

Online Social Movements

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Introduction

The emergence of “e-movements” and new forms of “e-protest” and “e-activism” (Earl & Schussman, 2003) has signified the importance of the Internet as an organizational and mobilization vehicle for those engaged in social change. Social and political scientists have widely studied social movements for a number of years, including the use of information and communication technologies (ICTs) to support these movements. Historically, technology has constructively influenced social movements; perhaps most compelling is the use of the printing press by European social movements in the late eighteenth century (Tarrow, 1998). With the press, social movement organizers were able to widely distribute their ideas and better coordinate their activities. More recently, radio, television, telephones, direct mailings, fax machines, and e-mails have commonly been used to disseminate information as well as mobilize critical mass (McCarthy & Zald, 1977; Lievrouw, 2006; Porta & Diani, 1999).

In a similar vein, the bundle of new ICTs associated with the Internet (e.g., websites, streaming videos, blogs, Voice-over-IP and social networking sites) has assisted numerous contemporary social movements. For example, while traditionally so-called activists have been the primary participants in social movements, today general citizens who may not consider themselves activists are actively participating in online mobilization (e.g. Hara, 2008). Because of the wide use of the Internet, social movements are finding a way to reach the general public. It has been reported that some

social movements have taken advantage of ICTs to reach wider audiences faster, with lower costs than traditional methods (Bennett, 2003). More recently, social networking sites such as MySpace, Facebook, and Twitter played influential roles in political mobilization (Greengard, 2009; Gueorguieva, 2008). These technologies began to provide powerful means to organize forces—whether it is to fight against a prevailing corporation (Shirky, 2008) or to coordinate international protests (Pérez, 2008).

Traditional social campaigns have resorted to activities like public demonstrations, street theater, sit-ins, and protests to wrestle with the power-holders or opponents. In contrast, the Internet has altered this dynamic by electronically advertising a movement's views, goals, and tactics, publicizing the information of movement activities, serving as multiple resources, and linking like-minded individuals and groups transnationally. The rapid formation of global mobilizing forces and advocacy networks has attracted dozens of social activist groups (e.g., Arquilla & Ronfeldt, 2001; Gillan, 2009; Kahn & Kellner, 2004).

In this chapter, we use the following definition of online social movements: “The term *online social movements* refers to the adoption and use by social movements and community activists of new information and communication technologies (ICTs), such as the Internet and the World Wide Web” (Loader, 2003, p. 1319, emphasis original). This includes both social movements that use ICTs as well as social movements that take place (exclusively) on the Internet. The literature on online social movements has grown to be recognized as a small but important area for research in information science and related fields due to the emerging roles of ICTs. Although this review makes no attempt to be comprehensive, it hopes to offer some insights into the literature of online social

movements which are dispersed in various disciplines. The review of the literature in this chapter begins with the definition of social movements and introduces prominent theories used to study online social movements. Subsequently, overviews of discussions regarding ICTs' influence on social movements are presented. Next, we focus on the following five uses of ICTs to facilitate social movements: ICTs as resources; ICTs to support collective identity; ICTs as framing devices; ICTs as mobilization tools; ICTs as spaces for social movements. Then, we discuss the opportunities and threats that online social movements provide, as well as how researchers began to explicitly theorize ICTs' influence on social movements. Finally, possible future directions are introduced.

Social Movements

The topic of social movements has been studied by sociologists and political scientists for decades. Accordingly, various definitions of social movements exist. Several of the more relevant will be reviewed in this section, so that they may convey a sense of the various manifestations of thinking about social movements.

Some authors have emphasized the transformation of a society, while others have emphasized networks, collective identity, and mobilization. According to McCarthy and Zald (1977), a social movement is “a set of opinions and beliefs in a population which represents preferences for changing some elements of the social structure and/or reward distribution of a society” (pp. 1217-1218). Castells (1997) characterized social movements as being “purposive collective actions whose outcome, in victory as in defeat, transforms the values and institutions of society” (p.3). Porta and Diani (1999) defined social movements as “(1) informal networks, based on (2) shared beliefs and solidarity, which mobilize about (3) conflictual issues, through (4) the frequent use of various forms

of protests” (p. 16). Diani (2000) later refined the definition as “networks of informal relationships between a multiplicity of individuals and organizations, who share a distinctive collective identity, and mobilize resources on conflictual issues” (p.387).

As the above definitions demonstrate, the main goal of social movements is to seek social change and alter the relations of power. Different schools of theorists vary in their own emphases. For example, theorists of Resource Mobilization theory, McCarthy and Zald (1977), took an organizational perspective focusing on factors of organization and resources. New Social Movement theorists such, as Castells (1997) and Diani (2000), see collective identity, networks, and life values as being crucial to contemporary movements. New social movements differ from traditional social movements because they are less concerned with economic issues and emphasize instead group or collective identity, values and lifestyles.

The goal of this review is to explore the relationship between a social movement and ICTs. Therefore, Diani’s (2000) definition of social movements is the most relevant to adopt. As illustrated in his definition, computer-mediated communication (CMC) has the potential to influence some primary dimensions of social movements such as the actors (individuals and organizations) and the movement’s collective identity, networks, and resources. Diani’s definition stresses that within the process of pursuing a new social order, social movement activists find themselves by constructing their own meaning, which is premised upon the movement’s capacity to create communication and connections among the movement’s actors.

Since a number of studies that investigate online social movements apply traditional social movement theories, it is useful to discuss these theories here. While

the literature on social movements is vast, contemporary social movement theory can be categorized into the following four frameworks as Diani, (1992), Hess, Breyman, Campbell, and Martin, (2008), and Sawyer and Tapia, (2005) suggested: resource mobilization theory, frame analysis, political process theory, and new social movement theory.

Resource mobilization theory, as represented by the work of McCarthy and Zald (1977), viewed social movements as rational and organized activities, unlike the predecessors who considered social movements as irrational behaviors (e.g., Olson, 1965). In this theory, the main concern is to maximize both tangible and intangible resources within social movement organizations. Examples of resources include money, facilities, labor, land, technical expertise, a means of communication, legitimacy, organizing and special skills, supporter, loyalty, interpersonal ties, solidarity, common awareness, moral commitment and authority (Freeman, 1979; Gamson, 1990; Jenkins, 1981; McCarthy & Zald, 1977; Tilly, 1978). As the focus is on how to run social movement organizations effectively, ICTs can be seen as resources or means to maximize other resources.

Frame analysis examines how social movement organizations facilitate developing collective cognitive understandings (i.e., collective action frame) to justify their activities and encourage wider participation. Frames enable individuals “to locate, perceive, identify, and label” events within their life space or the world at large (Goffman, 1974, p.21). Collective action frames have been widely used to examine traditional (face-to-face) social movements. McAdam (1994) argued that collective action frames serve as cultural resources analogous to the material resources deployed by social

movement actors to achieve their goals. Benford and Snow (2000) defined collective action frames as “action-oriented sets of beliefs and meanings that inspire and legitimate the activities and campaigns of a social movement organization” (p. 614). Their review of the literature on framing processes and social movements indicate that this theoretical framework has been increasingly used over the years in studies of social movements. ICTs can help disseminate frames for social movements that could be easily reached by the general public and assist the development of collective identity.

