

## INTRODUCTION

# The Community Network Lifecycle: A Framework for Research and Action

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Since the publication of Doug Schuler's influential book *New Community Networks: Wired for Change* (1996), community networking has gained definition and momentum as a sociotechnical phenomenon in the U.S. and elsewhere. It has emerged as a research field of enviable vitality as well. This special issue is focused on a neglected but fundamental research question: How do *community networks* originate, stabilize, and change in their socio-historical context? I use the term here to refer to systems enabled by information and communications technologies (ICTs) and "intended to help revitalize, strengthen, and expand existing people-based networks" (Schuler, 1996) in locality-based (geographically grounded) human communities. Social activism is an important motif in community networking (Schuler, 1996). I include *community technology centers* under *community networks* (the papers in this special issue cover both modes) on the reasoning that, despite differences in emphasis, both modes (see Beamish, 1999) help foster social networking.

The framework developed here is grounded in theories of community social organization and is attentive to the social and historical context within which the community network lifecycle—origin, stabilization, and transformation—plays out. Community networks must be analyzed as artifacts shaped within particular systems of social organization (or social structure), and it is here that explanations for variations in technological form and function must be sought. They develop in the "ordered arrangements of relations" (Wellman, 1997) between individuals, groups, and organizations that describe community social structure. They are embedded in these relations; their constitution and ongoing operation are shaped by them. The network may change these relations as it matures as a social object, but the starting point for an adequately historicized and socialized account of the lifecycle would have to be in community social structure. The starting point, in

other words, is community (see Calhoun, 1998) or, rather, locality-based community.

*Community* has many meanings. A common sociological focus has been on social organization and activity based in a specific locality. This special issue is concerned with such communities as defined historically, by administrative fiat and/or economic activity. Communities analyzed here range from an urban housing complex (see articles by Pinkett & Hampton in this issue) to a region in south India (Blattman et al., this issue). While community size is important, one may, for a number of reasons, choose to analyze "federated" communities made up of smaller member units. Social life in these units, or even in the larger community as a whole, may evidence the kind of organic unity and intimacy celebrated in Tonnies' *gemeinschaft* type. More typically, however, communities are diverse in their social makeup and relations. Community constituents—residents, organizations, groups—may participate in a variety of ties in their daily life. These may be "directly interpersonal . . . and mediated" or indirect (Calhoun, 1998). Some ties may engage a single facet of a constituent (a casual business exchange, for example), while others may involve multiple (see primary and secondary relationships in Calhoun); they may be formal or informal, established or emergent, strong or weak (Granovetter, 1973), intra- or extra-local in scope (Warren, 1978). This aggregate, emergent social network describes community social structure. To understand a community is to understand "the interplay of these . . . webs" (Warren, 1999). Arguing their centrality in community life, some (e.g., Laumann, Galazkiewicz, & Marsden, 1978) have characterized community structure more narrowly to refer to inter-organizational relations.

The idea of social structure offers the following viewpoints for analyzing locality-based community. First, analytically, structure pre-exists action and both enables and constrains it (Archer, 1995). However, action is not

determined by structure but conditioned by it; the relation is one of loose coupling (Galazkiewicz, 1991). Actors are not minions of structure and may act independently of it. Culture (professional norms, training), habit, and altruism are potent sources of motivation and counter-influence on the actor. By acting, actors reproduce or transform structure. Second, power is a key differentiator in the social order, affecting both macro- and microsocial relations: "Neither power nor community can be understood except in light of the other," wrote Nisbet (1962). Some constituents enjoy more clout than others due to their structural location: They may be more *influential* in their capacity to mobilize resources and more *powerful* in their capacity to apply sanctions to encourage compliance (see Walton, 1973, on potential power or influence and actualized power). Influence is often enough: A large firm may direct local decisions simply by virtue of its significance for the local economy (Brint & Karabel, 1991). Third, positions (roles) actors occupy in the social order come with vested interests; interests provide actors with "presumptive motives for acting" (Porpora, 1989). It is in the interests of the large local firm to pursue profits because it is in a competitive zero-sum relation (Porpora, 1989) with others in its operating context. Individual representatives are assumed to have their own interests and may be motivated to further their own over those of the firm if they conflict. Fourth, social needs recognized and prioritized (explicitly or implicitly) in a community are an aspect of its structure and reflect its hierarchy of values (Nelson, Ramsey, & Verner, 1960)—its policy agenda.

