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# Technology Movements and the Politics of Free/Open Source Software

Paul-Brian McInerney  
*Indiana University South Bend*

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Many technologies in our everyday lives are expressions of deliberate and protracted political struggles among interested groups. While some technologies are inherently political, other technologies become politicized through competition among different groups and organizations. How do seemingly apolitical technologies become politicized? In this article, the author examines the case of the “circuit riders,” a progressive technology movement in the United States that promotes information technology use among nonprofit and grassroots organizations, to show how a particular technology is politicized through field-level interactions. Applying and contributing to actor–network theory, the author finds that translation takes place as an organizational process by which actors associate the ideals of the technology in question with their political ideals and then attempt to enroll other actors to accept the resultant associations. Successful association depends on both discursive and organizational practices.

**Keywords:** *actor–network theory; free/open source software; politics; association; social movement*

## Introduction

Many technologies in our everyday lives are expressions of deliberate and protracted political struggles among interested groups. While some scholars contend that certain technologies are inherently political, others become politicized through competition among different groups and organizations. How do seemingly apolitical technologies become politicized? In this article, I examine the case of the “circuit riders,” a progressive technology movement in the United States that promotes information technology use among nonprofit and grassroots organizations to show how a particular technology is politicized. The case presents a study in how actors associate technologies with political ideals. The process highlights the challenge of creating stable

political ontologies for mutable technologies, such as software. As technologies become increasingly informational, designers face ever more challenges in incorporating their values into artifacts.

## The Politics of Technology

*Politics*, as I will use the term here, can be understood in two ways: as macropolitics (*Politics*), that is, activities associated with the governance of entire societies or social groups, or as micropolitics (*politics*), that is, as pertaining to relations and interests among individual actors. With such a view, one can see on one hand how Winner (1986) claims certain technologies, such as nuclear weapons, are inherently *Political*, while others, such as Robert Moses's bridge designs, are the reified *politics* of their designers. Two dominant approaches to the study of technology, namely, actor–network theory (ANT) and the social construction of technology (SCOT), reduce the former to the latter, contending that all technologies contain the interests of actors. As a critique of technological determinism, SCOT and ANT treat technology choices as contingent on social contexts.

SCOT shows that technologies are not selected based on the inherent performance of the artifact, but by the ability of actors to convince others of their relative worth (Bijker, Hughes, and Pinch 1987). As an approach, SCOT is based on the principle of symmetry (Bloor 1991), which holds that scholars must treat all claims as operable in the world, regardless of their status as truths. This means that the best or most correct technology or theory does not win, but rather, what determines the acceptance of a technology is the degree to which it garners the most support and achieves closure (Bijker, Hughes, and Pinch 1987), that is, when a population accepts the way a single actor or set of actors connect their framing of a problem and their artifact as its solution (Bijker 1997; Hughes 1994). The resulting technologies are subsequently diffused throughout relevant populations. For example, Bijker (1997) explains

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the political machinations among various parties around the introduction of fluorescent lighting, showing how the technology itself stabilizes over time as relevant stakeholders come to accept it.

SCOT, however, conceives of contingency without paying proper attention to power relations among competing actors (Hard 1993). In contrast, ANT addresses power differentials among competing actors as flows rather than absolutes (Latour 1986), showing how actors create and mobilize networks to advance their interests (Latour 1987). The solution to the problem of interests—the politics of technology—lies in processes ANT describes as translation and inscription.

### Translation and Inscription

According to ANT, artifacts may move toward stability (Callon 1991), but their ontology remains in a constant state of flux (Callon 1986). Various actors attempt to advance their interests in the network by attributing certain features to the technology and moving it along the network. Within those networks, translation is about how actors align the interests of other actors, each of whom understands the technology in a different way and moves it in a direction that best serves him or her (Latour 1988b, 1994). As the metaphor suggests, interests are transformed as they are translated: each actor takes things to mean something slightly different. The resultant sociotechnical systems are highly contentious (Latour 1988b). ANT suggests that sociotechnical systems are not static relations but combinations of heterogeneous actors, including humans and nonhumans (Law 1987, 2002). For example, Latour (1988a) shows how Louis Pasteur advanced his theories of sanitation not only by publishing in scientific journals but by creating networks that connected hygienists to the microbes causing disease.

In the theory of translation, these networks are never complete; they are subject to fragile links in “chains” of association (Latour 1986, 268). For ANT, metaphorical chains link actors in the network. If the links are not secure, the network dissolves. The solution is for actors to produce physical artifacts, nonhumans, that can stand in for unreliable humans in the network, what Latour (1987) calls “immutable mobiles” (p. 227). In creating such artifacts, actors “inscribe” their politics into the technology (Akrich 1997; Latour 2002). Because they consist of the reified politics of their designers, physical artifacts, while not entirely stable, can serve the interests of their masters more reliably and economically than human actors (Latour 1991). Immutable mobiles stabilize networks (to the degree that stabilization is possible) by standing in for other actors and serving as the building blocks for sociotechnical networks.

For example, Apple computer's digital music player, the iPod, has a curious feature related to recent legal battles over sharing digital music files. The Recording Industry Artists of America, a trade association representing artists and recording labels, has begun suing users of file-sharing software. File-sharing software creates worldwide peer-to-peer networks over which users have skirted copyright laws and illegally traded music files without paying royalties. The Apple iPod, essentially a computer hard drive that plays the music files often shared on peer-to-peer networks, prevents users from sharing large quantities of music files. Once the files are loaded onto the device, users can listen to them but not share them with other users. In other words, I can upload my music to the device, but if I give my iPod to you, you cannot download that music to your local hard drive. As such, the interests of the recording industry are built directly into the device, and the device becomes part of the war against music piracy.

