

Chapter Five: The Community Wireless Networking “Movement” -- Articulating Technology and Politics

We drove for twenty hours from Montreal, down through impoverished Michigan, across rural Indiana and into Missouri. “We” were half the Canadian representatives at the National Summit for Community Wireless Networking of 2006, which was held in a suburb of St. Louis, Missouri. The group included two of the founders of Île Sans Fil – Benoit Gregoire, at the time one of the main developers of the WiFiDog software, and Michael Lenczner, the self-proclaimed “mascot” who so clearly articulated the social potential of WiFi hotspots. There was a camera operator making a documentary on community WiFi in Canada (a project that was never completed), and me. The other Canadians, who traveled from Toronto included Graham Longford, the CRACIN project’s postdoctoral fellow, Dory Kornfeld, a geography graduate student, Gabe Sawhney, the founder of WirelessToronto, and Hanna Cho, a graduate student researching social capital development through technology development. Our identities and practices during these Summits contributed to the ways in which this event and similar others defined new socio-political frameworks for WiFi technology, by explicitly connecting it with social justice goals in a purported “movement.” Instead of being institutionalized through an organizational structure like the municipal government in Fredericton, the CWN movement contextualizes community WiFi as part of a new social movement where discourses, practices, skills and knowledge transfer horizontally among participants.

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On the first day of the 2006 Summit I attended a session discussing ways of mobilizing community organizations using wireless technology. Dharma Dailey, a community activist who had worked first with community radio activists and more recently with WiFi, referred to a “community wireless movement.” Soon others in the session began talking about a movement. I asked, “What is this movement? Who is it for?” to which others responded: “a political movement based on lobbying for more open radio spectrum”, and the statement “we are looking for more communication for more people” (Field Notes, April 5, 2006). A year later, at the following Summit, Eddan Katz, an intellectual property lawyer and head of the Yale University Information Society Project observed a panel on policy research, saying “I’m having trouble getting a sense of what’s important here . . . it seems that technology is the framing for the whole movement” (Field Notes May 20, 2007). These two vignettes raise the question of what a CWN movement might be – and how WiFi technology might be meaningfully placed into the flexible, global and networked forms and institutions that characterize new social movements.

Introduction

Background: Community Wireless Networking

This chapter examines the process by which Community Wireless Networking becomes politicized. As the case studies of ISF and the Fred-eZone have shown, local WiFi projects have unique social, political, and organizational impacts, including the development of WiFi publics and the symbolic linkage between local WiFi networks and an innovative local culture. These previous chapters have hinted at some of the broader policy issues that local WiFi networking raises. This chapter begins to explore these policy issues through an examination of the broader CWN “movement” as I experienced

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it as a participant. It outlines the origins of this “movement”, linking it first to FreeNetworks mobilizations concerned with free and open information infrastructure development, and then to IndyMedia community media mobilizations. The chapter describes how these origins and their political ideologies help to define two important articulations – connections – that CWN participants make between technology and society. After discussing some of the tensions between these two articulations, the chapter concludes by discussing how the CWN Summits in 2004, 2006, and 2007 acted as network forums (Turner, 2005) creating sites of exchange between groups of people with different ideas about the connections between WiFi and politics, including geeks and social justice advocates. Finally, the chapter suggests that the concept of ‘hacking’ acts as a type of ‘contact language’ (Star and Greisemer, 1989) that establishes both a shared identity for participants, and a more politicized context for community WiFi.

The “Movement”

Sascha Meinrath deserves some of the credit for first circulating the discourse of a CWN “movement” by helping to organize in 2004 a “National Community Wireless Summit” meant to “launch the Community Wireless Networking Movement” (2004). This Summit, and the others that followed in 2006, 2007, and 2008 attempted to mobilize technology developers, strategists, and policy advocates to contribute to a broader assessment of CWN’s potential influence beyond merely the impacts of individual local projects. The central questions defined by this first meeting and those that followed were technical, strategic, and political. The explicit questions motivating the 2004 Summit were the following:

- Do community wireless networks really serve the populations they ought to reach, and if not, what needs to be done?

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- What is the future of the Federal Communication Commission's (FCC's) unlicensed spectrum policies that enable the innovations that drive community wireless technologies?
- Can dozens of independently-operating community wireless initiatives join together to create a positive future for the movement?
- What technological innovations and software innovations do we already have, and what projects are currently being worked on? (Champaign-Urbana Community Wireless Network 2004).

By 2007 the National Summit had become the International Summit, and the

“movement” was described this way:

The Community Wireless Networking (CWN) movement has evolved since its beginnings in the 1990s. Although it has made impressive strides in the area of developing autonomous mesh networks, the larger success of the CWN movement has been the encouragement of citizens, small businesses, and local governments to get involved in local telecom infrastructure as important stakeholders. More than ever we are taking hands-on approaches to ensure that our communities have the telecommunications infrastructure necessary for an inclusive, dynamic and socially just future. (Champaign-Urbana Community Wireless Network 2007)

By 2007, the “movements” successes were framed as both technical and political: for example, the development of “autonomous mesh networks” and the participation of alternative actors in policy-making processes. They are linked to a broad politicization of WiFi technology that positions it as an alternative to other types of networks. Through the CWN Summits, this politicization connects the technical and organizational questions that the CWN Summit organizers posed with the vision of an “inclusive, dynamic, and socially just future.” WiFi technology and practices are discussed in more explicitly political terms than at ISF or in Fredericton. The CWN Summits, much more than individual WiFi projects, have introduced and developed the notion of a CWN “movement” with explicit political goals. However, the ideologies of different participants in CWN, especially geeks and social justice advocates, draw from differing

political inclinations – some even claiming that their contributions should not be considered to be political at all.

