being rolled out (Monnickendam et al., 2008; Riley & Smith, 1997; Savaya & Waysman, 1996).

Utility (Carrilio, 2008) and quality (Moses et al., 2003) of information have been considered as factors motivating CIS use, with the main finding being that usefulness and importance of information are assessed in relation to the information's contribution to work tasks (Carrilio, 2007). Savaya's (1998) study, however, pointed out a "vicious circle" in integration of information into work tasks: the practitioners considered an instrument for evaluation of interventions to be inapplicable because they did not know how to use the resulting information in their casework. To be able to learn suitable integration, they should first use the instrument, but they did not do so – because they were unconvinced of its applicability. (Savaya, 1998.)

Struggles with the system have been considered as obstacles to making the best use of a CIS (Moses et al., 2003). On the other hand, perceived ease of use has a positive impact on the extent to which a CIS is used (Carrilio, 2008). Also social workers' engagement in the local customization process can lead to a positive outcome in this respect (Shaw et al., 2009).

Use of a CIS does not take place in isolation. Several organizational factors can make a difference in how workers adopt and make use of information systems. Among

these are the availability of computers and online access (Peckover et al., 2009); the adequacy of the technical support (Monnickendam et al., 2008); the resources allocated to system operation and maintenance (Savaya & Waysman, 1996); the time assigned for use (Savaya, 1998); and expectations as to leadership, attitudes, and accountability (Carrilio et al., 2003).

### 3.2.2 Client-information systems in action – production and use of information

Prior research gives a very limited account of how a CIS is used in daily work. Accordingly, the discussion in the following paragraphs relies mostly on findings from British ethnographic fieldwork on Integrated Children's System implementation – the sole body of recent CIS research available.

The Integrated Children's System consisted of a framework for the development of electronic recording systems for children's social care in accordance with the assessment framework in use (see Cleaver, 2008). The plentiful set of exemplars, kinds of forms, guided recording in the various stages of the social-work process (Shaw & Clayden, 2009; Shaw et al., 2009). The research showed that social workers seemed to employ their professional discretion and judgment when choosing the extent to which to fill in these forms (Shaw & Clayden, 2009). The prime example of this discretion emerged with the Common Assessment Framework (CAF) form. The structure and format of the CAF were resisted, and "strategic and moral decisions" were made on whether and when to complete the form (White et al., 2009). The CAF was used more for its summary portion, where one could record narrative information (Pithouse et al., 2009).

The problem with the CAF form arose also because it required large amounts of information. The social workers neglected certain parts of the form for diverse reasons: they lacked experience, the information demanded was deemed unnecessary and irrelevant, and it was not even possible to get such extensive information in a short time or one home visit (Broadhurst et al., 2010; White et al., 2009). The latter reason also demonstrates that information is often gained piecemeal over a client process, not in a single session. The findings of an Israeli study carried out in a juvenile-home context are in line with the British findings: the structured assessment form with its numerous questions was considered cumbersome, a sense aggravated by the perception that it did not capture the client's unique information or nuances or give room for professional judgment and that the information to be supplied was irrelevant to practice (Savaya et al., 2004).

Some papers reporting findings about Integrated Children System implementation have included brief remarks about workarounds. Technical flaws such as instability of the system and the complexity of entering and finding information resulted in the use of paper-based shadow systems (Shaw et al., 2009) or reversion to other computer-based systems, such as Microsoft Office (Ince & Griffiths, 2011). The social workers copied and pasted information between siblings' files, which resulted in a cloned and homogeneous account that was suitable for all children in the family (Broadhurst et al., 2010; White et al., 2010). This copy-and-paste activity can be considered a "shortcut," a specific form of workaround used to save time.

The primary issue from the information use point of view was that the Integrated Children's System exemplars split holistic case information into pieces (White et al., 2010) and disrupted the temporal and narrative display of information (White et al., 2009). More precisely, this meant that key features were difficult to find (Shaw et al., 2009), coherent views of relations and events were lost (Ince & Griffiths, 2011), and family context was obscured (Shaw & Clayden, 2009). Finding out what a case was all about, indeed, posed technical and mental challenges for the social workers. The technical challenge involved workers having to navigate among various screens (Ince & Griffiths, 2011) and messy layouts (Shaw et al., 2009). The mental effort, in turn, involved some of the exemplars creating demands for reader interpretation (White et al., 2009), and that eventually meaningful case history was carried just in social workers' heads (White et al., 2010). Earlier research among Norwegian social workers similarly showed that it was impossible to pull the full client history together quickly since information was in pieces on the computer screen (Lie, 1997).

British social workers filled in the CAF forms selectively, and similarly the information was used selectively. The form was considered so extensive that only the key sections were read, and if there were several siblings, familiarity with a case could be gained through only one of the siblings' files (Hall et al., 2010).

## 4 THE RESEARCH ENVIRONMENT AND METHODS

This chapter gives an account of the empirical work that was carried out. The beginning of the chapter summarizes the aim of the research. Then, the temporal context, the research sites, and the client-information system in use are described. The third section illustrates how access to the field was gained and participants recruited. Section 4.4 consists of description of the interviews and the observation sessions. The fifth section explains how the data collected were worked through and analyzed, and the chapter ends with discussion of the validity, reliability, and ethics of the research.

### 4.1 The aim of the research

The overall goal of the research was to understand how social workers in child protection interact with client-related information while they record and use it in a CIS. The generalized research question was addressed as follows: **How do social workers, in the course of their work tasks, interact with client information in a CIS?** The main research question was broken up into the following parts:

- How do social workers use client-information systems as part of their daily work tasks in child-protection services? (Study I)
- How does a CIS support construction and management of case overviews? (Study II)
- How do social workers work around the constraints to information interaction imposed by a CIS? (Study III)
- Why is information about the cases filtered out in the course of the recording process? (Study IV)

## 4.2 The research environment

The data collection took place in 2008. That was also the year when Finland's new Child Welfare Act (417/2007) entered into force. Ripples from the changes introduced legislatively (see Section 2.1) surfaced in the observations and interviews with social workers sometimes. There were discussions about where to record the summary of one's child-welfare assessment (a new document type) or about a need to update forms and pre-formulated text that contained suitable references to legislation in the CIS to match the requirements set forth by law. The reform was part of the temporal context wherein data were collected but was not the focus of the research or a direct topic of it. The reform also highlighted the existence of multiple layers of human services (Hasenfeld, 2000), where changes in the legislation in societal context generated changes at the organizational level involving modification of the CIS. The changes in recording generally were not that dramatic, though, since child-centered recording had been adopted quite some time before. This child-centered recording had replaced the previous practice of family-centered recording, wherein records were filed either under the youngest (site A) or oldest sibling (site B) or under the head of the household (site C).

The research sites were three Finnish municipal social-service organizations (A, B, and C) that provided child-protection services. The data collection took place at those units that organized in-home services for children and their families. The organizations were in urban municipalities whose population ranged from a little over 60,000 to more than 200,000.

The proportion of children in child-protection services varied among the municipalities (see Table 4). Sites A and C exceeded the national average of 5.2% of children in in-home services, while site B was some way below it. The reasons for these clear differences among the research sites in the proportion of children receiving in-home protection services were hypothesized to stem from organizational differences: how regularly the clients' situation is checked, how the client relationship is maintained and demarcated, and the repertoire of in-home services that support clients and enable them to cope in home life for a long time (Huuskonen & Korpinen, 2009). Also, the availability of preventive social services may vary across the sites. Their inadequacy may result in children being brought into child-protection services without an actual need for them or when they would not have been otherwise necessary. (Ibid.)

Table 4. The percentages and numbers of children (for those aged up to 20) in child-protection services for the individual research sites in 2008 (data from <http://www.sotkanet.fi/>)

	A	B	C
Community-based interventions (in-home services)	8.5% 1,313	3.5% 648	6.7% 2,964
Placement of children outside the home	1.1% 183	1.6% 305	1.5% 728

Each research site had separate units to take care of children receiving in-home services and to manage issues with children placed outside the home. Each site also had its own institutions in which a child could be placed if this was needed. Outside office hours, an emergency department was responsible for urgent matters. In practice, therefore, several departments and their workers could be involved in a single client case.

The in-home services for children were organized regionally in the research sites. Research site A had two regional social-work units, where, in all, 10 social workers were involved with in-home services. Research site B had divided the municipality into three regions, with designated workers in charge of each. These workers were still based in the same office building, though. Finally, research site C had six physically separated regional units and 35 workers in all. Staff turnover – caused by workers abandoning the organization for good, going on maternity leave, or changing post within the organization – was an acknowledged issue at sites B and C specifically (Huuskonen & Korpinen, 2009). Consequently, it was common for several social workers to handle a client's issues over time (*ibid.*).

Social workers' tasks were organized differently in each municipality. At site A, the work covered a broad expanse of the social-work landscape. The social workers took care of matters such as the income support of adult clients and devoted about 60% of their work time to tasks in child-protection services. The work at site B concentrated strictly on child protection, while social workers at site C were discussed as "working with the families with children." Besides child-protection tasks, these social workers handled, for instance, income support issues and advised and counseled substance-abusers. Recently, though, the focus of the work had shifted increasingly toward child protection.

Social workers were in charge of varying numbers of children. Most of the time, also a co-worker was assigned to assist with a case. In each organization, the social workers had heavy caseloads, ranging from about 30 to over a hundred cases. These figures on their own only partially depict the social workers' workload, because there is variation in how much attention any given case demands. Cases in which taken into care situation was actual caused more pressures on social workers than the steady ones

that required meetings only at long intervals. Generally, the social workers described their work as a “treadmill” or as “piecework” in which they were “running from one meeting to another like a bat out of hell.”

Social workers’ work tasks in the course of a client process included assessing the need for services, keeping in touch with a child and his or her family and other parties involved in a case, organizing services, and preparing decisions of various types – including decisions on taking a child into care. In practice, the social workers’ tasks were quite mobile, with days often booked solid with home visits and various meetings taking place outside their office. The encounters with clients meant discussion, counseling, and guidance. As one social worker reminded the researcher, it was also about comforting clients in the challenging situations in life. The social workers also had their turns to be on call during office hours, responding to child-welfare notifications or other emergencies. Recording was strongly integrated into the daily work tasks, as the following comment from a social worker points out: “The clients know that we have this computer, but I wonder if they know how much we do that work [recording]. They think that the work is about seeing them and making home visits. Probably, they don’t know what the entirety of the work is about.”

The social-work managers occasionally took part in client work. They advised their subordinates, made some official decisions, and reacted if clients contacted them. Their main tasks were administrative ones. The system administrators, in turn, were in charge of matters such as the maintenance of the CIS and advising workers in its use. They also produced statistical information for organizational needs and compiled aggregated figures to be submitted for national child-welfare statistics. At site C, the post of system administrator was a full-time one, whereas the CIS management at sites A and B was carried out as a part-time job in parallel with several other duties.

The current CIS had been put into operation in 2004 at research sites A and C and in 2006 at site B. Previously, another CIS had been in use. On site C, the implementation had been a lengthy process that included the detailed planning and education of the staff. At sites A and B, the whole implementation process had been pushed through in less than a year. An automatic conversion from the previous system to the new one had not been possible. Therefore, only the basic information on the people who were active clients at the time had been entered in the new CIS, manually, and, for instance, narrative case reports on these clients remained only in the earlier CIS. The previous CIS stayed in parallel use because there was still occasional need to access it. For instance, there was a case in which the entire history of a long-term client was needed, to inform work tasks such as decisions on taking into care, and sometimes the child’s age as listed in a child-welfare notification (indicating a year of birth before implementation of the current CIS) prompted checking of further information in the previous system.



The CIS consisted of several separate modules, meant for various purposes (see Table 5). With the **documentation module**, social workers maintained a chronological case report in which entries were made as free text. The entries were organized by date, with the option of viewing in either ascending or descending order. At site C, this report had been complemented with a structured element for the basics of, for example, a child's social network, hobbies, and school or day-care arrangements. Generally, the case report was the most frequently used resource in the CIS, since it collected the day-to-day activities in a client case. Also stored in the documentation module were client plans. Client plans were structured through headings that were tailored locally to the research sites. According to the social workers, an up-to-date client plan, where one existed, was a valuable information source since it offered a quick summary overview of the client situation. The **person and family module** contained the client's contact information. It also listed the people who lived in the same household and offered a brief glimpse at changes in the family structure by showing when people had moved into and out of the household. The **decision-making module** was used for making formal decisions on matters such as allocation of services or whether to open or close a case. This module structured information by means of drop-down menus and boxes in which information was entered. The writing to justify the decisions was supported by ready-made phrases, prepared text that contained references to legislation. These phrase texts were modified locally. The **scheduling module** presented the upcoming appointments, providing structured information in brief form reporting the time and type of an appointment. A brief field offered space for additional information. The social workers used this field, for instance, to communicate about the purpose of an appointment and the workers participating. The **work-done module** was used to provide numeric information about the work completed: the type of task, the time spent on the task, and the number of participants. In summary, the selection of modules in use, ways of organizing files, and modified-content drop-down menus were examples of local customization of the CIS.

Table 5. CIS modules in use at the research sites (x = included)

Module	Description	A	B	C
Documentation	Case reports and client plans	x	x	x
Decisions	Official decisions made on a client case	x	x	x
Person and family	Contact information and family description	x	x	x
Scheduling	Time management	x		x
Work done	Actions and time spent with a client		x	x



The social workers had access to the CIS through a navigation bar upon entering a personal ID and password. Also, there were user roles specified that determined what information a worker was able to access; for instance, managers had more extensive rights to access information than social workers. Log data captured the actions performed by social workers in the CIS. This log data were occasionally used for checking and ensuring that social workers' accesses to information were appropriate and followed the privacy policy. The basic view in the CIS was a client-specific **diary view**, which served as an access point to the various modules. No direct transition between modules was possible, so all navigation between modules required looping back through the diary view. Other limits were to the inadequate search tools offered in the CIS and the lack of a search option within a case report.

In summary, the research environment was as follows: a societal context with legislative and other norms; municipalities of different sizes, where proportion of children in child-protection services varied; organizations wherein the social workers' work tasks and duties were organized in various ways; work task context; and informants from multiple positions in the organization, with varied work and technological experience (cf. Hasenfeld, 2000).

### 4.3 Access to the field and recruitment of participants

The data collection was part of the LasTi-research project which was a joint enterprise of the three municipal social-service organizations (A, B, and C) and disciplines of information studies and social work from the University of Tampere. The LasTi-project had two major goals. One purpose was to strengthen the recording practices and improve the CIS in the organizations. The second aim was to realize a follow-up study (Huuskonen & Korpinen, 2009; see also Huuskonen et al., 2010a) on the children who had entered child-protection services in these three organizations about two years earlier, in 2006 (Heino, 2007). Each organization had a paid project worker with a background in social work. These workers carried out the project work locally. The researchers focused on designing a follow-up questionnaire on the children in collaboration with local social workers. In the overall project, the researcher from the discipline of social work collected data among the clients about their experiences in child protection. My specific task was to interview and observe social workers to learn more about their recording and CIS use practices. The preliminary findings were used to support local work toward goals of improving the recording and the CIS.

The project comprised various meetings at which the social workers participated in designing a follow-up questionnaire in an early stage of the project. Later, the meetings

served as a forum for discuss and comment on the preliminary findings from the questionnaire and interviews. The group discussions at the meetings have also been used as research data and the findings have been reported upon elsewhere (Huuskonen et al., 2010b). These locally held meetings were, first of all, a highly valuable entry point for familiarization with the context of the child protection and the organizations themselves and for making the acquaintance of the workers there. The time spent in the field spanned more than a year, of which about four months constituted a period of intensive data collection. The schedule of the project activities, including data collection and early analysis, is presented in Table 6. The more detailed analysis and scientific reporting (performed in studies I–IV) took place in the years following the project itself.

Table 6. Timetable of activities in the research project, and the data collection and early analysis

Dates	The project activities	The data collection and analysis
October 2007–February 2008	Initiation of the project and design of a questionnaire: joint meetings with all participating municipalities ( $n = 3$ ) and separate meetings ( $n = 3$ ) in each	Familiarization with client-information systems Negotiation of access to the field and interview arrangements A pilot interview
March–July 2008	Reporting of preliminary findings related to the questionnaire: joint meetings with all participants ( $n = 2$ ) and separate meetings ( $n = 3$ ) in each participating municipality	Interviews ( $n = 33$ ) on the research sites Observation sessions ( $n = 12$ ) on the research sites
August–November 2008	Reporting of the preliminary findings from the interviews and observations: separate sessions ( $n = 5$ ) in each participating municipality	Preliminary data analysis
November–December 2008	Completion of the project: a seminar for all participants, a published report about the questionnaire, and an unpublished report on the interviews with social workers and the observations	Preliminary data analysis

The cooperative project facilitated smooth recruitment of the informants. I started to inform the workers about the forthcoming interviews and encourage them to participate already in the very first meetings of the project. On both sites A and B, the worker who regularly participated in the project meeting set up the interviews. At site C, two managers in their own regional units marketed the interviews to their subordinates.

Also, the project worker at site C recruited informants from diverse regional units, then provided their names for establishing contact and set up the interviews.

At sites A and B, most of the social workers took part in the interviews, while at the largest site, site C, about one fourth of the workers volunteered to participate in the interviews (see Table 7). In total, 23 interviews were conducted among social workers. The social workers interviewed had varying work histories in child-protection services. There were novices who had just entered the field, those who had a couple of years' work experience, and a few with decades of experience in child protection. Typically, the social workers interviewed had no formal training in recording. Social-work managers ( $n = 7$ ) and system administrators ( $n = 3$ ) were interviewed, for gaining a "variety of voices" (Myers & Newman, 2007) and to gather the perspectives of people in several organizational positions (Gorman et al., 2005). The social workers', managers', and administrators' work tasks varied, so their needs and their approaches to recording and the CIS varied too.

The social workers' consent to participate in observation was sought during the interviews. Everyone who was asked accepted the request. Field observation sessions were realized in a real-world setting. Eleven social workers were observed, one of them twice (see Table 7). The social workers observed had a heterogeneous history of CIS use and featured those whose experience was limited to the current CIS in use, those who had seen several upgrades to the version of the system in use, those who had used these but also a locally tailored CIS in another municipal context, those who had used diverse types of CIS, and those whose experience extended to "dinosaur systems" also.

Table 7. Overview of the participants at sites A, B, and C

Type of data	Informants	A	B	C	Total
Interviews	Case workers	6	8	9	23
	Social-work managers	1	3	3	7
	System administrators	1	1	1	3
	Total	8	12	13	33
Observations and think-aloud	Case workers	3	3	5/6	11/12

## 4.4 Data collection

This section describes the realization of the data collection in the field. The validity of the methods is discussed in more detail in Section 4.6.

#### 4.4.1 Interviews

There were two major parts to the preparations for the interviews: designing the interview questions and piloting them. The interview plan was modified in accordance with the informant's role as a social worker (see Appendix I), social-work manager (see Appendix II), or system administrator (see Appendix III). The project workers from the research sites commented on the interview plan and suggested some further ideas for questions. Before the actual interviews, I conducted a pilot interview with a social worker who had experience in work on child protection. The purpose of the pilot was to estimate the time required for an interview and to check the workability and clarity of the questions (Gillham, 2005; Silverman, 2010; Wengraf, 2001).

The actual interviews took place in the workplaces of the social workers, with the exception of one interview, which was carried out at the university. The red light beside the doorway of a worker's office and leaving the telephone answering machine on guaranteed that the interviews could be conducted without interruption in most cases. The workers had their computers and papers close at hand, allowing them to demonstrate some issues concretely, such as the nature of paper files related to client cases and their personal notebooks and client lists in their own format in MS Word and Excel files etc. A few times, the social workers also opened the CIS, for better explanation of issues related to system use.

In general, the interviews started with an explanation that I had no background in social work – whether studies or work experience – and that it might therefore sound as if I was asking simple and very basic issues. Holliday (2002) considered this kind of “innocent and naïve” starting point of possible benefit in the research, since the researcher then is not pressured to take issues for granted. The beginning of the interviews focused on the social workers' background: their experience in child protection and other areas of social work and the training and orientation they had obtained in CIS use. These background questions elicited information on the workers' domain knowledge and technical expertise, both of which may affect a worker's information-seeking (Russell-Rose & Tate, 2012).

The semi-structured interviews had three core themes, those of 1) work tasks, 2) recording, and 3) the CIS. The social workers were asked to give a general description of their work and the components of it. The questions also touched on child-welfare notifications, assessments, and decision-making in the course of the client process. Also, more concrete questions about recent or upcoming work tasks were asked, such as “What have you done today so far?” or “What are you going to do after the interview is over?” Specifically, these questions brought out the social and mobile nature of the work, with the social workers often telling about meetings, either at their office or

in various other locations, with clients and other stakeholders. The questions about recording covered the whole recording process, from the encounter with stakeholders and note-taking during the encounters to the worker's ways of carrying out recording in the CIS and the use of the recorded information. Thus, the questions captured the recording as a two-way process of writing and reading. The CIS theme was approached through questions about daily CIS use, and perceptions about the system's strengths and weaknesses were sought too.

The social workers were also requested to use a client case as a critical example in the interviews, if possible. These cases had the role of a critical incident (see Davenport, 2010; Urquhart et al., 2003), allowing more focused and concrete questions. The case examples have been considered valuable also in that they capture occurrences and social workers' actions and in this way facilitate reflection on the nature of workers' knowledge and expertise (Osmond & O'Connor, 2004). It was up to the worker, however, whether to use a specific, real client case as an example. Some of the workers felt more comfortable discussing the issues in only general terms, and others had just started in the job and, therefore, did not have any particular client in mind yet. However, the majority of the social workers ( $n = 16$ ) did choose this option, anchoring the questions to a particular client case. The social workers described an individual client's case by explaining the major issues related to the case and the network of people involved in the case.

The interview questions posed to social-work managers, in turn, dealt with recording and CIS use from the perspective of work tasks related to administration and management. The interviews with system administrators took the perspective of the history of implementation of the CIS and specifically deepened the researcher's understanding of the properties and local customization of the CIS. The latter interviews also revealed how aggregated data were collected and produced for use within the organization and in the national child-welfare statistics.

The pre-planned interview guide ensured that the research topics were covered appropriately (Flick, 2006). However, the outline was not followed in a fixed order, and improvisation was occasionally applied in the posing of questions (Myers & Newman, 2007; Packer, 2011). The issues were sometimes discussed in a discontinuous manner, as in "What was your original question, since we are off track now?" and "I don't know anymore, but I guess we talk sense." Eventually, the open-ended questions and uninterrupted flow of discussion resulted in a rich dataset, because the interviewees had freedom to express their thoughts (see also Silverman, 2010).

I closed the interviews with open questions such as "Is there anything else, that I didn't know to ask?" or "What should I make visible in my research?" The purpose of these non-directive probes was to elicit additional information (Gorman et al., 2005). Most of the workers commented that the topics were covered extensively and

that they had nothing more to add to the interviews. Some workers, however, used the opportunity to give feedback about the drawbacks in their work circumstances or the CIS. These comments might have been made in the hope that the message would be passed on to decision-makers in the relevant municipality. Finally, one experienced social worker pointed out the uniqueness of the clients in a humane and sensitive manner. Her final words obviously were rooted in the core ethical principles of social work: the dignity and worth of the person.

The interviews were audio-taped, with the permission of the interviewees. The shortest interview lasted slightly over an hour and the longest about two hours and 30 minutes, with the average interview lasting approximately two hours. The whole dataset comprises about 62 hours of audio data.

#### 4.4.2 Observations and think-aloud sessions

The observations ( $n = 12$ ) were realized in a real life setting in those moments that the social workers had specifically allotted to work in their office and to carrying out recording tasks in the CIS. The observation sessions varied from those wherein social workers had an opportunity to be fully focused on recording to those in which the social workers were multitasking. This multitasking involved, for example, being on call for possible emergencies or keeping telephone hours for clients.

The social workers were prepared for the observations sessions on two occasions. First, an e-mail reminder was sent about the forthcoming observation session. This was complemented with preliminary instructions provided in a manner such as the following: "I will be with you on Monday at 9:30 to observe your work. Thank you for letting me come and tolerating a possible nuisance. I'll try to keep quiet, and you just talk aloud about what you are doing." Secondly, similar instructions and encouragement to explain and reflect on their thoughts and actions concurrently every now and then (Makri et al., 2011; Miller & Brewer, 2003) were given orally at the beginning of each observation session.

