Another Aspect of Community Networks

Najib Saylani
najib.saylani@hofstra.edu

Deb Sledgianowski

Follow this and additional works at: http://aisel.aisnet.org/sais2006

Recommended Citation
http://aisel.aisnet.org/sais2006/46
ANOTHER ASPECT OF COMMUNITY NETWORKS

Najib Saylani
Hofstra University
najib.saylani@hofstra.edu

Deb Sledgianowski
Hofstra University
deb.sledgianowski@hofstra.edu

Abstract

In this paper we propose the creation of a portal for Community Networks. This portal, in the traditional context of a Community Network, would support the social interaction between the members of a community. Additionally, this portal would also have many features that can be used in times of crisis or natural disaster to help in communication and coordination between members of the communities, local authorities and various other federal and state entities. This portal should, in real time, help disseminate information about the plans, programs and outcomes of evacuations and at the same time help maintain a certain level of efficiency in the supply chain of the affected areas.

Keywords: Community Network, Community Computing, Disaster Preparedness, Supply Chain

Introduction

We all remember the chaos that followed the passage of Hurricane Katrina through the Gulf region. It is now well documented that failure happened at every stage of this disaster - failure to prepare adequately before the hurricane landed on shores, failure to properly coordinate the evacuation of thousands of residents, and failure of the communication process during the hurricane and after it passed. Proposal after proposal were suggested to address concerns and problems experienced by those communities at every stage of the disaster. Our proposal addresses an elementary but very important part in the process of preparation for a disaster evacuation of people and their return to their communities. We propose the creation of a portal for Community Networks. Community Network is defined as “a computer-based system or set of systems designed to meet the social and economic needs of a spatially defined community of individuals” (Tonn, Zambrano, & Moore, 2001).

Also, it is a fact that a disaster of the magnitude of Hurricane Katrina will disrupt the most robust supply chain but a lesson should be learned to minimize the risk of disconnecting too many links in the same chain. The infrastructure supporting the supply chain was badly damaged by the lack of efficient evacuation, and poor coordination made the matter worse. At this time, evacuation via roads and rail ways can be made more efficient with better communication and coordination. While various technologies were used during the Hurricane Katrina relief efforts for emergency and rescue, distribution of food, allocation of shelters, and the preparing for the return of evacuees, it seems those same technologies were not working in harmony. The media and government tended to blame people and administrations. The reality of it is the systems whose processes are supported by these technologies cannot interface with each other at all or fail when coordination must be done in real time.

Added to all the concerns mentioned so far are those associated with the process of policing. The disaster in the Gulf presented us with a prime example of failure in policing at a time of crisis. Community policing is not an easy task but must be the subject of a critical study that takes into account individual communities and their personal needs (Wells, Falcone, & Rabe-Hemp, 2003). While we are in the process of preparing a system of Community Networks we need to note along the way that every community should be evaluated and have its community information assessed in the light of its personal experiences (O’Neil, 2002). In our case, the proposed system, which is a portal, must bring together, via the same interfaces, resources that can be used not only to sustain the development and improvement of a community during times of peace and stability- characteristics that are not the main focus of this...
paper, but can also be used to support collaboration, coordination and survival for the members of a given community during time of crisis or a disaster.

Community Network Environment and the Proposed System

Before continuing, we should acknowledge the fact that all necessary IT tools and other technologies already exist. This is an attempt to build a single interface to interconnect systems that are heterogeneous, for the most part, that were developed to handle different services. We need to start from a traditional Community Network based system and expand it to maintain connectivity at the local community while adding more services and enabling other systems to connect either permanently or temporarily such as in time of crisis. The Internet, as we know, is the foundation and the catalyst of this type of environment.

Community networking has been tried with success in many communities in different parts of the U.S. and throughout the world (O’Neil, 2002). The need for the system is mainly socio-economic. It helps by virtually bridging between a given local government and its citizens by offering online services (Taxations and Finance, DMV, Healthcare, Education), electronic commerce, and participation in a given political process. We should be aware here that Community Networks do not involve computer and Internet communication only (Cowan, Mayfield, Tompa & Gaspani, 1998). The use of other telecommunication technologies such as mobile telephones and instant messaging are also used. Usually a local club or association would take the initiative of enabling its members not only to chat and post on forums associated with its activities in the community but also to schedule meetings online to discuss issues of concern and invite local elected officials, members of the authority, and others to go online and participate and contribute to the discussion. All issues can be discussed; from issues on education in a local school, to new construction, the establishment of a new business, traffic, cost of living, noise, pollution, anything you can think of. Although it was not the main focus in the development of these different technologies, these technologies can empower Community Networks by allowing them to reach a large number of community members, bringing elected officials closer to the people, highlighting important issues, and avoiding the constraints associated with trying to bring all concerned to an actual physical meeting (Beamish, 1995).

As Tonn, Zambrano, and Moore (2001) concluded, the majority of existing Community Networks are simple web sites with links to other sites of interest to members and where members belong to a forum where they post their feedback and discuss issues. In many cases the members complement this with chat, short message service, and telephone.