Methods

As a participant in CWN Summits in 2006 and 2007 I observed and described different ways of connecting technology and politics through WiFi. I participated and observed the Summits, conducting interviews and reviewing documents. In addition to participating in the Summitsⁱ as a member of ISF and as a researcher exploring CWN, I monitored public mailing lists, websites, wikis, and discussionsⁱⁱ and created and contributed to discussions about CWN on several different blogsⁱⁱⁱ. Through participant observation, structured interviews and informal discussions, and the analysis of mailing list postings (all conducted in 2006 and 2007) I collected a corpus that I thematically coded to explore CWN actors' goals, values, strategies and tactics. I examined how the common values and goals of CWN were framed simultaneously as both technical and political: particularly the goals of accessible networks, autonomous community, and open systems. As I became more active in policy issues related to CWN^{iv} I encountered more policy actors active in defining the terms of the North American debate. I conducted interviews with some of these actors in 2007 and 2008, as detailed in Appendix Three.

As I observed at the 2006 Summit, two strong currents define the political importance of CWN: one focusing on the possibility of WiFi to create disruptive network configurations that upset conventional structures, and another focused on its ability to act as a cheap form of ubiquitous connectivity. As in Fredericton, these two elements

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balance each other in a dialectic. The difference in the case of the “movement” is that the balance between interpretations of WiFi as disruptive and ubiquitous influences ideas that can shape policy structures. For example, policy advocacy drawing on the disruptive character of WiFi could focus on its differences from other communication infrastructures, and propose alternative forms of regulation. Advocacy focused on the potential of WiFi to extend internet connectivity might instead concentrate on creating WiFi access that would be available to more people. As this chapter explains, both of these articulations emerge at the CWN Summits and within the CWN “movement.”

Origin Stories

Two origin stories for the CWN Summits illuminate the roots of these different articulations between WiFi and politics. One origin story suggests that the precursors to Summits were geek meetings focused on hacking and the development of autonomous networking that created disruptive alternatives to the networks established at the time. The other origin story situates the roots of the “CWN movement” in IndyMedia mobilizations dedicated to expanded communication opportunities and media production by a greater number of people. I briefly discuss these origin stories, describing how the politicization of WiFi was foreshadowed by Indymedia’s integration of technical and social goals in its activism.

Libertarian Origins: FreeNetworks Summits

SeattleWireless, established in 1999, was possibly the first CWN in North America. Its members were dedicated to using wireless mesh technologies to create a citywide, non-commercial, autonomous community-controlled network and perceived hacking as a revolutionary activity. Once a year from 2002 to 2004, they joined similarly-minded

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geeks from around the world for a FreeNetworks Summit, described in 2003 as

“combin[ing] overviews of the technologies and motivations, status reports from the frontline, and in-depth coverage of implementation details that provide the conference attendee with the knowledge to bootstrap a CWN in their own locale” (Nettime 2003).

The focus was on developing networks, because few had been built, but also on the essential liberation many participants envisioned as being part of the FreeNetworking process, which used free software and open standards. In a link with the somewhat libertarian history of computerization movements the 2004 FreeNetworks Summit featured a speaker from the Electronic Frontier Foundation. The inclusion of this speaker suggests that the FreeNetworks Summits were interested in policy, but perhaps more in terms of retaining the freedom of WiFi hackers to modify equipment than from a social justice perspective concerned with leveraging increased access to communications. The libertarian strain in computerization movements, sometimes appearing in the discourses surrounding free software development, has linked free access to software code with free speech. This has motivated linkages between free software and open WiFi networks.

In 2004 Matt Westervelt, one of the organizers of the FreeNetworks Summit announced another Summit on his blog:

Not to be confused with this weekend’s FreeNetworks Summit in SF, the Champaign Urbana Wireless Network (CuWiN) is throwing a ‘National’ CWN Summit this August in Urbana, IL. It looks to be a bit different than the Summits up to this point, as it has some funding and is catering to the non-networking-but-interested crowd. (Westervelt 2004)

The “non-networking-but-interested” crowd presumably included people who did not know how to build networks or hack WiFi devices, but who were still potentially

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interested in other aspects of CWN. As it turned out, the CUWiN hackers had a different understanding of the importance of building and promoting WiFi networks that may have developed from the group's genesis in a local IndyMedia collective.

Social Justice Origins: IndyMedia

In Champaign-Urbana, IL, community WiFi activists drew on the metaphors and practices of the Indymedia movement when they planned their CWN network, called CuWiN. The engineering students and communication activists who were involved with CuWiN were interested in using the network as a distribution platform for community media, as well as a citywide, dynamic mesh network. Many CuWiN members came to community WiFi through community media activism through Champaign-Urbana's IndyMedia collective. The IndyMedia platform, developed on open-source software, supported the distribution of alternative media using a content-management system now common to blogs. This permitted anyone to "be the media": most famously at the anti-World Trade Organization protests in Seattle in 1999. Academic literature on Indymedia is extensive. In some representative literature Kidd (2003) heralds Indymedia as a new form of autonomous media production, while Halleck (2003) describes how its distributed local networks establish a global reach through the web, leveraging its network to challenge corporate media outlets, Downing considers it as part of the anarchist social tradition (2003); in turn, Milberry (2003) assesses it as a social movement in its own right. It also drew from, as Coleman (2005) notes "another, relatively new social movement – that of 'liberated' Free and Open Source software. For example, the first web-publishing tool, Active, was an open-source project for media dissemination coded by Australian hackers" (n.p.). Hill (2003) also analyses the role of

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software development and software politics in Indymedia, noting that the decisions made by Indymedia’s software developers represent the developers’ political convictions. However, Jones and Martin (2007) describe how the reliance on technical elites to channel decision-making about how and whether to publish Indymedia content undermines the potential for open publishing to promote a democratic public sphere.

Given these previous insights on Indymedia’s history and organization, the role of software development in Indymedia and CWN can be considered potentially politically significant. As Chapter Two has argued, the political compass of the free and open-source software (FOSS) movement is complementary to that of social justice movements, but the two are not necessarily aligned. Without explicitly declaring a political position, the FOSS movement has connections with both utopian and anarchic streams of thought. Although software production is not explicitly positioned as political, Bradley (2003) argues that “a utopian impulse is nonetheless revealed in the typically vague invocations of political anarchism and social democratic ideals that accompany the discursive promotion and legitimization of these modalities [of software production]” (n.p.). The politics of the FOSS movement orient themselves more towards freedom of information than to the principles of equality and anti-oppression, or to anti-globalization associated with social justice advocacy.