### **Reducing *Politics* to *politics***

ANT treats politics as a feature of relations among actors in the network (Law 1991). By explaining how actors distribute morality or inscribe it in the technology itself (Latour 2002), ANT neglects the ability of actors to leverage larger *Political* discourses (Winner 1993). In other words, ANT sacrifices *Politics*, reducing all power relations to *politics*. Aside from inscribed politics, artifacts can have "ascribed" politics. Designers, according to ANT, can place the rules of use into a technology's form (Latour 2002, 254). For example, Latour (1997, 225) caricatures an irate driver whose unfastened seatbelt will not let him drive in peace. The police and lawmakers impose a particular plan of action on the driver through the work of crafty automotive engineers whom they enroll in their efforts.

### **The Problem of Software**

ANT generally studies physical artifacts or scientific facts, showing how such objects are constructed, reconstructed, and stabilized through political interactions. But what about computer code? Computer code is never ontologically stable; it is perpetually inchoate (Neff and Stark 2003). The iPod example was not innocent. Hackers have been able to create programs to bypass the iPod's security features, allowing users to share music and breaking the network ties between the recording industry and music fans.

Free/open source software (F/OSS) does this problem one better: it provides users with the "source code," the recipe for the software, which enrolls users in the battle by inviting them to modify the artifacts. Since F/OSS resists

inscription, circuit riders must find alternative means to stabilize their networks and mobilize others. But as ANT is concerned with the articulation of politics in artifacts, I will show how the politics associated with F/OSS are articulated in organizational forms. Neff and Stark (2003) write, "If, as has been said, architecture is politics set in stone, then information architecture is politics in code" (p. 186). If code is politics, then source code is a prescription for political action, one that can be encoded into organizational form.

Although scholars find F/OSS developers as a cadre tend to be politically agnostic in the traditional sense (Coleman 2004; Lawton 2002; Weber 2004, 112), especially when compared to other members of the high-technology economy, who often preach a harshly Darwinian version of libertarianism (Borsook 2000), they do see themselves as part of a political movement. A vocal group of F/OSS advocates engages in political and legislative battles, defending the software as an example of free speech and the necessity of a vibrant digital commons (see, for example, Lessig 1999; Healy 2002). Among these advocates, the Free Software Foundation (FSF) is at the cutting edge of intellectual property disputes, providing intellectual and material support for F/OSS programming and advocacy efforts (O'Mahoney 2005). Eben Moglen, professor of law and legal history at Columbia University and FSF board member, was once quoted as saying, "We are a small organization running a big revolution and we have big adversaries" (Bray 2002, F3).

## **F/OSS Defined**

F/OSS, as I will use it here, refers to a variety of computer programs and platforms under one of the open source licenses, for example, Berkeley Software Distribution (BSD) or General Public License (GPL). There are several competing free and/or open source licenses, a discussion of which is beyond the ken of this article. I will treat F/OSS the way members of the community I studied treat the idea: as a set of free<sup>1</sup> programs, programming platforms, and operating systems that are developed by communities of users who make no ownership claims over the final product and make available the source code<sup>2</sup> underlying all products. F/OSS technologies blur the boundaries between product and process as well as consumer and producer (De Landa 2001). Unlike proprietary software, which is designed and developed by a group of professional programmers working for a single company, a distributed community of programmers continuously develops F/OSS (Von Hippel 2001, 2005). Yet despite these pronouncements, a remarkably small number of regionally concentrated programmers are responsible for a disproportionate amount of open source code (Gregorio et al. 2001; Ghosh and Prakash 2000). Although many of the programmers are professional

software developers, they remain users in the strictest sense of the term, in theory if not in practice (Von Hippel 2005).

Under such a regime, software production shifts from a manufacturing to a service economy. The distributed, project-based mode of F/OSS production has revolutionized software creation and innovation (O'Mahoney 2002). Some scholars claim this innovation comes from shared norms and values (Weber 2004). Others take more economic perspectives, applying rational choice and game theoretical models to explain the open source model of development (Gallaway and Kinnear 2004; Lancashire 2001; Von Hippel and von Krogh 2003).

## Method

Data for this study were gathered using three qualitative methods: ethnography, formal interviewing, and document analysis. Ethnography is an in-depth research study of a group, based on longitudinal field-based methods. From May 2001 to November 2004, I conducted ethnographic research, which entailed ten to twenty hours per week of participant observations at nonprofit technology organizations throughout the United States, conferences and meetings, and other social and business settings. In this way, my ethnography was "multisited," capturing members' perspectives across geographic distances to allow for better comparisons (Marcus 1995). Participant observation is a method in which the researcher "goes native," investigating the worlds of others by becoming part of those worlds (Lofland and Lofland 1995; Schatzman and Strauss 1973; Van Maanen 1988). In developing my ethnographic text, I rely on key informant accounts, the ad hoc narratives people develop to make sense of their worlds (Garfinkel 1984; Orbach 1997).

