Chapter 39
Using a Web-Based Collaboration Portal and Wiki for Making Health Information Technology Decisions

**ABSTRACT**

This chapter presents a case study highlighting development of a Web-based wiki-driven collaboration portal that is being used by a distributed group of community health organizations engaged in developing a strategic implementation plan for health information technology (HIT) at the point of care. The transdisciplinary approach to software development incorporates the perspectives, skill-set, and interests of a diverse group of stakeholders, including staff from the community health organizations, academic researchers, and software developers. The case study describes a select set of the challenges and strategies that have emerged in the planning and development process, including issues surrounding communication, training and development, and infrastructure. Prospects for future development are also explored.

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INTRODUCTION

Internet or web-based communications platforms may greatly expand the reach and scope of collaborative projects. Most businesses and organizations currently grapple with an inefficient, often linear fashion of editing shared plans and documents via word processing software and email. This process does not typically permit users to simultaneously see and make changes in a fashion that is transparent and modifiable, and depends on the next person in the email chain to respond in a timely fashion. Often this does not represent the best overall workflow for a given process. Conversely, web-based collaboration portals, wikis, and other groupware (Schrum & Lamb, 1996; Pereira & Soares, 2007) technologies allow for shared development, editing, and distribution of materials among various stakeholders. These products are intuitive, and user-friendly, and permit non-technical users to edit or upload documents and other multimedia files by simple interfaces. Many are inexpensive, easy to set up, and support integration with other interactive web 2.0 technologies such as blogs, RSS feeds, internet calendaring, email integration, and user defined metadata tagging for easy retrieval. The combination of ease-of-use and intuitive features have pushed wikis to the forefront of collaborative groupware options. In fact, one limitation of many products is their ease of use, which can create increased risks for vandalism to the system (Gonzalez-Reinhart, 2005). Nevertheless, when correctly set up and managed, wikis have the potential to enable collaborative learning communities that use advanced knowledge management and distributed learning strategies (Boulos, Maramba & Wheeler, 2006).

The ability of wiki technology to support collaboration in a distributed network holds great promise in the field of health care. Health care organizations must work constantly to improve quality and service delivery in a system that is increasingly dispersed and complex. In this environment, tools that foster collaboration and partnership are essential. Unfortunately, health care providers in low-resource environments may be hesitant to adopt novel technologies (Fiscella & Geiger, 2006; Shields, Shin, Leu, Levy, Betancourt, Hawkins & Proser, 2007). Barriers often include lack of familiarity with information technology (IT) applications, cost, differences in language and context of communication, limitations in end user ability to adapt to technology, and variations in the infrastructure necessary for end users to engage in IT-enabled collaboration (Chaisson, Reddy, Kaplan & Davidson, 2006).

The challenges of using collaborative IT tools, including wikis, in health care settings may also be related to the unique requirements of health care from both legal and usability perspectives. On the legal side, federal Health Insurance Portability Accountability Act (HIPAA) requirements in the United States call for stringent security features in the use, transmission, and sharing of information; wikis and communications portals must be able to meet these standards. From a usability perspective, health care is a highly specialized industry. The context of the health care environment necessitates easy-to-use graphical user interfaces for non-expert users, the ability to alert end users for new content in an appropriate manner, and seamless integration of the product into workflow of the busy medical office environment.

These issues underscore the importance of social and organizational context when employing newer technologies in a setting such as health care where end users have complex needs, variable or specialized technical knowledge, and other barriers to adoption. According to Rogers’ theory of diffusion of innovations, end users will be more likely to adopt an innovation that is adaptable, advantageous, and simple to use (Rogers & Scott, 1997). Furthermore, the development process must account for the social dynamic of user groups, be participatory, and allow for “re-invention” (Rogers & Scott, 1997; Greenhalgh, Macfarlane, Bate, & Kyriakidou, 2004). Ultimately, end users must
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