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MOBILE ENHANCEMENT OF CARE WORK

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Abstract

This paper describes the organizational implementation of a mobile system in social home care. By recording the times, places and tasks carried out, the new mobile system was planned to enhance managing and planning of home care services to become more efficient in the future. Home care workers view the system as a device for controlling working time. There is an apparent tension between independence and control as well as between technical and care rationalities of the work. This longitudinal ethnographical study aims to describe how the new mobile technology was appropriated to be a meaningful feature in the care context. The technology-led change is assessed from the perspectives of use, control, technical problems and disappointment.

Keywords: Organizational implementation, mobile information systems, longitudinal ethnographic study.
1 INTRODUCTION

The organizational implementation of a new information technology affects the working community in many ways. In addition to the expected outcomes, unexpected changes in the work or in the working practices are likely to happen. This paper sets out to describe what took place during the organizational implementation of a new mobile information system in social home care.

Home care offers help to vulnerable, usually elderly, clients coping with their everyday life in order to promote independent living as long as possible. Work in home care consists of distributed activities between different workers at different times and in different locations. In the city of Turku, in South-Western Finland, developing this service work was planned to take place through implementation of mobile technology. PDAs were introduced for gathering information about the client service calls to ease the planning of working hours and to make the balancing of resources and tasks more efficient as they make it possible to record service task types and service duration. Whilst the home care management has seen the implementation project as an opportunity to improve quality and effectiveness of the service by upgrading and standardizing the working practices to a more professional direction, the home care workers have expressed doubt while attempting to interpret what actually were the purposes and outcomes of the implementation project.

Van House, Butler and Schiff (1998, p. 335-336) state that changing the material bases of work or making possible new forms and methods of working often “foregrounds previously taken-for-granted practices.” This means that decisions of new working practices have to be made and, for example, negotiations of what to include and exclude have to be carried out. Home care workers felt the mobile system as a threat to the accustomed independence at work. Before the implementation, they used to work alone in the field and no official accounts were made of the services. By changing the visibility of working, the mobile system promoted a shift towards disciplinary control and surveillance (Foucault, 1979, 1980) that the workers interpreted as distrust by managers.

Star and Strauss (1999) discuss the vulnerable situation of workers when invisible, often so called unskilled work such as home care, is made visible. Positive outcomes can be, for example, an increase of legitimacy and rescue from exploitation. Other outcomes can be, for example, reification of work practices, surveillance of the workers and, on the more positive side, increase in group communication and in sharing of the tasks. Although there is accounts on how new technology affects interdependence relationships at work (Karsten, 2003), these relationships are described as somewhat paradoxical (Elmes et al, 2005). A new information system can increase the level of empowerment amongst workers by increased visibility of information and processes. At the same time, the new information system can mean an increase of control through integrated systems of technological monitoring. Zuboff (1988) argues that whereas imperative control by managers is a delicate power, which needs to be renewed in daily experience, power and managerial control can readily be emphasized by material dimensions. Also in the home care case, the care workers gave this meaning to technology.

2 DEVELOPING SOCIAL SERVICES IN MOBILE CONTEXT

New information technology is often implemented with the hopes of modernizing work. McGrath (2003) states that the managers and designers of new technologies often have an opinion that new technology will automatically have a positive impact on organizational culture and can be used to promote more efficient working practices. She describes the situation as one where attempts to implement technology in order to create organizational effectiveness may cause unintended consequences, which in turn may challenge the original objectives of the implementation of information technology. Modernizing public social services has been attached to growth of managerialism (Clarke et al, 2000; Banks, 2004). Patterns for managerial empowerment have been borrowed from corporate organizations. According to Clarke, Gewirtz and McLaughlin (2000), this
shift has changed also expectations on how organizational actors should behave and act in a “businesslike” manner. Flynn (2000) is concerned about the impact new managerialism on how work is done and supervised. For example, mechanization, standardization and making routine activities in areas such as teaching and nursing have meant decrease of worker’s control on his or her work. On the other hand, according to Flynn (2000), routine tasks have also been included in process quality improvements and promotions of self-management. In social home care such development is also apparent. To achieve professionalism in the field, home care workers have a more limited set of service tasks than previously but there is also evidence of increased sense of control over working arrangements.

