SUMMARY

◆ Describes a social networking Web site designed to gather first-hand reports from technical communicators about single sourcing and/or content management systems

◆ Argues that Web 2.0 paves the way for online qualitative research that can help achieve participatory research ideals rarely realized using traditional methods

Using Web 2.0 to Conduct Qualitative Research:

A Conceptual Model

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INTRODUCTION

Web 2.0 refers to innovations that have enabled entrepreneurs to reinvent the Web by making it more interactive and participatory. Web 2.0 sites such as Facebook, LinkedIn, YouTube, and MySpace have experienced phenomenal growth, energized by the desire of people with shared interests to socialize and regularly exchange information, opinions, and other content. By combining instant Web publishing, social networking tools, user-generated content, and communal tagging, rating, and commenting—all within an easy-to-use content management system—Web 2.0 has the potential to increase the richness, dynamism, and ultimate impact of interview-based qualitative research.

To explore this potential, we have developed a conceptual model for a research Web site designed to collect structured accounts of technical communicators writing about their experiences and opinions related to single sourcing and/or content management methods and tools. This novel data collection method is part of a research project supported by a grant from the Society for Technical Communication; to date, the project has gathered data through an online survey and through interviews and site visits. The firsthand reports (FHR) Web site, as we call it, will complement traditional data collection methods by combining Web 2.0 technologies such as those in use at the well-known social networking sites MySpace.com and Facebook.com.

Of course, those Web sites constitute a new form of grass-roots mass communication; the research Web site we envision will operate on a much smaller scale. Indeed, keeping the scale small and the focus limited is an important constraint—and big advantage—in our conceptual model. In the FHR Web site, informants will be members of a virtual community that forms to share information on the specific focus of the Web site, which in our test case is first-hand information and opinions about single sourcing

and content management in technical communication. Members of the virtual community we envision will be those who have applied and received approval from the principal investigator running the site. Each informant will have his or her own firsthand report space that will include a detailed professional profile and an in-depth account of the person's experience with and knowledge about the topic. Each firsthand report will be composed in response to prompts presented by the project's principal investigator. Each informant will have the option of creating a blog, which will be accessible only to other informants. The site will also have a public community message board for site members and visitors to exchange information and opinions about single sourcing and content management.

We believe that the kind of Web site we envision has the potential to alter radically how researchers collect and make sense of firsthand accounts from research informants. The site's principal investigator or research team will structure and moderate information sharing, but any member of the community will be able to search and analyze the information collected on the Web site. Thus, the distillations and interpretations of information published by the site's research team may be supplemented, or even contested, by participant-investigators with different perspectives.

The primary purpose of this article is to present our conceptual model for a firsthand reports Web site and to discuss some issues that will need to be resolved to make such a site feasible, as well as to speculate about the potential of such Web sites to provide the truly participatory, multivocal qualitative research that scholars in our field have envisioned and advocated for some time (Blakeslee and colleagues 1996). We begin by glossing the

role and value of technical communication research, emphasizing the centrality of qualitative methods to constructing our discipline's body of knowledge. Next, we briefly review the benefits and limitations for conducting qualitative research using Internet-mediated communication and explain why we think Web 2.0 technologies have the potential to enhance the benefits and minimize the limitations. We then present a high-level description of the conceptual model for the firsthand reports Web site we are currently developing. After that, we sum up and discuss the compelling advantages we see in this method of qualitative data collection compared with traditional interview-based methods. Finally, we discuss the most obvious barriers to implementing an FHR Web site, some of which are technical and some of which are social and institutional.

ROLE AND VALUE OF TECHNICAL COMMUNICATION RESEARCH

Our understanding of technical communication has grown tremendously over the past three decades because of insights gained through research, which has increased the discipline's practical, scientific, and scholarly body of knowledge (Hayhoe 2006; Rainey 1999; Smith 1992). According to Allen and Southard (1995), technical communication researchers primarily desire to understand the motivation, attitudes, and behaviors of users (readers), content developers (writers), and their intertwined communication practices (33). Technical communication research often tries to shed light on how communication designers and their audiences interact with the technologies and media used to create and deliver the communication products.

