The wiki way: prefiguring change, practicing democracy

By Kate Milberry

Abstract

The Internet is an unfinished and contested technology that reflects the duality of science and technology - the double aspect of transformation and innovation. Today there is an imbalance of this internal tension, resulting in a disconnect between modern technology and social values. Tech activists have appropriated Internet technology, inflecting it with the goals and concerns of the global justice movement. Through their development of free software - in particular their customization of wiki technology - tech activists have created a space and tool for communication in cyberspace. In turn, this has enabled the realization of new communicative practices offline, establishing a dialectical relation between the technological and the social, and restoring technology's transformative aspect. Democratic practice online prefigures the desire for a more just society; actualized as democratic interventions into the development and use of technology, it then manifests in alternative modes of social organization in the "real" world.

Introduction

What democratic potential does the Internet hold? This is a much-asked question, both within and outside academia. And yet the question remains unanswered, in part because the Internet remains an unfinished and evolving technology. The duality of science and technology - on the one hand its promise for a more humane and just society, on the other, its potential to dominate nature, and therefore humanity - reflects a similar tension between status quo power relations and alternative visions of the future. This tension plays out in the way recent progressive social movements have engaged with new information and communication technologies, in particular the Internet, within a framework of global capitalism. As such, it is not clear whether cyberspace will be fully colonized by corporate forces or whether it will be preserved as a virtual public sphere that can enhance "real world" democracy. Neither has
it been determined if the Internet will be controlled by the state, by its corporate partners or by citizens, although a decidedly less open Internet protocol, IPv6, is currently being tested.

Today, various actors compete for dominance on the web, as the commercialization of cyberspace continues apace. Among them, activists in the global justice movement (GJM) have appropriated Internet technology in their struggle against the negative impact of corporate capitalism on a planetary scale. Since the eruption of the GJM at 1999’s Battle of Seattle, much has been made about the impact of the Internet on progressive activism. Of particular interest have been the ways in which activists have used the Internet as a tool for organizing (Deibert, 2000; Kahn & Kellner, 2004; Meikle, 1999; Smith, 2001). Applications like Websites, email and Internet Relay Chat (IRC) have largely facilitated the new movement as a global phenomenon (Bennett, 2004; van Aelst & Walgrave, 2004). Cyberactivism - political activism on the Internet - is a new mode of contentious action, and new practices such as virtual sit-ins, online petitions and email campaigns have enhanced the repertoire of contention (McCaughey & Ayers, 2003). But what impact have activists have had on the Internet? "Tech activists" - programmers, coders, and hackers who subscribe to the philosophy of the free software movement yet are committed to the pursuit of a just society - are largely responsible for facilitating the novel combination of interactive digital technology and activism. They are responsible for the design of the virtual infrastructure used by activist groups. But in addition to building and maintaining websites, wikis, web logs, email accounts and mailing lists, these self-described geeks customize free software to meet the needs of activists engaged in the new global activism. Their work, therefore, alters not only the way people "do" activism; it is changing the face of the Internet itself.

How do we evaluate such a claim? I approach the problem by acknowledging first and foremost that technology is political - both in design and use. I further contextualize the problem historically, considering the origins of critical thought on the interrelation between modern technology and society, noting the inherent tension underlying the human-machine bond. Through the lens of critical constructivism, I then trace the rise of tech activism, which has roots in the free software movement but has cultivated its own ethically

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grounded and socially responsible tech activists have appropriated Internet technology in their struggle against the negative impact of corporate capitalism on a planetary scale. Among them, activists in the global justice movement (GJM) have appropriated Internet technology in their struggle against the negative impact of corporate capitalism on a planetary scale

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From the dawn of modernity, the promise of technological advancement has inspired awe and dread in seemingly equal parts. It signaled either human-society's triumph over nature or, conversely, humankind's impending doom. Leiss (2005) calls this the "two-sided significance" that science and technology hold for society; it is this duality that produces the "essential, internal tension in the epoch of modernity" (p.4). Feenberg (2005) affirms the dual nature of technology. Where technology is designed and used, it then manifests in alternative modes of social organization in the physical world. Feenberg suggests? It is with this question in mind that I consider the implications of tech activism.