Second, I conducted eighty-four formal interviews with leaders and personnel throughout the movement, including circuit riders, foundation officers, trade association representatives, and other significant people in the field. Formal interviews lasted between forty-five minutes and four hours and were tape-recorded and transcribed for analysis. Interviewees were selected using modified snowball sampling, a method that entails following the network of actors, allowing each to identify other relevant respondents. This strategy has the advantage of allowing actors to define the boundaries of their worlds as they experience them rather than relying on researchers' a priori random sampling methods to create them (Latour 1987, 1996). To ensure the validity of my sample, I corroborated informants' recommendations with trade association and conference attendance lists as well as the historical accounts

of others. Formal interviews let researchers delve more deeply into respondents' understandings of their worlds, allowing them to fully articulate and justify their accounts (Holstein and Gubrium 1995; Kvale 1996; Weiss and Miller 1987). In this way, I can analyze actors' accounts for representations of their values (Latour 1987).

Finally, I analyzed physical and electronic documents acquired from field-work and archival sources (Hodder 2000). Physical documents included meeting agendas, memos, pamphlets, financial statements, flyers, and other official and unofficial communications. Electronic documents analyzed included e-mails, instant messenger logs, and Web sites, all of which provide a historical record of organizations and the ways they represent themselves online (Lamertz, Heugens, and Calmet 2005). Documents present researchers with official and unofficial representations of organizations. They allow scholars to understand organizational epistemology, that is, how organizations make claims about their identity, what they do, and how they understand the world around them (Bowker and Star 1999; Star 1999).

These methods combined synergistically to allow me to produce complete accounts of organizations and the actors within them. Data analysis was conducted by iterative methods of constant comparison and extensive memo writing (Emerson, Fretz, and Shaw 1995; Ryan and Bernard 2000).

## **Brief History of Nonprofit Technology Assistance**

The 1990s were a period of tumultuous technological change. Computers were becoming less expensive and easier to use. The Internet was becoming more widely adopted as a mainstream communications medium. While for-profit corporations had long appropriated information and communications technologies in their daily work, nonprofit and grassroots organizations remained woefully behind the adoption curve (Corder 2001; Kirschenbaum and Kunamneni 2001). Over the past decade, nonprofit and grassroots organizations in the United States have made considerable advances in their use of information technology, due largely to the work of nonprofit technology assistance providers (NTAPs) (McInerney 2007). NTAPs are agencies and individuals that deliver information technology consulting and training to nonprofit and grassroots organizations. When formally organized, NTAPs are most often incorporated under the U.S. 501(c)(3) tax code, which means they can receive tax-deductible contributions from individuals and donations from foundations. NTAPs work exclusively with information and communications technologies, such as computer hardware and software as well as the Internet and other networks.

## The Birth and Rise of Circuit Riding

Starting in 1996, a group of politically progressive computer enthusiasts, calling themselves circuit riders, began organizing a movement of like-minded individuals to distribute the benefits of new information technologies, the Internet in particular, to nonprofit and grassroots organizations. Circuit riders rallied behind claims about the revolutionary and emancipatory potential of information and communications technologies.

The movement was spawned by the W. Alton Jones Foundation, which founded the first circuit rider program in 1995. The circuit rider model entailed a foundation-supported consultant who would travel among grantees providing technical expertise. Because the technologies being deployed were so elementary, the foundation recognized that it was more important that circuit riders be a part of the communities they serviced. Therefore, foundations following the model would hire technically inclined environmentalists to service environmental groups, community organizers to service social justice groups, and so on. Circuit riders from the beginning, therefore, were committed to the causes that the nonprofits they served championed rather than to the organizations themselves.

As the movement grew, it picked up members. They formed a Listserv to keep in touch with one another and share technical tips and political ideologies. They organized conferences, called "Riders Roundups" to meet in person to discuss issues and concerns of the nascent circuit rider community. The Listserv and roundups recruited more adherents. According to the Listserv moderator, the e-mail list began in 1997 with twenty-five members and grew to over three thousand within four years.

## Challenges to the Circuit Rider Movement

With the circuit rider movement growing and becoming a more legitimate part of the nonprofit sector, other actors recognized opportunities. For-profit consulting firms entered the market. However, the most significant challenge to the circuit riders' dominance came from an entrepreneurial nonprofit technology assistance organization called Procyon,<sup>3</sup> a network of thirteen affiliated nonprofit organizations that are politically agnostic, charge clients for their services, and follow distinctly businesslike practices.

Funded with seed money from a for-profit multinational software firm, Procyon started in 2001 in the Pacific Northwest. Procyon's stark business practices, including its ability to generate revenue directly from clients, attracted the funding of other corporate philanthropies, allowing them to grow quickly. By the middle of its second year, Procyon had received additional

funding from Sirius to expand and replicate its model nationally. Within two years, the Procyon network had grown to more than thirteen affiliates in as many cities throughout the United States, becoming a formidable challenge to the circuit riders.

It is important to note the terms of competition between Procyon and the circuit riders. With nearly two million nonprofit organizations in the United States (Weitzman et al. 2002), NTAPs of any form had more clients than they could hope to service. Instead, competition existed for the already small pot of foundation funding to support the work of technology assistance. More important, however, were the battles to secure the most appropriate model of technology assistance in the sector. In this way, the competition was ideological and moral rather than profit based (Ingram and Rao 2004; Simons and Ingram 1997, 2004; Thevenot, Moody, and Lafaye 2000). Beyond this relatively small group of actors, the outcome of this competition had material consequences for how the nonprofit sector acquired technology and what technology means in the sector (Czarniawski-Joerges 1990) as well as for the organizational structures of the nonprofit clients themselves (Orlikowski 1992, 2000). Therefore, fundamental changes in how organizations procured technology would yield practical and structural consequences for nonprofit organizations and the sector as a whole.

