A THEORETICAL AND ANALYTICAL FRAMEWORK TOWARD NETWORKED COMMUNITIES

A CASE OF THE ELECTRONIC COMMUNITY INFORMATION COMMONS

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Abstract

The essay builds a theoretical framework toward the electronic information commons that can bridge virtually and physically networked communities. Relying on Habermas' theory of communicative action, first, the essay maps out community as a unit of democracy in a civil society context through which it provides a meta theoretical framework to understand a conceptual framework of the electronic community information commons from such theoretical perspectives as the public sphere, social capital, and networked communities. Then, the essay proposes an analytical framework that enables scholars and researchers alike to examine how community computer networks or virtual communities contribute to physical communities and vice versa through potential research agenda and questions. Theoretical, methodological, and practical issues are discussed.

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Introduction

With the advent of information and communication technologies (ICTs), a wide variety of virtual communities, ranging from community computer networks to recent citizen media projects in local communities, have formed new types of social relations among diverse individuals, groups, and organisations. Although newly emerging virtual communities have been connected to physically embedded communities, previous studies in the field of computer-mediated community communications have largely paid special attention to unique characteristics of online communities distinct from offline communities. Therefore, many earlier scholars and researchers have assumed that online communities are separate from offline communities. This assumption has been reflected in various terms that indicate these new communities, such as "virtual community" (Rheingold 1993a; 1993b), "networlds" (Harasim 1993), and "nonplace community" (Frederick 1993), all of which emphasises the discontinuity between traditional and modern communities.

In contrast, other scholars and researchers alike have attempted to bridge the gap between online and offline communities, assuming that the community in virtual space is based upon the community in physical space, and thus, the two types of communities are closely related to each other (e.g., Wellman 1999; Friedland 2001). Considering that both community types have a strong existence today, it is an attractive perspective that could explain our social life as a coherent whole. Although it is assumed that offline and online communities are interrelated, the theoretical and analytical frameworks that can bridge two distinct, but closely related, communities have been largely missing, especially in terms of how virtual communities can contribute to physical communities and vice versa. Therefore, the purpose of this study is to provide a theoretical and analytical framework that enables scholars and researchers alike to understand better the nexus between online and offline communities and examine community oriented citizen media projects or community computer networks.

In so doing, this essay maps out community as a unit of democracy in a civil society context, relying on Habermas' theory of communicative action (1987) through which it provides a meta theoretical framework to understand a conceptual framework of the electronic community information commons (Ostrom 1990; Levine 2002) from such theoretical perspectives as the public sphere (Habermas 1962/1989), social capital (e.g., Putnam 1995; 2000), and networked communities (Wellman 1999; Wellman et al. 2001). Then, the essay proposes an analytical framework that enables scholars and researchers to examine how community computer networks or virtual communities contribute to physical communities and vice versa through potential research agenda and questions. Lastly, this essay offers discussions on theoretical, methodological, and empirical issues, as well as practical issues regarding physically and virtually embedded and networked communities.

Theoretical Framework

Mapping Community as a Unit of Democracy

Relying on the distinction between systems and the lifeworld (Habermas 1981/1987), this section locates community as a unit of democracy and further discusses what roles community oriented projects, such as community computer

networks or citizen based community projects coupled with digital communication technologies, can play on community processes in democratic societies. The theory of communicative action (Habermas 1981/1987) offers the mechanism of social evolution, which differentiates systems from the lifeworld. In particular, communicative action enables individuals to disseminate knowledge, generate cultures, and build identities, thus integrating the lifeworld. As a consequence, the lifeworld that is integrated through communicative action – as opposed to political and economic systems that are integrated through steering media, such as power and money – nurtures civil society to grow and develop. The lifeworld is realised through public spheres that mediate between civil society and systems, in which a large public body forms public opinion and builds social capital, such as networks, values and norms through communicative action.

