

The Making of a Web Portal: Tools and the Process

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Abstract

A Web portal is a special web site designed to act as a gateway to other related sites. Web portals are designed to retain their users who must return to them frequently. They provide a useful means of making content readily available to authorized users in a convenient form. Web portals are found in many domains of specialization. This paper will discuss some of the technologies which support the creation and maintenance of Web portals.

Introduction

A Web portal is single point of access to information which is linked from various logically related internet based applications and of interest to various types of users.¹

They are an excellent way for enterprise to provide a consistent look and feel with access control and procedures for multiple applications, which otherwise would have been different entities altogether. Portals present information from diverse sources in a unified way.

A Personal Portal is designed to use distributed applications, different numbers and types of middleware and hardware to provide services from a number of different sources. It is a site on the World Wide Web that typically provides personalized capabilities to its visitors, providing a pathway to other content. In addition, business portals are designed to share collaboration in workplaces. A further business-driven requirement of portals is that the content be delivered on multiple platforms such as personal computers, personal digital assistants, and cell phones.

Why Portals

To disseminate information across the enterprise it is often required to have a

centralized application that provides graded access to other applications within the enterprise. An enterprise with multiple applications will find it inconvenient to have one entry point for each of them. So Given today's context of multiple locations, working from home and traveling, it is no longer enough to provide access from within the office network alone to these applications. Various users, with different roles, prefer to have a single access point to all of them over internet too. They like to personalize the applications and have the coupled applications coordinated.

Since all the applications share information through portals, there is better communication between various types of users. Another advantage of portals is that they can make event-driven campaigns.

Advantages of portal can be listed as:

- * Intelligent integration and access to enterprise content, applications and processes
- * Improved communication and collaboration among customers, partners, and employees
- * Unified, real-time access to information held in disparate systems
- * Personalized user interactions
- * Rapid, easy modification and maintenance of the website presentation.

What's a Portal?

With so many portals out there and so many vendors hawking portalware, one might think that there is at least a firm agreement on what portals are. In fact, there are many confusing and often contradictory definitions. Some people

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even believe that just putting the word portal prominently on their home page makes it portal.² After all, with enough links, and specially a link to search engine, any home page can give access to much of the Web. Isn't that a portal?

It is useful to divide portals into two groups: Horizontal portals or HEPs (Horizontal Enterprise Portals, also called Megaportals), and Vertical portals, or VEPs (Vertical Enterprise Portals). A horizontal portal is a public Web site that attempts to provide its users with all the services they might need. NetCentre and MyExcite are examples of horizontal portals.³ All HEPs include shopping, weather, stock prices, news, search engines, chat groups, horoscopes and so forth. They allow to personalize the page we see by selecting the cities for which one would like the weather, choosing the stocks and as well as news sources.

Key Features of Portal

There are many features, which a portal provides. Out of which some important are listed below:

- * Access different data: Through portals one can access varied type of content
- * Security: Portal provides high security compare to the ordinary web pages.
- * Transactions: In portals users can interact with the site, and can exchange the Content.
- * Search: Unlike ordinary websites, Portals provide simple search as well as advance search facilities.
- * Personal content: Administrators as well as authenticated users are having personal space in portal where they can store their personal information.
- * Publish Content: One can publish their content through portals.

Major Functions of Portal

A flourishing portal consists of a good collaboration support and a good integration of the information sources. The major functions of a Portal are mentioned below:

*** Search and Navigation**

Search and navigation forms the basis for most of the brandishing public web portals,

which means that a successful portal should support its users in an efficient search for contents. A portal is best when it provides right information to the right users and it should also provide additional information, and allow the user to voluntarily personalize the information presented by the portal.

Personalization

Personalization is important for the delivery of appropriate information to Portal users. There should be mechanism that each user gets only the information which is specifically tailored to his /her needs. Personalization should be based on user roles, as well as user preferences.