Political process theory argues that the failure or success of social movements depends on political opportunity structures—the broad social, economic, and political dynamics that shape the opportunities and constraints for mobilization (Tarrow, 1998; Tilly, 1978). For political process theorists, the organizational perspective of resource mobilization theory is too static and emphasizes formal organization while ignoring the factors of network and political opportunity structures. Whereas resource mobilization theory conceptualizes resources internal to social movement organizations, political process theory includes discussions about opportunities and challenges put forth by authorities and political structures, which are external to movements (Tarrow, 1998). McAdam (1996) synthesized the political opportunity structure into four main dimensions: (a) “The relative openness or closure of the institutionalized political system; (b) The stability or instability of that broad set of elite alignments that typically undergird a polity; (c) The presence or absence of elite allies; and (d) The state’s capacity and propensity for repression” (p.27). As an example of elite alignments, the Supreme Court ruling of *Brown v. Board of Education* and President Kennedy’s and Johnson’s statements about civil rights, positively influenced civil rights movements (Meyer, 2004).

When considering ICT use in social movements, even in repressive regimes, governments have limited capacity to control the Internet compared to traditional media. This offers opportunities for social movements to take action in the form of cyberhactivism¹ or cyberactivism (Denning, 2001), as in the “Twitter Revolution” (Berman, 2009) against suspicious results in the Iranian presidential election.

New social movement (NSM) theory advocates the values of identity, equality and direct participation, democracy, plurality and difference. Melucci (1989) observed that a movement is a way for individuals to act collectively, where people with many different viewpoints and goals work together in a relatively stable fashion. For Melucci, contemporary movements arise from the construction of collective identity, an interactive process that addresses “the question of how a collective becomes a collective” (1996, p.84). The concept of NSM is mainly associated with Western European scholars, who developed it in the 1960s as a critique of the limits of resource mobilization theory. Instead of focusing on the traditional social movement of classes, the cultural version of the NSM theory examines collective action based on other identities such as gender, ethnicity, and sexuality. Scholars of the new social movement perspective consider peace, lesbian/gay, feminist, ecological, community and youth movements to be new social movements that emerged in resistance to growing threats to personal autonomy (Castells, 1997; Cohen, 1985; Melucci, 1985, 1988, 1989; Offe, 1985; Touraine, 1981). ICTs have the potential to provide more opportunities for participation and foster collective identities (Diani, 2000).

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A range of Internet-based attacks such as denial of service, computer break-ins, and domain name system attacks have been created and tailored through social IT savvy by developing innovative software that enables activists to challenge and further counteract an authority’s repressive actions.

These theoretical frameworks are undoubtedly useful to study online social movements, as a number of studies have applied traditional social movement frameworks to online environments. Studies of online social movements have used resource mobilization (e.g., Clark & Themudo, 2006; Cronauer, 2004; Hara & Estrada, 2005; Hsu, 2003; Huang, 2009; Pudrovska & Ferree, 2004) and new social movement theories (e.g., Hsu, 2003; Huang, 2009; Ma, 2007; Nip, 2004; Pudrovska & Ferree, 2004; Wall, 2007), whereas few studies have used frames (e.g., Clark & Themudo, 2006; Hara & Shachaf, 2007; Park, 2002a; Pudrovska & Ferree, 2004) and political process theory (Clark & Themudo, 2006; Cronauer, 2004; Pickerill, 2001; Pudrovska & Ferree, 2004). Table 1 presents a summary of studies and their use of theoretical frameworks. The studies listed demonstrate the types of frameworks that have been used to study online social movements. In the next section, perceptions of ICT's influence on social movements will be discussed.

Table 1: Summary of Studies and Their Use of Theoretical Frameworks

Authors	Movement	Theoretical Frameworks
Clark & Themudo (2006)	Anti-globalization movement	Resource Mobilization (RM) Framing theory Political process theory
Pickerill (2001)	Environmental movement	Political process theory RM New Social Movement (NSM)
Pudrovska & Ferree (2004)	Women's movement	Political process theory NSM Framing theory
Riemer (2003)	Social activism (anti-mine)	Framing theory RM
Cheta (2004)	Disability movement	Social constructionist
Cronauer (2004)	Social activism (anti-globalization)	RM Political process theory

		NSM Framing theory
Hara & Estrada (2005)	Social activism	RM
Hara & Shachaf (2008)	Peace movement	Framing theory
Huang (2009)	Religious movement (Falun Gong)	RM NSM
Hsu (2003)	Broadcasting reform movement	RM NSM
Ma (2007)	Pro-democracy movement	NSM
Nip (2004)	Lesbian movement	NSM
Park (2002a)	Anti-Communication Decency Act of 1999	Framing theory
Wall (2007)	Social activism (anti-WTO)	NSM

As the existing study shows in Table 1, there is a tendency by a number of researchers to use a mixture of social movement theories as frameworks to investigate online social movements. This is because using a single theoretical framework may still leave researchable areas for unfolding complicated online activism. Myers (1994, 2002) specifically pointed out that using resource mobilization and new social movement theories would serve as a solid framework to explore social movements' Internet usages. He stated that:

Not only can the researchers use data from activists' computes to examine resource mobilization processes, such as attempts to gather and allocate collective resources, plan strategies, and perpetuate the movement, but she or he can also observe processes related to the formation of collective identities and solidarity” (2002, p.125).

The sophisticated online phenomena prompt social researchers to adopt a combined theoretical framework to better explain and examine online social movements.

Do ICTs make a difference in Social Movements?

A series of articles question whether ICTs make a difference in social movements and, if so, in what ways. These articles can be categorized into three positions: equalization thesis, normalization thesis, and undecided.

Some authors, especially in early literature about online activism (e.g., Arquilla & Ronfeldt, 2001; Castells, Fernandez-Ardevol, Qiu, & Sey, 2007, Danitz & Strobel, 1999; Kahn & Kellner, 2004) support an 'equalization' thesis whose argument is that online tools will distribute powers relatively equally, particularly in terms of communication channels, via access to and dissemination of information. In this view, technologies are a significant factor to drive the change. For example, Nah, Veenstra, and Shah (2006) examined how news consumption (TV, newspaper, and Web) and political discussions affected political participation, both online and face-to-face. This study used survey data in 2003, during the time in which the majority of the U.S. population supported the Iraq War. The results indicated that using Web news had a positive and significant relationship with political discussions in general, and that both face-to-face and online discussions were considerably related to political participation. Interestingly, TV news views had a significant relationship with political participation in a negative way. In other words, the more people watched TV news, the less likely they were to engage in political participation. Nah et al. (2006) concluded that the Internet is a pivotal resource for political participation in the context of anti-war activism.

The utopian vision of a new technology is in line with this equalization thesis. According to the technologically utopian perspective (Kling, 1994), the Internet improves democracy, offering both internal and external ways for citizens to participate in political decision-making processes. Internally, some applications of the Internet could

potentially raise civil awareness of political decision-making processes, while externally it is possible to provide a channel for citizens to make their voices heard by using online forums or sending e-mail messages. The Internet's interactive nature is the feature most expected to expand the role of citizens from passive message consumers to active message creators. In sum, the logic of the equalization thesis is similar to the perspective of *technological determinism* (Webster, 2006), in addition to the utopian vision of utilizing the Internet for political purposes.