(Hu)Man against machine or the duality of science and technology

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nator of scientific change. Uncontested in any meaningful way, it promotes a vision of the continual flow of new products and technologies that improve the material conditions of life. Inventive science also gave rise to the "idols of technology." Evocative of Bacon's idols, which were rooted in devotion to magic, religion and irrational social convention, these are "the false notions that have grown up around modern society's fervent commitment to technological progress" (Leiss, 1990, p. 5). Transformative science - innovation's better half - endured through the end of the 1800s in European culture, maintaining harmony within the project of science. Up until then, the new scientific methods were considered important not only as a toolkit for better understanding nature, but for their potential to positively influence social policy and social institutions (Leiss, 2003).

The society-technology disconnect

Today, however, the two sides of the internal tension within science and technology have become unhinged; thus separated, they no longer support and enhance one another. What Leiss (2005) calls the "cultural mission" of science has faltered. Marcuse (1964) recognizes this disconnection between modern technology and social values in his concept of the one-dimensional society. Here dialectical contradiction (the crux of true reason) is flattened and the Platonic logos of a technology - its rationale or reference to the good served - is lost. "The totalitarian universe of technological rationality is the latest transmutation of the idea of Reason" in which logic has become the "logic of domination" (p. 123). Thus technological rationality triumphs as reason - the basis for scientific thought and technical action - becomes unreason in the "closed operational universe of advanced industrial civilization" (124). For Marcuse, the only way to transcend this situation, this closed universe, is through a "catastrophic transformation" of society that is at once technological and political. "The political change would turn into qualitative social change only to the degree to which it would alter the direction of technical progress - that is, develop a new technology" (p. 227). Such a qualitative change would facilitate the transition to a more advanced level of civilization if technologies were designed and used for the "pacification of the struggle for existence" (ibid). What would emerge, Marcuse posits, is a new idea of reason, one opposed to modern scientific and technological rationality.

Feenberg (2005) similarly acknowledges the imbalance in modern times between the transformative and inventive sides of science - or technology and values - and the resulting tendency of technical action toward domination. "Technical action is an exercise of power," he argues.

Where, further, the basis for power is the principle of efficiency, the designs [that] narrowed...This narrowing distorts the structure of experience and causes human suffering and damage.

What is necessary, Feenberg posits, is a new form of production, as indeedMarcuse (1964) notes, in order to create technologies that feed technical advances, not just those that meet the full range of human needs. In response to the limited interests that rest their claims to hegemony on technical mastery" (p. v). He dismisses the technologically determinist insistence on the neutrality of technology, stating that the real issue is not technology itself, but the variety of choices involved at the level of technical design and the numerous potential outcomes of the design process. At the same time, Feenberg points out the asymmetry of power relations between human and machine, or actor and object, suggesting modern technology is subject to conscious social control. Openings for democratic interventions appear during the various stages of the design process, making possible a radically different technology that serves more broadly the needs of humankind.

A critical theory of technology development...This narrowing distorts the structure of experience and causes human suffering and damage.

Democratic control...
These disputes often align the technical code a direct reflection of status quo power relations (Feenberg, 1999). Often, the technical code acts to structure the social world in a rather autonomous way. In other words, the technical code translates what are typically ruling class objectives into technical terms; it “invisibly sediment[s] values and interests in rules and procedures, devices and artifacts that routinize the pursuit of power and advantage by a dominant hegemony” (Feenberg, p. 14). A technology reaches closure when disputes over its definition are settled by privileging one over any number of possible configurations; these disputes often align the technical code a direct reflection of status quo power relations (Feenberg, 1999).

However, the technical order is not merely a sum of technical devices and artifacts, but a scene of struggle. It is a social battlefield, wherein outcomes with weighty implications for civilization are decided (ibid). Technical devices and systems are indifferent to power; that is, there is no necessary, pre-given correlation between technology and social dominance. This highlights the ambivalence of technology: it can be used just as easily in alleviating the “struggle for existence” as in dominating humanity.

**Technology as a scene of struggle**

According to Feenberg (1991) the technical order is not merely a sum of tools but instead acts to structure the social world in a rather autonomous way. “In choosing our technology we become what we are, which in turn shapes our future choices. The act of choice is technologically embedded and cannot be understood as a free ‘use’” (p.14). But critical theory is not fatalist and Feenberg retains this thrust; the future of civilization is not determined by the "immanent drift of technology" therefore, but can be, and is, influenced by human agency. Political struggle continues to play an important role, however tenuous and uncertain of success.