### **Circuit Riders' Response**

The circuit riders responded to Procyon's challenge in four ways. Some capitulated, noting that there were more than enough clients to go around. Some recognized untapped niches and divided the market. Others yielded and became part of the Procyon network themselves. Still others mounted a response, mobilizing themselves and politicizing an alternative technology platform to help face the competition's growing hegemony in the sector. The remainder of this article articulates the strategy of this last group of circuit riders, explaining how they attempted to politicize a technology and the problems they faced in doing so.

## **Politicizing F/OSS**

### **Connecting politics to Politics**

The circuit riders bring F/OSS into their field-level politics by making claims on behalf of the software platform, associating certain ideals of the open source platform with certain ideals of the nonprofit sector.

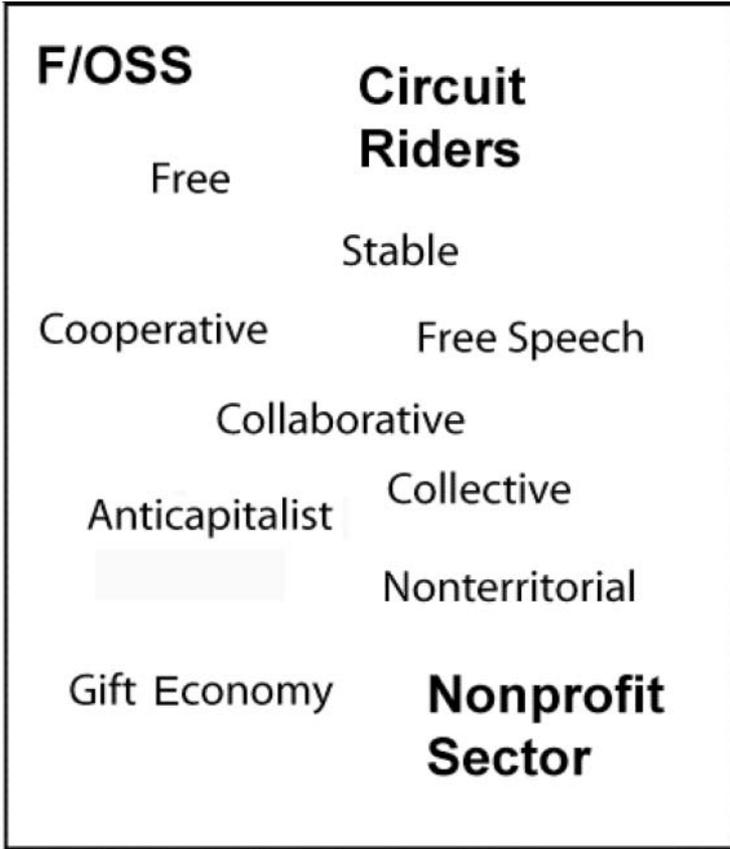
Latour (1986, 2005) redefines sociology as the study of associations. In explaining how power is actuated, Latour (1986) argues that objects (ideas, artifacts, etc.) are not diffused but translated, proactively rendering diffusion models (e.g., Strang and Soule 1998) obsolete. Translation means that each actor enlisted to move the object transforms it in some way, unlike diffusion models, which assume actors merely transmit objects. Actors forge associations to advance interests in ANT's translation model. The circuit riders, therefore, forge associations between the ideals of F/OSS and the ideals of the sector. In doing so, they are simultaneously forging material associations between F/OSS code and the nonprofit organizations. These associations therefore take place on both levels at the same time.

Figure 1 below shows some of the claims circuit riders make about F/OSS and the nonprofit sector. The words in the frame are drawn from interviews and other sources to describe both F/OSS and the nonprofit sector. F/OSS is no longer just computer code; it becomes an object around which actors can mobilize and make critical claims. In making these associations, the circuit riders are actually making claims about the nature of F/OSS and the nature of the nonprofit sector, interpreting and reconstituting each in the process. In this way, circuit riders are attempting to bring the natures of each together and make them equivalent.

Such words are normative claims about both F/OSS and the nonprofit sector, claims such as "collaborative," "cooperative," "voluntary," and even "anticapitalist." Michelle Murrain, a circuit rider with a self-professed "very serious socialist streak," explained that "the idea of an operating system that was not controlled by a big corporation was a great idea to me" (telephone interview with the author, October 13, 2003).

Circuit riders associate these ideas about the nature of F/OSS with ideas about the nature of the nonprofit sector through discursive connections. In interviews and elsewhere, circuit riders lauded the "natural affinity," "natural and obvious fit" and "natural philosophical affinity"<sup>4</sup> between F/OSS and the nonprofit sector, including themselves. In each instance, open source advocates described the relationship as "natural." The circuit riders therefore employ discursive strategies to associate the ideals of F/OSS with those of the nonprofit sector, which are intended to "naturalize" the connections between them. Latour (1995) writes, "Essence is existence, and existence is association" (p. 303). By naturalizing the associations between the ideals of F/OSS and the ideals of the nonprofit sector, circuit riders are creating new ontologies for each in the process redefining their essences. Once circuit riders can stabilize these essential qualities, the choice of which technology platforms nonprofits should adopt becomes obvious. In other words, once

**Figure 1**  
**Association: Claims Connecting the Values of the Nonprofit Sector with Those of F/OSS**



Note: F/OSS = free/open source software.

the essential qualities of F/OSS and the nonprofit sector are aligned through associations, they can become links in the actor–network and do some of the work of getting nonprofits to adopt the platform.