The framework goes well beyond the papers included to ground an approach to the community network life cycle in community structure. Space restrictions permit no more than an outline of key elements. The first is the link between structure and action. A macrosocially informed analysis of the lifecycle would be sensitive to the location and distribution of power (not just locally) and to how powerful interests coalesce to secure particular technological outcomes. Given the observed "increasing orientation of local . . . units toward extra-community systems" (Warren, 1978), a purely locality-focused understanding of *macrosocial* may miss the actual source(s) of control. As artifacts assembled by human actors interacting in social forums, such as design meetings, community networks are obviously also shaped at the microsocial level. It is often here that macrosocial interests become visible and get expressed. Community network form and function are best understood as contingent outcomes of the interplay of the two levels. The second element is closely related to the first. A structurally informed view recommends a social shaping approach (see Bijker, 1995; Pinch & Bijker, 1984; Mackenzie & Wajcman, 1985) to the lifecycle—that the community network is molded, intentionally or otherwise, by social processes. The "how and why" of

influence, its motivation and direction, and the social consequences of technological choices would be important concerns of this approach (see Winner, 1985). Technological influences on technology are also acknowledged. Contra technological determinism, the social shaping approach rejects the idea that technology is autonomous, *sui generis*, and directs analysts to the *prior* question, to genealogy: "What has shaped the technology that is having effects?" (Mackenzie & Wajcman, 1985). The social shaping approach also opens possibilities for practical action by showing that a particular technological form is not historically inevitable, that it might have turned out differently under different circumstances, and that it can be changed.

### COMMUNITY NETWORK ORIGIN

In the inaugural paper Blattman, Jensen, and Roman present a contextualized analysis of the "community"—an administrative entity called Melur Block in south India. They develop a socioeconomic profile of the area and document the "community networking and information needs" of residents, farmers in particular. This yields insights on the kinds of information (and mediated information services) that would be useful to this target group. The authors find that information on pest control, seeds, and techniques would improve the *technical efficiency* of farming in the region. Price and market information, on the other hand, would be less useful for varied reasons. For example, the dependency relation between a farmer and the middleman who loaned him money would require that the produce be sold to the latter, not in the open market. The authors provide suggestions for context-sensitive, nondiscriminatory design of mediated interventions, noting the realities of stratification from gender, class, and caste in the area. To reduce the risk of exacerbating existing inequalities in access, they argue the need for an integrated multimedia approach where ICTs (accessed via telecenters or kiosks) are but one of a mix of tools, along with the mass media, available to rural users.

Pinkett (this issue) presents an equally contextualized account (emphasizing "indigenous assets" rather than community needs) of the development of an ICT infrastructure to support community building in a Boston housing complex. Pinkett's strategy is an empowering one that sees technology users as active producers of content and community members as active agents of social change; the project is an attempt to integrate these views and evaluate the consequences for social and cultural capital development. In pursuit of these goals, Pinkett installs a community network and a Web application (designed by him) and trains users. Residents who participated in the project reported increased social contacts locally (in line with results in Hampton & Wellman, 1999) and greater awareness of assets and resources (including residents' skills),

opportunities, and services in the neighborhood. Importantly, participants reported an increased level of confidence in their own strengths and capabilities. (Carroll & Rosson [this issue] touch on the value of self-efficacy generally for fostering a sense of community.)

A community's constituents may engage in intra- and extracommunity ties. In a social sense, communities lie at the intersection of local and extralocal ties maintained by its constituents. The *balance* of the local and the extralocal contributes to variations in community structure. Too much of the former would isolate and provincialize it, while too much of the latter would render it a mere node on extralocal circuits of power and signification. Local relations are important in that they may, under appropriate conditions, localize decision-making (Warren, 1978). Indeed, community development has been characterized as a progressive strengthening of intracommunity linkages (Warren, 1978). However, such ties are notoriously difficult to sustain (O'Brien, 1983). Constituents may develop conflict as they pursue needed resources—power and money in particular (see Benson, 1975, on domain conflict among organizations). As Melur's telecenters gear up to provide technical information to farmers, they would have to negotiate terms with institutionalized sources (e.g., government agencies) or develop alternative ones. The technical support structures they would require to stay operational may complicate their development as an independent local resource. The authors are aware of the criticality of such contingencies for telecenter sustainability. This is where extralocal ties can help, by instituting and strengthening local ties. They may, for example, link telecenters with extralocal social capital and resources to catalyze strategic local ties to negotiate structural constraints (see Cohen, 2001). Indeed, Blattman et al., in this issue (and Pinkett) represent such a resource for their site. Extralocal resources can help leverage change in the local normative order by promoting emergence of "competing power centers" (Walton, 1973).