The discipline of technical communication creates knowledge about the work of practitioners and its impact on employers, audiences, and other stakeholders by examining aspects of technical communication primarily through an interpretivist lens—constructing and interpreting reality by collecting empirical data through qualitative methods: interviews, case studies, focus groups, and field work. According to Blakeslee and colleagues (1996), "one important goal of such research is to improve our understanding of the settings and individuals we study through accounts that describe the rhetorical practices of our participants in ways that are meaningful and useful to them and to ourselves" (126). Blakeslee and colleagues "argue for judging how meaningful and worthwhile our accounts are from how well they inform practice and on what they teach us" (126).

Internet-mediated communication is now widely recognized as a productive site for generating research questions as well as a means of collecting information about activities and attitudes not otherwise related to online discourse (Gurak and Silker 2002; Kastman and Gurak 1999). Researchers have used first-generation Web technologies such as e-mail, online chat, listservs, message boards, and threaded discussions to study the rhetorical dynamics and communication patterns in cyberspace, as well as to query informants about activities and attitudes from "real life." Compared with face-to-face communication for gathering qualitative data, Internet-mediated communication is cheaper, faster, and more convenient for the researcher because the information does not have to be transcribed to produce a text for analysis. On the other hand, certain of these advantages can also be limitations: asynchronous, text-based communication is less immediate and is often lacking in the depth and assured understanding that emerges from real-time dialog with its confirmatory back and forth exchanges to clarify and probe for details and examples.

Managing the data collected through Internet-mediated communication has also been something of an obstacle for qualitative researchers. Although online communication methods may enable lots of information to be collected rapidly from many people in a short period, the unstructured nature of the texts thus collected make the data analysis process laborious and time consuming. One of us knows this first hand, having moderated an online discussion group for a qualitative study (Dayton 2001). Although the information generated by the online discussion, which extended over several months, was rich in factual details, provocative opinions, and occasional brilliant observations, coding and sorting the data so that it could be reduced to a set of generalizations took many, many more hours than were required to collect the information.

To improve qualitative data gathering using Internet-mediated communication, researchers would benefit greatly if they had a Web site that enabled them to

◆ Impose some uniformity of structure on and embed metadata in the textual information as it is collected
◆ Facilitate timely interaction to clarify and elaborate the texts first presented by informants
◆ Provide data exploration tools built into the primary data collection platform
◆ Enable teams of researchers to work closely together to collect and analyze information presented over time by many informants

The technology to build such Web sites already exists, and it is being implemented widely on the Internet today under the rubric of Web 2.0.

How Web 2.0 works

Treese (2006) defined Web 2.0 as an incremental set of changes to existing Internet technology (16). By combining instant publishing, interactivity, social networking, Web services, communal tagging and rating, and content management, this new generation of technology has changed the Internet into a participatory medium (Treese 2006). These technologies have the potential to mitigate the lim-

itations associated with first-generation Web technologies. Qualitative researchers will especially benefit because they will be able to foster more in-depth communication with and among people from whom they are seeking information on a particular question, problem, or topic. What is equally important, Web 2.0 has the potential to enable researchers to manage their communications and analyze the information they collect much more efficiently than current Internet- and computer-based methods.

Web 2.0 changes the flow of communication to a bottom-up model. Web developers now create multiple input channels that allow users to communicate in real time to post feedback or comments or even edit a Web site's content instantaneously. These richer interactive channels on blogging and social networking sites have contributed to the growth of online communities, "social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (Reingold 1993, 5).

Web 2.0 conveys one overarching concept: the Internet is becoming more user-centric. Rather than simply being a repository of information, the Internet's content is being driven by users. Hart-Davidson (2007, 9) lists important trends in user behavior that influence the concept of Web 2.0: that users produce, organize, and share content, that they interact with Web sites as content aggregators and even content creators, and that they pursue social goals as well as work goals.

Web 2.0 has revived the Internet as a participatory medium, where users "[create] network effects though an 'architecture of participation'" (O'Neil 2005, 1). Users are no longer passive, but instead are actively involved with creating content, setting agendas, and interacting in online communities. This level of participation is made possible by a host of technologies that have come to define Web 2.0. Among the most commonly used by social networking sites are content management systems (CMSs), wikis, blogs, and Real Simple Syndication (RSS).