Different types of personalization can be listed as below: Personalization of navigation

- * e.g. shortcuts to specific information, mostly known as bookmarks or favorites
- * Personalization of layout
 - e.g. what information appears where on the screen, in which form, color and size?
- * Personalization of data/content
 - e.g. which stocks one wants to see in the stock ticker

Information Integration

A Portal should guarantee the integration of information from disparate sources. Moreover, the user should also be able to optimally use this information. There are several mechanisms for doing this. One such promising technique of innovative interface is the Unified Content API (Application Programming Interface), which speeds up the development of portal applications. The Unified Content API supports all current tools for developing web environments, such as JAVA, C++, ActiveX, Visual-and Non-Visual -Java Beans.

Task Management and Workflow

Portals providing task management services can help users take part in managing formally defined business processes. The workflow functionality allows the automation of business processes. Thus, as part of a workflow-automated business process, a portal should be able to prompt its users when they have tasks to perform.

Notification

Notification is which is also known as push technology is referred to as system in which a user receives information automatically from a network server. Push technologies are designed to send information and software directly to a user's desktop without the user actively requesting it. Thus, the user has the opportunity to subscribe to activate information sources (such as news feeds and periodically update reports) and ask to be alerted when documents are updated.

Collaboration and Groupware

Knowledge management and groupware ensure that the required information is stored in the right place in the right mode. By this means the right persons are brought together with the right information. Groupware software assists in less formal collaboration than workflow tools. As with workflow automation, groupware increases the value delivered by many types of specialized portals, for example:

- * Increases the attractiveness of business-to-consumer e-commerce portals.
- * Enables informal communication between suppliers and customers in business-to-business e-commerce portals.

Supply chain portals are also dependent on collaboration support in order to help suppliers and their customers manage their relationships. Moreover collaboration support is a key requirement for knowledge portal.

Infrastructure Functionality

The infrastructure functionality constitutes the fundamental for the work environment. The other functionalities which were mentioned above all are built on infrastructure functionality. The runtime infrastructure associated with the portal will have a primary effect on manageability, scalability, security and availability.

Types of Portals

There are many portals out of those the major ones which are available on web, are as follows:

Specialized Portals

Specialized Portals are designed for a specific purpose. One such specialized portal is an ASP

(Application Service Provider) portal that provides its customers with access to applications via an extranet or the Internet.

Public Web Portals

Public web portals exist to provide easy to use and provide attractive services to the public. Major Functionalities:

- * Extensive search and navigation system
- * Great variety of service offerings
- * Mega-sites used as "starting point" for the web surfing

Market Space Portals

Market space portals exist to support business-to-business or business-to-consumer e-commerce. Major Functionalities:

- * They give software support for e-commerce transactions
- They have the ability to find and access rich information about the products on sale
- * They have the ability to participate in discussion groups with other vendors and other buyers.

Enterprise Portals

An Enterprise portal also called as a corporate portal provides personalized access to an appropriate range of information about a particular company. Enterprise portals have become one of the best and new technologies of the Internet. Initially called Intranet Portals. It exists for the benefit of the company's own employees, this set of technologies has developed to assist and provide access to a company's business partners as well.⁴ As opposed to public web portals, enterprise portals aim at providing a virtual workplace for each individual using them. They can be executives, employees, suppliers, customers, third party service providers. Rather than offering access to consumer goods, services, and information, enterprise portals are designed to give each individual using then access to all of the information, business applications, and services needed to perform their jobs.

Knowledge Portal

Knowledge portals increase the effectiveness of knowledge workers by providing easy access

to information that is necessary or needful to them in one or more specific roles. Knowledge portals are not mere intranet portals since they are supposed to provide extra functionality such as collaboration services, sophisticated information discovery services and a knowledge map.

Workspace Portals

A Workspace portal is a single, coherent, integrated portal that presents its users with all the information they need to carry out their jobs. Workspace portal represent the radical vision of a portal providing the user interface people always wanted and never had a user interface making available all the information necessary for an employee's job role. The current alternatives to a workspace portal are specialized portals or the contemporary Windows desktop. Thus, the advantages workspace portals have to offer over these alternatives ought to be evident and convincing.