For home care clients the process of modernization shows up in several ways. First, information technology has crossed threshold to private sphere, to homes, and has become a domesticated feature of daily routines (Haddon, 2004). Secondly, modernization efforts have been connected with implementing new management systems, cutting the costs and increasing overall efficiency (Clarke et al, 2000). Thirdly, clients are now customers “shopping” for social care. According to Mackintosh (2000) the metaphor of exchange or shopping labels the client interaction and in practice means that a client has to choose what is available. Banks (2004) argues that new management and increasing regulation of work pose a threat to professional ethics as basis for action.

Within the public social sector, home care provides services at clients’ own homes. In this context, mobility doesn’t mean only moving around while working but emphasizes the needs for communication and interaction between different care workers and their managers (Hughes et al, 2002). Possibilities of mobile information technology were recognized by the municipal service providers as they were trying to cope in a situation where the percentage of older citizens has been estimated to grow significantly.

Bellotti and Bly (1996) consider mobile technology as a way to use shared resources better. This includes the facilities and artifacts in the working environment but in this case, also the distribution of home care workers and service hours reserved for the clients. According to Pica, Sørensen and Allen (2004), besides adequate recourses, the role of information is increasingly important in complex, temporally and spatially distributed work environments such as home care. One aspect of utilizing mobile technology is that it can bring about a new kind of temporal mobility (Kakihara and Sørensen, 2002). In the home care case, for example, the workers can now access the client information system outside office hours and outside office facilities. In a sense, they are freed from the clock time. At the same time, the use of working time is monitored and controlled to a greater degree than before. Mobile technology means also increase in spatial control (Haddon, 2004) as home care workers can now be tracked throughout their working days.

Control at work is legitimized in relations of accountability between home care workers and managers. These relations concern the sharing of knowledge and power. In the home care context, disciplinary power (Foucault, 1979, 1980) is expressed in timetables and daily task lists that bind workers together in productive activity (Zuboff, 1988). Moreover, repetition of daily care routines and timetables place also the home care clients under spatial control (Watson, 2000). Watson (2000, p. 73) argues that social policy is “a highly normative discipline which constructs ideal models of society based on notions of social justice which disguise the concrete functioning of power.” Similarly Banks (2004) notes that in social care there is always the notion of monitoring the clients. The implementation of a mobile information system that would promote further accountability and control launched a power discourse about balancing independence and control at work (Vuokko, 2004). Foucault’s (1979) argument that exercise of power has also its positive and useful effects in social relations was applied to emphasize new trends at different levels of home care organization. But exercise of power includes also resistance. Resistance can be triggered, for example, simply by fear of changing situations at work, or by technology that is not user-friendly, and by complexity of socio-technical relations at working context (Markus, 1983). In the home care case, the idea of increasing control or even surveillance was resisted more fiercely by home care workers than the unfamiliar information technology as a new feature in their working context. In contradiction to strong managerial pull during
the implementation and initial resistance by home care workers, there was also evidence for increased feelings of control over their own working amongst the home care workers.

3 THE STUDY DESIGN AND METHODS

3.1 The study methods

This qualitative study of home care work aims to describe how technical implementation was carried out with the goal of enhancing care services. The study of home care was conducted as a longitudinal ethnographic research (Van Maanen, 1988), where I aimed to understand the meanings that home care workers gave to their changing situation at work (Zuboff, 1988). The goal of the study was to contribute a thick description (Geertz, 1973) of significant changes in home care work and impact of information technology in those changes (Zuboff, 1988). Ethnographic methods aim for observing and understanding the phenomena holistically within the context of everyday activities and through the meanings attached to it by the participants (Agar, 1980; Schultze, 2000).