CMSs are client-server Web applications that separate the content of a Web site from the design patterns used to present the content to users. Content is stored in a database, and pages on the Web site are dynamically assembled through Web forms that allow designers and content developers to manipulate all the usual elements of the site's architecture, screen layout and design, and navigation. CMSs significantly increase the efficiency of Web site maintenance by allowing multiple users to author, modify, record, and delete data without requiring specialized knowledge of hypertext and programming languages.

Wikis are basic Web sites run by CMSs; every wiki provides a simple, easy to use markup language, which allows users of all proficiency levels to contribute, edit, and delete content. Wikis allows users to control content while keeping the Web site's look and feel consistent (Fuchs-Kittowski and Köhler 2005).

Blogs (from Weblogs) have also gained an incredible level of popularity. Blogs are online journals that are frequently updated through a CMS. Blogs foster two-way communication. Readers can review blogs and leave comments and feedback to guide future discourse. Readers can subscribe to receive new blog content automatically, and bloggers can comment on one another's blogs using a special system for interlinking.

RSS feed is analogous to a subscription service. Users are able to have new online content such as news stories, blogs, and threaded discussions sent automatically to their computer or Web-enabled device (PDA, cell phone). A Web application collects this content and presents it to subscribers for instant access.

Social networking sites such as LinkedIn, MySpace, and Facebook have become big business by enabling users to create a Web presence and personal profile using a variety of the tools just mentioned. These social networking sites feature simple CMSs that allow users to instantly update their personal sites. Users can present a variety of personal and professional information in their profiles including photos, video, music, groups, interests, résumés, and *curricula vitae* to other people within the network. Additionally, these sites allow users to create personal blogs with RSS feeds.

In sum, Web 2.0 technologies offer an innovative and accessible tool kit for researchers who wish to collaborate with practitioners in studying workplace technologies, organizational contexts, and any important issue or concern related to work practices. First-generation Web technologies have seen limited use for collecting qualitative data because of constraints on immediacy and interactivity and because of the data management problems that we have discussed previously. We are confident that Web 2.0 technologies can be assembled to create dynamic community Web sites that transform the qualitative research process, making it richly participatory and, thus, more relevant, trustworthy, and useful. In the next section, we describe the main technologies and aspects of interaction design that make up the conceptual model of the research Web site we are building.

CONCEPTUAL MODEL FOR AN FHR WEBSITE

The primary purpose of our Web site is to collect firsthand reports from technical communication practitioners writing about single sourcing and/or content management methods and tools. What we are calling the conceptual model of the FHR Web site is simply our starting-point design schematic that brings together the best aspects of existing Web 2.0 technologies. The conceptual model is detailed in an

unpublished master's thesis (Thacker 2007). In the next section, we provide a general description of the site's technology and architecture.

Social networking focused on a narrowly defined topic

The FHR Web site has three primary functions: (1) to collect information from numerous people on a relatively narrow topic; (2) to enable easy search and retrieval of the knowledgebase thus created; and (3) to build the social cohesion and communication that characterize healthy virtual communities. The FHR Web site will implement those functions by combining and reconfiguring basic tools for interactivity and communication used by popular social networking sites (LinkedIn, MySpace, and Facebook, for example).

Users of the FHR Web site will interact with fellow community members and the information on the site through a relatively small set of key functions. These are described below.

- ◆ Profile: A personal profile space that features all of the user's relevant demographic and psychographic information. The profile is also the main gateway for users to interface with an informant's first-hand reports, blogs, and discussion.
- ◆ Firsthand Report: Structured narrative accounts generated from a uniform sequence of prompts created by the research team.
- ◆ Search: A search engine that queries the site's database to find relevant information from the inputs and preferences of the user.
- ◆ Forum: The site's threaded message board that is accessible to the public. The message board is designed for members of the community to discuss topics in an open forum, interacting with guests—visitors to the site who have not joined the site or have not been approved for membership in the site by the principal investigator (PI) and/or the research team.
- ◆ Help: A wiki that addresses common issues pertaining to the site. The wiki will be initiated and maintained by the research team, but any member will have the ability to comment on any page, and some members who volunteer for the role will be able to edit pages.