Blattman et al. do not envision an overtly political function, correctly emphasizing the provision of "basic communication and information services" to potential users in Melur. This by itself would empower users. However, their careful delineation of the embedding social milieu—the network's starting conditions—allows us to understand what aspirations may realistically be projected on to the telecenter, the extent to which they may be feasible, and the kinds of interventions that may be possible (and necessary) through this new institutional entity in Melur.

As argued, a community network cannot be assumed to start up in a social vacuum. It cannot be assumed to start up in a technological vacuum either. It is very likely embedded in pre-existing ICT infrastructures and in the social support structures that have developed around ICT resources in service provider and user sites. It may be nec-

essary to extend/upgrade/modify the already existing ICT resources at these sites to connect to the network. The extent to which service providers and users are willing to change existing infrastructures to accommodate the network will depend, among others, on the *financial* costs involved. Radical alterations will be more expensive than incremental ones and may be opposed. Pre-existing resources (infrastructures in particular) thus have the ability to constrain network form and function. Technology itself, in other words, is a shaper of technology (Mackenzie & Wajcman, 1985). Similarly, technical support structures (e.g., technical staff) at provider and user sites are geared toward particular technologies, not all. Certain ICTs may require specialized support structures for their operation. Radical alterations may be costly in *cognitive* terms as well—stemming from need for staff retraining—and may be resisted for that reason. Support structures, in particular those that develop around ICT infrastructures, also have the ability to constrain the network.

## STABILIZATION

At some point after its genesis, a community network may become more stable in at least some of its cultural environment and its technology.

Carroll and Rosson (this issue) report that "new social structures" emerged when the Blacksburg Electronic Village (BEV) was first organized. One such grouping, the BEV-news listserv, started out as a technical support resource for newbies and developed into a lively forum for "general social support and interaction," not just online but in the area generally. As the BEV matured, however, some valued things changed. While its integration with the Internet broadened user access to extralocal resources (such as the national League of Women Voters), it has also threatened to undermine its local identity by facilitating self-referencing links from local branch offices and their national parent companies. A second and related concern is that much of the up-to-date content on the BEV today apparently is developed and maintained by "a small number of relatively resource-rich institutions" (some with help from national website maintenance contracts). Such concerns raise important questions on the ontology of any locality-oriented, purportedly public resource, not just the BEV: *What is the network about?* and *Whose is it anyway?* They raise important questions on the network's extent of embeddedness in community structure.

A public artifact may be narrowly or broadly embedded, answering to a narrow or broad range of interests. A broadly embedded artifact is structurally differentiated. Aiken and Alford (1970) use the term to refer to "the number of organizations of different types which play some role in community life." They found that highly differentiated communities—with diverse actors involved

in community concerns—were more likely to be socially innovative as well. This is a useful evaluative criterion for community ICTs as well. Analysts of place-based community argue the importance of institutions that can “enhance integration, but . . . do so in ways that resist homogeneity and sustain differentiation” (Selznick, 1996). To the extent it purports to be responsive to the public interest, a community network should aspire to be exactly such an institution—a differentiated resource. The more broadly embedded it is, the more likely it will feature a plurality of interests (intra- and extralocal in origin) in its constitution and governance arrangements. It would be able to muster countervailing forces against any one group jockeying for control, but whether they succeed in pushing the network toward social innovation would depend on how well endowed with influence resources proponents are (see Laumann et al., 1978, on “effective interest”). Whether the network privileges extra- over local links would also depend on such considerations.

