

# Pilot Implementation Driven by Effects Specifications and Formative Usability Evaluation

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## EXECUTIVE SUMMARY

*This chapter reports on the usability-engineering work performed throughout the pilot implementation of an Electronic Healthcare Record (EHR). The case describes and analyzes the use of pilot implementations to formatively evaluate whether the usability of the EHR meets the effects specified for its use.*

*The project was initiated during the autumn of 2010 and concluded in the spring of 2012. The project configured and implemented an EHR at a Maternity ward at one hospital located in a European region and then transferred this system to another ward at another hospital in the same region.*

### ***Pilot Implementation Driven by Effects Specifications***

*The project was conducted using effects-driven IT development: a process comprised of workshops with specification of the usage effects by management and end-users followed by an agile development process progressing through mock-ups, prototypes and finally the pilot system. Effects were iteratively refined and evaluated to achieve alignment with the intended design, and quantitatively measured to document the desired effects.*

*The pilot implementation is analyzed, and the lessons learned are discussed in relation to usability engineering in general.*

## **ORGANIZATION BACKGROUND**

This section introduces the chapter and describes the experiences of the IT vendor CSC Scandihealth in working with pilot implementation on the basis of effects-driven IT development and the EHR client, a large hospital complex located in a European region, the Hospital for short.

A pilot implementation is defined as: “a field test of a properly engineered, yet unfinished system, in its intended environment, using real data and aiming – through real-use experience – to explore the value of the system, improve or assess its design, and reduce implementation risk.” (Hertzum, Bansler, Havn, & Simonsen, 2012). Pilot implementations are field trials and in that sense constitute a continuation of prototype evaluations into the field. In this chapter, we describe a case where the preparations were carried out before a pilot implementation included using workshops with mock-ups as well as several versions of prototypes. The pilot implementation was supported by so-called ‘effects-driven IT development’ (Hertzum & Simonsen, 2011) by which the desired effects of using the system were specified, used as specifications for the mock-ups and prototypes, and finally measured as part of a formative usability evaluation based on the system used during actual work as part of the pilot implementation. In the following, we outline the strategies of both the vendor and client and the circumstances making the pilot implementation and effects-driven IT development relevant. We set the stage and describe the effects specified to produce the input to the succeeding usability evaluation. Then, we describe the case and the pilot implementation including planning and design, technical configuration, organizational adaption, use of the system, and the learning that took place. We conclude the chapter by discussing challenges, solutions, and recommendations.

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