Chapter 10

Using Web 2.0 to Conduct Qualitative Research

A Conceptual Model*

Christopher Thacker and David Dayton

Editors' Introduction

Thacker and Dayton argue that Web 2.0, with its ability to enable a variety of ways in which users can interact within virtual worlds, can be used to enhance and strengthen the participative nature of interview-based qualitative research. Their article reports on the development of a conceptual model for an interactive Web site to capture the technical communicator experience of single sourcing and content management through a survey, interviews, and site visits. Their goal is to develop a framework for research conducted on a Web 2.0 platform that can be used to operationalize a qualitative inquiry through the formation of a research community. These communities would be made up of investigators and participants, where the investigators create a structured context for accumulating data, and where all members of the community (researchers and participants alike) have full access to the data.

This article is a clear instance of the idea put forward by Blakeslee and colleagues in Chapter 2 of this collection, calling for new ways to share authority between researchers and participants (and Thacker and Dayton explicitly acknowledge the debt their work owes to that of Blakeslee and colleagues). With Web 2.0, they argue, the people who access and use Web sites are gaining more and more influence over the content of the sites, and are able to interact in real time. For research projects, this approach introduces the possibility of creating a platform that can efficiently capture and organize data from a screened sample of participants, and that allows these participants to take on the identity of active research collaborators rather than passive research subjects.

Thacker and Dayton point out the central role played by qualitative methods in technical communication research, and review the ways that Web technology can assist the research endeavor. For example, a Web-based research community could allow for the timely interaction between researchers and participants to clarify and further develop data gathered through interviews or journaling. It might also promote collaboration among teams of researchers, and it could host electronic tools that would facilitate the organization and extraction of data.

The authors suggest that the main barrier to participative research is that researchers are busy people with limited resources, as are research participants.

Though many acknowledge the value of participatory research, it is often simply not feasible for researchers and participants to engage with each other after the data have been gathered. Web 2.0, they argue, offers a way of overcoming this barrier.

The article also describes their effort to implement and test their Web 2.0 conceptual model by constructing and using a first-hand reports (FHR) Web site. They describe the choices that they made as they looked for a suitable software platform for their site, and report their progress so far in constructing the site. We can look forward with anticipation to their next publication, which we hope will report on the full results of their test of the conceptual model.

This article is a clear demonstration that research methodology is not a fixed and finished endeavor; research methods and the technologies that support them are constantly evolving. Thacker and Dayton show us how technical communicators are likely to take advantage of and contribute to innovative uses of emerging technology, which is one of the themes highlighted by Giammona. They suggest that emerging, interactive Web technologies could have a significant impact on the way that academics conduct research into technical communicator experience, and the way that practitioners investigate the needs and constraints of their audiences and users. The article, like its subject matter, has an intriguing unfinished quality, as it is a progress report on the ongoing development and testing of a conceptual model.

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 first-hand reports (FHR) Web site, as we call it, will complement traditional data-collection methods by using 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 a 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 first-hand report space that will include a detailed professional profile and an in-depth account of that person's experience with and knowledge about the topic. Each first-hand 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 first-hand 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 an FHR Web site and to discuss issues that need to be resolved in order to make such a site feasible. We also feel that it is important to discuss the potential of such Web sites to facilitate the truly participatory, multi-vocal 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 of 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 first-hand reports Web site as originally envisioned (Thacker and Dayton 2008). After that, we sum up and discuss the compelling advantages we see in this method of qualitative data collection compared to 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. In the final section, we describe why we decided to use Ning, a free Web service for building social networking sites, and how this decision will impact on our ability to implement the most important features in our FHR model.

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 (Smith 1992; Rainey 1999; Hayhoe 2006). According to Allen and Southard, technical communication researchers desire primarily to understand the motivation, attitudes, and behaviors of users (readers), content developers (writers), and their intertwined communication practices (1995, 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, "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" (1996, 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" (1996, 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, 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, the unstructured nature of the texts thus collected makes the data analysis process laborious and time consuming. One of us knows this firsthand, 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 defined Web 2.0 as an incremental set of changes to existing Internet technology (2006, 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 limitations associated with first-generation Web technologies. Qualitative researchers will benefit especially, 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. 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" (Rheingold 1993, 5).

Web 2.0 conveys one overarching concept: the Internet is becoming more user-centric. Rather than simply using the Internet as a repository of information, users are driving content. 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 through 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 Really 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 mark-up 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, resumés, 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 toolkit 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 our conceptual model of an FHR Web site.

Conceptual Model for a First-Hand Reports Web Site

The primary purpose of the Web site that we plan to build is to collect first-hand 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 site is simply our starting-point design schematic. The original version 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. We use the future tense, even when discussing features that we now think we will not be able to implement exactly as described, for reasons which we explain in the closing section of the chapter.