The firsthand reports will be the primary means of collecting information. To generate the reports, the site will present newly registered users with a series of prompts—directive, content-defining questions. Each prompt will have a text entry box for the informant's response, including a rich-text editor like those found in popular Web-based e-mail applications. Responding to the prompts, informants will fill in factual details and compose experiential narratives that will have a common structural framework.

Each member's firsthand report will be stored in a personal profile and blog space on the Web site. The researchers and other site members will be able to communicate with informants privately through internal messaging or by posting comments appended to the firsthand reports. Only site members vetted and approved by the site's research team will be able to create firsthand reports and search the reports of others. However, nonsite members will be able to interact with site members on public-facing message boards, where the research team will seed and moderate discussions by site members and visitors.

The FHR site's search function will be designed to allow members of the community to query the site's knowledgebase for specific information. The general search capabilities will be useful and usable, but not as robust as those provided to the site's research team, who will use a more complex and feature-rich interface enabling more granularity in specifying terms and conditions for a search. Academic and practitioner researchers who are members of the site community may request access to the more robust search application, which would enable them to explore the knowledgebase in depth on particular research questions. Although not as powerful, the search tool available to all community members will still allow them to explore specific questions, search for patterns in the firsthand reports, and formulate questions for discussion in their blogs and/or in the public message boards.

Ease of data search and retrieval will be one of the cornerstones of community building on the FHR Web site. We want users to be able to explore the rich qualitative data provided by community members and generate their own questions for further exploration and discussion. The community-building function will be aimed at fostering social networking within the membership of the site. Users will be encouraged to create in-depth profiles and personally controlled communication spaces. The profiles should increase the level of trust within the community by providing a way for users to display and authenticate their credentials. Moreover, we hope to provide tools that encourage users to interact with the larger community. Such tools should include a private messaging system, blog, and public commenting on each user's blog and firsthand report, which will be under the control of the member who owns his or her own communication space.

Accommodating informants and researchers

The FHR Web site will be designed to accommodate the needs of two macro categories of users: informants and researchers. A third user role is really a nonrole: guests. Visitors to the site who are not members of the community will be severally restricted with regard to what information

they can access; this is necessary to maintain a high level of trust within the community. Nonmembers will have access to public-facing information such as the administrator's news/blog, the site FAQ, a public discussion board, links and resources, and the sign up/login interface.

Informants are those who contribute to the site's knowledgebase by writing firsthand reports. The PI collects data from informants initially through the structured questionnaire that generates the firsthand report. Informants will not have administrative access to the Web site. They will interact with the Web site in two roles: as members and as moderators.

Members are the core community. They request full access to the Web site's database of firsthand reports, a request that must be approved by either an administrator or a moderator. In exchange for full access to the firsthand reports of other members, new members must agree to share their own story of technology use and/or adoption related to single sourcing and/or content management; if they have no experiential story to share about those technologies, they must, at the very least, provide a real identity profile and agree to the informed consent, copyright, and usage policy of the site (to which members with firsthand reports must also agree).

We refer to the researcher role as the PI, as though it would be a single person, but on any given project, the PI might well be two or more persons on a research team whose members work collectively to share the PI's functions. The PI is defined by two distinct roles: researcher and administrator. In the role of researcher, the PI is responsible for collecting and interpreting data. As an administrator, the PI controls all access to the Web site's content management system through the admin control panel. The PI assigns roles and sets the precise details of what functionality a user may access on the site; these decisions affect the user's views of the site. The front end view is the general presentational view for all users. The back end view is a customized view that allows users to edit or change elements of the Web site from the permission levels set by the PI (individual or team).

KEY BENEFIT: MAKING PARTICIPATORY RESEARCH PRACTICAL

The role of user advocate is central to the professional identity of technical communicators. In like manner, the role of "practitioner advocate" is central to the way that many researchers in our field view the studies they undertake and the various modes of communication that are critical to their ultimate mission, which is to inform practice and to help build the profession's body of knowledge by writing articles, books, and textbooks and by giving presentations, leading workshops, and teaching courses.