A broadly embedded community network may not necessarily be a microcosm of its community. It should, however, be organized around broad areas of community experience—issues, institutions, needs—so as to convey to users “a sense of significant incorporation” (Rubin, 1973) into social life. This can occur in many ways. The first is through an established institutional entity such as the department of social services. The network may, for example, link area seniors and DSS staff on interactive Q&A sessions to better coordinate service delivery. It may permit seniors and their caregivers to interact as well, enriching institutionalized as well as informal social relationships all around. More radical articulations are certainly possible. Established groups like the BEV Seniors (Carroll & Rosson, this issue) for example, may expand their mission from “outreach and training” to voice seniors’ healthcare and public safety concerns. To the extent that they use the network as a vehicle for collective action, they will have insinuated new allies and targets into its sphere of concern, enhancing its structural differentiation. Marginalized groups may use the network to claim recognition for their needs on the community’s values hierarchy and inject a new set of players and relations into local life. To the extent that it develops into a broadly embedded public resource, the network expands the governance capacity (see Healey, Cars, Madanipour, & De Magalhaes, 2002) not just of itself but also of the community at large. It brings a plurality of voices into policy-making by diversifying the discourse space, contributing to a pluralistic power scenario (see Walton, 1973). By serving as a site for active contestation and negotiation, it links community constituents to varied aspects of community life and invests them actively in its politics.

A community network cannot simply be assumed to be coextensive (see Carroll & Rosson, this issue) with com-

munity structure. This would be an aspiration, a normative ideal, not a given. It may start out narrowly embedded—affirming/reproducing certain relations, interests, values—for many reasons: Not all groups may be able to afford it (this would be especially true of advanced technology networks) or may see value in it, and not all may have the skills to take advantage of it. Underpowered, under-resourced groups may simply be ignored: the potential for self-serving appropriation by the resource rich and powerful should not be underestimated. These realities argue a dynamic activist (versus functionalist and static) model of network development. A network cannot be assumed automatically to develop in line with a community’s varied interests. Similarly, it cannot be assumed that it will become more diverse in its constitution. Its instruments of institutionalization (bylaws, “netiquette” rules) may be defined to resist change in explicit or implicit ways. Activist intervention may be required to push the network toward structural differentiation. One possible area is the development of an endowment to assist under-represented interests. The endowment, defined as a “set of resources . . . held jointly” (Lohmann, 1996), could be funded, for example, by “taxing” the resource rich in exchange for the benefits they derive from the community network. Enlightened urban planning practice offers examples of private developers accommodating publicly accessible amenities in their plans in exchange for incentives. Extracommunity resources may be tapped to fund the endowment as well.

To assume that the network is co-extensive with local concerns would be problematic as well. As it matures, local content may be displaced by the nonlocal, intra- by extracommunity relationships. This may happen by default: Lack of resources may thin out local presence on the network (Carroll & Rosson, this issue). Tighter links with the Internet may exacerbate such trends. To counter the decentering, decontextualizing influence of the Web, Carroll and Rosson report on MOOSburg and CommunitySims—tools developed on the assumption that a sense of place and shared concerns can be cultivated by building “models of place” into a community network. Rebalancing the network thusly (in terms of local and extralocal content), the authors believe, would help transfer the normative expectations of context-appropriate behavior that regulate offline social life onto online interactions on the BEV. This is a compelling insight and is explored by De Cindio et al. as well (this issue). A concern with the local may also help call users to acting locally. Utopian visions of the Internet driving sweeping social change may have underestimated the motivational bases of action, the appeal of relevance, and the necessary link between politics and place (Levin, 2002). Local institutions are privileged here: They can locate targets—and the motivation—for direct action. Their local scope can promote a sense of self-efficacy in

members—that they are, as de Tocqueville noted, “worth the trouble trying to direct.” They can frame issues of non-local origin in locally relevant ways. Community networks can help similarly. Carroll and Rosson’s efforts to shift the BEV toward the local recall Selznick’s (1996) comment on the emergence of community itself: It would, he said, depend on “the opportunity for, and the impulse toward, comprehensive interaction, commitment, and responsibility.” The operative words are *opportunity* and *impulse*. A network may attract local eyeballs because it is there, but visitors must be motivated—impelled—by its content and issue framing before they will act locally; they have to want to assume desired roles and responsibilities on the network and in the community.

