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SUPPORTING COMMUNITY AND BUILDING SOCIAL CAPITAL

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THE TERRORIST ATTACKS ON THE WORLD TRADE CENTER AND THE PENTAGON LAST SEPTEMBER SHOCKED US ALL. MANY REACHED FOR THE TELEPHONE TO CONTACT LOVED ONES AND WATCHED TV OR LISTENED TO THE RADIO FOR NEWS IN THE DAYS DIRECTLY FOLLOWING THE ATTACKS. OTHERS, HOWEVER, SOUGHT SUPPORT AND EXCHANGED INFORMATION VIA ONLINE COMMUNITIES. IN FACT, SOME 30 MILLION AMERICANS—ABOUT ONE-THIRD OF ALL U.S. INTERNET USERS—TURNED TO EMAIL, MAILING LISTS, INSTANT MESSAGING, CHAT ROOMS, AND THREADED DISCUSSION SYSTEMS [1]. THEY WROTE DETAILED EYEWITNESS DESCRIPTIONS AND TENDER WORDS OF COMFORT. THEY ENGAGED IN SOUL-SEARCHING DEBATE ABOUT WHY THESE EVENTS OCCURRED, WHAT RESPONSE WAS APPROPRIATE, AND WHAT SHOULD BE DONE TO AVERT FUTURE ATROCITIES.

The empathy and shared reflection that brought people together in physical communities and via technology across barriers of time, distance, and often culture, was revitalizing in the horror of these events. Communication and a spirit of collaboration can help strengthen any community online and offline. Furthermore, it can touch every aspect of business, education, health care, entertainment, and family life in good times as well as bad.

The glue that holds communities and other social networks together is called “social capital.” A key ingredient for developing social capital is trust. Social capital is the social equivalent of financial capital. Like financial capital, social capital is a resource that helps sustain community. Robert Putnam, author of the acclaimed book *Bowling Alone: The Collapse and Revival of American Community* [4], asserts that social capital

encourages collaboration and cooperation between members of groups for their mutual benefit. Consequently, life in communities with a rich supply of social capital is easier than in communities with low social capital.

How might the Internet, and particularly online communities, contribute to enriching social capital throughout the world in the aftermath of September 11th? How might we, as technology professionals, contribute to this goal? As Amy Bruckman points out in her article in this section: “Culture and technology coevolve [and] computer professionals catalyze this process.” The challenge we face is to make sure that technology serves human needs. Our goal is therefore to examine how widely available communications technologies can be more effectively used to support communities and foster social capital development.

Computing infrastructure already supports thousands of online communities that unite people across barriers. Some bring people together only online, other communities also meet physically. How might the Internet better support all these communities and

encourage others in a way that increases social capital locally, nationally, and internationally? How can we ensure that everyone can participate in such communities, regardless of their income, education, race, culture, or gender? To do this, we need to develop low-cost hardware, software, and a computing infrastructure that is universally usable [6].

Early U.S. Internet users came from a narrow segment of the population. More recent surveys show the number of U.S. women online has increased to equal the number of men. There is, however, still a gap between rich and poor, educated and less educated, with which we must concern ourselves [7]. In many other countries access to the Internet is much more restricted; there are billions of people who will never experience it.

Achieving the goal of universally usable online communities and community networks poses two challenges. The first is we must focus on developing

nonverbal cues (that is, body language) that help to make these systems more effective. For example, clever users are inventing linguistic shortcuts, such as the now-familiar smiley faces and abbreviations like IMHO for "in my humble opinion." Ingenious designers, like the contributors to this special section, are also raising the quality of users' experiences by creating visual representations and tools to support social interaction (see [3]). However, software alone is not enough. Skillful community managers, leaders, and moderators are needed to encourage collaboration and promote the cooperation and trust needed for a successful community.

Trust develops when there is a history of favorable past interactions that lead participants to expect positive future interactions. Being able to identify who is present and examine their past behavior is therefore helpful. The articles by Tom Erickson et al.,

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technologies accessible to a wide range of users on a variety of devices. The second is to ensure the software also supports sociability, that is, effective social interaction online [2].

