PERSONALIZED DISTRIBUTION OF INFORMATION FOR CAMPUS COMMUNITIES WITH CNEWS

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ABSTRACT

The paper deals with personalised distribution of information in and for campus communities. The nature of campus communities is reflected and the concept of user-centeredness in campus communities is introduced. Critical design-components on the news-engine cNews (CampusNews) are analyzed and explained. A closing outlook on estimated integration success factors and further development is given.

KEYWORDS

campus communities, information-sharing, user-centeredness, news-engine, digital campus

1. COMMUNITY: THE NATURE OF UNIVERSITY

The nature of university is community. According to W. von Humboldt University can be described as a community of individuals that participate in an academic dialogue (Humboldt, 1964). Universities of today – in contrary to Humboldt`s time – are typically large organisations with many individuals and differing roles in many (sub-) institutions. Indeed, if we speak of a campus community, there is not only one but the community consists of several small intertwining communities (Figure 1).

Figure 1. Campus, communities and relations
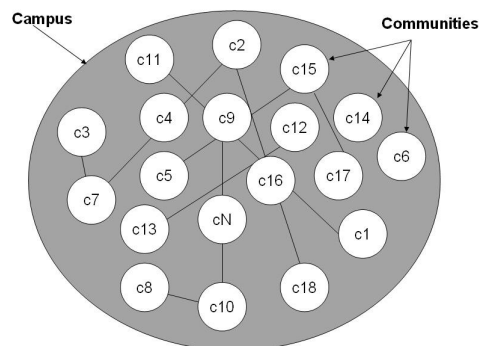
In an effort to provide students mobile access to the "digital campus", that has been set up in the context of a laptop-programme, University Duisburg-Essen build an infrastructure for the ubiquitous access to information relevant to students on campus during 2002-2003. In this context the need for a tool came up that supports the dissemination and sharing of information on campus with a web-based solution that can be

accessed by stationary and mobile devices on campus. All members of a university want to share information easily and quickly. It became clear that an personalized information system that supports communities on campus must be able to deliver selections of information from different (sub-) institutions to the user that can be tuned to the users interests. A mayor challenge was the fact that all members of the university have different roles in many different contexts.

There are two mayor types of information that are shared in communities on campus. At first there is organisational information (e.g. appointements) that help universities` members to organize their work, studies – their life on campus. The other type of information is subject-related. The information management system should enable and support both types of information and should be integrated in the existing websites. Actually there are university websites that mirror the real on-campus structure of university. As some authors underline (Moul 2002, Katz 2002) there has to be a paradigmatic shift from these mirrors to user-centric infrastructure. At University Duisburg-Essen we are on the way to create this infrastructure for the digital campus – a user-centered information management system should be the starting point for further development (Kerres, M. et al. 2003).

2. USER CENTERED COMMUNITY DESIGN IN UNIVERSITY

After reviewing different existing information-management products we decided to develop an new system. Most existing solutions did simply not match to the structure of university as "self-governing anarchies or adhocracies" (Katz & Gross 2002). Besides, the solution should be developed from the perspective of user-centeredness (Norman & Draper 1986). If we want to support the existing on-campus communities with new technology, we have to keep in mind that every member of this communities is an autonomous entity in the huge spiderweb we call campus community. What do we learn from this?

2.1 Multiple roles and relations

All members of a university have many relations and interests to/in different institutional entities of a university. Prof. Jane is interested in her colleagues` publications, the concerts from the music departement and next weeks` menu in the refectory. Student Jim wants to get informations on lectures by Prof. Jane, Prof. Peter, activities in the sports departement and his fraternity Alpha Phi. To get this a little more complicated we focus on the university members` roles. Prof. Jane is the head of departement C so that he can moderate "her" online community, while she has only rights to read the discussion of research group A (if this is public). Student Jim is team leader at the footbal team so that he can administrate this community, while he can only read results from the examination office. Every campus community member can have different roles in different institutional entities (see Figure 2). The second point is quite simple but nevertheless important.

Figure 2. User-centered information management in campus communities
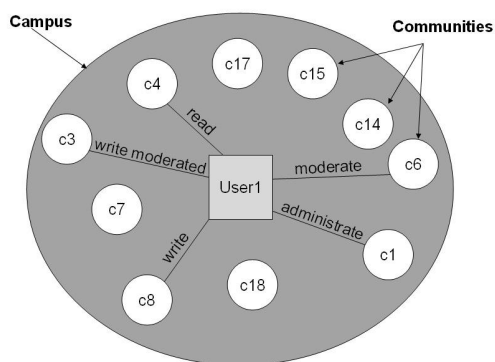
2.2 Pull – not push

Campus members choose which information from which institution is interesting for them. Some institutions will provide information for all interested individuals with open access, others will deliver

information only to approved members. In general, the system must be personalized and consist of a pull-structure to support participation in different communities on campus. The single user decides which community s/he belongs to and what kind of information s/he wants to receive. For this a technological framework is necessary that is able to depict the various levels of an organisational structure.

2.3 Independent Institutional Entities

Universities departements, schools, chairs and other units mostly work as highly independent institutional entities that build communities of their own. This fact has important consequences; every institutional entity should have the possibility to adminstrate its own communities. This is connected to members, categories, roles and (social) role names and sub-communities.