One motivator is the assurance of civil conduct online. Civil society, as has been suggested (Friedmann & Douglass, 1998), is as much about civil discourse as it is about the moral economy. Conceptualizations of civil society (or public sphere) are as concerned about expanding and diversifying discursive space as they are about assurances for open civil dialogue. DeCindio, Gentile, Grew, and Redolfi (this issue) trace the development of discourse rules on the RCM, Milan’s civic network (in Italy). The rules regulate online conduct by requiring users to introduce themselves by name; no anonymous participation is allowed. This requirement helps “transfer the rules of real-life social relations” to online relations, creating a “continuum between the physical world and the virtual world . . . and serves to root the online RCM community in the proximate community served by the network.” The explicit parallel sought between offline and online life stems from the RCM’s targeting active citizenship as the civic virtue to be developed (and capitalized on) by the network. An active citizen is an active source of online content and one who will assume responsibility for the content he or she generates. The rules ensure that this founding principle is not forgotten. There are sanctions, and role definitions, that work with the rules to maintain the RCM’s social order.

Citizenship and social justice are not the same thing. The latter is “concerned not with the formal equality of citizens, but with the substantive inequalities between them” (Tonkiss, 2000). They are however intimately linked through social agency that active citizenship enjoins. Citizens as social agents can mobilize against injustice; they have the right to speak for themselves and others. Increasingly, assertions of social agency occur over the gulf that splits the substantive from formal aspects of citizenship for “second-class citizens” and marginalized groups. They center on claims for a “distinct social space” (Flores & Benmayor, 1997) by and for groups on the wrong side of this divide and on their right to identity construction in and through such a space as part of a cultural and political offensive for full citizenship. The regulation of RCM’s space opens out to similar issues. As it matures, the rules

are being tested on aspects of the RCM’s authority structure and accommodation of emergent interests. Apropos the first, while rules specify member conduct, that of some administrators is left unspecified. This is problematic: The principle of citizenship requires that all online conduct be subject to the rules. Per the second, the authors report that RCM’s technology, and the rules themselves, have been tweaked to accommodate special needs, e.g., assurance of anonymity for gay users. As with any reflexive construction dedicated to equality and openness, the rules will continue to inspire new challenges to them as the embedding social milieu changes. They will inspire tough questions: How will claims for accommodation from other special groups be dealt with? What about groups (e.g., recent immigrants) who may lack the resources to organize? With its avowed commitment to citizenship, is the RCM then obliged to actively assist such groups in claiming their “distinct social space” in community life and politics? Democratic institutions are by definition implicated in the many multicultural struggles and dilemmas ongoing in today’s public sphere, and community networks are no exception.

In technological terms, a community network is made up of *infrastructure* and *applications*. The first refers to foundational ICT resources (e.g., PCs, LAN and WAN devices) that allow computing and connectivity in and between network service provider(s) and user sites. The second refers to uses of this infrastructure. A user uses applications (software packages), which run atop the infrastructure. Applications must rely on the infrastructure to be usable. ICT infrastructures may be said to operate at the primary level of technological organization, while applications constitute the secondary level (Jepperson, 1991). Infrastructures typically take years to develop and embody high financial and cognitive sunk costs. As such, they tend to become institutionalized—stabilized, with formally defined functions and governance structures—and resistant to change more readily than do applications. As institutionalized elements, they permit compliant actions and impede those that are not. The implications are significant for community network development. Stipulating conditions for network access (i.e., restricting it to broadband) will penalize users who cannot satisfy them. Standardizing on a certain version of web browser or operating system may shut out some applications and users. Design entails choices. Designed artifacts are “simultaneously both inclusive and exclusive, aimed toward particular market segments and away from others” (Brown & Duguid, 1994; see Carroll & Rosson, this issue, on “design rationale” for a complementary viewpoint). Networks tend to stabilize around certain characteristics (both cultural and technological) as they enter into routine use. While acknowledging that design choices are unavoidable and stabilization must occur, there are at least three questions that may be

raised on network institutionalization, its inclusiveness, and its potential for progressive change. First, who is excluded and why? This refers to the social structural concerns described earlier. Second, at what level is exclusion occurring? Exclusion at the level of infrastructure would be harder to negotiate than exclusion at the applications level. Third, how open (or vulnerable) is the institutionalized network to intervention from the excluded? What online and offline avenues are available to fight exclusion? Does the network provide online means (e.g., e-mail) to allow community constituents to move against the status quo? Offline means include open access to instruments of institutionalization—the netiquette rulebook, network bylaws—that may be challenged on their inclusiveness.

