



# Network ethnography and the hypermedia organization: new media, new organizations, new methods

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## Abstract

Social scientists are increasingly interested in innovative organizational forms made possible with new media, known as epistemic communities, knowledge networks, or communities of practice, depending on the discipline. Some organizational forms can be difficult to study qualitatively because human, social, cultural, or symbolic capital is transmitted over significant distances with technologies that do not carry the full range of human expression that an ethnographer or participant observer hopes to experience. Whereas qualitative methods render rich description of human interaction, they can be unwieldy for studying complex formal and informal organizations that operate over great distances and through new media. Whereas social network analysis renders an overarching sketch of interaction, it will fail to capture detail on incommensurate yet meaningful relationships. Using social network analysis to justify case selection for ethnography, I propose 'network ethnography' as a synergistic research design for the study of the organizational forms built around new media.

**Key words**

communities of practice • ethnography • knowledge networks  
• network ethnography • organizational behavior • social  
network analysis

**Scholars in the social, communication and computer sciences** have been interested in the social dynamics of computer-mediated communication since communities with significant momentum started forming over electronic networks two decades ago. Now that computer technologies have spread beyond experimental, classroom, and niche groups into other organizational forms, the more traditional disciplines are also taking an interest in this type of social and organizational behavior (Howard et al., 2001; DiMaggio et al., 2001). Methodological innovation has not kept pace, however, sometimes resulting in studies that claim to be ethnographies but that are clearly not the product of authors' immersion in the lives of their subjects. Researchers who read email correspondence or participate in chatrooms conduct a kind of participant content analysis that is sometimes labeled 'virtual ethnography'. Often, this scholarship does not carefully select cases and justify method. This article presents an argument for a synergistic, transdisciplinary method – *network ethnography* – that should be especially useful for studying communication in modern organizations over new media.

My research interests took me into a professional community that specializes in building new media tools for explicit political use. This community outfits political campaign staff with new tools for organizing volunteers and collecting donations, builds and analyzes extensive databases on voter preferences and behavior, and projects political ideology through new media by designing, operating, and interlinking technology. They build private intranets, publicly accessible websites, and delivery systems for actualities, logistical information and campaign propaganda. Members often call themselves 'the e-politics community', but they work for many different kinds of organizations across the country. This situation presented a profound methodological challenge: how could I delve into the cultural dynamics of this particular, powerful community while contextualizing my observations within the system of relations among other political actors such as parties, lobbyists, and the media?

Few social scientists would label a method 'ethnographic' if it were conducted using telephone or conference calls with subjects, and most would not acknowledge an ethnographic project if it were done primarily using email, listservs, or other chatting technology. Still, researchers struggling to study communities and organizations structured around new communications technologies with the depth permitted by qualitative methods have tried to develop a kind of 'multimedia cyber-anthropology'

(Paccagnella, 1997). Several good handbooks on doing qualitative research in new media now exist (Mann, 2000; Markham, 1998; Hine, 2000; Miller, 2000). Since this is a relatively new means and subject of research, they take on the important task of justifying the use of qualitative methods and of thinking reflexively about the role of researcher in studying life online. While they identify the promises and pitfalls of doing qualitative research online, we still have few specific research strategies for working around a challenging problem in the social sciences: sampling with qualitative methods. I argue that even though many wired communities and organizations are structured in such a way as to make rigorous qualitative investigation difficult, we need to develop more rigorous methods in order to obtain generalizable qualitative data and transportable theory in the study of new media and society.

Social scientists often apply multiple methods to study unusual forms of organization, but a growing number of social groups constitute *hypermedia organizations* – they have adapted in significant ways by using new communication technology to conduct the business of social organization over large areas and disparate time zones, and at all hours of the day. The internet, cell phones, personal digital assistants, private networks, and databases all help to extend traditional organizations into hypermedia organizations. This conjoined superstructure of fast, high-capacity hardware and software communication tools lets people transmit, interact with, and filter data. Significant differences exist between the traditional media and new media now employed in firms, state bureaucracies, civic groups, and recreational communities. First, new media are structured literally over and above traditional media in a network of satellites, relay stations, and databases that coordinate the retrieval and delivery of public and private information. Secondly, these media operate at greater speeds and with greater amounts of content than do traditional media. Thirdly, they permit simulations of offline interaction, speedy circulation of social signs and meanings, rapid decomposition and recomposition of messages, and increased transience of socially significant symbols. From e-commerce firms to state agencies and news media, organizations that employ these hypermedia technologies are growing in number and social significance. How can a researcher study an organization whose most interesting attributes make it difficult to do so in a rigorous, qualitative manner?

Scholars are increasingly interested in the behavior of people and organizations that make use of new communications technologies. As more and more people conduct their social life with these new media, the forms of organization and patterns of organizational behavior we are familiar with in communities, firms, state agencies, and other kinds of groups evolve. Organizations that can survive administrative or territorial decentralization often thrive with these media, and scholars have found rich sociological

stories in studying everything from philanthropic networks and academia, to telecommuters, online communities, and e-commerce firms.