Although numerous definitions of community as a complex concept exist, community has long been conceived of as a unit of democracy mediating between the lifeworld and systems (see Friedland 2001) in which community members, groups, organisations, and institutions are integrated through communicative action. That is, community is considered as a mediating sphere, which corresponds to the public sphere (Habermas 1962/1989), and serves as a unit for a healthy democracy to function. Community, by definition, is one of the public spheres or equivalent to the public sphere that builds civic resources, such as social capital, not only at the individual level, but also at the organisational level, which is connected and integrated through communication networks. As the concept of community is complex, the diagram in Figure 1 attempts to locate community as a unit of democracy in a civil society context in relation to the distinction between the lifeworld and systems by comprising two dimensions (Habermas 1981/ 1987; Warren 2001): (1) mechanism or mode of coordination or integration and (2) closeness of social relations. First, in terms of mechanism or mode of coordination or integration, there are two types of modes: (1) legal coercion and money at the systems level, such as states and markets and (2) communication and norms at the social level. This makes a distinction between systems and the lifeworld. Second, in terms of the closeness among social relations, there are three types of relations: (1) intimate, (2) intermediate, and (3) distant. This results in an array of families, friendships, neighbours, voluntary and civic associations, and mediating associations in political and economic societies.

According to Habermas (1981/1987), the lifeworld that operates through communicative action has been decoupled from systems. In the decoupled relationship, the public sphere mediates between the system and civil society embedded in the lifeworld. Although the concept of public sphere is useful in understanding the differentiation between the lifeworld and systems within the civil society structure, it is somewhat abstract because the public sphere requires a substantial unit. As media is conceived of as a public sphere, it also requires a substantial unit, which is geographically and physically embedded, in order to function. The lifeworld that has been decoupled from the system comprises the interaction of communicative actions among citizens and their shared norms, culture, and personality. Community is embedded in the lifeworld that is equivalent to civil society, and the lifeworld and the system interact in the mediating realm of the community (see Friedland 2001). Further, community functions as a unit of democracy between the lifeworld

Figure 1: Mapping Community as a Unit of Democracy*

Closeness of Social Relations	Means of Social Coordination or Integration				
	Legal Coercion		Social (Norms and Communications)		Money
System	**States**				**Markets**
Distance		Mediating Associations: Political Society	Mediating Spaces: Publics	Mediating Associations: Economic Society	
			Community		
Lifeworld			**Civil Society**		
Intermediate		Voluntary/Civic Associations			

* Reconstructed from Friedland (2001), Habermas (1981/1987) and Warren (2001, 57).

and systems, and the public sphere as a mediating sphere between the lifeworld and systems can be realised in a community. As a result, family, friendships, and neighbours comprise primary forms of the lifeworld, whereas community becomes a secondary form of the lifeworld.

In relation to community, related concepts, such as the public sphere and social capital, provide valuable insights in understanding the roles of media in a community context. As aforementioned, the public sphere functions as a mediating realm between the state and civil society, which is embedded in the lifeworld. In particular, media may play a vital role as a public sphere, which creates social capital for a community to function in a democratic society. More importantly, media can function in relation to voluntary and civic organisations, which contribute to organisational social capital in a community context. Therefore, media, especially, digital communication technologies, can serve as public spheres, or integrating and mediating realms in which systems and the lifeworld encounter in networked communities. Media, particularly, information and communication technologies can also generate civic resources and culture, which, in turn, allows for a healthy community to function in a civil society context. Therefore, the following section reviews a conceptual framework of the electronic community information commons (Levine 2002; Ostrom 1990), which integrates and bridges physical and virtual communities through community computer networks or citizen based community projects through digital communication technologies.

Conceptual Framework: The Electronic Community Information Commons (eCIC)

The notion of community information commons through the Internet has been proposed by Levine (2002; for a detailed discussion of the commons, see Ostrom 1990). According to Levine (2002, 7), commons is defined as an association, which is "something valuable (intrinsically or instrumentally) that a whole community jointly owns and controls." The commons ownership is achieved through organising networks of community institutions and groups, such as non-profit and

nongovernmental associations. And voluntary membership, autonomy from other institutions, deliberation, norms to govern membership and common ownership are major features of community information commons (Levine 2002, 7).