Working as normal was easier said than done for some of the social workers, particularly at the beginning of an observation session. The workers' reactions included discomfort, curiosity, and confusion as to what were expected of them, as the following data extract illustrates: "Ask me something. Actually, I don't have any idea how this looks to you." It has been acknowledged that people react differently and might change their behavior while aware that someone is paying attention to them (e.g., Gorman et al., 2005). Also, simultaneous articulation of thoughts and completion of the task at hand is cognitively demanding (Kelly, 2009). The social workers observed did,

however, seem to get used to the new kind of situation represented by the observation and continued working ordinarily after a while. The amount of verbalization depended on the social worker, with some throwing in occasional comments while others talked almost continuously. I intervened in as little as possible and only rarely asked workers to clarify issues. The social workers' comments were related to, for example, events that they were about to record, navigation paths in the CIS, and processing of information from paper notes into the CIS format.

The methods of observation can be divided into structured and unstructured ones. In the former case, the recorded events are predetermined and the observations instrument prearranged, whereas in the latter case all of the behavior or events that are relevant to the research questions are recorded in an open-ended way (Gorman et al., 2005). My approach to observation was open. I made notes about activities related to recording and the CIS and elements that displayed the realities of the work, such as interruptions caused by phone calls or by colleagues appearing in the doorway.

The observation data are in the form of hand-written field notes from all sessions and the tape-recorded verbal accounts of the social workers from 10 sessions. In two sessions, recording was not appropriate. The sessions' length ranged from about two hours to the whole working day. The total body of observation data covers about 40 hours.

## 4.5 The data analysis

Separate analyses were carried out for each of the subsidiary studies, I–IV. The conceptualization involving client process, temporal trajectory, workarounds and recording process served as analytical lenses to the data. The general principles of the analysis, applied in each of the studies, are presented next.

The interviews were transcribed word for word, and the transcripts were then imported to the qualitative analysis software ATLAS.ti. The analysis began with separation out of segments that were relevant for the research questions. This kind of segmentation is called holistic coding (Dey, 1993), and its purpose is to prepare data for further analysis. In the first phase of the analysis, the segments were wide, for example, identifying where client-information systems were mentioned (studies I and III) or where significant information (Study II) or exclusion of information from the records (Study IV) were discussed. Next, these broad segments were studied in further detail and more detailed codes were assigned. Connecting threads and patterns were sought among the codes. The workarounds (Study III), for instance, were analyzed from the process perspective, and so the codes pertaining to constraints on information



interaction, ways to bypass them, and consequences of workarounds were linked for the full picture of recording. (see Bernard & Ryan, 2010; Packer, 2011.)

Each client case ( $n = 16$ ) used as an example in the interviews was pieced together so that it formed a consistent chronological account. Also, institutional actors and people related to clients' private life were listed. The mentions of the use of information and the CIS over the course of a client's trajectory were identified also. This analysis contributed specifically to Study II.

The raw field notes were written up in fuller form shortly after the observation sessions. Later, the audio data of social workers' commentary were transcribed in full for analysis. These transcripts were then matched with corresponding notes from the observation. This combined data package was then imported to the ATLAS.ti software and dealt with in the same ways as the interviews in the analysis.

The observation data, field notes, and social workers' verbal accounts were also analyzed independently of the interviews. The data were broken down and organized by work episode – i.e., according to functional entities within the CIS. A functional entity consists of a sequence of actions performed in order to reach a certain goal. These entities included activities such as formulating a decision in such a way that a child could be placed in a foster home or reading the records in order to decide about possible termination of a client relationship.

In most cases, the entity had to do with a case of only one child. In a few situations, though, the cases of siblings were intertwined, so splitting into separate entities was not justified. In all, it was possible to identify 92 functional entities, of which three were related to adult clients (e.g., income support) and 89 to child protection. Of the child-protection entities, 84 entities pertained to a child directly and five were related to a child's parent. The parent's issues were strongly interwoven with the child's case, though. The entities covered the recording tasks from the various stages of a client process. The data consists of 12 entities from the beginning of the client process, 67 from the middle, and 10 from the end.

The analytical framework used for the entities joined together work tasks and workers' interaction both with information and with the CIS. The exact categories used in the framework were the following: 1) the work task generating the CIS activity, 2) the purpose of the CIS activity, 3) the sequence of steps taken in the CIS, 4) the modules used in the CIS during the episode, 5) identification of the type of information production, 6) identification of the type of information use, 7) the support the CIS was giving, 8) problems in using the CIS, 9) other problems, 10) help in a problematic situation, 11) workarounds, and 12) communication outside the CIS. This analysis was utilized specifically in studies I–III.



## 4.6 The validity, reliability, and ethics of the research

The different datasets cast different kinds of light on the research questions. The interviews offered an overall picture of the types and nature of information handled by social workers, recording practices, and the CIS's role in social workers' work tasks. The overview gained through the interviews laid foundation for the observations, providing preliminary understanding of what to expect. The client cases ( $n = 16$ ) discussed in the interviews showed the shape of the clients' trajectories to be varied. Observations and verbal protocols concretized the interaction between information production and use and the CIS. According to Gorman and colleagues (2005), the use of multiple methods has potential to increase the validity and reliability of research.

Interviews and observation differ in their temporal perspectives. In interviews, the informants often describe past events, whereas observations have present-orientation (e.g., Atkinson et al., 2003). Among the advantages of observations are that they capture activities that people might not remember (*ibid.*), are unable to report (Gorman et al., 2005), or are even unaware of (Taylor, 2009). For example, in this study, the social workers had difficulties in articulating their actions in the CIS while they were being interviewed. The observations made visible issues such as the long navigation paths in the CIS (Study I), copy-and-paste activities (Study III), and the role of the paper notes as temporal memory (Study IV). As was noted above, observations have great potential to yield a holistic understanding of users, tasks, the tools being used in performance of the task (Gorman et al., 2002) and people's actions (Rossman & Rallis, 2003).

The think-aloud data were collected in a natural environment where social workers were performing their actual work tasks. Studies that exploit think-aloud methods have often been realized in simulated settings. This has been the case for studies focusing on, for example, lawyers' way of using electronic resources (Makri et al., 2008), pediatric oncologists' ways of searching paper-based patient records when preparing for a patient visit (Jaspers et al., 2004), and formulation of search tasks involving online library catalogues (van den Haak et al., 2004). The benefit of think-aloud method is that it can offer rich and accurate insight into people's interactive information behavior (Makri et al., 2011). The disadvantage, in turn, is that it is an artificial element and, thus, may decrease the validity (Case, 2012).

The findings of the research were presented to the social workers on several occasions. The preliminary results were brought to the field while the research project with three municipalities was in progress, in 2008 (see Section 4.3). Recently (in October 2013), the results were again presented to social workers, and feedback on the correspondence between research and practice was sought in writing. The comments were positive, among them that "the everyday work is recognizable in the results." This kind of member

checking is a means of validating the accuracy and credibility of research (Creswell & Creswell, 2013).

Some limitations of this study need to be acknowledged, specifically with relation to the generalizability of the results. Firstly, the data were collected in three social-service organizations using the same CIS (though it was locally customized). Our study is thus limited to the use of a particular information tool at particular sites. There were variations in the size of the organizations and the ways in which they had organized the services and work tasks. This resulted in a rich picture reflecting the fine details in recording practices in the context of child protection. Both lack of resources and haste in the work were common at all of the sites. These problems being commonplace in child protection in Finland (e.g., Kananoja, 2012), the participating organizations most likely offered a prime example of the shared circumstances wherein the work is carried out.

Secondly, the observations were realized in those moments that were allocated to recording tasks involving the CIS. Accordingly, for example, situations in which the CIS was used quickly between client meetings are lacking in the data. Consequently, tasks wherein information is used but not entered might be underrepresented. Thirdly, the relatively small number of participants may result in lack of generalizability (Case, 2012). The tradeoff, however, is that detailed observations have great potential to get closer to the phenomena of interest and reveal what people actually do (*ibid.*). Also, Holiday (2002) has highlighted the value of “thick descriptions” for understanding the complexities of particular phenomena. The thesis offers micro-level analysis of social workers’ interaction with information and client-information systems. When these findings are compared with results from other studies, we reach a fairly extensive picture of the research topic (*ibid.*).

One source of limitation in the analysis of this study is that the coding of the data was carried only by one researcher. This may have harmed the validity of coding. The data was thoroughly scrutinized several times and the analysis process was discussed with a supervisor, however. The collected data was confidential and thus available only for the researchers working in the LaTi-project. In practice, there were no resources to have several coders for the data.

The implementation of the interviews and observations in the context of social services required appropriate research permissions. These permissions were granted by the municipalities that collaborated in the overall project.

Informed consent, guaranteed anonymity, and confidentiality are often listed as core principles for the ethical conduct of research (e.g., Boulton, 2009; Case, 2012; Rossman & Rallis, 2003). The social workers’ participation was voluntary. They were all informed that the purpose of the study was to produce information for the use of the

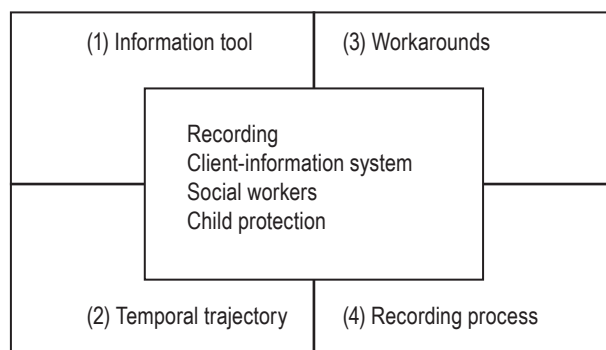
project taking place in their organizations (see Section 4.3) and that a “side product” might be an academic dissertation. This information was supplied on several occasions and in various ways: in reminder e-mail sent before the interviews, verbally just before the interviews started, and on a written information sheet. The observation session started with an explanation that the purpose was to gain insight into CIS use in real time and that this data would be also used in this study.

Anonymity and confidentiality factors were taken into account in several ways in the course of the research process. The research sites are referred to only as A, B, and C, and people are referred to by pseudonyms or in terms of their professional role (e.g., “social worker, site A”). During one observation session, a social worker expressed concern about the privacy of her clients. She wanted to be sure that I was under an obligation to maintain that privacy since I saw clients’ information in the CIS. The client cases have not been used as such. In Study II, I have created composite cases to depict what a case might be like and how that scenario would be represented in the CIS. The description of a recording process (in Study IV) has been constructed from several observation sessions, for the same reason.

## 5 OVERVIEW OF THE FINDINGS

This thesis contains four articles, which approach social workers' interaction with client-related information and use of CIS from different angles (see Picture 1). The information interaction ties together the user, system, and content, but these can be viewed as a series of two-way interactions also: user–system, system–content, and user–content interactions (Toms, 2002). Interaction with information is generated by work tasks (Vakkari, 2003) and takes place in a specific context (Solomon, 2002) of human services (Hasenfeld, 1992; Hasenfeld, 2000), that of child protection. The articles have the following emphasis:

- 1) The first article gives an overall account of the social workers' ways of interacting with information in the CIS in the various phases of a client process (focus on user–system–content interaction).
- 2) The second article discusses the social workers' need for chronological case overviews and their related presentation in the CIS (focus on system–content interaction).
- 3) The third article presents the social workers' own solutions to bypass the obstacles in information interaction in the CIS (focus on user–system interaction).
- 4) The fourth article describes the filtering out of information in the course of the recording process, from face-to-face encounters to CIS (focus on user–content interaction).



Picture 1. The themes of articles 1–4

## 5.1 The client-information system as an everyday information tool in child-protection work (Study I)

The purpose of the first article was to explore how social workers used a client-information system as part of their daily work in child-protection services. The framework for the paper rested on the idea that the CIS was used not for itself but as a tool that facilitated interaction with the information as part of work tasks (Vakkari, 2003).

The article made equal use of the interviews ( $n = 33$ ) and observations of social-work professionals with think-aloud data ( $n = 12$ ) collected in all three municipal social-service organizations. In the analysis, the information interaction with the CIS was divided into production and use activities. These activities were interconnected with the work tasks and the stages of a client process. The client process was conceived of us consisting of three parts: beginning, middle, and end. This structure was an idealization based on the legislation, and it was acknowledged that in reality the processes were not always so straightforward and linear.

Information production and use activities were strongly interwoven with the social workers' other work tasks throughout the client process. Priority, however, was given to face-to-face encounters with clients, and, especially at a moment of crisis, the practicalities were handled first, with recording realized afterwards. The work tasks were natural triggers to information production activities, because the social workers had to meet multiple accountability demands in their work. The social workers operated between narrative, structural, and numerical modes of producing information. The chronological case report had a central role in keeping a client's process on track. Obviously, the free text was technically easy to produce and left space for rich description of the issues. Structured modes were used mostly for administrative purposes, such as decisions on providing services or on opening or closing a case. The social workers considered reporting statistical information in a separate module to be a somewhat excessive burden because it captured only a limited view of the work and did not directly contribute to their work with the clients.

The social workers approached recorded information in various ways within limited time resources. The typical methods of making use of the information were 1) checking of a single fact, 2) occasional encounters with recent entries recorded by co-workers and glancing through these, 3) holistic checks involving skimming the entries to gain an overview of a case, and 4) intensive reading – going through all of the documentation thoroughly. Preparing the first client plan for a long-term client or piecing together a client's history for purposes of a decision on taking a child into care seemed to be the most tedious and demanding tasks requiring CIS use. Interestingly, in these tasks,

the information production and use activities were integrated: previous information that was dispersed across various documents was brought into use for production of an analytical and summary account.

The CIS was not a completely suitable tool for the social workers. A major problem was seen in the intricacy of the CIS and mismatch between the logic of the CIS and social workers' common sense. The study demonstrated how information about a client accumulated piece by piece over time in several documents and modules in the CIS. This vast amount of information could not be put to the best use by the social workers, because the CIS lacked features for effective representation of overviews of cases.

## 5.2 The client's temporal trajectory in child protection (Study II)

Social workers' need for a coherent summary overview of a client case was identified in the first paper. The second paper looked in more detail at the core information elements needed in the overview, their presentation in the CIS, and social workers' methods of managing and making use of that core information. Time and temporality were chosen as the theoretical starting point because of their centrality to social-work practice and needs for narrative accounts of cases (White, 1998). The work rests especially on the concept of a temporal trajectory, understood as a structured timeline of activities, events, and occurrences in the past, in the present, and in the future (Reddy et al., 2006). Aspects of temporality were used to complement time-wise analysis, with a short or long span of time distinguished with exact time marks for beginning and end, and a continuous stretch of time denoted without distinct time stamps (Sonnenwald & Iivonen, 1999).

The full dataset of social workers' ( $n = 23$ ), social-work managers' ( $n = 7$ ), and system administrators' ( $n = 3$ ) interviews and the observation directed at social workers ( $n = 12$ ) were used. The client cases used as critical incidents in some of the interviews ( $n = 16$ ) were of special value for the article. The critical incidents concretely depicted the events and people involved in a case and thereby brought out the shape of the trajectories (e.g., the cumulative arc of actions). The analysis was divided into parts in line with the three research questions. In the first phase of analysis, the expressions related to core information were identified and summarized. Then, the presentation of the core information in the CIS was identified. Finally, the social workers' methods for managing the core information and locating it were scrutinized.

The analysis revealed three interconnected threads of information in a temporal trajectory, which we denoted as the private life strand, concern strand, and institutional strand. The private life strand represented "the history of a family," the concern strand

explained the problems and their seriousness as reasons for the person in question being a client of child-protection services, and the institutional strand represented the services provided and the actions taken by the social workers. The institutional strand had the most exact time marks, while precise time marks for day-to-day issues in private life or concern were more difficult to point out. Presentation of a coherent trajectory was impaired for two main reasons. Firstly, the information was dispersed across several documents and modules in the CIS. Secondly, the entries in the case report were heterogeneous, time-sliced snippets referencing the child's life. The social workers maintained the temporal continuum of the client's trajectory in the case report by creating cross-references to pieces of information in the other modules in the CIS. When necessary, they created summaries of the past and presented a sort of "dialogue" between past and current entries in a case report. They highlighted parts of the text for use as a cue to support information location later on. The social workers sought an overview either by skimming or by intensively reading the text. Either way, to construct an overview of a case, the social workers had to put pieces together in their minds.

The findings suggest that social workers would benefit if the CIS provided a continuum of the various documents automatically or if the various threads of information could be depicted as visualized timelines with nodes for accessing the actual documentation. Information entities in the individual strands feature temporal markers of varied precision (cf. Combi et al., 2010). These temporal markers could be used as a starting point for automatically or semi-automatically building a time-based overview of a case.

### 5.3 "I did it my way": Social workers as secondary designers of a client-information system (Study III)

The purpose of the third article was to explore how the social workers circumvented the obstacles in information interaction in the CIS. The article is based on the concept of the workaround. Workarounds have been defined as substitutive methods (Pollock, 2005) or unintended manners (Gasser, 1986) of use of technology employed with a goal of facilitating the accomplishment of a work task. The social workers were considered active agents whose tinkering and customization work both within and external to the CIS generated valuable secondary design suggestions for rectification of deficiencies in the CIS (see Hovorka & Germonprez, 2011).

The interviews of the social workers ( $n = 23$ ), social-work managers ( $n = 7$ ), and system administrators ( $n = 3$ ) and the observations of social workers ( $n = 12$ ) were exploited as a single dataset; however, the observation data had special power to



highlight how workarounds had become embedded in the actions performed with the CIS. The workarounds were analyzed as a process: their antecedent conditions, actual actions, and possible consequences were taken into account. The article adopted three perspectives to workarounds: the maintenance of an individual client's trajectory, management of the circle of clients for whom the social worker was responsible and reporting at the organizational level.

The **technical flaws and inadequacies** in the CIS were the main factor triggering workarounds. The lack of direct links between the modules and the various documents on any given child generated a need to maintain a narrative in the case report by manually referencing the other sources there. Occasionally, information belonging to other documents was rather embedded in the case report because the social workers wanted to avoid long navigation paths between modules. Highlighting served as a signal of essential information in a case report and substituted for the filtering option, which was absent from the CIS. The most commonplace workaround was to maintain shadow systems covering one's clientele, in electronic or physical form, because there was no appropriate search tool for locating the group of clients for whom one was responsible. **Also, the organizations themselves established purposeful blocks** to links between information resources. This was evident in the restriction of access to the previous CIS or to information recorded by other social-work departments. The solution was to use colleagues as intermediaries to information. **Externally imposed demands for accountability** created the necessity of maintaining an individual case file for each sibling and for numerical reporting on the work tasks performed. Information was manipulated through copying and pasting of entries between siblings' files and ignoring or merging information when one was reporting on completed work tasks for statistics. Sometimes there were several, intertwined reasons for resorting to workarounds. Evident specifically in statistical accounting for the work, these were the time-consuming and inefficient navigation between modules, difficulties of allocating time for a single client, and limited choices in the drop-down menus – resulting in poor coverage of the multiple components of human-services work.

Several workarounds, such as information signals, manual linking, and shadow systems presenting the clients who are one's responsibility, were realized proactively to support future use of the information. These workarounds were applied systematically over a long span of time. Some of the workarounds, however, were situated in tension with issues of clients, legislation, and demands for accountability.

It is vital to distinguish whether the origin of the workarounds lies in technological flaws in the CIS or in demands from outside. This distinction can inform efforts to create possible remedies that eliminate the need for workarounds. The social workers' own suggestions form a step toward a more "handy" information tool. The examples



chosen for such remedies were integration of the work-done module with the case report and the ability to produce information for siblings' records simultaneously.

## 5.4 Selective clients' trajectories in case files (Study IV)

The objective of the article was to shed light on the process through which a client's trajectory in case files is constructed. The specific focus was on the filtering out of some information and the reasons for it over the course of the recording process. The article grew out of works acknowledging that the roots of the entries lie in the face-to-face interaction (Hall et al., 2006; Prince, 1996), that the oral information is only selectively recorded in case files (Garfinkel, 1967; Taylor, 2008), and that social factors and organizational context affect the construction of the records (Trace, 2002).

The social workers' ( $n = 23$ ) and social-work managers' ( $n = 7$ ) interviews and the observation data from social workers, with the associated verbal accounts ( $n = 12$ ), were used as data sources for the article. The verbal accounts were especially crucial, because they captured the situational nature of the recording and revealed the social workers' reflections about the work task generating the recording and their reasoning on what to include or exclude from the records. Inspired by existing literature (Ackerman & Halverson, 2004; Askeland & Payne, 1999; Hertzum, 1999; Prior, 2007), we modeled the recording process in terms of four, partially overlapping, phases: 1) completion of the client encounter, 2) note-taking, 3) recording in the CIS, and 4) (re)use of the information recorded. This process was used both as an analytical framework and as a tool for organization of the findings.

The recording process tied physical and mental actions together. The social workers communicated with the client and took notes with pen and paper simultaneously. Later, the social workers performed actions in the CIS and refined their notes either by complementing them or by filtering some of them out. The filtering manifested itself in careful wording, regulation of the exhaustiveness of the details, and complete exclusion of some issues. Filtering of information occurred in each phase of the recording process, for various reasons (see Table 8). The social workers made both intentional and unintentional choices when filtering information out. The informed exclusion was based on relevance assessment in light of the client situation at hand and anticipation of future audiences and uses for the recorded information. The unintentional exclusion stemmed from human factors such as inadequate and messy notes in combination with time lag causing difficulties to remember all details. The reasons for the filtering testify to the multi-layered context (cf. Hasenfeld, 2000) of human services: professional ethics and legislation form a broader societal layer; work circumstances in the organization

constitute the next layer; and, finally, in the “innermost” layer is the worker making his or her individual choices and balancing of the terms imposed by the other layers.

Table 8. Summary of the reasons for filtering of information over the course of the recording process

Phase	Reasons for filtering the information
1) Encounter	<ul style="list-style-type: none"> <li>• Professional ethics</li> <li>• The nature of the encounters</li> <li>• Lack of trust</li> <li>• Lack of time</li> <li>• Brief duration of the client–worker relationship</li> </ul>
2) Cache: notes and memory	<ul style="list-style-type: none"> <li>• Prioritization of interaction over recording</li> <li>• The nature of the encounters</li> <li>• Multitasking</li> <li>• Working alone</li> </ul>
3) Recording in the CIS	<ul style="list-style-type: none"> <li>• Delayed recording</li> <li>• Memory issues</li> <li>• Inadequate notes</li> <li>• Blindness to certain issues in one's work</li> <li>• Legislation</li> <li>• Anticipation of an audience</li> <li>• Anticipation of the client's trajectory</li> <li>• Increased expertise</li> </ul>

The social workers excluded bits and pieces that were related to each of the strands – private, institutional, and concern-related – in a client's trajectory. Moreover, the social workers were extremely careful when recording their “gut feelings,” thoughts and tacit knowledge of the cases. Social workers' choices in information filtering did not always persist through time. Sometimes, the social workers considered there to be too many details left in the records, and on other occasions they faced information gaps in the records. This hints at the dynamic and situational nature of relevance (Schamber et al., 1990).

The findings imply that social workers could make use of appropriate digital note-taking tools. More readable notes might at least go some way toward preventing unnecessary loss of information in the course of the recording process. Another issue is what can be done about the limited nature of the time resources available for recording or about social workers' timidity with respect to writing about some of the essential issues, such as their perceptions about a case.

## 6 DISCUSSION

The first part of this section summarizes the results and contributions of studies I–IV. After this, the findings are discussed in light of previous literature, in relation to three themes: social workers’ interaction with information, interaction between social workers and the client-information system, and the relationship between the recorded information and client-information system. The final part of the chapter presents implications for research and practice.

### 6.1 General summary of the findings

This thesis is situated at the intersection of information science and social work. It contributed to our understanding about recording, the use of client-information systems, and their mutual interconnections. It explored the integration of a CIS into the work tasks of social workers in child-protection services. Recording was approached as a two-way process of writing and reading (Berg, 1996; Prior, 2007) where the origins of the entries most of the time is in the oral communication with various stakeholders (Hall et al., 2006). The thesis focused on social workers’ interaction with information – i.e., recording and use of information – in their daily tasks mediated by a client-information system. Deviating from the main-stream of studies in information science, it concentrated on the creation and use of information for work tasks in addition to analyzing the use of the information system. This focus on the processing of information for accomplishing work tasks through the system is innovative. The study corroborated the conclusion that task performance, information processing for social workers’ cases, and the use of information systems are closely interconnected.