The most dominant way circuit riders stabilize associations and networks is by creating alternative objects, which can stand in the place of F/OSS and

represent it. The question then becomes Who can legitimately speak for F/OSS? There are many charismatic leaders in the circuit rider movement who could conceivably serve as a representative for the platform. For example, Michael Gilbert is a longtime celebrity within the circuit rider ranks. He is known for his rousing commentary against proprietary systems, taking time during a plenary session at the 2003 Riders Roundup to indict Procyon in particular for hawking expensive software with corporate backing. When I first met Gilbert at a nonprofit technology event, he wore his hair short and spiky on top and very long, down to the middle of his back partly covering his purple velvet cape. His rhetoric, appearance, and persona indicate charismatic leadership, making him the most likely candidate to lead the charge. But having an individual represent F/OSS would contradict the collaborative spirit circuit riders were trying to promote. Instead, circuit riders created organizations to represent the software platform and the nonprofit sector. Organizations, as collective actors, can have stable ontologies as well as inscribed politics. In other words, politics is expressed in organizational form (Simons and Ingram 2004).

I will describe three examples of such organizations that illustrate three strategies of translation (*viz.*, alignment, obligatory passage points, and representation) designed to promote the circuit riders' interests by enrolling other actors and attempting to influence their behaviors by stabilizing networks among human and nonhuman actors as well as ideas.

### **Alignment: Nonprofit Open Source Initiative (NOSI)**

The first strategy is alignment. Alignment is about lining up actors—getting them to adopt your project and advance your interests (Latour 1987). In ANT, interests are interpretations.<sup>5</sup> When actors attempt to advance their interests by assembling and mobilizing a network, they are leveraging the network to get others to adopt their interpretation. The NOSI was founded to convince others in the circuit rider community as well as in the larger nonprofit sector and beyond that F/OSS was the natural choice for the nonprofit sector on philosophical grounds. As the group writes in its open letter to the community, “Choosing and Using Open Source Software: A Primer for Nonprofits,” “The philosophical underpinnings of OSS (community-based development, volunteer effort, freely available software, community support) are very much in line with the mission of organizations in the nonprofit sector. . . . In general, we would argue that all other things being equal, making a choice to implement OSS in a nonprofit organization would add more mission-based value” (Murrain et al. 2004, 11). Their attitude was

driven by what Reuben Silvers (2002), the first director of the organization, called “a natural philosophical affinity between the nonprofit sector and open source” (p. 1).

In 2001, when Sirius, Procyon, and corporate interests became more active in shaping the Nonprofit Technology Enterprise Network (N-TEN) and the organization’s activities, Carnet Williams decided to resign his position on the board and form an alternative organization to help nonprofits realize the potential of F/OSS. Williams explains, “At the time, NOSI was [an expression of] my frustration with not seeing the ideals that we talked about early on in the formation of N-TEN being pushed forward. The ideals of using open source technology, looking for innovative technologies to push forward” (telephone interview with the author, September 16, 2003). He voiced his opinions on the riders’ e-mail list and found many other circuit riders expressed similar sentiments. These discussions led to a separate open source e-mail list, which drew over seventy subscribers in the first month.

Reuben Silvers was the first person enrolled in NOSI. He was charged with pulling together resources, writing a business plan, and organizing NOSI into a full-fledged entity. Silvers took advantage of a student loan debt forgiveness program, agreeing to work half-time on NOSI, an otherwise volunteer-driven organization. Marshall Mayer, another member of the steering committee, gave Silvers a desk and a small stipend at Tech Rocks<sup>6</sup> to incubate the fledgling open source advocacy organization. Silvers spent the next six months organizing conference calls, driving e-mail discussions, and writing the business plan for NOSI.

Members of the steering committee see NOSI’s primary task as advocacy for open source technology. Silvers explains, “What really needs to be happening is that nonprofits don’t know about the open source software tools that are already out there. The basic stuff, like Linux, Open Office and stuff like that. And that we [NOSI] need to be advocating and educating nonprofits and the NTAP community about Linux and how to use it and when to use it, how to even think about using it” (telephone interview with the author, May 18, 2004). The decision to become an advocacy organization was not always clear. Silvers also explained to me that they considered acting as a software development group, building open source technologies for the nonprofit sector. After one member, David Geilhufe, experienced considerable difficulty getting such an idea funded, NOSI steering committee members considered the activity premature and decided to advocate for F/OSS instead.

