Network Communities, Community Networks

John M. Carroll and Mary Beth Rosson
Computer Science Department
Center for Human-Computer Interaction
Virginia Tech
Blacksburg, VA 24061, USA
Phone: 540-231-6931; E-mail: {carroll, rosson}@cs.vt.edu

ABSTRACT

A network community is a group of people whose communication and collaboration over networks strengthens and facilitates their shared identity and goals. A community network is a special case of a network community in which a physical community coextends with the network community. This tutorial will survey and analyze network communities and community networks focusing on how they may impact human activities and institutions.

KEYWORDS: network communities, community networks

INTRODUCTION

A network community is a group of people whose communication and collaboration over networks strengthens and facilitates their shared identity and goals. The emergence of network communities is a striking example of what might be called grassroots technology development. Visions and possibilities for network communities are being discussed throughout the computer industry, and throughout society.

A community network is a special case of a network community in which a physical community coextends with the network community. Some observers (for example, Schuler, 1996) have argued that community networks represents the most vital contemporary manifestation of strong democracy. This tutorial will survey and analyze network communities and community networks focusing on how they may impact human activities and institutions.

The tutorial will have four objectives: First, we will provide an overall definition and analysis of the concept of community. We will define and differentiate various network infrastructures and mechanisms. From this, participants will understand the design space of network communities, the features and contrasts that differentiate various infrastructures and mechanisms.

Second, we will provide a set of example network communities utilizing different types of communication mechanisms and various combinations of mechanisms. We will provide a survey of example communities, as well as "eyes-on" demonstration experience. These will be examples of purposes and uses for the various networking technologies. From this, participants will understand the practical uses that are being explored with these technologies.

A focus of the tutorial will be community networks, and a set of applications and services developed within the Blacksburg Electronic Village. We will summarize the state of research on network communities, surveying about a dozen of the most well-known and historically significant community networks. We will discuss the emergence of the Blacksburg Electronic Village and its current use. We will describe and analyze the development and use of Web-pages and other mechanisms by the town government, community groups, and local businesses. We will also discuss relatively novel network applications: a community history system, a Web-based community MOO, a town nostalgia archive.

Finally, we will provide a general analysis of where things may be going with respect to particular networking infrastructures and applications. We will emphasize what could be done now by interested persons. We will provide a comprehensive reference list. From this, participants will have a set of issues and possibilities with which to interrogate, evaluate and participate in further networking research and development .

Network communities are an important *tool* for CHI professionals. Indeed, SIGCHI is a network community. The listserv "announcements.chi" (and related listservs) plays an important role in the communication that constitutes the current CHI community. CHI professionals are increasingly expected to be able to make use of e-mail, listservs, gopher, world-wide web browsers, MUDs and MOOs, electronic collaboration rooms, Internet Relay Chat, and newsgroups in their routine work.

Network communities are also an important *topic area* for CHI research. Recently, the adoption and impact of network communities has far outstripped the research and expertise of the CHI community: The striking example of course is the emergence of the World-Wide Web (WWW) and Web browsers. The impact of WWW technology is a usability breakthrough case study, but one that had no connection whatsoever to the CHI community. Indeed, there still has been surprisingly little reflection of the WWW "revolution" on the CHI Conference Program.

It's important to inject more awareness and more basic skill in network communities into the CHI community to ensure that CHI professionals can participate fully in the world of network community technologies, and that the CHI community can play more of a leadership role in driving the future development and application of these technologies.

But more generally, this topic is one of relatively broad social interest and significance. We have found that many of the people who have taken the tutorial before did so for reasons of general interest.

TUTORIAL CONTENT

What is a community?

We will define "community" — differentiating the concept of community and the concept of society. We will discuss what makes a community successful, why communities matter to people, and, broadly, how technology influences communities (including how it undermines them).

Network mechanisms

We will survey the network technologies (mechanisms) used to build network communities and explore the relationship between these and the social/psychological aspects of community. We will present a somewhat formal framework for classifying network mechanisms, based on features such as the extent to which the mechanism supports a sense of place (such as MUDs and media spaces) and a sense of group (newsgroups).

We will survey email, listservs, conferencing systems, newsgroups, chat, MUD/MOOs and video conferencing. The purpose of this survey is to even the participants' background knowledge in preparation for the subsequent discussion of our classification framework and to support subsequent discussion of network community applications. We will highlight several contrasts among mechanisms for network communities: persistent/ephemeral, copied/shared, same/different time, same/different place, automatic/manual receipt, explicit/implicit referent, and a variety of properties: editability, roles, phases, discourse acts, space, identity, media.

Network community applications

In this portion of the tutorial, we will focus on how the basic networking mechanisms are used to support activities and purposes of users. We will survey some historically significant examples (Lambda MOO, MediaSpace), but we will focus on a network community project of our own (the Web Storybase) which has been extensively documented and analyzed. We will develop and use a framework for describing communities, involving the facets of purpose, membership, norms and regulation, core and periphery, human development, and defining episodes.

Community Networks

We will consider community networks as a special, strong case of network communities in which the community is already *there*, in a shared physical space. Thus, many of the parameters of purpose, membership, norms and regulation, core and periphery, human development, and defining episodes are already set. We will survey Berkeley Community Memory, the WELL, Cleveland Free Net, Big Sky Telegraph, Santa Monica PEN, Campbell River, and Wellington Free Space. This is to set historical context and to indicate the variety of motivations and models that have existed and that exist now. We will focus on the Blacksburg Electronic Village, since we have special knowledge of this community network and its constituent projects (Carroll & Rosson, 1996).

We will describe the history and the current variety of applications in and use within the Blacksburg Electronic Village, as well as some of the problems and challenges have occurred historically and that exist now. We will focus on some relatively novel applications: Nostalgia (a Web-based forum on community history designed and managed by the senior citizens), HistoryBase (a Web-based forum on the Blacksburg Electronic Village designed to make the project visible to groups throughout the world wanting to create community networks, and to allow any member of the Blacksburg Electronic Village to contribute to the history), and MOOsburg (a multi-user domain in which the modeled space is isomorphic to the town of Blacksburg, and in which all members had programming privileges), the Virtual School (a computer-intensive group of four middle school physical science and high school physics classrooms supported by synchronous, World-Wide Web-based collaboration including joint manipulation of shared simulations).

We will also discuss general issues regarding the establishment and development of community networks (funding, participation, entrepreneurial activity, subgroup roles, evaluation, sustainability).

Challenges and Directions

In the final portion of the tutorial, we will discuss opinions and indications about where network communities are going. We will summarize some of the positive future visions originating in the industry and federal government, and some of the more skeptical, even negative, future visions. We provide a wind-up exercise including a set of future scenarios. We will direct the discussion towards developing a group consensus analysis and agenda for further action.

REFERENCES

Carroll, J.M. & Rosson, M.B. 1996. Developing the Blacksburg Electronic Village. *Communications of the ACM, 39(12),* 69-74.

Schuler, D. (1996). *New Community networks.* Reading, MA: Addison-Wesley.