Information Portals and Virtual Learning Communities: 
The Case of Dinos Virtuais Portal

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Abstract

This paper presents a study developed by the team of the Research Laboratory of the Information and the Communication Technology (LATEC / UFRJ - www.latec.ufrj.br) about Information Portals and Virtual Learning Communities, with emphasis on Content Management System (CMS), its potential and limitations, and its communication tools. We present a case study involving the construction and implementation of the Dinos Virtuais Portal, developed in partnership with the team of the National Museum of Paleontology.

Keywords: Information Portals, Virtual Communities, Content Management Systems, Communication Tools, Virtual Learning Environments.

Cyberculture and Network Society

The philosopher Pierre Lévy was one of the precursors of the thought about the social and cultural implications of the development of the New Technologies of the Information and of the Communication. According to Lévy (1999), "interactive and collective communication is the main attraction of cyberspace". In his books Technologies of Intelligence (2002) and Cyberculture (2000), Lévy discusses the new relationship to knowledge; new paradigms of today; the new professional
At agriculture times, wealth was land. At the industry time, it was the factories. Recently, information has taken the place of industrial capacity as the primary way of generating wealth DAVIS & Meyer, 2000.

For Lévy (2003) the new context of the Information and the Communication Technologies evidence the need for two fundamental reforms in education and training systems: the use of Distance Education Online and recognition of new ways of learning through social and professional experiences, and not only through the school and university traditional ways.

Lévy (2003) still states that "the collective and interactive communication is the main attraction of cyberspace." This happens because Internet is a tool for social development, which allows sharing memory, perception and imagination, resulting in collective learning and knowledge exchange among groups or virtual communities.

Cyberspace creates opportunities for communication entirely different from traditional media. Lévy (1999) proposes a typology of communication devices based on relationships between senders and receivers for better understanding the changes wrought by the Internet. These Lévy’s observations are fundamental by determining the guidelines of a really effective information architecture in websites.

Castells (2002) presents a wide analysis of the network society, noting not only the benefits but also challenges to be faced, highlighting the problem of loss of freedom and exclusion.

There is also a fear among many citizens about what this new society can bring in terms of employment, education, social protection and life forms. Some of these criticisms have an objective foundation in the deterioration of the natural environment, job insecurity or the growth of poverty and inequality in many areas. (CASTELLS, 2007).
Web 2.0 and Virtual Communities

The Web 2.0 term is used to describe the second generation of World Wide Web, a trend which reinforces the concept of information exchange and collaboration of the Internet surfers with websites and virtual services. It is about a more collaborative internet, based on platforms (softwares) that enable users to share information and have a more active and participatory performance. A classic example of this new model for the Web is Wikipedia, whose information is provided and edited by the own users.

A virtual community is an element of cyberspace, which exists only when people make changes and establish social bonds. The studies of virtual communities point to the understanding of how the New Technologies of the Information and the Communication (NTICs) are influencing and changing ways of social relationship.

There are criticisms to the idea of virtual communities and some explain their positions against saying that virtual communities are nothing more than traditional communities maintained by CMC (Welman, cited by Hamman, 1998). Other authors, however, state that the virtual community does not have a territory and therefore would not be a a strict sense community (WEINRECH, cited by JONES, 1997).

The means of communication change the space and time through their action as well as the relationships among the several parts of society, also changing the idea of community (McLuhan, 1964). Thus, the Computer-Mediated Communication (CMC) is also affecting society and influencing people's lives and notion of community. That is why many authors have chosen to define the new communities which have emerged within the CMC as "virtual communities".

Information Portals and Content Management Systems

Information Portals center general and specialized information, e-mail services, chat and relationship channels, virtual shopping, web search engines, among others, whose intention is to be the main access door to guide user's navigation.
The Information Portals are generally able to organize large collections of content from specific (thematic portals) or general themes, connecting people to information. Murray (2005) includes the definition of Information Portal the search tools and the public sites where there is no concern about the interaction and cooperation between users and experts.

The information portals and virtual communities reinforce the role of the Internet surfer as a producer of knowledge agent. Thus, we observe a transformation in the way of producing, distributing and consuming knowledge.

Content Management Systems (CMSs) are platforms or software for building Information Portals. These systems let you manage the process of publishing information as well as access of users and their permissions for access to platform functionalities, such as publishing and reviewing of content. The CMSs integrate the different actors of the process to different support steps to the collection, organization and information publication. A CMS is a "skeleton" of pre-programmed portal with basic devices of maintenance and management already readily available, which enables the creation, storage and administration of web content in a dynamically way, through user interface via Web and not a simple set of static HTML pages.

The traditional way of site production involves a team of diversified professionals, including designers and programmers and where authors and content editors usually depend on computer technicians to publish content, while managing the CMS management can be achieved by the authors and content publishers.

**Joomla Platform and the use of free software**

Joomla is a free software for content management which, besides allowing the lower costs of creating a web portal, includes a large number of contributors and developers around the world, constantly engaged in providing improvements to the platform and make it available for free to the user community.
With the multiplication of SGC and platforms based on open source software, a new model emerges: the "citizen media", where each user is encouraged to produce, distribute and recycle digital contents, without matter if they are literary, political protests, news reports, noise emissions, home movies, photos or music.