**Study I** served as a general introduction to the use of a CIS over the course of a client process. The study identified four ways of using recorded information: checking of an individual fact, occasional skimming of entries, a holistic check-up on a client’s situation, and intensive reading. The client-information system did not adequately support the social workers’ rapid tracing of an overview of a case. Gaining an overview required navigation, digging through information, and picking pieces of information from several places in the client-information system.

**Study II** looked in more detail at the information requirements for presenting an overview in client-information systems. The social workers placed great value on the temporal continuum of client information. The core information elements for gaining an overall picture consisted of the three information strands: concern, institutional elements, and private life. The overall picture was lost for two main reasons: information was dispersed across several modules in the client-information system, but also the nature of the work generated time-sliced bits and pieces of information for recording.

**Study III** focused on social workers' ways of circumventing the constraints on information interaction in the client-information system. Both the technical inadequacies of the CIS and external demands for particular type of information prompted workarounds. The reactions to technical flaws were proactive, as social workers sought to facilitate future information use. Workarounds addressing the external demands, in turn, were utilized to save time. As for the workarounds themselves, both small-scale "tricks" realized within the CIS and shadow systems outside it were employed. Some of these workarounds were tensional in the human-services context.

**Study IV** explored the filtering of information that took place in the process from oral encounter to notes and finally to recording in a client-information system. The study revealed that information was filtered out gradually in the course of the process for human-related reasons, such as vagueness of notes. Secondly, awareness of social norms and also anticipation of future audiences and the direction of a client relationship led to exclusion of potentially relevant or important information. What was recorded did not fully match the information needed.

Table 9 synthesizes the various relations in information interactions. Row 1 depicts social workers' interaction with recorded information, and row 2 illustrates social workers' interaction with the client-information system. The interactions with the information and with the system are interwoven. The table has been divided into three columns, on the basis of the recording process. From left to right, the columns represent recording, the content of the records and the structure of the client-information system, and use of the recorded information. The gray column in the middle depicts the relationship between the information recorded and the client-information system. These relations are discussed in greater depth in the following sections of the work.

Table 9. Synthesis of social workers' information interaction in a client-information system

	Recording	Records	Use of the records
1	<p>Filtering of information: determining the wording for the text, regulating the amount of detail, and omitting 100% certain items</p> <p>Dialogue between entries</p> <p>Occasional summaries</p> <p>Modification of copy-and-pasted text</p>	<p>Bits and pieces of information, on the basis of situational relevance assessment</p> <p>Focus on concerns</p> <p>Less association with positive issues</p> <p>Less relationship with tacit knowledge</p>	<p>Varied reading tactics:</p> <ul style="list-style-type: none"> <li>• occasional glimpsing</li> <li>• checking of a single fact</li> <li>• holistic checking</li> <li>• intensive reading</li> </ul>
2	<p>Navigation between modules and documents</p> <p>Navigation between individual family members' files</p> <p>Production of various types of documents, both free-form and structured, both textual and numerical</p> <p><b>Workarounds</b> providing information signals to offer handles for reading and manual linking</p> <p>Embedding of information in a case report</p> <p><b>Shortcuts</b> to save time: copy-and-paste and ignoring and merging of statistical information</p>	<p>Loss of information in free-text form (i.e., narrative)</p> <p>Loss of the variety of work – the structural work-done module does not capture it</p> <p>Varied documents without a continuum</p> <p>Information in family members' files</p> <p>A previous client-information system and paper files that contain additional information</p>	<p>Navigation between modules and documents</p> <p>Navigation between family members' files</p> <p>Access to an earlier CIS through intermediaries</p> <p>Shadow systems in use</p> <p>Reading also records in paper form</p>

## 6.2 Interaction with information: Filtering and reading

Social-work research consistently emphasizes the value of holistic biographical narrative for the full comprehension of a client's case (Hall et al., 2010; Parton, 2009; White et al., 2010). The holism seems to comprise theoretical, philosophical, and ethics-oriented approaches that take into account all aspects of a person's life, including the family, community, societal, and cultural environments (e.g., Freeman, 2005; Lie, 1997). The narrative information, in turn, refers to temporal aspects (White, 1998), with

which the focus is given to a story with a beginning, middle, and end (Aas, 2004). The discussion about holism is important for the light it sheds on the basic premises of the social work. Abstract references to holism, however, leave open what counts as significant information to support performance of the work tasks. The unraveling and explication of what holism means is important, since it might directly contribute to further development of recording practices or client-information systems. It is difficult to develop systems toward better supporting holistic accounts of client cases without clarity as to what holism means in this context.

In Study II, the concept of a temporal trajectory (Reddy et al., 2006; see also Strauss, 1997) was used as an analytical device for grasping the holism and multifaceted issues that contribute to a client relationship in child protection and for reflecting on them in temporal perspective. The social workers did not use the concept of holism as such; instead, they spoke about the importance of developing a time-wise “overall picture” of a case. Articulation of exactly what forms the core of a temporal trajectory was difficult for the practitioners, because under the broad remit of the work – to do with people’s life as a whole – anything could count as an important piece of information. We identified three interconnected strands in the temporal trajectory as formed of those pieces: institutional, concern, and private life threads. The **institutional strand** referred to the overall organization of the work and the services provided over the course of the client relationship (cf. Strauss, 1997). The **concern strand** reflected both the social workers’ interpretation of the reasons for a given relationship and assessment of its seriousness, along with other stakeholders’ views about the client relationship. Concern is very much embedded in the social-work vocabulary. It refers to a subjective, intuitive, and anticipatory view of the client’s situation that is based on a social worker’s past experiences and knowledge (Eriksson & Arnkil, 2005). According to Hall et al. (2010), British social workers considered the recording related to a child’s needs to be nondescript whereas remarks about the concerns effectively highlighted what the issue really was and provided contextual information as well. The **private life strand** captured major events but also small issues in a child’s day-to-day life and social network.

The client’s temporal trajectory reflected the tempo of the work, so its shape might be steady but could also show peaks and breaks (Study I). Retrospective analysis of children’s path in care, wherein case records were used as a data source, revealed that there was imbalance among the strands of recorded information. The child’s institutional positions were the most comprehensively recorded, whereas the information about a child’s private life was fragmented and, because it was constructed at those moments when services were delivered, focused on the problems of the child. (Pösö & Eronen, 2013.) Pösö and Eronen (2013) refer to information gaps as “silent trajectory” and name two reasons for the silence seen: information did not accumulate when the child

was not present in care, and information was selectively recorded. This selectiveness of the records has been discussed in general terms (Askeland & Payne, 1999; Berg, 1996; Cochran et al., 1980; Garfinkel, 1967; Meehan, 1986; Räsänen, 2012; Taylor, 2008; Trace, 2002), but research exploring the selection as an action, that of filtering, is scarce. At the same time, the explanations for certain pieces of information being absent matter to people such as those leaving care who ponder and have difficulty in accepting their fragmentary recorded case histories (Swain & Musgrove, 2012).

The findings from Study IV suggested that information filtering took place as a chain reaction, as an oral encounter with varied stakeholders into notes and finally data in a client-information system. Firstly, the social workers were challenged to build a trusting client-worker relation, which has been acknowledged as a prerequisite for gaining more information about a client (Hasenfeld, 1992). However, there was a limit to what could be asked at one time without harm to the trust-building process. Secondly, the written notes made on the terms of oral interaction formed only a limited “cache,” in conjunction with a social worker’s memory. Thirdly, the social workers struggled with unclear notes and frailties of memory in the final stage of the recording process. The process approach to recording, thus, demonstrated that some of the reasons for information filtering were very human.

The filtering did not take place in isolation from the context; also, awareness of social norms, such as professional codes of ethics and legislation, resulted in reduction of the final records.

Time had a dual role in explaining filtering of information – as a limited resource and as a span of time. There was not enough time for an adequate number of encounters with a client, to reflect on and think about a child’s situation thoroughly, and to invest in recording. Secondly, the client-worker relationship and better understanding of the client’s situation developed over time. At the same time, however, working with a client for a long time was a minefield that could result in “blindness”: inuring one to some elements of the work, and consequently not recording them at all.

The social workers filtered information in their **choices of words**, by regulating the **amount of detail**, and through their balancing and **omission of certain topics** (see Table 9, row 1). The choices made about the exclusion of information are subjective, as Mary Richmond (1917) actually acknowledged nearly a hundred years ago, and they are situational, depending on the client circumstances at hand.

Social workers’ regulation of the amount of detail in the records illuminated the social workers’ expertise in an interesting manner. The social workers’ own observation was that increased work experience resulted in better distinguishing between relevant and irrelevant information and that the ultimate consequence was a lower number of details in the records. The work in Study IV demonstrated also that a social worker’s choice



to record in a more detailed manner could reflect increased concern about the client's situation and could predict a possible decision on taking a child into care. Detailed recording hence turned out to be an implicit signal of a social worker's professional experience and hunches. Hall, Slembrouck, and Sarangi (2006) too observed that recording is more intense in the critical moments of a case. Huuskonen et al. (2010a) demonstrated that, in a follow-up period of two years, the number of case-report entries and decisions was much higher for children who had been taken into care than with those who had been supported through only in-home services. The hypothesis was that the number of entries echoed the tempo of institutional interventions and was predictive of the course of the client's trajectory (Huuskonen et al., 2010a). A similar recording pattern was observed in another field of human-services work, with nursing records. A study that used data-mining techniques for examination of nursing records revealed that increased frequency and quantity of optional comments correlated with a patient's critical state. The study concluded that the recording pattern might indicate nurses' concern about their patients and that it thus had predictive value. (Collins & Vawdrey, 2012; Collins et al., 2013.)

The information filtered out was varied bits and pieces that are related to the institutional, concern, and private life strands of a client's trajectory. In particular, the social workers tried to reach a certain balance in their recording of their perceptions, sensations, conclusions based on professional expertise, and hunches and were likely to exclude these from the records. These findings are consistent with the results of Räsänen (2012), according to whom social workers emphasized recording of concrete facts. It seems, accordingly, that the social workers gave priority to direct representation of the events and left it up to the readers to form an opinion on their own (cf. Taylor, 2008). However, the professional touch is considered a useful tool in social work – sometimes called “silent expertise” – that produces valuable information (Eriksson & Arnkil, 2005). For justification for recording the conclusions from silent expertise, one can turn to the legislation as well. The Child Welfare Act (417/2007), indeed, mandates the recording of all information needed in planning, implementation, and monitoring of the child-welfare measures. The recorded fruit of silent expertise is very much needed by, for instance, colleagues who take over a case and seek to continue the work on it (Study IV). Hence, it is not surprising that social workers choose to turn to their colleagues in person to complement the picture of a client case (Davis-Mendelow, 1998; Monnickendam et al., 1994). Although the social workers seem to balance among various stakeholders and expected uses of records, they should be encouraged to record more commonly also their professional opinion and analysis of a client case. The utility of this kind of information is an obvious reason for which the use of a client-information system may seem attractive in the first place (Carrilio, 2008).



The social workers estimated that less time was spent on reading the records than writing them (Study I). Specific time was allocated for the recording, but that was not necessarily the case with use of the records. The records were sometimes utilized in brief sessions between other work tasks; simultaneously with, for instance, phone calls; or in conjunction with recording. Wilson and Streatfield (1977) suggested that the limits of time resources and the fragmentary nature of a social worker's work day should be taken into account in the design of reading materials of any kind. Their notions – set forth before the electronic age – about the impact of contextual issues and the nature of work to reading are still valid today.

Study I enhanced our understanding of the social workers' ways of using recorded information (see Table 9, row 1). Sometimes the social workers, while doing recording of their own, happened upon recent entries made by co-workers. Then they took a quick peek at the entries and continued with their own recording. This type of use was referred to as involving **occasional glimpses**. **Fact-checking**, **holistic checking**, and **intensive reading**, in contrast, were planned and goal-directed ways of approaching recorded information. The purpose of fact-checking was to locate a specific piece of information, such as a phone number or the amount of financial support granted. The aim of holistic checks was to get an overall picture of the client's case quickly. This involved the social workers skimming the records and, if a certain part of the text caught their attention, stopping for closer reading. Workers' intensive reading involved thorough familiarization with the records, possibly with printouts on paper, since paper better afforded annotations. The intensive reading often took place in conjunction with tasks requiring recording: summarization and analysis of previous information. Clearly, work-related reading varies in its purposes and forms (Adler et al., 1998; Sellen & Harper, 2002), and social workers' work is no exception. Insight into the reasons (Nygren et al., 1998) for using recorded information and ways of doing so may actually guide CIS design such that it better supports the work tasks at hand.

### 6.3 Interaction with the client-information system: Workarounds

Most of the previous research on client-information systems has been conducted in their implementation stage. These studies report outcomes, hurdles, and failures in the implementation (Riley & Smith, 1997; Savaya, 1998; Savaya et al., 2004) or client-information-system-related expectations, attitudes, feelings, and satisfaction of social workers (e.g., Dearman, 2005; Moses et al., 2003). The most recent British studies have focused on the mismatch between national child-welfare policy, as a part of which information and communication technology was introduced, and the grassroots level

(e.g., Hall et al., 2010; Peckover et al., 2009; Wastell et al., 2010; White et al., 2009; White et al., 2010). The studies realized in a stage after implementation quite often rely on surveys with an interest in the frequency and extent of use of the client-information system (Mutschler & Hoefer, 1990; Savaya et al., 2006), factors influencing its use (Carrilio, 2007), or social workers' experiences of information technology in general (Humphries & Camilleri, 2002). The present thesis stands out from earlier research in the following perspectives it brings: 1) the research was conducted quite some time after the implementation of the client-information system; 2) the focus was placed on work task context, though awareness was maintained that tasks are situated in organizational and societal context; 3) the starting point for the analysis was a client-information system in action (that is, how it was used by social workers); and 4) detailed micro-analysis of social workers' action in the CIS was carried out.

The social workers used a client-information system almost daily (Study I). Their expectation was of a client-information system as supporting their work and not imposing additional learning requirements. Ease of use and simplicity were named as the central qualities of a good client-information system because, as a consequence of them, recording would take less time, without struggles with technical issues. Previous studies too have highlighted that perceived ease of use contributes to the utilization of a client-information system (e.g., Carrilio, 2008), and British social workers considered the CIS needed considerable simplification if the system is to fulfill its potential (Shaw et al., 2009).

Even though the client-information system was part of the everyday work, its use was not always that smooth. The intricacy of the functions was commonly commented upon, with problems arising from conceptual mismatches between the client-information system and social workers' conceptualizations, inconsistent and hidden functions, and the logic of the client-information system obviously running counter to the social workers' common sense. The navigation paths were long because of lack of integration between documents of various types and between modules but also because there was often a need to switch back and forth between individual siblings' files (see Table 9, row 2).

The social workers applied their discretion in their interaction with the client-information system. This discretion manifested itself as workarounds, which are defined as alternative strategies for reaching a goal (Gasser, 1986; Koopman & Hoffman, 2003). Research has approached workarounds from several viewpoints, seeing them as everything from resistance to necessary activities in everyday life to creative acts and sources of future remedies (Alter, 2014). These creative acts have been described as tinkering and tailoring of a system in the context of real-life use; therefore, the acts can

be considered as a form of “secondary design” (Germonprez et al., 2009; Hovorka & Germonprez, 2011).

The social workers resorted to workarounds to compensate for the shortcomings in the client-information system and gaps in functionality. Firstly, the social workers kept a case history coherent via **manual linking** of varied documents together. The continuum was maintained in the case report, from which references to other sources of information were made. The social workers used **information signals** to indicate the major “plot points” in free text. These signals offered hints that specific items might be significant pieces of information and thus served as visual landmarks for readers (see also Nygren et al., 1998). These kinds of landmarks are obviously useful when text is being skimmed through. Secondly, the social workers managed their clientele with shadow systems maintained in paper form or with another computer application. The shadow systems supported maintenance of group-level awareness about clients and in some cases guided the coordination of client-related tasks. Thirdly, the social workers used time-saving shortcuts in response to the demands of superiors or external authorities. The shortcuts included **copying and pasting** of information and **merging or ignoring of statistical information** for managerial use. These findings are in agreement with research according to which the top-down requirements of the external environment and the bottom-up constraints in day-to-day work were shown to be potential generators of workarounds (Azad & King, 2011); see row 2 in Table 9.

The existence of workarounds has been recognized in diverse contexts, such as administration and business (e.g., Gasser, 1986; Ignatiadis & Nandhakumar, 2009; Petrides et al., 2004), and increasingly often in health care (Halbesleben et al., 2008), with applications such as electronic health records (e.g., O'Donnell et al., 2009; Saleem et al., 2009; Saleem et al., 2011; Thielke et al., 2007; Varpio et al., 2006). Study III enhanced our understanding of what the workarounds in a CIS are like in the multifaceted context of child protection. The workarounds were everyday survival strategies for the social workers, but some workarounds were tensional in tone with regard to clients, in relation to organizational demands for accountability and to legislation at societal level. Accordingly, the full context must be taken into account if one is to gain in-depth understanding of the workarounds and the human information interaction process in general (see Fidel, 2012).

## 6.4 Interaction of information and CIS: Tracing a client's temporal trajectory

The social workers wished to find a client's temporal trajectory with the strands of institutional actions, concern, and the child's private life from the recorded information. They looked for a broad temporal perspective on a case: the past, the current situation, and the possible future of the child. It was also important for them to make remarks about reoccurrence, continuity, permanence, and change in the client's trajectory (Study II). Longitudinal histories of this kind and chronologies are of great importance to social workers because they support professional sensemaking surrounding a case (Wastell & White, 2013). The key features of these longitudinal histories, however, were hard to find in the client-information system context, as studies I–II demonstrated. The problems arose because of the complexity of time and temporal expressions, fragmented information, and fragmentation of information across the various modules of the client-information system.

Time and temporality existed in client-information systems in several forms. Time expressions can be roughly categorized as of two types: absolute time, with exact time marks, and relative time, expressed in a blurrier way with words such as “before,” “during,” and “after” (Combi et al., 2010). The chronology was easiest to trace in the institutional strand, because it contained the most structural information and, consequently, had the most absolute temporal markers – with fixed service periods and set dates for other kinds of institutional tasks, such as appointments with stakeholders (cf. Pösö & Eronen, 2013). The parallel strands of concern and the child's private life, in turn, were present mostly as free text in the case report. This free text featured both absolute and relative temporal markers. The temporal features, such as permanence, continuity, and change, had to be interpreted also on the basis of the tense of the verb and from the words chosen. The information was obtained as individual items and recorded piecemeal in the course of a client process. A child's history was not set out in chronological order; the entries contained references to the past, current circumstances, and future occasions.

These temporal features could be exploited for development of a time-wise overviews of a case. Temporal data mining harvests temporal features from a dataset (Mitsa, 2010) and in this might be of potential use with child-protection records. Some interest has been expressed recently in automatic analysis and ordering of temporal expressions in medical narratives (Bramsen et al., 2006; Post & Harrison, 2008; Savova et al., 2009; Tao et al., 2010). At the interface level, visualized timelines have been developed for medical (Bui et al., 2007; Drohan et al., 2010) and nursing narratives (Fang et al., 2006;

Mamykina et al., 2004), for personal histories (Lifelines) (Plaisant & Mushlin, 1998), and for newspaper items (Matthews et al., 2010) to support effective presentation of information.

Recent British studies have argued that structural information presentation splits holistic case information into pieces (e.g., Hall et al., 2010). The findings reported in this thesis suggest that information can be just as fragmented in a narrative case report. The case report is composed of time-sliced entries with pieces of miscellaneous information. The number of entries grows with time and can be plentiful in lengthy cases (see Table 9's middle column). The social workers had a hard time following the plot and identifying key points, because there were only occasional information signals – from proactive workarounds – guiding the way through a report. A similar problem has been observed in medical records, in which important details got buried in lengthy progress notes (Nygren et al., 1998). Several decades ago now, Moore (1934) pondered whether incomplete records are actually more utile than records containing all items. In fact, this resembles the tradeoff between recall and precision.

Free text is a flexible way to record information, but the reuse of information can be a challenge, particularly with voluminous records (Allvin et al., 2011). Thus far, little has been done to develop tools that would support the effective use of free text, even though studies exploiting intensive health-care records suggest that language technology is applicable for creation of topical overviews of patient records (Allvin et al., 2011; Suominen & Salakoski, 2010).

The pieces of a client's temporal trajectory were presented in various unconnected documents in the separate modules of a client-information system (Table 9, middle column). Therefore, understanding the whole dataset at a glance was impossible. A trend line (cf. Matthews et al., 2010) collecting varied documents – e.g., case-report entries, decisions, and child-welfare notifications – in the same place would have informative value in its own right. Also, the pattern of recording indicates the tempo of the work and depicts the shape of a client's trajectory, with steady and peak periods. The pattern of recording, indeed, may implicitly tell about the concern felt by a social worker (see Section 6.2), and, therefore, the recording pattern has predictive value (Collins & Vawdrey, 2012; Collins et al., 2013).

Tracing a client's temporal trajectory in a CIS required two elements: finding out the core of a trajectory within information and operating between varied documents. After all, social workers had to piece together a trajectory in their minds (cf. Thompson, 2013). A client-information system should be able to provide an appropriate technical overview of a case and give support for a mental “overviewing” which means making sense of, and eventually understanding what to do with, the information (cf. Hornbæk & Hertzum, 2011).

## 6.5 Implications for further research

Future research should transcend boundaries between disciplines. Collaboration across disciplines such as computer science, social work, and information science has much to offer for research. Computer scientists are systems design experts, while social-work researchers are familiar with the domain and information scientists operate with diverse forms of information.

Different types of research approaches have been suggested, affording in-depth insight into what takes place in the interaction between an individual and an information system. There have been calls for ethnographies that could reveal more about the social and organizational context of use of the systems (Gillingham, 2011) and the work that goes on there (Dourish, 2006). An alternative proposal is laboratory-style research, with a so-called microworld, wherein simulated practice scenarios are used for exploring users' interaction with technology and information (Wastell et al., 2011). Ethnographic and laboratory research may seem to be opposite camps, but, in fact, they complement each other and could be used in turns, with fieldwork in real life supporting construction of realistic scenarios to be used in the "microworld," while the "microworld" can be used for testing and further development of new design ideas before their implementation in the real world.

The "in-the-wild" findings from the fieldwork described in this thesis informed us about social workers' various ways of using recorded information. The "microworld" could be employed for more in-depth exploration of social workers' patterns of navigation in a client-information system and their ways of making use of recorded information in work tasks of varied complexity.

Existing research has highlighted the bureaucratic and accountability aspect of recording; however, the records are also used in daily work tasks. The latter use is what we need to learn more about by reaping benefits from both real-world ethnographic and "microworld" research settings.

## 6.6 Implications for practice and system design

Recording was a challenging task for social workers because they had to find a balance among multiple and contradictory demands when making choices about what to record. The social workers had learnt to record mostly through practice. This is somewhat surprising, because recording is considered a core element of professionalization and professional tasks in social work (e.g., Kagle, 1984; Tice, 1998). Social workers would benefit from collective professional discussions about the role of recording in their



work. Sharing their experiences and learning from others in their field would be rich sources for developments in recording practices.

At the national level in Finland, recording is being guided toward a more structured and standardized way to present information (see <http://www.thl.fi/sostiedonhallinta>, in Finnish). What kind of support this gives to social workers in practice remains an open question. However, social workers should maintain their autonomy to exercise professional judgment in assessing what information is significant for their work. Guidelines for recording or new technologies do not on their own resolve the problematic issues in recording. Recording, as does any other work task in child protection, requires appropriate resources if one is to ensure that it can be carried out properly.

As day-to-day users of a client-information system, social workers know the system's "pros and cons" and in practice have figured out little "tricks" to fill the functionality gaps in the system. Wastell and White (2013) similarly concluded that users can be imaginative as long as they are given opportunity for this. Socio-technical system design has been suggested as a premise for getting users better integrated into the design process (White et al., 2010). Currently, the distance between workers and designers seems to be too great.

