Comparing Portals and Web Pages

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INTRODUCTION

Just how do *Web pages* and *portals* differ? A fair question, since both have common characteristics. However, important differences can be drawn. The purposes of this chapter are to (a) provide a basic background of both Web pages and portals, (b) compare the structure of Web pages with the infrastructure of portals, and (c) point out future trends for each.

BACKGROUND

A *Web page* (WP) is a document written in HTML or XHTML language and placed on the World Wide Web through a unique and rather permanent address called the *uniform resource locator* or URL. A Web page can be either a single page, or be combined with other Web pages, nested one inside the other. These multiple Web pages, once created by using *frames* (F), are increasingly being created through the use of *cascading style sheets* (CSS). These enhancements allow users to navigate content on other Web pages while remaining on the initial page. Web pages contain *navigation links* (NL) to other Web sites and are viewed through Web browsers. Web pages can also contain elements that can be seen (graphics and images) and cannot be seen (scripts, meta tags). A *Web site* (WS) is physically located on a Web server as a collection of Web pages stored in hierarchical folders. Users move from page to page through use of these navigation links, navigation bars, or *hyper links* (HL) to view additional pages. Even so, Web pages are relatively flat or static when compared to the more functional and complex portal.

A *portal* (P), is a Web site that serves as a gateway to other resources (Internet or intranet). These resources provide the user with enhanced capabilities through the use of distributed means—computers, personal digital assistants (PDAs), and cell phones. Therefore, some would argue that the portal is nothing new, but yet another type of Web page. Others (Tatnall, 2005) argue that portals are more than Web pages. At the very least, portals are enhanced versions—powerful improvements—along the evolutionary development of the simple Web page.

Portals have proliferated. Tatnall (2005) describes attempts to categorize them and provides a list of major types: (a) general portals, (b) vertical industry portals, (c) horizontal industry portals, (d) community portals, (e) enterprise information portals, (f) e-market place portals, (g) personal/mobile portals, (h) informational portals, and (i) specialized or niche portals. While some have proclaimed the death of the portal (Online Publishing News, 1999), others (White, 2003) write about portal metamorphosis, an evolving transformation of the simple Web page in response to user needs.

STRUCTURE OF THE WEB PAGE

Web pages of all kinds are created by using an HTML suffix and HTML commands inside a text file. Each of the tags are located inside right and left angle brackets (< >). Most HTML tags are used in pairs with the end tag leading with a forward slash (<HTML></HTML>) signaling the end of the specific formatting style.

The basic parts of a Web page are created by using HTML tags include the head (<head></head>), title (<title></title>), and body (<body></body>). Additional tags provide for extra spaces ( ) or page breaks (<br>), extra spaces between paragraphs (<P>), or font that is bolded (). Some require ending tags other do not.

Additional tags can be used to add background color (<bgcolor = #XXXXXX>), or a texture file background (<body background ="filename.gif">). HTML coding is used to create additional functionality on Web pages. There are special email HTML tags that help users send email messages from a Web page. Other tags provide Web page designers with the use of FRAMES—a design structure that lets users stay on the main page and navigate to other pages within that home page.

HTML language provides the tools that designers use to create the basic structure of a Web page—a home page and all attached pages. These pages provide (a) sequences, (b) hierarchies, or (c) webs of related pages. The user navigates through the Web Site to find and review information put there by Web designers.

Typically, Web pages contain the following sections: (a) menus and sub-sites, (b) resource lists or other related sites, (c) site maps or guides, (d) search features, and contact information for page designers or owners. Well designed Web pages are constructed with the user in mind. This concern for the user led to the development of more and more complicated Web sites, and eventually to the development of Web portals —the natural evolution of the simple Web page.

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INFRASTRUCTURE OF THE PORTAL

Just as a Web page has a set of technical components (visible and non-visible), so does the portal. Wojtkowski and Major (2005, pp. 22) outline the following components as being essential to portals: (a) content aggregation and publishing, (b) search tools, search engines and taxonomy generators, (c) application integration, (d) personalization, data capture, collaborative filtering and data mining, (e) security/permissions services through a directory, and (f) links to multiple internal and external entities. These components contribute to how useful a portal is to users. Even without understanding the specifics of these elements, it is clear that portals are more complex than Web pages.

In addition to these technical components, portals require a *portal environment* (PE) in which to function (Wojtkowski & Major, 2005, pp. 23-25). This environment is built on the following elements. Portals require an *application server* as well as a *Web server* to respond to user requests. Content for these requests are provided through the support of various *database* applications. The portal environment also requires a classification scheme, folder structure, or *taxonomy,* for organizing information. Other elements required for a portal environment include a *Webcrawler, metadata repositor, gadgets, categorization engines, filters,* and an *index.* In addition, portals require a *virtual card* to keep track of the location of actual data associated with the portal. Additional elements include a *Web service, content management systems,* and s*oftware* for integrating all these applications.

The reason for teasing out these technical components and portal environment elements is to illustrate how different portals are from Web pages. But perhaps the major difference lies not in the technical elements alone, but in the enhanced functionality they promise. The portal provides the user with the power to more efficiently access information. This increased capacity provides the user with the opportunity for *knowledge management* (KM), a systematic process of finding, selecting, organizing, distilling, and present information in such a way that it improves comprehension of a particular user's knowledge and decision making capacity in a particular topic or area of interest.

Another way the portal differs from the simple Web page is that it provides the user with the capacity to plan and direct business and organizational operations, as in a *management information systems* (MIS). The portal provides *functional support* in the data collection process. Once the user has access to appropriate and relevant data, the portal provides *decision support* for what about or what if questions. And, finally, Web portals provide ways to gain a competitive advantage with support for *strategic* thinking. The benefits of knowledge management and management information systems, to the users of portals, go beyond the benefits of Web pages.

Another powerful benefit for the portal user is that a well-designed portal can serve as a personal *executive information systems* (EIS). As such, it provides the right information, at the right time, and in appropriate amounts—nothing more, nothing less. The term *dashboard* (D) is descriptive of this type of portal. The significant aspects of such portals are real-time information systems, or put differently, a rich interface with data, visual indicators, reports, and charts that help decision-makers do their work (Malik, 2005).

A superficial inspection of Web pages and portals would lead the uninformed to conclude that they were similar. Upon further inspection, the user gains more sophistication and can appreciate then intended productivity provided by portals. Even so, there are issues with portals. Neilson (2005) studied number of companies with portals and found the following challenges and disappointing findings.

1. Portal solutions are not usable out of the box.
2. Single sign-on versus group sign-on is still not a practical reality.
3. Personalization for individuals is still rare. Instead, role-based customization is designed into the portal functionality.
4. Governance has more of an impact on portal success than technological related issues.
5. Research on user satisfaction or impact on user productivity is inadequate.

FUTURE TRENDS

While Neilson (2005) reports that not much has changed in portal development over the past three years, Cahill (2006) argues that future portals will need to broker the following elements that promise to impact portal productivity and usefulness if consumer-concentric portals are to be part of the technological tools of the future.

1. Who needs what information?
2. How quickly is knowledge needed?
3. How should information be delivered?
4. Are users getting all relevant information needed to make decisions?
5. Are results accurate and related?

Donley (2005) provides additional goals for developers when he argues that portals need to move beyond their stated purpose. While portals claim to aggregate information from multiple sources, most of them are only capable of interfacing with one source, directory, or database at a time. Even with such improvements realized, Strauss (2002) claims that even the best customized portal will not be able to serve everyone's needs. Future portals will need to find ways to minimize these shortcomings in order to maximize personal

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