On the other hand, according to the 'normalization' thesis, the Internet has certain limits in reshaping social movements. This thesis states that online social movements are mere reflections of offline environments and will fail to overcome the existing social structure (Stromer-Galley, 2000). While traditional media are accessible to ordinary people, the influence of the Internet depends on the accessibility and the willingness to find information on websites (Norris, 2001; van Dijk & Hacker, 2003). Some scholars argue that information inequalities exist in digital communication. Castells (1999) especially emphasized that "the information age does not have to be the age of stepped-up inequality, polarization and social exclusion. But for the moment it is" (p.403). While cost is a concern when purchasing equipment, researchers have observed that online participation does not solely depend on the availability of cheap computer equipment. Kling (1999) warned users that the actual purchase price of a computer includes the price of software, maintenance, peripherals, and in institutional settings, training, planning, and administration in terms of total cost of ownership. In addition to the affordability of access to computer networks, other factors influence information inequality, such as differences in knowledge and skills in using computers, attitudes toward using them,

training, gender, income, race/ethnicity, age, location, governmental controls or limited use of the Internet (Bell, Reddy, & Rainie, 2004; Fox, 2004; NITA, 2000a, 2000b, 2002, 2007; Spender, 1995; Spooner, Meredith, & Rainie, 2003; Warschauer 2002).

Finally, there is a position that does not answer yes or no to the question of whether ICTs make a difference. Scholars who take this position are in line with the perspectives of Social Informatics. The Social Informatics approach serves as a needed corrective and an antidote to naive technological determinism. Although not denying that technologies have social effects, the focus, rather, is on the social forces which give rise to particular use of technologies that follows the existing social hierarchies (Kling, Rosenbaum, & Sawyer, 2005; Shirky, 2008). In addition, some earlier studies of online social movements (e.g., Zelwietro, 1998) concluded that the penetration rate of the Internet at that time was not high enough to make a claim about any effects. Zelwietro (1998) examined four environmental organizations that used the Internet to support their activities. While he found some differences between online and offline groups, he concluded that further investigation was necessary because the Internet was not adopted by a large number of the population.

Thus, the single factor of the Internet can hardly create a new social order. For example, based on a historical analysis, Garrett and Edwards (2007) went beyond the cliché to say that the Internet made an impact on the South African anti-apartheid movement. They criticized that previous research on online social movements tended to take a technological determinist perspective and presented the analyses that incorporated the interactions among users, organizations, and the Internet. They did not state yes or no to the question of whether ICTs make a difference, but did offer a more complex picture

to that question. The consideration of social processes surrounding the new medium of the Internet should include much more than one-sided generalizations. This is the general premise on which the current chapter is based.

While there are some disagreements, many scholars agree that ICTs do influence social movements to some extent. In the next section, we will discuss the ways in which ICTs facilitate or impede social movements.

How do the ICTs Facilitate or Impede Social Movements?

In this section, ICTs for social movements are categorized into the following five uses: ICTs as resources; ICTs to support collective identity; ICTs as framing devices; ICTs as mobilization tools; ICTs as spaces. The first four categories are manifested in the literatures and based on the major traditional social movement theories—ICTs as resources (resource mobilization); as collective identity support (new social movement theory); as framing devices (framing theory); and as mobilization tools (resource mobilization, new social movement theory, political process theory). The last category is about social movements that exist solely online. In other words, ICTs provide spaces in which social activists can assemble for communication, interaction, and action for their goals.

ICTs as Resources

The framework of resource mobilization theory pays attention to tangible resources, such as labor, money, and means of communication, as well as intangible resources, such as interpersonal ties, solidarity, and moral engagement, that social movement organizations are capable of mobilizing (McCarthy & Zald, 1977; Porta &

Diani, 1998). Furthermore, as Hess et al. (2008) noted, “science and technology are viewed as one of many potential resources that a movement can access” (p. 474).

Thus, ICTs can be seen as resources or means to capitalize on other resources such as money, time, and materials.

First, as resources, ICTs allow social movement organizations to have control and legitimacy over content disseminated through the Internet (Garrett, 2006). Almeida and Lichbach (2003) examined the reporting of worldwide protests for the World Trade Organization and found that activists’ own websites had the most accumulative reporting of the protest events. Even the international news organizations did not extensively report on the protest events. This is partially attributed to the fact that news organizations tend to cover sensational (e.g., violent and large) protests more than civil and peaceful protests (Oliver & Maney, 2000). Almeida and Lichbach’s (2003) study illustrated that the Internet offered alternative means for activist organizations to disseminate information without relying on mass media, as the reporting in traditional mass media is predisposed to certain perspectives (Lievrouw, 2006; Webster, 2006).

Second, ICTs have been used to capitalize on resources for social movements. Hara and Estrada (2005) identified four types of virtual resources—“knowledge, credibility (access to credible information), interpersonal interactions (sociability), and identity support (validation of personal identity and group identity)” (p. 507) and analyzed how the Internet may facilitate grassroots organizations in mobilization. They studied an online grassroots activist group called MoveOn.org and discussed how the organization took advantage of the Internet to support the movement. The study indicated that MoveOn.org utilized the Internet to disseminate knowledge about

the issues, as well as ways to involve activities. In addition, they contended that online discussion forums were used to facilitate interpersonal interactions, and as a result, a sense of community was fostered through continuous communication with the members of MoveOn.org.

Internet use has been considered a cost effective medium for many activist groups because they do not have sufficient financial resources for their political actions (Leizerov, 2000). Scholars (Cronauer, 2004; Kobrin, 1998) noted the potential for Internet technology to reduce and shift the resources necessitated for online and offline mobilization. Thus, Internet use can maximize “money” or a form of capital that makes a movement financially feasible. In Porter’s (2003) study of the Falun Gong religious movement, some interviewees perceived that the Internet was crucial to the movement, especially due to the low cost of access and use. Likewise, Carty (2002) emphasized that the inexpensive cost of Internet access made it possible for the anti-Nike campaign’s activists to disseminate information and coordinate activities across the world, which is important for grassroots movements operating under limited budgets.

Regarding financial advantages, the Internet provides a means to raise funds for campaigns. An example of using the Internet to raise funds is found in a study of an anti-mine campaign in Crandon, Wisconsin (Riemer, 2003). A website, Nashville Under Siege², was created to support the town of Nashville, where a portion of the Crandon mine is to be located. The use of a website helped the town gain financial support from external parties as it publicized its cause. Another example of online fund-raising is demonstrated in the support of the Free Tibet movement. One of the more prominent

² <http://www.Nashvillewiundersiege.com>

sites to support Tibetan independence, the Tibet Fund³, was developed to finance pro-Tibetan activities. This fund-raising website provides detailed information to potential donors about how the funds will be used; a mechanism for making a contribution online is available on the website as well (Chase & Mulvenon, 2002).

ICTs as Framing Devices

One of the uses of ICTs for social movements is to help shape the “collective action frame” by supporting movements in framing their activities to promote participation by the general public. Using Oliver and Johnston’s (2000) characteristics of frame analysis, it would be useful to focus on the representations of frames to understand how ICTs are utilized. Oliver and Johnston defined frames in terms of how individuals perceive phenomena, i.e., as “individual cognitive structures” (p.41). Though individually developed, frames have the potential to develop into resonated entities when united, and to eventually become collective frames. These collective frames become pivotal elements in supporting collective action and can be observed by examining representations of frames. For example, peace movement websites are snapshots of representations of collective action frames (Hara & Shachaf, 2008). While frames can be analyzed as a snapshot of a stable cognitive framework, some prior studies have examined processes of developing frames (e.g., see the discussion of the frame align process examined by Snow, Rochford, Worden, & Benford, 1986 below).

