IRM PRESS
701 E. Chocolate Avenue, Suite 200, Hershey PA 17033-1240, USA
Tel: 717/533-8845; Fax 717/533-8661; URL-http://www.irm-press.com
ITB14117

This chapter appears in the book, ***Web Mobile-Based Applications for Healthcare Management***
by **L. Al-Hakim** © 2007, IGI Global

Chapter XV

Rescheduling Dental Care with GSM-Based Text Messages

Reima Suomi, Turku School of Economics and Business Administration, Finland
Ari Serkkola, Helsinki University of Technology Lahti Center, Finland

Abstract

The Internet has opened new avenues for customer communication, even for public services. In this chapter, we propose a framework for an integrated electronic health platform. Most of the platform is still at the planning stage, but the first applications are already up and running, among them, dental-service appointment rescheduling. In this application, new patients to fill canceled dental-service appointments are searched from an existing waiting list using GSM SMS messages. The first few months of operation have already shown that the new application, in conjunction with other methods in use, could limit the share of time slots that dentist completely lose through cancellations to under 10% percent of all canceled times.

We present and analyze the function of the SMS-message-based dental-service appointment-reservation system, which is being implemented in Lahti, Finland. This analysis contains a description of the system functions, as well as some assessment of the success from a service-provider and customer point of view.

Introduction

Internet technology is penetrating every aspect of modern life. We speak of e-commerce, e-learning, e-health, and of e-everything. Healthcare is one of the industries in modern-day society where the adoption of information technology is now happening very fast. We consider e-health as a subset of e-government as far as public health services are concerned. The industry was, however, late in starting the adoption process. Currently, the development of information systems in healthcare is several years behind the general development in most other industries (Ragupathi, 1997). We have found the following reasons for the late adoption of modern ICT in the healthcare sector (Suomi, 2000):

- Fragmented industry structure.
- Considerable national differences in processes.
- Strong professional culture of medical-care personnel.
- One-sided education.
- Traditions of manual work.
- Weak customers.
- Hierarchical organization structures.

Healthcare institutions, especially hospitals, must emphasize professional information management more strongly in their organizations (Haux, Ammenwerth, Herzog, & Knaup, 2002). A part of professional management is the application of different available infrastructure and architecture solutions on the market to avoid solutions that would emerge as technology

In our chapter, we propose an integrated architecture for electronic mobile health applications. This architecture is defined as a typical care-taking chain for a patient, and also as a series of interactions. A typical interaction chain begins from the emergence of a need for healthcare, and ends with curing of the sickness, with the development of the sickness to a new qualitative phase, or, in the worst case, death. Another key part of the architecture is the definition of the actors: the patient, the healthcare staff, and the system. Especially important is to see how the system can add value through performing different functions automatically, or supporting the staff or patient very efficiently.

The proposed architecture has already been successfully implemented in two areas in the city of Lahti, Finland, and further implementations are under way.