In societies organized around technology, such as modern Western nations, technological power is key to the exercise of political power. Feenberg (1991) explains how the ruling elite preserve their power through his concept of the technical code. Whereas earlier constructivist notions, like momentum (Hughes, 1987) and path dependency account for certain technological trajectories, the technical code is the embodiment of dominant social principles at the level of technical design. In other words, the technical code translates what are typically ruling class objectives into technical terms; it “invisibly sediment[s] values and interests in rules and procedures, devices and artifacts that routinize the pursuit of power and advantage by a dominant hegemony” (Feenberg, p. 14). A technology reaches closure when disputes over its definition are settled by privileging one over any number of possible configurations;
space; nonetheless a community model of the Internet that envisions a virtual space for the development of democracy suggests commercial domination is not inevitable (Feenberg and Bakardjieva, 2004).

These discordant models of the Internet indicate that it is an unfinished project (Feenberg and Bakardjieva, 2004); that is to say, conflicts over its design and meaning have not been resolved. Herein lies the "two-sided significance" or the dual nature of technology. With its potential to be both inventive and transformative, the future direction of Internet remains dynamic and very much contested. It is unclear whether cyberspace will be sold off to the highest bidder or whether it will be preserved as a place for public communication and interaction. The turf war in cyberspace is still being waged, and actors with competing goals, values and interests continue to battle for supremacy. Thus Internet has not reached closure, nor have the dominant norms of modern western capitalism sedimented into a technical code; both the social and technical definition of the Internet remain at stake. Many possible outcomes are visible on the horizon of the future, making this an opportunity moment to investigate the Internet's emancipatory and democratic potential.

**Interpreting the Internet**

Viewed through the lens of critical constructivism, the Internet's contingent nature is apparent. Its development is characterized largely by interpretive flexibility, and the concomitant notion of user agency in the arena of technological design. The Internet was originally conceived as a means for connecting government researchers at various military and academic institutions, enabling them to share expensive computing resources (Abbate, 1999; Ceruzzi, 2003). But it quickly developed into a medium for human communication, demonstrating interpretive flexibility. The designers of ARPANET, the progenitor of the Internet, were also first generation users, and as such, they intervened in the design process in ways that strayed from the official vision of military computer networking. What makes the Internet unique in the history of communication and information technologies is the openness of its design principles - in its standards, its software and its engineering - and the prospects this offers for user agency. This was a deliberate choice of its originators with profound impact on the Internet's social meaning. "From the very beginning these principles have been understood to have a social as well as a technological significance. They have, that is, been meant to implement values as well as enable communication" (Lemley & Lessig, 2004, p. 44). The value of openness that characterized the Internet's birth has endured, despite increasing contestation and the emergence of competing models of Internet governance.

Alternative conceptions of society such as those sought by the global justice movement will value other attributes of technology, beyond those currently endorsed by capitalist hegemony. "This space was to be inclusive, rather than exclusive" (in Ceruzzi, 2003, p. 302). Ironically, it was with the privatization of the Internet in the corporate arena and hackers in the free software/open source movements. Tim Berners-Lee designed the World Wide Web in 1990, designed into his application a value contrary to the norms of universities and research facilities, along with the popularization of the personal computer, the right to copy software, and the movement to free software.

**Tech activism's radical roots**

The Internet is arguably well suited to the task of facilitating alternative, progressive conceptions of society, especially in the face of capitalist hegemony, which states that the current socio-economic configuration of modern Western society is the only possible one, whatever its flaws.

Most of these students were not part of the counter-culture of universities and research facilities, along with the popularization of the personal computer, that this vision of inclusivity seemed ever more likely .

