

# Web Portal Research Issues

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## INTRODUCTION

In general terms, a portal can be seen as “a door, gate or entrance” (Macquarie Library, 1981), and in its simplest form the word just means a gateway; however, it is often a gateway to somewhere other than just to the next room or street. *The Oxford Reference Dictionary* defines a portal as “a doorway or gate etc, especially a large and elaborate one” (Pearsall & Trumble, 1996). In the context of this article, a Web portal is considered to be a special Internet (or intranet) site designed to act as a gateway to give access to other specific sites.

A Web portal can be said to aggregate information from multiple sources and make this information available to various users (Tatnall, 2005c). It consists of a Web site that can be used to find and gain access to other sites, but also to provide the services of a guide that can help to protect the user from the chaos of the Internet and direct him or her toward a specific goal. More generally, however, a portal should be seen as providing a gateway not just to sites on the Web, but to all network-accessible resources, whether involving intranets, extranets, or the Internet. In other words, a portal offers centralised access to all relevant content and applications.

## BACKGROUND

The Web-portal concept developed from search-engine sites such as Yahoo, Excite, and Lycos, which offered access to a large amount of general information and acted as general jumping-off points to the contents of large parts of the Web. These general portals then began offering extra services in addition to search capabilities (Rao, 2001) as the first step in their evolution. In an attempt to describe the early stages of this evolution of the general portal, Eckerson (1999) outlines four generations of portals whose focus, in each case, was on the generic, personalised, application, and role (Tatnall & Davey, 2007).

An early classification of portals had them being either horizontal or vertical (Lynch, 1998). The original portal sites mentioned above would have been considered horizontal portals because they were used by a broad base of users, whereas vertical portals were focused toward a particular audience. Davison, Burgess, and Tatnall (2004) offer the following list of portal types.

- General portals provide links to all sorts of different sites of the user’s choosing. Many of these general portals have developed from being simple search tools (such as Yahoo), Internet service providers (such as AOL), and e-mail services (like Hotmail).
- Vertical industry portals are usually based around specific industries. They aggregate information relevant to particular groups or online trade communities of closely related industries to facilitate the exchange of goods and services in a particular market as part of a value chain. They often specialise in business commodities and materials.
- Horizontal industry portals are portals utilised by a broad base of users across a horizontal market. Horizontal industry portals are typically based around a group of industries or a local area.
- Community portals are often set up by community groups, or based around special group interests. They attempt to foster the concept of a virtual community where all users share a common location or interest, and provide many different services depending on their orientation.
- Enterprise information (or corporate) portal is the term being applied to the gateways to corporate intranets that are used to manage the knowledge within an organisation. These are designed primarily for business-to-employee processes and offer employees the means to access and share data and information within the enterprise.
- E-marketplace portals often offer access to a company’s extranet services and are useful for business-to-business processes such as ordering, tendering, and supplying goods.
- Personal or mobile portals are increasingly being embedded into mobile phones, wireless PDAs (personal digital assistants), and the like. Some appliances are also being equipped with personal portals aimed at allowing them to communicate with other appliances, or to be used more easily from a distance.
- Information portals can be classified into one of the other categories; however, they can also be viewed as a category in their own right as portals whose prime aim is to provide a specific type of information.
- Specialised or niche portals are designed to satisfy specific niche markets. In many cases, these can also be classified as information portals.

A major problem with any classification, however, is that new types and categories of portals are appearing all the time, portal types are reclassified, and most classification schemes include overlapping categories. Even given the difficulty in classifying portals or attempting to count the numbers of each type, it has become clear that specific rather than general portals are very much the topic of research interest around the world (Tatnall, 2005a, 2005b).

## **RESEARCH IN A WIDE RANGE OF WEB PORTAL APPLICATIONS**

Web portals are now quite ubiquitous, and researching their use in organisations and by individuals is an important aspect of information systems research (Tatnall, 2007a). To illustrate the range of quite specific applications now being filled by portals, the following list of topic categories (Tatnall, 2005b) comes from articles by many academics from around the world who contributed to the *Encyclopaedia of Portal Technology and Applications* (Tatnall, 2007b). Anyone with an interest in conducting a research project needs to see what else has been done in this area, and this list of topics is provided to give such an indication. It does not show the level of usage of the different types of portal, but should be seen as much more than just a list. Rather, it provides an indication of the current research interest in portals and portal technology, and gives an idea of possible future research directions in this area.

### **Education Portals**

To begin, there is considerable interest in education portals, and the topics covered include academic management portals; large-scale, integrated academic portals; mobile education portals; artificial intelligence and education portals; high school portals; primary school portals; corporate e-learning portals; Weblogs; knowledge portals in education; and subject-teaching portals.

### **Health and Medical Portals**

This is another popular area with topics such as empowerment and health portals, bioinformatics portals, biotechnology portals, nursing knowledge portals, network-centric health care and the entry point into the network, and genomic and epidemiologic medical data portals.

### **Community, Personal, and Mobile Portals**

Topics researched in this area included how to promote community portals, a community geographic domain names

portal, designing a portal and community-to-community generator, local community Web portals and small businesses, the paradox of social portals, accessible personalised portals, mobile portal technologies and business models, mobile portals as innovations, mobile portals for knowledge management, the MP3 player as a mobile digital music-collection portal, widgets as personalised mini portals, wireless local communities in mobile commerce, and portals supporting a mobile learning environment.

### **Government and National Portals**

In a related area, there was much research interest in government portals around the world: portals in the public sector, e-government portals, e-value creation in a government Web portal in South Africa, government portals as a gateway for enhancing electronic governance in Singapore, interoperability in integrating e-government portals, modeling public administration portals, service quality in the case of e-government portals, and state portals as a framework to standardise e-government services.

There is also research into portals relating to national issues: African Web portals, business module differentiation and a study of the top three Chinese portals, cross-cultural dimensions of national Web portals, the growth of e-portals in Dubai, how portals help Chinese enterprises operate successfully in global markets, impacts and revenues models from Brazilian portals, Web museums, and a case study of the French population.

### **Knowledge Management, Libraries, and Professional Societies**

Knowledge management, especially relating to libraries and professional societies, is another area that attracts a number of researchers. They are interested in topics such as designing portals for knowledge work, mobile portals for knowledge management, knowledge servers, the portal as information broker, portal strategy for managing organisational knowledge, a prototype portal for use as a knowledge management tool to identify knowledge assets in an organisation, library portals and an evolving information legacy, open access to scholarly publications and Web portals, the IFIP portal, and portal features of major digital libraries.

### **Portal Concepts, Design, and Technology**

As one might expect, portal concepts are also an area of particular interest with topics such as defining the portal, benefits and limitations of portals, comparing portals and Web pages, the evolution of portals, factors affecting the adoption of portals using activity theory, information visualisation, the ubiquitous portal, and portals of the mind.

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