Collective action frames do not emerge spontaneously, but rather require processes of integration whereby individual frames of a movement are organized into a coherent and collective frame. Such integration enables collective action. “Frame

³ <http://www.tibetfund.org>

alignment processes” are explained by Snow et al. (1986) as the processes necessary to link individual interpretation of a movement to the frame provided by social movement organizations. They further elaborate and explain four types of frame alignment processes: frame bridging, frame amplification, frame extension, and frame transformation. Snow et al. (1986) described frame bridging as making a link between “two or more ideologically congruent but structurally unconnected frames regarding a particular issue or problem” (p. 467), which is primarily executed by disseminating information through social networks, mass media, and other means. Frame amplification refers to strengthening a frame that supports a certain issue. Frame extension describes efforts to expand an existing frame to increase the number of supporters and participants. Finally, frame transformation occurs when the original framing is a misfit, which requires social movement organizations to readjust their frames. Snow et al.’s framework for the frame alignment process is useful when analyzing the use of the Internet as a communication tool for social movements.

Park’s (2002a) case study of the Electronic Frontier Foundation’s online campaign was one of the first to demonstrate that the frame alignment process conceptualized in traditional social movements was applicable in online social movements. Although the entire framing alignment processes can be facilitated through ICTs, frame bridging is best facilitated through new technologies according to Snow et al. (1986). This is attributed to the fact that these technologies allow social movement organizations to promote their own agendas. Hara and Estrada (2005), like other researchers (e.g., Kahn & Kellner, 2004; Park, 2002a), have shown how ICTs, such as e-mail, websites, and blogs, have helped mobilize, not only hardcore activists, but also

socially-conscious lay people. In the past, social movement organizations had limited means to promote their activities and ideologies, relying for the most part on the news media. The framing of the social movement organizations' activities by the news media was sometimes inconsistent with the organizations' framing (see e.g., Gamson, Croteau, Hoynes, & Sasson, 1992).

Similarly, Owens and Palmer (2003) examined the successful use of Web communication by anarchists during the 1999 protests against the World Trade Organization (WTO). Although they found that activists had a tight network presence online prior to 1999, the network was not strongly connected outside of their own organization, especially to the mainstream networks. After a radical anarchist group, Black Bloc, used violence for the protests, their activities triggered negative news coverage. Soon after, a website called Infoshop not only covered some stories about the WTO protests but also explained and justified Black Bloc's activities. For the protests against IMF/World Bank in D.C., Infoshop posted Black Bloc's intentions before the events and recruited participants. This website attracted many visitors. Owens and Palmer contended that the availability of the anarchists' perspective online influenced the news coverage to become more favorable. In this sense, the anarchists were able to frame their activities by using websites. With the use of ICTs, social movement organizations now have a better way to reach the general public and frame their movements to their advantage.

Framing could be a useful strategy to provide a rhetoric of identity for recruiting new participants and reinforce solidarity among members of social movements (Polletta & Jasper, 2001). Hunt, Benford, and Snow (1994) also made connections between

framing and identity construction processes. Similar to frames, collective identity provides a framework to “make sense of the social world” (Polletta & Jasper, 2001, p. 298). How ICTs are used to foster collective identity and solidarity will be discussed in the next section.

ICTs to support Collective Identity and Solidarity

Social movement theorists classify the concept of identity into three areas: individual identity, collective identity, and public identity” (Laraña, Johnston, & Gusfield, 1994, pp.11-12). Individual identity consists of “wholly personal traits that . . . are internalized and imported to social movement participation as idiosyncratic biographies” (p.15). Collective identity consists of the “agreed upon definition of membership, boundaries, and activities for the group” (p.15). Public identity “captures the influence that the external public has on the way social movement adherents think about themselves” (p.18).

Among those identities, collective identity is the most emphasized and discussed by social movement scholars because it “goes to the core of social movement formation” and is a driving force for movement participation (Stryker, Owens, & White, 2000, p.18). A number of scholars have argued for the importance of understanding collective identity in the study of social movements. As discussed previously, collective identity is a core concept of NSMs. Melucci (1989) conjectured that all social movements have an identity dimension; collective identity is represented in the movement and the movement is a process within which collective identity finds realization. Melucci (1995) stated that

people take action for “the possibility of recognizing themselves and being recognized as subjects of their action” (p.48).

Collective identity is an important outcome of social movement mobilization, since according to Peteet (2000), “the very form of identity used as a mobilizing frame can be transformed during the course of social movement participation” (p.184). In addition, identity helps to define the realms of action and possibility. Melucci (1995) stated that “individuals acting collectively . . . define in cognitive terms the field of possibilities and limits they perceive while at the same time activating their relationships so as to give sense to their ‘being together’ and to the goals they pursue” (p.43).

The Internet could be considered a useful tool to support processes of collective identity construction (Jones; 1998, Miller & Slater, 2000; Nakamura, 2002; Smith & Kollock, 1999) but some studies (e.g., Cronauer, 2004; Nip, 2004; Wall, 2007) did not find that the Internet successfully or fully supported the development of collective identity. Park (2002b), who takes the former position, observed: “The formation of collective identity is easier due to the Internet’s ability to put people with similar grievances in disparate geographical area[s] [together]. . . also the diffusion of collective identity is faster and easier” (p.19). Through communication, a collective identity can be fostered to mobilize participants for social movements. CMC may also have the potential to help cross-movement (e.g., anti-Iraq War movement (Gillan, 2009); global anti-mine campaign (Riemer, 2003)) or cross-culture interaction, enabling the sharing of ideas and perhaps fostering feelings of solidarity. Electronic communication can act as a new means by which like-minded individuals are able to connect to each other, help form a united consciousness and mobilize participation around a specific issue (Schwartz, 1998).

Research in Internet use by contemporary social movements demonstrates that the Internet has the capability to foster the construction of collective identity and solidarity among movement members. For example, an online anti-Intel protest was launched by three privacy advocacy groups to fight against Intel's intention to include a processor serial number (PSN) in its 1999 introduction of a Pentium III processor that would enable websites to verify the identity of users (Leizerov, 2000). In response, privacy advocacy groups developed a website⁴ to present relevant information for the campaign and provide links to many sympathetic international news articles, as well as coordinate the public actions of these privacy advocates. The privacy advocacy groups successfully forced Intel to stop using the PSN in Pentium III processors in 2000. Leizerov (2000) posited that "the combination of similar demographics, heightened political awareness, and the pursuit of a common value shared by the group (privacy, for instance) clearly identifies such individuals as a group even if in an online campaign those individuals are usually unaware of one another" (p.476). This case exemplified that the Internet can facilitate the formation of collective identity.

Considering Taylor and Whittier's (1992) three components of collective identity, (a sense of 'we', a consciousness, an oppositional culture) within this network, participants in the anti-Intel campaign clearly demonstrated that they shared a common consciousness about their goal (intent to protect privacy) and had an oppositional culture in terms of fighting against Intel. Despite Leizerov's inference, there is no clear evidence to judge whether or not individuals shared a sense of 'we' or solidarity in the anti-Intel protest. Nonetheless, in a broad view, the sense of being a group may be indicated by the participants' pursuit of a common value—privacy—shared by the group.