For the Internet to be an associational commons, Levine (2002) provides three necessary conditions. First, the Internet needs a voluntary-based association that can encourage community members to participate in community activities. That is, "the Internet now needs a *voluntary, democratic organization* that can demand something of its members and *take collective action* on their behalf" (Levine 2002, 8). Second, the associational commons should be community owned commons. That is, "this association should articulate a clear definition of the 'commons' and defend its evolving principles *against anarchist and corporate alternatives"* (Levine 2002, 8). Third, the associational commons should build social and community networks. That is, "it should *strengthen networks among people* who are interested in the commons idea, by *bringing activists* from various communities into face-to-face contact, and by *sponsoring interchanges among grassroots activists, software experts, leaders of major nonprofits, and public-interests lobbyists"* (Levine 2002, 8).

The electronic community information commons may provide a virtual public sphere in which all of the community members and organisations build virtual social capital. In this case, the community commons can serve as community-owned media and community networks, in which community members discuss community issues and seek information about groups and related community issues through the participatory sphere (Tonn et al. 2001). Pre-existing social networks may lead to community networks through communication technologies, such as the Internet (Fukuyama 1995). And existing community environments, social networks and culture may serve as a basis for creating online community networks (Sullivan et al. 2002, 874). That is, as community technology has contributed to democracy (Bakardjieva 2002), community networks may facilitate civic participation (Kavanaugh et al. 2005). In addition, the electronic community information commons may function as conduits to offline community engagement. As numerous studies have demonstrated (e.g., Jennings and Zeitner 2003; Shah et al. 2001), Internet use yields a positive relationship with offline community engagement. And, physically embedded community engagement and satisfaction lead to Internet use by community members (e.g., Dutta-Bergman 2005). Furthermore, community computer networks affect social capital and community involvement offline (Kavanaugh and Patterson 2001).

Theoretical Perspectives

To understand better the electronic community information commons, which refers to community oriented experiments and practices through information and communication technologies, the following section provides theoretical perspectives to build a theoretical framework.

The Public Sphere Perspective. The concept of the public sphere (Habermas 1962/1989) has been expanded as it has faced social, political, cultural, and technological transformations. The public sphere in a face-to-face communication context traces back to the notion of a bourgeois public sphere (Habermas 1962/1989) that refers to a mediating realm between civil society and the state, in which ordinary citizens participate in public discussions to achieve common goals and interests as

opposed to private goals and interests. In particular, the public sphere notion has been changed as media, such as newspapers, radio, and television, has evolved beyond face-to-face communication. The public sphere in a mass mediated communication context obtains dual status in both physical and mediated realms. Habermas (1974, 49) explains the mediated public sphere, arguing that "citizens behave as a public body when they confer in an unrestricted fashion – that is, with the guarantee of freedom of assembly and association and the freedom to express and publish their opinions – about matters of general interest. In a large public body, this kind of communication requires specific [technological] means for transmitting information and influencing those who receive it. Today, newspapers and magazines, radio and television are the media of the public sphere."

Although Habermas did not specify the possibility and potential of the Internet as a public sphere, the Internet provides another mediated public sphere for citizens to discuss current issues, and reach mutual understanding and consensus-building (e.g., Papacharissi 2000). In particular, as Web sites are interconnected through online networks, they connect citizens and grassroots groups to exchange information and engage in discussions, thus functioning as multiple public spheres (Dahlgren 2005). In this regard, it is noteworthy to consider three conditions beyond technological innovations that enable the Internet to serve as a public sphere.

