PrairieKNOW: A Tool to Assist the Study, Creation, and Growth of Community Networks

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1 Introduction

Community-wide networks are social systems that link local residents and organizations, allowing them to communicate, share resources, and participate in efforts to address community needs and build upon existing social and cultural capital. In Champaign-Urbana, the critical needs of low-income residents—typically African-Americans, single parents, and seniors--include affordable health care and housing, crime prevention, family support and youth development. But the contribution of community-wide networking to problem-solving is hampered because information regarding beneficial social services is fragmented, and community organizations find it difficult to share resources and coordinate their work (Dewdney and Harris, 1992; Venkatesb, 1997). Computing and communications technologies offer the potential to support traditional community-wide networks by facilitating more extensive communication and coordination related to problem-solving efforts and the delivery of social services. In particular, computer-based community networks (CNs) are not-for-profit institutions that typically provide online community information, Internet services, and user support to local residents and organizations (Beamish, 1995; Schuler, 1996).

2 Prairienet: Champaign-Urbana's Community Network

The city of Champaign-Urbana was recently ranked by Newsweek magazine (November 9, 1998, http://www.newsweek.com/nw-srv/19_98b/printed/us/bz/bz0419_1.htm) as one of the ten most wired communities in the world. With support from the Telecommunications and

Information Infrastructure Assistance Program (TIIAP) in the U.S. Department of Commerce it is served by a nationally recognized computer-based community network (CN) called Prairienet (http://www.prairienet.org). Prairienet develops and consolidates community information in digital formats, provides free or low-cost access to Internet services such as electronic mail and web browsing, and offers significant user outreach, training and support. Unfortunately, this technology bonanza can also further isolate precisely those people and organizations who are at the heart of local development efforts: those without the resources. expertise, motivation and experience to access and make effective use of local information infrastructure (Benton Foundation, 1998; McConnaughey and Lader, 1998; Novak and Hoffman, 1998; Schn, Sanyal, and Mitchell, 1999). The pervasiveness of electronic communication media in communities makes it increasingly difficult for individuals and organizations who lack access to networked information services to discern their community's knowledge networks. Specifically, it is increasingly difficult for individuals and organizations to accurately determine: "Who knows who?" and "Who knows who knows who?" "Who has what?" and "Who knows who has what?" "Who is addressing which community problems?" and "Who knows who is addressing which problems?" This difficulty presents a serious barrier to coordination and collaboration in community development efforts across local organizations.

CNs have been heralded as promising partners in local efforts aimed at both community development and bridging the digital divide that splits use of computer resources along socioeconomic lines (Chapman and Rhodes, 1997; Lillie, 1998; Virnoche, 1998). Information on Prairienet is organized (as it is in most CNs) following a city metaphor with information and organizations grouped into general categories, such as Health or Recreation. While a great deal of valuable local information is provided on Prairienet, the online information areas created by individuals and organizations do not typically include the kind of information that would provide answers to the questions about local problems and resources posed above. This arrangement does not optimally support local problem-solving and resource-sharing across organizations.

3 PrairieKNOW: A Tool to Support Prairienet

As part of the Community Networking Initiative (http:l/www.prairienet.org/cni), we are piloting an approach that uses networked information services to enhance community-wide collaboration. Our approach is derived from the concept of asset mapping, which is based on the assumption that community problems can be addressed from the inside out, if people know who has what resources (including skills, time, supplies, facilities, and financial

assets) and service interests, and who has collaborated with whom in the past (Kretzmann and McKnight, 1993). Our pilot project is intended to develop more effective ways of identifying and mobilizing those sharable assets, which are currently hidden within organizations, and missing from Prairienet itself. With initial support from the National Science Foundation (ECS-9422730) we have developed PrairieKNOW (Prairie Knowledge Networks On the Web; http://iknow.spcomm.uiuc.edu/praineknow), to help enhance an organization's ability to access the community's knowledge network. PrairieKNOW, which represents a new generation of software called "communityware," makes visible the community's tacit social and knowledge networks (Contractor, Zink, and Chan, 1997; http://www.spcomm.uiuc.edu:1000/contractor/iknowtour.ppt).

PrairieKNOW represents an innovative application that complements the existing tools and resources currently found on Prairienet and most other CNs. We have collected asset records from about thirty community-based organizations in the local region. The asset records contain fields for, among other things: major programs and services offered; target audiences; community organizations worked with in the past; past community development projects; resources available to share; resources needed; and contact information. These asset records have been loaded into PrairieKNOW. Within PrairieKNOW, a user can visually examine the existing network relations among the various organizations in the community. For instance they can identify those organizations that are directly and indirectly connected to one another through various community partnerships and projects. They can also visually examine the network of organizations that can offer or share a need for similar resources. More significantly, PrairieKNOW provides organization in the community to visually match the resources they can offer with those organizations that may have a need for those resources.

These asset records have also been mounted directly on Prairienet in the form of simple wehpages (http://www.prairienet.org/assets/). As part of our pilot project, we are exploring the strengths and weaknesses of these two technological platforms. One offers a high tech solution that allows sophisticated search, analysis, and display, hut will require more advanced skills and equipment to use. The other offers a low tech solution with minimal functionality hut greater ease of use. Eventually we hope to develop an integrated solution that will make the power of PrairieKNOW readily available through Prairienet to all community members.

3.1 User reactions to communityware solutions

In meetings attended by representatives of local community organizations, we have introduced the asset mapping concept, collected asset records, and obtained direct feedback from those who are both the creators and users of the

local asset map we are developing. Organizations attending these meetings include the Urban League of Champaign County, Family Services, Senior Services, and **A** Woman's Place (which offers temporary shelter and social services to women and their children who are in need of emergency aid). Those attending the meetings were enthusiastic about the potential of asset mapping to facilitate collaborations across community institutions and felt that such an application would indeed address an important information and communication need. At one meeting, a representative from one organization noted they often have leftover food that goes to waste because they have no means to discover, quickly and easily, what other organizations might be able to use it. The representative of another organization quickly noted that they could use the leftovers, and the two people exchanged phone numbers so that, in the future, they could contact each other when food was available. This incident demonstrates both the potential for cross-institutional resource sharing and the need for improved communication mechanisms to support it. Meeting participants also identified important issues related to the adoption of online asset mapping. Concerns were raised about 1) the inability of community organizations who lacked computers and technical skills to participate in the system; **2)** the demands associated with maintaining the online asset record repository; and **3)** the need to keep private that information which organizations did not want to make publicly available.

3.2   Potential of PrairieKNOW to support the community

There are at least four ways in which PrairieKNOW can assist creating, sustaining, and growing knowledge networks within the community. First, it provides participating organizations with a set of visual tools to inspect, identify, and critically analyze the existing and potential collaborations and partnerships among the local government and non-profit. and health organizations in the community. Second, it offers participating organizations the ability to track over time the growth characteristics of the community network (in terms of the size of the network, the density of inter-connections, and the content areas). Thud, it provides participating organizations in the community the ability to efficiently and effectively identify other organizations represented on Prairienet who offer specific complementary or similar services. This is especially beneficial for organizations assembling alliances to address specific project concerns or funding opportunities. Fourth, it provides citizens in the community the ability to identify organizations on Prairienet who offer specific services.

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