⁴ <http://www.bigbrotherinside.com>

For instance, a sense of solidarity is evident in the examination of the anti-Nike campaign. The anti-Nike sweatshop campaign has received much attention and several studies have investigated the campaign's various phenomena. The campaign began when a MIT graduate student, Jonah Peretti, ordered personalized Nike shoes labeled with the word "sweatshop" through the Nike Corporation (McCaughey & Ayers, 2003). The request was denied, and the e-mail exchanges between Peretti and Nike were widely circulated online. Micheletti, Stolle, Nishikawa, and Wright (2004) analyzed online messages that expressed support for the anti-Nike protest. The study found the capability for building the sense of 'we' or solidarity in these online messages. This is one of the collective identity components proposed by Taylor and Whittier (1992). In addition, Carty (2002) discussed 'globalized identity politics' in her case study of the anti-Nike campaign. The Internet was used to link geographically dispersed, multi-identity groups that formed a singular globalized identity under the label of 'working group on Nike'. Likewise, Micheletti et al. (2004) found that identity is naturally constructed in an invisible discourse space. The users identified Nike as 'you', the oppressed worker as 'they' and the consumer as 'we.' Furthermore, Bullurt (2000) argued that in the anti-Nike campaign, without the Internet and e-mail to transmit information across national boundaries and access to receive the information, it would have been impossible to create the sense of 'we'.

One of the methods of producing the feeling of solidarity is to use verbal encouragement. Thus, the text-based Internet serves as an ideal medium for exchanging inspiring words. For example, a worker in Indonesia posted a letter on the United Students Against Sweatshops listserv to support the striking workers in Mexico (both of

which produced goods for Nike). Indonesian workers provided encouragement by stating that “after eight years of strikes, Indonesian workers successfully attained the right to form an independent union that has resulted in a number of additional benefits” (Carty, 2002, pp.137-138). Moreover, the listserv was used to coordinate ‘National Days of Action’ on two occasions, which also served as acts of solidarity in support of the workers’ needs.

In Pickerill’s (2001) environmental social movement study, the findings showed that activists used CMC to boost morale and solidarity received from communicating with other activists who showed support or were involved in environmental activism. Interviewees from Green Student Network, Friends of the Earth UK, Lyminge Forest, and McSpotlight agree that Internet use may inspire activists. Similarly, the capability of fostering feelings of solidarity frequently occurs in women’s movements online (e.g., Kennedy, 2000; Onosaka, 2003; Pini, Brown, & Previte, 2004).

Nip (2004) studied the identity-building capacity of the Internet in a lesbian movement by examining the Queer Sisters bulletin board. His study showed examples of solidarity and a less successful example regarding the Internet capability to foster collective identity. Nip investigated the three elements of collective identities in social movements conceptualized by Taylor and Whittier (1992): a sense of ‘we’, a consciousness, and an oppositional culture. The results showed that the participants’ Internet use successfully led to the following two elements: a sense of ‘we’ and an oppositional culture. However, the data failed to show collective consciousness among participants. Since only two out of the three elements of collective identities were

supported, Nip concluded that the participants on the Queer Sisters bulletin board were less successful in sharing a collective identity.

Nip (2004) argued that the reason for the absence of a collective consciousness among participants had to do with the bulletin board's lack of resources and organizational goals. This bulletin board became a service platform rather than a tool for cultivating consciousness. In a similar vein, Cronauer (2004) lent support to Nip's analysis in her examination of two e-mail lists. She found that the e-mail list was not an effective tool for building collective identity, although collective identity is crucial to collective action. Online hostilities, anonymous postings, and preferences for face-to-face contact were cited as reasons to explain this failure.

Another study that demonstrated that the Internet does not necessarily facilitate collective identity development was described by Wall (2007). Based on a study of three e-mail lists that supported the Seattle World Trade Organization (WTO) protests, Wall concluded that these e-mail lists had diverse ways of communicating collective identities; although all three were opposing WTO, some were more successful than the others. All three were not particularly effective on supporting articulation of collective identities.

Although some cases (e.g., Cronauer, 2004; Nip, 2004; Wall, 2007) revealed that social movements had less success in using the Internet for their formation of collective identity and solidarity due to some negative postings, different preferences of Internet uses, and a weak organizational capability, the Internet still achieves certain levels of collective identity among social movement activists and assists movement activities. To sum up, the Internet is acknowledged by various scholars (e.g., Carty, 2002; Diani, 2000; Huang, 2009; Leizerov, 2000; Ma, 2007; Micheletti et al., 2004; Pickerill, 2001) as an

effective tool for fostering collective identity and solidarity. Generally, the findings of most empirical studies illustrate that the Internet, especially the use of the text-based tools in which it is easy for groups' members to express their verbal encouragement to movement participants, aids in the formation of these two concepts. The constructed collective identity and solidarity increase the possibility of success for social movements.

ICTs as Mobilization Tools

According to Tilly (1978), "mobilization is the process by which a group goes from being a passive collection of individuals to an active participant in public life" (p.69). Klandermans (1984) distinguished mobilization into two different processes. First, *consensus mobilization* refers to "a process through which a social movement tries to obtain support for its viewpoints. Consensus mobilization bears resemblance to the spread of generalized belief" (p.586). Secondly, *action mobilization* is a process of motivating people to participate (Klandermans, 1984). Marden (1978) and Klandermans (2004) both cautioned that consensus mobilization does not necessarily lead to action mobilization, but action mobilization cannot occur without consensus mobilization.

Mobilization intertwines with matters such as the effectiveness of communication, the influence of social networks, barriers and the perceived costs and benefits of participation, all of which are affected by the use of the Internet. Diani (2000) indicated the technology affordances provided by the Web not only offer information about campaigns, but also allow social movement organizations to coordinate their efforts online. For example, the Internet allows social movement activists to take direct control of mobilizing media (e.g., Almeida & Lichbach, 2003). More importantly, new utilities

of Internet technologies such as e-mail, blogs, wikis, and websites allow organizers of online movements to combine the advantages of one to one and multiple communication media. A key feature of the Internet is its ability to quickly and affordably reach a number of diverse groups at the same time. The Internet also offers the possibility for people to reply to social activists, responding with e-mail that includes questions, elaborations, and personal contributions.

Cronauer (2004) examined two e-mail lists used by activists to oppose globalization summits by using the concepts of consensus mobilization and action mobilization to investigate how effective the lists were for mobilizing subscribers. The findings indicated that neither list posted much information about group views, aims or tactics unless they had personal contact with other anti-globalization activists. Hence, list subscribers could not learn much about the groups if they were not involved in off-line activities. The results further revealed that in the case of consensus mobilization, the most-mobilized, most supportive subscribers of both lists were those who had extensive personal contact with other activists for similar causes. These results illustrate how important established social movement actors are in creating consensus mobilization.

However, sometimes ICTs do not necessarily assist mobilization, especially action mobilization. Cronauer (2004) found that the majority of online participants were not involved in the offline organizing of groups and did not attend the events organized by groups. In both lists, female participants appeared to be the least facilitated because they did not have much personal contact with other subscribers and were turned away by negative movement dynamics (e.g., hostile messages and competitive debate). The

results showed that participants who had prior experience with activism and knew other participants from past activities were most likely to be mobilized into action.

Perhaps one of the most well-known mobilizations on the Internet was the anti-Multi-lateral Agreement on Investment campaign. The Multi-lateral Agreement on Investment (MAI) was a draft international treaty sponsored by the Organization for Economic Co-operation and Development (OECD), comprised of 29 wealthy nations. The MAI's objective was to promote greater trade liberalization in investments among its members. In February 1997, an early draft of the agreement was leaked to *Public Citizen* and was posted on the Web. As a result, 600 organizations in 70 countries, including Amnesty International, AFL-CIO, Sierra Club, the Malaysia-based Third World Network, United Steelworkers of America, and Western Governors' Association began to express strong opposition to the treaty (Kobrin, 1998). The MAI was criticized for promoting corporate power at the expense of national sovereignty, environment and labor rights. The anti-MAI protest lasted until the negotiations were canceled in October, 1998.