The analysis of the workarounds and social workers' innovations as verbalized uncovered a rich source of remedies. The main implication was that a client-information system should provide a time-wise overview of a client's case in the form of, for instance, a "diagram." The idea can be fleshed out as follows: documents need to be brought together and depicted in a "trend line," and each case history should be depicted as a timeline with a summary-snippet leading to the relevant full entry (Study II). The purpose of such a system is to offer handles for deeper navigation into actual entries, not to substitute for the contextual narrative as such. Inspired by our work, Kiviharju (2013) has elaborated upon and tested the idea by applying language technology and data-extraction methods to child-protection case reports. The design outcome was two types of timeline: one for the entries and the other depicting the people involved in a case (*ibid.*). These timelines are likely to be able to help social workers gain a comprehensive overview of a case more efficiently.

The recent British studies have highlighted several flaws in structural ways to capture and depict client information (e.g., Hall et al., 2010; Pithouse et al., 2009; Shaw et al., 2009). This thesis, in turn, has highlighted problems in the reuse of narrative free-text information. The structural and standardized presentation is not capable of capturing the variety of people's lives or of work in child protection. In lengthy narratives, core information can get lost and the user can drown in a sea of information. Finding a solution might be a matter of striking a balance between structural and narrative ways of presenting information.

## 7 CONCLUSION

The thesis contributes to understanding of task-based information interaction as a process – that is, to conceptions of recording and use of information mediated by an information system for various work tasks. More precisely, the project has enriched our knowledge of the relations in social workers' work tasks and involving information and client-information systems in the child-protection work context. The relationship tying these three elements together was tight and dynamic. Social workers were shown to be active agents in their relations with information and the CIS in use. Firstly, the social workers exercised their professional judgment and skills in recording information and making use of the records created. Secondly, the workers devised their own solutions to promote the information interaction in the CIS or, alternatively, trusted in means other than the CIS. The CIS, after all, lacked several features that could have supported effective use of narrative information. A process approach to the recording revealed that several factors other than the properties of the CIS had an impact on what ultimately was recorded in the CIS. Therefore, it is essential to identify those terms for recording that arise from organizational and societal layers of human services properly. The study suggests that both "cultural" and technical design should be taken into account when recording practices and client-information systems are being developed. Data from a real-world setting and micro-analysis of these data proved highly valuable both for understanding varied relations in information interaction and for pointing to practical remedies for CIS development.



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# APPENDICES

## Appendix I: Interview guide – social workers

### *Background*

- Could you describe your work a bit?
- How much work experience do you have?
- Have you received any training for a) recording b) use of CIS in your organization?
- Are there any organizational requirements or instructions for recording?
- Are the instructions for recording adequate?
- What kind of training needs do you have for recording?

### *Child protection process*

- What do you think a good/successful client process is like?
- Can CIS capture a client process?
- Could you describe a client process: how do you make sense of a case?
- With whom do you typically work? What kind of information do you share?
- How about recording various kinds of documents in the different stages of a client process: a child welfare notification, a child welfare assessment, a client plan?
- How do you make decisions about services or opening or closing a client case?
- How do you predict the future of a client?
- What happens if a child taken into care situation occurs?
- What are the “hand over” situations like when you take over a client case from another worker?
- Could you describe the client encounters: a) with a small child b) with teenagers c) with parents?

### *Recording*

- What do you think about recording?
- Why do you record?
- Could you describe your own ways of recording?
- Have your own ways of recording changed during your career?
- How does recording change during a client process (or does it change)?
- How real time is your recording? – When do you record?
- How much time does recording take? Is there enough time for that?
- What is the most essential information that should be recorded?
- What kind of issues do you record (e.g. about this child) or generally about encounters and why?
- What kind of issues do you not record? Could you explain why?

- Do you take personal notes and, if so, what are they about? How do you formulate these notes in CIS?
- How, when, why and what kind of information do you use from the records?
- What is it like to read the records a) the ones you recorded b) those recorded by your colleague?
- Is there missing information in the records? If so, can you explain why the information is missing?
- Who else uses the information you record and for what purposes?
- For whom do you record?
- Do you record or read recorded information together with a client?
- What is the difference between oral and recorded information?
- How do you record children's opinions?
- What kind of information do you need to be able to monitor a child's situation?
- What does effectiveness mean in child protection? How do you make it visible in the records and can you find such information in the existing records?
- What kind of issues and how do you record a) in a case report b) in a client plan c) in decisions?
- Could you tell more about writing these various documents – are there differences?
- What kind of information do these various records contain?
- Should records have a predefined structure?
- What do you think about a standardized structure for recording?
- Could you describe your work tasks and the information you need for these tasks?

### *The client information system*

- How have you used the CIS today/yesterday?
- What do you do in the CIS on a daily basis and what do you do less often?
- Which work tasks do you use the CIS for?
- Could you tell something about what is it like to use CIS to record a) a child welfare notification b) decisions c) entries in a case report d) a client plan e) numerical information about completed work?
- What is your opinion of the CIS?
- How does the CIS support your work – for what purposes do you use it?
- Does the CIS regulate recording, and if so how?
- What kind of information do you search in records? Can you find this information easily?
- What kind of information is important for you to find in the CIS?
- How do you use the recorded information?
- Would you be able to find all your clients in the CIS?
- Is there something that you can't do (do not have rights) in CIS?
- Is the CIS user-centered?
- How do you find information about a child's current situation?
- How about the clients with whom you are not actively working – can you find them in the CIS?
- Are all the documents in the CIS?
- Have you had any problems with CIS? If so, what were the problems like?
- Where do you get help if you have problems with the CIS?
- What are you good at when working with the CIS?
- Do you have any ideas to improve the CIS?
- What are the strengths of the current CIS?

## Appendix II: Interview guide – social work managers

### *Background*

- Could you describe your work a bit?
- How much work experience do you have?
- What are your work tasks like and do you need the CIS in them?
- How many subordinates do you have?
- Do the managers have a management team? If so, what is the purpose of it?
- How did you learn to use the CIS?
- Are there any organizational requirements or instructions for recording?
- What is a manager's role like in the CIS when compared with social workers? What can you do in the CIS?

### *Child protection process*

- What do you think a good/successful client process is like?
- How do you take care of a client process in your organization?
- Can the CIS capture a client process?
- Do you monitor client processes in your organization? What information do you need for this and how do you get this information?
- Are you able to monitor the number of clients in your organization? How do you do this?
- Are you able to obtain information about the effectiveness of the child protection work? How do you do this?
- Can the CIS support provision of information about the effectiveness about your work?
- With whom do you cooperate in your organization and outside your organization? What information do you share with them? How and why do you share that information?
- How do you share information in your organization e.g. in team meetings?
- Do you use any other information systems?

### *Recording*

- What is a good recording like – specifically, if you consider it from a manager's point of view?
- What do you record?
- How do you use case records – what information do you need?
- What information should you be able to find quickly in case records?
- What information do you need so that you can make decisions or plan different issues in your organization?
- What information do you receive orally from your subordinates – does this differ from the information in the CIS?
- Is there missing information in the records? If so, can you explain why information is missing?
- What information do you need as a manager e.g. a) about clients, b) the workload of your subordinates, c) the effectiveness of the work?
- With regard to the effectiveness: What is it? Is it possible to find the goal that was set and the effectiveness in the recorded information?
- What role does the recorded information play in decision making?
- Do you supervise how your subordinates record e.g. monitor that client plans are implemented?

- What do you think about having a standardized structure for case reports?
- What would be the best way to unify recording practices?
- Would standardized recording benefit managers?

### *The client information system*

- Can you describe how the CIS was implemented in your organization?
- How have you used the CIS today/yesterday?
- Do you use the CIS on a daily basis?
- Is there a difference between social workers' and managers' ways of using the CIS?
- How do you find information in the CIS – what is difficult/easy?
- How do you use (read) various documents, such as case reports?
- What kind of reports do you need from the CIS to support your work tasks?
- Are you able to create statistics in the CIS yourself?
- Are you able to follow timeframes?
- Would you be able to find all the clients in your area from the CIS?
- Are all the documents in the CIS?
- Have you had any problems with the CIS? If so, what were they like?
- Whom do you ask for help if you have problems with the CIS?
- What are you good at when working with the CIS?
- Do you have any ideas to improve the CIS?
- What are the strengths of the current the CIS?
- Are the instructions to use the CIS adequate?
- Do you have any need for training – how about your subordinates?

## Appendix III: Interview guide – system administrators

### *Background information*

- What are your tasks as a system administrator?
- What are routine tasks for you and what do you do less often?
- How long have you been working as a system administrator? How did you end up doing this work?
- With whom do you cooperate in your organization and outside your organization?
- What kind of CIS-related teams, meetings or discussion forums do you have?

### *Child protection process*

- How is a child protection process depicted in the CIS?
- What possibilities does the CIS provide for monitoring a client case?
- How do you follow timeframes?
- Are you able to monitor the number of child welfare notifications and assessments?

### *Recording*

- What kinds of issues are recorded in the CIS during a client process: child welfare notification; assessment; decisions?
- What kind of user groups do you have in the CIS – what are the differences; what are they able to record or read?
- What type of instructions for recording are integrated into the CIS?
- How does the CIS support recording?
- Do you have locally tailored forms in the CIS? If so, for what purpose?
- What kind of reports do you provide for your organization?
- What is it like to produce figures for national child welfare statistics?
- What kind of information can you easily extract from the CIS, and is there something that is more difficult to find?

### *The client information system*

- Could you describe the implementation process for the CIS?
- What was the cooperation like with the company that provided the CIS? What kind of cooperation do you have currently?
- How did the employees participate in the local tailoring process in the beginning?
- How do you tailor the CIS locally? Can you provide concrete examples?
- Can you describe the CIS updates – how do you implement an upgrade?
- How often do you update the CIS?
- What modules do you have in your organization; is it possible to tailor them locally?
- Could you comment on information security issues?
- What are problem situations like?
- What are the strengths of the current the CIS?
- What are the weaknesses of the CIS?
- What is your vision about the CIS in the future?
- What are the log files like?

*Support for employee*

- What kind of help or advice do employees need?
- What do you think about the employees' skills in using the CIS?
- How do you train staff to use the CIS?

## ORIGINAL PUBLICATIONS





# Client Information System as an Everyday Information Tool in Child Protection Work

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## ABSTRACT

We describe information production and use in a client information system (CIS) by social workers in child protection. Data consists of interviews and observations with think aloud material. Information production and use are embedded with other work tasks and go throughout the whole client process. CIS does not support social workers' tasks sufficiently. Our findings imply recommendations for developing CIS for better fitting to work practices in child protection.

## Categories and Subject Descriptors

H4.1 Office Automation, H5.2 User Interfaces – interaction styles

## General Terms

Design, Human Factors

## Keywords

Client Information Systems, Social Work, Work Tasks, Information Production, Information Use

## 1. INTRODUCTION

In social work, client information systems (CIS) have recently been under active development and critical discussions. In Finland, the national project called TIKESOS is supporting CIS development and implementation for social work. In Great Britain, Integrated Children's System and in USA SACWIS are information systems developed for nationwide use in child protection services. Client information systems have a growing role in every day practice of social workers.

CIS can be described through a tool metaphor. A tool is used to accomplish a particular task with technology. It should befit the hands and minds of an individual person. [12] CIS is used for tasks related to the production and use of information. The information in CIS is utilized in varied ways to support work in child protection services. The information is recorded and used typically when a social worker takes care of a single client case or a social work manager makes plans about service resources.

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The CIS is also used for producing statistics for local and national level.

There is a lack of empirical research about social workers' daily work with CIS [16]. The aim of this study is to describe how social workers in child protection services use CIS in their daily work. The focus is on a client process and information production and use activities in CIS generated by it. The findings have relevance to designing and developing more fitting information tools for social workers.

## 2. RELATED RESEARCH

Information and communication technology (ICT) including CIS has become an integral part of social work. Technology changes the work and communication processes and forms of knowing in social services [13]. It has, as well, been argued that ICT transforms holistic client information into fragmented pieces [8]. Recent British studies around the Every Child Matters Reform and its technological solutions point out problems in narrative and statistical information production. Structured form called Common Assessment framework seems to constrain professional practice by disrupting a professional's own ontology to "common evidence-based language of need" and breaking the narrative nature of knowledge [14, 21]. There are also problems of aggregating accurate statistical profiles [18].

Social workers' utilization of an integrated information system in social service agencies has been in focus in a few studies. Based on an Israeli study social workers seemed to be more inclined to enter data than use it. This was explained by the ease of use of the input component compared to the output component, and by social workers' unfamiliarity with planning and evaluation work where information has a critical role. [17] According to research realized in the USA, the system attributes of CIS and workers' skills with it influenced to which extent CIS was used [2]. British research also showed social workers' variation of skills in using computer technologies [14].

In some cases, computerization has been perceived to have had negative impact on work satisfaction. The reasons for dissatisfaction included struggling with the system, accessibility problems to client information and low quality of information throughout the system [10]. Sense of an increased bureaucratization of work at the expense of work with clients has been found to be the reason for dissatisfaction [1, 18]. Tension between immediate client work and representing it as records exists [15].

The studies seem to highlight problems related to CIS and other communication technology. An alternative scenario argues that ICT has a strong capacity to distribute information and even

increase the participation of clients [19]. In principle, British social workers considered CIS a remarkable idea as long as it is simple to use [18].

There are signs that properly done implementation of CIS can increase users' satisfaction with it. Especially, social workers' engagement in the local tailoring process can make a positive difference in the use [18]. Factors like preparedness, importance for work practice, technical support and usefulness are other factors to predict satisfaction [9].

In information studies, interest in social workers' information needs and use has been modest. The major study originates from the time before electronic CIS with focus on information needs in general [22, 23].

Studies in social work seem to reveal the limited use of CIS and low satisfaction with them. The reason for dissatisfaction might be that the information systems are developed without paying sufficient attention to the needs of frontline workers and without realistic understanding of work processes [11]. There is a lack of studies describing what is done in CIS and how it is related to work tasks in social work. Our research about the use of CIS in child protection work explores client and work process and by this way we gain understanding of how CIS is generally embedded in work tasks. A task consists of a series of actions to pursue a particular goal and performance of it includes purpose, beginning and end [20].

### 3. RESEARCH ENVIRONMENT

The data was collected in three municipal social service organizations providing child protection services in cities A, B and C in Finland. The research has been focused on open services where a child and his family are supported while a child lives at home. Services include, for example, financial support and organizing support persons and family work in to the family.

In city A there are ten social workers in two regional units involved in child protection open services. In city B, the number of social workers is nine in those services. They are based on the same office building although the city has been divided into three regional areas. City C has six regional units and 35 social workers involved in child protection open services.

The CIS used in the research sites was modified from a Swedish system. The local social service organizations buy "a skeleton" of the system. At the implementation stage, it is tailored to fit the needs of the local social service organization. Tailoring is a continuous process that does not end with an implementation stage. Since the implementation, there has also been several system updates provided by the company that produced the system.

The CIS was implemented into city A and C in 2004 and city B in 2006. The conversion from the old system was manual when only the information of the active clients was transferred to the new CIS. In site C implementation was a long process involving the detailed planning and education of the staff. In sites A and B implementation was done quite fast, the whole process was realized in less than a year. Site C has invested in developing the system locally. It has a full time system manager and support system for users. In sites A and B, investments have been far less. The system is managed only as a part-time job besides other duties. Thus, the system is most tailored to local needs in site C.

Local tailoring means describing the units of local organization and services inside CIS. This has an impact, for example, on how decision process in the CIS goes. Also file structure, content of drop down menus and 'ready phrase texts' in the decision module are locally tailored.

CIS includes several modules that can be purchased separately. Table 1 depicts the modules that are used in the research sites. The documentation module is used for documenting daily work in case reports and making client plans. The case report provides an unstructured space for documentation whereas a client plan is structured. The decision module is used when making decisions about starting and terminating a customership and allocating services. The decision procedure is mostly structured by drop-down menus. The person & family module depicts the family members in structured form. The scheduling module shows meetings and appointments. The work done module gives numerical information about time and operations done with a client. The income support module calculates financial support given to a client. We are using the term case records when referring to all client information in CIS.

In the present study, scheduling and income support modules are excluded because there are not essential when following a client case.

**Table 1 Modules of CIS in use in cities A, B and C**

Module	Description	A	B	C
Documentation	case reports, plans	x	x	x
Decisions	official decisions	x	x	x
Person & Family	family description	x	x	x
Scheduling	time management	x		x
Work done	actions and time spent with a client		x	x
Income support calculation	financial support for client	x		x

Access to the system is through a navigation bar by a personal password. There are users' roles of a different kind. The roles define what information the person is mandated to see. The basic view in the CIS is a diary view of the client. The client's information can be searched on the view by using the client's name or social security number. After that, it is possible to continue to different modules depending on what a task requires. There is no direct transition between different modules but navigation goes through diary view.

The local tailoring is essential because it has an impact on what kind of an information tool the CIS is in the organization. It defines, for example, what kind of statistics it is possible to produce.

## 4. RESEARCH DESIGN

### 4.1 Research questions

The research concerns CIS use as part of work practice in child protection services. The aim is to understand what kind of an information tool CIS is, with special interest in tasks and situations in which it is used. The article seeks answers to the following research questions:

- What kind of information production and use activities are performed with CIS during a client process?
- How is CIS used for information production and use?

- How are activities done in CIS connected with other work tasks?
- How does CIS support information production and use in child protection work?

We take client process in child protection as a point of departure when seeking answers to these questions.

## 4.2 Data collection

This study combines three qualitative data collection methods (table 2): semi structured interviews and observations combined with think-aloud data. The interviews were conducted first and thereafter the observation sessions were set up. As a supplementary material tape-recorded and transcribed data from CIS workshop, organized as part of our project, was used.

**Table 2 Overview of Data Collection in cities A, B and C**

Type of data	Informants	A	B	C	Total
Interviews	social workers	6	8	9	23
	managers	1	3	3	7
	administrators	1	1	1	3
	total	8	12	13	33
Observations & think-aloud	social workers	3	3	5/6*	11/12*

\* one social worker observed twice

Before the interviews one test interview was conducted to check the functionality of the questions and time required for an interview. A total of 33 interviews were conducted including 23 case social workers', seven social service managers' and three system administrators' interviews. The interviews took place in the office of social workers, only one interview was done at the university. Three core interview themes covered work in general, documentation and CIS. The CIS was discussed from the aspects of daily work, experiences of use, obstacles and possible improvements of the system. The questions varied according to the role of the informants. The interviews data is about 62 hours and one interview is about two hours in length. The interviews were tape recorded and transcribed. The interviews give a good overview and description of daily activities done in CIS and problems and benefits concerning the use of the system. The interviews created a good base for more detailed and concrete data collection by an observation method.

The social workers' observation and think-aloud data consists of twelve sessions in natural settings. The social workers have a practice to book up time to do documentation and other work with CIS. The social workers were asked if it was possible to join those sessions and follow their work. The only difference with regard to a normal situation was that the social workers every once in a while said something about their work. It was their choice when to talk. They were asked rarely to explain more about their actions. Some of the social workers talked loud a lot making the most of the situation *"I just enjoy when I can talk aloud. I just hope that I don't stick with this"*. On the other hand, the situation seemed to be somewhat uncomfortable for some of them *"Well, it is a bit disturbing when someone else is present, but you may stay there, I just tell you this."* The observational data is all together approximately 40 hours. The length of a session varied from about two hours to the whole day. Ten sessions were tape-recorded whereas in two cases it was not appropriate. Besides recording, hand written notes were made during the observations.

Tape recordings of the think-aloud were transcribed and combined with field notes.

Research permission was acquired from the social service organizations according to their procedures. Data was collected in the autumn of 2008.

## 4.3 Data analysis

Analyzing the interviews was based on several reading rounds of the data. First, all the segments where CIS was mentioned were identified. Identifying the segments can be called holistic coding that is a preparatory approach to data [5].

After holistic coding the segments were read through and analytic memos were written to gain general understanding about the data concerning CIS. The next reading round focused especially on identifying parts in which the use of CIS was mentioned. These parts were encoded in information production and use activities and divided in three parts according to the client process. Problems related to the use of CIS, workaround practices and system's improvement suggestions were also encoded. The final analysis was done by making summarized lists about coded parts and studying dimensions and properties of them. [4]

The combined computer text files of the field notes from the observations and social workers' think-aloud were analyzed together. Field notes and think-aloud data were broken down and organized according to the working episodes i.e. functional entities within the CIS. A functional entity consists of a sequence of actions occurring in order to reach a certain goal. In most cases, the entity concerns only a case of one child. In a few situations, the cases of siblings were intertwined so it was not justified to split these into separate entities. All together, it was possible to identify 92 functional entities. Three entities were excluded since they concerned only adult clients. All together 89 episodes were analyzed more in detail. Out of these episodes, 84 entities concerned a child and five episodes concerned a child's parent but were closely related to a child's case. Most of the episodes (n=67) were from the middle of the client process. Episodes from the beginning (n=12) and end of the client process (n=10) had almost an equal share. The episodes include activities as writing a case report, making a client plan and updating an old one, making different types of decisions, terminating customership and using information in CIS for the fast or intensive checks the client's situation.

The functional entities were analyzed by using a structured analytical frame that was created to answer the research questions. The frame had elements from task analysis [6, 7]. The analytical frame for an episode included categories as follows: 1) work task generating the CIS activity 2) purpose of a CIS activity 3) the sequence of actions taken in CIS 4) modules used in CIS during the episode 5) identifying the type of information production 6) identifying the type of information use 7) support the CIS is giving 8) problems in using CIS 9) other problems 10) help in the problem situation 11) workarounds 12) communication outside the CIS.

When presenting results, the interviews and observation and think-aloud data are used side by side. The extracts have been marked **I** for an interview and **O** for an observation episode.

## 5. RESULTS

### 5.1 Client process as the structuring principle

Like all other social work, child protection work also involves different stages [3]. However, the real process is not linear since intensity of customer contacts varies and there can be breaks in customership. The Child Welfare Act (417/2007) structures the client process in child protection (Figure 1), especially at the beginning of it. There should be a well-defined beginning for the client process started by either child welfare notification, application done by a child or parents or social worker becoming aware of a child by some other means. The process continues by assessing the needs of a child and if necessary doing more detailed investigations. The assessment is documented and summarized in CIS. If a child continues as a client, after the investigation, a client plan is made and services are organized. During the client process, the plan is updated regularly. At some point, the customership in open services is terminated either because there is no need for the services or open services do not suffice and a child is taken into care.

**STARTING POINT → ASSESSMENT → DECISION  
ABOUT CONTINUATION → WORKING PERIOD →  
TERMINATION**

**Figure 1 Client process in child protection.**

The interviewed social workers also divide the child protection process into three parts. They describe how customership starts, continues and ends. In the description of the ideal process by the social work manager it is possible to identify these three stages:

*"So that we would get a notification early enough, or the client himself would contact us early enough. [...] We would work with the client based on an accurate and clearly done client plan, and meanwhile regularly we would organize client plan meetings, in which we would check up the services. [...] And it would end when we could find out that ok – you are coping now, that our open care support was helpful, we can terminate the customership...or we could make a good quality custody in early stages." (I 26)*

This division is also used as the base for the analysis. To the beginning part belong the first contact about the child and actions as far as the evaluation whether to continue the customership or not. The middle part starts when decision about the continuation of customership has been made and services are provided. The end part means decisions about terminating the customership in the open services. The termination can be either taking a child into the care or services are not needed.

The process defined by legislation or by an ideal description is, however, difficult to fulfil in the daily social work. The defined timeframes are difficult to follow. Sometimes clients have to queue for the services.

The social workers' interviews show that working intensity varies with the clients. Some clients are more in a passive stage and are like "sleeping" clients. With the other ones, the work is more intense and active. The process is also described as being like "a roller coaster". After a silence, the customership may be activated with no anticipation. The length of the customership varies

greatly. It can end very shortly or continue even over the whole childhood.

During the client process, the social workers work in many ways. It is possible to identify tasks of a different kind from the interviews. The work consists of meetings with a child and parents either in the office or at the clients' home. As well, different kinds of group meetings take place, for example, in the school, in the day care, in the hospital or in the psychiatric unit. The work involves plenty of interaction either face to face or on the phone with the client and officers from other organizations. The integral part of the work is also to make client plans and organize services for a client. That means acquisition of services, getting them started and at intervals checking that services are working properly.

In the CIS workshop which was part of our project, the social workers raised contradictory opinions about a CIS's ability to support social work processes. Some were of the opinion that "the system is guiding too much our processes and our work is not guiding the system". The other ones contradicted this by saying "I see plenty of similarities in that process when I think about the new child welfare act, it has a beginning, a working stage and an end."