Artificial Intelligence laboratory at Massachusetts Institute for Technology developed the habit of sharing source code based upon a cooperative spirit and a belief that information should be free (Stallman, 1999). They were part of a student culture that took up computer networking as a tool of free communication (and later, a tool for liberation), which included graduate students who emerged in the 1960s as a digital counterculture. Hackers working in the Artificial Intelligence laboratory at Massachusetts Institute for Technology were at the fore of the push to mold it into a medium for democratic participation and interaction. The Интернет is a tool that "humanizes power" (Feenberg, 1991, p. 19). We see this in the continual development of tools for social justice. The current tradition of tech activism is the second wave of a movement that emerged in the 1960s as a digital counterculture. It is not a vision of a specific other world, as Naomi Klein (2001) astutely observes, simply a way of imagining a different world, one that is better and more just than the only possible one.
cultural movement in the same way as many radical activists of the day. "And yet they were permeated with the values of individual freedom, of independent thinking, and of sharing and cooperation with their peers, all values that characterized the campus culture of the 1960s" (p. 24).

By the 1980s, these values were increasingly marginalized as the computer industry became more and more proprietary. One of the MIT hackers, Richard Stallman, quit the AI lab in response to this change and founded the free software movement in 1984. This was, arguably, the formalization of a long tradition of openness in the computing community. Ceruzzi (2003) traces the custom of sharing source code as far back as 1955, to the forming of SHARE, a disparate group of programmers who banded together to tackle upgrading their IBM systems. Stallman (1999) took the moral stance that proprietary software was antisocial and unethical, rejecting the assumption that "we computer users should not care what kind of society we are allowed to have." He began developing an operating system, GNU (GNU's Not Unix) that became complete with the addition of the Linux kernel in 1992 (gnu.org). The movement was based upon four essential freedoms: the freedom to run a program; the freedom to modify a program; the freedom to redistribute copies (gratis or for a fee); and the freedom to distribute modified versions of the program. Because freedom is considered in the context of liberty rather than price, the ability to share source code, and sell a finished program are not necessarily incompatible. The crucial point is that the source code always remains freely available - in proprietary and free software.

Free software vs. open source

Freedom, and not simply program development and use, is the central concern of the free software movement, making it an explicitly political project. In this way, it suggests "a digital revolution that is social before it is technical" (Obscura, 2005). But some in the tech community have purposely avoided the subversive potential of free software. In 1998, Eric S. Raymond launched the Open Source Initiative (OSI) in response to the value-laden approach of the free software movement. Although it assumes an apolitical stance, this movement reveals its bias in its support of the status quo.

The Open Source Initiative does not have a position on whether ideas can be owned, whether innovations can be patented, and whether proprietary software was antisocial and unethical, rejecting the assumption that "we computer users should not care what kind of society we are allowed to have." He began developing an operating system, GNU (GNU's Not Unix) that became complete with the addition of the Linux kernel in 1992 (gnu.org). The movement was based upon four essential freedoms: the freedom to run a program; the freedom to modify a program; the freedom to redistribute copies (gratis or for a fee); and the freedom to distribute modified versions of the program. Because freedom is considered in the context of liberty rather than price, the ability to share source code, and sell a finished program are not necessarily incompatible. The crucial point is that the source code always remains freely available - in proprietary and free software.

Another political project founded in defense of freedom on the Internet is the Electronic Frontier Foundation. Begun in 1990, the EFF works to protect the public interest in legal battles over digital rights in cyberspace. A discussion of this group, however, is beyond the scope of this essay. See www.eff.org.

While the two projects have different focuses - free software, making free software more compatible with capitalist discourse, describing itself as "a marketing program for free software. It's a pitch for 'free software' on solid pragmatic grounds rather than ideological tub-thumping. The winning formulation focus on the user -technology relationship, founded on an implicit critique of corporate capitalism. Proponents of the open source project strive to support the development of software technology based on a proprietary system that underwrites modern capitalist hegemony. The free software movement, however, offers a working example of an alternative social model, a minority of the tech community, which drifted away from its more radical origins and is today largely apolitical.

Talking about freedom, about ethical issues, about responsibilities as well as convenience, is asking people to think about things they might rather ignore. This can trigger discomfort, and some people may reject the idea for these things.

Despite its broad political program, the free software movement represents a minority of the tech community practice and values. This vision extends beyond the computer industry and embraces the entire scientific and technological practice and values. While the two projects share a similar definition of what constitutes free software, their objectives are different. Activists in the free software movement focus on the subversive potential of free software. In an effort to appear business-friendly, the Open Source Definition "logically abandoned all reference to the social and ethical means and motives of this movement reveals its bias in its support of the status quo.

