

CAMPUS 2007 TECHNOLOGY

EDUCATION PORTAL FOR INFORMATION STORAGE, SHARING AND COLLABORATION

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ABSTRACT

Today the Internet has provided great opportunities for enterprise integration among internal departments, external partners and other service providers. Web services based systems have recently found their way into many applications such as e-commerce, corporate portals and e-learning. Construction of new services or introducing new functions to existing services requires composition of web services. Current approaches to service composition often require major programming effort; this is time consuming and requires considerable developer expertise. Planning for Web portal implementation should be seen as a process of building an infrastructure and foundation for the future. In this paper, we explore and identify the requirements for a basic portal framework in the design, implementation and deployment of an Educational Web Portal Service at the School of Health Professions (SHP), University of Puerto Rico. We also discuss the benefits of this platform and some of the tools provided by the portal environment to fulfill the organization needs and the lessons learned during the architecture design and software implementation.

KEY WORDS

Web Portal, Share Portal, Middleware, Enterprise

1. Introduction

The actual academic environment requires that faculty, employees and administrators have access to user-specific information on demand. The School of Health Professions at Medical Sciences Campus, University of Puerto Rico, is facing a new challenge to maintain their units integrated and connected as an academic community due to a main building reconstruction. During this process most courses will be moved to an online platform and faculty and employees will be working from home or telecenters. How can we keep the faculties, employees; office and programs connected in a platform that they will maintain their individual files, office files, collaborative work and keep informed about campus important information?. We look for a secure policy driven solution that satisfy the needs of our faculty, staff and employees to maintain their critical documents, share it and do collaborative work between them from outside of the campus. Can a web portal application be the solution to this problem? This paper investigates the implementation of a web-based platform solution using Microsoft SharePoint Portal Server, to provide anytime, anywhere access to important personal or organizational documents.

2. Relevance and Significance

Information technology has the potential to transform how an organization achieves its mission. The Internet and Web-based technologies provide a framework that facilitates the sharing and dissemination of information [1]. Web portal implementation should be seen as a process of building an infrastructure and

foundation for the future, not as the development of a single all-encompassing solution. Mapping requirements and specifications for the portal framework to a conceptual target architecture is part of this process. Security, ease of use, and scalability are essential in the development of a web portal project. Microsoft SharePoint Portal seen like an intuitive Web-based application builds on solid, Microsoft technology. This project will empowers faculty and employees, resulting in reduction in wait time, redundant tasks and improvement in work productivity and from that point have special interest to the academic institution. The major significance of this project is that it will provide the necessary infrastructure to keep people connected anytime, anywhere with access to there critical files or documents in a community environment using the Internet.

3. Core Benefits of the Project

Over the last years, the business community has envisioned portal solutions as an opportunity to develop and maintain integrated, personalized environments for collaborative work. Based on the target users, portals have been defined as Corporate Portals, Organization Portals, University Portals, or Enterprise Portals. Portal technology has been increasingly used for the integration of enterprise-wide information and applications [2]. An enterprise portal provides consolidated information from both inside and outside the enterprise. The information is customized for users with one or more roles. Similarly, applications or services which consist of job-specific software tools or aids are made accessible via the portal. The table 1 summaries some of the benefits of this project to the School of Health Professions [2].

Table 1 – Benefits of the Web Portal

1	A centralized 7 by 24 web-based portal for communication and support; including news, forums, and many other sections and tools.
2	A virtual space for every individual user, program and office.
3	The architectures for file sharing, search and index and collaborative work
4	Total accessibility to organization or critical documents is available to any authorized Internet-connected user.
5	The opportunity to keep the unit integrated as an academic community through the Internet, sharing documents, news, calendars, discussions and surveys.
6	Rapid deployment, integration, customization and easy administration and maintenance.

7	User-friendly interface for access to a centralized repository of information and easy administration tools that empower employees to manage content
8	Simplified access to information using power search features.

Information technology has the potential to transform how an organization achieves its mission [3]. One of the most important benefits of Web-based portal technology is there flexibility. A portal is build upon layers of services and component modules. Various areas can be emphasized or de-emphasized based on the needs of the organization. This is important because different organizations have different missions or employ varying levels of technology use.

4. Portal Framework

A portal framework provides the infrastructure and tools for building portal sites regardless of their types. A typical portal framework combines a number of different tools. Essentially it contains the tools for aggregation, organization and presentation of information through a Web browser. A portal framework can define a default appearance for modules, and is responsible for intercepting and routing URL requests into specific modules and for supporting navigation between or within modules [4]. A module can be seen as a user-facing Web service. In addition a portal framework provides the infrastructure for handling common services across modules.

5. Portal Requirements

A generic portal framework for service integration should support: [1].

- Integration -provides plug-ins for connecting to databases, web services and applications based on a broad array of standards.
- Security -provides user identification management with single sign-on facility.
- Personalization - provides role-based access which helps users to focus on information, services and processes most relevant to their job.
- Customization - provides flexible web page layout and content organization so that users have greater control over presentation aspects.