CuWiN’s activists wanted to reproduce Indymedia’s open contribution structure, but at an infrastructural level, through the use of a WiFi architecture consisting of a distributed mesh network. With this goal in mind, they adapted commercial equipment designed to

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broadcast home and office internet signals to create dynamic mesh networks where each radio acted as both sender and receiver. As IndyMedia was intended to offer an alternative to corporate media, meshed wireless networks were meant to provide an infrastructure alternative to the commercial internet service providers. For the activists in Champaign-Urbana, IndyMedia was political because it expanded who had access to media, and what they could contribute. WiFi could be political in the same way. This shared understanding of the political potential of WiFi led to CuWiN's active role in organizing the National Summits on Community Wireless Networking in Champaign-Urbana in 2004 and St. Charles, MO in 2006, and International Summits in Columbia, MA in 2007 and Washington DC in 2008.

These CWN Summits began to define a "CWN movement" that aimed to politicize WiFi technology as a means to provide more people with internet connectivity, and as a disruptive technology that could easily be modified to serve local needs, including hosting community media. Compared to the goals of the FreeNetworkers, these goals focused less on the technology of WiFi and more on its organization and implementation as they related to other forms of communication and media. Although the questions of freedom and openness that concerned the FreeNetworkers were important to the activists involved in the CWN movement, other questions of policy and regulation also impacted the ability of the CuWiN network to fulfill the roles its participants envisioned. In 2004, CWN members began discussing it as a social movement, but one with at least two political antecedents. The following section examines how the two differing political

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perspectives described above developed into two different articulations between politics and WiFi technology within the CWN movement.

CWN: A new social movement?

Touraine (1973) argues that social movements emerge from within unique historical contexts, and are always engaged with the salient aspects of these contexts. He writes, “in a society defined by the role of scientific and technological innovation and by a social hierarchy based upon knowledge, and by the pursuit of privatization in the realm of consumption, no social movement can exist oriented toward any other type of historicity” (p. 311). The shape, control, ownership, and value of communications infrastructure are politicized within CWN because actors see in the reconfiguration of technology the potential to engage with one of the most important elements of contemporary society (Lievrouw, 2007). The examples of the FreeNetworks and Indymedia phenomena suggest that CWN is one in a series of interventions where technology and social forms are co-produced.

In the following sections I examine the CWN “movement” in terms of how different groups of actors think about the political consequences of WiFi technologies. I use the concept of “articulation” to describe how politics and technology are connected by different groups of people. In cultural studies, this co-construction of society, culture and technology is referred to as articulation, (Slack, 1999; Slack and Wise, 2005) and as I explored in Chapter One it can conceptualize linkages like the one that CWN participants make between technology and society. The concept describes how politics and technology can be connected. In CWN different articulations between technology and

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politics contribute to defining the so-called “movement” as a social, political, and technical mobilization that tried to argue for the social and political significance of computer networks.

Articulations

CWN provides a good example of how technologies can be articulated with politics: that is, not just how political discourses are mobilized to inspire social action, but also how technical action works like a discourse to become connected to – articulated with – politics. Through CWN, technology is articulated with politics in two different ways that produce different sites for action. First, WiFi can become politicized because of its potential to provide communications access to more people. This articulation frames technology as intrinsically political, presuming that the expansion of internet access using WiFi assists in extending democracy. I call this the *ubiquitous network articulation*. The actors most often drawn together in this articulation are likely to describe themselves as interested in the social justice aspects of WiFi. Technology is therefore framed as political because access to it influences whose voices are heard, which groups can gain expertise, and where power is produced.

Second, the disruptive nature of WiFi can become politicized; especially in terms of the challenge its architecture might pose to existing communication media. In this articulation, WiFi’s political impact is framed in terms of its openness to modification, its unregulated quality, and therefore its potential to allow people to contribute to it (provided that they have the appropriate expertise). This articulation, which I call the

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disruptive network articulation, draws on the newness, flexibility and openness of WiFi technologies as being potentially disruptive to existing communications systems. This articulation between technology and liberation is predicated on the assumption that CWN projects use open-source software, create open networks, and that these structures are politically valuable because they permit freedom of expression by virtue of allowing expert users to modify the technology. The *disruptive network articulation* also promises more horizontal political and technical alternatives to existing communication structures, inspired by the non-hierarchical social structures (volunteer organizations) and distributed technical structures (for example, mesh networks) that develop around WiFi networks.

Efforts to create a broader CWN “movement” motivate these articulations, each of which proposes different means of politicizing WiFi, and each of which mobilizes a slightly different set of actors. In the ubiquitous network articulation, WiFi technology is understood as serving a political project: making communication more just by making it more broadly accessible to individual citizens. Within this articulation, social action is required to structure WiFi technology so that the political goals accompanying it may be met. WiFi technology is therefore envisioned as a tool employed to expand access to communications. In the disruptive network articulation, WiFi technology is envisioned as intrinsically political – a system shaped by a particular set of values built in to the material form of WiFi. Once the networks have been built with these democratic principles embedded in them, the disruptive network articulation suggests that their

disruptive quality could challenge the existing organizational structures of the telecommunications sector.

Table 3 summarizes how these two articulations between technology and policy shape the CWN movement. It describes the key actors associated with each articulation, as well as the existing frameworks or historical antecedents. As I explored in terms of CWN's antecedents, these existing frameworks contextualize the perceived problems to which CWN is responding. In the CWN case, the ubiquitous network articulation frames barriers to access of communication networks as the main problem, while the disruptive network articulation suggest that the greater problem is the lack of openness at a network's structural level.

Finally, the chart suggests that these articulations are associated with different goals. The disruptive network articulation concentrates on the potential for WiFi's flexibility and openness to facilitate the development of more democratic communications, while the ubiquitous network articulation sees new technology and its flexibility as establishing a broader distribution of access to communications. The envisioned – and achieved – outcomes for each articulation are different as well: the ubiquitous network articulation prefigures the development of municipal WiFi projects, while the disruptive network articulation sets the symbolic grounding for advocacy about the political influence of network structures, which includes the politicization of Network Neutrality.