Just as technical communicators over the past two decades have increasingly aspired to involve users in the design and evaluation of their information products, so too

have researchers aspired to an ideal of participatory research. In a landmark article examining this ideal, Blakeslee and colleagues (1996) reviewed perspectives in our field about what constitutes validity in qualitative research. Their discussion assumes familiarity with the issues, so we provide a brief, high-level overview as background.

In scientific research, validity is shown if the researchers can marshal the arguments, from experimental methods and the analysis of results, to persuade fellow scientists that the experiment did indeed provide a reliable test of the hypotheses and the results produced relevant new information to help answer the questions that motivated the study. The nature of qualitative investigation, however, is thoroughly interpretive and focused on subjective observations and opinions. Qualitative research represents a different paradigm of knowledge making, and so its quality must be evaluated using different criteria.

Over the past three decades, thought leaders in qualitative research have proposed a host of concepts by which the quality of qualitative studies may be measured (see Seale 1999 for an engaging discussion). Lincoln and Guba (1985) first proposed the term *trustworthiness* to sum up the essential characteristic of good quality research within qualitative traditions, and they broke the concept into four components that could be empirically shown to some extent: credibility, dependability, transferability, and confirmability. They later added to trustworthiness the concept of authenticity (Guba and Lincoln 1989), according to Seale (1999), to be consistent with the constructivist (that is, relativistic) view that undergirds the qualitative paradigm while at the same time offering a standard by which one research-based view might be considered more worthy of belief than any other.

> *Authenticity, they say, is demonstrated if researchers can show that they have represented a range of different realities (fairness). Research should also help members develop "more sophisticated" understandings of the phenomenon being studied (ontological authenticity), be shown to have helped members appreciate the viewpoints of people other than themselves (educative authenticity), to have stimulated some form of action (catalytic authenticity), and to have empowered members to act (tactical authenticity). (Seale 1999, 468–469)*

The views of Blakeslee and colleagues (1999) are consistent with the quality criterion of authenticity, although they do not use that term. They keep their discussion within the literature of technical communication in arguing for a similarly participative ideal in evaluating the validity of qualitative research. Contrasting their stance to the views of several other scholars in technical communication and in composition studies, they state "[W]e need to view validity as being more than a matter of determining whether, in fact, we are measuring

what we think or say we are measuring, which is how many scholars continue to define validity" (128).

Paraphrasing the views of Kirsch (1992, 257), Blakeslee and colleagues (1999) agreed that researchers doing qualitative studies in technical communication "should open up our research agendas to our participants, listen to their stories, and allow them to actively participate, as much as possible, in the design, development, and reporting of our research" (132). They acknowledge the difficulties of implementing that vision of participatory research.

Traditional methods of qualitative research rely mainly on one-to-one communication between informants and researchers: some form of interviewing. In many studies, each informant is interviewed only once. In most studies, the opportunities for informants to dialog with the researchers about their findings and conclusions are greatly limited or nonexistent. Rarely do informants in a qualitative study get the chance to exchange views with other informants about the study and what the researchers plan to publish about it. Even in focus groups, the participants typically leave the moderated discussion unable to predict what generalizations the researchers will write to sum up the many opinions expressed by a dozen or so people over the course of an hour or longer. The participants will never get a chance to talk about those findings and the implications drawn from them.

The barriers to implementing participatory research are mundane, practical constraints and not attitudes: researchers do not usually have the time, the resources, and the means to incorporate as much dialog with informants into their research as they would wish. By the same token, many informants would not necessarily be willing to take the time and effort that would be required of them if researchers solicited more input and feedback.

Our concept for an FHR Web site removes most of these barriers to participatory research. Table 1 summarizes why we believe this is so by comparing traditional interview-based research to the FHR Web site in terms of methodology, what gets published, and what informants get in exchange for their participation.