Researchers tend to adapt methods over the course of research, and I adapted several research methods to study several hypermedia organizations working in politics during the 2000 election season. First, I assess some of the problems common to studying hypermedia organizations – from online fan communities to dot com firms. Then I evaluate ethnography and social network analysis, and, after unpacking their relative strengths and weaknesses, I repackage a method – network ethnography – that was better suited for studying hypermedia organizations. Network ethnography is not simply the sum of two traditional methods, however, and in conclusion I discuss the synergy between methods, identifying its unique aspects, critically assessing its strengths and weaknesses, outlining how it was used in collecting evidence, and illustrating its purchase in developing an argument.<sup>1</sup>

## METHODOLOGICAL CHALLENGES IN STUDYING HYPERMEDIA ORGANIZATIONS

Ethnography is the systematic description of human behavior and organizational culture based on first-hand observation. As new forms of social organization and communities appear, researchers must adapt their methods in order to best capture evidence. Researchers in several disciplines are navigating a range of methodological challenges in studying essentially the same social phenomena – physically decentralized social networks made up of individuals who form a community but are not members of the same formal organization. These organizational networks are called ‘epistemic communities’ in political science (Haas, 1990; Young, 1991); ‘communities of practice’ in sociology (Abbott, 1988; Bijker et al., 1987; Latour and Callon, 1981); and ‘knowledge networks’ in management (Podolny and Page, 1998; Uzzi, 1996). Scholars have been studying this kind of social interaction for some time, but it has proliferated in recent years with the advent of new communication media.

Certainly some ethnographic research challenges are the same as they would be for the study of more traditional groups: entry, exit, and membership role have to be negotiated whether the field site is a café, privately held firm, or white supremacist group (Adler, 1987: 63). But the most common challenge in studying the culture of hypermedia organizations lies in avoiding a flavor of either organizational or technological determinism, and one advantage of qualitative methods is that they allow researchers to expose how people build culture from the bottom up.

*Organizational determinism* occurs when the researcher imputes community culture from the formal structure of its networks and hierarchies. For example, it is rare that the importance of individuals in an organization can

be determined by their use of new media such as email. The manager who does not adopt email may be isolated in an email network while retaining a central role in the firm, and information exchanged in face-to-face executive meetings will not reach lower-level workers (Garton et al., 1997). Interviews conducted by the researcher or the researcher's participant observation alone may not capture the dynamics in which managers may retain power, despite their small engagement with email communication. The problem lies in an analytical frame that equates the particular structure of an organizational field site with broader social phenomena. In other words, the boundaries of the organizational field site are so constraining that the explanation for a phenomenon can only be the organization itself.

*Technological determinism* occurs when the researcher imputes community culture from the formal structure of communication tools. Some scholars in the history of science and technology insist that technological systems are socially constructed and try to deny any technological determinism in their writing (Bijker and Law, 1992). At the same time, some acknowledge that it is difficult to study the social construction of technology without also speaking to the technological construction of society, and blame their methods (often historical or archival) for yielding a kind of evidence from which it can be difficult to isolate the former. In other words, the boundaries of a technological field site are so constraining that the explanation for a phenomenon can only be the technology itself. Thus, the method that a researcher chooses can strongly affect the language used in the researcher's observations – usability studies alone tend to yield technologically deterministic language, and fieldwork alone tends to yield organizationally deterministic language.

### **Unbundled social cues and territoriality**

Some of the problems of organizational and technological determinism have common root causes. These occasions result from the application of traditional ethnographic methods to the study of patterns of social interaction that are essentially aterritorial, or that take place over communication technologies that reduce social cues.

Traditional methods were designed for the study of physically centralized, territorially specific social interactions. Territorial interactions are bundled in fixed, enclosed spaces in which people order and administer themselves, their resources, and their relationships. The territorialization of space is the dominant means of social organization, and the demarcated space serves as a container for political attributes, enforcing cartographic boundaries as social boundaries. Space lacks content until participants collectively define objects and relationships, and administration itself is a process of planning for change by separating and recombining the objects and relationships within the space. A good example is that of the 'empty' city lot – a place with only

trees, weeds, and rodents that is devoid of socially valuable content until it is integrated and made socially functional through urban development. These 'full' social spaces, or the process of filling them, are of particular interest to the qualitative researcher.

If there are reduced social cues between subjects who communicate with particular media, there are reduced social cues between the subjects and the researcher who joins in the use of that media. E-mail may appear to reduce social differences and increase communication across organizational boundaries (Sproull, 1986), but the ethnographic perspective cannot do without some sense of the broader social environment in which these changes appear (Spears, 1994). These new ways of working also increase social interaction between territorially and organizationally distant individuals, but distance should not become a methodological reason for excluding them from ethnographic study (Constant et al., 1996; Sproull, 1991). In other ethnographies of modern workforces, engineers or other people working in the technology sector are based in field sites that have a distinct workplace. From the researcher's point of view, the advantage of having a workplace as a field site is that cultural peculiarities can be attributed to a distinct *in vitro* effort to create and manage norms in a group of people bounded by the hierarchy and location of the firm (Kunda, 1992). In contrast, many hypermedia organizations have a less territorial basis, and this is not a methodological oversight or a problem of site specificity.

It can be especially challenging for a researcher to interpret the content of messages sent over new media, since many are text-based and can mean different things to different recipients. Researchers can easily reinterpret or misinterpret these messages if they lack deep knowledge of the individuals and relationships involved. Moreover, it is difficult to reach this depth of knowledge with computer-mediated communication between the qualitative researcher and subjects. Rich and complex communities can still evolve over communication tools that reduce social cues, but these social worlds exist somewhat independently of the social worlds in which we spend most of our time, and it takes extra care to sensibly connect an online world of limited social interaction with everyday lives.