The study began during autumn 2001 when the pilot phase of the new information system was started in two home care teams. The average age of home care workers, the main study subjects, is 47 years. Home care work is still women dominated area of work and of those interviewed (see Table 1), only one worker and two of the managers as well as one representative of the hardware providers were men. To understand the home care working practices, they were at first observed in situ – that is to observe the daily or mundane action taking and meaning making of home care workers. The observations included going along to service calls with a care worker to observe interaction with the clients and sitting in their break facilities to observe the interaction with other care workers. The emerging picture was then deepened by doing semi-structured interviews amongst home care workers and their managers. Also less formal group interviews were arranged as home care workers seemed to find it natural to discuss and express their thoughts as a working team. The results were documented as a description of the home care work practices at that time and of the expectations placed on the implementation project (Vuokko, 2004).

| Observations | First phase: observing 40 home care workers during the day and night shifts and during the meal services.  
Latter phase: observing 60 home care workers during the day and night shifts. |
|---|---|
| Interviews | First phase: interviewing 7 home care workers and 13 other participants in the implementation.  
Latter phase: interviewing 20 care team managers and 20 home care workers.  
Most of the home care workers’ interviews were group sessions.  
In addition, informal discussions during the breaks with the care team members. |
| Questionnaire | Mapping of education, career paths and technology expertise within the home care workers. |
| Document analysis | Analysis of documents and forms used in the care work and generated from it.  
Familiarizing with the information gathered in the new information system. |

Table 1. Data gathering in home care case.

In the second phase, in 2004, the study was continued as the new mobile technology was already in use in all the 40 care teams. At that time, I interviewed the care team managers to map out their impressions of use and the general attitudes towards the new technology or towards what improvements were gained with it. The last phase of fieldwork was concluded in 2006. This part included observations of two new home care teams as well as observing one of the original care teams from year 2001. Besides observations, the outcomes of the implementation and the impact of technology on care work and on working practices were discussed in semi-structured interviews.
The validity of ethnographic research is increased not only by ensuring that the data answers to the research question but also by combining different data gathering methods to get a complete view on the matter (Altheide and Johnson, 1994; Zuboff, 1988). To do so, I have combined observations with interviews and document analysis to explore how mobile information technology is constructed to be a part of a changing professional identity and a meaningful part of fluent interaction between the members of a care team. I also explored whether the implementation of information technology could strengthen or weaken home care workers’ interpretations of their own abilities concerning the daily work. Interesting aspects here are whether the changing visibility of the care work will affect the arrangements of daily work when technology is introduced for the first time, and what kind of new working practices may emerge from the interaction between care workers and new technology. In this paper, I concentrate on evaluating the learning of and coping with technical and social issues during the implementation. These include learning to use the new technology, coping with control of working time, overcoming technical problems, and dealing with disappointment with the outcomes.

3.2 Data analysis

The observations were documented in field notes as a constant practice. The break times spent at the team facilities provided important insight to home care work through informal discussions. All of the formal interviews were taped and later transcribed as such. The transcribed data was arranged according to the themes emerging from the case and this insight reformed the research questions. Mapping out themes from the data was similar to the inductive method described by Zuboff (1988, p. 428): “I tried to treat the data much as I treated individual informants – by listening to what they had to say without imposing a preconceived judgement.” In the final analysis, data from the interviews was reflected on the notes of observation diaries. All data is in Finnish. The quotes in following sections are all from the interviews and I have translated them into English “to represent the main trend of responses on the subject in question” (Zuboff, 1988, p. 429).

One prevailing aspect of both doing ethnographic fieldwork and analyzing the data was the sensitivity and confidentiality of home care as an area of work or research. The home care workers visit their clients’ homes and perform different services while respecting the clients’ rights for independent living. To ensure wholesome well-being of a client the home care workers need commitment for care work and skills in human interaction. The observations enlightened how daily decisions in home care are often based on tacit knowledge about the clients and about the right ways of providing care. I have attempted to analyze also the sensitive “unmentioned” or tacit tendencies in home care.