First, the Internet should be free and independent from power and market forces. Without freedom from structural constraints, the Internet fails to function as a public sphere. Second, the Internet should provide citizens and grassroots groups with various information and news that can encourage people to engage in discussions, which in turn, may lead to collective actions. Third, the Internet should foster interaction between political elites and citizens, and equally important, among citizens. In reality, however, the Internet fails to provide multiple public spheres to citizens due mostly to structural constraints (e.g., McChesney 1999). Likewise, as Dahlberg (2004) points out, market forces are threatening online civic communication through the Internet, thus shrinking online public spheres. That is, information interwoven with entertainment is becoming prevalent and dominant.

Nonetheless, the Internet, and especially Web sites, function as multiple online public spheres that connect citizens, thus encouraging participation in community activities (e.g., Dahlgren 2005). Web sites may be also useful for advocacy and activists groups, such as environment social movements and minority groups in local communities, to achieve their organisational goals by performing their organisational activities. Indeed, the Internet is of importance to grassroots community organisations as their new communication tool (Beck 1997). In addition, civic portal sites provide information regarding their activities, which can be converted into civic or social capital in a local community (Putnam 2000). More importantly, Web sites of civic groups provide interactive features (Schuler 1996) so that people in organisations and community members can communicate with each other through discussion boards, Weblogs, and other functions of online discussion, which are open to the public.

The public sphere perspective focuses on open public communication and interaction among citizens, which is also one of the most crucial foundations for communities. Given that online public spheres are interconnected through networks, they are more likely to bond and bridge social ties that build trust and mutual obligation among community members. In other words, the online public spheres

may function as bases that enable citizens and groups to build social capital and lead to civic participation, which will be discussed in the following section.

Social Capital Perspective. Although Putnam (1995; 2000) has popularised the concept of social capital, its origins and definitions go back to Pierre Bourdieu and James Coleman among others (Portes 1998). First, Bourdieu's definition of social capital has been conceived of as "the first systematic contemporary analysis of social capital" (Portes 1998, 3). He defines the notion of social capital as "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition" and "the profits which accrue from *membership in a group* are the basis of the solidarity which makes them possible" (Bourdieu 1986, 248-249). Here social capital has several dimensions, such as resources of the social network at the levels of *individuals and further structure* (structural equivalence). He further argued that social capital can be transferred into cultural and economic capital and, finally, symbolic capital.

Second, Coleman (1998) explains social capital as follows: "social capital is defined by its function. It is not a single entity but a variety of different entities, with two elements in common: they all consist of some aspect of social structures, and they facilitate certain action of actors – whether persons or corporate actors – within the structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that in its absence would not be possible. Like physical capital and human capital, social capital is not completely fungible but may be specific to certain activities. A given form of social capital that is valuable in facilitating certain actions may be useless or even harmful for others." (Coleman 1998, S98)

Third, Putnam has attempted to explain the decline of civil society in America within a framework that focuses on the concept of "social capital" (1995; 2000). According to his definition, social capital refers to "features of social organizations, such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (Putnam 1995, 67). Also, in the book *Bowling Alone* (Putnam 2000, 19), he defines social capital as "connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them (*social networks* added)."

Despite their difference of theoretical assumptions to explain the relationship between/within social structure and social actors, Bourdieu and Coleman emphasise the importance of strong ties. As compared to the previous two definitions of social capital, Putnam's definition tends to emphasise loose social ties through informal social gatherings and associations.

Furthermore, Shah and his colleagues (2001, 467) define the concept of social capital in a broad sense as "the resources of information, norms, and social relations embedded in communities that enable people to coordinate collective action and to achieve common goals." Taken together, social capital indeed has multifaceted and multilevel conceptual definitions (Shah et al. 2001). Social capital encompasses trust, norms, and social networks among individuals, groups, organisations, and institutions. In turn, social capital can contribute to civic and community engagement, such as participating in national and local elections, serving on a committee within some local organisations, working for a political party, and engaging psychologically in local communities.