Interestingly, many ethnographies of the new media experience carry auto-ethnographic features, introducing the researcher as one of the subjects in narrative (Markham, 1998; Turkle, 1995). This may result when researchers call their explorations of life online an ethnographic journey, but only use online text, working with the same diminished social cues as other users. The experience of the researcher becomes most of the content of the ethnographic project. Virtual ethnographies that do not become auto-ethnographic may still produce elaborate discussions of the meaning of self and of human cyborgic qualities (Hakken, 1999). Some of the more popular readings about life online tell fascinating stories of intrigue and

entrepreneurship (Borsook, 2000; Bronson, 1997, 1999; Lane, 2000; Lessard, 2000), but they are rarely generated by extended fieldwork with systematic participant observation. Some kind of qualitative method feeds discourse about cyberculture, from the earliest accounts of life online to the latest case studies of wired communities (Baym, 2000; Correll, 1995; Dibbell, 1993; Silver, 2000)

Since new communication technologies permit ever more nuanced human interaction over large areas, researchers are increasingly faced with a new challenge: how can we qualitatively study culture produced in situations of decentralized human interaction with the high ethnographic standard of first-hand experience and produce generalizable theory? How can we qualitatively study culture in such a way as to strike a palatable balance between macro-structure and micro-agency while avoiding the pitfalls of organizational or technological determinism?

Research into the role of computer-mediated communication in management structure is vast, but it is rarely ethnographic and rarely able to speak to problems of organizational culture (Pickering and King, 1995). Thus, the field of communication studies covers the role of email in altering organizational hierarchy (Markus, 1994) and organizational learning and innovation in firms and governments (Constant and Sproull, 1994; Contractor and Eisenberg, 1990; Huff et al., 1989; Keisler and Sproull, 1988, 1992). In contrast, research into the organizational culture of wired neighborhoods, fan groups, and online communities is less equipped to connect these cultures to offline spheres of social interaction. On some occasions, these communities do not even form around a central person, place, corporeal organization or with the benefit of face-to-face interaction between members. The better ethnographies of hypermedia organization do take the extra methodological step to look at life offline, even though many of these have been interested in micro-cultures and have not justified case selection with the goal of broader comparisons.

For example, in *Tune In, Log On*, an ethnographic study of a Usenet newsgroup, Nancy Baym explored the social organization of, and struggles over, meaning within an online cultural system. Borrowing from Bourdieu and others, she noted that: 'While in theory all participants in a Usenet group are equal, in fact group values make some forms of cultural capital more valuable than others and, hence, lend those with such capital greater status' (Baym, 2000: 159). With her methodological approach she found that small-group interaction online is like many kinds of small-group interaction, and in this case her method was well suited because the phenomena of interest framed the internet *itself* as a social context. This analytical frame sets into sharp relief the fascinating social norms that evolve as a community grows – deviance, entry and exit, and the presentation of self are a few examples. We must be conscious, however, that this analytical frame is

different from one in which we study the social context of the internet, in which we are interested in the norms, rules, and patterns of behavior that evolve on and offline. It is insufficient to immerse ourselves in an online field site if we want to answer broader questions and generate transportable theory.

### Problems and prospects of ethnography

As a method, ethnography is useful in forcing a researcher to define a field site, but as a term, 'ethnography' is generously applied to any qualitative study. Ethnography is in favor once again as a method for studying organizational behavior and the social diffusion of new media technologies, but it is still a rigorous and demanding method in that the ethnographer has to give careful thought to the selection of field sites. Comparativists select some cases but not others, statisticians select some data samples and discard other data samples, and ethnographers have to identify who in their line of sight is of interest. Because ethnography is centered on specific actors, it has earned a reputation for rendering rich description – narratives with historical depth and contextual perspective that trace social processes within groups. For some scholars, the 'good stuff' of ethnography is the way that it drops the reader into the social setting, reveals the mundane and everyday, and delivers both a point and a punchline (Bate, 1997).

Ethnography allows the researcher to explore all the open-ended questions that cannot be asked in typical survey instruments, and it is these questions that allow the researcher to delve into the culture of a new community. By letting people tell stories about how they enter and experience the group, their images of the group, winning and losing, being injured or surviving, the researcher can discover culture and closely experience organizations (Fineman and Gabriel, 1996). Moreover, communities are defined by symbols, social and physical boundaries, rituals, and self-awareness. Cohen writes:

Whether or not its structural boundaries remain intact, the reality of community lies in its members' perception of the vitality of its culture. People construct community symbolically, making it a resource and repository of meaning, and a referent of their identity. (Cohen, 1985: 45)

Ethnography is particularly useful in capturing and categorizing community symbols, since in-depth interviews and community membership allow a researcher to probe for meaning and watch symbolic communities interact and evolve. Along with symbols, keywords also give away culture, and their use during conferences and daily work can reveal shared understanding of social boundaries, roles, and responses (Williams, 1985).

But as Morrill and Fine summarize, ethnographic research may provide depth, multiple perspectives, and process, it sacrifices control, researcher

objectivity, and generalizability (Morrill and Fine, 1997). Ethnography is about careful in-depth interviews, but it also is about observing small-group interaction. In my particular professional community, I could study group interaction in the workplace or at the special conferences and other professional events that occur throughout the year. The companies were spread out across the country (Boston, New York, San Francisco, Washington, DC) I could not reasonably do rigorous multi-sited ethnographic research in all parts of the e-politics community (Abu-Lughod, 1997; Marcus, 1995; Radway, 1988).

