

# Open Source Community Portals for E-Government

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## BACKGROUND

The value of the Internet as a flexible tool for the posting and exchange of information is expressed in the potential it has for governance, commerce, and social interaction. The Internet is symbolic of the *digital revolution* of the 20<sup>th</sup> century that changed the packaging and dissemination of electronic information. In politics, the potential of the Internet is perceived to be in *e-government*. In the book *The Internet Galaxy*, Castells (2001) indicates how the Internet is expected to be an instrument to further democracy. The Internet has a significant role to play in government or politics; it provides a two-way medium of communication between government and society in flexible personalized and mass forms of communication.

Through the Internet, information can be easily accessed by both citizens and their leaders as a means of effective communication. All kinds of information, public records, service forms and requests, and a wide range of non-classified information can be disseminated on the Web. The interactive nature of the Internet technology allows for on-demand accessing of information in the form of citizen request, the voicing of opinion, and in some cases, asking government representatives for information or answers to issues of concern. The typical use of Internet portals by governments has been in the form of information access points where governments post information without a concerted attempt at interacting with the potential users of the resource. Such approach to e-governance is cast in the traditional mode of top-bottom political activity that focuses on what government leaders or their administrative systems want to give to their constituents, with little concern or regard to issues of interest to their constituents.

Chadwick (2003) makes a distinction between what he calls e-government and *e-democracy*. According to him:

*Public administration scholars, public policy analysts, and public management specialists focus on e-government, whereas political communication specialists, social movement scholars, and democratic*

*theorists sharpen their analytical tools on e-democracy. (p. 444)*

Chadwick points to the need to have e-democracy, which is found with civil society, and e-government that operates at the local and national levels of political administrations to converge. The discourse of how these two aspects of *electronic politicking* can converge using *open source content management systems* (CMSs) is the focus in this discussion. E-democracy and e-government allude to the fact that electronic politicking has two distinct aspects:

1. **Managerial:** This feature is typical of e-government because it involves government bringing people closer to government by providing an information system that is convenient and prompt in the dissemination and retrieval of information.
2. **Policy Making:** This element is characteristic of the e-democracy in the sense that it entails deliberation of public policy and in some cases advocacy.

Musgrave (2005) identifies these two aspects of e-government as community and civic portals. Castells (2001) indicates that e-government has its origin in the convergence of three different components of online political activities:

*...the pre-Internet grassroots movements in search of new opportunities for self-organizing and consciousness-raising; the hacker movement in its most politically oriented expressions; and municipal governments trying to strengthen their legitimacy by creating new channels of citizen participation. (p. 144)*

*Drupal, Xoops, and Mambo* are open source CMSs that facilitate the convergence of all the elements of online political activities, and the dissemination of information that usually gets lumped together as e-government. We compare Drupal, Xoops, and Mambo and outline how they can be used as integrated e-government portals. The

three CMSs are among the most popular open source CMSs used for creating online communities and systems for the discussion of issues and dissemination of information.

## DESCRIPTION OF E-GOVERNMENT APPLICATIONS/SYSTEMS

Open source is software that is developed by software engineers who give users the right to alter the software code in order to develop and improve the software for use and distribution. This approach to software development and distribution has created unprecedented opportunities for the exchange of information between businesses, society, and government. The open source movement is a deliberate attempt to keep access to software code and information open. The movement originated from an initiative by Richard Stallman of the Massachusetts Institute of Technology's Artificial Intelligence Laboratory in 1984. It was an attempt to counter the decision by American Telephone and Telegraph (AT&T) to claim proprietary rights to the UNIX operating system. His efforts were supplemented in 1991 by Linus Torvalds, a student at the University of Helsinki, who developed the Linux system and posted it on the Web for distribution and further development. By 2001, "over 60 percent of World Wide Web servers in the world were running on Apache, which is an open source server program developed by a cooperative network of UNIX programmers" (Castells, 2001, p. 14).

All open source software and applications are developed through cooperative networks of programmers. Drupal, Xoops, and Mambo open source content management systems are also developed by programmer networks that have fashioned them to be useful for the launching of online portals. Open source portals have the ability to be customized and localized in every language. Donnelly and Merrick (2003) identified this type of customization as *communitization*, of which there are two types—protected and public. *Protected communitization* enables "a design to be customized by an acknowledged community representative who adapts a design for a group of people based on their own expert knowledge of the characteristics, abilities and environment of the community they represent." *Public communitization* is the "active adaptation by anyone allowed within the community, in the same way that communities allow participation in forums and chat rooms" (p. 10).

A 2001 Pew Internet study on online communities in the United States indicated that people used the Internet "to intensify their connection to their local community ... arrange neighborhood gatherings, and petition local poli-

ticians" (p. 2). According to the Pew Internet Research Study, people who joined online communities reported that online communities lowered the barriers that prevented them from democratic participation. Flew (2002) also determined that community portals "reinvigorated [a] sense of community-building and citizen participation in public life" (p. 77).

Interactive online technology has redefined and changed the way society communicates: "The Internet provides virtual third places (different from home and work) that allow people to hang out and engage in activities with others" (Preece, Maloney-Krichmar, & Abras, 2003, p. 5). Preece et al. (2003) described how technologies such as *e-mail*, *chat rooms*, *blogs*, and *wikis* have changed the nature of online interactions and facilitated the exchange of ideas and dissemination of information. Such activities have empowered people and promoted development. The type of software used for these online communities is very crucial in the usability of the portal. Drupal, Xoops, and Mambo are CMSs that have the potential to integrate different online interactive features into a portal through the configuration of modules that are developed by programmer cooperatives and are posted online for use.

## Drupal, Xoops, and Mambo

The *scalability* of open source CMSs makes them suitable for customization and use in launching sustainable e-government systems. We examined the features of Drupal, Xoops, and Mambo by downloading and installing these software on a Sony VAIO PCV-RS620G desktop computer with a Windows XP operating system.

To be functional, most CMSs use a combination of a Web server, database, programming language, and operating system. Apache Web server is the most widely used Web server. Open source CMSs use either MySQL or PostgreSQL database systems. The programming languages that are often used are PHP, Perl, or Python, and the operating systems used are either GNU or LINUX. The combination of these components is sometimes called a LAMP platform. This enables open source CMSs to run on other operating systems (OSs) such as Windows, Mac OS, and Solaris.

In studying Drupal, Xoops, and Mambo, we documented the following steps that are worth noting for the deployment of an open source CMS portal. We did not do an online installation, but rather installed it on a standalone desktop computer. Since the computer used was not a server, we downloaded Easy PHP 1.7, which consisted of Apache Web server and MySQL open source database with a Web interface. EasyPHP provides a Web interface for MySQL called PHPPMyAdmin, which means there is no

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