This divide within the tech community recalls the "essential, internal tension" of modernity and science and technology, inventiveness and culture. The free software movement, however, offers a working example of an alternative social model, a minority of the tech community, which drifted away from its more radical origins and is today largely apolitical.

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one based on decentralization, volunteerism, cooperation and self-empowerment, with the ultimate goal of creating a freer society. It is an example of what Feenberg (1999) calls democratic rationalization, the use of new technology (software) to undermine the existing social hierarchy. Put another way, democratic rationalization highlights the political implications of user agency for technical design, suggesting the possibility of organizing society in ways that enhance democracy, rather than capitalist efficiency and control. In this case, democratic control of software suggests a different Internet and, broadly considered, a different world.

**Second wave tech activism: Repoliticizing technology**

The resurgence in tech activism in the early 2000s rested firmly on the foundation laid by the free software movement. It is unsurprising, then, that a similar rift exists between tech activists in the global justice movement and the generally apolitical advocates of open source. While both projects share an affinity for collaboration and coordination, with geeks often moving easily between the two, their political, philosophical and technical motivations differ. Programmers working on open source projects are rewarded by the creative expression, intellectual stimulation and improvement of technical skills acquired through programming (Lakhani & Wolf, 2005). Similar rewards may also inspire tech activists in their work but there is no question as to their overarching motivation: "technical means are directed toward political ends" (Coleman, 2004). These political ends include the pursuit of social, economic and environmental justice under the auspices of the GJM. This shift in focus signals a return to the radical tradition of the free software movement and the repoliticization of computer technology.

The reclamation of computer technology as a political frontier for contentious action is a hallmark of the global justice movement. The GJM comprises the latest wave of social justice activism, and seized the world's attention at the "Battle of Seattle", 1999's massive street protest against the World Trade Organization. Here, upwards of 50,000 activists from a variety of cultural, ethnic and political backgrounds formed an unprecedented alliance, united by their common opposition to the debilitating effects of neoliberal globalization, a world economic policy that has generated massive profits for a minority of the world's population at the expense of labour and human rights, environmental sustainability, democratic practice and national autonomy (Langman, 2005). In the face of increasing corporate dominance, there was increasing resistance, and a movement of movements swelled, embracing the vision of a people's global justice movement that historicized the global march of capital, thus human intervention was possible and power of the global economy was curtailed. The Seattle protests and continuing with other major citizen protests and people's summits at subsequent meetings of institutions of global economic power brokers such as the G8, International Monetary Fund and World Bank (Morris & Langman, 2002), and the organization of campaigns and movements into "super movement spheres" (Langman, 2005). The Internet facilitated the novel combination of interactive digital technology with thegatekeeping function of editing and subverting journalistic norms. Indymedia therefore emerges as more than an experiment in radical media making collective actions possible.

Tech activists have been central to the global justice movement since its inception, facilitating the coordination and social justice activism at the grassroots level and around the world. While all tech activists share in the movement's overarching goals of social justice, one particular affinity for collaboration and coordination, with geeks often moving easily between the two, their political, philosophical and technical motivations differ. Programmers working on open source projects are rewarded by the creative expression, intellectual stimulation and improvement of technical skills acquired through programming (Lakhani & Wolf, 2005). Similar rewards may also inspire tech activists in their work but there is no question as to their overarching motivation: "technical means are directed toward political ends" (Coleman, 2004). These political ends include the pursuit of social, economic and environmental justice under the auspices of the GJM. This shift in focus signals a return to the radical tradition of the free software movement and the repoliticization of computer technology.

While IMC was the dream of media activists, it was the geeks in the movement who developed and implemented the code to realize that dream. In particular, the innovation of open publishing software enabled anyone with an Internet connection to upload stories and images to the website, bypassing the equal rights (not the written but the real ones) and conditions for all humans (and partially other beings, too) on this planet.4

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4 Personal communication with Alster, 2 December 2005.
ly an example of the democratic rationalization of the Internet - activists appropriating Internet technology to not only challenge the dominant ideology (neoliberal globalization), but to foster alternative visions of social organization.