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 knowledge base 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.
- *First-hand 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 first-hand 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 first-hand 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 first-hand reports. Only site members vetted and approved by the site's research team will be able to create first-hand reports and search the reports of others. However, non-site 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 knowledge base 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 knowledge base 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 first-hand 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 first-hand report, which will be under the control of that user, 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 non-role: guests. Visitors to the site who are not members of the community will be severely restricted with regard to what information they can access; this restriction is necessary to maintain a high level of trust within the community. Non-members 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 knowledge base by writing first-hand reports. The PI collects data from informants initially through the structured questionnaire that generates the first-hand 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 first-hand reports, a request that must be approved by either an administrator or a moderator. In exchange for full access to the first-hand 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 first-hand reports must also agree).

We refer to the researcher role as the PI, as though it were a single person, but on any given project the PI might well be two or more persons on a research team, working 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).

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 an experiment has indeed provided a reliable test of the hypotheses, and the results have 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 shown empirically 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), this means being 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, 468–69)

The views of Blakeslee and colleagues (1996) 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 with 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" (1996, 128).

Paraphrasing the views of Kirsch (1992, 257), Blakeslee and colleagues 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" (1996, 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 10.1 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 Progress

Our conceptual model for the FHR Web site is the roadmap we used to launch the development process, with Thacker serving as lead developer assisted by his friend and business partner Patrick Kim, who is a Web programmer. Dayton served as both the client for the project and as a consultant in user-centered design.

Initially, Thacker and Kim planned to build the site using the Java Enterprise 2 (J2EE) platform. Their goal, apart from building a site enabling Dayton to carry out his research, was to create an open-source Web application that could help

Table 10.1 Interview-Based Qualitative Research Versus the First-Hand Reports Web Site

Traditional interview-based research	First-hand reports Web Site
Methodology: Principal investigator or research team conducts interviews, reduces qualitative data through analysis to distill generalizations and reach conclusions.	**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 raw data are not accessible to anyone outside the research team, and in many cases only a lone researcher has access.	• Research report summarizes and interprets the information collected, but the report is linked to an online knowledge base that can be examined by others and also restudied later by the PI/RT.
• 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.	• Informants—members of the Web site—may discuss the report on the site and debate alternative interpretations.
• Raw data remain inaccessible to anyone outside the research team; in effect, the data vanish, replaced by the published report's generalizations illustrated by selected quotations.	• Longitudinal studies are not only possible, but they become a relatively convenient and therefore compelling option—over relatively short time frames, at least (less than a year). If participants and institutional review boards are amenable to the possibility, some FHR sites could have an even longer life cycle.
• 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.)	
What gets published: A summary containing a small, highly selective fraction of the data collected.	***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).	• Others can examine the same source information and conduct their own analyses.
• The published interpretation cannot be challenged by re-analyzing the same data.	• 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 Web site 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.

others build FHR Web sites. Thacker and Kim envisioned a commercial, off-the-shelf product that could be easily configured by anyone with a modest degree of technical skill. Users with adequate technical know-how could choose to alter the underlying code of the application to improve upon the basic FHR model. Access to this product would come with an explicit agreement that any innovation would have to be shared by making the revised code available on the Web, along with a similar open-source licensing agreement. Ultimately, anyone would be free to adopt and further develop any changes to the interaction design and functionality that improved the FHR site builder.

That vision proved overly ambitious. Constraints of cost, time, and technical knowledge brought the project to a crawl. At Dayton's suggestion, Thacker decided to evaluate open-source social networking platforms that might enable he and Kim to achieve most of the functionality envisioned in the FHR model but at far less cost in time and effort.

At first, Thacker and Kim looked into the feasibility of combining separate off-the-shelf applications (Wiki, blogs, discussion boards) within an open-source Web CMS such as Drupal. However, the time needed to build out the FHR model in that way was still more of a challenge than two unpaid part-time developers with full-time "day jobs" could manage. Their decision not to experiment with an open-source Web CMS was validated by a recent conference paper from a marketing firm that built a prototype research Web site with social networking features using Drupal (Johnson and colleagues 2007). Although the marketing firm reported success in building their Web 2.0 site for testing novel ways to elicit people's reactions to products, they described technical challenges that went far beyond what Thacker and Kim could manage.

The continuous innovation that is a hallmark of Web technology companies presented an unanticipated alternative: Web sites where anyone who can read and click their way around an interface can create a social networking site in a matter of minutes. At Dayton's suggestion, Thacker tried out the two such Web service providers whose social networking platforms seemed to offer most of the functionality essential to building out the FHR model: KickApps.com and Ning.com.