- Content management -provides update and synchronization to various content collected by the institution and shared with the others.
- Workflow -provides web-based process automation with event triggers for inter-and intra-domain collaboration and cooperation and task management

6. The Project Approach

The propose project address the needs of a web-based centralized collaboration platform required to keep the faculty and employees of the School of Health Professions connected in a secure academic environment. The figure 1 illustrated the proposed project approach:

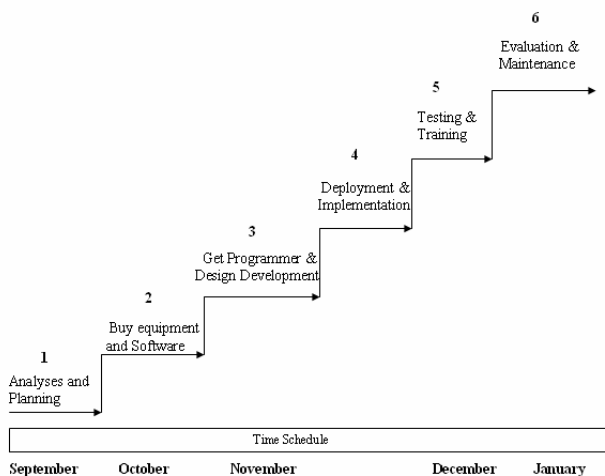


Figure 1 – Project Approach

7. Analysis, Design and Deployment

The analysis and plans was adapted to our organization specific needs. At least the platform should provide; a virtual space for every individual user, program and office, file storage and sharing space for personal and public documents, a 7x 24 web portal for communications and support including

news, forum and links, file search and space for collaborative work in addition to a rapid deployment, integration, customization, low cost and easy administration and maintenance [5]. The figure 2 illustrates the portal architecture for the SHP. This should mimic the organizational structure of the School. The general layout shows the site areas and groups to be created including the site navigation hierarchy.

Resources and training

The project resources includes two servers in a farm for SharePoint Portal and clustering, backup batteries, two desktop computers to be used by the programmers, and some Microsoft software and licenses including: SharePoint Portal Server 2003, Windows Server 2003, Windows Share Point Services, and Microsoft SQL 2000 [6].

After a successful deployment of the Web Portal a group of training session was coordinated through the Training Unit to offers the faculty and employees the necessary skills to use the portal. A total of 181 staff personnel were trained and most of their critical documents were migrated to their personal sites on the SharePoint Portal Server.

8. Lessons Learned

During the curse of this project we learned useful lessons in the areas of architecture, operations, and best practices that may be helpful for other Web Portal deployments of SharePoint and similar technologies.

Architecture:

- Determine storage requirements.
- Plan the portal hierarchy structure with the organization leaders.
- Define the need from a team site versus a portal

Operations:

- Assign Active Directory attribute for personal site
- Tune publication sites and sites quotas
- Use Windows security groups

- Plan for unexpected data migration

Best Practices:

- Develop a comprehensive communication plan
- Understand how workspaces and sites before deployment
- Conduct a security audit
- Prioritize communication and training

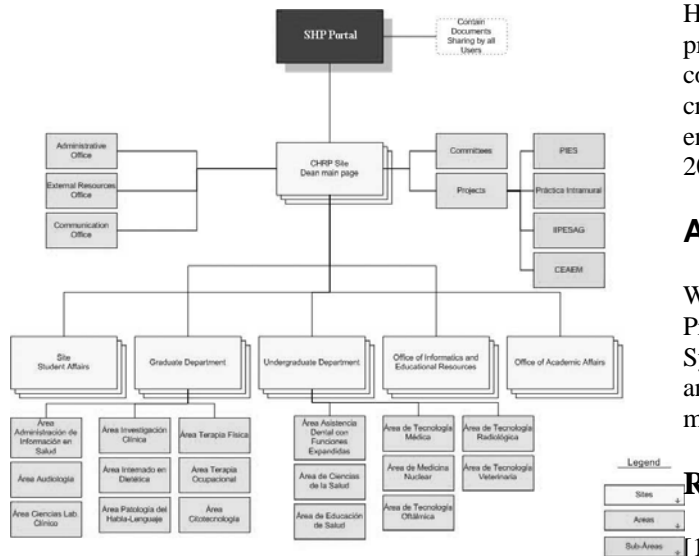


Figure 2 – Portal Architecture

9. Contributions of this study

The process to proactively define an architectural design to deliver a Educational Web Portal that meet the organization vision for the future is a great challenge. SharePoint Portal Server looks like an effective and low cost way to deploy common search, centralized storage, notifications, users profile and community portal for the School of Health Professions. This study will contribute in the evaluation and uses of the enterprise applications in the academia environment.

10. Conclusion

The architectural design in this project was made to mimic the organizational structure of the School of Health Professions. The software and hardware was

successfully installed according with the vendor specifications and organization network requirements. The full architecture including the sites, groups, divisions, user's spaces, documents, links, news, forums and works groups was completed on time. Considering the short period of time to complete the deployment, the web portal was deployed and implemented according with the time scheduled. The project was accomplished according with the implementation plan and time frame. The new web portal was open to users training from December 2006 to January 2007 and it already in use by the whole academic community of the School of Health Professions. The Web Portal is committed to provide the necessary infrastructure to keep people connected anytime, anywhere with access to there critical files or documents in a community environment using the Microsoft SharePoint Services 2003 application.

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