Assisted by the Internet, the activists of anti-MAI were able to launch a successful trans-national protest. Warkentin and Mingst (2000) also emphasized the importance of the Internet to anti-MAI campaigns. They found that information and analysis about MAI, produced by protesting Non-Government Organizations, was linked via their websites. Deibert (2000) summarized that the Internet was used in three distinct ways by the anti-MAI activists: (1) publicizing, sharing and distributing information, (2) binding together individuals and organizations around the world participating in the protest, and (3) contributing to influence politicians and decision makers.

The anti-MAI campaign illustrated that the Internet helped activist groups influence global policy-making. The case of MAI also showed how collaborative mobilization can happen with simple email lists and websites—especially since one key document posted on the Internet made a significant impact on mobilization.

The Internet can also be used as a mobilizing tool to raise public awareness, as demonstrated by the Canadian Women’s Internet Association, which campaigned on the Internet to raise public awareness about the issue of violence against women. In November 1996, the campaign began with a website and a striking image of a glowing candle which could be taken by people to their own Web pages and used as a link back to the Vigil website to create “A Candlelight Vigil Across the Internet.” The campaign lasted for ten days and marked the anniversary of the deaths of 14 female engineering students at the Ecole Polytechnique in 1989. During the ten days, approximately 12,000 people visited the Web page from fifty countries. The site received over 500 e-mails (Sayers, 1998).

The power of the Internet to aid social movement mobilization was also illustrated by the case of Falun Gong practitioners’ organized protest against the Chinese Communist Party. On April 25th, 1999, Falun Gong practitioners from various Chinese provinces assembled in front of a Chinese Communist Party leadership compound, participated in a peaceful protest against state repression of their activities, and asked for the freedom of religious belief. Falun Gong supporters communicated with each other via email, mobile phones, and face-to-face contact in order to quickly spread word of the massive demonstration (Hurley & Charleton, 2005; Lin, 2001; Yu, 2004).

On a smaller scale, some of the social networking sites, such as Facebook and MySpace, facilitate collective action (e.g., Gueorguieva, 2008). Collective action describes the joint activity of a group of individuals to pursue public goods through activities such as voting, lobbying or demonstrating, which occurs on different social bases (classes, ethnic groups or sexes), and is oriented towards achieving a variety of goals (e.g., material resources, new laws or new positions) (Hechter, Friedman, & Appelbaum, 1982).

Gueorguieva (2008) discussed the influence of MySpace and YouTube on the 2006 U.S. midterm election. In addition to using these online tools for capitalizing on resources, such as fundraising and information dissemination, Gueorguieva highlighted that they were also used for consensus mobilization. For example, lesser known candidates were able to reach out to voters due to the relatively inexpensive cost associated with YouTube, while citizens circulated inappropriate comments by politicians through YouTube—as in the case of Republican senator George Allen who used a “racial slur” (p. 292) during a campaign.

In addition to political campaigns, Nisbet and Kotcher (in press) discussed the use of social networking sites to facilitate climate change campaigns. They examined a campaign that attempted to recruit ten million activists to support activities through online opinion-leaders. A Facebook application was launched in order to recruit supporters and raise money, although this initiative resulted in rather disappointing outcomes. Nisbet and Kotcher concluded with noteworthy disadvantages of using online media to recruit opinion-leaders.

The Internet could help social movements to expand their scale (Kobrin, 1998), reach the general public to support consensus mobilization (Sayers, 1998), and assist action mobilization. Among them, action mobilization through the Internet probably occurs with the most difficulty, as noted earlier (Cronauer, 2004; Nisbet & Kotcher, in press).

ICTs as spaces

ICTs have provided spaces for social movements to exist and undertake their activities. For example, Denning (1999, 2001) classified three broad categories of online activism: a) cyberactivism; b) cyberhacktivism; and c) cyberterrorism. Online activism usually is non-disruptive and legal and focuses on coordination, information transmission, and communication (Vegh, 2003; McCaughey & Ayers, 2003). The aforementioned example of the anti-Nike campaign (e.g., Kidd, 2003) was taken place entirely online. Similarly, some users of MyBO (an Internet platform for candidate Obama) voiced dissent on its social networking tools (Kreiss, 2009). “During the summer of 2008 activists created a MyBO group called ‘Get FISA Right’ (Foreign Intelligence Surveillance Act)” (Kreiss, 2009, p. 16) to oppose Obama’s changing position on warrantless surveillance. This attracted over 15,000 members through the publicity over blogs, Facebook, and other media. Although Obama did not change his position on the bill, he issued a statement to the group to clarify his position.

Hacktivism’s main goal is to be disruptive, though usually not damaging, and may or may not be illegal. Hacktivism is a term created by the fusion of ‘hacking’ and ‘activism’. Neeley (2000) believed that “hacktivists are a special breed of hackers and crackers who attempt to call attention to an issue with a virtual call to arms using

intrusion...or creating technology to advance a political or social cause” (p.30). A well-known and widely cited web sit-in is documented by the pro-Zapatista movement’s use of the Electronic Disturbance Theater (EDT). After the 1997 massacre of indigenous Mexicans in the city of Chiapas, the EDT, a US-based group comprised of 4 activists, intended to take action and draw attention to the struggles of the Mexican Zapatistas through the practice of ‘electronic civil disobedience,’ a phrase coined by Critical Art Ensemble (CAE) (Meikle, 2002). The EDT developed a software program, FloodNet, which is a web-based Java applet that repeatedly sends browser reload commands. Their technical activism aimed to flood the websites of Mexican and U.S. governments and financial institutions in Mexico City until the overload shut down the servers. Its larger purpose was to produce a “simulated threat” (Wray, 1999, p.5) drawing attention to the Zapatista cause.

The term “Cyberterrorism” was first coined by Collin (1997). In contrast to hacktivism, cyberterrorism involves more aggressive action rather than a simple attempt to call attention to a cause. The term refers to an act, or acts, of terrorism carried out through the use of computing technology. For example, a number of Estonia websites were attacked by (presumed) Russian hackers in May 2007. Users experienced a flood of Distributed Denial of Service attacks, which forced many government, media, and banking websites to close down over three weeks (Bloomfield, 2007).

These three types of online activism use ICTs as spaces for their existence. In the next section, how the ICTs could provide opportunities and/or threats to online social movements will be delineated.

Opportunities and Threats to Online Social Movements

As discussed in the previous section, ICTs offer various means to support or impede social movements. By adopting ICTs, social movements gain new opportunities, such as wider dissemination of information with lower cost, while having to deal with some threats, such as surveillance. In this section, we review the literature that elucidates these possibilities. Garrett's (2006) outstanding literature reviews on social movements synthesized how ICTs facilitate mobilization in three ways. First, as many scholars assert, ICTs help reduce the cost of distributing information, as well as the cost of participation. ICTs offer inexpensive means to disseminate information via activist organizations' websites (Almeida & Lichbach, 2003), Indymedia.org (Kidd, 2003; Lievrouw, 2006), and blogosphere (Kahn & Kellner, 2004) without filtering. Second, Garrett (2006) identified the promotion of collective identity, the idea that participants are a part of a larger community and that they share similar concerns, as an advantage of ICTs. This collective identity becomes a driving force to mobilize participants for collective action. Third, intertwined with the promotion of collective identity, Garrett mentioned that ICTs foster community development by citing Diani (2000): 'new ICTs provide the largely passive support base with a low-intensity forum for issue-based communication' (Garrett, 2006, p. 206).