The birth of Indymedia

There are numerous examples of tech activism, such as the construction and maintenance of activist websites (including mailing lists, email accounts and other functionalities), refurbishing old computers for distribution in technology poor areas/nations, and the hosting of hacklabs' and other tech training events. Tech activists are also responsible for setting up media centres for major street demonstrations and during natural disasters, such as Hurricane Katrina. But Indymedia is arguably the most prominent, and perhaps best, example of tech activist work done under the banner of the global justice movement. The building of the first IMC in Seattle now approaches legendary status. The inaugural post, by founding geeks Manse Jacobi and Matthew Arnison, acknowledges the novelty of the new movement; on 24 November 1999, they wrote: "The resistance is global... a trans-pacific collaboration has brought this web site into existence." But it was activists' prior use of the Internet as a communication tool that enabled the global resistance to unite in one locale.

Another geek, Evan Henshaw-Plath, took part in the birth of Seattle IMC, which he had heard about from a friend at a pre-protest party. He describes the scene as "packed and hectic", with techies scrambling to shore up the server and code before the protests began:

Almost the instant I walked in to the Indymedia Center I had caught the IMC bug. Without knowing the organizing structure, extent of the projects, political background, I could experience the energy. I worked all night on the one locale.

...in to the streets…

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5 Hacklabs are political spaces (often temporary) that provide community computer and Internet access. They are used for independent media, the promotion of free software and other emancipatory technologies. Here tech activists share skills with one another and the broader public. For example, see www.hacklab.org.

6 In Houston, Indymedia and low power FM radio activists set up a disaster information radio station. New Orleans IMC offered breaking coverage and activists set up a media centre in Algiers, a portion of the city that did not flood from the levee breaches. IMC USA created a topical site, Katrina.indymedia.us.org, which carried news from across the Indymedia network (http://www.anarchogekt.com/articles/category/indymedia).

7 For the full transcript, visit http://seattle.indymedia.org/1999/11/2.shtml.

8 Interview with Evan Henshaw-Plath, 28 July 2003.

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Since helping found Seattle Indymedia.org, Henshaw-Plath has been involved with dozens of projects, incorporated into the (in)famous. The first open publishing project, Active, was originally coded by Arnison (2002), who had written about the responses to the privatization of information and news, like that of free software; readers are not only informed in editorial decisions, but also in their shortcoming.

The choice of free software, was deliberate, and suggests a philosophical inheritance from the social purpose of the software, nor of the user-technology relation. In the case of free software, one technological design or set of features creates a particular public realm and needs, which is central to democratizing technology. Thus in their software, tech activists demonstrate insight into the power asymmetry of the continual hacking of Active, which is aware that each technological design or set of features creates a particular public realm and needs, which is central to democratizing technology. Thus in their software, tech activists demonstrate insight into the power asymmetry of the continual hacking of Active, which is aware that each technological design or set of features creates a particular public realm and needs, which is central to democratizing technology.
tries inherent in capitalist socio-technical systems, as well as the knowledge that such asymmetries are both socially constructed and reflective of inequality in the broader social context. With Indymedia, it is apparent that the social and technical are tightly coupled; IMC geeks consciously attempt to create a technical environment that promotes equality and democracy and that, in turn, supports the social changes goals of Indymedia, as well as the broader the justice movement.

**Wild wild wikis: The latest frontier**

Tech activists combat power imbalances in the technical sphere through their development and use of free software. Thus they carve out their own virtual terrain oriented toward the community model of the Internet, which is based on democratic practice. (Feenberg & Bakardjieva, 2004). Recognizing communication as key to achieving the goals of the global justice movement, activists created their own media system. Indymedia’s philosophy is summed up in the now-famous slogan: “Become the media.” However, it soon became apparent that the importance of communicating movement ideals of social, economic and environmental justice through a global digital newswire depended upon internal communication within Indymedia. The IMC tech collective initially communicated by email lists and Internet Relay Chat (IRC). By 2002, however, a number of wikis were set up in an effort to create a sustainable system for documenting IMC’s history and ongoing activities. As one member of the Docs Tech Working Group observed: "Getting a functioning and used wiki is really vital for the network…Email lists just aren’t cutting it for the level of organizing and information exchange and growth we need to help facilitate.”

Techs maintaining the global site needed a virtual workspace with a constant online presence, where they could jointly yet asynchronously on common projects and tasks. In addition to facilitating workflow, the wiki had the benefit of constructing and cohering an online community of programmers interested in contributing their skills to the global justice movement.