Interaction via existing technologies, such as email, chat rooms, and instant messaging, entices millions of people online. It provides a good starting point for extending community development. These applications offer users novel ways of communicating that differ from those offered by established technologies such as telephones, and more recent technologies such as 3D immersive environments. For those who want to reflect, compose, and review correspondence at their own convenience, asynchronous text environments can be exceptionally powerful. In contrast, instant messaging, telephone texting, and chats support brief, rapid exchanges that enable people to keep track of each other and synchronize their behavior. Better integration of these technologies and the addition of facilities to support consensus building, voting, and information retrieval will further enrich them as we are starting to see in Web environments, PCs, and handheld devices.

Novel forms of communication are emerging for expressing emotions and conveying the equivalent of

Judith Donath, and Marc Smith suggest a variety of creative representations. Their goal is to allow participants to more easily gauge such things as, who is present, what they are doing, how long they have been there, who the leaders are, and how others judge the value of their contributions.

Erickson, Christine Halverson, Wendy Kellogg, Mark Laff, and Tracee Wolf strive to subtly provide just enough cues so that participants can judge the social milieu of their Babble chat world—a concept they call "social translucence." The idea is that the visualization should be helpful but not intrusive. Donath uses "semantic visualizations" to portray social phenomena in three different communities (for example, who is present and how long have they been active). As she points out, care is needed when designing visualizations because representations appropriate for one context may be inappropriate for others. A flower representation may be aesthetically pleasing for an emotional support community, but inappropriate for a business community. Smith describes tools for navigating social spaces in Usenet and bulletin boards by tracking threads and authors. His aim is to develop "social accounting metrics" to assess the success of communities. For example, in technical support com-

munities, a metric would show how rapidly questions posed by participants were answered.

The articles by Roxanne Hiltz and Murray Turoff, Amy Bruckman, and Dorine Andrews focus on the role of community leaders and participants in encouraging collaboration and trust. Drawing on over two decades of research, Hiltz and Turoff ask: What makes asynchronous learning networks effective? These pioneers recommend promoting instructor-student interaction by establishing "swift trust," developing collaborative learning activities, and generating active participation with appropriate software. Swift trust involves participants—in this case students supported by faculty—putting aside their feelings of uncertainty and suspicion and agreeing to collaborate. This positive experience plants the seed for long-term trust.

Learning communities in which students or children collaborate with peers, seniors, or other adults supported by technology can be engaging, productive learning environments, as Bruckman demonstrates. These environments can provide emotional support as well as a forum for sharing ideas and fostering creativity while learning. Although learning is the focus of these environments, the philosophy of co-operation and sharing is relevant to other kinds of communities, such as health communities [5].

Communities in which developing trust and satisfying privacy are particularly difficult challenges may benefit from the development method for Web-based communities suggested by Andrews. This method draws on her experience as a professional facilitator for face-to-face meetings to suggest ways of bridging between trust development offline and online.

How much do online communities cost to develop and support and what are their benefits? These questions are asked frequently; particularly by managers who must decide how best to use their budgets. The article by David Millen, David Fontaine, and Michael Muller suggests an approach for assessing the benefits and costs of communities of practice. In order to understand what makes a community successful and justify development funds we need methods of evaluation, measures of success, and guidance about how to improve the online experience.

Developing online community requires a deep understanding of social interaction and the mediating effects of technology. There are many issues to consider as the authors in this special section demonstrate. Solutions are needed that go beyond mimicking face-to-face interaction. Successful solutions will creatively harness widely available technology to make it more powerful while ensuring

universal usability. Mobile devices with small screens and tiny keys are already extending the range of communication options for some citizens. Tighter integration of asynchronous and synchronous technologies is occurring and new styles of interaction are emerging, such as "texting" in cell phones. These technologies are dissolving the boundaries between online and offline communities as people move seamlessly across virtual and physical worlds.

Progress in designing and deploying communications technology may enable survivors of other traumatic events to cooperate and comfort each other. A greater hope is that effective communication could increase the social capital needed to build more responsive communities that help to prevent or reduce future terrorism. At a moment in history when institutions are taking measures (for example, increasing surveillance and interviewing foreign nationals) that evoke fear and distrust, we may also want to build social capital, that is, trust and willingness to collaborate. Community involvement raises awareness of threats, encourages protective vigilance, and generates caring responses. Online communities are becoming an increasingly important way for turning to one another for collaboration, support, information, and debate.

At last online communities are coming of age. The next step is to build more universally accessible, usable software to support communication and foster social capital. The authors in this special section are leading the way. **C**

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