Table 1: Articulations between technology and policy in CWN

Articulation	“Ubiquitous Network”		“Disruptive Network”	
Key Actors – who participates?	“Social justice”: Community media activists, community organizers, telecom policy lobbyists, academics		“Geek”: WiFi geeks/hackers, telecom policy lobbyists, academics	
Pre-existing frameworks – what are the existing contexts for these articulations?	Context: Indymedia; Universal access projects	Problem: Barriers of access to communication and media	Context: Free and Open Source Software; FreeNetworks	Problem: Increasing enclosure of existing communications
Goals and Outcomes – what results?	Goals: Democratize technology		Goals: Create technology in line with democratic principles	
	Outcomes: Municipal WiFi		Outcomes: distributed physical networks, social networks lobbying for Network Neutrality	

(Chart adapted from Smith 2005))

The goals of the two articulations sometimes appear to diverge from one another, although they may also blur and blend together. The *ubiquitous* network goals express opposition to telecommunication monopolies and resistance to agenda-setting by corporate interests. As Schiller (1985) and McChesney (1999) describe, ownership and

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management of telecommunications is increasingly consolidated. One of the major concerns with this consolidation is that control of ownership of telecommunications can also influence the types of media messages distributed, limiting their diversity and reliability. As a response to the consolidation of both communications infrastructure and media content, IndyMedia created the possibility for more access to publishing. As well, computerization movements through the 1990s lobbied for community ownership and control of the means of communication. These efforts created the context for the ubiquitous network articulation. Actors who help develop this articulation perceive WiFi as contributing to an overall expansion of access to media and communications. As I explore in the next chapter, this articulation has influenced the discourses framing the municipal WiFi movement.

Goals associated with the disruptive network articulation define the main problem associated with existing structures of communication networks as a problem of enclosure. In this formulation, one of the main advantages of disruptive networks is their potential to mitigate against the tendency of existing networks to restrict access and forbid modifications. Proceeding from the assumption that the internet and other large information networks increasingly underlie most mediated communication, this set of goals proposes to keep the structure of communication as open as possible, and is oriented towards repairing or replacing the existing internet-based communications networks with a proliferation of WiFi networks that would be easier for geeks to modify, and which would thus prevent communication from being centrally controlled.

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At the 2007 Summit, for example, Matt Westervelt described the job of CWN hackers as responsible for “mak[ing] a network that doesn’t suck. Right now the internet kind of sucks . . . we can’t make it not suck until a network is up and we can fix it” (Field Notes, May 20, 2007). The comment implies that not only is the internet not available to everyone, it is beginning to be restrained and controlled in ways that contravened the spirit of its original, open design. WiFi hackers could, by putting up their own networks, create an alternative, disruptive system that would be more accessible to end users, but more importantly, modifiable by geeks, who could ensure that the networks would not “suck.”

Organizing the Summits: Points of Contact and Separation

The CWN ‘movement’ has created a point of contact between the disruptive network articulation and the ubiquitous network articulation by bringing together individual activists whose perceptions of WiFi were aligned with one or the other of the articulations. Specifically, it has brought together geeks who perceive their WiFi work as disruptive, and social justice actors who describe WiFi as being important because it might make communication infrastructure more ubiquitous. As Slack and Wise (2005) note, articulations are not firm nor totalizing and in the CWN case the alignment of actors with one or another articulation is not mutually exclusive. Geeks describe themselves as oriented towards social justice, and many CWN actors deeply committed to social justice have strong technical backgrounds. Still, discussing the tensions between different types of articulations provides another example of how social movements organized around technology can be politically ambivalent and create flexible and contingent socio-political institutions. This section describes how the Summit’s organization contributed

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to this political ambivalence by both bringing together geeks and social justice advocates, but also by separating them based on their interests.

The 2004 CWN Summit was the first point of contact for a broad range of people interested in CWN, including geeks and members of social justice organizations, even though many local CWNs, like ISF, have some members who identify themselves as geeks and others who put forward a more politicized identity. However, the Summits established an organizational structure in which these different actors might influence one another. In contrast to other CWN meetings like the FreeNetworks Summits that focused mostly on hacking and coding, defining politics as interesting rather than central, the 2004 Summit included parallel tracks on “Technology” “Policy” and “Implementation.” These inclusions were meant to help the newly-defined CWN “movement” transcend the narrowly-defined, technologically-focused goals that had previously been associated with community WiFi projects and that Sandvig (2004) found lacking in political influence^v. However, the creation of these parallel tracks had an unintended consequence for the CWN movement: as the participants divided themselves by interest, the “Technology” track segregated participants most interested in discussing new technology and network structures, while the “Policy” and “Organizing” streams attracted many people with fewer technical skills but with interest in extending internet connectivity to more communities through the use of wireless technologies, or for advocating for changes to policies that impact wireless and internet technology.

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At the 2006 Summit, some self-identified “WiFi geeks” participating in the Technology stream, stated that they were not “policy people,” and that they weren’t interested in politics. In a defense against the movement’s potential association with a-political geekery, comments during the Summit’s plenary session specified that “this isn’t a geek movement – it’s a movement of people who know how to use certain tools, working with other people. It’s not just about the technology” (Field Notes, April 5, 2006). In many ways, these comments establish even more distance between geeks and non-geeks by reiterating that the “movement” should not be “about the technology.” As I described above, these different social imaginaries were already associated with different articulations between WiFi and politics. The next section describes geek and social justice imaginaries in detail, drawing out some of the points at which different articulations between technology and politics come into conflict with each other, particularly around issues of interest and expertise – elements which also connect with gender, race, and class.