Wiki software originated in the mid-90s in the design pattern community as a means of writing and discussing pattern languages. Ward Cunningham invented the name and concept and implemented the first wiki engine in 1995. Because of its speed, he named the system wiki, a Hawaiian term meaning “quick”. According to Cunningham and Leuf (2001), “a wiki is a freely expandable collection of interlinked Web ‘pages’, a hypertext system for storing and modifying knowledge by any user with a web browser. A wiki is a series of linked pages, any of them can be edit ed by any logged-in user, who can also view its own history, and alter content made by others. Cunningham (n.d.) maintains that wikis support the social changes goals of Indymedia, as well as the broader global justice movement.

wikis can be used to communicate and exchange information with others in much the same way as online discussion forums and email lists. By its very nature, however, wikis encourage collaborative knowledge creation (ibid). Thus, as with any conversation, norms of social behaviour are at play.

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10 John Windmueller posting a comment to the Indymedia Documentation Project Wiki, [http://docs.indymedia.org/view/Sysadmin/ImcDocsReplaceWikiEngine](http://docs.indymedia.org/view/Sysadmin/ImcDocsReplaceWikiEngine).

ates links to existing and potential pages in a wiki, is one example of this organic collaborative knowledge production. It is a critical and deliberate design element that fosters the creation of a shared language. This shared language emerges instinctively and is fundamental to effective communication within a wiki. (Kim, 2005). According to one tech activist, the "link as you think" feature is "a way of building a community-specific vocabulary that allows you to easily formulate complex thoughts by using the terms your community thinks are important" (Schroeder, 2005).

For tech activists, the wiki enables them to enact the social change they seek in the broader society. Here, democracy, equality and justice switch from being abstract ideals to concrete social practices. At the same time, wiki software is part of the digital infrastructure tech activists build and maintain in order to achieve more immediate movement goals, and as such is represents only one tool in the activists' repertoire of contestation. Considered thus, wikis emerge as an ideal mode of communication for distributed networks like Indymedia and the global justice movement, where participants from disparate geographical locales, with varying skill and commitment levels, as well as ethnic, class and technical backgrounds, work together toward a shared vision of a better world.

**IMC meets TWiki**

Indymedia made early use of wiki technology for the Global Indymedia Documentation Project, which gathers collective knowledge about IMC's history, its current role(s) and its short and longterm goals. Documenting their project is vital to the success of Indymedia; not only does it provide a public record, it creates a fluidity that facilitates participation at varying levels. "The Indymedia Documentation Project looks like a normal Web site... except that it encourages contribution and editing of pages, questions, answers, comments and updates" (IMC, Welcome). Importantly, participants are not required to know how to code in order to add, change or delete content. Because Indymedia is predominantly a web-based project, implementing a wiki addressed the persistent problem of how to organize communication within the disorganized environs of cyberspace. While mailing lists facilitated information exchange, and IRC enabled real time discussion, neither application provided a collaborative space where Indymedia volunteers could work asynchronously on common projects. Wiki technology appealed to IMC geeks because of its ability to facilitate information flow, which allowed distributed teams to work together seamlessly and productively, and eliminated the one-webmaster syndrome.

In 2002, IMC meets TWiki, a free software wiki clone aimed at the one website, docs.indymedia.org. Today it is one of the largest TWiki installations on the World Wide Web. It is divided into sections made up of forum for discussing technical issues of varying degrees of importance to the Global Tech Team and features a variety of working groups, documents and materials needed to understand, navigate and participate in the Indymedia and the global justice movement, where participants from disparate geographical locales, with varying skill and commitment levels, work together toward a shared vision of a better world.

While the Docs Project wiki has opened up a new mode of communication within a specific timeframe. "Revision history" shows previous page versions, and the "dif feature" highlights the changes between two versions. This allows users to deal swiftly with attacks such as wiki spam or insults, correcting and insuring the validity of content despite the ease of modifications. Most wikis have a "recent changes" page that records the latest edits, or all changes made here. The wiki's design allows you to easily formulate complex thoughts by using the terms your community thinks are important" (Schoenholz, 2005).

Logs from past meetings, as well as drafts of policy proposals, are also stored here. The wiki's design allows you to easily formulate complex thoughts by using the terms your community thinks are important" (Schoenholz, 2005).
The emancipatory power of wikis?