For the social workers, CIS has become an integral part of the daily work. CIS is opened every morning besides e-mail. Situations when the system is not available cause interruptions to work "You are quite helpless then because you don't know what to do. All the information is there." (I 19) The social workers estimate that they spend more time in producing information than using it. It is the opposite with the social work managers.

Next we analyze more in detail how CIS is used at different stages of the client process. The activities are divided in information production and use.

### 5.2 Beginning of the process

#### 5.2.1 Information production

Information production in a beginning of a client process forms a basis for future work. First of all, a customership needs to be established as an independent procedure. At the beginning, information about a child's family is also added to CIS and a case report for documentation is created. Despite the multiple activities needed, the work in CIS is in many cases considered as secondary compared with other work tasks "You carry those starting procedures automatically...but the nature of CIS is that it should be secondary. It is not the main reason why we are working here." (I 3) The primary work tasks are to react to a child welfare notification, organize meetings with a family and assess whether there is a need to start a customership.

No matter, how social workers are informed of a potential customer, the case has to be opened in CIS in a standardized way, by filling a structured form in CIS. The form is also a base for statistical information concerning notifications. The amount of work in CIS can be manifold if the notification concerns siblings. The same procedures need to be done to all of them: "And then the third one. When there are several children in a family and if you get a notification that is related to all of them, then you have to do a great deal of typing." (O 50)

Besides a child's personal information, information about the family needs to be created in CIS in a separate module. If a family structure changes information can be updated. Updating, especially bringing members together, requires previous knowledge about the practices within CIS. *"Although it basically is combining you do it through dividing."* (O 65) Finding a way to join family members together had required previous trial and error experiments and sharing this information between colleagues. In some cases, the social workers create their own workaround practices so that information concerning a family would be easy to find. Since moving to the family module to check up things is found to be extra work, the same information is rather added to the top of a case report. *"I don't jump there, to some odd person information module or something, I find it unnecessary. I rather write the information to a case report where I work anyhow."* (I 5)

Investigation of a need for a child protection services was a new work task actualized since the new child welfare act in 2008. It also implied a new type of practice in CIS. An investigation includes typically meeting a child and his family to be able to assess their situation. Based on these meetings, a summary assessment is composed. Table 3 depicts moves made when the social worker writes this assessment in city B. At that time in city B, it was still unclear for the social workers where to put a summary in CIS. The actual summary already exists as a word-document. The social worker turns to the colleague and the system manager to check whether there is a special place for a summary. Since there is no special place she copies the word-document and embeds it inside a case report. To distinguish it she also gives it a title with capital letters and marks it off with asterix-symbols. To the text, she adds a reference telling that an original paper document is in the paper files. After that, she moves to a work done module to report time spent on an assessment reporting.

This example shows clearly how new work tasks require tailoring of CIS. It is also common to ask for help from a colleague or a system manager. Highlighting text and making references to paper files are common practices. Finally, we see how work is reported on two separate modules: narratively in a case report and numerically in work done module. (O 91)

**Table 3 Summarizing a child protection investigation on a case report (city B)**

1.	checks up from a colleague where to document investigation
2.	double checks from the system manager
3.	starts from a diary view to locate a client
4.	moves to a case report to paste text from the word document
5.	moves to work done module to report documentation time

The beginning part of the client process ends with a decision about either continuation or discontinuation of a customerhip. That has to be done also in CIS.

### 5.2.2 Information use

In the beginning of the customerhip the information use is quite limited for an obvious reason: in CIS there is relatively little information to use. On the other hand, when receiving a child welfare notification the lack of information itself is already a message that a child does not have a previous history in child

protection services. The use of information means a fast check up on whether the family is previously known or not. This is done by searching by child's name or social security number.

However, in checking information, there is a problem caused by the manual conversion of client records. Due to the costs only records of active clients were transferred to new CIS. It is possible that there is relevant information in old CIS. That is checked up in some cases: if the name of a client "rings a bell" or on the basis of a child's age it is reasonable to expect to find information in old CIS.

## 5.3 Middle of the process

### 5.3.1 Information production

At its simplest, information production activities can be categorized based on document type produced. The social workers write 1) a case report 2) a client plan 3) make decisions and 4) record time spent with client work. The type of information can be narrative or structured, or it can also be divided into textual or numerical. In the following we analyze information production by document type.

*Writing a case report* is the most common information production activity in CIS. Information production to case reports is diary type reporting that reflects the intensity and happenings in the customership. The case report writing is related to almost all other tasks since social workers document all their contacts with a client and officers dealing with a case.

Updated information is considered valuable especially in situations where a deputized social worker or person working in emergency duty takes care of the case. In spite of the need for updating information, there can even be delays of weeks, in documenting the daily work in CIS. In some cases, the social workers make a short annotation to a case report and later on continue with more detailed writing.

Technically case report writing is a simple activity since it does not require complicated steps in CIS. It happens by accessing a case report via diary view where the client is first searched for by the last name or social security number. From the diary view there is an access to the documentation module where the reporting can be started just by adding text after previously written text. The social workers start the entry by adding a date and their own name because a date automatically produced by the CIS does not print out properly but is rather like *"odd looking litany"* (O 30). Printed documents are presented in court in custody cases or when a client wants to look at his own records.

Basically documenting to the case report is writing text straight through. However, this is found to be inadequate by many social workers because the essential information does not show out well enough when it is searched for. They have developed their own ways to highlight and structure essential information. By this way, they make text more readable and offer handles of some kind to readers. Highlighting information includes making the lists of major points, like agreements and future plans, to the end of the documented text, bolding important parts of the text or creating subheadings *"Now I have tried that I put subtitles but I don't know if there are hundreds of subtitles if it makes it any easier."* (O 87) Picking up the essential information is a double

edged sword, where too much highlighting loses the essential information.

A case report is a central place to keep up a chronology and a plot in a client case. It serves as a double registry where linking to other documents, like client plan or decisions, is made. Since there is no technical way to build up a link between different documents and different modules it is done textually by making cross reference in the case report text. Without linking activity, a narrative concerning a child would break and it would seem like there would be a piece missing from the case history.

In some cases, a case report is a communication channel between workers in different units. It is a place where a social worker can show to co-workers concerned about a child that she is aware of the situation of this child. Especially in crisis communication is real time. In the following citation, the social worker explains why she immediately responded to the emergency department's entry: it is a matter of dialoguing. *"This was an important phone call as you heard. There are two entries from the emergency department that this has happened. It would have looked funny if I hadn't reacted in some way."* (I 7)

The practice in which each individual sibling has his own case record is a relatively new phenomenon. The new practice is explained by the right of each client to his own history. Previously, family was considered as a starting point. In city A information was recorded under the youngest child, in city B under the oldest child and in city C under the head of the household meaning most of the time the man currently living in the house. The new practice has increased the amount of recording since the social workers need to keep up separate records for each sibling. *"Although you cut and paste common information, it still takes time when you put that to everyone and in addition every child's specific information."* (I 18) The social workers make time saving shortcuts when they copy and paste information between siblings' files. However, the CIS does not fully support this activity. The social workers need to shuttle between the case reports by closing down the first documentation and opening the second one since it is not possible to keep open two case reports simultaneously.

The case report is tailored differently in different cities. Unlike the other two, city C has a structured part for a child's background information concerning family and siblings, social network, hobbies, school and day care. The structured part seems to be underused. Maybe this is because all the structured information is not considered essential for work. Time is spent with chronological case reports whereas producing information to the structured part of it is secondary.

A *client plan* is a structured and summarized document about a client's situation. It clarifies the client process and goals set. The plan is sent to a client. It is created and updated based on a client's meeting either organized for making a plan or in conjunction with meeting for some other purpose. Besides talking with a client, making a client plan requires information filtering from a case report. Information filtering can be a heavy task especially in a long customership where there is plenty of recorded information available.

Structured client plan form is not always filled fully but selectively by social workers. The selection is based on what information is

available and what is considered important in a particular client case. When updating a client plan unchanged fields are either copied to a new plan or left open since the information can be found in an old plan. However, in the latter work practice social workers do not refer to the old plan.

*Decisions* are made in CIS's decision module. In the middle of the client process, decisions are mostly related to giving or terminating services. The decisions are made with less delay than case reporting because some other procedures are dependent on them. However, when it is a matter of crisis *"the practical work is taken care of first and [formal decisions] are made when there is time"*. (I 3)

The decision making path in the CIS requires several steps and within them filling out structured forms in different interleaves. Some of the social workers are comfortable with decision making while others find steps complicated and are irritated about it: *"I think it is quite illogical if it takes a half year from a worker to figure out the logic of it"*. (I 13) There seems to be a misfit between CIS and the user's common sense. For them decision is one act, whereas in CIS it consists of several acts.

The social workers distinguish between frequently and infrequently made decisions. More frequently made decisions concern typically financial support or organizing family work whereas infrequently made decisions are about emergency placement or support for a parent with substance related disorders. In most of the cases, infrequent decisions require more justification and information production. In those cases the social workers need instructions. In the decision module, locally tailored legal phrases are valued as a big help.

Cities B and C also have in use the work done module by which client work is reported statistically. The purpose is to mark each task done with a client to this module. The structured form produces information about a type of a task, time spent with a task and number of participants. According to the observations, recording time used in a task is done mostly simultaneously with case report writing. The documentation and work done module are not linked. Reporting to both modules means closing down the other module and shuttling to the other one. The work done module is not in full use *"I don't know if anyone is doing it, at least not in a very consistent way"*. (I 10) Underuse is explained by duplicate work compared with case report writing, the inadequacy of the module to present essential information and difficulties of allocating tasks only under a single client. Those ones producing statistical information are hoping to show an amount of work by offering facts and by this way maybe getting additional resources.

### 5.3.2 Information use

The CIS serves as an extension of social workers' own memory. Due to the heavy workload it is impossible to remember each client and details of their case. The social workers turn to the CIS that is considered as *"archive and storage where you go to check up any sort of information"*. (I 23) The information stored in the CIS is used in various ways. The use is typically quick reading for 1) checking a single fact 2) holistic check up of a client's situation or 3) occasional glimpsing of entries whereas 4) intensive reading is done more sparsely. We present the types of information use in this order.



*Checking a single fact* means an attempt to locate a certain piece of information in CIS. This can be, for example, finding a phone number, an address or a name of a client's family member or time set up for a next meeting. The modules of CIS used in these situations vary. Sometimes, the fact is embedded in case report implying browsing through the text. If relevant text is highlighted in some way like making it bolder so it is naturally easier to find.

*The holistic check up* signifies either gaining a general overview of a client's situation or summing up recent events. A general overview is needed, for example, when taking over a case as a new worker. Case reports are read when the situation becomes current, for example, when it is time to meet a client for the first time. More likely reading is done chronologically backwards going as far back as there is time to read. The case reports are read more in detail if the client situation is more serious: *"The more serious the situation is the more I try to familiarize myself with the old entries, dig out what has been the starting point and what is the concern". (I 17)* The social workers return to the recent events when they prepare for a meeting with a client or co-workers. They summon up things, like agreements and promises made in a previous appointment. In practice, holistic checking up means skimming through the text looking for the major points: *"In my opinion, I can perceive quite well those key words and important points". (I 14)* The summarized information in a client plan, if it is available, is valued especially in a hurried situation when one needs to find the core points of a customership. Previously made decisions are picked up for support when making a new decision.

Finding information fast becomes important especially in situations when the social workers need information when they are on the phone. For example, when reacting on the phone to a child welfare notification concerning an old client, already scrolling through entries gives a hint of a type of a customership. The more there are entries, the more serious the case probably is.

Information in CIS is used when social workers want to keep updated and aware of an acute situation of their own client. There are also other people, like the emergency department or a colleague being on call, involved in these situations. Since CIS does not itself alert social workers to acute cases it is up to colleagues or emergency department to inform a social worker by phone, e-mail or paper note to look up the case reports of her own client.

Case reports can also be used by unplanned, *occasional glimpsing* of entries. In these cases, a social worker comes across entries written by some other worker and kind of peeks at what they are about. This shows how CIS bundles up activities and information of several people.

*Intensive reading*, going through thoroughly the whole documentation, is not common in the middle of a client process. Preparing a client plan, especially the first one, is a tedious task and requires often familiarizing with a client's history. However, going through all entries in a case report, finding and filtering the information to summarize takes a lot of effort since relevant information drowns in long narratives. *"But how I can make use of the case report is that I take a look at what has been documented here... [Information] is somewhere there fragmented, in a long text." (O 24)*

### 5.3.3 Information production & use intertwined

Information production and use intertwine in many cases as shown in an example concerning a client plan updating based on a meeting held about a month ago (Table 4). This example reflects common practice in the three cities studied. First of all, the work in CIS is done with quite a delay to the actual event. The social worker writes an entry to the case report about the client plan. The information from the previous plan is used by copying and pasting it to the new client plan. The social worker also accidentally ends up reading entries about the meeting written by the co-worker. Finally, the social worker prints out the copies of the plan, first for proofreading and thereafter copies to the paper files and to a client. Although work done module is in use in city C she neglects to report the time spent in the meeting and writing the plan. (O 5)

**Table 4 Updating a client plan (city C)**

- |  |
|--|
| <ol style="list-style-type: none"> <li>1. starts from the diary view</li> <li>2. checks if client plan is mentioned in the case report → since not, makes a short note about it</li> <li>3. reads entries by the worker in the family open services</li> <li>4. writes a plan - copy and paste text from the previous plan</li> <li>5. prints out the plan to read it on the paper</li> <li>6. prints out a copy for a client &amp; another copy to the paper files</li> </ol> |
|--|

The example of decision making (Table 5) reflects also the simultaneous information production and use. A social worker makes decision in order to financially support a family's holiday. The decision concerns all the siblings since they all are clients in child protection. She checks decisions from the past year before making a new one. The types of decisions have been recently tailored in CIS and she does not know how to proceed. She tries to contact the system manager to get help but does not reach her. Later on, the colleague stops by and helps to find a solution. She makes the official decision under the files of the youngest child. After that, she also makes a note about the decision to the case report of the youngest one and copies and pastes the same text to the second and third sibling. (O 49)

**Table 5 Decision making (city A)**

- |  |
|--|
| <ol style="list-style-type: none"> <li>1. starts from the diary view</li> <li>2. checks decisions under each three siblings</li> <li>3. does not find a proper decision code for a reason → tries to call to the system manager to get help<br/>--- break until solution is found ---</li> <li>4. makes a decision under the youngest sibling</li> <li>5. prints out the decision</li> <li>6. makes an entry about the decision into to case report of the youngest sibling</li> <li>7. copies &amp; pastes the entry to the case report of the 2. sibling</li> <li>8. copies &amp; pastes the entry to the case report of the 3. sibling</li> </ol> |
|--|

In the middle of the client process information production and use are manifold. Information is produced in several ways in different modules: narrative information in case reports, structured information in plans and numerical information to report work tasks with a client. Information is used typically by browsing texts through and reading quickly, or intensively by focusing texts when writing client plans or decision for custody. CIS ties up workers involved in a client case. Information is shared between colleagues via case reports.

## 5.4 End of the process

### 5.4.1 Information production

The activities done in CIS at the end of a client process in open service depend on the type of an ending. If there is no need for the services in child protection at all, the closing down of a case requires less information production than in a case if a child is taken into care. In both cases, there is a need to write an entry on the case report and make an official decision about termination.

A case report is used to report work that is related to closing a case. This includes, for example, documenting a check up meeting of a child's situation to a case report. It also includes explaining the work done: *"Then I go there to document that we terminate this service because there is no need for it at the moment. When I go and document it you can see why it has been terminated."* (O 4) Similar kind of recording is done when a child is taken into care. It is recorded that open services are closed and the child moves to the department in charge of a placement.

The decision to close the case is made quite easily because there is no need to write at length the reasons for the decision. The drop-down menu offers ready reasons for terminating a case. The statistical information is based on these drop-down menu selections.

Decisions to take a child into care are infrequent like consequent CIS activities. The custody decision requires several moves not easy to remember. One of the social work managers brings up an important aspect of CIS as a tool: *"I have started to think that when a worker starts to make, for example, custody, it concentrates mostly, of course, we do quality social work, but it concentrates too much on how it is done in CIS...that you perceive the process what actions you have to take in the CIS."* (I 26) CIS is dominating the process, not supporting the information production and work task.

A taken into care decision requires plenty of information production, maybe the most out of all information production activities in child protection. Since the legislation defines clear terms for the custody the justification of the decision needs to be done very carefully and written text can be pages long. In some cases, it is possible to copy and paste text from a case report, and after that modify it to fit the needs of the decision. Justifying is also a thinking process for a social worker in which the information is summarized and situation assessed very carefully.

The justification for a taken into care decision is written into a structured form. The new form, updated and tailored after the recently changed child welfare act, raised irritation especially among the social workers in city C. The form was considered to be burdensome since it seemed to repeat the same type of questions all over again.

It is social work managers' task to approve custody decisions prepared by subordinates. The way this action is technically realized is opposite to decisions made by social workers independently. This causes an anomaly with moves in decision making in CIS: *"And now you have to remember to add a check tag where you in other situation take it away."* (I 11)

### 5.4.2 Information use

As in information production, the type of ending is associated with the type of information use. In general, the information use is more

intensive in the end than in earlier stages of a client process. The documented information is used by holistic skimming or even frequently by intensive reading. The documented information plays even a greater role if there is no long term client contact but the social worker is making decisions mostly based on case records.

In a situation where a child is taken into care the social workers familiarize case reports in depth. The way of reading is different from daily patterns. *"In your everyday work you are not researching the past all the time but when you are taking a child into care you have to go through reports, also those ones written in other units."* (I 16) The case reports are read through especially for filtering the information defined by law and needed in a structured custody form. The information that is looked at is defined as "facts" like agreements, services that has been used or refused to take and home visits. Information is collected piece by piece. Like in making a client plan, locating information is described as digging and picking information.

The need to use digging as a method of locating information is partly related to the limited possibilities of the search tool, and limited skills in using it. It consists of possibilities to search for established customerhips and payments, for example. *"When you start preparing a custody or something like that or you need to do a summary about someone's situation you could get those things easily by using some menu but I don't know them, I use them too little. So then you do it a more complicated way."* (I 6) Unfamiliarity with the system seems to lead to workaround practice. Instead of proper searching by search tool information is located by browsing.

Information that exists in the current CIS is not always adequate to make decision in serious cases. In some cases there is need to return to information in old CIS. However, only relatively few workers know how to access the old system and that may cause some problems. *"Then it says here, former information in the Old System. Now, when I am a new worker, I don't even know what this Old System is. So these old ones, ghosts, are hanging there – take a look at there or take a look at here."* (I 5)

## 6. DISCUSSION AND CONCLUSIONS

Our study extends understanding of how CIS is used in social workers' daily work tasks. Results concerning work practices in producing and using information in CIS can be used for developing more fitting information tools for supporting their work.

Information production and use in CIS belongs to the whole client process in child protection. The client process consists of actions concerned with clients like assessments, plans and organizing services, and representing them and clients' situation in the case records. Although activities in CIS are intertwined in work tasks and necessary part of them priority is given to direct interaction with clients. This confirms findings in [1] and [18].

The social workers spend more time in producing information than in using it in CIS. This reflects the findings of Savaya et al. [17]. Focusing on information production reflects social workers' multiple accountabilities. They are responsible to report their work in their organization but records are read by clients and other officers involved in a case as well. The most laborious information production activities are writing a totally new client plan and

documenting a custody case. Consequently, information is used also most intensively in these activities. Information use includes both fast check-ups and intensive reading.

The social workers balance between producing narrative, structural and statistical information. Traditionally, narrative and holistic client information is valued in social work. A client is considered as a unique and undivided human being. [8] In CIS holism in client information is sought by focusing on case report writing and by linking all information to it. This procedure seeks to guarantee in one place - in the case report - holistic case history without gaps. This representation in the case report tells most about the client whereas information in other modules is mostly supportive and administrative.

Next, we present the problems in the use of CIS and solutions for system design.

The structural information, especially the one in a client plan is valued as a fast way to get an overview of a client case. In previous studies the production of structural information is sometimes considered complicated [14, 21] and statistical information is under produced [18]. Our findings confirm this. Structured forms have parts that do not fit to the purpose they are aimed and are not necessarily filled fully. Statistical information collected through the work done module is not used in daily work. Social workers report irregularly, because they consider it as unnecessary work.

CIS is not yet a fitting tool for the social workers. Complexity of the system is a major problem. Modules are not directly linked but through diary view implying additional moves between them. Case report serves as an access point to information stored in other records. It includes references to other records and modules. Ability to link these references would help social workers. Most of all, CIS does not help much social workers to find overview information on their cases. The information is spread in separate modules in pieces so holistic picture of a client case is difficult to reach. CIS does not have any effective way to succinctly and fast show core points in a case. Also minimal search possibilities complicate information use. This means digging for information in long case reports by using personal highlightings. CIS neither has an alarm system but the workers are using paper notes, e-mail and phone calls to inform each other if attention to a case is needed.

Solutions to these mismatch problems rise from the social workers' own ideas and 'applications'. Information production could be supported in several ways. Statistical and narrative information could be reported simultaneously through a case report instead of shuttling between separate modules. CIS could also support parallel information production by allowing two case reports to be simultaneously open so that, at least, copy paste activity would be easier.

To be a better tool for information use CIS should offer ways to find summarized overview information rapidly. Information could be presented visually by collecting major events in a client case for a 'time line'. Also an effective search tool for locating essential information in case reports is needed instead of personally created highlights. However, simplicity and ease of use are the most important qualities of CIS: *"CIS is absolutely a good thing, but it should be as simple as possible...so that it would support the work and wouldn't bring any extra demands" (I 3)"*. Like the social

workers in our research British social workers longed for simplicity of CIS too [18].

Our data is from three social service organizations using the same, although locally tailored CIS. Our study is thus limited in the use of a particular tool in particular sites. Also observations are limited only to the moments that were reserved for information production in CIS. We might have missed situations in which CIS is used rapidly between clients' meetings. However, our qualitative data offers the rich description of daily work in child protection services.

In this article, the focus has been on work tasks and activities in CIS. Next we will study misfits between CIS and users and workaround practices. Workaround practices are often reactions to misfits, and indicate problems in the use of CIS. By studying them, we may create results for developing more effective information tools.

## 7. ACKNOWLEDGEMENT

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# Client's Temporal Trajectory in Child Protection: Piecing Information Together in a Client Information System

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**Abstract.** Our study focuses on the information needed for overviews by social workers in child protection, and how information is presented in client information systems (CIS). Data consists of semi-structured interviews and social workers' observations while they used CIS in their daily work. The analysis was structured by the concept of temporal trajectory. We identified three major interconnected information strands: concern, child's private life and institutional actions. Their temporal lengths and aspects are disparate. CIS offers modest temporal overviews of clients' cases. Representing information strands as timelines on the interface would provide better overviews.

**Keywords:** client information system, child protection, temporality, work tasks.

## 1 Introduction

Child protection is a part of statutory social work. Its objective is to support children and their families in problematic life situations. Primarily work is done by offering in-home services. In child protection services, a client information system (CIS) is used to support social workers' work. It has a crucial role conveying information about a client's case. Information is recorded and used in CIS during a whole client process as part of daily work tasks [8]. The representation of the recorded information as a case overview in CIS is in the focus of our study.

Information is collected mostly in face to face interaction with different parties, and it is afterwards selectively recorded in CIS. Information in CIS can be plentiful especially in long and active client processes. It gets demanding to piece together an information puzzle to form an extensive overview of a case. Thus, fast and effective information representation in CIS would be essential so that social workers could rapidly make sense of how a client's case has evolved over a period of time. The overview available at-a-glance has value in several work tasks [8]. This is the case, for example when a new worker takes over a case or an old timer with heavy case loads tries to summon up a memory of what the client's story is. Obviously, the effective overview in CIS constitutes two intertwined things: the essential information that is well documented and CIS' ability to present it in a concise manner.

Social workers' work orientation is holistic. This means understanding a person as a whole and as a part of social context [9]. The work requires a wide perspective about a client situation. However, the current systems do not seem to offer appropriate tools to present a client's situation fully. Systems are criticized, splitting holistic case information into pieces [7], [16], [33] and not fulfilling the task they were originally meant for [3]. Thus, a misfit between the needs of social workers and the way CIS present information seems to be obvious.