In Brazil, the advocate communities of free software have begun to be visible from the "International Forum of Free Software" in Porto Alegre in 2000. Currently, the adoption of ever-increasing scale of free software get into question the monopoly of large companies which produces software and reinforces the culture of sharing, the so-called 'copyleft culture' that is opposed to the own logic of the copyright.

The Dinos Virtuais Portal

The "Dinos Virtuais" Portal aims to support knowledge community, formed by young people and adults interested in learning about the world of paleontology and monitoring the disclosure work of the National Museum in this area. It is developed by the Research Laboratory of the Information and the Communication Technologies (LATEC / UFRJ), in partnership with the Paleoverterates Group of the the National Museum and can be seen at http://www.latecufrj.pro.br/museuvirtual/ .

The Dinos Virtual Portal (Figure 1) contains several sections such as news, interviews, publications, events etc. The section area of the teacher deserves prominence, which presents a selection of hints and guidelines for teachers who wish to approach the issue paleontology in his classes. For attending the public in general, about paleontology news, there is a place reserved for the presentation of several papers produced in Brazil and abroad, beyound information about discoveries and advances in researches about fossil and paleovertebrates.
Figure 1: Home Page of the Dinos Virtuais Portal
http://www.latec-ufrj.pro.br/museuvirtual/.

The horizontal top menu (figure 1) contains the static content of the portal: Presentation, Editorial, Contact Us and Newsletter, and a search tool. The main menu located on the left of the portal contains the main categories of information: news, exhibitions, interviews, Dinos from Brazil, Articles, publications, websites, comments and frequently asked questions.

Implantation of the portal

The implantation process of the portal involves four phases: a) installation of the database, b) creation of graphic design, c) creation and configuration of content categories, and d) production and publication of contents.

Classes of users

Joomla allows users to assign different levels of authorization for access the portal (Figure 2): 1) registered 2) author, 3) editor, 4) publisher, 5) Manager, 6)
administrator, and 7) super administrator. The first four groups have access only to the frontal area of the portal (front end), the others have also access to the administration area of the portal (backend).

Figure 2: Different classes of users.

Portal Administration

Through the frontal area of the portal it is possible to send news and edit them, whereas through the administration area you can publish and unpublish news, create new categories of information and authorize the registration of new users, besides to perform the most complex functions of the administration, such as application of layout, news blocks positions definition, etc.. Figure 3 shows the administration menu available in the backend of the portal and Figure 4 shows the news editing tools menu.
Design of interaction with the user

The Joomla platform offers some channels of communication and basic devices of interactivity that make the portal more attractive to the user. However, the strategy of user interaction among themselves and the users with management team of the portal must be result of careful planning, since the channels available to the public will automatically result in a workload demand increased of the team portal.

Accordingly, we divide the channels and interaction tools into two groups: a) those ones which result in automatic processing by the platform, and consequently do not occupy the team portal, but yet create the feeling of interactivity b) those ones that require team work with processing (selection, release and revision) of content.
In the first group (for automatic processing by the platform) includes the following tools: 1) poll, 2) newsletter, 3) breaking news, 4) most read news, and 5) portal search tool. In the second group (which require processing job by the team) includes the following tools: 1) contact us, 2) comments, 3) questions, 4) collaboration.

After performing login, the user will see a new menu, the "User Menu" with the following new buttons: a) send your question, b) send your comments and c) send their collaboration. Furthermore, calls in the respective sections, invite the user to participate by sending articles, news, websites and other collaborations.

It is also possible to create a third level of interaction, more elaborate, such as "ask the expert" section, where one or more experts interact with the public; besides create punctual campaigns with challenges to the public, which can be urged to participate in prizes exchange.

You can also set the discussion forums and chats, and integrate Joomla plataform with other platforms available on the web. The use of forums and chats depend on the installation of additional modules (plugins), since they are not available in the basic module of the platform.

**Final Considerations**

Joomla is a very easy too to use and that greatly facilitates the process of managing content, lowering significantly the costs of the project. However, activities such as installation of the database, updating software versions, server protection against attack and hackers virus, backup, plugins and new modules installation, and configuration of the layout, require computer specialist support, who can mean a significant expense.

Accordingly, the free software label can lead to misunderstanding of underestimating the costs involved in the project, because the costs are moved from the rental or software purchase to technical support maintenance of the platform. At the same time, the Joomla platform presents a number of bugs, small defects on functionality
of lay out, diagramming, creation and disabling of modules, that requires treatment by specialized professionals.

About the interaction of the communication tools, we observed that more important than the number and variety of tools offered by the platform, is the definition and adoption of creative and efficient strategies of interaction with the user. In other words, the available interaction tools by the portal seem to be enough to support different interaction strategies.

A very important point that should be taken into account when defining interaction strategies is the demand for care by the team of the portal, which arises when a communication channel is provided. It is better a minus communication channel in the portal than a channel without monitoring or appropriate response. Accordingly, the tools of interaction with automatic processing by the platform are very helpful to give the user the feeling of interactivity, without burdening the team beyond its capacity.

References


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