Chapter 5.15
Intelligent Portals for Supporting Medical Information Needs

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ABSTRACT

The aim of this chapter is to review the way portal technology can assist users seeking medical information. There has been an increase in health Internet usage, and better health-care delivery outcomes are predicted as users are better informed when making medical decisions. At the same time, there is much concern about the need for medical portals to meet community information needs. This chapter discusses what constitutes an intelligent portal, discusses desirable portal components and attributes of intelligent portal features, and how these can be implemented to meet the needs of diverse users. Seven Australian medical Web sites have been analysed according to intelligence features. The results and analysis are presented and discussed, in particular, with respect to their functionality as defined for intelligent portals. The discussion is focused on the extent to which these attributes help users with their information seeking and therefore support their decision-making processes.

INTRODUCTION

Internet technology provides a useful and easy information channel, which enables various content materials to be streamlined to users on request. The amount of information that is now available electronically is as large as that produced in non-electronic form since the development of print media. With the global proliferation of Internet use, obtaining information in this way has become the norm for many. This presents opportunities for providing the most relevant and current content to users when they need it. Information relating

to health is no exception; more and more people are relying on the Internet as a way of accessing information relating to health. Research shows that one in four of 80 million users of the World Wide Web in 2000 visited at least one medical Web site, and the number of visitors to such sites grew faster than with other sites in general (Murray, 2002).

However, studies show that many Internet users looking for information are often frustrated by a large amount of irrelevant information retrieved by search engines and by the time it takes to obtain truly relevant information. Personalization and customization of the interface through portal technology are a timely response to these problems (Finkelstein & Aiken, 2000).

There are many definitions of portals. Merrill Lynch in November 1998 described portals as "applications that enable companies to … provide users with a single gateway to personalized information needed to make informed business decisions" (Quirk, 2001, p. 2). A very generic definition of a portal is as a single gateway connected by a server that connects people with information (Harvard Computing Group, 2002).

The limitations in portal technology and specific human behaviour are factors affecting the efficiency of information retrieval. Consequently, modern portals are built with the intent of implementing some intelligent ways of catering for different needs. Improving in portal technology and understanding the dynamics of human nature can improve information retrieval.

The aim of this chapter is to review the way portal technology can assist users in broader community contexts. In particular, we look at how portals are employed for meeting community medical information needs and ways to improve these medical portals.

Specifically, we explore the extent to which these portals behave "intelligently" in addressing users' needs. The analyses of medical portal intelligence issues are discussed in terms of search engines, spell checking, "sounds like" indexing,

parsing, ontology, use of thesaurus, personalization, and decision facilities or expert system functionality. Finally, Australian medical portals are analysed in order to illustrate the problems and opportunities of intelligent community portals.

HEALTH INTERNET USAGE

Increasingly people are seeking medical information on the Internet. In America, Ehrenberger in 1991 predicted that by 2005, 88.5 million Americans will be using the Internet to seek health information (Ehrenberger, 2001). The current survey exceeds his prediction. According to the Harris Interactive consulting firm, health Internet users grew exponentially from 50 million in 1998 to 69 million in 1999, 97 million by year 2001, and reached 110 million in year 2002. The research concluded that:

The Internet continues to be used by huge, and growing, numbers of the public interested in getting information about particular diseases or treatments or about staying healthy. The results also demonstrate the critical importance to health care websites of the need to be quickly and easily accessible through search engines and portals. (Taylor, 2002, p. 1)

Brodie et al. report (2000) there is no significant difference in information-seeking habits due to age, and there is a direct correlation between computer usage and access to health information:

Once people gain access to the Internet, its use at home to get health information is similar across income, education, race and age. Therefore the number of persons using the Internet to access health information should rise along with computer use. (Brodie et al, 2000, p. 262)

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