What, then, are the implications of wikis for tech activism in today's global justice movement? Glaser (2004) assesses the emancipatory power of wikis, concluding that participating in a wiki is a political act with consequences that extend beyond cyberspace. The egalitarian structure of the wiki is based on decentralization of authority and horizontal self-organization. Much like Indymedia, wherein the gatekeeping power of editors and news producers to control the flow of information is obliterates, "wikis are administered by a group of people with equal rights who control each other and whose work and decisions are subject to all users discussion" (p. 4). This egalitarian structure is characteristic of the GJM, which eschews formal leadership and is configured rhizomatically in loose networks of autonomous nodes. Decentralization of power is critical for undermining social hierarchies common to modern capitalist societies, where the few rule over the many. In modern Western capitalism, this elite minority typically dominates the production of information (as well as technology), with the majority of citizens relegated to the passive, disempowered role of perpetual consumer. In a wiki, there are no access barriers: as with Indymedia, producers of content are its consumers, and vice versa.

The elimination of access barriers facilitates participation in wikis as does the purposely designed ease-of-use. "As you edit there is very little to get in the way of clear thinking and writing...The easier we can make a wiki to use, the more participants we can attract and in the greater the value of the system" (Why Wiki Works, n.d.). Participation is further enhanced by the self-organization that wikis require, which in turn leads to empowerment. "Everybody feels that they have a sense of responsibility because anybody can contribute" (ibid). A community grows up around well-used wikis, and users are invested in keeping their wiki relevant and functional. As discussed above, this is largely due to the collective production of content. In the process of organizing their wiki, users discover shared interests and begin work on common projects that reflect the concerns and needs of the community, and that promote social cohesion in the virtual environment. Key to this collaboration is the feedback generated through the wiki's interactivity. Unlike the dominant communication technologies of radio and television, the internet is highly interactive. Building upon this functionality, wiki software enables not only adding comments to existing content, as in a weblog, chatroom or email exchange, but the complete restructuring of the entire website, including its deletion. If modifications are not deemed an improvement, however, they are easily "undone" by other

Conclusion

The Internet remains an unfinished and contested technology in that it is still subject to intervention by the global justice movement. New social movements, creating an alternative tech activism on a planetary scale, tech activists deliberately adapt it to democracy. Employed wiki software facilitates not only the development of online collaboration but also the adaptation of the Baconian ethos and the Baconian ethos are realized in the design process, which in turn informs technological use. In technical terms, the wiki represents an advance upon this functionality, wiki software enables not only adding comments to existing content, as in a weblog, chatroom or email exchange, but the complete restructuring of the entire website, including its deletion. If modifications are not deemed an improvement, however, they are easily "undone" by other

users. This interaction between technology and society is the key to understanding the broader good of the wiki as a space for democratic practice.

The wiki is a space for collective deliberation and information sharing making their substance a form of "real" and defending views...The process of refining Western societies, where the few rule over the many. In modern Western capitalism, this elite minority typically dominates the production of information (as well as technology), with the majority of citizens relegated to the passive, disempowered role of perpetual consumer. In a wiki, there are no access barriers: as with Indymedia, producers of content are its consumers, and vice versa.

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ware, and as such, it is indicative of how tech activists are working at the level of technical design to "open up" Internet technology to a wider range of interests and concerns.

Viewed from a critical constructivist perspective, tech activists comprise a relevant social group that is but one node in the Internet actor-network. Through their free software development, activist geeks are contributing to the reconstruction of the Internet from a "communication medium [to] a lever of social transformation" (Castells, 2001, p. 143). Indeed, a battle lies ahead for control over this virtual frontier. As such, the Internet displays interpretive flexibility - that is, it is used and understood differently by a variety of relevant social groups, as the case of tech activists suggests. Further, the work of tech activists may be considered an attempt to address the duality of science and technology - the internal tension between social transformation and technological invention that together comprise the modern notion of "progress". In their work, tech activists strive to reconnect technology with its logos - the rationale for the good served. In doing so, they remind us that technology matters, that it is political, and that it is a scene of constant struggle. Does this indicate, or contribute to, a radical reform of the technical sphere? It remains to be seen. But it certainly offers hope that another world is possible.

References