4 BACKGROUND OF THE HOME CARE CASE

Home care in Finland is a part of social services offering help for vulnerable clients like older or disabled people. In the city of Turku, there are approximately 750 care workers in home care. They work in teams of usually 20 care workers and one care team manager. Turku is divided into four care districts supervised by district managers who are then supervised by the head of the home care department. In a year, approximately 4000 clients are cared for and over 740 000 service calls are made. At the moment, home care is undergoing a transition to professional direction as former unskilled workers, which are nearing their retirement, are being replaced by new workers with education for social care work. This trend is reflected also on the main work tasks. Previously the main services included more domestic tasks such as cooking and cleaning but nowadays the service consists more of caring for client’s health and well-being. Care services are divided in three categories. Basic tasks include for example help with bathing, going to the toilet, taking medications, and providing meals. Group services include for example bathing in sauna, and providing transport services and social gathering opportunities. Errant services include for example accompanying a client to hospital, taking a client for a walk or fetching prescriptions.
Besides home care workers, there are other partners working for the well-being of the clients. Help is provided, for example, by home health care nurses and doctors, by hospitals, communal kitchens, day care centres, parishes, and now in the form of shopping services. Especially the need to exchange information about shared clients between home care and home health care is often urgent. Cooperation for the client’s well-being is promoted further with ongoing integration of the client information systems of social care and health care in Turku. In addition, organizational integration has been planned to take place starting in 2008.

The implementation of mobile information technology in home care began during winter 2001-2002. At that time, two care teams were piloting the system. The mobile system met resistance that was attributed to the controlling aspect of the system and the technical problems encountered during the pilot phase. The biggest problems were the unreliability of updating the system or losing data during the updating due to the server problems, and the not completed integration between office systems and the mobile system that, for example, made it hard to establish and check new clients. Mainly because of technical problems the schedule of the implementation project was slowed down and, finally, also the project leader was changed.

The new leader of the implementation project, one of the district managers, evaluated the situation and decided that considerable effort should be put into introducing the technology successfully to the rest of the home care teams, and into training of those home care workers who only at that time joined in the implementation. All of the home care workers started to use the mobile system during autumn 2003. During this phase, the home care workers were trained by the project leader and the experienced workers who already had been using the system during the pilot phase. The basic training of use lasted only two hours but for those, who needed more support, peer-training was arranged. Technical help was also arranged in a new way: now each team has one person who is in charge of helping if simple technical problems occur. There is also one former home care worker, who is the “PDA-representative” and comes to help if needed. The help system was created from the idea that home care workers know best their own needs or problems and that technical knowledge can be accumulated through trial and error.

The PDA-system has been planned to be as easy to use as possible and so inconspicuous that it should not affect the service calls. Every home care worker has her own PDA with a barcode reader attached. As a home care worker enters a client’s home, she reads the client barcode and then the respective task barcodes. There are different barcodes for every service type and, for example, for break times and training or other type of meetings amongst the colleagues. The system registers the working time spent in different activities. The palm based devices are not entirely personal. For example, in the case of a leave, the substitute worker can borrow the device if she already has her personal codes to use the system. The mobile devices are stored in the team break premises and the home care workers themselves are in charge of updating the devices at suitable intervals and charging the batteries over night.

The mobile system was planned to increase the level of automation in home care. It was planned that, for example, client invoicing and calculating salaries would become more automated processes based on the information gathered with the mobile system. Despite some experiments, the gathered service data is utilized only for planning the working hours of the home care workers. Getting continuous sets of data has proven to be hard, as technical problems still occur.

5 EVALUATING THE HOME CARE CASE

In home care, there is still much tension due to the technology-driven change. Here I explore the current situation from four different aspects recurrent in the last interviews and observations: learning to use the technology, learning to cope with control and technical problems, and also, learning to cope with the certain disappointment felt towards the outcomes.
5.1 Using the mobile technology

The mobile system is “fairly simple” according to home care workers and learning to use the devices was “not as hard as expected”. Many of the home care workers claim to be “self-taught” and state that the best way was learning-by-doing and exchanging experiences within the care team.

In spite of these positive attitudes, there are some constraints on the mobile system in use. The biggest of these constraints is that the maintenance cost of the system was lowered by not going along with the original plan of an on-line or a real-time system. Now the system is off-line, and the information gathered in the system is updated on the client database only about once week.

However, the use of the system has showed that the care workers need to update their mobile computers in short intervals to get most use of the system. Some clients go to a hospital for intensive care, other come back home; others can have new medical prescriptions or new diets and so on. The changes of client status from passive to active, as well as other possible changes in client information, need to be updated into the files that home care workers have in their palm based computers.

Despite economic restrictions, the home care workers have been learning fluent use of their mobile devices. This can be witnessed in a shift of attitudes from resistance towards acceptance: “We are not happy with it, but we use it.” In general, learning to use the palm based computers lessened the initial rejection and hostility towards technological change.