How to Develop a Portal

The steps involved in developing a Portal can be listed as follows:

*** Planning**

The purpose, goal, target audience, content needed and the overall style wanted are outlined. Hosting services either free or commercial is also picked up.

*** Designing**

Designing is the generation of a design by an agent under the influence of certain constraints, preferences and evaluation knowledge. These influences derive from various sources, such as the knowledge, skill and experience of the agent doing the designing, the available tools and methods, external imposition, and physical limitations.⁵ The design process is guides and supported by a wide variety of knowledge and data.

How to design is the basic question while designing a portal. What colors do we want to use? How to keep the look of the site consistent? Which content to be added? What graphics should be included? How will the user navigate the site? As well as the layout of the pages.

* Colors: While selecting the colors one should use sophisticated colors which may not be eye

piercing.

* Consistency: Consistency should be maintained through out the pages keeping in mind the importance of the site.

* Content: Content should be reliable because it is considered the most important aspect building of a website.

* Graphics: The graphics can be added carefully by selecting icons, bullets, links and other things which can give personal look to a site.

* Navigation: Navigation plays an important role in and for a website so one should give proper links which may carry further details for the given link.

Portal Style: The style of a portal is defined through layout, design and personalization of web pages.

Tools required for designing a Portal

To design a portal tools are required which are listed below:

- * An Editor
- * Browser
- * FTP Program
- * Image Viewer/Editor
- * Text to HTML
- * Zip/Unzip Program

Coding

HTML is the Code used to specify text, multimedia documents (i.e. graphics, video, animation and sound). It also creates hyperlinks between documents. There are several HTML editors which are available free as well as commercial.

Creating HTML code for Website

There are four ways to create a Web Page:

- * Use an HTML wizard;
- * Use pre-made HTML templates;
- * Use an HTML editor;
- * Use a text editor such as Notepad to write own HTML code.

HTML Editors

For creating a Website HTML editors are

available, free as well as commercial. Many of these editors provide tool bars; buttons and icons through necessary tags can be inserted. Most of the HTML editors are easier than learning HTML from the scratch.

Selecting HTML Editor

The question arises while selecting HTML Editor that which type of HTML Editors should be used?

* **Manual HTML:** To create HTML manually there is need to use a text editor, such as Notepad. It can be done on a PC using Windows 95, 98, Me or XP.

* **HTML Tidy online:** HTML Tidy is a tool for checking and cleaning up HTML source files. It is useful for finding and correcting errors in deeply nested HTML code.

Besides these following points should also be taken care of:

* **Consistency:** To assist with being consistent in page layout, one should develop a page layout for the site.

* **Cut and Paste:** After creating code for each of the pages the header, navigation bar, and footer created during the design step should be pasted on the each of the web pages.

* **Spell Check:** The webpage should be spell checked using an automated spell checker.

Upload FTP files

To upload the files to host computer there is need to determine FTP address and password. One should complete the pre-FTP checklist. Next, select and download the free FTP software. Setup the host profile. Then, upload the website files to the host computer. Outputs from this step will be:

- * A complete pre-FTP checklist.
- * A copy of free FTP software.
- * Host profile setup on FTP software.
- * A copy of Website files uploaded to host computer.

How to Upload FTP Files

FTP is an acronym for File Transfer Protocol. FTP allows sending and receiving files to and from computers.

*** Pre-FTP check**

Folder and file names have to be checked out. It must be made sure they are all in lower case letters. Otherwise, they will not work on UNIX based hosts. Spaces or special characters in folder or file names should not be used. More than one extension in file name should not be used.

HTML file should be clicked and checked to ensure all internal links and navigation buttons work properly. Using an automated spell checker Spell checks should be done on web pages. If one doesn't have a spell check capability, it should be deferred until the Test step. Printout should be taken carefully. Proof reading should be done for the each page. Errors should be corrected and all the required changes should be done on hard drive.