Movement Geeks

As I have already discussed, geeks and hackers use technology to define their social imaginaries. Geeks at the Summits envisioned community WiFi as facilitating increased control of the networks by their (geek) designers, as well as liberation from the obligation to use code or systems that were under proprietary ownership. Furthermore, they envisioned community WiFi networks as ideally built in a non-hierarchical manner, following ‘open standards’ that would permit any device equal access to the network. Open-source software and open access standards could, as far as these geek visions were concerned, go some of the way to routing around the enclosure of the internet,

Co-productions of Culture, Technology and Policy in the North American Community Wireless Networking Movement – Alison Powell, PhD Thesis, Concordia University characterized by corporate ownership of its backhaul bandwidth or government control of content (Goldsmith and Wu 2006). Autonomous WiFi networks controlled by their creators could thus offer an alternative to enclosed or controlled communication systems, in a problem that also concerned other critical computerization movements.

CWN also helped to define geeks as socially involved “citizen hackers” and to underline the importance of technical skills in inspiring social change. Like IndyMedia, it made technical expertise central in social change projects. This created an almost aspirational quality to being a geek in CWN: the national and international meetings, even more than local projects, established technical expertise as cool and powerful^{vi}. As part of a blog discussion of technology and political action, Michael Lenczner expressed his opinion of how geeks contributed to social change:

I can understand people looking at ISF as grassroots and as succeeding because of "bottom-up" or people-power type stuff. But mostly I don't feel that way. I feel that these people are technical experts. Our knowledge is power and our ways of collaboration as arbitrary and byzantine (sic) as any other way of working. I feel sometimes that we are using our power + expertise (sic) to impose infrastructure on people (comment by Lenczner on <http://youcancallmeal.flinknet.com>, Sept 16, 2006).

This comment describes geeks as having power and expertise that they can use to “impose infrastructure.” While it gestures at more socially inclusive “people-power type stuff” it rarefies geek expertise. In the case of Lenczner, who was very competent in modifying WiFi devices and developing web pages, but was not a skilled programmer, the comment can also be read as a desire to be part of a group of experts with the power to change the modes through which people communicate. To be a geek, or to aspire to be a geek, is to endeavor to cultivate a special relationship with technology and with others

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who also have the same kind of relationship. As I explored in the Île Sans Fil case, geek identities area also gendered, and often part of hegemonic masculinity.

Other people at the Summits also seemed to aspire to geekdom. One afternoon at the 2007 Summit I was writing notes when a colleague, who in his day job was a senior technologist at Cisco, leapt over to me. He had been discussing the function of a particular piece of hardware with some other participants, all much younger and dressed in t-shirts with ironic logos. In striped shirt and khaki pants, he exclaimed, grinning, “I’m a geek” before turning and skipping away. I read my colleague’s announcement as a hope of becoming accepted by a radical group capable of revolutionizing communication. Since being a geek does not depend on professional status but on rather on technical prowess, becoming a CWN geek or “citizen hacker” is all the more desirable because of the skill it implies – and CWN also, conveniently, provides an outlet for these kinds of geeky skills not necessarily valorized elsewhere (as Chapter Three explored).

Practical Politics: Making Social Change through Technical Change

Because technology’s political character was at the centre of the movement, geeks with strong technical skills perceived themselves – especially at the earlier Summits – as being able to influence policy by building things. At the 2006 Summit one participant remarked, during the final roundtable session: “we need to build an independent, redundant communications network . . . policy be damned. If we build the network, we control the network.” (Field Notes, April 5, 2006). Another expression of the same sentiment was posted on my blog after the Wizards of OS conference in 2006:

Consider a member of a community who goes down the street to talk to a neighbour . . . they have a conversation. They both take responsibility for what they say and engage in a liberal flow of words and sentiments. The same thing should take place in network communities – an electronic conversation inside a private network which is decentralized, self governing and self propagating. If this requires re-writing the IP stack then why the hell not – there's plenty of time before tea! (Comment by Will Hall on <http://youcancallmeal.flinknet.com>, September 20, 2006).

Both of these comments express the idea that building a network could establish values and conventions (community control or rational liberal discourse, respectively) that could be as or more effective than taking political action. In many ways, this action-oriented approach to politics is reminiscent of the libertarian politics of individual freedom enacted through software and licenses by Richard Stallman's Free Software Foundation. Community wireless geeks look to the CWN movement for a valorization of both their skill and oppositional ethic, even if this ethic is not well expressed. Similarly, a community wireless "movement" depends on geeks to provide expertise and legitimacy by creating resistant or oppositional forms that challenge existing media and communications infrastructures.

Social Justice Advocates

The geek perspective on doing politics by building networks instead of politicking highlights the difference between geek politics and those of social justice advocates. For the most part, the self-identified geeks were white, educated men, who were not representative of broader CWN participants who may have self-identified differently, including most of the women and people of colour I met at the Summits. These participants were often critical of what they saw as a valorization of technology for its own sake. The 2006 Summit concluded with a passionate discussion of who geeks were,

Co-productions of Culture, Technology and Policy in the North American Community Wireless Networking Movement – Alison Powell, PhD Thesis, Concordia University and how to get more people to be geeks. This essentializing perspective mirrored the essentializing of gender at ISF. Similar affirmations of the broader non-technical goals of CWN included references to community wireless as “part of a media reform movement” and as “a cultural movement; technology is just part of it.” One participant suggested that a key framework was the way WiFi and other technologies facilitated communication: “when you strip it down, everything is about communication” (Summit Field Notes April 5, 2006).

Some participants who were more invested in the social justice potential of WiFi were highly critical of what they saw as the depoliticized actions of geeks. One of them, Josh Breitbart, became involved in CWN because of an interest in community development through the production and distribution of alternative, community-produced media^{vii}. In a blog posting reflecting on community participation in municipal WiFi projects, he describes what he sees as the failing of geeks contributing to their communities by building tools and networks. Breitbart argues that the development cultures of community wireless networks do not create the kind of engaged, democratic local population that should be the goal of social justice interventions:

One problem was that many (though not all) of the so-called “community wireless networks” were actually civic wireless networks. Rather than community-based efforts to solve local problems, they came from a small group of technologically-endowed people wanting to contribute to their city. This becomes a problem when the city or a corporation moves in. If people’s only connection to the project is access to the technology, they will not care who provides the technology.” (<http://breitbart.wordpress.com>, April 16, 2006).