From the beginning, NOSI recognized the need to bring open source developers into a dialogue with NTAPs, aligning their interests and thereby promoting NOSI’s. Steering committee members felt that F/OSS held great

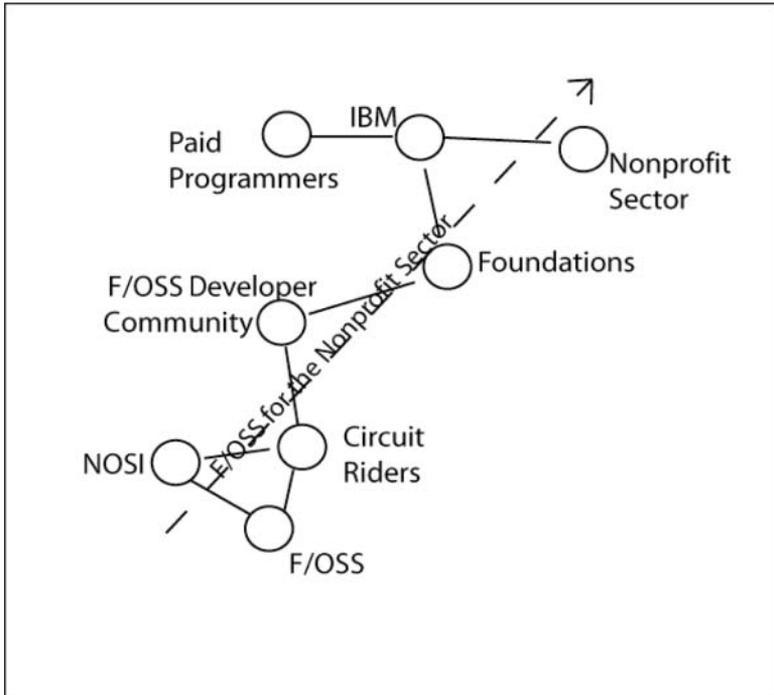
potential for the nonprofit sector but lacked a dedicated development community and technology tailored to the specific needs of nonprofits. Marshall Mayer, while working at Tech Rocks, drafted a mission statement for NOSI, which reflects the need to fill this niche: “NOSI aims to bridge the gap between the nonprofit and open source communities. We envision a world in which nonprofits are an integral part of the open source community and in which technology development for the nonprofit sector is open, interoperable, useable, sustainable, and minimizes the total cost of ownership” (Mayer 2001, 1). The mission statement goes on to say, “NOSI’s primary goal will be to evangelize the ‘conditions of synchronicity’—the environment—that will make rapid adoption of open source software and practices by nonprofits possible” (p. 1). This notion of the “conditions of synchronicity” is NOSI’s strategic statement of association. By locating such conditions, they can naturalize the connection between F/OSS and the work of the nonprofit sector.

NOSI’s stated mission therefore is to bridge the nonprofit and open source communities through “evangelism.” The founding members of NOSI are rooted in the early circuit rider community. Evangelists for technology were how the early circuit riders saw themselves. Marshall Mayer, the author of the NOSI mission statement, started Desktop Assistance, one of the first NTAPs in the United States, which later merged with Rockefeller Technology Project to form Tech Rocks, the premier circuit rider organization. The NOSI strategic plan invokes ideological alignment strategies: “The open source and nonprofit communities share many norms and values, including the volunteer ethic, integrity, generosity, practicality, and excellence” (Silvers 2002, 3). In its evangelism, NOSI sought to align its interests with the broader circuit rider community, the F/OSS developer community, foundations, and ultimately the nonprofit sector writ large.

As an organization, NOSI is mostly concerned with the technical benefits of F/OSS for the sector. The organization has conducted total cost of ownership studies to compare the relative expenses of F/OSS versus proprietary software. In 2003, NOSI enrolled the support of IBM, getting it to fund NOSI’s report on F/OSS. It was the first external funding that NOSI received. More important, however, is that IBM’s support represented the possibility of bringing untold legions of F/OSS programmers into NOSI’s program. NOSI capitalized on IBM’s protracted competitive battles with proprietary software manufacturers, Sirius in particular. By showing IBM that the nonprofit sector was a market ripe for an alternative technology program, NOSI was effectively telling the corporation, “We want the same thing.”

To mobilize these actors, NOSI attempts to align their interests, showing how these heterogeneous groups all want the same thing. Figure 2 shows the

**Figure 2**  
**NOSI's Alignment Strategy**



Note: NOSI = Nonprofit Open Source Initiative; F/OSS = free/open source software.

outcome of successful alignment processes. NOSI shows circuit riders how promoting F/OSS keeps them working. It offers the F/OSS developer community an entire sector of organizations to serve as testing grounds for their innovations. Foundations are told how F/OSS is less expensive and easier to support than proprietary solutions. And NOSI enrolls IBM by claiming the nonprofit sector is a market ripe for an alternative technology platform. By making associations among these actors, NOSI enrolls legions of additional actors, independent F/OSS programmers, and those on IBM's payroll, making the circuit riders a much larger contingent to the nonprofit sector. NOSI, as a self-professed advocacy group, relies on these disparate actors to carry out its interests in promoting open source for the nonprofit sector.

## Becoming an Obligatory Passage Point: Aspiration Tech

The second strategy is for an actor to become an obligatory passage point or a translator creating and occupying a structural position among heterogeneous actors (Callon 1986). Aspiration Tech is a pilot organization spun off from the Open Society Institute. Its mission is to connect heterogeneous actors and coordinate large-scale software projects for the nonprofit sector. Aspiration attempted to become an obligatory passage point by convening meetings between the circuit rider movement and full-time F/OSS programmers.