While these are opportunities that the Internet can provide, a few social movement researchers offer warnings instead of optimism regarding Internet use. Balka (1993) and Cronauer (2004) have shown that anonymous messages resulted in antagonistic behavior and uncomfortable feelings when users posted messages to the lists and doubted the reliability of previously posted messages. Others are skeptical about the

development of stable and long-lasting movements in the future. McAdam, Tilly and Tarrow (1996) pointed out that the improved capacity for transnational communication will not automatically lead to global social movements. They believe that new virtual contacts on the Internet cannot substitute for meaningful social networks. Etzioni and Etzioni (1999) were also skeptical about virtual contacts being equal to in-person contacts. In addition, Pini et al's study (2001) indicated that face-to-face contact is more powerful and effective than e-lobbying in working with politicians. In addition, by examining six cases of environmental groups, Pickerill (2001) found that online lobbying was not very effective.

Diani (2000) contended that virtual interactions may be unable to construct permanent relations due to the lack of trust, but surveillance or censorship may worsen the mutual trust between Internet users. The threat of surveillance may decrease Internet users' mobilization to participate online or even seek out online information (Cronauer, 2004). This concern is more common in non-democratic countries such as Burma (Danitz & Strobel, 1999) or China. For example, according to Yang (2003), protest in China is less likely because of state sanctions, as witnessed in the Tiananmen Square Massacre (Zuo & Benford, 1995).

Another possible setback of online social movements is that it is relatively effortless to have online discussions about issues, but taking action, especially offline, requires some effort. As such, action is seldom taken as a result of active discussions. Byrne (2007) examined the potential for using a black social networking site (SNS) to assist political mobilization. The study found that, while participants in the black SNS engaged in discussions about racially relevant issues, the discussions (e.g., serious

concerns about Hurricane Katrina) did not lead to actions. Byrne contended that using online communities to build a foundation for civic engagement requires a specifically articulated purpose for mobilization. In fact, this finding was similar to Nip's (2004) earlier study on a Queer Sisters bulletin board—discussions do not necessarily lead to political actions.

Another problem of media such as SNSs for mobilization is that people tend to self-select sources from which they receive information (Gueorguieva, 2008). Although a wide selection of choices are available through the Internet and satellite television, this does not necessarily mean that people obtain diverse perspectives. On the contrary, they have channeled themselves into a narrow and precise self-selection of specific views (Sunstein, 2009). As eloquently stated by Castells (2000), “[w]hile the media have become globally interconnected, and programs and messages circulate in the global network, *we are now living in a global village, but in customized cottages globally produced and locally distributed*” (p.370, original emphasis).

While acknowledging the opportunities that the ICTs offer, the addressed concerns raised by social movement researchers may curb Internet utopians and help develop more doable, holistic and effective uses when the ICTs are utilized in social change efforts.

Emerging Theories of Online Social Movements

So far, we have dealt with online social movements within the framework of traditional social movement theories. Although using the traditional theories provides useful perspectives, they do not theorize specifically how ICTs impact social movements.

In the realm of science and technology studies, Callon (e.g., 1986), Latour (e.g., 1987), and Law (e.g., 1987) changed the way we perceive the impact of “actants,” including ICTs, by explicitly conceptualizing non-human actants. In a similar vein, some scholars identified novel characteristics of Internet-enabled social movements and proposed promising theoretical frameworks to examine such phenomena.

Edwards (2004), for example, examined how the Internet supports organizational infrastructure in the context of the Dutch women’s movement. When considering the movement’s organizational infrastructure, Edwards proposed a model in which he illustrated that the Internet uses of a movement’s organization can be explained by the interaction of three factors within the context of a given political opportunity structure: the first of these, organizational characteristics, includes (a) the goal orientation of the organization; (b) the function that the organization wants to achieve within the movement; and (c) the internal structure of the organization. Based on these three organizational characteristics, an organization decides to use appropriate actions (including ICT use) for achieving its movement goals. His second factor, availability of resources, refers to the cheap costs of building a website and their further uses such as providing rich content related to movements. The third factor he identified, the organizations’ perceptions of opportunities of the Internet, refers to the range of potential Internet uses to facilitate the functioning of the organization. Edwards’ model shows how organizations develop their uses of the Internet based on these three criteria. Edwards (2004) argues that Internet usage is expected to have an impact on three dimensions within social movements.

Huang (2009) extended the conceptual scheme that Edwards put forth by incorporating additional elements to be considered for Internet-enabled social movements. Her framework in a study of a religious movement illustrated that the Internet use of a movement's organization can be explained by the interaction of five factors: organizational characteristics, repertoires of online activism, the formation of the collective identity, perception of political opportunities, and perception of available resources of the Internet. The Internet usages may influence a movement's capability to deal with actors (individuals and virtual organizations), networks, collective identity/solidarity, recourses, mobilization, and opportunities offered by the Internet. Both Edwards' and Huang's models were based on traditional social movement theories but extracted the roles of ICTs in the frameworks.

Compared to these scholars who used the existing social movement theories with emphasis on ICT's roles, Bennett (2003) suggested a new perspective, that the Internet could be beneficial to resource-poor organizations that do not traditionally have access to mass media outlets. He further observed that one of the online activism characteristics is ideologically thin—meaning that the lower thresholds to engage in any specific online activism activities offer more opportunities to join multiple activist organizations. For example, membership in ICT-driven collective actions is unlike traditional membership with dues, but rather tends to be less committed and more flexible (Chadwick, 2007). To be a part of an activist movement, one of the simplest things that individuals can do is to register with an e-mail address. This creates a situation in which individuals' commitment to specific activism may be weak due to multiple commitments to different

causes, while the experiences that individuals gain from various activities may be enriched because they can participate in a wide range of actions.

Bennett and Toft (2009) proposed that we need to examine narrative processes separately from frames and framing. They argue that, by investigating how narratives spread and develop, we can focus on how personal networks are formed and how narratives travel through such networks. Through the use of ICTs, including social networking tools, “the idea of narratives as networking devices offers a useful mechanism for understanding how individuals and organizations actually construct social ties” (Bennett & Toft, 2009, p. 259). Again, their conceptualization explicitly includes the effect of ICTs.

Similarly, Bimber, Flanagin, and Stohl (2005) contended that the traditional theory of collective action needed to be reexamined in a context where ICTs play a major role. First, they argued that the classic dilemma of public goods and free riding needs to be reconsidered in the context of ICT-facilitated collective action. This argument has been attested to by the successful growth of Wikipedia (Nov, 2007). In other words, due to the massive participation of users, public goods and free riding is no longer an issue (Anthony, Smith, & Williamson, 2009). This is a departure from the traditional social movement theories. Second, they pointed out how the grassroots nature of ICTs (including e-mail, IM, and websites) can be useful for mobilizing collective action. Among others, one of their compelling arguments is to conceptualize collective action as a boundary crossing from ‘a private domain of interest and action to a public one’ (Bimber et al., 2005, p. 377). To be more precise, ICTs can help bridge public and private spheres much more fluidly than could be done in the epochs when ICTs were not

readily available. Bimber et al. used the blogosphere as an example to illustrate the blurring of public and private spaces, noting that many blogs publish personal journals to public space. Individuals can easily express support or opposition to a specific movement on the Internet. The porous nature of boundary crossing is one of the differences of ICT-facilitated collective action from traditional ones. This conceptualization is a first step toward examining collective action facilitated by ICTs.