In this analysis, Breitbart criticizes the geek ethic of ‘giving back’ arguing that civic participation through network building does not amount to a solid engagement with

Co-productions of Culture, Technology and Policy in the North American Community Wireless Networking Movement – Alison Powell, PhD Thesis, Concordia University community. He claims that without a broader community participation in creating or managing a network, or determining what kind of content should be distributed across it, the benefits of community WiFi are reduced to technical access alone, as occurred in Fredericton. This criticism echoes concerns that without community media or local content, geek-publics are mobilized to make contributions that ultimately serve to establish consumer expectations for free WiFi in public spaces, as opposed to broader access to and engagement with media.

Politics of Inclusion

Social justice advocates at CWN Summits conceived of the politics of technology in a different way than the geeks: instead of primarily concentrating on the potential of WiFi's unique structure to inspire alternative forms of communication infrastructure, they framed the central issues as related to access and control of communications infrastructure. Many social justice activists did not necessarily consider hacking WiFi devices as a sufficient means of achieving political goals. For social justice advocates, WiFi was politicized because it could create a way for communications infrastructure to be built more cheaply and flexibly in order for more people to gain access to media. Like the CWN geeks, the social justice advocates involved in CWN found the dynamic mesh form inspiring because its more horizontal structure promised a more equitable and open alternative to broadcast forms^{viii}. However, the political quality of the network was in its application, not in its intrinsic technical qualities. Social justice advocates drew on the historical context of open publishing for their political framing of the potential of CWN: in the same way as the IndyMedia system provided a much broader group of people with the ability to contribute to online media before blogging became widespread, community-

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owned WiFi networks could provide more people with access to the internet, and also potential access to community media.

The Dialectic Reappears

The connections between technology and politics that emerge within CWN are thus somewhat ambivalent: different ways of articulating politics emerge in connection with different social imaginaries. Feenberg (1999) argues that technology is available for different political ends: its ambivalence permits both (or either) a conservation of hierarchy and a democratic rationalization of technology. Thus, the dialectic of computerization movements continues even as “movement” goals become more politicized. Geeks often valorize their own expertise, which is in some ways a conservation of hierarchy and a solidification of technocracy, but as Proulx (2007) argues, geek movements can also be perceived as democratic rationalizations of technology because they create new sites for political engagement. This political engagement mobilizes both geeks (through their ability to leverage the disruptive potential of WiFi) but also social justice advocates who work to enroll more citizens and communities in the control of their own communications infrastructure.

Both the ubiquitous network articulation and the disruptive network articulation establish politically progressive visions that establish WiFi as contributing to democratic life. In many ways, the tensions between them create shared commitment to working towards technical and social change. Compared to a social justice movement concerned with equality, a “geek movement” – or better, a “mobilization” – may not carry conventional

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political markers. The individualistic, libertarian politics associated with a desire for free and open information infrastructures contrast with the greater democracy of access to communications espoused by media democracy and community technology movements. However, these two articulations were brought together at the CWN Summits to create a shared image of WiFi as a “hack” of existing structures and policies that were, for different reasons, unjust. This suggests that the Summits acted as a type of network forum that connected together different perspectives through shared concepts and objects.

Synthesizing Political Dialectics: Network Forums

At the Summits, and particularly in 2006 and 2007, a continuing tension remained between seemingly a-political (disruptive) perspectives oriented towards technical goals brought forward by participants who primarily identified themselves as geeks, and a social justice focus on increasing ubiquity and access to communication. Although this tension highlighted differences between groups of actors, it also brought them together, since both articulations concentrated on the political significance of WiFi networking. This suggests that the Summits have a role as “network forums” where bridges are built between different social imaginaries. Turner (2006) defines network forums as “meetings, publications, and digital networks within which members of multiple communities could meet and collaborate and imagine themselves as members of a single community” (p. 5). He argues that network forums bring together different types of actors who have different proximal relationships to technology, and produce “new social networks, new cultural categories, and new turns of phrase” (p. 5).

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Network forums produce a shared language that can bring together people with different types of expertise. In his example of the 1984 Hacker’s Conference, Turner argues that hackers “close to the machine” shared their expertise with cultural entrepreneurs who occupied a social category that was much more concerned with transforming technologies into symbolic social goods than in focusing on the technologies themselves. Turner’s network forum introduces a key concept into the study of computerization movements: the idea that the people at a remove from technology may have greater influence on how people think about and use new technologies. To do this, journalists, think tank researchers, and other “cultural entrepreneurs” need to have access to people working closely with technology – in Turner’s case hackers, and in the CWN case, WiFi geeks.

In the CWN movement, “the cultural entrepreneurs” include advocates and academics motivated by a shared interest in criticizing existing ownership, governance and regulation of communications. These shared values motivated Sascha Meinrath, and other key actors, including lawyer Harold Feld of the Media Access Project, to establish discourses – both at the Summits and through blogs and discussion lists – linking the disruptive and ubiquitous network articulations into a cohesive call for political and social change that underlines the democratic potential of new communication technologies.

Creating a Common Language and Politics

CWN Summits create a common language of a movement, which bridges the different articulations between technology and politics and frames the efforts of a variety of actors

Co-productions of Culture, Technology and Policy in the North American Community Wireless Networking Movement – Alison Powell, PhD Thesis, Concordia University as being in the service of a broader common good. This common language reiterates that CWN's fundamental aim is to develop as a social movement dedicated to making communications more democratic.

The discourse of the “CWN movement” circulated before the Summits, connecting a range of vaguely political impulses. For example, the libertarian Foundation for P2P Alternatives (an online clearinghouse of documentation related to peer to peer initiatives) described the Community Wireless Movement as “a worldwide movement to create a bottom-up and wireless broadband infrastructure, accessible by all citizens” (Foundation for Peer to Peer Alternatives 2006). The “Wireless Commons Manifesto” claimed, “Low-cost wireless networking equipment which can operate in unlicensed bands of the spectrum has started another revolution. Suddenly, ordinary people have the means to create a network independent of any physical constraint except distance” (Wireless Commons 2003). These broad evocations of a “CWN movement” encompass an extraordinary range of political motivations, from libertarian interest in constructing autonomous, grassroots networks to social justice perspectives that mobilize “ordinary people” to transform their lives through technology.