Until she organized Penguin Day, Katrin Verclas was a bit player in the NTAP field. She attended Riders Roundups as early as 2001 but worked as a program director at a small foundation, then independently as a consultant and project coordinator, mostly for Summit Collaborative in Massachusetts. Penguin Day was an alternative technology conference dedicated exclusively to promoting open source.<sup>7</sup> In spring 2003, the Tactical Technology Collective, a group advocating F/OSS among nongovernmental organizations (NGOs) in the developing world, hired Verclas to help organize a conference called the Summer Source Camp. The conference was held in late summer in Croatia and featured “e-riders” from developing, transitional, and postconflict areas of the world, for example, Tajikistan, Mongolia, and Tanzania. Reporting on the conference, Verclas writes, “The vibrant, mostly volunteer OSS developer community which operates with the users in a spirit of collaboration and openness, by its nature reflects many values of civil society NGOs” (Verclas 2003, 1).

The following spring, the Open Society Institute hired Verclas as the executive director of a new pilot project, Aspiration Tech. Aspiration Tech is a technology intermediary for nonprofits, NTAPs, and foundations. Its goal is to provide a means of connecting technology, skill, and financial resources. Verclas proposed a series of F/OSS sessions to N-TEN, the Nonprofit Technology Conference (NTC) organizers. N-TEN decided to stick with the traditional format for its event, offering Verclas a handful of sessions but denying her the opportunity to host an event such as Penguin Day under the auspices of the NTC. Through Aspiration Tech, Verclas decided she would organize Penguin Day anyway as an open source alternative to the NTC.

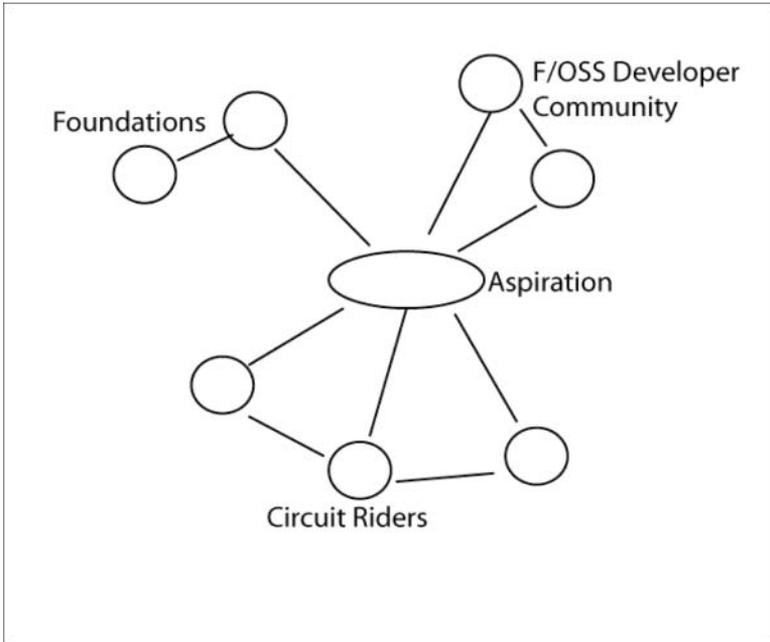
Penguin Day convened representatives from the F/OSS developer and circuit rider communities in an attempt to build a dialogue among them. Their differences were apparent from the first glance: the F/OSS developers sported penguin ties and vests; the circuit riders, Amnesty International T-shirts. Since the first Penguin Day in Philadelphia, Aspiration has organized many more across the country and in England. For many circuit riders, the

Penguin Day events have become the compulsory alternative to the more mainstream NTC. In appreciation for their efforts, the codirectors of Aspiration were given the annual “Dirk” award in 2004, a fishing trophy given to the circuit rider of the year; the fish symbolizes how circuit riders “swim upstream” in their work. This gesture asserted that F/OSS was becoming the new technology for the circuit riders and that Aspiration was the organization that was bringing it to the sector.

Explicitly, Aspiration says its mission is “to connect nonprofit organizations with software solutions that help them better carry out their work. We want nonprofit organizations to obtain and use the best software to maximize their effectiveness and impact so that they, in turn, can change the world” (<http://www.aspirationtech.org/>).

While Aspiration does not embrace F/OSS explicitly in its mission, its practice is dedicated exclusively to the alternative software platform. But to connect, according to ANT, is not simply to broker. In this way, Aspiration attempts to position itself as an obligatory passage point, not a structural hole (see Figure 3). Structural holes occupy positions in a network that can be used to certain advantage. Burt (2004) has shown that such positions allow those occupying them to diffuse ideas across social groups. Aspiration certainly channels ideas across diverse social groups. However, in the spirit of association, Aspiration translates rather than diffuses. Obligatory passage points are active translators, not passive transmitters. Aspiration gains advantage through its structural position but actively translates interests among heterogeneous actors to maintain that position. Through its work, Aspiration tries to ensure that its position in the network is always between these communities, such that information, projects, and actions must flow through it. Aspiration attempts to negotiate connections among circuit riders, foundations, and the F/OSS developer communities and charge fees on the exchanges they make. As a result, Aspiration is becoming an increasingly important actor in the nonprofit technology assistance community, domestically and abroad. Members of the organization are invited to speak to foundations and policy makers about F/OSS in the nonprofit sector. Through its strategy, Aspiration has grown powerful enough to insert itself and F/OSS back into the mainstream nonprofit technology dialogue. Yet it is not clear whether Aspiration’s strategy is wholly successful. Verclas left the organization in 2005 to take a position as the director of N-TEN. Since then, Aspiration has turned much of its attention to the arena of international NGOs. Yet with Verclas at the helm of N-TEN and in a better position to connect circuit riders to F/OSS programmers, it is possible that N-TEN will take the reins as an obligatory passage point.

