

Teaching Collaborative Web Portals Technology at a University

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INTRODUCTION

A collaborative Web portal is a Web site that consists of a set of Web pages, grouped according to specific criteria, from which users can access Web services and functionalities, and which, depending on the type of collaborative Web portal, allows synchronous and/or asynchronous interaction among users who may be geographically dispersed.

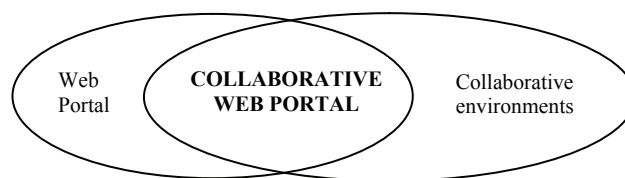
The origin of collaborative Web portals is the combination of Web portals and collaborative environments fields.

There are many definitions of Web portals, one of which is “a point of access to information and applications” (IBM, 2000). Web portals are supported in the World Wide Web (WWW) that was launched in the nineties. At first, the Web was a system for sharing documents written in HyperText Markup Language (HTML), but it evolved gradually from HTML static to dynamic pages with programming components, multimedia elements, and three-dimensional objects options. Due to the significant increase in Web pages on the WWW, Web portals emerged to meet the need for a common access to all these pages. These Web portals are informative which mean that they only provide information.

Unlike Web portals, collaborative environments, known as CSCW (computer supported collaborative work), have been in existence for some time (Grudin, 1994). A CSCW is defined by Tschang and Della (2001) as “multi-user software applications that enable people to coordinate and collaborate in a common task or goal without being in close proximity either spatially or temporally.”

The synergy between CSCW and the Web portal was achieved recently as a consequence of Web technology evolution (Tschang & Della, 2001). Currently, a Web portal can be the image of a company. However, the clients and employees of a company not only want information, but also a work environment where they can interact with other

Figure 1. Collaborative Web portal



employees, and work collaboratively. The ability to carry out collaborative tasks is one of the current characteristics of Web sites and Web portals equipped with this characteristic are called collaborative Web portals (Figure 1).

Collaborative Web portals are ideal for groups in the same professional field, for example, industry and research, where there is a great need for synchronous and/or asynchronous interaction and users are geographically dispersed. These portals are being used in environments such as medicine (Pratt, Reddy, McDonald, Tarczy-Hornoch, & Gennari, 2004), industry and the different interdisciplinary fields of civil engineering (Garner & Mann, 2003). In education, collaborative environments have been used in asynchronous learning (Dewiyanti, Brand-Gruwel, Jochems, & Broers, 2004) and in virtual environments (Dave, 2000).

The lecturers in the software engineering area at Carlos III University designed a collaborative Web portal so that lecturers and students could work collaboratively. For example, lecturers have to design and coordinate subjects. These tasks have always been carried out using traditional techniques, such as meetings, eemails, and so forth. but, due to technological advances, these tasks are ideal for a collaborative Web portal which would allow:

1. students to see all the information on each subject and offer the option of communicating with the lecturers synchronously and/or asynchronously;
2. students to work collaboratively among themselves, share documents, do practices together, look up information through interest links, plan and track assignments, have Web discussions and many others functionalities; and
3. lecturers to consult their peers on topics, assignments, practices as well as to work with other lecturers synchronously or asynchronously.

There are some systems, like learning management systems (or e-learning systems), that allow users to do these activities; but we did not consider this possibility because we feel that the goal of the university is to equip students for the labor market. Due to the demand for collaborative Web portals in business we think it is important to teach this technology, the knowledge needed for the current labor market and how it benefits an organization instead of e-learning systems that only offer a vision of collaborative work at university.

The Background section describes the uses and current collaborative Web portal tools on the market, the collaborative Web portal chosen and explains some of their functionalities through software engineering techniques. In the section Microsoft Sharepoint® at University, the authors present a case study at Carlos III University and shows the advantages and disadvantages of using a collaborative Web portal. In the following two sections, the authors describe the future lines of work, and they present their conclusions. Key terms are defined at the end of the article.

BACKGROUND

This section presents the different tools used to develop a collaborative Web portal and their functionalities. Next, we describe the tool chosen for our study, the reasons for our choice and analyze how Microsoft Sharepoint® performs with software engineering techniques.

Uses and Current Collaborative Web Portal Tools

Development environments for the creation and implementation of collaborative Web portals are available on the market. A collaborative Web portal can be classified in different ways, for example, a commercial versus an open source collaborative Web portal. Commercial collaborative Web portals, which are portal servers, include Sun Java System Portal Server®, Microsoft Sharepoint Portal Server 2003®, WebSphere Portal for MultiPlatforms®, Vignette – Enterprise Content Manage

and Portal Solutions®, Builder Suite Portal Server®. Open source portals include Synergeia (<http://bscl.fit.fraunhofer.de>), Basic Support for Cooperative Work, BSCW (<http://bscw.gmd.de>), Nicenet (<http://www.nicenet.org>).

The main differences between the two are the requirements needed, for example, for BSCW you need POP3 (Post Office Protocol, version 3). With POP3 you can register with a public server and use an Internet browser that supports forms and basic authentications (Netscape Navigator or Internet Explorer). However, with Microsoft Sharepoint®, you need Sharepoint Portal Server 2003 on Windows Server 2003 Web Edition and SQL Server 2000 even though the end user only needs a navigator. Although Microsoft Sharepoint is more expensive than the collaborative Web open source, it offers more functionalities.

These portal servers allow us to develop collaborative Web portals with functionalities which:

- provide better communication among users;
- connect people, teams, and knowledge across business processes;
- coordinate work between geographically dispersed teams by linking colleagues, customers, prospects and partners;
- integrate information from different systems, using flexible deployment options and management tools, into one solution;
- customize the Web portal; and
- offer advanced search.

A Portal Server: Microsoft Sharepoint®

As mentioned before, the authors of this contribution, who are also lecturers at Carlos III University, developed a collaborative Web portal so that lecturers could work collaboratively with each other and with their students. This collaborative Web portal was developed using Microsoft Sharepoint Portal Server 2003®. The reason for our choice is explained below.

Microsoft is an international company whose products are used in a great number of organizations, institutions, and so forth. The products of Microsoft Office® (Access, Excel, Powerpoint, Word) are integrated with servers (one of which is Microsoft Sharepoint Server 2003®), services such as Microsoft Office Online® and operative systems (Microsoft Windows Server®). Microsoft calls this set Office System®. This integration is an incentive to use Microsoft products because

- they are known and used by many and the tool is not rejected as the environment is familiar;
- other tools and functionalities can integrate with Microsoft Sharepoint®;

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