In contrast to these vague evocations of WiFi “movements” and “revolutions” the contact language of the Summits establish a WiFi moment as a public interest response to communications problems emerging at a specific critical juncture shaped by regulatory changes occurring around the time of the Summits. This context included issues of community ownership of networks, network structure, and technical principles such as

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network neutrality. I discuss these below in detail. To address this context, CWN organizers concentrated on bringing together sympathetic people with different skills and interest in WiFi networking. Sascha Meinrath explains “around 2004 we realized that even if we could build these technologies we couldn’t deploy them because of different issues like it being illegal or not having spectrum, and made me think in my work with Free Press [a media reform nonprofit] about the idea of community wireless blending geekery and wonkery” (February 22, 2008). The “wonkery” that Meinrath is referring to describes policy advocates or policy makers (policy wonks). As a way of connecting CWN hacks with policy change, discourses and technical projects that emerged after the CWN Summits concentrated on defining the movement’s politics in terms of political and social change.

Discourses of the CWN “Movement”

Turner argues that the main product of network forums are new types of discourses: “contact languages” that are produced as ways of bringing together people with diverse backgrounds working in different areas, and public discourses that communicate the commingling of different social imaginaries. He argues that at the 1984 Hacker’s Conference journalists like John Markoff, who worked for the New York Times at the time, reported on the countercultural hackers, setting up a public discourse in which countercultural politics were linked with hackers. Markoff (2005) revisits this process in his history of the links between the counterculture and the computer industry. Similarly, blog posts, videos, and documentation contributed by participants at the Summits

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circulated discourses about politics, while retaining a sense of playfulness in the Summit environment.

Documentation from the Summits mixes references to the political impact of CWN with reference to the “do-it-yourself,” hacker spirit of participants. After the 2006 Summit Lisa Yeo, a technologist from the city of Edmonton, wrote “There’s a bit of an ‘information wants to be free’ energy. Neat. The speakers talk about the importance of communication to democracy. . . .Participating in the most profound revolution in the history of the species . . .Relationship between technology and the 1st amendment rights to free speech. . . .The agents of change are the geeks!”

(<http://ablogofherown.postopolis.com/category/community-wireless/> April 2, 2006).

After the 2007 Summit, a review article in *Government Technology*, a blog discussing online government, opened a discussion of the policy challenges facing CWN projects by describing the difference in approach between CWN actors and the participants at commercial WiFi conferences. Josh Breitbart writes:

Compared to the more professional attendees of other wireless conferences like MuniWireless and W2i, the people at the International Summit for Community Wireless Networks are a ragtag bunch. They do things like walk up to a McDonald's drive-thru window at 2:30 in the morning impersonating a car in the hopes of scoring some late-night food. But its folks like this that invented wireless networking and, judging by the Summit attendance, they have spread their innovation to every corner of the globe. Their gusto was on clear display at the three-day affair. (Breitbart 2007)

The article continues by discussing the commercialization of the “cultural rebellion” of community WiFi by municipal wireless projects and concludes by referring to the need to

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continue “hacking” – or mobilizing geek interest in the disruptive potential of WiFi to construct more ubiquitous, accessible, or community-owned networks.

Hacking Politics

Keynote speeches made at the Summits by public-interest lawyer Harold Feld and reproduced on his blog emphasized how the CWN movement acted as a way of “doing” politics that could have important policy implications for goals of expanding social justice. The online version of the 2006 keynote speech reads:

Politics is our desire to make a better world, and our deliberate actions done to make it so. That can start as small as wanting to unwire your neighborhood, or writing software documentation to help someone set up a node. You make a conscious choice to do something to make a better world. You have made a political act, and given yourself power. NEVER let them make you ashamed of that. NEVER let anyone make you so desperate not to get caught doing “politics” that you would rather stay helpless (Feld 2006).

Feld’s speech concentrates on the political intent inherent in taking action to “make a better world.” Using examples of technical activities, his speech makes a tangible link between hacking and politics.

This connection re-emerged at the 2007 Summit, in a discussion on the “demise of the citizen hacker.” Initially, the discussion focused on the decline of “device hacking” – working directly with WiFi software and hardware – within CWN. Even the title of this panel suggests that self-identified “hackers” felt defensive about how their activities contributed to a more politicized CWN “movement.” However, by 2007, municipal WiFi projects were announced in an increasing number of cities (a more detailed discussion of municipal WiFi follows in the next chapter). This increasing enclosure prompted Matt Westervelt to comment that he felt that CWN projects, as they attempted to influence

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municipal networking projects, were departing from “what community needs . . . People making money don’t care about neutral networks or openness” (Field Notes, May 20, 2007).

The 2007 conversation about “hacking” shifted to defining the characteristics of a community wireless network, which participants claimed should offer “access to all kinds of devices”, and be “hackable.” These comments seemed to indicate a clear opposition to large-scale networks constructed primarily to facilitate access to the internet without remaining open or “hackable.” The ideal community network, participants argued, should be both broadly accessible to a wide population as well as being open to modification. In essence, it should be *both* disruptive and ubiquitous. Going further in connecting the different articulations by creating a shared language, Rich Mackinnon, another participant, attempted to expand the definition of hacking: “Sometimes hacks in technology open the way for policy hacks” (Field Notes May 20, 2007). The idea of policy advocacy as also a “hack” created a shared frame of reference for Summit participants engaged with more conventional social justice work focused on shifting political discourse and impacting regulation, and geeks “doing politics” by hacking. By the end of this discussion the divisiveness expressed in the comments above had dissipated, and participants collectively understood that the CWN movement encouraged “hacking” of all kinds. This contact language reclaims “hacking” as part of the political process, blending together the playful, critical resistance of geeks with the broader questions of political justice mobilized by social justice advocates involved in CWN.