Despite the strong criticism there is a lack of studies, which analyze social workers' perception of holistic information needed in their work tasks, and how CIS supports representing and using this information. By exploring in detail what kind of overviews of client cases are needed we can create results for developing CIS to better fit to social workers' tasks.

We approach the child protection information from the temporal perspective. The importance of temporal perspective in research has been recognized in information studies [24], [26], social work research [19], [31] and CSCW/HCI [20]. Our research is situated at the intersection of these three disciplines.

Our research has three objectives. Firstly, we examine what kind of information according to social workers belongs to a comprehensive temporal overview of a client case in child protection's in-home services. Secondly, we give an account of how this information is currently presented in CIS in our research sites. Thirdly, we relate a need for 'overviewable' temporal information to work tasks. Temporal trajectory [20] [28] is used as an analytical concept. This concept offers an analytical lens to look at social workers' work with a client's case in temporal context.

Our study is based on field work realized in in-home services in child protection in Finland. In-home services are offered to a child and his family based on child welfare assessment. The services are defined by legislation. The field work consists of social workers' interviews and observation in real working situations with CIS.

The paper is structured as follows. In the first section, we describe the conceptual framework and review the previous literature. Next, we present the research setting including the research site, data collection and analysis methods. Then we introduce the results starting by reviewing social workers' perception of information that belongs to a client's temporal trajectory. Then, we analyze how the information with temporal perspective is presented in the CIS of our research sites. The last part of the result section looks at a temporal trajectory and CIS as a part of social workers' work tasks. We conclude with binding our three research objectives together, and outlining some design ideas.

## 2 Conceptualization of Research

Time and temporality both have a central place in social work practice. Many social work activities, the notion of intervention and change and social workers' sequential narrative accounts of cases have an aspect of temporality [31].

Temporality is embedded in different types of processes in social work. The processes have been defined from the perspective of work as the series of encounters and activities during the professional services [5]. The processes can be approached from the perspective of an individual client, too. Then a process is seen through

human growth and changing circumstances [9]. The concept of trajectory originates from the studies that described work in medical settings. The central idea of the trajectory was to depict the organization of work associated with the course of the illness of a patient [28]. The generalized concept of trajectory is understood as the evolvement of a phenomenon over time plus action, interaction between multiple actors and unanticipated contingencies related to phenomenon [27].

A further developed concept, temporal trajectory, is defined as a structured timeline that consists of activities, events and occurrences over time. The temporal orientation covers the past, present and expectation of future activities. This wide perspective makes it possible to see the relationship of activities and to take a look at patterns of former activities and anticipate the progress of a case. [20]

The temporal trajectory embodies similar elements as narrative accounts, traditionally valued in social work. Narrative has thematical development; it shows causality and it tells the story with a beginning, middle and end [1] just like temporal trajectory presents evolvement of a case over time.

We complement our analysis with three aspects of temporality: episode, interval and eon. Episode means a short period of time; interval a long period of time with distinct starting and ending; eon is a long continuous period of time [26]. The aspects are used to give a temporal shape to information in the trajectory.

### 3 Related Research

The core critical arguments in social work towards CIS concern the way of presenting information. The CIS has been seen as a threat to holistic and narrative information [16]. Reasons for the misfit might be that information is forced into a certain format [22] with too much focus on facts [14] and by this way being irrelevant to practitioners.

Recently, there have been plenty of studies around the British Every Child Matters Reform and its technological solutions. The main result of the studies is that this new technology does not optimally support the work practice. Integrated Children System does not offer a complete picture of a client's case because of a lack of contextualized narrative [33] and a lack of a common family file [7]. The research realized more than ten years earlier among Norwegian social workers ended up with similar results: it was impossible to pull together the full client history to view it at a quick glance since information was as pieces on the computer screen [9].

Physicians shared similar problems in gaining an overview from electronic health records. Navigation between different screens lost the overview [2]. The studies seem to indicate that different professions share similar needs and similar problems.

Studies on reading the case files indicate that there is need for fast access to information. In CIS information is skimmed through with the aim of locating the most essential parts of it. Rapid access for information representing case overviews was valued, in particular. [8] The similar type of skim reading was recognized already in the time of paper documents both in social work [12] and in the medical context [15].

A structural client's assessment form (CAF), also part of the British Reform, splits information into fragments [25], disrupts the temporal and narrative display of



information [32] and limits the expression of concern by highlighting a more robust assessment of needs [7]. The CAF form was used more in parts that offered possibilities to produce traditional narrative information [17]. Findings are alike in the study realized in Israel in the juvenile home context, where the structured assessment form was considered cumbersome and incapable to capture the client's unique information [23].

The temporal aspect of information and its implications for system design have been under study in computer supported co-operative work. The studies have been realized in health care. Health care staff valued seeing information organized chronologically because in that way they were able to situate the patient within the temporal trajectory and gain better understanding of a current situation [20]. The need for retrospective or prospective information depends on the work task at hand [21]. The study concerning chronic patients' illness trajectories highlighted the value of a good overview of a patient and as well an evolvement of medical information over time [13].

The previous studies point out a need for a chronological, time-wise approach to structure information, and the need for an overview of a client's situation available at a glance.

## **4 Research Design**

### **4.1 Research Questions**

We are interested in a triangle that constitutes information, its temporal presentation in CIS and how they intertwine in social workers' work tasks in child protection. The precise research questions are:

- What information strands belong to a client's temporal trajectory as perceived by social workers?
- How is a temporal trajectory presented in CIS in our research sites?
- How do social workers manage a temporal trajectory in CIS?

### **4.2 Study Environment**

The field work took place in three Finnish municipal social service organizations offering in-home services in child protection. The in-home services defined by the Child Welfare Act (417/2007) include, e.g. support persons and families, financial help and family workers' visits at home. The data was collected in the year 2008.

In city A, the number of front line social workers in child protection in-home services was ten, in city B nine and in city C 35. Outside of office hours an emergency department was responsible for urgent situations. Staff turnover was relatively high in the research sites. Often several social workers took care of a client's matters over time.

A social worker was in charge of a varying number of children. Most of the time a co-worker was also named for a case. Among interviewed social workers the caseload

was heavy, varying from about thirty up to over a hundred cases. Social workers' task was to manage a client's case, e.g. by assessing need for the services, keeping in touch with a child and his/her family and other parties involved in a case, and organizing services. The social work managers occasionally took part in client work. They gave consultancy to their subordinates, carried out some official decisions and reacted to clients' contacts.

CIS had an integral role in managing clients' cases. Each child has their own file in CIS (Fig. 1). The current CIS was introduced to our research sites A and C in 2004 and in site B in 2006. Previously, another system was in use. In the implementation stage, only the basic information of active clients was manually entered to current CIS. Because of the lack of automatic conversion, narrative case reports were, however, left in former CIS. Each research site tailored CIS to match the local needs.

CIS has separate modules for documentation, structural family information, decision making, scheduling and statistical presentation of work activities. In the documentation module, social workers keep up the chronological case report and write a structural client plan. Family module depicts the people living in the same household. Decision making module is used, for example, when services are granted for a client. Scheduling module presents the forthcoming appointments. Work done module is used to numerically describe the past actions. Each module can be purchased separately. Therefore, there is a slight variation in what modules are available across research sites.

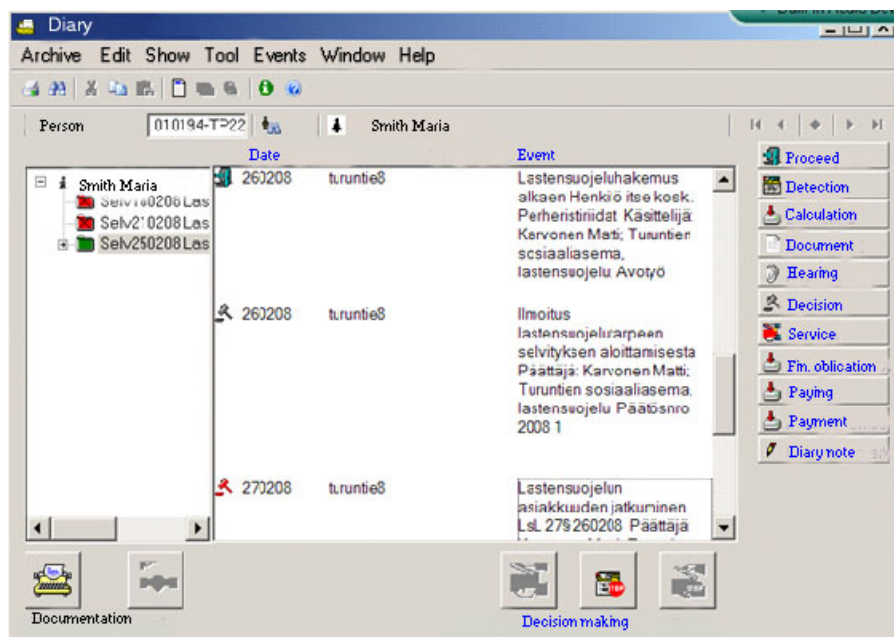


Fig. 1. The diary view of CIS - translated in English (fictional client)

The so called diary view (Fig. 1) of a client serves as an access point to different modules. There is no possibility to navigate directly from one module to another but a loop through diary view is needed. The navigation buttons to the modules can be seen on the right side of the screen capture. The diary view also shows different files (on the left) and offers a modest glance at recent decisions of a case (on the middle of the screen). CIS offers limited search tools for the social workers. It is possible to search clients by their name or ID. However, there is no search option within a case report.

### 4.3 Data Collection

The study employed semi-structured interviews and field observations. The interviews were carried out first. Willingness to participate in observations was asked during the interviews and the actual observations were realized later. In city A and B the majority of social workers were interviewed whereas in city C about one fourth of the workers participated. The interviewed social workers had varying work histories in child protection services. There were novices, those who had a couple of years work history and a few having a long term career. The observed social workers had a heterogeneous history of using CIS. Some had experience only from this particular CIS and some had used various types of systems previously.

Before the actual interviews, a pilot interview was conducted to check the functionality of the questions and time required for an interview. Our data consists of 33 semi-structured interviews with social workers (23), social work managers (7) and system administrators (3). The interviews took place at the offices of the social workers, with only one exception at the university. The core themes of the interviews were work related to child protection, documentation and use of CIS as part of work. In sixteen interviews, social workers described an individual client's case by drawing a timeline and network map about persons involved in a case. The cases had a role of a critical incidence [29] allowing more focused and concrete questions. The total interview data is about 62 hours. One interview is about two hours in length. The interviews were tape-recorded and fully transcribed.

Twelve field observation sessions were realized in real-life settings. Eleven social workers were observed, one social worker twice. The social workers have a practice to book up time to do documentation and other work with CIS. The social workers were asked if it was possible to join those sessions and follow their work. The social workers worked normally in these observation sessions. The only exception was that based on their own choice they explained and reflected about their actions concurrently every now and then. This way, a verbal protocol [11] was produced. Observation data consists of hand written field notes from all sessions and the tape-recorded commentary by the social workers from ten sessions. In two sessions it was not appropriate to do recording. Field notes were written up shortly after the observation session. Later on, the commentary of the social workers was transcribed word for word. The observation data is about 40 hours. The sessions varied from about two hours to the whole working day.

### 4.4 Data Analysis

Firstly, the interviews were read through several times to become familiar with the data. After that, appropriate parts of the data were collected under four wide themes

according to research questions. The data extractions were thoroughly scrutinized and summarized with few words in the tables. This enabled us to analyze the dimensions of phenomena in a more itemized way.

Each critical incidence - client case used as an example in the interviews - was pulled together so that it formed a consistent account. This meant that all events were listed chronologically. Also institutional actors and people related to clients' private life were listed. The use of information and CIS was identified and itemized in the critical incidents.

From the interviews, those of the front line social workers' and social work managers' were used as a primary source. The interviews of systems managers offered background information to understand the properties of CIS.

The notes from the observations and social workers' commentary during the sessions were combined. Thereafter, the data was organized according to functional entities. A functional entity is a single task in CIS consisting of a sequence of actions occurring in order to reach a certain goal. The functional entities include activities like writing a case report and making different types of decisions. These functional entities were studied more carefully from two aspects: how social workers keep up the temporal trajectory and how they look for a temporal overview of a case.

The different datasets shed a different kind of light on the research questions. The interviews offered an overall picture of significant information and a role of CIS as part of work. The critical incidences within the interviews gave a shape to the clients' trajectories. Observations and social workers' verbal protocol concretized the human-computer interaction.

We take two standpoints to temporality when we present the results. Firstly, we describe the temporal trajectory in general. Secondly, we link temporal aspects (episode, interval, eon) [26] to information presented in the trajectory.

## 5 Results

First, we describe information that the social workers consider as important for understanding a client's trajectory. Next, we analyze how this information is presented in CIS of our research sites, and the capability of CIS to give a temporal overview of a client case. Lastly, we briefly discuss social workers' strategies of producing and using the temporal trajectory in CIS as part of their daily work.

### 5.1 Information Strands in a Temporal Trajectory of a Case

Social workers clearly highlighted the importance of seeing and interpreting a client's situation as a temporal continuum. This meant a chronological and consistent narrative that could depict what had been the starting point and what had happened during a child protection process. The need to observe changes in the process was expressed by a social worker: *"What has changed, if there is something new. I aim to depict the trajectory."* (O 1)

However, it turned out to be more difficult for the social workers to define what kind of information belongs to the temporal trajectory. It is not about working around a single issue but rather handling a case from a much broader perspective. As

expressed by one of them: "*We manage a person's life in its entirety so what would not be meaningful.*" (3) A full trajectory is constructed from several information elements. Trajectory management is reminiscent of piecing a jigsaw puzzle together. The core of the problem is: "*Also those small pieces of information are important so it is not enough to put down summarily those big outlines.*" (1)

The client's records serve as a temporal boundary object. Information is recorded in a specific moment and it might be used months, even years later. Often, however it is unclear what information is needed in the future. Besides the wide working orientation, situational and temporal factors also seem to somewhat explain what is considered as relevant information.

Three major information strands of the temporal trajectory were identified. They were strands of concern, a client's private life and institutional actions. They were intertwined. To understand a client case as a whole requires seeing the strands together.

**Concern Strand.** To the social workers, the concern strand explained the varied reasons for the beginning and continuation of customership in child protection services. The social workers appreciated concrete expressions of concerns. The essential was to find out: what is the concern about? The list of major reasons for concern was relatively limited. Moreover, often it is not possible to articulate well what it is all about.

It is common that the concern strand has several actors expressing their point of view about a client's situation. In some cases, opinions about concern can be contradictory, and also contradict the social worker's opinion.

The temporal strand of concern is not necessarily linear, stretching over the past and the future, as the examples told by social workers demonstrated. The arc can be cyclic when there are passive and active stages of concern. The concern can fluctuate when a level of concern takes turns. The course of concern might be steady or cumulative with increasing issues of concern coming out. The concern strand can consist of several of these features.

Concern is hard to fit into any of the temporal aspects (episode, interval, eon). It is rather an all over state continuing across the temporal trajectory. In that sense, it belongs to the temporal aspect called eon. However, the level of concern can have peaks or periods of good or bad times. In those situations, the episode and interval aspects of time are applicable.

**Private Life Strand.** The essential information in the private life strand concerns the whole family, not only the child. We recognized three major information themes that social workers talked about: major events, everyday life at home, and family as a network. Noteworthy is that information is often needed about the past events and life situation from the time before the child protection. After all, the private strand describes "the history of family".

All the aspects of time match up with the private strand: episodes for events, interval for certain periods in family life and eon to depict continuity in everyday life.

**Institutional Strand.** The reason and level of concern determine what kinds of services are organized for a child and family, and what institutional actions are taken. The institutional strand describes the work done in the child protection. The social workers seemed to need a long term view of services: what had been in use but

terminated, how did services get started, what currently is going on, how long were the service periods, and what are the plans for the future. The evaluative information about the impact of services and family attitudes towards services were needed as well. The analysis of the network maps of the critical incidents revealed that social workers co-operate with a multitude of people. There were co-workers within their own social service organization (emergency department, adult services, welfare for intoxicants) and outside of it. All of them are potential information producers.

From the temporal aspects, episode and interval seem to felicitously depict the institutional work.

To conclude this chapter, we use data extracts to demonstrate the temporality and a contingencies, in the work.

*"Q: What is the essential information in child protection, what should be available from each client?*

*A: Well, why the customership exists and what is the goal and what is the plan to reach the goal.*

*Q: Hmm.*

*A: Often we are reproached that we don't have any plans in our work. We are making plans today and in the next day our plans might be vitiated because of a single phone call."* (6)

We can summarize the core findings of information strands in a temporal trajectory to the following: reason and level of concern; services and actions child protection has taken plus their impact; major events, everyday life, and a child's network are core information needed in the overview to support social workers in their work. The intertwined strands have different temporal aspects and lengths, the institutional trajectory maybe being the simplest one to represent. In the next chapter, we take a closer look at how CIS is capable of presenting the three identified strands as a trajectory.

## 5.2 Presentation of Temporal Trajectory in CIS

We mirror information presentation in CIS through a specific case of Maria. The temporal trajectory (in italic in the next paragraph) is the idealization of several critical incidences presented in the interviews. The strands of the temporal trajectory - concern, private life and institutional – are narrated side by side.

*Maria's customership was opened at the beginning of 2005. The school contacted child protection. Maria attended school irregularly and looked unbalanced. Her parents were divorced. She lived with her mother and two younger siblings. The social worker called the teacher and the mother. There were meetings with Maria and the mother at the office and a visit to home. The social worker noticed that the mother seemed to have health problems, balanced with short term jobs with no time and energy for children. The social worker organized a support family (obtained after six months waiting) and financial support for Maria's hobbies. The mother's partner moved in and out, the family moved within the city, Maria participated in a summer camp. Everyday life rolled on. In 2006, a new social worker took care of Maria's case. Meetings were irregular. At the beginning of 2007, the neighbours made two child welfare notifications: children had been alone at home. The third social worker*

*visited the family. She could not figure out the situation, just made observations about home and the mother's tiredness. To strengthen the support, a family worker started to visit the family. However, the work was soon discontinued because the mother wanted it to be. In 2008, customership was on hold. Then the social worker got a very serious child welfare notification by anonymous phone call – it was time to react.*

Next we take a look at how information about Maria's trajectory is distributed, and can be found within CIS: in modules of documentation (includes e. g. case report, client plan), of family, of decision making, of scheduling and of work done.

**Concern Strand.** There are four child welfare notifications. The first one is from the school, two later ones from the neighbours and the last anonymous one. The other form of concern is that of the social workers: the observations about the mother's tiredness in the first place. Later it is only a hunch when the social worker is not able to clarify a crux of the matter. The notifications have their own registry in CIS, where they are recorded. This information is brief and structured: a date, the name of informant and the content of contact. In most cases, the social workers also write as a link a short entry about the notifications to the case report. The social workers' own concern and assessment of its level is embedded in the case report. The worry expressed by different actors during discussions is also in the case report.

**Private Life Strand.** There are few events listed in Maria's and her family's life: a summer camp, changes in the mother's relationship and a change of residence. We can also find references to the time before customership. In the past the parents have divorced. There is also information about everyday life. These are reported on the case report. In addition, the official changes in the household composition (move of the mother's partner) and a move during the customership are depicted in structured form in the family module.

**Institutional Strand.** During the course of the trajectory there were meetings, phone calls and home visits. Besides events, the social workers made four formal decisions. The first one is about to start the customership and three latter ones about the services: financial support, a support family and family work. The staff turnover is also a part of institutional strand: three different social workers took care of Maria's case. The institutional work is fully reported on the case report in the documentation module. The entry of a short event starts with the date, social worker's name, the name of event and the listing of participants. Thereafter, the content of the event and discussions are described. It is a practice to mention the decisions made in the case report. The institutional work is monitored in three other modules. In the decision module are the structured decisions including written justification. The work done module indicates the already realized actions (phone calls and meetings etc.). It briefly depicts the type of action, the number of participants and time in minutes spent with a work task. The scheduling module orientates to the future. It indicates the forthcoming meetings and home visits. These modules, however, give only a limited view of the work.

Obviously, the case report on the documentation module offers the most comprehensive account of Maria's case. It binds all three information strands together. Its temporal perspective covers the time before child protection, current time and the future. The information in the other modules is mostly used for administrative and accountability purposes. Their timeframe covers only the current



time in the child protection. The information presentation is multifold since the same information can be found in different modules expressed in a different form. The information strands, modules containing information about them, and their temporal aspects in CIS are summarized in Table 1.

**Table 1.** Information strands, modules and temporal aspects in CIS

Strand	Module	Temporality
Concern	Documentation Notification registry	episode, interval, eon – past, current, future episode - current
Private life	Documentation Family module	episode, interval, eon – past, current, future episode - current
Institutional	Documentation	episode, interval, eon – past, current, future
	Decision module	episode, interval - current
	Work done module	episode - current
	Scheduling	episode –current (orientation to future)

According to the social workers the fastest way to get an overview about a client’s trajectory was to read through a client plan. It summarizes the history of the family and clarifies the client process and goals set. In the client plan information is ready selected and analyzed. However, not all clients had one. In those cases, the social workers were dependent on a case report if they wanted to figure out a child’s history as a whole.

Overall, the significant issue was the difficulty of identifying the thread running through the case report: finding the course of action. This was particularly the case in active client processes when reports could be “thick like a brick”. The social workers noted that the concern, major events, goals and their realization did not come up clearly enough. The case report contained those small pieces of information recorded just in case. The other reason is that the history is made up of different entries as life unfolds.

CIS could give only superficial support depicting an overview of the case. The diary view visualizes only the different files and major decisions. The following data extract exemplifies not only how information comes up in the case report but also the social worker’s fast interpretive skills. She discusses information through institutional strand: numerous entries are a message from active working that likely indicates the seriousness of a case. By looking at the time frame she analyzes the shape and stages of a trajectory. The work of the emergency department is a message about possible crisis and contingencies.

*“You can at a glance see **how many entries** there are [in a case report]. Sometimes it scrolls a long time to get open. Then you know that there is plenty of writing and a long customerhip. You can take a look at **what time frame those entries have been made**...You can see from the initials if it has been the **emergency department** working over the case. You can make those short observations.”* (4)

Client information was spread over several modules in CIS. Information of institutional strand was in four modules, and concern and private life strands in two modules. In the documentation module, case report compiled information of all strands. However, it was difficult to get an overview about a client's case based on it.

### 5.3 Interacting with CIS: Managing and Using a Temporal Trajectory

Social workers had different strategies of managing and using trajectories when they interacted with CIS. Since the major source of information was the case report, the majority of the management work was done there. The social workers' goals were first of all, to keep the trajectory as a whole in the case report by referring to possible information in other modules. Secondly, there were different types of attempts to point at the essential information in the case report. To gain a temporal overview of a case, social workers approached the case report either by skimming text through or by reading intensively.

**Managing Trajectory.** We identified three tactics to keep up the temporal continuum in the case report. *Firstly*, the social workers created *links to information* outside of the case report by writing short references. They indicated whether there was more information in another document (e. g. in the client plan) within the documentation module or in another module. In the latter case, references were mostly made to decisions that existed in the decision module. The social workers also created traces to hint that more information could be found from the family members', siblings' or parents' files in CIS. In the client cases that had started before the implementation of CIS, there were occasionally references to old CIS. Often, the social workers made a note if there was more information in paper files, too. *Secondly*, the social workers *wrote*, although very rarely, *summaries*. The summaries related to the past, a time before a child became a customer in this particular organization. This was the case, for instance, when a child had a history in another municipal's child protection service or there were previous remarks concerning the family. Occasionally, summaries were made about paper reports. *Thirdly*, in some situations the social workers kept the case report consistent by keeping up a *dialogue between* past and current *entries* and between the entries of co-workers. The current entries were reactions to the past ones. The linking strategy (manually added notes to the case report) was relatively simple and more technical by nature, instead summary writing is rather a writing practice.

Indicating the essential information was realized by adding titles to structure the text, using bold fonts or making listings to the end of entries. The bold fonts were used, for example, to highlight turning points or serious events. Serious issues that were raised for discussion for the first time could be entered in bold text. The social workers used listings in the entries, mostly to summarize agreements and actions to be taken in the future. These tactics aimed at offering handles for fast access to information.

