Using Scenarios and Drama Improvisation for Identifying and Analysing Requirements for Mobile Electronic Patient Records

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Abstract

This chapter presents two different techniques for elicitation and analysis of requirements for a mobile electronic patient record (EPR) to be used in hospital wards. Both techniques are based on human-centred and participatory design principles. The first technique uses observational studies as a basis for identifying and analysing requirements for a mobile EPR. The observations are structured and systematised through a framework. The second technique is named “Creative system development through drama improvisation”, and it enables users (in this case healthcare

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professionals) to contribute to the requirements engineering (RE) process by acting out everyday work situations in one-day workshops. Both techniques presented in this chapter focus on user requirements elicitation, and we believe that they are promising and complementary contributions to more traditional requirements elicitation and analysis methods, not only for hospital information systems but for a wide variety of complex, sociotechnical systems.

Introduction

Advanced clinical information systems have great potential for systematising and structuring the large amounts of information that exist in modern hospitals. At the same time these systems may also simplify and coordinate the endless streams of communication that take place. A well-designed system has to be intuitive, effective, and flexible enough to meet the specific information and communication needs of a wide range of healthcare professionals. However, the high information intensity and the complexity of the organisation make the system design process particularly challenging. Both the social features of current work practice and the technical features of the system have to be considered when performing requirements gathering and analysis (Reddy, Pratt, Dourish, & Shabot, 2003). One approach to such sociotechnical requirements analysis is to involve users more actively in the design process through methods such as participatory design.

In this chapter we introduce and discuss two different techniques for elicitation and analysis of requirements for a mobile electronic patient record (EPR) to be used in hospital wards. Both techniques are based on human-centred and participatory design principles, and they have been developed and used as parts of the MOBEL¹ (Mobile Electronic Patient Record) project at the Norwegian University of Science and Technology (NTNU). An EPR is a computer system designed to support clinicians by providing accessibility to complete and accurate patient data. It may also include alerts, reminders, clinical decision support systems, links to medical knowledge, and other aids (Coiera, 2003; Dick, Steen, & Detmer, 1997). Numerous EPR systems exist, most of them developed for stationary computers, but also for various other devices such as handheld computers.

The first of the techniques presented in this chapter uses observational studies as a basis for identifying and analysing requirements for a mobile EPR. Observational studies are frequently used within the social sciences, and during the last decades computer science researchers have also acknowledged such methods as useful for understanding the complexity of organisations and the various information needs of different users. Yet system developers may not always be able to transform rich observations to requirements and design decisions. In this chapter we present a framework for structuring and formalising scenarios obtained from observational studies at a hospital ward. Further we discuss how the outcome of characterising these scenarios may be used for producing requirements to a mobile electronic patient record.

The second technique, Creative system development through drama improvisation, has been introduced by product designers and software engineers as a method for develop-
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