The attitudes of the care team managers had a major role in the success of smooth use versus problem use. Most of the managers supported implementation, but some felt indifference, insecurity, or even hostility towards the new technology. The attitudes of the managers were reflected especially in the ways in which problematic situations were handled in different teams. For example, here are opinions of two care managers reflecting the difference of attitudes:

“This is the system we are working with, we have no other options, and we have to cope with it. We try to learn, and we will keep on discussing this and raising voices about this – but – even so, we are using this.”

“Now you asked a tough question. […] I am taking care of this rather poorly myself. I have received instructions, but I don’t obey them. […] If there have been technical problems, my workers do not have to think about such. I don’t demand it from them. If we would do everything that is expected, we would have a lot of extra work – also here at the office. I’m against information technology. I think it only means extra work.”

Most of the home care workers see the mobile system benefit the managers – and their interpretations of efficacy – more than themselves. Even the original aims of the mobile system were to make planning of working hours easier and to reduce the need of manual work of accounting for the services. The managers justified the implementation by stating that less manual accounting would mean more working time saved for the care of the clients. These justifications had no basis in the daily work. Earlier, the care workers did not actually have much manual paper work to accomplish during their working day. In fact, there was no daily recording previously. If reports were needed they were produced jointly.

When technical problems with the system still occur, the home care workers feel that the mobile system promotes a growth of “paperwork”. This attitude is understandable, as nowadays the workers have to fill in manually correction reports for unsuccessful updates. The care workers described the time together at their team break facilities as meaningful interaction, where knowledge concerning the clients and their care was shared (cf. home care nurses, Hughes et al, 2002). Besides providing more knowledge and skills for problem solving, the interaction provided important contrast to the demanding and lonely work on field, and as such, it was a way to diminish stress.

To summarize home care workers’ feelings about information technology, the common expression was that it should be more reliable for significant changes in working practices to emerge.
5.2 Learning to overcome control

Home care workers felt that their independence as individual workers was threatened by technology promoting surveillance aspects. In contrast to the beginning of the implementation, a change of attitudes based on growing trust in their own technical skills has made the home care workers even more independent in their work than before. This is reflected in the interaction with the clients and with the care managers. In complex situations, for example, when the service call does not go as previously planned, the home care workers support their own views with the information in their PDAs. In their relationships with managers, this has meant significant empowerment of the care workers although, according the managers, the level of empowerment seems to differ from team to team:

“It feels like the team is now planning themselves how they care for the clients, or how they will plan different working days. I don’t do much of such work anymore. It is almost so, that the team members call me telling that a client needs this and that or this many hours. It feels like the team is now really organizing the care, although there are still lots to learn.”

"I am planning working hours together with my workers; my workers don't plan their calls themselves. It would take too much time if they would start to plan it all. It is better that I am supervising it: their relationships stay fairer, and then there are those not-so-wanted clients in every group. It's better for my workers that they receive the schedules from me than a situation where a client would be dropped or forgotten."

From the viewpoint of worker empowerment, the changes in client relationships are somewhat more alarming. The home care workers use mobile technology to exercise power over their clients as they promote a view that the technical system is not a flexible one. Often, workers are stressed by balancing the demands of the managers and the wishes of the clients. Not all of the home care workers want to do extra tasks that a client may wish. Some of the workers use their PDAs to take control of the client interaction situations. The workers may give PDAs an active role in a client relationship by telling the client that “the system” does not allow extra service tasks. If the workers want to “go by the book” it might mean surpassing the client’s independence in their own homes.

"It depends on the people so much, some do only the necessary, or are already planning the next service call, or are waiting for a break. It’s like, some workers do 'by the book' - only the necessary, but you should also ask a little, at least if you are not in a hurry. [...] Of course, if you have a new client, you wouldn't probably look for something extra right away, but - when you go to a client you have been taking care for a long time, looking and asking around at the client's home a little - that is what makes it good care.”