Although the concern of social capital has been extended from an individual level to a structural level (Portes 1998), the concept of social capital has been narrowly defined at the individual level, but not at the relational or organisational levels (e.g., Brehm and Rahn 1997). Even when Putnam relies on a macro level of analysis, it is still an aggregate level of social capital through surveys from individuals (Putnam 2000). In contrast, Coleman (1988) emphasises social capital both at the individual and organisational levels as follows:

> *It accepts the principle of rational or purposive action and attempts to show how that principle, in conjunction with particular social contexts, can account not only for the actions of individuals in particular contexts but also for the development of social organization* (Coleman 1988, S96).

In addition, as Paxton (1999, 100) argues, "individuals can be informally connected to others through friendship choices and other types of network ties, and individuals can be connected to others through formal group memberships." As a result, it is necessary for social capital to be understood not only at the individual level, but also at the organisational level, which leads to civic or community engagement. As discussed above, social capital can be organisational civic capital, which connects community organisations through the generation of common civic culture, norms, and even trust among them. The organisational level of social capital matters in the sense that individual citizens participate in a community through their relations with various community groups, associations, and organisations. That is, individual actions can form their organised engagement through various community organisations that have different activities based on their missions and goals, varying from the advocacy of minority groups, such as gay and lesbian groups, through environmental groups, to sports and hobby groups.

However, they may also serve a common purpose, enabling citizens to have shared goals and interests in a community context (Coleman 1988, S101). As a consequence, social capital as resources that are generated through various community organisations may contribute to citizens' engagement in local communities. The organisational level of social capital also occurs through the Web sites of community organisations. Although Putnam (1995; 2000) has argued that membership in voluntary associations has declined, individuals have engaged in various groups that have existed in different forms through electronic communications since the advent of the Internet (e.g., Rich 1999). For example, various types of voluntary groups build their own communities through the Internet, specifically through Web sites. That is, civic capital through organisational associations serves as a resource that can facilitate and enable citizens to achieve common goals through civic organisations that serve as a representative agent for collective action. In this regard, it is necessary to link offline and online social capital because offline organisational social capital may potentially lead to online organisational social capital and vice versa.

As discussed, online public spheres provide bases in which community members create online social capital in the online communities that are distinct but closely related to offline communities, potentially empowering civic participation. In a networked community paradigm, various communities are interwoven in layers and even purely virtual communities become related to physical communities, which will be discussed in the following session.

Networked Communities Perspective. According to a social network perspective (Wellman 1999; Wellman et al. 2001), a physically based offline community is associated with a geographically bounded online community. For example, community members in Lexington, Kentucky, tend to frequently visit their community portal site of Kentucky.com (see The Media Audit, April-May 2006). In this regard, it is important to consider empirical studies that show some evidence regarding how offline community activities are connected to online community activities (see Dutta-Bergman 2005). Given that community and communication can be conceived of as a social network (e.g., Wellman 1999; Wellman and Gulia 1999), it is necessary to consider a *networked community communication model*, wherein every level of community, ranging from local to global, can be interconnected with the Internet (Friedland 2001). As local media play an important role in community integration (Wirt 1948; Janowitz 1952/1967; Park 1926/1967), communication media also can contribute to community attachment and integration, linking cross-cutting networks from all levels of communities. In particular, in the model of *community communication ecology*, not only traditional media, such as newspapers and television, but also new communication media, including the Internet, can play a vital role in creating and framing community issues, as well as providing public spaces for public discussion to work in a community context (Friedland and McLeod 1999; Friedland 2001).

Within a networked paradigm of community, community has been understood from the perspective of "continuity" rather than "discontinuity." Basically, a networked paradigm of community assumes that community *per se* has consistently existed in contrast to community collapse or breakdown (see Wellman 1999). That is, a networked community has simply not changed from *Gemeinschaft* to *Gesellschaft*; instead, the two have coexisted (Fischer 1977, 14). The social network paradigm focuses mainly on individual and social relations as a specified set of linkage within a structure, and therefore assumes that community has consistently existed and will continue to exist without any kind of breakdown or collapse (Fischer et al. 1977; Bender 1978). The social network paradigm also goes beyond the traditional paradigm, which considers community as a distributed space. It seeks to find social structure and social process as well as the individual (Wellman 1999, 15).