**Using Trajectory.** We identified two tactics, holistic check up and intensive reading, as the social workers' ways of familiarizing themselves with the whole trajectory in CIS. The holistic check up means skimming through the text in the case report and trying to locate the essential parts of it. In the intensive reading the social workers

carefully go through the entries. In some cases, they print out the case report and rather read this printed document.

The time available to read the entries, the familiarity of a client, a work task or a work situation at hand were some of the reasons that dictated the ways of reading. The social workers skimmed through the past entries before the meetings, when they were on the phone with a client or when they evaluated the continuity of a client's case quickly. The previous information had a special significance to the social workers who took over an old case and tried to figure out the past. The taken into care decision or making a first client plan for a long-term customership required intensive reading.

We illustrate these two information use tactics by presenting two functional entities from the observation sessions. On the tables, the left column describes the major moves made in CIS. The right column includes the essentials of the verbal protocol. The first example depicts the holistic check up and the second one intensive reading.

In the first example (Table 2), the social worker goes through a client's list in a semi-annual customers' 'check-up day'. She evaluates whether the customership needs to be sustained or be terminated. She navigates from the child's file to the mother's file, returns to the child's file to close down the case and finally closes down the sibling's case too. She looks at information from the temporal perspective. Firstly, she looked at the starting time, and then stages in the client process. She notices that the situation is passive. She uses all information strands of the trajectory. She makes observations about the services that had been in use (institutional strand), reflects the concern and finally seeks consolidation from the mother's income support file (private life strand). She remembers the mother from engagements at the office. The information in CIS combined with her own experiences support decision making. She decides to close the case and the sibling's case as well. The task does not require much time.

**Table 2.** Holistic check up – evaluating the customership

Moves in CIS	Verbal protocol
<ol style="list-style-type: none"><li>1. skims the case report of the child</li><li>2. skims the case report of the mother</li><li>3. checks the income support calculation of the mother</li><li>4. returns to the child's file and terminates the customership</li><li>5. moves to the sibling's file and terminates the customership</li></ol>	<i>"This has happened in 2004. This case is still open. There has been family work but terminated. Well, in 2006 – now I got hang on this. They have been in a summer camp. I remember that the mother has been here for income issues. The past action was two years ago. I don't have any child protection work here... I take a look by mother's name...There is neither work going on nor is there concern. "</i>

Our second example (Table 3) draws from the situation in which the social worker prepares a tentative client plan to be discussed in a meeting. The child has the history of several years in the child protection. The social worker has been in charge of the child's matters for about a year. According to her, the customership is activated

because of a crisis. For the plan, she must piece together a compiled package about concerns, private life and institutional actions. She starts by glimpsing a case report and correcting some spelling mistakes in it. Thereafter, she prints out the case report's entries from the past year. Then she moves to the actual task at hand: preparing the client plan. She reads the case report both from the CIS screen and from print. She tries to figure out the course of action. She is lost in the text: she needs to locate information piece by piece. As she says, information is fragmented in the case report. She makes notions about services (institutional strand), child welfare notifications (concern strand) and family situation (private life strand). She finds out that the situations of the same kind reoccur and continue in the family's life. That is an important piece of information. She copies and pastes between the case report and the client plan. She spends most of the afternoon familiarizing herself with the client's case. To boot, there would be even more information in old CIS and paper files.

**Table 3.** Intensive reading – preparing a client plan

Moves in CIS	Verbal protocol
<ol style="list-style-type: none"> <li>1. skims the case report of the child</li> <li>2. checks assistance (how to check spelling in CIS) from a colleague</li> <li>3. prints out the case report from the past year</li> <li>4. works with a client plan</li> <li>5. reads the case report carefully</li> <li>6. copy-pastes between these two documents</li> <li>7. prints out the half-done plan</li> </ol>	<p><i>"I need to ask if somebody can take a look at information <b>in old CIS</b>.</i></p> <p><i>You just have to search for the information. If a case report is all you got you are totally lost.</i></p> <p><b><i>This is quite a patchwork.</i></b></p> <p><i>If only there could have been a way to pick up [the services] somehow. By now, I have spent almost 1 ½ hours on this.</i></p> <p><i>I could take a look at the <b>paper files</b> too. What had happened in the child's life, what has it been, the background information is laborious to find. <b>The information is fragmented there.</b>"</i></p>

The two previous examples depict the role on information and CIS as part of two different types of work task. The social workers interact with information and CIS alike. In both cases, the social workers search information from the perspectives of three information strands. They also make notions about the past and the current situation of a case when trying to assess the possible future of a child. The tasks require both the identification of essential information and navigation between different modules in CIS. Apparently, CIS could offer more support to realize the tasks. However, it is a matter of the social worker's professionalism, too. As expressed by the social worker when talking about whether there was enough information for preparing a taken into care decision: *"Yes there was, but you have to see the wholeness. And [understand] what to do with that information."* (7)

## 6 Discussion and Concluding Remarks

*Summarizing the Findings.* In child protection, there is a need for case overviews presented by CIS [8]. The overview would support the social workers' work that is framed by limited time resources, heavy caseloads and situations when immediate reactions are needed. We approached the construction of the overview from three perspectives. Firstly, we identified the core information strands belonging to the case overview. Secondly, we analyzed how these information strands were presented in one particular CIS. Thirdly, we observed how the social workers managed and used these strands in CIS.

In the previous studies, CIS has been considered as a threat to presenting holistic information in social work [7], [16], [33]. Holistic information has been taken for granted with no exact explanation of what it is and how it should be presented in CIS. To design an overview, however, its core information elements should be defined. We identified three interconnected information strands in a client's trajectory: of concern, of private life and of institutional actions. The social workers preferred to see the strands from a temporal perspective. They needed information about the past, the present and the planned future of a child. The temporal continuum also describes change, continuity and permanency. Visibility of these three factors is central when trying to understand the complexity of case work [19].

The information elements of the concern and private life strands included three temporal aspects: episode, interval and not so clearly time sliced aspect, eon. Instead, information elements in the institutional strand included the aspects of episode and interval. Consequently, the information in the institutional strand is easier to describe with exact time stamps than in the two other strands. Time has been modeled according to instant (aka episode) and interval in information system design [4]. Our findings indicate that information can be temporally depicted similarly in CIS in social work.

Information was distributed across separate modules in the CIS analyzed. However, the case report had a central role to keep three information strands together. The report is a sequential account [31] but still, the entries can refer to the past, current and future issues in a child's life. Thus, it is not only the CIS fragmenting information as has often argued [7], [16], [33] but as well the nature of work that generates information as time sliced pieces. The social workers can only write the child's story as it unfolds. Information is obtained piecemeal during a client process.

The social workers managed a client's trajectory within a case report in two ways. Firstly, they created references to information existing in other modules or paper files. They did this to ensure a temporal continuum of a case at least in one place. Secondly, the social workers occasionally highlighted the essential information to create help in identifying the essentials. They used their own tactics to patch up the missing properties of CIS.

The social workers had to piece together an overview of a case in their minds. They either tried to scan quickly through a case report (holistic check up) or if necessary read through a case report carefully (intensive reading). The previous studies on medical [15] and social work [12] context identified skimming as one

approach to documents. Obviously, exhaustive information is not always needed. Even a hint, e.g. bolding, can fill the information gap and guide in work task performance.

**Implication for Design.** There has been growing interest toward temporal representation of information. Proposals have been made to visualize information in timelines, e. g. with patient data [6], [30], personal histories (LifeLines) [18] and newspaper news [10]. Our findings are in line with these proposals. The social workers themselves directly referred to diagrams as alternative ways to depict the core history of a child. Also, assuring a temporal continuum of different documents is a way to keep a child's case history coherent.

Three information strands found could be depicted as parallel timelines. The construction of timelines requires collecting information in different CIS modules together. The timelines could have 'pointers' with snippets to actual documentation. The social workers could choose whether to draw on a summary or navigate to the actual documentation. These alternatives would support two reading tactics: skimming and intensive reading. An opportunity to mark possible contingencies [27] or turning points are similar to the social workers' currently used tactic to highlight issues in a case report.

The child welfare notifications are concrete expressions of concern to be compiled to the concern timeline. The challenging part, however, is to depict the social workers' own assessment or hunch of concern. As carefully proposed in a couple of the social workers' interviews, the concern could be 'measured' and indicated with colour codes: red for high and green for low concern level. It is a double-edged sword though. The coding might be supportive but it also adds to the work of social workers.

Private life constitutes events that are, at least partially, possible to collect to the timeline. Family is a central context of a child's private life. It includes siblings, parents, stepparents, grandparents etc. Depicting a family as a social network graph might ease the understanding, in some cases, of complex family structures. In many cases, the social workers navigate between family members' files. The network graph could offer access points between the files.

The timeline of institutional strand could depict given service periods and actions taken by social workers and other workers. This timeline would support seeing a cumulative arc of action on a trajectory [27] by showing all the provided services.

Creating a continuum of documents requires collecting entries from different modules and scanned paper statements to a 'document timeline'. Scanning possibility exists already now in CIS. Currently, the social workers sustain the continuum of documents in a case report by their linking practices.

System design should be done keeping in mind that social workers need a tool that is simple and easy enough to use [8]. The possible new features in CIS should not produce an extra burden for social workers.

**Implication for Research.** The construction of a timeline can be based on existing temporal markers in CIS. Taking a look inside at different documents, especially a case report, is essential. Thus, further analysis of temporal markers is needed.

The social workers take a lot of effort to produce information about a child's case in CIS. Currently, CIS does not offer a coherent overview of a case that is available at a glance. It is possible to design a holistic overview of a case to match the social workers' needs and to support social workers' work.

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# “I Did It My Way”: Social workers as secondary designers of a client information system

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## ABSTRACT

The article focuses on the social workers' workarounds aka their own alternative strategies for defeating the various types of obstacles in information interaction in a client information system (CIS). Data consists of semi-structured interviews and social workers' observations with their verbal accounts while they used CIS in their daily work. The workarounds were analyzed from the process perspective when antecedent conditions, actual workarounds and their consequences were taken into account. The design flaws and external demands in work generated the workarounds. The social workers used small scale tricks within CIS to maintain continuum in a client's trajectory; they relied on shadow systems to manage their whole clientele; and took shortcuts in production of statistical information. The workarounds offered a better grip on information and saved time. However, some of the workarounds were tensional in a child protection context. The analysis of workarounds provided valuable secondary design suggestions to remedy CIS.

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## 1. Introduction

A client information system (CIS) has been part of social work for decades. It is embedded in work tasks in a course of client's process in social work like in the child protection services (Huuskonen & Vakkari, 2010). Information systems (ISs), including CIS, are expected to support the performance of work (Gasser, 1986). Users are motivated to use them if they facilitate information interaction, e.g. various forms to produce, communicate and consume information (Hovorka & Germonprez, 2011). In social work, it is vital that CIS offers appropriate tools to chronicle a client case (White, Hall, & Peckover, 2009) and to present it comprehensively (Huuskonen & Vakkari, 2011).

Occasionally, obstacles related to the material properties of IS (Leonardi & Barley, 2008), users' unawareness about properties (Koopman & Hoffman, 2003) or contextual issues (Azad & King, 2011) may hinder the information interaction. The users tend to seek solutions to bypass the obstacles, however. Their own alternate routes to reach work goals are called workarounds (Gasser, 1986; Koopman & Hoffman, 2003). Workarounds have been considered as a secondary design where users “tinker and tailor” the system to better fit with the demands in real context of use (Hovorka & Germonprez, 2011). The workarounds have been also described as an outcome of a learning process which was preceded by resistance toward a new technology (Boudreau & Robey, 2005; Orlikowski, 2000).

The research on CIS use in social work has enriched again since 1990' (Rafferty & Steyaert, 2009). The long lasting themes have been the bureaucratization of social work (e.g. Burton & van den Broek, 2009) and CIS' impact on the nature of information (e.g. Pithouse, Hall, Peckover, & White, 2009). Recently, the implementation of Integrated Children's System (ICS) in Great Britain has generated a substantial number of research evaluating technological failures (Ince & Griffiths, 2011) and

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criticizing policies behind the system (Wastell, White, Broadhurst, Peckover, & Pithouse, 2010). Studies of workarounds in social work are missing.

There has been a call for the post implementation stage studies of technology (Boudreau & Robey, 2005) that would reckon in the genesis and consequences of the workarounds (Pollock, 2005) and their localized context (Germonprez, Hovorka, & Gal, 2009). Understandably, insight about tinkering practices at the grass roots can provide vital information to remedy or set IS on a specific organizational culture (Ciborra & Nygaard, 2002), too. This type of information is essential when CIS is better fitted with social workers' work tasks.

Our aim is to explore social workers' workarounds in information interaction in CIS as part of their daily work. We consider workarounds as a process: the antecedent conditions, the actual action and possible consequences of them. Our findings rely on semi-structured interviews and real-life observations with verbal accounts. The field work was realized in three Finnish municipal in-home child protection services several years after the implementation of current CIS.

The paper is structured as follows. First, we introduce our conceptual framework and related literature. Thereafter, we describe research environment and methods used. We structure the results section in three work related themes: managing individual clients' trajectory, managing clients' groups and accounting statistics as part of direct social work. Finally, we summarize and discuss the results and present grass roots improvement ideas for CIS.

## 2. Conceptualization of workarounds as a process

Workarounds have been broadly defined as substitutive methods (e.g. Koopman & Hoffman, 2003) that facilitate the continuation of the information interaction and realization of a task at hand. The process model divides a workaround into three phases: preceding conditions, a workaround itself and consequences of workaround (Halbesleben, Wakefield, & Wakefield, 2008) (Fig. 1).

Information interaction, in most cases, intertwines to some wider activities, such as work tasks (Blandford & Attfield, 2010; Vakkari, 2003). IS support the accomplishment of 'primary work' (Gasser, 1986) as they facilitate various ways to produce, communicate, aggregate and consume information (Hovorka & Germonprez, 2011).

The obstacles faced in information interaction are part of an antecedent phase of the workarounds. Koopman and Hoffman (2003) suggested categorizing the workarounds on the basis of four obstacle types. Firstly, the design flaw in software refers to buggy programs and laborious paths in a system. Secondly, hardware or component failure concerns system misbehavior. Thirdly, the intentional design limits aim to purposefully prevent users' action. Fourthly, the software may also totally lack the necessary features. This may be due to the new attributes in work tasks unknown when a system was designed. The users may be unaware about the system features (Koopman & Hoffman, 2003) or their conceptual model does not match with the conceptual model of the system (Blandford & Attfield, 2010). Also, pressures from external environment and bottom-up constraints (Azad & King, 2011), e.g. policies and protocols, have been named as conditions behind the workarounds (Halbesleben et al., 2008).

Gasser (1986) defined workaround as an unintended manner to use a computer or avoiding its use and turning to alternative ways to accomplish work tasks. He identified three concrete forms of workarounds. Firstly, the data were adjusted or even incorrect data were entered to get the desired outcome in IS. Secondly, the organizational procedures were reversed. Thirdly, users created alternative backup systems that could be either manual or automated ones. Recently, the workarounds have been seen as innovative ways to tinker and tailor IS (Germonprez et al., 2009; Hovorka & Germonprez, 2011). A shortcut has been defined as a specific form of workaround that is used as a reaction to time block (Halbesleben et al., 2008).

The classification of consequences of workarounds to harmless, hindrance and essential ones (Ferneley & Sobreperez, 2006) describes the dual nature of workarounds. Workarounds do not necessarily affect data accuracy at all. Alternatively, they leave gaps in documentation if, for instance, information is entered partially. Workarounds may be essential to get work done but they may as well harm the workflow as well (Ferneley & Sobreperez, 2006).

We define a workaround from the process perspective as follows. It is a substitutive method that is used to overcome a constraint in information interaction in CIS with a specific motive to complete a work task. The workaround is used either to substitute the existing but insufficient properties of CIS, to patch up the lacking ones or to survive external demands.

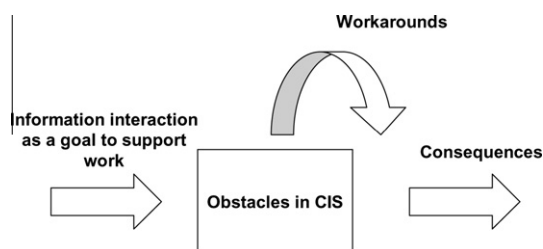


Fig. 1. Workaround process.

### 3. Workarounds in IS in social work and health services

Recent British studies have extensively reported the mismatches between work practice and Integrated Children System (ICS). The findings demonstrated difficulties of documenting narrative information (Hall, Parton, Peckover, & White, 2010), problems in gaining a full picture of a case (White, Wastell, Broadhurst, & Hall, 2010) and enlisted technical shortcomings in detail (Ince & Griffiths, 2011). The workarounds have not been in the focus of these studies. Some remarks were made about social workers reverting to other systems (Ince & Griffiths, 2011) and parallel paper files that were used because of the unstable system and complexity of data entering and finding (Shaw et al., 2009). The social workers overcame the timescale demands in a child's case by redefining the date of the assessment in ICS and moving the case forward in the assessment process in ICS although there was not necessarily a need to do so (Wastell et al., 2010). These examples demonstrate that not only technical failures but also external policies generate workarounds.

The workarounds have been explored in various health care information systems (see Halbesleben et al., 2008; Lawler, Hedge, & Pavlovic-Veselinovic, 2011) including the electronic health record (EHR). The studies have reported the persistence of paper along EHR. Lack of skills and knowledge about EHR and perceived efficacy of paper were motivation to rely on paper workaround (Saleem et al., 2009). The paper seemed to better support writing and reading practices of physicians (Heath & Luff, 1996; Varpio, Schryer, Lehoux, & Lingard, 2006).

The use of copy-paste within EHR was identified in the study based on a survey among physicians (O'Donnell et al., 2009). Automated text categorization within EHR revealed that the physicians copied their own previous entries but some of them used also text written by colleagues. The study assumed that copy-paste was used because it was considered an effective way to save time (Thielke, Hammond, & Helbig, 2007). Therefore, the copy-paste can be considered a shortcut that is a sub-category of workarounds (Halbesleben et al., 2008).

The study in computerized consultation package in EHR in a hospital revealed that instead of using the reporting option of the system to track active consultations the clinical staff used Excel spreadsheets. The shadow system offered more flexibility and functionality (Saleem et al., 2011).

### 4. Study design

Our objective is to explore social workers' workarounds in CIS from the process perspective. We answer the following research questions:

- What kinds of obstacles in information interaction lead to the workarounds?
- How do social workers and social work managers work around obstacles in CIS?
- What are the possible consequences of workarounds?

#### 4.1. Research environment

The field work was carried out in three Finnish municipal social service organizations (A, B, C) in 2008. Child protection in-home service is part of statutory social work. It provides support to children and their families in problematic life situation by offering services just as family workers visit at home, financial aid and support persons and families. The social workers' work was organized differently in the research sites varying from pure child protection to cover all areas of social work. The variation in work content impacted on what modules of CIS the social workers used and what information they were mandated to access.

A social worker with a co-worker was assigned to manage a child's case. The case management included activities such as assessing need for the services, keeping in touch with a child and his/her family and other parties involved in the case, and organizing services. Documentation was a mandatory part of the work. The social work managers gave consultancy to their subordinates if needed and carried out some official decisions. Their major tasks were administrative. The system administrators, in turn, were in charge for the maintenance of CIS. They also produced statistical information.

The current CIS replaced the former one in 2004 in research sites A and C and in 2006 in research site B. The data conversion was manual. Therefore, only the basic information of active clients was manually entered to the current CIS. Narrative case reports were left in former CIS. Each research site tailored the CIS to match the local needs. The CIS had separate modules for different purposes (Table 1). The modules were not directly connected but the navigation went through a 'diary view'. The modules can be purchased separately.

**Table 1**  
CIS modules and content and availability at the research sites (A, B, C).

Module	Content of modules	A	B	C
Documentation	Chronological case report as free text; client plan structured with titles	x	x	x
Family	Structural information of a family living in a same household	x	x	x
Decision	Formal decisions (e.g. opening and closing of a case, given services) structured mostly with drop-down menus, justifications as a free text	x	x	x
Work done	Performance information about realized work task structured mostly with drop-down menus		x	x
Scheduling	Future events structured mostly with drop-down menus	x		x

**Table 2**

Overview of data collection in research sites (A, B, C).

Type of data	Informants	A	B	C	Total
Interviews	Social workers	6	8	9	23
	Social work managers	1	3	3	7
	System administrators	1	1	1	3
	Total	8	12	13	33
Observations and think-aloud	Social workers	3	3	5/6 <sup>a</sup>	11/12 <sup>a</sup>

<sup>a</sup> One social worker observed twice.

#### 4.2. Data collection and participants

Our data consists of semi-structured interviews and observation of social workers using CIS in conjunction with their verbal accounts (Table 2). After a pilot interview, the interviews were carried out and the observations were conducted thereafter.

In the research sites A and B, practically almost all the social workers in child protection were reached for the interviews. In the research site C, that was the largest one, one quarter of the social workers were interviewed. The interviewees were at different stages of their career. Social work managers and system administrators were interviewed to gain a 'variety of voices' (Myers & Newman, 2007). The themes of the interviews were the work, documentation and use of CIS. The questions varied according to the role of the interviewee. The workarounds were not directly asked about but often the topic came up among other questions, and then it was discussed in more detail. The interviews were tape-recorded and transcribed in full for analysis. The total interview data consists of 33 interviews with an average length of 2 h (Table 2).

The social workers' willingness to participate in observation was asked for during the interviews. Everyone who was asked accepted the request. Twelve observations were conducted in a realistic and authentic context of CIS use. The social workers worked normally in these sessions doing their daily work with CIS. The only exception was that based on their own choice they verbalized and reflected upon their actions concurrently every now and then (Makri, Blandford, & Cox, 2011; Miller & Brewer, 2003). Observation data includes field notes from all sessions and the tape-recorded accounts from ten sessions. The recording was not appropriate in two sessions. The sessions varied from 2 h to the whole working day. The total data is about 40 h. Field notes were written up shortly after the observation session. The commentaries of the social workers were transcribed word for word.

#### 4.3. Data analysis

The analysis was started with holistic coding (Dey, 1993) when items related to CIS were identified. Thereafter, the coded parts were read through and the following narrower codes were added: production and use of information, obstacles in the use of CIS, workaround and ideas to improve CIS.

The notes from the observations and social workers' commentaries during the sessions were matched up. Thereafter, the data was segmented (Miller & Brewer, 2003) into functional entities. A functional entity is a single task in CIS consisting of a sequence of actions occurring in order to reach a certain goal. The functional entities ( $n = 92$ ) were activities like writing a case report or making different types of decisions. The analytical frame covered the following aspects: the purpose of activity in CIS and its linking to a work task; a sequence of actions and types of information interacted; blocks in information interaction and means to work around the block.

Lastly, the analysis of interviews and observation data were joined together. Finally, the coded parts were organized in the analytical scheme that depicted the process of workarounds: antecedent conditions, action and consequences (Fig. 1). The interviews offered an overall picture of the use of CIS in daily work, problems encountered in the use and the solutions to them. Observations and social workers' accounts concretized in detail the use of CIS and brought out how workarounds were embedded in the information interaction in CIS.

### 5. Findings

The social workers recorded and used information in CIS daily. They expected that CIS would offer support in gaining an overall picture of a single case (see also Huuskonen & Vakkari, 2011) and controlling their clientele. The social work managers, instead, used CIS less frequently, because their work tasks rarely required recording. Information in CIS was often relayed to them by the social workers or the system administrator. Specifically, the managers wished that CIS would have been able to provide accurate statistics about clients and work realized at the organizational level.

CIS did not fully live up to the expectations, and various obstacles in information interaction with CIS were faced. A social worker summarized the overall problem of CIS: "At our office, the system administrator knows CIS the best. CIS is a rare program made in cipher. You get to understand it when you have used it for a long time, messed up with it and participated in many training

sessions.” (Social worker – site B – Interview 8) The data extract signals frustration but also lists potential strategies for familiarizing with CIS. It is a matter of learning by doing and by the hard way. When facing an insurmountable obstacle, the system administrator is a resource that is turned to.