Besides interaction between home care workers and managers or home care workers and clients the use of PDAs has affected least the interaction amongst home care workers. Home care workers from a same care team meet each others for the first thing in the morning to have a short meeting over the day’s client list and possible special situations. Even during the working day, between service calls home care workers meet each others during breaks and discuss different matters about their clients or problems with their PDAs. Sometimes on of them notes: “We’re on a break; let’s not talk about the clients all the time.” But soon the talk turns back on client issues.

It seems that the level of control and who is in control varies from team to team. Noteworthy is that in some teams the workers state positive outcomes similar to empowerment practices.

5.3 Coping with technical problems

The home care workers are rather cynical about the robustness of the mobile devices as they come across different technical problems almost daily.
"Well, the enthusiasm is gone and we feel kind of disappointed - especially with these mobile devices. If we had working devices everything would be better – but we would need better equipment, ones that would work with more reliability. These are just cheap."

Besides obvious restrictions of the mobile technology, such as small screens and limited data storage capacity, some technical features remained problematic, both during service calls on the field and especially in the break facilities while updating the system.

During the service calls, common problems are caused by the surroundings at the field conditions. Home care workers mostly use their mobile devices indoors at the clients’ homes, but even so, especially the light of the display screen is too dim for the liking of several workers. For example, if home care workers need to check some information, such as the door code of a client, the display is hard to read in a dim hallway. Outdoors, the display is hard to inspect both during darker hours and in sunny weather.

Sometimes the home care workers need to use their mobile devices while on the move between different clients’ homes. During the coldness of winter, the batteries of these devices seem to run out faster, and sometimes, the whole device “just freezes”. Some home care workers also stated that when coming in from a cold weather, the hand held devices can work slower than normally and they need to wait for them “to warm up”.

The mobile devices can simply break down from the daily use. The attitude is that the devices are “so light and small” that it turns to be a disadvantage to durability. Most care team managers state that the home care workers themselves are careful users of technology and hardly the main cause of breakdowns.

One critical technical aspect, which strengthens the surveillance aspect of the system, is that only the managers have rights to make corrections into the data gathered with the mobile computers. The information gaps in the database are mainly caused by breakdown of the devices and by problems during updating the system. For example, if a client is for some reason left out of daily lists, the home care worker first contacts care team manager, who then tries to clear the situation and finally calls up technical maintenance if she needs help. As the home care workers cannot make any corrections themselves or even check their input, they feel considerable suspicion towards the system. Even the care team managers feel frustration and state that “by manual documenting we could function much faster” in correcting such situations.

Technical problems that keep appearing do frustrate the users. But more alarming than coping with technical problems is the diminishing interest felt in the possibilities of continued use of the PDA-system.

5.4 Coping with disappointment

The level of PDA-system use is high but besides just gathering service information, further possibilities of the system remain largely underdeveloped or unused and some workers clearly state themselves to be disappointed after four years worth of use experiences: "I think that we are still at the same point as we were during the pilot phase. We haven't progressed anywhere."

The system was not aligned to fit better in home care after the corrections wished by home care workers to increase usability of the system. As such, the system did not promote a significant change of working practices as such but more an added task at work. Instead, the home care workers feel somewhat disappointed with their mobile devices and the lack of achieving the goals, although the actual implementation is viewed as successful.

"It hasn't been connected to other information systems we have. The information was supposed to be transferable into other systems automatically. But that hasn’t been succeeded in. Our workers don't think much of this system, for them it is just a system of control, and our
managers don't think that this is even important as long as the information is not being exported anywhere."

The first and foremost reason for the disappointment is the lack of real benefits for the clients or for the home care workers:

"This is a disappointment for me, because we haven’t been able to achieve the goals. We cannot yet accomplish the clients’ invoicing based on this information – there remain too many gaps [in the data] and the manual corrections drag behind. I haven’t done two months’ worth of corrections myself. First we should get this system to be more reliable and gapless, so that we could achieve the goals."

The distrust or disappointment on the new system is enlightened by the increase of manual book keeping.

“We have to do corrections constantly and by hand on paper forms. It’s not fair.”

“We have to do this [manual documenting] daily. There are many reasons for this. For example, the client code can disappear, which means that we have to add the services of this particular client manually afterwards. Or sometimes, the device does not function, or we can forget it on the table in the break facilities. And sometimes we can punch wrong buttons or read wrong barcodes. There are really many reasons. We can end service duration too early by mistake or go to the next place with the previous client’s codes still counting the time.”