ICT infrastructures are institutions in technological and social terms. Kling's (1980) *social web of computing* idea argues the centrality of technical support structures that develop around ICTs to sustain computing practice in organizations. The social web includes support staff, skill sets, and work routines as well as the contracts and commitments that regulate relations between the support function and users. The social web is crucial to computing, which would be impossible to sustain without it (see Blattman et al., this issue). As with the ICT infrastructure, the social web that develops around it tends to get institutionalized due to its criticality to the ongoing use of the infrastructure. Over time, the institutionalized ICT base is so embedded, so enmeshed, in its support web that any technological change would entail corresponding changes to institutionalized work routines, prompting resistance from the support function. Institutions tend to *infect* elements linked to them, institutionalizing them in turn (DiMaggio & Powell, 1991). Taken together then, pre-existing technological resources, in particular ICT infrastructure, and the social web that evolves around it at network service provider and user sites emphasize the *historicity of emergence* (Archer, 1995) of ICT artifacts and the attendant constraints that shape their development.

## CHANGE

Institutions embody rules that regulate social behavior while also ensuring their own reproduction. Highly institutionalized entities are relatively invulnerable to social intervention aimed at thwarting reproduction along present lines; they present “a near insuperable . . . threshold” (Jepperson, 1991) to collective action for alternative articulations. A community network that is highly institutionalized may evidence all or some of the following characteristics: a well entrenched regime of rules and sanctions to enforce acceptable conduct by users, embeddedness in a field of powerful institutions, and relative invisibility to interests outside the embedding field (see Jepperson, 1991). For example, the rules may disallow any

political speech. Interaction may be restricted to vertical contact between users and institutional representatives; direct user–user interaction may not be supported. Powerful extralocal interests may appropriate the network for their field operations in local markets, embedding the network deeply, near-inextricably, in institutionalized procedures. The network may become invisible, and thus impervious to community oversight, as extralocal content displaces the local: Local eyeballs may have little reason to go there. It must be emphasized that, even in citizen-led efforts, such outcomes may stem as much from drift as from design. However, politics is part of the explanation of institutionalization as well as deinstitutionalization (see DiMaggio, 1988); even if the motives are apolitical, the effects usually are not. What relations, interests, and values is the network institutionalizing around, and how might insurgent groups act collectively to challenge exclusion?

Hampton (this issue) reports on the mechanics of collective mobilization in Netville, a “wired” suburban residential community in Toronto. The housing developer's decision to terminate high-speed ICT services at Netville—services offered on a trial basis to residents—was the provocation for “widespread collective action.” Residents' ability to collectivize stemmed from their network of weak social ties and their use of the (threatened) ICTs—in particular a local e-mail list, NET-L—to converse and organize. NET-L started out as an aid for organizing quotidian life, and Hampton credits it with fostering a sense of community in Netville through the social contacts it facilitated. When the termination notice was announced, offline and online reaction began to form, with NET-L used to mobilize residents quickly and to convey their concerns to the developer. Hampton notes key features of the effort: Over half of Netville households were involved (higher than usual), and NET-L had organized residents quickly and more efficiently than expected. Recalling a point made by Carroll and Rosson and DeCindio et al., Hampton shows that “offline contact can encourage online contact, and . . . online communication can be mediated by concerns for how it will impact offline relations.”

Collective action is rooted in relational structures and the social and cultural resources they bring with them (Melucci, 1996). These structures also constrain action by, for example, defining power and interests, and by locating objects for action. Use of NET-L fell after residents' housing concerns were resolved. Whether new (similarly galvanizing) concerns will emerge and how they may be framed, and what their objects will be, will depend partly on these embedding structures. This field throws up objects and constructs needs, interests, and discourses that help actors forge a collective (Melucci, 1996). However, breakthrough social agency is always possible, whereby actors actively construct issues as targets of broad-based collective action and tap into resources from within and outside

their immediate operating contexts to sustain momentum. Moving from a relatively homogenous environment like Netville to a heterogeneous one raises important questions on the nature and emergence of collective action because now the field is different, with perhaps a cacophony of claims from constituent groups with differential access to power. There may be not one concern but many different and conflicting ones. Community networks, as Hampton shows, can help get the word out quickly to rally actors around and link to extralocal resources (as when NET-L exchanges were leaked to “powerful outsiders”). They can further the “logic of collective action” (Melucci, 1996) by supporting many of its elements: instituting and strengthening social ties and decision-making mechanisms, circulating information, archiving experience, and social learning. But whose concerns get voiced (offline, online) will hinge on the relationship between the network and its embedding field. It will depend on the network’s understanding of its defining function in the social order.