In this vein, it seems reasonable that the Internet provides two forms of community: personal community and group community, or whole networks (Wellman 1999; Wellman and Gulia 1999). The distinction between personal communities and group communities is crucial for understanding how community works in contemporary societies, both in online and offline spaces. Group community is a social network in which people interact with each other and regularly provide sociability and support. Here, people can become members of a village, kinship group, neighbourhood, or an on-line discussion group, such as Usenet newsgroups or discussion groups, through electronic bulletin boards. By contrast, personal community is an individual's network, which is scattered into intimate or anonymous relationships. Moreover, as Fisher (1977) points out, a social network paradigm transcends space and time, which were important analytical factors in traditional community studies. Therefore, the Internet may take a central position in the sense that it has increasingly played a major role in civic and political life, inasmuch as it has changed our community (or society) (Friedland and McLeod 1999; Friedland 2001). In the studies of the relationship between the Internet and

community, the Internet can influence not only the offline community, but also the online community.

On one hand, in an offline community context, numerous studies have shown how the Internet and its use were associated with community engagement and community building at both the individual and group levels (Shah et al 2001; Wellman et al 2001). Also, a growing body of studies has investigated the role of the Internet in a community context and how electronic community networks can contribute to building a better community, considering not only individuals but also institutions and associations (e.g., Schuler 1996). On the other hand, arguments about deliberation have been moving toward public discussions through online public forums since the Internet has gained popularity. That is, the Internet offers technological potentials, such as online bulletin boards, chat rooms, and Usenet news groups, enabling general citizens to participate in an "electronic public sphere" (e.g., Friedland 1996; Papacharissi 2000).

In this vein, many scholars have argued that the Internet can contribute to building a new online community, where people can create their identities and share common interests by discussing political and community issues (e.g., Jones 1995). Having said that, it is notable that the Internet has formulated two types of online communities that may facilitate a public sphere, which may be independent from market and state power (see Blanchard and Horan 1998): 1) physically based online communities and 2) geographically dispersed online communities. In particular, physically based online communities through the Internet can be analogous to physically based local communities.

As Sirianni and Friedland (2001) argue, if only physically based activities can create democratic civic engagement in the community context, the Internet itself may not function as a medium for facilitating civic activities. However, given that online space-based activities are as important as offline space-based activities, online communities, especially physically based online communities, may contribute significantly to democratic action and practice in the community context (see Doheny-Farina 1996; Tonn, Zambrano, and Moore 2001). It is notable that offline communities cannot separate from online communities and vice versa (see Wellman et al. 2001). In addition, the Internet can build a cross-local community, providing an imagined identity of not only upper levels of communities but also lower levels of communities and lifeworlds (Friedland and McLeod 1999; Friedland 2001). In the process of cross-local community building, the Internet can play a central role in the sense that it can provide people with a wide variety of information and news both within and between communities. Given that the Internet can have all the various communication patterns that personal and mass media have, the Internet can connect all levels of communities ranging from systems to lifeworlds from a networked community communication perspective (Friedland 2001).

As Web sites of community organisations function as public spheres and online communities, which generate social capital and community engagement online, they exist as a participatory space (Ester and Vinken 2003), which, in turn, generates and leads to offline community engagement. That is, consequences of the organisational level of engagement in the community organisations' Web sites lead to offline community engagement. In this perspective, there are two types of engagement to consider: (1) extra-organisational engagement, such as participating

in a community project, community events, a community conference, a community public forum, etc., and (2) intra-organisational engagement, such as mobilising participants, volunteers, and donors. As a consequence, community organisations are anchoring groups, which bridge and bond members of a community.

The theoretical framework discussed so far becomes more useful when manifested specifically through analytical frameworks that directly address specific research agenda and questions to examine how the electronic community information commons may contribute to physically embedded communities and vice versa. The following section proposes an analytical framework that enables scholars to examine the nexus between community technology and community building.

