

A Web 2.0 Enabled Content Management System for Rural Youth Photographers: Social Computing Supporting Community Empowerment

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Introduction

Twenty-two youth aged 11 to 16 from two rural east Tennessee counties learned 35mm film, darkroom, and digital photography techniques in the recently completed first two phases of a project called *Growing Tennessee: Rural Youth Cultivate Common Ground*. About half of the youth are children of migrant and seasonal farm worker families and other half are from rural Appalachian families. The project was conceived and started by Telamon Corporation's project development coordinator using Head Start funds, private foundation funding, and a number of volunteers.

The Growing Tennessee project seeks to bring youth from different cultural backgrounds together in a shared experience that can help them better understand another culture as well as identify the similarities shared by the two cultures. The project also provides a creative educational outlet for rural youth while promoting cross-cultural awareness, developing self-esteem, improving aesthetic, media, and technical literacy, improving critical-thinking skills, and encouraging youth to continue their education past high school.

In late 2006, the Telamon project development coordinator and a faculty member from the University of Tennessee began discussing how the University's School of Information Sciences could support the Growing Tennessee project by using information and communications technologies (ICTs). Using an available open source content management system (Drupal) as a starting point, we talked about the opportunities to support ICT mediated social interaction (comments, social tagging, blogging, etc.) and

direct control of the Web content by the project development coordinator, photography instructors, as well as the youth photographers.

Theoretical Perspectives

Community informatics is the study and practice of enabling communities with information and communications technologies in order to effect positive change contribute to community building. Community informatics researchers typically partner with community groups to promote social or environmental justice, rectify unjust power relationships, or support community-led development and empowerment. The focus on organizing, creating, and utilizing information and applying appropriate ICTs by community members as they achieve their goals distinguishes community informatics from other traditions of community engagement, such as education and social work (A. P. Bishop & Bruce, 2005; Gurstein, 2000; Mehra, 2004).

The term community informatics has also been associated with traditional, and often paternalistic, outreach projects involving deployment of technology into neighborhoods (e.g., the establishment of telecenters). Such projects fail to take the needs, priorities and aspirations of the community members into account (Stoecker, 2005b): they fail to recognize what Rob Kling called the web of computing (Kling & Scacchi, 1982).

Community informatics projects often utilize participatory methods that trace their roots to popular education and folk schools (Adams, 1975; Freire, 1970). In these traditions, community members are full partners in designing and executing research and development projects, from the identification of goals and objectives, methods for implementation and evaluation, and reporting to the community and other audiences. The Growing Tennessee participatory content management project applies a project-based approach, connecting research and development with action using an iterative cycle of diagnosis, prescription, implementation, and evaluation (Stoecker, 2005a).

Design scenarios (Carroll, 2000) were created from notes taken from face-to-face meetings held at the outset of the design and development of the participatory CMS between three principal team members and subsequent e-mail exchanges. Design scenarios are attractive when working with a team with a majority of non-programmers / non-engineers because scenarios can be expressed in words, and do not require use or mastery of many common formal requirements gathering methodologies. Design scenarios are understood to be heuristic and incomplete, yet past use research and use shows that they can be an effective means of expressing desired system behavior.

Provisional Implications and Lessons

The objective for the initial release of the Growing Tennessee CMS was to be ready for the opening of the show held at the Art Gallery of Knoxville in July and August 2007. Specific capabilities included providing a simple site for the display of youth photographs along with descriptive text, other content related to the project, such as press reports, and information about past project events. Appropriate site access controls were also required

to distinguish access by the general public from access by content managers and site administrators. Providing each youth photographer with the ability to manage his or her own area of the site was identified as a goal, but implementation was understood to be a couple of iterations away. This experiment in participatory development of a community-based content management system has confirmed the potential for use of this approach in participatory community-based projects, yet questions about the generalizability and scalability of this approach remain. Several lessons and implications from our limited experiences are discussed below.

System design can be expressed and communicated informally. Many large-scale free / open source software development projects rely on distributed and informal methods, but they also depend upon well-established and widely-known software engineering processes, such as software problem management systems, version control systems, and bug reports (Sandusky & Gasser, 2005). In community-based ICT projects, information technology experts cannot depend upon community members' knowing these conventions. In this project, notes taken during face-to-face meetings and telephone calls and e-mail exchanges have provided the data used to create system use scenarios that guided the choices made by system administrators as they configured the participatory CMS.

System development for a community-based information CMS can be geographically distributed. While face to face interaction between the core CMS participants was essential in the participants' learning about each other and developing trusting relationships, during the period when most of the system development for the initial participatory CMS release took place, the program development director and graphic designer were located in Tennessee, the systems administrator was in Illinois, and the gallery curators were in Massachusetts. Change requests were distributed and discussed via e-mail, and project members used instant messaging during periods when multiple people were making simultaneous changes.

Technologists can successfully cede control over structural and content to the community. It is essential that the community has a significant degree of control of the site in order for the technology to be characterized as participatory. There is some risk of the introduction of inconsistencies in different parts of the site, and it remains to be seen if inconsistencies become a significant problem (see scalability, below).

The scalability of this approach is unknown. The experiences reported here involve a small group of three people modifying the CMS. Future plans, however, call for providing access to a portion of the site to each of the youth photographers, the photo instructors, and School of Information Sciences graduate students. As the number of participants who have the ability to effect changes on the site increases, how will the consistency and integrity of the site be affected?

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