Ethnography often begins with a purposive sampling of people and situations worthy of close study and proceeds with combinations of variation, extreme, snowball, and theoretical sampling – an approach that also helps inform survey sampling down the road (Morrill and Fine, 1997; Witte et al, 2000). Variation sampling identifies a discrete organization as a field site and tries to sample all relevant actors and contexts in the organization. Even though the e-politics community has some formal social organizations, many members are spread throughout the country and throughout different kinds of organizations – firms, political parties, sole proprietorships, and government agencies. Extreme sampling selects the most unusual cases precisely because they help define a norm by being so unusual. The e-politics community of practice is still small enough that extreme sampling is not necessary. Snowball sampling depends on individual informants to refer the researcher on to other informants, introducing bias in the overall sample. Theoretical sampling allows examples to be selected for their fit within categories of a model, but if no overall model exists this method may not be useful. It is common for ethnographers to select informants either with theoretical sampling or by allowing informants to recommend other informants. Critics point out that, in either case, relying on informants or on researchers' models can result in inappropriate bias in sample selection. On its own, ethnography helps researchers to delve into the cultural dynamics of the hypermedia organization, but because it keeps them focused on individual attitudes and small group interaction, researchers still have to justify sample selection. This method does not equip researchers to easily set the community in a larger social context.

We trust ethnographers' processes of case selection when we know that they know their subjects' lives inside and out. When the primary means of interacting with subjects is the internet, we are much less confident that researchers' observations have any offline context. Certainly from the researchers' standpoint it may be interesting to have subjects' text-based content and responses to explore, but the inability to make independent observations leaves researchers confined to content analysis of the subjects' analytical frame. In other words, relying on subjects' interpretations of their social worlds will give researchers a rich but incomplete picture.

Ethnographers who depend on hypermedia technologies for their interactions with subjects may be uncertain about the time, location, and social context in which messages are generated, draining color about the real field site from researchers' observations (Daft and Lengel, 1986). While they are in the field, researchers are also supposed to be immersed in the activities of the community, learning languages or jargon and engaging at as many levels as possible in the daily lives of the subjects. Fieldwork involves conducting in-depth interviews, observing casual interaction, observing formal interaction, making photographic records of icons and events, collecting community stories from different perspectives, and collating information on how subjects view the world. But for some researchers claiming to do ethnography online, going into the field is little more than a state of mind because there is so little convergence between their lives and the subjects' lives: there is no physical entry into or exit from the community. There is no territorially-based field site, and the social cues that are available are unbundled from much of the context in which the content was produced.

### **Problems and prospects of social network analysis**

Proponents of social network analysis have been vocal about presenting their method as suitable for studying any social relationship, especially those mediated by the new communications technologies. In practice few researchers rely exclusively on social network analysis, but some rely on it so heavily that it is worthwhile to give the method a friendly critique so that we can be aware of its strengths and weaknesses.

Social network analysis is good at making personal relationships comparable, defining core and group membership, and expanding the number of social observations (in terms of subjects and relationships between subjects) possible in traditional ethnography (Scott, 2000). Thus, it has been especially useful in studying ideational communities created when an organization such as a firm, non-profit or government agency permits the formal and legitimate participation of its staff with other organizations. Researchers can methodically observe organizational learning and the diffusion of ideas and innovation across these communities (Brown and Duguid, 1991). The method exposes routes of communication and the width of the road, but data on the content of communication or relationships is highly reduced and often unsuitable for the comprehensive study of organizational culture. In this sense, social network analysis is like other quantitative methods that are valued for testing generalized theories, but critiqued for their positivist and unreflexive treatment of subjects and relationships. Social network analysis identifies the relative positioning of members and the partitioning of subgroups, but it does not reveal why those positions and partitions are socially significant. Social network analysis

alone is a rough tool for theorizing about organizational culture. When researchers conducting this type of analysis claim to deepen their work with participant observation, they usually only highlight its inadequacy.

Social network analysis frequently uses close-ended questions – questions that limit the range of descriptive possibility – to map out the strength of association between individuals and between groups. The diagrams yielded by such analysis can reveal a group core and a periphery, the strength of external attachments, and obligatory points of passage between communities. Moreover, they can identify high-density personal networks in the hypermedia organization, which are important in making up for the physical isolation and organizational alienation that some members may express at the outset. Thus, an understanding of the social network can help researchers to understand both their own positions and their informants' positions relative to the rest of the observable community.

Although ethnography will generate rich data about particular interactions, only a large relational database reveals egocentric and sociocentric overlapping networks and the density and directionality of ties, allowing the researcher to put the events and people of interest into a fuller context (Scott, 2000). Social network analysis identifies core and peripheral members and more comprehensively charts entry into, and exit from, the group. For example, it reveals that suppliers and manufacturers may rely heavily on personal connections among staff to sort out small disagreements in the interpretation of contracts and on the threat of ostracism from the network as a means of enforcing them (Uzzi, 1996).

In a sense, everything studied sociologically is a study of the network of relationships between individuals and groups. Social network analysis may be an excellent means of testing the expanse of cultural norms, but not of uncovering and identifying culture in the first place. Social network analysis is a method that often assigns ordinal values to norms of trust and reciprocity enveloping social actors. These values are determined with close-ended questions that ultimately reduce social relationships to mutually commensurate values.

On its own, social network analysis misses much of the rich information that the researcher can obtain by participating in the hypermedia organization and observing small-group interaction. As a method it can bring perspective to complex-layered social networks, sometimes artificially making employment, peer, and personal networks congruent. More importantly, social network analysis has limited use in revealing stories of mobility within communities. Narratives about how people enter and leave a network, or about how people move from periphery to core and back, are difficult to reduce to comparative values.

Social network analysis needs to be critically assessed before it is applied, especially in the study of new organizations and new media. The method is

based on transactional measurement, and is therefore only as good as the quality of the content exchanged. Since computer-mediated communication consists of text, modest graphics, or limited audio or video images, the method is best for distilling evidence that a communication or transaction occurred, not for assessing its particular content or significance. Moreover, social network analysis may allow community members to see new aspects of their organization, and only intimate familiarity with group dynamics will allow the researcher to critically assess the effects of their research. Again, few social network analysts conduct their work without some kind of ground-truthing. But casual interviews or participant observation alone are not ethnography, and ground-truthing by interview or participant observation is not as good as going into the field as an ethnographer.