We propose a model whose development to a full working system would be specific to a given community’s needs. The advances in community computing would help in this endeavor from evaluation and analysis of community needs to developing the system, implementing it, and more importantly, maintaining it and expanding it as needs arise. While research has shown that most members of a Community Network are educated, own one or more computers, and have broadband connection (Kurzeme, 1996), they lack IT skills and community computing approaches to better their existing system which, in most cases is a loose set of existing technologies that are not designed to work together in the most efficient way. This environment may not be properly maintained and may not adequately sustain the current and future needs of its members. We believe that the creation of a simple application that interfaces every existing technology that members of the Community Network use is very important. We opted for a web based application because we think this would take advantage of the universal accessibility possibility on the net (Rosenbaum, 1998). For the majority of people with access to a computer and the Internet at their home, installing the application would enable them to be added to an existing Community Network. Community Technology Centers such as those in local libraries and that are open to the public can also enable each of their connected computers to be part of the whole network under a standard environment by installing the same application. The application can be transformed to a true portal where users can access everything they use from a single interface. Again the support for a Community Network comes from a heterogeneous environment of not only technologies and applications but from the way each individual sets up his or her home computing environment. For example, the bookmarks in the web browser of each individual can give you an idea how different the general needs are of each member of the Community Network (O’Neil, 2002). The complexity that current users’ computing environments may exhibit at a micro level grows exponentially at the macro level, where these same members must get together to solve a community problem. Collaboration via this environment can be difficult due to extra constraints that can cause slow adaptation. In the following section, we outline all features of this portal and highlight the most important characteristics; again in the context of a Community Network portal with services toward a better disaster preparedness with coordination of all processes during a disaster from evacuation, to traffic control, to the supply chain.
Overview of the Portal System

• A standard interface common to all members of the Community Network. The interface must offer the same layout and functionality to everyone using it.

• Automatic access to all needed add-ins such as, document viewers, audio and video decoders, and to all general utility programs which are common and exist with all web browsers.

• Access via a menu to widely used chat programs (i.e. Yahoo, AOL, MSN messengers) and support for voice and telephony.

• Access to different sources of weather reports with a focus on one or more zip codes local to the community with the ability to download weather reports and display interactive maps of the progress of a hurricane.

• Compilation of news from different sources. The news must be pertinent to the community. This requires the collaboration of local and other news broadcasting entities. News reports can be downloaded automatically via the portal to all users in the concerned Community Network.

• Support for mobile computing. Although this should not be a problem as connectivity is established via wireless services, it may be possible to add global positioning system (GPS) technology and also enable connectivity directly via satellite. This is critical especially when disaster has already struck and traditional wired communication channels are down or disrupted.

• The ability to manage user locations via GPS. Many cellular phones, personal digital assistants, and automobiles already have this capability. GPS will be a very helpful tool in coordinating an evacuation of the community members and would allow interaction in real time.

• The option of using radio frequency identification technology together with GPS to not only keeps track of a member but also to identify the member. This technology can be useful for people with disabilities, patients of a nursing home (in the aftermath of Hurricane Katrina many patients were left to perish when their caregivers had to evacuate without them), and for pets and other animals. This option will make it possible to track and bring together people who may be separated during an evacuation.

• The ability to micro-manage a supply chain at the community level. We are all aware of the fact that in the days before a hurricane is announced almost all members of a community will rush to local supermarkets and retail chains to buy supplies and in most cases deplete the local supply source. Collaboration between the members of the communities, retailers, and suppliers is crucial.

• Like any other application with networking capabilities, security is an issue. In this case, the same security tools in use by the community member when browsing the Internet, chatting, and downloading or uploading files would suffice.

• Storage in these applications is critical. We opted for a distributed storage scheme where each computer in the network stores information. A sought after feature would be to allow for automatic updates of all information in all system areas of a network. We assume that in time of crisis the network would expand to include additional nodes owned by local authoritys, local industries, retails and other federal entities.

• The application must have its own bookmarks (call them “community bookmarks”) that can be populated and managed independently of the browser installed in the system. In this case, the bookmark may contain links that are within the context of the portal. It should be possible to distribute and exchange bookmarks across the whole network in order to maintain consistency.

• There are many tools available to us to start a blogging site and we think that blogging is a very important aspect of the system. One drawback of this is possible information overload. Just imagine hundreds of members of the community all blogging together and expecting everyone in and out of the community to listen to them! There should be a feature by which all messages and articles are available to everyone and the most critical ones are to be broadcasted to everyone in the community. Otherwise, chaos may follow.

• Finally, the interface itself looks like any other window application with a main menu, drop-down submenus, printing, saving, bookmarking, tools for accessibility, security, and links to other applications.
Conclusion

We believe that the development of the proposed Community Network portal is very important. This portal can be a useful tool in the hands of every member of a Community Network. It can help with day-to-day participation in the process of citizen empowerment. We think it can be a very strategic and efficient approach in disaster preparedness for evacuation planning, execution of those plans, and for managing an ongoing rescue effort. The fact that it would interface between existing systems operated by the local government and other federal entities can make it useful as a tool to coordinate all processes and tasks during a disaster. We acknowledge the fact that failure of communication channels would imply the partial failure of the portal, but we believe that even a partial service, even at the peripheries of the disaster area, can be helpful.

References