In 2009, both companies (and a number of others) were offering "software as a service" (SaaS) platforms designed to let anyone build a customized social networking site, including such standard features as blogs, chat, member-to-member messaging, discussion forums, comments, ratings, and embedded video. Anyone wanting to create their own specialized Facebook-like site for a group could obtain the necessary Web applications from these companies; the site could be hosted and maintained by the same companies, initially for free.

After evaluating both the KickApps and Ning platforms, Thacker concluded that they were remarkably similar in what they offered, but that Ning was easier to use. In addition, KickApps instituted a usage-based pricing plan for all users after a 30-day free trial. Ning, in contrast, retained its free-to-use option for sites that did not exceed storage and bandwidth limits—more than enough to serve Dayton's needs, for a Web site community of fewer than 50 people. Table 10.2

Table 10.2 FHR Web Site Features Compared to those Available in a Ning.com Web Site

Features with our rating of Ning's ability to deliver	FHR model assuming custom build	What Ning.com offers
Whole-site search Poor (significant tradeoff)	Granular, highly customizable search that allows researchers to explore site content by selecting any variety of pre-defined tags, conditions.	Limited search feature; administrator can only search by name, tag, and topic. The site offers no customization for its search feature.
Forum Adequate, with possibly important tradeoff	Simple threaded discussion board; allows multiple levels of user access. Guests would have access to at least some discussions.	Basic discussion board. The user-interface is a bit confusing, and the threading system is counterintuitive. User access is restricted to members only.
Security Not provided, but not needed (by us)	Encryption of data transmitted to/from the site is not a concern for our initial project; however, this security could be essential for research involving sensitive subjects.	Password protected. No data encryption option.
Wiki Not provided, but not needed	Fully integrated wiki to offer user-generated guidance and instructions for using the site.	No option for this, but ease-of-use and Ning.com's user assistance makes the wiki we envisioned unnecessary.
User interface Excellent	Designed for our specific research purpose; bare-bones, with custom-designed features.	Limited customizable interface allows you to add pre-packaged features.

Feature	Original design	Ning implementation
Administrator tools — Excellent with caveat	Customized tools that allow administrator(s) to control all aspects of the site including user access, reports, and user interface. Easy, flexible content export options.	Limited export features for data mining; robust control of user access; user-interface controls; messaging and user analytics.
Profile — Excellent with caveat	Required personal information set up by the administrator with option for disguised identity. Profile space to be similar to that of popular social networking sites.	Customizable look and feel; administrator can require a limited set of personal identifiers such as a photo, name, location, age, and occupation. Disguised identity users possible but more difficult to set up, control.
Blog — Excellent	Envisioned to be the main portal for data collection.	Robust blogging feature that integrates new media and commenting.
Group space — Excellent added feature in Ning	Group space was not envisioned in the original model. We relied on the discussion board to serve this purpose.	Similar features to the profile page; integrates a group discussion, commenting, and notes.
New media — Excellent added feature in Ning	We did not envision allowing users to embed new media or third-party applications. These features could make the site "stickier" if enough community members use them.	Each point of interaction (blog, discussion board, group space, commenting) allows for the integration of external links, embedded audio and video (podcasts, YouTube).
User-installed third-party applications — Excellent added feature in Ning	Our design did not intend for users to install their own third-party applications.	Allows for user-installed third-party applications; limited to preselected applications such as Box.net (Filesharing), and Twitter (Text Broadcasting).

summarizes Thacker's assessment of the features that Ning offered (as of summer 2009) compared to the most important features in the FHR Web site conceptual model.

The comparative analysis summarized in Table 10.2 shows that a Ning Web site provides most of the key features of our FHR model. Currently, Ning does not support encryption of transmitted data, which would be essential for an FHR site dealing with sensitive information. That security feature is not needed, however, for our research Web site about technical communicators' experiences and opinions regarding single sourcing and content management. We are also optimistic that future versions of Ning will offer the option to use secure protocols for transmitting data, perhaps for an added fee.

For our project, the most noteworthy tradeoff of using Ning at present is the lack of a powerful search function coupled with limited export options. We envisioned a site with a robust query-builder and search engine that would make it easy for researchers to mine all the site's text, or narrowly targeted subsets of it, applying granular filters with tags and key words. In addition, we planned for researchers to be able to export content from the site in formats that would make it easy to import texts into any number of content analysis software programs.

We believe that the lack of robust search and export features in Ning has to be kept in perspective: our vision of the ideal search tools for researchers was unrealistic, given our limited programming resources and time available for developing them. If Ning can make it a relatively simple matter to create an FHR Web site for collecting qualitative data, we think researchers will happily accept the tradeoff of having to use their usual digital tools for exploring, organizing, and analyzing those data.