## NETWORK ETHNOGRAPHY

Network ethnography is the process of using ethnographic field methods on cases and field sites selected using social network analysis. Active or passive observation, extended immersion, or in-depth interviews are conducted at multiple sites or with interesting subgroups that have been purposively sampled after comparison through social network analysis. Although this strategy may sound like a straightforward marriage of two traditional methods, in fact it makes several important conceptual advances possible.

First, the meaning of 'field sites' is adapted, and instead of choosing territorial field sites, the researcher has to choose a perceived community and select the important nodes in the social network as field sites. Indeed, the field site may not be a socially significant physical place at all, but may be more ephemeral – perhaps a sequence of conferences or trade shows occurring in sterile hotels that still represent key events full of important social interaction. Other field site nodes might include the loft of a start-up e-commerce business, the foundation headquarters in Rockefeller Plaza, the newsroom of a trade magazine, or the somber brownbag lecture-luncheon series of a small think-tank. Compared to selecting a single field site, identifying several nodal events or physical locations does not dilute the evidence because the important material – the social interaction of community members – remains constant. Whatever the case, thinking of the community as having constituent parts forces researchers to be aware of the shared and unique features of different organizations that are home to members of an extended ideational family. This can make for richer contextual detail.

Secondly, the researcher can manage sample bias that might appear in selecting informants with extreme, snowball, or other sampling method. Whereas snowball sampling does not allow the researcher to control the direction of sample growth, social network analysis will identify some of the most significant informants in the network, but may also bring to light

other members and roughly illustrate their relationship to the rest of the community. In this sense, network ethnography permits more rigorous theoretical sampling.

Simultaneously, the researcher can avoid banal data with the rich detail of in-depth interviews and participant observation of central informants, events, and crucial field sites. Herein lies another advantage to network ethnography: it may help the researcher manage entrance into communities of practice. The bonds of trust that allow entrance pass over the social network of the community, not through the hierarchy of the particular organization to which a member belongs, so it may be more important to have the confidence of key community members (as identified by network analysis) than it is to have official blessing from an organization's managers.

Thirdly, the researcher can dynamically use the initial ethnographic and social network analysis to improve subsequent inquiry. In-depth interviews that collect basic stories about community history will help in the design of survey questions suitable for social network analysis. The social network analysis will identify key organizations, events, and people worth discussing in in-depth interviews.

Fourthly, the researcher can more accurately chart community change over time and track the passage of ideas. Regardless of the label the researcher wants to apply, when working with a knowledge-based community, it is important to know who knew what and when. Network ethnography, unlike snowball sampling, allows researchers to conduct theoretical sampling from a large population while managing the direction of the sample. After defining research questions it is crucial to define and justify the selection of evidential cases, an exercise that requires researchers to imagine the universe of cases so as to rationalize the choice of particular cases (e.g. why should we be interested in your grandmother?). Network ethnography allows qualitative researchers to think strategically about the selection of cases by empowering them to define the universe of cases themselves. This is an epistemological exercise, however, so the researcher still needs to construct good arguments about why the range of attributes and properties may be interesting.

## **NETWORK ETHNOGRAPHY APPLIED**

One example of a hypermedia community is the network of political campaign consultants who specialize in taking ideology and party platforms online. This e-politics community is a trans-organizational system that extends from the major political parties to activist networks, telecommunications and computing professionals, and journalists. In line with the classic definition of a trans-organizational system, the community is an expanded network of stakeholders who are motivated to interact because they are dependent on the same limited pool of foundation and political

money, committed to enhancing the quality of communication between citizens and political leaders, and have integrating mechanisms that allow for leadership, the exchange of ideas, and mutual support (Cummings, 1984). But there are also clear norms of performance that establish guidelines for conduct and broad collective goals that help to define good and bad players, insiders and outsiders.

This community is interesting because it is weaving new communications technologies into many aspects of political life by designing websites and integrating new technologies into campaign structure and culture. Early in my search for a field site, one fixer told me:

There is a mini constitutional congress going on right now that nobody knows about. Whatever democracy looks like 15 or 20 years from now, it will have been designed by us.

Who was the us? What was their project? Informants often expressed their opinions on political events through the cultural framework of a community of democratic warriors working with political hypermedia:

All our experience in Florida this election shows that one single electoral result isn't possible with existing technology. Democracy has always operated with a margin of error, and it's our job to close that margin of error. Democracy isn't real yet – it is constrained by the limits of our ingenuity.

Often they referred to their network of 30 or 40 people as the 'e-politics community'. My research questions concerned the social construction of the new forms of political communication that campaigns use to organize and communicate with the public. I needed a method that would allow me to interact with people in the environment of their own professional community, as they literally and figuratively constructed technology for other political actors.

Four particular challenges had to be overcome. First, the e-politics community is structurally, functionally, and ideationally unlike others studied by social scientists. Secondly, the research questions necessitated a level analysis that was neither devoted to the behavior of macro-political institutions such as political parties, the media, or the government, nor beholden to micro-level analysis of the particulars of voter learning and behavior. Thirdly, the method had to allow an exploration of the multiple dimensions of contemporary work – both formal employment relationships and professional obligations and informal discourse about the broad democratic project in which many in the e-politics community feel engaged. Finally, the research method had to provide balanced evidence that did not prejudice findings towards either technological determinism or organizational determinism.

