

Chapter 19

Replacing an Old Functioning Information System with a New One: What Does it Take?

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ABSTRACT

This chapter addresses a problem that is often experienced when ICT systems are being implemented in a work practice. Posed as a question, it might be formulated like this: What does it take to replace an old functioning information system with a new one? Findings are grounded on a long-term case study at a community elder care. This chapter used the Development Work Research (DWR) approach that is an interventionist methodology comprising ethnography as well as design experiment. During the case study, a new digital case book for the community wound care was developed. However, as it turned out, the nurses' established practice favored the old-fashioned mobile information system. First conclusion of this chapter is that an old-fashioned information system within health care work will not successfully be replaced by a new one, unless the new is better "as a whole", that is, better supports work practices of a range of occupational and professional workers. Second conclusion is that when designing information system for the public sector, system designers will almost always face dilemmas based on a contradiction between central, high level interest and local level work-practice perspectives. The third conclusion is that in order to succeed in the design of new information and communication system, the distinctive features of the work activities in question have to be delineated by ethnographic studies, and taken into consideration in the design process.

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OVERVIEW

In this chapter we want to address a problem that is often experienced when ICT systems are being implemented in a work practice. Posed as a question, it might be formulated like this: What does it take to replace an old functioning information system with a new one? Our findings are grounded on a long-term case study, using interventionist methodology comprising ethnography (about ethnography, see (Krippendorff, 2006; Suchman, 1987)) as well as design experiment. In spite of its local origin and the diverse particularities it contains, we claim that the findings from the case study have a more general interest and validity.

The point of departure of our discussion is a case study. It is about the development of a new Information and Communication Technology (ICT) system, where a digital case book for the wound care was developed. The development was carried out in a joint project using the Developmental Work Research approach (a kind of action research, see (Engeström, 1993)) in which an evolutionary system development practice was incorporated. Developmental Work Research is a methodology within the framework of cultural-historical activity theory. It comprises ethnographic investigation, reflection on the history of the work and designing solutions to identified need problems. This methodology for creation of a new tool, such as a computer system, includes gathering of qualitative data to be analysed and used as raw material input in transformation of the investigated work practice. Nurses, computer system developers and researchers joined in the activity for analysis and design of a new digital case book. The first outcome was a rough prototype of the to-be-designed system.

Interestingly the nurses' established work practice favoured their old-fashioned mobile information system, a bag on wheels loaded with binders together with other material including the paper case books on wounds. In the further course of the study, we learned to know why the

new design did not match as a deployed system. We reminded as what Thomas Kuhn (1962) has pointed out: a paradigm would not be abandoned just because it faces many anomalies; an alternative paradigm, regarded as better, must be available. Something similar seems to be valid for the replacement of an old-fashioned, albeit functioning, activity system, including its information and communication facilities. A better one has to be presented, received and realised in practice. In our case of wound care practice, this seems to require that new software and hardware are developed to be immediately accessible for the nurses in performing their everyday work.

The main reason is that the computer system did not match the work practice of the municipal nurses, a work practice that is characterised by three distinctive features: High mobility, the need for face-to-face interaction in different locations, and a great variety of artefact usage. From the perspective of the nurses the new information system was not "better as a whole" than their old-fashioned bag-on-wheels system was. Here we realised that we have design lessons to learn. This chapter is an elaboration of those lessons learned.

FEATURES OF A COMMUNITY WOUND CARE ACTIVITY

The long term case study that forms the empirical ground for our argumentation in this chapter was conducted in a small municipality in the south of Sweden. There community elder care is given to about 400 people living in eleven special accommodation units where they receive help with everyday things, like getting dressed, taking medicine, and some having their wounds cared for. A number of assistant nurses, nurses, managers and other personnel work and provide round-the-clock service.

Although the treatment of wound is only one of many things the nurses have to take care

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