2.4 Export possibilities for heterogenous campus networks

Typically, there is no homogenous web environment that has been planned systematically from a centralized institution at universities. Besides, not every institution wants to work with a complex content or learning management system so that we have a great variety of smaller solutions that coexist and make for a digital campus. Therefore, an important design aspect was export possibilities for other applications and websites. We identified RSS (Rich Site Summary) as a powerful export format for campus communities. According to Harrsch "RSS syndication technology provides a bridge between isolated Web content and interested information consumers in multiple institutions, groups, and arenas of practice. By reaching out to a global audience, syndication transforms the 'lonely voice' of the Web page into an international dialogue of ongoing professional discourse" (Harrsch 2003). Due to the fact that RSS is nothing for the beginner of web-supported information-sharing activities, an export format was needed for still often used static HTML-pages. Departements, schools and central units should be empowered to publish news in the system without the need to rewrite the information (e.g. for their websites). Additionally, visitors of different websites on campus should be able to read their personalized news regarding the institution s/he "belongs" to.

3. CNEWS: CAMPUS-INFORMATION-SYSTEM

Based on these aspects of user-centered community design, we transferred these theoretical reflections of campus communities to a requirements specification. The result of this developement process is cNews (Campus-News) an information system for the distribution of personalized information for communities on campus.

3.1 Functionality

cNews is an news-engine for personalized spread of information in universities and other huge organisations. It serves as community-tool for the targeted delivery of news and information in complex organisations and can be integrated in other (learning-) applications. The system can be used and administrated through a web-based user-interface. Members of the system can subcribe to news from different institutions and categories. cNews uses an hierarchical institutional model with independent institutions. Institutions are independent entities in the system with an own administrator. Every institution can define their own categories and (social) roles. These social roles are not connected to special rights, the administrator of an institution can assign rights (read, write moderated, write, administrate) to members who subscribed to the institution. News can be assigned public or private so that only members can view them after authentification. News subscription can be done upon request or through self-subscription (with or without password). Members can write, edit, moderate and read news through an easy-to-use web interface. Authors can change the following settings of every news: category, priority, language, can be read from (public, students, autors, moderators, admins), publishing date, is valid (up to 100 days), appointement (yes

or not). Appointements can be integrated in Microsoft Outlook/Netscape Messenger on click. Every institution has its own news-channel with different export possibilities.

Figure 3. Screenshot of the system

The first export possibility is email; members can chose if they want to get every news directly by mail or if they want a dailiy or weekly digest (html or plain text). Besides members of cNews can read their News trough their personal newspage in the system after authentification. Every institution has automatically an own RSS-Channel so that these channels can be read through an external RSS-Reader (e.g. Feedreader) or through the integration of the channel in other websites. Besides there are other ways to integrate a cNews-Channel in external (learning-) applications. These channels can be integrated through a special ASP- or PHP-Code-Snippet. Additionally you have the possibility to read your personal news with a mobile device through a special export page (e.g. for a PDA). cNews is adminstrated by one super-user (or super admin) who can change the system-language, the ldap-server settings and other configurations. Besides the super-admin is the only user who can delete institutions completely. The institutions` admin can only disable instituitions in the case of misuse of the system.

3.2 Technotes

cNews is based on PHP and free Database MySQL. The menu is created through PHPLayers menu which is distributed through LGPL. The system supports LDAP and creates RSS-2.0-Feeds (compatible to XML 1.0 specification). The design of the system can be changed through CSS (Cascading style sheets). Appointments are in Outlook/Netscape compatible format. The system can be run under Linux and Apache Webserver or Windows and IIS (Internet Information Server). cNews is bilingual (german and english) at the moment but more languages can be added through external lists. cNews will be licensed according to GNU GPL. Installation is easy through an online-installation-script and it can be used on a typical hosting-server with php/MySQL-support.

4. DISSEMINATION OF A COMMUNITY-FRAMEWORK

With cNews we developed a news-engine that fits to the structure of university. As next steps we have to connect the existing communities with the new virtual possibilities. The system can be used for different usage-scenarios.

- News-Engine: Every institutional entity can integrate their own news-channels in their existing websites.
- Information-Sharing for project groups: Scientific workgroups can add a subinstituion for subject-related information-sharing.
- Information-sharing for seminars: Accompanying information-sharing channels for seminars.

- University-wide appointements channel for different activities on campus
- Information/Discussion channels for eLearning-activities and applications
- Targeted information delivery with RSS-Syndication

To integrate these scenarios we have to do internal marketing. For internal marketing some best-practice-examples will be published on our e-Competence-Portal, a site that is aiming at lecturers at our university who want to use e-Learning solutions for blended-learning in university. The next important development step for the software would be a profiling system so that the users can see the (social) profile of the other users (Kim 2000, p. 76). A "desktop-publishing-system" like wbloggar as it is used for weblogs would simplify the publication process for members. Due to the fact that cNews will be published under GNU GPL, we hope that interested developers will develop these "open" tasks for cNews.

In general a technological system for information sharing must not constrain the existing communities on campus. Because of the structure of university and ist independent institutions we cannot influence the real communities on campus – we can only provide a framework for these communities to widen their intercation to web-based activities. In this context it will be interesting, if cNews will support the building of communities that would have not been built without technological support.

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