This field site is not a traditional professional community, since multiple overlapping ties of very different kinds define it. Individuals in the

community occupy different positions in several companies, non-governmental agencies, academic centers, government agencies, political parties, and news media. Some work in sole proprietorships or for politicians or firms on contract. Others work for some of the more traditional businesses – such as polling or public relations agencies – that are trying to add to the range of products and services that they currently offer the country's political leaders, political parties, and lobbyists. Many work for the few mid-sized firms that actually describe themselves as being in the business of e-politics. Members of the community have relatively complex formal, semiformal, and informal relationships that quickly became difficult to track because it is more of an occupational than organizational category:

A group of people who consider themselves to be engaged in the same sort of work; who identify (more or less positively) with their work; who share a set of values, norms and perspectives that apply to, but extend beyond, work related matters; and whose social relationships meld the realms of work and leisure. (Van Maanan, 1984: 58)

Although many members have the same occupation, many work for very different organizations. Moreover, many are not clear peers with equivalent or comparable organizational roles; rather, they constitute a knowledge-based group, a 'specific community of experts sharing a belief in a common set of cause-and-effect relationships as well as common values to which policies governing these relationships will be applied' (Haas, 1989). Despite the diversity of formal organizational affiliations, I believed that this group shared principle and causal beliefs, patterns of reasoning about how politics should and should not work, an understanding of the value of technology in politics and commitment to this marriage, and, consequently, a common policy agenda. For many members, the project of digitizing democratic institutions was the primary basis of affiliation, not loyalty to the university-based academic centers, non-governmental agencies, governmental agencies, political parties, and firms around the country within which they were formal members.

Secondly, I wanted to craft a research method that was not predisposed to generating theory for particular levels of analysis. For example, much of the theorizing about how democratic institutions change occurs either at the macro-structural level, where social scientists examine elections, revolutions, or elite behavior, or at a micro-structural level, where we examine how voters learn, reach decisions, or respond to media. Those who study large-scale institutional change often do so either by studying the interaction of social groups such as countries or political parties, or by examining aggregated databases about political trends. Those who study small-scale institutional change often do so with experiments or in-depth interviews. Since my analytical frame posited that both technology and democratic

values are socially constructed, and that they are not constructed in monthly or annual increments convenient for statistical analysis, I needed a method that would allow me to watch the dialogue of ideas within the community. Since this discrete community is an important part of the larger democratic process, I also needed a method that would allow me to set the evolving democratic discourse in the community within the larger context of electoral politics in the 2000 campaign year. I needed a method that would let me speak to the intermediate or mezzo-structural connections created by the small group interactions of a specific community that was powerful within the sphere of contemporary American politics. I wanted to investigate how the actors themselves modeled political discourse and what they thought of their political masters and the voting public. The people building new political communication technologies are powerful in the sense that they have quiet influence in the largest political parties and interest groups in the country.

Thirdly, I needed a way of distinguishing between formal organizational affiliations and actual power relationships in the creative process. In *Talking About Machines* (1996), Orr found two important parts to the definition of work. In this ethnography of a modern job, he found that work is both a series of employment relationships and what is actually being done day-to-day. Since I expected to find that work in the community of practice had these two components, I needed a method to help me study each of them. Moreover, I quickly discovered the importance of ideational work – exchanging and debating ideas about democratic politics. In the e-politics community formal structures and actual work are often distinct. I could not always predict the nature of a respondent's day-to-day work from the apparent employment relationship. The exchange of ideas that propels many people does not always occur along the lines of employment or with immediate colleagues. The ideational work community comes from extended social networks. Moreover, much of the literature on professionalization describes how information is monopolized and expertise is bounded. The opposite seemed to occur in this group. Even though many firms, charities, schools, pollsters, parties, and consultants would take different positions on many policy questions, their IT people collaborated, sharing strategies and content.

Fourthly, method choice would have clear implications for the quality of evidence gathered to answer these research questions, especially vis-à-vis organizational or technological determinism. Scholars have long noted the cultural pervasiveness of technological determinism, finding that people often provide their own accounts of history in language laden with it (Smith and Marx, 1994). Moreover, there is a definite tradition of describing the form and shape of democratic institutions as a consequence of the technical prowess of a polity in collating public opinion (Winner, 1980); it has been

argued, for example, that the telegraph made politicians more accountable at the turn of the century (Blondheim, 1994). On first contact, some members of the community will announce that the logical, if not inevitable, application of hypermedia technology is in political life, where it makes democracy more direct and more deliberative. A kind of soft determinism is at work here in the community conviction that even though citizens must step up and use the technology, the use of internet in politics is unavoidable.

In sum, social network analysis alone probably would have revealed that I did not have much of a community to study, its individual actors are not bounded by a formal organization or physical proximity but are merely a collection of individuals with common professional interests in technology and politics. Ethnography alone probably would have revealed that there is a strong community bond between some members, but it would not have rendered a broader portrait of the size of the community, revealed distant members, or exposed widely held norms, rules, and patterns of behavior. Network ethnography, however, produced rich cultural data about ideational work in a wired community practice, data I could situate between the contexts of micro-level group interaction and the large-scale machinations of American political elites and historical voting trends, with little risk of producing technologically or organizationally deterministic results.