DEVELOPMENT AND IMPLEMENTATION PLANS

Our conceptual model for the FHR Web site is the road map we have used to launch the development process. We believe that we can build out the model into a readily configurable off-the-shelf solution for online qualitative research. The model will undoubtedly change, but we cannot predict how or to what extent. We plan to spend a great deal of time testing and eliciting feedback from a small group of invited users before we attempt to fully deploy the site. We estimate that the initial site deployment will occur in the second or third quarter of 2009.

Building the site will be a labor of love, carried out as a part-time activity by a few already fully occupied people.

One of us (Thacker) has managed to enlist the help of a business partner, Patrick Kim, who will serve as the lead programmer. Patrick has decided to develop our site using the Java Enterprise 2 (J2EE) platform. His decision to use J2EE is based solely on personal preference; our model could be implemented using different platforms. Thacker will work alongside Kim to develop the Web applications that will run the Web site. Dayton will serve as an advisor and client, helping the developers to navigate his vision of the site's essential functionality.

Because of limited resources, we plan to strictly limit the initial scope of our Web site in terms of the number of users given access to it. We are still in the process of discussing a working business model that will allow us to scale the Web site without having to rely on advertising revenue. We are considering the feasibility of setting up a nonprofit organization to own the site, one that is funded entirely through grants and private donations.

As we look ahead, we realize that numerous important issues remain to be addressed in these three areas: (1) confidentiality and security, (2) ethical and legal requirements, and (3) expansion and/or transfer of the site. No doubt many other issues will arise as we move closer to completing the site, but these are the ones that we can see on the horizon now.

All of the issues summarized in Table 2 reflect threats to community trust, which is essential to building and maintaining a thriving virtual community. These potential threats can be mitigated through effective communication from the research/administrative team running the site, starting with the development of clear, accessible, and reasonable policies and procedures. Continuous intracommunity dialog will be essential in helping the administrative team successfully manage the site.

Our FHR Web site will be developed using an open-source licensing model. Open-source allows us to share our code with the programming community by licensing our software for free. After affirming our licensing agreement, programmers may elect to alter our underlying code to improve on our existing model. Access to our code will come with an explicit acknowledgment that any innovation to our existing model must be shared. We will be free to adopt and support any changes that we feel will benefit our model.

Selecting an open source licensing model for our Web site will allow for innovation and flexibility. Most researchers will not need to alter our underlying code. Our Web site will be designed as a commercial off-the-shelf product that will be easily configured. However, there may be a small group of researchers who have the time and technical know-how to customize our model to meet their specific needs. These users will be allowed to make any changes to our code as long as they are shared with the community.

TABLE 1:   INTERVIEW-BASED QUALITATIVE RESEARCH VERSUS THE FIRSTHAND REPORTS WEBSITE

Traditional interview-based research	FHR Website
Methodology: Principal investigator or research team conducts interviews, reduces qualitative data through analysis to distill generalizations and reach conclusions. ◆ Research report summarizes and interprets the information collected, but the raw data is not accessible to anyone outside the research team, and in many cases only a lone researcher has access. ◆ Informants typically are not given a chance to review and respond to the research report's representation of the information they provided; if they are given the chance, their perspectives may not be adequately represented or even included in the final report. ◆ Raw data remains inaccessible to anyone outside the research team; in effect, the data vanishes, replaced by the published report's generalizations illustrated by selected quotations. ◆ This methodology rarely produces longitudinal studies — follow-up interviews with the same informants over time. (Time and expense of conducting interviews and continued cooperation of informants create major impediments to longitudinal studies.)	*Methodology:* Principal investigator or research team (PI/RT) structures prompts for first-hand reports, moderates draft reports and solicits additional details and clearer explanations. PI/RT may also add public comments, moderate discussions, maintain a blog to "think out loud" about themes, issues, ambiguities, which can prompt further discussion in comments on the blog entries. At some point, PI/RT reduces data through analysis to distill generalizations and reach conclusions. ◆ Research report summarizes and interprets the information collected, but the report is linked to an online knowledgebase that can be examined by others and also re-studied later by the PI/RT. ◆ Informants—members of the website—may discuss the report on the site and debate alternative interpretations. ◆ Longitudinal studies are not only possible, they become a relatively convenient and therefore compelling option.
What gets published: A summary containing a small, highly selective fraction of the data collected. ◆ Others do not have access to the data interpreted by the researcher(s). ◆ The published interpretation cannot be challenged by re-analyzing the same data.	*What gets published:* A summary containing a small, highly selective fraction of the data collected. ◆ Others can examine the same source information and conduct their own analyses. ◆ The published interpretation of the data can be challenged by others offering alternative interpretations based on the same data.
What informants get in return for their participation: The gratitude of the researcher(s); possibly some insights into the activities/attitudes under study as a result of the interaction with the researcher(s) and/or because of the report's analysis and findings.	*What informants get in return for their participation:* Informants will be motivated mainly by self-interest, finding value in the website community if it becomes a continually expanding source of useful information. Those who also enjoy the social interaction on the site will value it the most.