The only other noteworthy tradeoff in using Ning, as noted in Table 10.2, is inconsequential. Our FHR model called for allowing guests to view at least some discussions and even to participate in the discussions. That does not appear to be an option with Ning sites at this time. Our vision of the FHR site has evolved, and we now see little to be gained in allowing guests to have access to any content on the site while the research phase of the project is under way. We anticipate that the research phase of our first FHR site may be short-lived, with most of the activity occurring within the first three months. Once the research team has collected the first-hand reports and all the ensuing discussions, we plan to let the site community decide the future of the site. The options would need to be spelled out at the outset of the project because our university's institutional review board (IRB) will require that we describe how we plan to store and ultimately dispose of all the information we will have collected on the site during the life of the project.

We are now at the phase of building a prototype FHR site using Ning, so that we can prepare a proposal to our university's IRB. Thus, we are more aware than ever that crucial details need to be hammered out with regard to managing the FHR Web site, particularly in these three areas: (1) confidentiality and security; (2) ethical and legal requirements; and (3) expansion and/or transfer of the site (see Table 10.3). These potential threats can be mitigated through effective

Table 10.3 Threats to Community Trust and Policies and Procedures to Manage Them

Confidentiality and security	Ethical and legal requirements	Site life cycle concerns
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.	**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.	**Issue:** What becomes of the FHR site once the researchers have gathered what they consider to be sufficient content?
Potential threats:	**Potential threats:**	**Potential threats:**
• Marketers—use open discussion forums to spam users with marketing messages or posting mainly to sell their product or service.	• Research involving human participants must meet or exceed the standards outlined by federal regulations: Title 45 of the Code of Federal Regulations, Part 46.	• Will community members be allowed to vote whether to: (1) keep the site going; or (2) let researchers archive all content and delete the site from the Internet server?
• Data Farmers—firms that aggregate personal data culled from Web sites. Information is sold for marketing and other purposes (including scams and identity theft).	• Procedures for gathering, storing, and using data must be reviewed by IRB(s) of all universities represented on the research team.	• Community members may have conflicts regarding what to do with discussion board threads to which multiple members contributed.
• Special Interest Groups—promote their issues and steer discussions. May include consultants who seed discussions to promote products and services in which they have a vested interest.	• Best practices have yet to be proposed for dealing with data collected from informants on an FHR Web site.	• Community members may disagree about assignment of administrator rights once the research team is ready to transfer site ownership.
• Trolls—Internet jargon for forum participants who purposefully post fallacious or inflammatory messages.		

Table 10.3 Continued

Policies and procedures to manage threats to community trust

• Restrict site access to trusted participants; no guests allowed. • Authentication process. • Terms of service agreement, with strict enforcement if members violate confidentiality rules. • Code site to hide it from search engines.	• FHR Web site members must affirm that they understand and agree with all the provisions of an informed consent form that will have to include the site's terms of service agreement. • University researchers will need to obtain evidence of participants' informed consent that is acceptable to the IRB(s).	• If the community decides to keep the site going, each member will need to document a decision as to whether all or certain parts of what they contributed to the research site should continue to appear on the community-owned site. • All confidential information from research site must be erased before new administrators take over, with access to all site data.

communication from the research/administrative team running the site, starting with the development of clear, accessible, and reasonable policies and procedures.

Summary and Conclusion

Shortly after the turn of the 21st century, first-generation Internet technologies began to be applied and combined in novel ways that converged with improvements in Web technology under the rubric Web 2.0. More recently, the terms *social media* and *social networking* have become attached to a wide range of Web 2.0 sites that feature interactive multimedia entertainment, personal instant publishing with easy content aggregation and sharing, and asynchronous socializing through comments and discussions. We believe that integrating basic Web 2.0 technologies to facilitate a small online community's extended discussion of a limited topic would produce compelling benefits for qualitative research in technical communication. We have argued that such Web sites offer a means to realize, much more consistently and fully, the vision of participatory research that scholars in our field have been advocating for over a decade. To advance that collective ideal, we described our conceptual model for a first-hand reports Web site. We then related the obstacles that made programing the site a difficult, long-term challenge for us, even though our team included technical expertise that few researchers in technical communication possess. As an alternative, we investigated the feasibility of using an open-source CMS, but then we discovered that we could implement most of the features we wanted in an FHR site by using Ning, a free Web tool for building social networking sites. We summarized and discussed the benefits and tradeoffs of using Ning for our project. Finally, we identified several kinds of threats to community trust posed by an FHR Web site and suggested protective policies and procedures that must be presented in persuasive detail, first to institutional review boards, and then to those volunteering to join an FHR Web site's community.

Acknowledgment

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