The lack of real benefits leads to a situation where the use of PDAs remains apart from the actual working. It is still just “something extra” attached to working context but the home care workers claim that they could as well work without their PDAs. For example, the system does not support exchange of client information between the home care workers.

Awareness of other workers and transparency of work done supports cooperation in mobile work (Bellotti and Bly, 1996; Luff and Heath, 1998). Awareness can be achieved through use of mobile technology, but mobile technology can equally well mean lack of awareness and communication problems when the system is not working accordingly. In home care, the system supports explicit communication but it does not make implicit communication available. In this context, explicit communication consists of information like which clients have been visited, for how long and by whom. The system does not support shared information like what was the present condition and spirit of the client or what actual care tasks were carried out – as one of the workers comments:

“A new worker gets only an overview of the clients from the care and service contracts. The actual knowledge comes from other workers. What a client wants to be done and how you are supposed to do it; the real knowledge you get only from the other workers.”

Cooperation in a care team relies on the exchange of this kind of informal information. In this sense of communication the new technology does not necessarily enhance cooperation between the care workers. The lack of communication possibilities and gaps in the gathered data due to unsuccessful updates are stated as main reasons for user disappointment.

6 CONCLUSIONS

In this paper, changes in home care work after the implementation of a mobile information system were described and some of the outcomes of the implementation were evaluated. The implementation was approached as a part of new managerialism efforts for modernizing home care services. Use of PDAs was planned to increase efficiency and decrease costs of home care by automated accounting of service calls. The accounts were planned to be used for regulating and standardizing services and working practices. For home care clients, use of new technology was promoted as increasing transparency and equal quality of services. In relation to clients, more apparent change was how new
technology became involved in the construction and control of clients’ domestic time and space (Silverstone et al., 1992).

Home care workers have been experiencing changes at work after the implementation of mobile system and introduction of new service ideals. Learning the basic use of the system was mostly found out to be easier than anticipated although users’ resistance fits well in Markus’ (1983) description. All of the three explanation models fit to the home care case. First, the home care workers resisted unknown technology, and then noticed the new kind of problems that arouse from the use of mobile technology. Also the interaction between features of mobile technology and social structures in the care organization were not without friction. One apparent change is that time is now spent in break facilities also to manage the technology and to update the system while previously break times were used to discuss different aspect of client care. Although increased confidence in technology use does not necessarily diminish the initial computer anxiety, only a few of the workers have tried to refuse the use of the system altogether. They claimed that the technology makes care work too complicated and there won’t be enough time to care for the clients. These situations have mostly been handled by discussing the problems with a care manager or by receiving extra training to lessen the anxiety.

Technical problems and breakdowns of the PDAs have caused continuous passive resistance in the form of doubt. This doubt as well as management problems during the implementation project have caused feelings of distrust on the new technology and this attitude is hard to change. The negative or indifferent attitudes are supported by the views that the system does not work well and cannot promote real benefits through automated processes as was planned. As such, the mobile system is likely to remain only as a means to monitor and control working hours.

The workers felt that the mobile system was not especially useful to them, as the main benefit remained to be the possibility to check client information in their PDAs if something unexpected occurs. They can also inspect their working time on the display of their devices, and thus feel more in control of it. But as the home care workers were expected to fill in correction reports on regular basis, they felt that the use of the mobile system demanded time and effort. Therefore, the system has remained as “extra”, as something that has to be taken care on top of the actual care work as the benefits gained from the use are not yet apparent to home care workers.

In home care, along with the managerial efforts to enhance services by technical implementation there appeared changes in relationships of control and interdependence. As the technology changed visibility of working conditions, especially interaction between home care workers and their clients tended to be negotiated in a more formal or contract like way in contrast to previous more spontaneous action during a service call. In this relation, home care workers gained more power where as home care clients’ rights for self-regulation seemed to diminish at some level.

The home care workers themselves are still asking why it is so that the development of the system was stopped at the earliest possible point and the initial goals of the implementation remain unfulfilled. Notion of disappointment in the technological impact has caused the home care workers to form an attitude that the work could as well be carried out without the PDAs.

References


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