*** Determine the host FTP procedures**

One should check with website hosting services and determine URL, and obtain their FTP instructions, FTP address, user name and password.

Select FTP software

There have to be some FTP programs which may be the following

FTP Explorer-PC: FTP Explorer is a file transfer protocol client for windows, that looks and acts very much like the Windows explorer. Free for home and educational use. This program works for all Windows operating system and NT 4.0

WS_FTP-PC: Offers a side by side display of the local and remote sites directory.

Prepare files for Uploading

Move all the files to upload the same folder/ directory on computer. Then double check to ensure they can be viewed with browser using navigation scheme. Access FTP software and transfer all the files from PC folder to website folder.

Test or validate:

To test the portal, add a document type declaration (DOCTYPE) and character encoding to each Web page. Next validate each page using a free online HTML validator and spell checker. Check to ensure that all links -internal and external are active. Determine the download

time for each page. For a final check ask friends to visit the website and provide comments. If any error found correct it offline. Outputs from this step

A document type definition (DOCTYPE) added to each page;

- * Character encoding added to each page;
- * Each page of website validated at least once;
- * All pages of site spell checked by an online service;
- * All links verified by an online link checker;
- * Determine the download times for each page;
- * Evaluation of comments from other people;
- * A backup copy of all files.

Testing the Website: Testing the website should include testing each Web page for, HTML validation, load time, browser compatibility, bad links and spelling errors.

Uptodateness of files: Based on testing results, make all the required changes and FTP our new page to host computer.

The final test: Portal should be evaluated by other people. Consider their recommendations carefully and make the required changes, spell check the files again and FTP.

Make backup copy: This is the most important step so that even if we lose some files backup is there and the Portal remains intact and functional.

Promote Site

To promote Website one needs to add the Web page title, Meta description and Meta keywords. Create a text file containing the promotion data. Select search engines and directories. Add URL and maintain records of all promotion actions. Promote the Website as often as possible. Outputs for this step are:

- * Meta data for each of web pages
- * A text file containing registration data.
- * A database containing online promotion actions
- * A listing of actions taken to promote Website offline.

How to Promote the Portal

To ensure that the portal gets the attention it deserves promotion. To do so, one has to add a few more lines of HTML tags to our web pages, and fill some online forms to register it with the various search engines and directories. There are internet sites available to do most of the work free. Steps are following:

* **Meta data:** Create the Meta data that will be used by search engines to locate site, index it and display a description of it on their web pages.

* **Add Meta data:** Make the changes offline. Add Meta data to each of the pages and FTP the new pages to the site hosting the pages.

* **Measure twice and cut once:** Before trying to register the site, make sure the Meta data on each page is correct and double check everything else.

* **Registration:** Register the site with the top search engines. Access the text file that created for the Meta data and add the following information to it

- * URL
- * Name (personal or organizations)
- * E-mail address
- * **Keep records of promotion:** Create a database containing online promotion actions. As a minimum include the following:

- * The name of the search engine/directory/link exchange;
- * Date of registration;
- * Lead time for registration;
- * Code verifying that site is registered;
- * Month verified

Registration sites

To promote and register the web page following sites may be used

- * FFA: Add the site to my free for all link pages.
- * 60 FFA LINKS: Place the site on 60 free for all links with one click
- * Jayde Online Directory
- * Linkmaster
- * Nerd World Media

Conclusion

A portal should know your schedule and workflow and present you with the right information at the right time. It might know, for example, that you create your capital budgets in February and do employee performance evaluations in April. The right tools to do these tasks should appear at the right time. It should also sense the way you work and suggest ways to facilitate what you are doing. Finally, the portal should be your computer desktop. It should be the application that appears first on your screen and in most case should replace everything else on your computer desktop. From a user point of view, the portal will become the computer. Users would do e-mail, text processing, budgeting, system design, and all the work they might need to do via the portal. Looking at the screen desktop of such a user, the only thing that would ever appear would be the portal and the things that would ever appear would be the portal and the things obtained via the portal.

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