8 Usability in IT Systems for Mobile Work

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8.1 Usability in mobile IT systems

Today mobile IT systems are increasingly deployed as technical support tools in various mobile work situations. In order to contribute to, or at least not prevent, usability and a healthy and efficient work environment these mobile support tools must fulfil a number of requirements.

In our research concerning usability of mobile technology, we are mainly interested in usability of mobile IT systems used in a professional work context. Such work support systems are found in various work settings, e.g. in health care, in technical maintenance and in sales and consultant organisations. IT systems support mobile work activities and are sometimes necessary for making work mobile. However, in some occupations work is, and has always been mobile, such as in home care or in technical maintenance field work. For this reason technical support system must of necessity be mobile, otherwise they cannot be used at all. In many such situations lack of appropriate, supporting, technology has resulted in low impact of modern information technology at such work places. Improvements in usability could result in new application areas and progress in development of work organisation and efficiency.

This means that we are facing two different challenges. The first concerns design of mobile IT support systems which are efficient, have a high usability and can contribute to positive development of mobile work situation. The second concerns how we, through design of efficient, supportive and usable IT support systems, can contribute to making a normally stationary work practice mobile. Usability criteria for mobile IT support systems are probably the same in both cases, but the design processes will face different difficulties. Either the work practice already exists and can be studied and analysed, or it must be made mobile and thereby completely redesigned.

There are two main aspects of how technical systems can support development of mobile work situations. One aspect concerns usability in a more
traditional sense, i.e. user interface design, how well the technical system as such can be handled by users, whether it supports a good physical and cognitive work environment etc. Another aspect has to do with how well technology can contribute to improvements in organisation, management, work efficiency, communication, competencies, skills etc.

In this chapter we focus on three different issues concerning usability in mobile IT support systems:

- Definition of a set of usability criteria for mobile technology
- Experiences from evaluating usability in mobile IT systems
- Designing work processes enabled and supported by mobile IT systems

The first issue addresses important usability aspects to be considered in the design of IT support systems for mobile virtual work. It is our experience, that if technical support systems are not appreciated as efficient by professional users, technology will not be used and users will, if possible, find other ways to perform their tasks. This is apparent when introducing mobile technology in a work situation. Moreover, when designing IT-support systems, we must handle relevant requirements concerning work procedures, usability and work environment. Requirements related to ‘tacit knowledge’ (Polanyi 1967) are especially difficult to specify but important to include in a user centred system design process (Huges et al. 1993). In this way, we will enhance efficiency and be more likely to engender a positive attitude towards new technology. The opposite would result in a deteriorating and unhealthy work environment.

The second issue concerns assessment of usability in mobile systems in the health care sector. The study reports parts of findings from a survey named “Vård-IT-kartan” (Lind et al. 2004) performed in Sweden in 2004 by the company UsersAward. In the survey, user opinions concerning usefulness in a broad sense are evaluated. The part of that study presented here addresses mobile applications used in the health care sector.

As always, when new technology is introduced in a professional environment, it has to be done carefully and with respect for many complex goals and requirements. Whilst the “On line” mobile technology provides us with an excellent opportunity to develop working life in a positive manner, it also entails many problems to be solved. Some problems can already be foreseen, while others are difficult to predict. The third issue in this chapter is concerned with these issues and the design of future mobile work support systems for home care professionals. The project VIHO is described, where requirements for future mobile support systems to be used by professionals in home care work were studied. The goal of the

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1 “The Health care IT map”