### **An example: confirming field observations**

After only a few weeks of fieldwork, I had collected a number of observations about how members of the community were concerned about the dominant role that private, for-profit commercial enterprises had taken in producing political hypermedia. These concerns were difficult to substantiate beyond the observations of several informants, however. To help understand the relationships between formal organizations and the informal community, I created a data set based on conference-panel interaction. In the five years preceding the 2000 elections, there were 35 professional conferences on themes of digital democracy and politics online. I used the programs and transcripts for all of the conferences – the universe of cases – to build a database of who sat with whom and what was discussed. Network analysis of attendance, topics, and changing affiliations helped me to understand social relationships and idea formation, as well as the diffusion from the group of 20 who attended the early meetings to the hundreds who attended recent conferences about e-politics. Moreover, the panel transcripts and recorded debates were an important source for linguistic and content analysis in my search for the talking ideology.

Table 1 reveals that in all, 765 different people registered for at least one conference about politics online during the five-year period, but that participation was unevenly distributed. For example, nine people appeared on five panels between 1995 and 2000. Over the same period, 753 people

• Table 1 People participating in e-politics conferences, 1995–2000

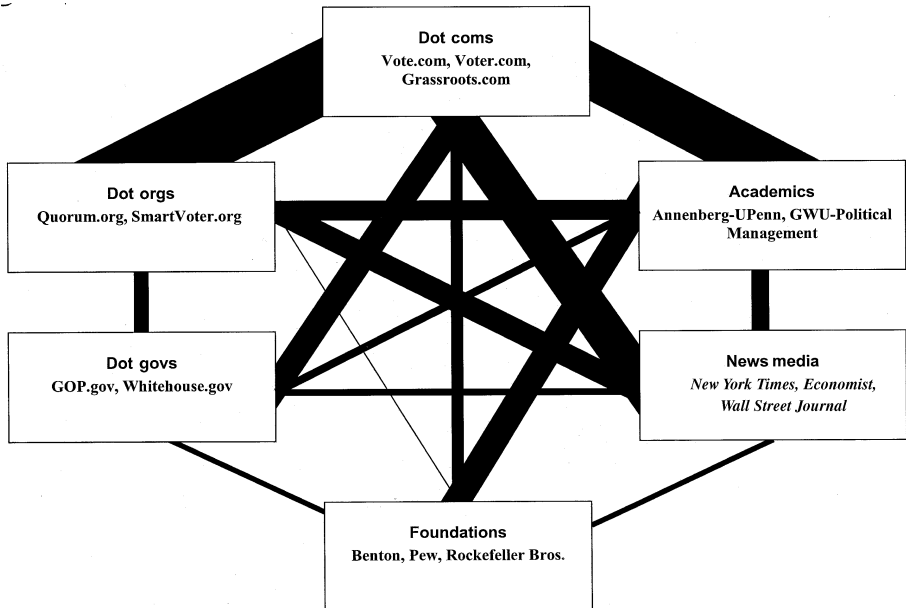
CONFERENCE PARTICIPATION	COUNT (%)	CUMULATIVE COUNT UP (%)	CUMULATIVE COUNT DOWN (%)
Only in Audience	184 (24.1)	184 (24.1)	765 (100.0)
1 Panel	435 (56.9)	619 (80.9)	581 (75.9)
2 Panels	83 (10.8)	702 (91.8)	146 (19.1)
3 Panels	32 (4.2)	734 (95.9)	63 (8.2)
4 Panels	19 (1.3)	744 (97.3)	31 (4.1)
5 Panels	9 (1.2)	753 (98.4)	21 (2.7)
6 Panels	4 (0.5)	757 (99.0)	12 (1.6)
7 Panels	3 (0.4)	760 (99.3)	8 (1.0)
8 Panels	1 (0.1)	761 (99.5)	5 (0.7)
10 Panels	2 (0.3)	763 (99.7)	4 (0.5)
12 Panels	2 (0.3)	765 (100.0)	2 (0.3)

sat in the audience or appeared in five panels at most, and 21 people sat on at least five panels over the same period. Broadly speaking, a quarter of those who participated in one of the conferences only attended, and four-fifths of those who participated either attended or joined in only one panel discussion. Since panel participation was usually invited, and speakers were expected to share stories of triumph and failure (usually triumph), those who spoke on panels framed the debate and discussion about e-politics. About 150 people spoke on at least two panels, about 60 people spoke on at least three panels, and a core group of about 30 people spoke on at least four panels. This core group appeared to dominate dialogue about the social construction of political life online. Table 2 reveals that private firms and political consultants dominated dialogue during this period about how

• Table 2 Dot com delegates dominate dialogue on digital democracy, 1995–2000

DYADIC RELATIONSHIP	INSTANCES
Dot com + Dot org	53
Dot com + Dot edu	40
Dot com + News media	30
Foundation + Dot edu	20
Dot com + Dot gov	19
Dog org + News media	17
Dot org + Dot edu	15
Dot edu + News media	13
Dot org + Dot gov	11
Dot com + Foundation	9
Dot gov + Dot edu	6
Dot edu + Dot gov	6
News media + Foundation	4
Dot org + Foundation	1

technology could be applied in political life. In total, there were 151 instances of a dyadic relationship involving a representative of a dot com; these represented over 60 percent of all the dyadic interactions. These relationships are graphically represented in Figure 1. Moreover, analysis of the network of conference panel interaction revealed patterns in how the same people changed formal organizational affiliations over the years, exposing how many individual people moved between formal employment in government and private industry while maintaining informal membership in the e-politics community. It also quantitatively confirmed field observations that people working for civic groups were frustrated by limited access to granting agencies, and that they had more camaraderie with private firms than with foundation staff. This analysis identified individuals who were core members of the community, several of whom I had not met in my field site but were clearly important subjects. Of course, I knew I had to spend time with certain people who had not been pointed out to me through social network analysis. Several of the chief organizers were rarely also panelists, and so social network analysis alone would not have revealed their centrality. Some of the acknowledged experts actually liked to heckle from the sidelines. Analyzing the conferences this way helped me to re-enter the field more purposively because I could sample individuals, projects, and organizations and the basis of several features: their core or peripheral



Note: line thickness is proportional to the strength of subgroup relations as reported in Table 2.