In a normative sense, the network’s defining function is mediating between community constituents, and between them and the world. *Community* itself has been viewed thus, as a mediating structure through which constituents “feel meaningfully related to the larger society” (Rubin, 1973). Support for open communication is a must if the network is to play such a mediating role. There is growing evidence that such a role cannot be assumed. In the early days, support for open, two-way exchange was an acknowledged object of community networks (e.g., Freenets). With the advent of the Web, however, community networks’ focal function seems to have shifted to one-way information dissemination—from government agencies and businesses to users. In the extreme case, they may provide no support for open exchange. In the less extreme case, they may support interaction between users and institutional representatives but not between users themselves. A network may be open in varying degrees, in other words. A network that permits *vertical* exchange, allowing a user to interact with an institutional representative, is less open than one that allows *horizontal* exchange as well, where users can interact with other users. Clearly, any form of collective action would be impossible without direct user-to-user connectivity. (In Hampton, it was only after NET-L was established that residents could interact online.) A horizontally open network is less likely to institutionalize around narrow interests because it is vulnerable to social intervention. A network that is only vertically open is less vulnerable.

Even if they support open interaction, community networks are only open to the extent that we want them to be. The mediating function can be construed in a passive sense (as an interface) or in an active sense. Per the latter, the network works actively to represent—and reach out to—constituents “without agency,” who may

lack the ICTs and skills needed to get on the network. They may lack political organizing skills. (Stanley [this issue] looks beyond access to the “psychosocial obstacles” that must be overcome for individuals to become users.) As part of a community empowerment strategy, outreach efforts aimed at social inclusion in and through the network could complement existing approaches (see Drier, 1996): community organizing (collective mobilization); extending reach of, and access to, the social support infrastructure available in the community for service delivery and need fulfillment; and community-based development. An activist view of the mediating function recognizes the structural (and other) impediments to community networks evolving as true civic innovations. An activist view would avoid the power-evasive assumptions of earlier community vitalization efforts in the U.S., which often resulted in the neediest—their very targets—being excluded from the benefits. Community networks, similarly, can easily be appropriated by the powerful and well-resourced; their public-regarding orientation (Wilson, 1973) cannot be assumed but must be actively worked toward. Should it emerge as a civic innovation, the network in its mediating role will not merely represent needs, interests, and values but will actively *constitute* them as the community changes. This argues against the functionalist assumption that social institutions emerge spontaneously, automatically, in response to the need for them (see Bellah, Madsen, Sullivan, Swidler, & Tipton, 1992). They do not. Needs, interests, value hierarchies, rights—these are creatures of politics (see Fraser, 1989). These construct communities as much as they are constructed by them. Community networks—as objects and as vehicles, as social catalysts—are deeply implicated in such constructions and counter-constructions. They ought to be.

This essay’s main arguments can be quickly summarized. As befits a maturing field, we need to go beyond Adamic discovery and naming exercises to robust, theoretically informed accounts of community network development as socially embedded and socially constructed artifacts. They develop within a given historical and social milieu and cannot be analyzed without reference to the embedding social structure and the actions of human actors directly engaged in the fabricative process: Their development is best analyzed at macro- and microsocial levels. They are also technologically embedded—grounded in, institutionalized by, pre-existing technology and technical support arrangements. They are thus shaped by both technological and social forces. I argue that open dialogue between users is a basic safeguard against the community network institutionalizing around narrow, private-regarding interests (Wilson, 1973). Support for open interaction implements the network’s mediating function in the community. However, considering the many impediments that constituents “without agency” face in gaining voice, I

argue for an activist interpretation of mediation—involving outreach to promote social agency and human flourishing on and through the network. The papers in this special issue take a step in some of these directions.

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I wish to dedicate this special issue to the memory of Rob Kling.

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