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Computer Supported Collaboration in Mixed Homecare

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Abstract. In today's world, which is characterized by an ageing society and an increasing need for care, new concepts of care organization and cooperation are needed. The successful collaboration in networks of professional providers and informal caregivers will be decisive for the care of the individual. Information and communication technologies (ICT) may facilitate the collaboration within these networks. While ICT has long been part of regular business practice, the healthcare sector and especially the homecare sector are lagging far behind digitization. The reasons for this are manifold and have not yet been satisfactorily clarified, although for this a variety of interdisciplinary projects have been funded in recent years. The heterogeneity of mixed homecare networks as well as different perspectives of informal and professional caregivers complicate the design and successful implementation of CSCW tools. Questions about the ability to change of care networks with established technical arrangements, the importance of network effects, and the effects of the technology acceptance of the individual on the adoption of the whole network remain open. The EIKI research project is therefore investigating how care networks are composed and what influence the implementation of collaboration software has on the cooperation in homecare networks.

Introduction

For most people, the family is still the most important mainstay of their lives, which they in return support with the greatest of strength. In today's world, which is characterized by increasing (female) employment (Neubert et al. 2018) and large geographical distance between relatives, it is often difficult to cope with this challenge. The family loses its potential to care until old age (Bianchi 2014). This poses enormous challenges for society. New concepts of care organization and cooperation are needed. Particularly in view of the current demographic development and the expected shortage of skilled workers in the nursing sector, it is neither possible to care for the ageing population through purely professional care structures nor is it desired by a large number of senior citizens (c.f. (Lindwedel-Reime 2018; Peek et al. 2014; Piau et al. 2014; Vannieuwenborg et al. 2016)). In the future, homecare will therefore depend to a large extent on a successful care mix, i.e. a combination of informal (family or neighborhood) help and professional care (Bäuerle and Scherzer 2009; Görres et al. 2016; Jacobs et al. 2016) (compare Figure 1).

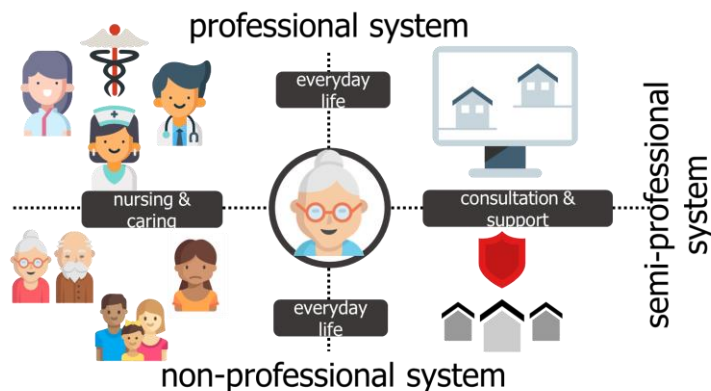


Figure 1: network around a person in need of care

The communication in and coordination of such a care mix however is not easy and thus, amongst others, the lack of transparency about responsibilities in the network, poor accessibility of actors and the lack of knowledge exchange pose major problems. Here, the targeted use of information systems (IS) could, offer help (Bosch and Kanis 2016; Bratteteig and Wagner 2013; Camarinha-Matos and Afsarmanesh 2002; Renyi et al. 2018).

Collaboration in Homecare – Experiences

Since Irene Greif and Paul Cashman coined the term CSCW in a workshop at Endicott House (MA) in 1984 (Grudin 1994), the use of ICT to support collaboration has become routine in many industries. Modern software tools for planning and documenting work got common practice in the professional sector with the aim to support group processes, to increase effectiveness and efficiency and to promote the exchange and production of knowledge in groups. However, especially in the informal and private sectors the potential of computer-supported collaborative work (CSCW) is far from exhausted and partly hardly accepted (Pinelle and Gutwin 2005; Renyi et al. 2019).

The understanding of the heterogeneity of these networks (number of actors, role of those in need of care, distinction between nursing and caring relatives, remote caregivers, other informally caring / engaged), gained through quantitative and qualitative studies (c.f. (Renyi et al. 2018, 2019)), led to the insight that the structure of the network has effects on the requirements for CSCW solutions. In contrast to other fields of application, CSCW for mixed homecare is not only about a productivity solution and the optimization of care organization. Related to the concept of caring communities (Klie 2015), it is also (or even first) about promotion of a common identity, sense of solidarity, and formation of communities of responsibility.

This objective must then also be reflected in collaboration solutions¹. The use of such tools however goes hand in hand with possible risks of technical coordination (e.g. diffusion of responsibility, feeling of obligation, etc.). Not only during the design of such applications, but also during the implementation in the field, sometimes contradicting requirements must, therefore, be met. The different perspectives and viewpoints of informal and professional caregivers complicates this even more.

Conclusion

Essentially for the everyday usage, the need for clear communication rules and guidelines for using such tools got apparent.

Still open is the question of the meaning of care-specific solutions compared to general collaboration tools (e.g. messengers, shared calendars, task lists). Is the new development of care-specific applications necessary at all or would an increase in the level of awareness for, training of and consulting for general collaboration tools be conducive to the same goal?

¹ c.f. the research prototype ‘Zirkel’ (<https://play.google.com/store/apps/details?id=de.hsfortwangen.circle>) discussed in (Renyi et al. 2018)

Also, still unclear are the ability to change of care networks with established technical arrangements, the importance of network effects (“*It’s only effective if everyone participates!?*”), and the effects of the acceptance of the individual on the adoption of the whole network.

A lack of transparency about tasks and roles in care arrangements repeatedly leads to tensions. However, it is unclear whether an increase in transparency can eliminate the differences in the understanding of roles and contribute to care at eye level. Long-term studies with large numbers of participants are still lacking.

Data privacy issues considerably hinder the adoption of cross-professional usage of collaboration tools. While informal and semi-professional caregivers use messengers like WhatsApp in an everyday manner, and even sometimes seem to lack a feeling for data worthy of protection, professionals categorically reject software with a certain suspicion of data privacy issues. Design implications how to bridge this gap are needed.

Future work

Further attempts to answer the above questions are, amongst others, conducted in the research project EIKI². The research project investigates social-space-oriented approaches to support collaboration for mixed homecare. The analysis and categorization of care networks is understood as essential for the successful implementation of technology for care collaboration.

Following a mixed method approach, the authors conduct a series of interviews, workshops and surveys on the way there. Comparing this knowledge to experiences of prior projects will hopefully result in a better understanding of care networks, their attitude towards technology and the role technology can play in ensuring successful care.

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