• Figure 1 The e-politics network of organizational ties

positions and ideological platform, their duration in the universe of cases, and their entry or exit trajectory.

As a multi-method approach, network ethnography has several disadvantages. For the researcher, an important part of ethnography is actually the formation of genuine friendships within the community, and the urge to do a comprehensive study can get in the way of maintaining regular contact with a small group of informants and fixers. The more decentralized the community, the more costly is travel. More important are the epistemological and research implications of defining a community that has not been through the exercise of examining itself in-depth. Researchers want to study networked communities in their nascent form, and mapping a community will elucidate its fragments. And as in traditional ethnography, being associated with certain core or periphery groups in a large network will affect the researcher's ability to enter other parts of the community. True face-to-face ethnography may help a researcher to manage this risk better than online ethnography, because information signals about social stigma can be inadvertently transmitted through personal contact, but mediated contact allows subjects to manage and control such signals.

## CONCLUSION

The benefit of network ethnography is that it strikes a balance between macro-structure and technological or organizational determinism on the one hand, and micro-agency of the social construction of culture on the other. It also forces researchers to justify the choice of field sites and subjects, necessary when faced with the challenges of studying a hypermedia organization. An old sociological adage holds that qualitative methods tend to be best for generating theory and quantitative methods tend to be best for testing theory. Network ethnography helped to generate theories about how democratic ideals are infused into technological design and to test how technological design perpetuates those ideas in broader social contexts.

I provided a friendly critique of both ethnography and social network methods and argued that a synthesized technique of network ethnography helps to accomplish research goals in spite of the problems inherent in hypermedia field sites. Network ethnography is a distinct research method – not just social network analysis with some interviews tossed in to casually specified relations in the network, not just ethnography with a network spider diagram generated by some software. Network ethnography has allowed construction of a grounded theory without encountering some of the sample-bias issues of which other grounded-theory research has been accused, allowing a systematic sample, with considerable depth, of the relations in a community.

In choosing to study a physically disparate community, I did not develop the many deep friendships that some ethnographers claim are the lasting

reward of good ethnography, and travel costs were significant. But the method did overcome several of the particular challenges: the unusual community structure, the need for context within micro- and macro-political processes, the ideational nature of community work, and my search for kinds of evidence that would not prejudice observations towards either social or technological determinism. Moreover, I did not want to fabricate a community by creating a sample of cases selected on the basis of shared norms and values; network ethnography revealed core and peripheral members, outsiders traveling in the same policy circles, and 'bad' members of the community. If I had deliberately selected people based on shared norms about technology and politics, my sample would have suffered from elective affinity.

Network ethnography allows the researcher to strategize over multiple points of entry into a community, avoiding the less manageable cascading or snowball sampling methods of traditional ethnography. Through the analysis of attendance records at professional meetings, or through surveys of trust and reciprocity, social network analysis helps to confirm the centrality or periphery of community members. The method allows the researcher to give special attention to the qualitative social boundaries that can demarcate a community – boundaries that are unbundled from territorial space.

Obviously researchers should adapt this method as they see fit, but, generally, an application of network ethnography would occur in stages. First, researchers would research, select, and enter a field site until they have a rough sense of community boundaries. This is necessary to identify a sample population, select the criteria for survey questions on centrality, and ultimately, ground-truth the results of social network analysis. Secondly, the researcher would conduct a social network analysis on as many members of the community as possible, especially with members who may have more (unobserved) contact with other members than they have had with the researcher. Thirdly, the researcher would use the findings of social network analysis to identify subgroups and clusters worthy of close study, previously unsuspected points of entry for further fieldwork, and subsequent methodological strategies such as purposive sampling for in-depth interviews according to core membership, periphery isolation, membership duration, or other individual attribute.

Several scholars of organizational behavior have charted the rise of different kinds of networked organizations, networked communities, or networked professions (Castells, 1996). Network ethnography is particularly useful for the in-depth study of emerging hypermedia organizations, from e-commerce firms and global activist movements to collaborative research projects, criminal networks and immigrant diasporas. This synergistic method helped to define community boundaries and core groups in a distributed social network and to organize different kinds of observations

about the social construction of political hypermedia. Network ethnography is an amalgam of traditional ethnography and social network analysis. The sample is generated purposefully but informed by network analysis. As a method, it reveals the complex fabric of associations between members with very different roles in very different organizations, while also exposing their deeply shared ideational commonalities. It is similar to theoretical sampling, but it allows for more strategy in selecting events, respondents, and organizations for in-depth analysis from the universe of cases.

As workplaces and professions become increasingly wired, physical proximity becomes strategically less important for social organization. Employers and employees may be less inclined to flock to areas of the country, or areas within a city, where their industry has a professional presence and finds prestige in place. If this displacement happens to other professional communities and they become as decentralized as the community in this study, scholars of work and organizational behavior will be faced with unique research challenges in studying communities of practice that might appear elusive because they are not centered in the way autoworkers are associated with Detroit, traders are associated with Wall Street, or IT workers are associated with Silicon Valley. As a synthesized method, network ethnography may help scholars to face contemporary research challenges, especially in the wired community networks – professional and otherwise – that are proliferating in modern social life.

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### Note

1 Debating whether qualitative methods are better than quantitative methods in any absolute sense is of little value here, so this argument proceeds under the assumption that researchers have already decided that for their particular research questions and cases, some kind of qualitative method is desirable.

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