Alternatively, workarounds were developed to bypass the obstacles in information interaction in CIS. They included small scale actions in CIS or reliance on alternative technologies or traditional paper. The next three sections bind together the process of workaround more in detail. The workarounds are approached from three perspectives: maintaining an individual client’s trajectory, being aware of clientele, and accounting about work and clients at the organizational level. The division (a) brings out the major areas where CIS was expected to support work (b) describes workarounds in relation to narrative, aggregated and statistical information (c) depicts the workarounds from the viewpoint of direct social work practice and managerial needs.

## 5.1. Maintaining individual client’s trajectory in CIS

### 5.1.1. Obstacles

The child’s trajectory was maintained and could be found over several unconnected modules and documents (e.g. a child welfare assessment, a case report, a client plan) in CIS. The *insufficient linking of modules and documents* resulted in cumbersome navigation and information fragmentation across CIS. The case report was the central information source among the various documents in CIS. The time sliced entries contained “odds and ends” type of information as a social worker defined it. *Insufficient filtering options*, however, slowed down locating the essential information within a case report. Additional information, such as the statements of other professionals, was available in paper files.

The information interaction was harmed also because of the *advisedly obstacles set by an organization*. Firstly, access to the information in the other sectors, e.g. income support could be denied if the social workers’ work tasks did not directly relate to the sector. In practice, the distinction between the duties was not that clear. As the social workers in child protection also provided financial support, they had a need to access the income support files, too. Secondly, there was a limited access to information in former CIS. That was explained with the lack of skills of the social workers to use former CIS and an irregular need to relay on earlier information. Thirdly, the social workers faced obstacles in information production since they were not able to delete recorded decisions themselves. The purpose was to prevent an accidental deletion of the essential documents. The organizational blocks, therefore, were justified for the sake of privacy, practicality and safety, respectively.

The general changes in the of nature work reflected in the requirements of documentation, and consequently the way information was maintained in CIS. Family files were replaced by individual case files when work orientation changed from family to child-centred (Pösö, 2011). This was the case in our research sites too. Previously, the records were found either under the youngest (site A) or oldest sibling (site B) or under the head of the household (site C). Individual recording for each child and demands for accountability increased time spent with CIS. This led the social workers to struggle with a *limited time resources* and seek alternative ways to operate in CIS. The social worker expressed a concern about how working hours were distributed: “One of our long term worker said that our work shifts to more interaction with the computer than with the clients.” (Social worker – site A -Observation – entity 76)

### 5.1.2. Workarounds and their consequences

To avoid multiphase navigation between modules and too many clicks the social workers *embedded* information in the case report instead of using appropriate modules or documents. For instance, a social worker chose to collect contact information of the families on the top of case reports instead of using a family module meant for this type of information. Likewise, saving and verifying each subtitle separately in a structural client plan was perceived as being complex and therefore the plan was embedded in a case report as a free text. Embedding was also an ad hoc solution to post information at least to a place somewhere in CIS. A just recently introduced document type, the summation of child welfare assessment, did not have a specific place in CIS yet. Therefore, it was written in MS-Word and copied to a case report. In two first cases, the workarounds were reactions to the shortcomings of CIS. In the last one, instead, it was a matter of changed attributes in the work tasks. Obviously, embedding simplified the use of CIS. The navigation was reduced since information was in one place. The embedding, in some cases, had harmful consequences, too. The embedded client plans were practically hidden in a case report. Thus, there was no separate document that could have been sent to a client to inform him/her. Nor it was possible to collect statistics about made plans.

The social workers prevented the information fragmentation across insufficiently linked modules by using the case report as the main document to preserve a case history as a whole. A *manual linkage* aka a short written reference was made in it to create a connection to information elsewhere, either in the other modules or in the paper files. Practically, linking was a double work. Within the case report, the social workers used *information signals* to point out the essentials among otherwise indistinguishable information. The signals, just as bold fonts, titles with capital letters and listings supported skim reading. The signals could be compared with underlines made on paper. Maybe the unwritten rules within organizations, however, made the social workers also wonder about the appropriateness of highlights or even abandon the use of them. A social worker approached the issue considering a client as a potential reader of a case report. Since bolded fonts were used most likely to highlight lamentable issues a client might feel uncomfortable seeing them pointed out as such.



*Intermediaries* were turned to when information interaction was constrained due to the organizational blocks. Intermediaries were colleagues who had sufficient privileges or know-how to access information. Firstly, a colleague could be approached if access to information required to carry out a work task was denied. Secondly, the access to former CIS was most likely obtained through long-term social workers who had a long experience in using it. Even years later the commands were still deeply rooted in mind as explained in next: “*I used it almost twenty years so I know it like the back of my hand. Actually, just during this week workers asked me to print the information out from there.*” (Social work manager – site C – Interview 24)

The copy-paste function was a workaround which goal was to reduce time spent in mandatory recording. The copy-paste occurred not only between the same type of documents but also across different document types of a child. Unchangeable parts of a document could be reused as such, as was the case when a client plan was updated, for instance. Alternatively, a copied text could be later modified to better fit the current purpose. The copied text of a case report could serve as a base for a client plan or a taken into care decision. Copy-paste was realized between siblings’ files equally, which turned out to be a double-edged sword, though. Copy-paste was a way to maintain a history as whole as possible for each sibling. The same information content in the siblings’ record was needed, for instance, when identical decisions were made or short entries about the shared event recorded. On the other occasions, copied and pasted information was regarded to compromise the individuality of a case report even though entries were modified: “*child-specific information*” added and “*extra information*” cleaned out. Obviously, the siblings have a shared family history but also their unique lives.

### 5.1.3. Illustrating and summarizing

The functional entity from the observation sessions (Vignette 1) concretizes the workarounds that support keeping the client’s trajectory as a whole in a narrative case report. The left column lists major moves in and outside the CIS and the right column gives examples of the social worker’s verbal account.

The social worker has received a child welfare notification from a police previously [move 1]. The notification concerns three siblings who are already involved in the child protection services. The social worker starts by locating a child through the diary view [move 2]. She records the notification to three siblings [moves 3, 6, 8] by selecting information from the drop down menus and navigates between their files. The structural recording provides statistics for organizational use too. She suggests that CIS would support her work better if it enabled her to add a notification to all siblings at once if needed. She also makes an entry to the case report of the child [move 4]. The entry offers complementary information, and it points out the existence notification and connects information in different modules. Within the case report, the social worker uses a bold font for the word child welfare notification to indicate the contingency in a client’s trajectory. Further, she copies and pastes the entry to siblings’ case reports [moves 7, 9]. In this case, the content of the information for the siblings is the same in any case and the shortcut – a specific form of workaround – rationalizes work and saves time. Copy-paste requires several moves. The case reports are open and closed by turns because only one document at a time can be open. As wished by several social workers CIS could be improved if multiple documents could be opened concurrently. The social worker manages her own work too. She uses her calendar [move 5] to check up the appointment that was set up. The calendar is an important information artefact for social workers. It supports personal time management whereas the scheduling module in CIS is rather for organizational use. Finally, she updates her paper list [move 11] that contains information about invitation letters sent to clients. The information on the list is parallel to information in CIS but faster to find and see at a glance.

#### Vignette 1

Functional entity: recording a child welfare notification (site A).

Moves in CIS	Example of verbal account
1. Child welfare notification from the police	
2. Locates a child through Diary view	
3. Adds a notification (own module)	<i>Then I choose child welfare notification, it is from police. Then it is drug abuse by a parent and child protection</i>
<b>4. Writes an entry to a case report (bold font)</b>	<i>Generally, I use a bold font for a word child welfare notification so that it shows up</i>
5. Checks an appointment time from a calendar and record the time to a case report	<i>I have already booked up a time for them. But when was the appointment?</i>
6. Adds a notification to a sibling’s file (own module)	<i>You have to do a great deal of typing if a notification concerns several children in the family</i>
<b>7. Copies and pasties a case report entry to a sibling</b>	<i>Now I copy this so that I can add it to the text of the other children</i>
8. Adds a notification to another sibling	
<b>9. Copies and pasties a case report entry to another sibling</b>	<i>If you could choose whether you want to record the [notification] only to single child or simultaneously to all children in the family. Then this would be a smart CIS</i>
10. Invitation letter to the parent by using Microsoft word	
<b>11. Updates her own paper list holding information of invitations</b>	<i>Invitations sent. I normally mark it so that I can remember that I have sent them</i>

**Table 3**

Summarizing the process of workaround in the maintenance of client's trajectory.

Obstacle	Workaround	Consequence	Design ideas
Insufficient linking of modules (intricacy)	Manual linkage	+Continuous story	Facilitating direct moves between modules
	Embedding	–Possible harm to compile statistics –Hiding information	View showing all documents jointly
Insufficient filtering	Information signals	+Support for reading  –Uncomfortable from a client point of view	Automatic short summations
Organizational block	Intermediaries	–Extra work and time effort	Control by log data
Limited time resources	Copy-paste	+Saves time  +Guarantees a record for each sibling –Lost of individuality in a child's record	Allowing two documentation to be open simultaneously  Concurrent recording

Table 3 pieces together the complexity of workarounds in the maintenance of a client case. Both the technological and organizational reasons generate the workarounds. Use of workarounds means also balancing between positive (+) and negative (–) outcomes.

## 5.2. Maintaining control over client groups

### 5.2.1. Obstacles

The social workers were in charge of varying numbers of children. The group level information about the children was needed to be able to coordinate the direct social work. A social worker explained the situation when she took up the baton of a new client group: “*I wanted to know children's names in my area. That was to be able, for instance, to book up times for the negotiations to check up their current situation.*” (Social worker – site C – Interview 1) Also, the figures were needed for estimating whether the caseload between social workers was in a reasonable balance.

An individual child could be searched by using the name or ID. However, searching for the whole clientele of a social worker, not knowing the exact names, turned out to be problematic. Our data offered three plausible explanations for the obstacle. Firstly, the search tool was too complex and an unconnected part in CIS. Therefore, the social workers had not learned to use it. Secondly, information about a worker in charge was inaccurate in CIS. Inaccuracy was explained by the fact that several workers took care of a child's matters over the client process. Information about a change should have been updated each time but obviously that was not necessarily done. Thirdly, the social workers were not even authorized to do group level searches. The obstacles returned to the *intricacy of CIS* and consequently specific skills required, *inaccurate information* and *authorization issues*.

### 5.2.2. Workarounds and their consequences

The social workers created *shadow systems* to keep updated with their clientele. *Self-made client lists* were maintained either on paper or on alternative technologies just as MS-Word or Excel. Lists provided by system administrators existed, too. They organized children according to the three formal stages of a client process: notification, assessment or service stages. In the research site C, general practice was that the system administrator prepared the client lists for social workers semi-annually. The aim was that the social workers would go through the list and check up the current status of the cases. The social workers preserved the list also for later use because it offered a modest help to keep track of the cases.

The content and organization of information varied on the self-made lists. The minimum information seemed to be a child's name and the year of birth. At the widest, the Excel-based list contained all the basics about the client: name, contact information, services in use and planned future activities and specific remarks on the case. The color codes supplemented the list: yellow being an alert code, for instance.

The new workers gained from ‘*hand over lists*’, which served as a communication tool between a former and a new social worker. It named the clients and could also indicate the most critical cases to work with.

Similarly, a social work manager maintained a paper list on children in foster care. It was a well tried and an inherited workaround from a former manager. The manager reasoned the workaround from two perspectives. Firstly, the maintenance of a list did not require much effort because the situation remained relatively stable over time. Secondly, the paper list provided better support than CIS. Information was accessible faster at-a-glance and did not require multistep clicking in CIS.



**Vignette 2**

## Managing client groups.

**OBSTACLE:**

*The system administrator send [client lists] to us. Our manager thought we should be able to print out the lists ourselves. But from where that I can't say. (Social worker – site C – Interview 15)*

**WORKAROUND:**

*I don't have [list] on a computer. Sometimes I have written the names on the paper or aside of a calendar. But I have the clients in my head. (Social worker – site A – Interview 14)*

**CONSEQUENCE/TENSION:**

*In principle, you are not allowed to keep up client lists. It is a rule. (Social worker – site C – Interview 1)*

**SECONDARY DESIGN SUGGESTION:**

*It would be great if I could get out my client families and how old are the children and for how long time they have been my clients and all that. I never thought that before but if I log to CIS with my ID why can it not even print out my clients? (Social worker – site A – Interview 11)*

**Table 4**

Summarizing the process of workaround in the client group management.

Obstacle in CIS	Workaround	Consequence	Design ideas
Intricacy of CIS	Shadow systems	+Increased awareness	Integration of search tool
Inaccuracy of information		+Information available fast at a glance	
Lack of authorization		–Legitimacy of client list unclear	

**5.2.3. Illustrating and summarizing**

The multi-voiced collection of data extracts in [Vignette 2](#) illustrates the phases of workaround in controlling client groups. Firstly, the social worker refers to a discussion recently carried out in their organization. The manager had assumed that self-directed searches in CIS are possible but the issue has twisted in the wind. At least, the social worker cannot indicate where the appropriate tool in CIS exists. Therefore, she relies on lists made by the system administrator. The second extract demonstrates two styles to sustain paper shadow systems: paper sheet or side of a calendar. Moreover, it points out the value of the social worker's own memory. She has worked years in the area and has built a long-term relationship with her clients knowing them by heart. In the third extract, the social worker carefully refers to the principles and rules that question the list outside CIS. The rule may refer to the Personal Data Act that dictates what kind of personal registers are permissible. In the final extract, stimulated by interview the social worker ponders the possible support CIS could offer. According to her, obtaining basic information on clientele is the essential feature in CIS.

[Table 4](#) depicts the process of workarounds in the client group management. There are several possible reasons to relay tools outside of CIS. The workarounds have both positive and negative consequences.

**5.3. Statistical accounting about work and clients****5.3.1. Obstacles**

The production and use of statistical information bound together three occupational groups observed in the organizations. The social workers did the groundwork as a part of the case recording. The figures were raised especially when information was entered through the drop-down menus in various modules like in recording child welfare notification, decisions or in separate “work done module”. The system administrators aggregated figures to be used within organization and as well in the national child welfare statistics. The social work managers rested on statistics provided by the administrators. However, the managers wished for independency and looked for “*smoother co-operation with CIS*” as expressed by one of them. The manager's expression refers to her own inadequate skills, and before anything, the intricacy of CIS.

The social workers considered especially the statistical reporting about their work as a duplicate task in CIS. From their point of view, the essential information was recorded as free text in a case report. The “work done module” depicting figures was *insufficiently linked* to the case report causing multi-step navigation across CIS. Certainly, navigation highlighted the separation of the tasks. The *pre-structured information* in the drop-down menus represented the work *insufficiently*. The information produced through menus was minimal (type of activity, time used and number of participants) compared with case reports. The client-based allocation of work activities was not unambiguous because often the activities related to several children at once. Obviously, the logic of work and the way to collect figures did not match. The figures depicted the “products” but the social workers perceived it difficult to squeeze the client process into product information. Statistical information was not perceived to benefit them in client cases. The obstacles faced by the social workers, therefore, seemed to be only partially technological ones. There was mismatch between root level and administrative needs.

**Vignette 3**

Making statistics about work in site B.

Social workers	Administrator and manager
<b>OBSTACLE:</b> <i>It is a huge inconvenience. . . It is not easy to remember the work done module and to see what is the point of it</i> (Social worker – Interview 2)	<b>TENSION:</b> <i>We have some workers who probably resist CIS. They do not use it as wished. We have noticed that you cannot quite trust every statistic</i> (System administrator – Interview 31)
<b>WORKAROUND:</b> <i>Then we keep up the double registries, for example, about the client plans. For example on Word or Excel or by some other means</i> (Social worker – Interview 13)	<b>WORKAROUND:</b> <i>I have asked for the statistics manually from the workers. This is the number of my clients and this is the number of the client plans. Then I have calculated the percentages myself. That's what is asked from us</i> (Social work manager – Interview 27)
<b>SECONDARY DESIGN SUGGESTION:</b> <i>The work done module and the documentation should be integrated. The case report could have a similar kind of tool as the work done module is</i> (Social worker – Interview 21)	

**Table 5**

Summarizing the process of workaround in the statistical accounting.

Obstacle	Workaround	Consequence	Design ideas
Insufficient linking of modules (intricacy) Insufficient pre-structured information Irrelevancy to direct social work	Ignoring Information merging	–Inaccurate statistics	Integration of work done module into case report
Intricacy of CIS Inaccuracy of information in CIS	Shadow systems	–Extra work and time effort	

**5.3.2. Workarounds and their consequences**

Generally, the social workers roughly estimated the time spent in work tasks. As a workaround, the social workers either *ignored* it entirely or *merged information*. For example, several short activities of the same type in a row could be shrunk as one in the “work done module.” Alternatively, an activity could be allocated only for a single child even though it would have concerned several ones. The information merging rationalized the social worker's work and saved time spent in documentation. On the other hand, the accuracy of the statistics was harmed.

The social work managers only occasionally collected statistics themselves. Their workarounds were *shadow systems*. The statistics were collected directly from the workers and then figures were calculated manually.

**5.3.3. Illustrating and summarizing**

**Vignette 3** gives two perspectives to accounting statistics. The left column gives a voice to the social workers and the right one to the social work manager and the system administrator. As stated by the social worker recording the statistical information is an extra burden, because it barely has importance in direct social work. Therefore, it is also easy to forget. The system administrator has recognized undesirable ways to use CIS and names it resistance against CIS. The inadequate recording has an effect on accuracy of statistics. The social work manager is responsible for reporting the outcomes to the board of social services. One of the measures followed quarterly is the number of client plans. She thinks that it might be possible to get figures out somehow through the “work done module”. Her reasons to turn to workaround are the unclear procedure in CIS and a doubt that information would not even exist there. She asks numbers from workers manually and thereafter calculates the figures herself. The social workers respond to the manager's demand with their own workaround: either paper based or alternative technology based accountancy. An obvious outcome of the workarounds is that work gets done even though it requires extra effort. At the end, the social worker presents an idea to simplify the double phase recording. The joining of two modules would reduce navigation. The recording would be done in a case report that is considered the major working area in CIS.

**Table 5** encapsulates both the social workers' workarounds in statistical accounting while recording a client case (the first row) and workarounds when statistics are compiled for organizational use (the second row).

**6. Discussion and conclusion**

Our study extended our knowledge about workarounds in the use of CIS in social work. Firstly, the workarounds were examined as a process when their genesis and consequences were also taken into account (Pollock, 2005). Secondly, the research of workarounds was introduced to human services – a sensitive field dominated by narrative information and

regulated by legislation and professional ethical code. Thirdly, the social workers were considered as active agents who realized their daily work with the support of CIS even though they faced obstacles in the use of it. The workarounds within and outside of CIS were primary users' attempts to design CIS to better fit their task environment (Azad & King, 2011; Hovorka & Germonprez, 2011) and get their work done. Understanding the workarounds as secondary design suggestions is a step forward to socio-technical system design. Its potential has been recognized in the social work research, too (White et al., 2010).

Generally, the social workers considered that CIS was far too intricate. Multiphase procedures in decision making, inconsistencies in the position of the cursor and number of clicks in navigation on a screen were concrete examples about design flaws (Koopman & Hoffman, 2003). Complaints were made about unclear terminology and icons, that indicates conceptual mismatches between a user and CIS (Blandford & Attfield, 2010). Specifically, the *insufficiently linked modules* generally complicated the realization of tasks in CIS. The social workers navigated long paths as often the same issue generated a need to record information in several modules. The continuity of case information was at risk as information was distributed across different documents and modules in CIS. It seems that CIS rather consisted of separate sources meant for different purposes than being a unified tool.

The importance of narrative information in social work has been widely emphasized (e.g. Hall et al., 2010). It is obvious that free text facilitates a comprehensive description of a client situation. Another aspect, however, is how narrative information is made accessible and is used. This has not been discussed in the previous studies. Our findings demonstrated that the social workers had difficulties in finding the core of a case especially in long and miscellaneous case reports. The documentation module facilitated recording in free text but *lacked tools for filtering or searching information* in a case report to get a faster grip on information. CIS did not support skim reading, and if intensive reading was necessary a case report was rather printed out (Huuskonen & Vakkari, 2010).

The social workers balanced how to fulfil the macro-level demands for the recording while they had limited time resources to work with a multitude of clients (see Huuskonen, Korpinen, & Ritala-Koskinen, 2010). These demands were expressed in the Child Welfare Act that defined recording as a mandatory part of each client process. On the organizational level it was equally expected case information to be up-to-date but also that performance information to be recorded. Understandably, the social workers sought alternatives to ease their workload in CIS. Our findings, therefore, are consistent with Azad and King (2011) who suggested that tension between top-down requirements of the external environment and the bottom-up constraints in daily work are potential generators for workarounds.

Manual links guaranteed a continuum of a case history and information signals pointed out the core information in a case report. These workarounds were realized to support the later use of information.

The social workers turned to *shadow systems* when keeping control over their clientele. The reasons could be either the inadequately integrated search tool for producing group based information; lack of authorization; or workers' unawareness about the features in CIS. Previous studies have identified social workers' reliance on paper (Shaw et al., 2009) and alternative technologies (Ince & Griffiths, 2011) as a backup but not discussed their purposes in detail.

The top-down requirements were beaten by two types of workarounds. Firstly, the social worker copied and pasted information within a child's documents, and between siblings' records, too. These shortcuts saved time (Halbesleben et al., 2008), rationalized work and guaranteed a case history for each sibling. The use of copy-paste has been identified in patient records, too (Thielke et al., 2007). Secondly, the social workers occasionally merge performance information or totally ignored its recording. The findings are in line with the discussion about the irrelevancy of statistics to direct social work (Shaw et al., 2009) and social workers' unwillingness to reduce a client relationship to numbers (Carrilio, 2005). It has been argued that the British social workers are in the "iron cage of performance management" (Wastell et al., 2010). Our findings demonstrate that the social workers also find ways to break out of the cage.

The workarounds may seem rather small technical tricks to interact with CIS. If they are contextualized in human services, tensions and balancing acts in their use come up. The tension exists in relation with clients, legislation and demands for being accountable. According to Vierula (in press) parents experienced child protection records as traumatic and repressive reminders about the past. Understandably, information signals pointing out a regrettable event may be a sensitive issue from the clients' point of view. The shadow systems used to maintain awareness about clientele contravened legislation. A juxtaposition of the direct social work and administrative needs exists as workarounds related to statistical information recording depict. After all, the workarounds were social workers' everyday survival strategies, which supported them to get a better grip on information and consequently carry on their work with their clients.

Our study was realized in three social service organizations using the same, albeit locally, tailored CIS. Our research, therefore, gives a limited account from three sites with a particular tool in use. In the interviews, the workarounds were not directly asked for. Hence, the analysis was built on the cases that emerged spontaneously. The observational data was collected when the social workers particularly focused on information activities in CIS. Consequently, the data may over-emphasize information production activities in CIS. The information interaction in other daily routines was missed. Also, the workarounds may have been so embedded in the work practices that they were not even interpreted as such in the observations. The research, however, is a detailed representation from the grass roots. It shows how social workers actively worked around the obstacles in CIS.

The social workers tinkering in CIS (Ciborra & Nygaard, 2002) and their direct verbalizations produced remedies for design. They thought up the possibility to have multiple documentation views open simultaneously, integrating a proofreading tool in CIS and specific place for clients to write down their own thoughts. The joint view of the varied documents and direct moves between them would guarantee a decent chronology, and would substitute the current use of manual links. The social

workers needed summarized and time-wise overviews, for which visual diagrams were proposed by a social worker (see also Huuskonen & Vakkari, 2011). Integration of “work done module” into a case report was directly suggested: the beginning of an entry could collect procedural information in structural form and thereafter the entry could continue as a free text. The integration would concretely diminish a navigational path. Moreover, it might even decrease the mental gap between recording for direct social work and administrative needs; but might be a difficult design task though (see Ince & Griffiths, 2011).

The people, practices, values and technologies form rich information ecology (Nardi & O'Day, 1999) in child protection. An ethnographic approach has been suggested in order to gain insight into what occurs in the interaction between users and CIS in a specific context (Gillingham, 2011). Interaction log data from CIS as complementary data might offer a more detailed understanding about patterns of use and time spent with CIS. Further research is still needed, for instance, about the eventual use of voluminous narrative information in daily work and information production chain from grass roots to national child welfare statistics. Possibilities of language technology have been explored in health records to provide the overviews of patient histories (Suominen & Salakoski, 2010). Its applicability in social work records should be studied, too. It might offer tools to develop CIS in the condition of the narrative information – a traditional way of knowing in social work.

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