Analytical Framework

As Figure 2 shows, the electronic information commons through community computer networks or citizen based community media, by nature, originates from and thus is embedded in physical communities. The electronic community information commons should be free from political power and market forces in the systems, and community owned. Based on the community ownership, it should provide virtual public spheres which tie to physical public spheres where community members gather to discuss community affairs and issues. In so doing, the electronic community information commons should deliver a wide variety of information and news concerning community problems and common interests.

Figure2: Analytical Framework toward Networked Communities

Theoretical Perspectives/Level	Electronic Community Information Commons		
	Virtual Communities	Networked Communities	Physical Communities
The Public Sphere			
Macro/Meso: Ownership		Community Owned Public Sphere	
Micro: Communicative Action	Discussion		Discussion
		Reciprocal	
Social Capital	Networks	Community Social Capital Building	Networks
Macro/Meso/Micro	Trust, Values, Norms, and Culture Engagement		Trust, Values, Norms, and Culture Engagement

The public spheres created by the electronic community information commons should also function as the realms through which they create social capital, such as trust, norms, values, cultures, and encourage community members to participate in civic activities. The electronic information commons, which provides public spheres to build social capital, should function at multiple levels. For example,

the electronic information commons as a voluntary and civic association can build inter-organisational networks with a wide range of community institutions, organisations, and groups while helping community members build interpersonal networks. Also, the electronic information commons should provide venues by which community members participate in diverse community activities: vote on community issues, donate money to charitable non-profit organisations, work for groups as volunteers, and affiliate with civic associations as members.

The electronic community information commons should function as the virtual public spheres which tie to physical public spheres that enable community members to deliberate on current community issues and problems. Also, the public spheres through the electronic community information commons should provide public arenas by which social capital emerges among community institutions, associations, groups, and individuals. The electronic information commons should bond and bridge virtual and physical communities through integrated and networked communities.

In sum, this analytical framework generates research agenda and questions that help scholars and researchers examine how the electronic community information commons through community computer networks or citizen media projects in local communities can operate and how virtual communities interact and influence physical communities and vice versa through networked communities.

1. To what degree does electronic community information commons (eCIC) create the public sphere in relation to physical community structure and the offline public sphere? To what degree is eCIC free from political power and market forces?

2. To what degree does electronic eCIC contribute to public discussion online? Does online public discussion lead to offline public discussion and vice versa?

3. To what degree does eCIC create and build social capital? Does online social capital lead to offline social capital and vice versa?

4. How and to what degree do offline and online public sphere and social capital influence and interact with each other?

Discussion

Since the mid 1990s, scholars, researchers, and practitioners alike have attempted to build communities through information and communication technologies. According to the Knight Citizen News Network (http://www.kcnn.org), there are more than 800 citizen media sites, which have been emerging over the years either in individual blogs or through Websites of civic associations. Although numerous projects have been working on community building through community technology, there remains a lack of conceptual, theoretical, and analytical frameworks to examine and analyse emerging community oriented electronic spaces and projects.

In overcoming this issue, this essay first provides a meta theoretical framework to understand the nexus between media, especially digital communication technologies, community, and democracy. From the meta theoretical framework, the essay draws a conceptual framework which guides theoretical perspectives. Then, the essay builds an analytical framework, which can examine how virtual communities through information and communication technologies can contribute to physical communities and vice versa. In this regard, this essay adds a framework to the field through which it can contribute theoretically and analytically to this area,

suggesting that future studies should consider adopting the framework to analyse potentials, possibilities, and practices of community based electronic information commons for community development. Also, this essay contributes to a theoretical and analytical framework that helps to evaluate previous projects on community technology and community building.

While adopting the framework to apply to not only pre-existing projects, but also newly emerging projects, future studies should consider a whole community case study, which examines the networked communities. Methodologically and empirically, future studies should adopt multiple research methods, which include but are not limited to surveys, content analysis, ethnography (e.g., participant observation and in-depth interview), and network analysis.

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