SUMMARY AND CONCLUSION

Recently, new technologies have emerged that can enhance Web-based research methods by increasing the potential breadth and depth of communication between qualitative researchers and their informants. We found that integrating these technologies into a Web-based research site is a lengthy and challenging process, but the benefits are compelling. In this article, we described our conceptual model for an FHR Web site that will now use commonplace Web 2.0 tools to increase the richness,

TABLE 2: THREATS TO COMMUNITY TRUST AND POLICIES AND PROCEDURES TO MANAGE THEM

Confidentiality and security	Ethical and legal requirements	Expansion and transfer
Issue: Personal and demographic information in profiles and postings could leave informants vulnerable to outsiders who have little or no interest in the welfare of the community. *Potential Threats:* ◆ Marketers – use open discussion forums to spam users with marketing messages, instigating discussions or posting responses mainly to sell their product or service. ◆ Data Farmers – firms that actively aggregate personal data culled from community websites. Information is sold to clients for marketing and other purposes (including scams and identity theft). ◆ Special Interest Groups — seek to promote their issues and steer discussion in certain directions. May include consultants who seed discussions promote products and services in which they have a vested interest. ◆ Trolls — Internet jargon for forum participants that purposefully post fallacious or inflammatory responses.	*Issue:* Institutions of higher education require rigid adherence to federal protocols for protection of human participants in research; permission from Institutional Review Board (IRB) must be obtained for all research activity involving human participants. *Potential Threats:* ◆ Procedures for gathering, storing, and using data must be reviewed by an Institutional Review Board. ◆ Research that involves human participants must meet or exceed the standards outlined by federal regulations: Title 45 of the Code of Federal Regulations, Part 46.	*Issue:* The site's underlying code and content is intellectual property, but a distinction must be made between the transfer of this underlying code and the content stored on the database. While the code can be easily transferred to another party, transferring database records could create ethical and legal obstacles. Additionally, any transfer or changes could negatively impact the community. *Potential Threats:* ◆ Growth — Web site is likely to become too much work for one researcher to manage alone. ◆ Expansion of research scope – Administrator/PI may decide to bring in other researchers to share the duties and prerogatives of the site administrator. ◆ Transfer of administration rights – Administrators may decide to end the research project or transfer administration rights to a new researcher.

POLICIES AND PROCEDURES TO MANAGE THREATS TO COMMUNITY TRUST

Confidentiality and security	Ethical and legal requirements	Expansion and transfer
◆ Terms of Service Agreement ◆ Optional privacy setting so personal information viewable only by site administrators. ◆ Restrict access to personal profile and prompts to trusted community members. ◆ Create detailed authentication process.	◆ All human participants in research must freely give informed consent that adheres to the standards set forth by the institution's IRB and Title 45 of the Code of Federal Regulations, Part 46. ◆ University researchers must obtain documented evidence of compliance.	◆ Security and confidentiality protocols must be maintained. ◆ Community members must be informed of any potential changes to the level of access granted to new community members. ◆ Any changes to the aims or focus of research must be communicated to participants.

dynamism, and ultimate impact of interview-based qualitative research. We discussed the most important of the foreseeable issues that must be addressed to build and maintain community trust and ensure the success of the Web site for participants as well as researchers. Finally, we argued that such a Web site offers a means to realize more consistently and fully the vision of participatory research that scholars in our field have been advocating for over a decade. T**C**

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