Critiques

The emergence of “hacking” as a key part of the contact language that developed around the CWN movement’s politicization is somewhat problematic. It overly valorizes the libertarian, geek contribution to politics; after Feld’s 2006 keynote, Summit participants engaged in a critical discussion of whether “doing” politics required technical expertise. If it did, participants worried that this might form yet another barrier to political and social engagement, which could counteract the efforts of those working for greater social and political inclusion. The 2007 discussion on the demise of hacking suggested that some fundamental elements of inclusion had not been achieved– all of the people in the session were men, except for me. All were white.

However, the CWN Summits have still created the opportunities for diverse groups of people who may have had opposing views on the political character of WiFi to join together to actualize its progressive political potential. Aligning CWN with political ideologies of social justice as well as with geek libertarianism brought many more women and people of colour to the CWN Summits than I had encountered at ISF meetings or in the Information and Communication Technology offices in Fredericton. Telecommunications policy analysts, heads of grassroots organizations dedicated to expanding access to communications, and academics also attended the Summits, helping to define the political significance of CWN in social justice terms – rather than in the (somewhat defensive) geek terms of “citizen hacking”. However, like the rest of the participants involved in CWN, these “non-geeks” felt that the CWN movement made important social contributions. For example, it could provide community members a chance to work directly with the people who had expertise in building networks, create

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more accessible networks that could resist corporate monopoly, or highlight examples of grassroots innovation (Powell 2006) .

Establishing the “movement” within the network forums of the Summits provided a clearer political orientation for CWN than the previous vague, technologically deterministic references to a “wireless movement.” The North American CWN combined an action-oriented approach to “doing” politics with a sharper sense of the implications of community WiFi networks for access to public radio spectrum, control over communications, and redevelopment of community media. The connections between these visions of WiFi’s importance were evoked in contact language that described CWN as a “movement” based on “hacking” technical structures and politics. The next chapter describes and analyses the full extent of how “policy hacking” bridges discourses and practices from CWN to broader policy spheres. The connection between *disruptive* and *ubiquitous* perspectives on CWN’s political potential indicates how network forums like the Summits connect different forms of discourse, practice, and expertise. At the Summits, diverging politics and expertise began to be connected through a contact language evoking a “movement.” This contact language also helped establish a loose but flexible organization of people who advanced public interest perspectives on WiFi at a critical juncture in policy and technology.

Conclusion

In this chapter, I have summarized the historical antecedents of the North American CWN movement, arguing that it has both libertarian and social justice influences. These influences align with two articulations between WiFi technology and politics: one I call

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the *disruptive network articulation*, which connects politics with the open, modifiable, disruptive qualities of WiFi hardware and software (and with the individual freedom creating and modifying these networks can provide to their developers). The other I call the *ubiquitous network articulation*, arguing that it connects WiFi's inexpensiveness and ease of deployment with visions of expanded access to communications in the context of greater social justice. I describe two groups of actors – geeks and social justice advocates – who are often associated with these articulations, and explore the tensions produced by these two different ways of thinking about WiFi politics.

In the second section of the chapter, I propose that the CWN movement, although it allows these competing articulations to develop, actually serves as a point of contact between them, establishing a network forum that frames WiFi as a technology that can serve the public interest. This politicization frames WiFi network development as a type of action-oriented politics, and evokes “hacking” as a political act. Overall, the chapter outlines the role that Summit meetings – as network forums where people meet and exchange ideas – can play in changing the political orientation of WiFi. In the next chapter I argue that the connections created through the contact language and shared politicization of WiFi influence expectations emerging around the development of institutions and public policies governing wireless communications.

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Notes

ⁱ In addition to the 2004 World Summit on Free Information Infrastructures Conference in London, UK these included the 2006 National Community Wireless Networking Summit in St. Charles, MO, the 2007 International Community Wireless Networking Summit in Columbia, MA, the 2007 Wizards of OS Conference in Berlin, and the 2008 National Conference on Media Reform in Memphis, TN. I also reviewed the online audio, video and text archive from the 2004 National Community Wireless Networking Summit in Champaign-Urbana, IL which I was unable to attend.

ⁱⁱ These include: the Île Sans Fil volunteer announcement list, the WSFII discussion list, the National Community Wireless Networking News, and the mailing list for the Boston Wireless Requests for Information working group struck during the 2007 International Summit.

ⁱⁱⁱ These included my own blog: <http://youcancallmeal.flinknet.com>, as well as Sascha Meinrath's blog: <http://saschameinrath.com>; Michael Lenczner's blog: <http://mtl3p.ilesansfil.org>; Joshua Breitbart's blog: <http://breitbart.wordpress.com>; Dharma Dailey's blog: <http://dharmadailey.com>. Comments posted on blogs are considered public speech and are attributed in the text of the thesis.

^{iv} I contributed to the educational website <http://whatisnetneutrality.ca> in 2006 and contributed to the Ethos Wireless Better Broadband Toolkit in 2007.

^v It is extremely important to note that an explicit focus on politics as defined through public policy seems to be a particularly North American preoccupation in CWN circles. The WSFII Summit in 2005 in London described its "focus on the needs and practicalities of free infrastructure development rather than on theory or policy, though these are possible outcomes of the process" (<http://www.wsfii.org/wiki/WsfiiDescription> - Accessed October 5, 2007).

^{vi} Also very masculine. As Kendall (1999) notes, technical and scientific expertise are associated with an increasingly hegemonic masculinity – previously pejorative identities like "geek" and "nerd" are marks of some power.

^{vii} This type of media, sometimes called autonomous media, is defined by Roncaglio as promoting alternative communication that would not occur within conventional media. Alternative media invites “more participation in the production and transmission of messages on the part of an increasing number and variety of groups” (Roncaglio, 2000, p. 206). Indymedia has been considered as a form of alternative media, but also as a type of “autonomous media” by Downing (2003) who considers it not just as an alternative but also an autonomous form of media production.

^{viii} Dynamic mesh networks are also very useful in cases of disaster recovery. CuWiN and other CWN actors created WiFi networks after Hurricane Katrina that functioned better than the United States federal government networks.