Hara (2008) examined Bimber et al.'s (2005) theorization that the Internet makes boundary crossings less demanding. She studied an online grassroots activist group, MoveOn.org, and examined its members whose activity levels differed (a passive online participant; active online participants; and active offline participants). This group used a hybrid of online and offline mobilization to achieve social change. On one hand, the study found Bimber et al.'s conceptualization applicable to MoveOn members who are either passive or active online without offline participation. On the other hand, MoveOn members who are active offline bear a resemblance to traditional social movement participants. This case study highlights the fact that ICT-facilitated collective actions not only take place exclusively online, but are also undertaken offline. It means that Bimber et al.'s conceptualization addresses ICT-facilitated collective actions solely online, but leaves out ICT-facilitated collective actions happening offline, such as the case of MoveOn. Thus, we ought to better conceptualize the hybrid nature of offline collective action facilitated through online activities.

Instead of treating ICT-driven social movements as different species, Garrett and Edwards' (2007) historical analysis of the anti-apartheid movement in South Africa presented a more complex and holistic picture of ICTs embedded in context. They

identified the following four factors that interplay between ICTs and social movements: ongoing technological innovation, user practices, technical competence, and organizational routines. In fact, these factors match the three levels proposed by Mantovani (1996) to describe the levels in which actors interact with environments. The first level represents social context where we produce and comply with social norms. The second level depicts how we interpret situations in everyday life. The third level is about how we interact with environments through artifacts. Garrett and Edwards (2007) and Mantovani (1996) cautioned that we fail to understand the complex phenomenon without recognizing these interactions of factors and levels. Lastly, Garrett and Edwards emphasized the contextual nature of ICT use in social movements and the importance of socio-technical analysis.

Another notable development is a framework called “Computerization Movements” (Iacono & Kling, 2001; Kling & Iacono, 1994). Computerization movements are “a kind of movement whose advocates focus on computer-based systems as instruments to bring about a new social order.” (Kling & Iacono, 1994). It is about specific social movements that are driven by core technologies (see Elliott & Kramer, 2008; Hara & Rosenbaum, 2008 for more discussions about computerization movements). One of the useful ideas in computerization movements is “technological action frames,” which is based on the concept of “technological frames” drawn from the field of Science and Technology Studies (e.g., Bijker, 2001). “Technological frames” elucidates the idea that different social groups of people perceive a single technology differently. People’s beliefs about technologies would drive or impede computerization movements.

Computerization movements are specifically about social movements motivated by technologies.

In summary, a great amount of the theoretical literature suggested the Internet's unique role for its potential to facilitate social movements. While pure online social movements (in which all the activities take place online) may have distinct characteristics, we need to carefully examine online social movements and consider the possibility of hybrid (online and offline) social movements. One type of ICT, the Internet, certainly assists social movements in various ways, by capitalizing resources, accelerating the coordination times for mobilization, and sometimes fostering collective identity among members of social movements. Nevertheless, some of the hybrid social movements are not radically different from offline social movements at this moment. This is in line with the social informatics perspective that ICTs do not bring radical social change and that "there are usually important continuities in social life in addition to the discontinuities" (Kling et al., 2005, p. 28).

Future Directions and Conclusions

Whereas many interesting cases examining ICTs' role in mobilizing grassroots activities have emerged in recent years, research in this area appears to be still in an infant stage, primarily focusing on a limited number of case studies, e.g., the anti-WTO movement (e.g., Kahn & Kellner, 2004), Zapatista movement (e.g., Arquilla & Ronfeldt, 2001), Indymedia (e.g., Kidd, 2003; Pickard, 2006; Pickerill, 2007), and anti-Nike campaigns (e.g., Carty, 2002; Micheletti, et al., 2004). So far, these case studies have largely paid attention to Internet use. Few have investigated mobile devices and other

technologies which, in many cases, are more inclusively utilized to mobilize citizens. Such cases as the SARS crisis in China in 2003 (Castells, et al., 2007) and the April 10 Mobilization in 2006 by undocumented immigrants in the U.S., introduced cell phone use to strengthen the ties among the relevant citizens; yet these movements appear to be abrupt surges of mobilization, not sustainable for a long period of time.

Another interesting study (Paulos, Honicky, & Hooker, 2008) reported the use of a mobile device to encourage citizens to participate in data collection of air quality in San Francisco. This type of mobile device use has a potential for developing communities among activists in the long term, although it is yet to be proven. The studies of these innovative technologies have the potential to enhance the existing theoretical frameworks with innovative perspectives.

In terms of novel Internet applications, mobilization through social networking sites will likely increase. Social media such as Facebook or Twitter do provide a means to connect with others and organize collective action with relative ease. Facebook has attracted 70 million members and is one of the most popular websites in the world (Sanson, 2008). Several articles described the success of the Obama campaign in the 2008 U.S. presidential election by mobilizing voters through Facebook (e.g., Talbot, 2008). Sanson (2008), in particular, discussed the effective use of “microtargeting”—marketing a candidate by using targeted ads for profiled populations—for the youth voters by the Obama campaign. Another successful reported example was massive protests against the Revolutionary Armed Forces in Columbia, internationally organized by Facebook (Pérez, 2008). Iranian protesters’ use of Twitter in response to their presidential election in 2009 attracted much media attention; some called it the “Twitter

Revolution” (Berman, 2009). At the same time, Schectman (2009) reported that people who resided outside of Iran, not Iranians, were the primary users of Twitter.

As the development of Internet applications continues, the movement organizers need to consider taking advantage of the many innovative features of the Internet to organize and mobilize activities rather than solely relying on informational, yet passive webpages and simple e-mail communication. Thus, social movements that utilize Web 2.0 technologies could possibly flourish. Smith, Costello, and Brecher (2009) suggested that social movements 2.0 have the following advantages: facilitating group formation, amplifying scales, increasing interactivity, reducing hierarchies, and having access to easy-to-use tools. Despite this, it is still uncertain how much of these Web 2.0 technologies are useful to social movements. We have yet to see the full implications of these technologies.

Therefore, a range of additional studies may shed further light on the diverse strategies used by ICT-driven movements, e.g., the frame alignment processes that these movements undergo. In this review, we discussed five ways in which ICTs can be used to support or impede social movements within the traditional frameworks: ICTs as resources; ICTs to support collective identity; ICTs as framing devices; ICTs as mobilization tools; ICTs as spaces for social movements. While traditional social movements theories are informative, current theoretical frameworks that explicitly address ICT-driven mobilization are scarce. Some researchers, such as Bimber, et al. (2005), Bennett (2003), and Bennett and Toft (2009) attempt to address this research cavity. However, a disconnection between the traditional theories about social movements and the rising ICT-driven social movements is evident. As Garrett (2006)

suggested, it would be fruitful to combine multiple methods to understand the ICT-driven phenomena. Once more case studies are available, it may facilitate the development and synthesis of various theoretical frameworks.

In conclusion, there is no doubt that various social movements will take advantage of emerging new technologies and that ICT use to support movement activities will continue to grow. In this sense, more empirical studies are needed in this field. At the same time, the focus of research should not be solely on technologies. We need an integrated view that would bridge the online and offline worlds. On one hand, the social movement theories have been applied to explicate the entwined social, economic, cultural, organizational, and other forces that shape the changes associated with the increasing ICT use; in particular, the Internet. On the other hand, these traditional social movement theories were developed without explicit contemplation of online environments. As such, we need a better framework to conceptualize the interactions among ICTs, social movement actors, and their environments, to support or impede social movements. With the consideration of the social informatics perspective, we hope that empirical studies will be synthesized and utilized to develop further theoretical understanding of online social movements.

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