**Figure 3**  
**Aspiration Acting as an Obligatory Passage Point**



Note: F/OSS = free/open source software.

### Representation: Free Geek

The final strategy I will discuss is representation. For ANT, representation is about which actors can make legitimate claims on behalf of other actors. In this instance, organizational and individual actors attempt to represent F/OSS to the nonprofit sector. While all actors mentioned in this article make such claims, the strategy is demonstrated most strongly by a Portland-based NTAP called “Free Geek.”

“Helping the needy get nerdy since the beginning of the 3rd millennium” is the motto of Free Geek, which is predicated entirely on an open source organizational model. Free Geek was founded and incorporated in 2000 as a nonprofit organization that refurbished and recycled donated computers. The organization takes volunteers and trains them to test parts and rebuild

computers. Each volunteer builds six computers, of which he or she keeps one. A second computer is given to volunteers in other parts of the organization. The remaining computers are distributed to local nonprofit organizations or sold in the organization's thrift shop.

F/OSS provided a solution to potential legal problems with Free Geek's refurbishing and redistribution model. The Sirius platform, like comparable proprietary systems, had licensing restrictions. According to the Sirius end-user licensing agreement, someone who purchases a computer with Sirius software preinstalled can only transfer the rights to use that software once. That transfer takes place when someone donates a computer to Free Geek. When Free Geek donates the refurbished computer to another party, the second party is responsible for securing the appropriate licenses, which generally require fees. Free Geek's mission is to donate computers to the nonprofit sector. Licensing fees prevent such a transfer from taking place. F/OSS is most often licensed under a GPL, which actually bestows rights on the user. End users under the GPL are allowed to use the software, make changes, post those changes, and transfer the software indefinitely. Free Geek therefore installs F/OSS software under the GPL on all computers it refurbishes, allowing it to donate computers to nonprofits without legal imbroglis.

Free Geek's dedication to open source is not merely practical. Of all open source advocates, Free Geek is clearly the most radical I encountered during my time in the field. The organization's model draws from the ideals of the open source collaborative development model. Open source developers often rely on consensus to resolve internal conflicts and make design decisions (Elliott and Scacchi 2003). Free Geek—like the May First Technology Collective, another NTAP that advocates for open source technologies in the nonprofit sector—relies on a consensus model of organization. Unlike the May First Technology Collective, the staff of which votes on organizational matters, Free Geek has a tripartite governance structure. For Internal Revenue Service compliance, the board oversees legal and financial matters. Paid staff members, all of whom receive \$10.25 per hour regardless of position, oversee internal functions. And a community council, consisting of volunteers and anyone who cares to attend council meetings, decides organizational policy. Free Geek structures governance with strict rules to guide consensus, but the decision-making process remains radically democratic, with a part-time volunteer having as much political clout as Oso Martin, the executive director and founder of the organization.

Beyond training members of the community and recycling and refurbishing computers, Free Geek runs a consulting arm called Collaborative Technologies. The fees for services are sliding scale, based on client budget

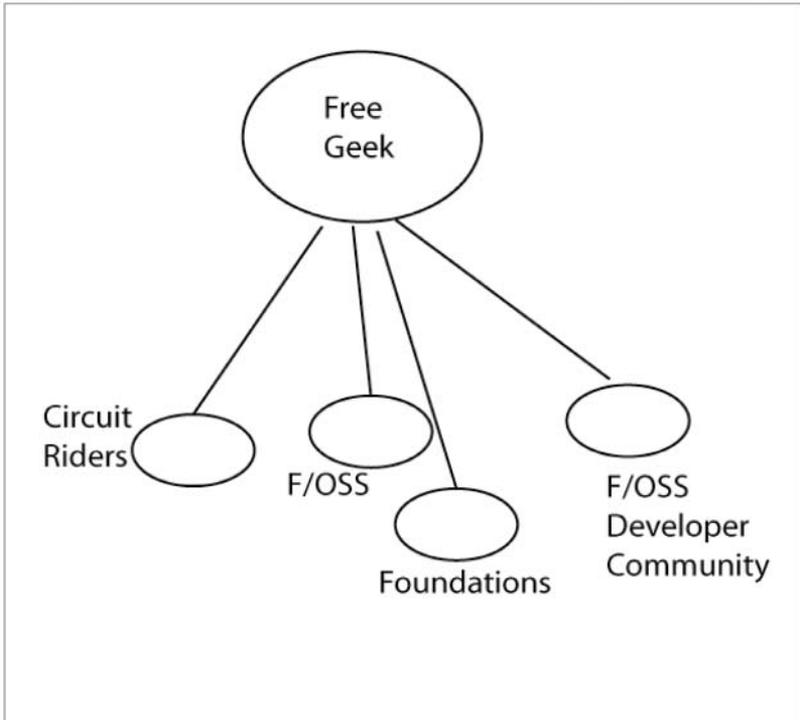
size and divided into three categories: “well-funded,” “underfunded,” and “struggling.” According to Ron Braithwaite, who runs the program, the scales are designed to allow Free Geek to cross-subsidize projects. Unlike Procyon and other corporatist fee-for-service models, Free Geek charges above cost to organizations in the well-funded category, at or near cost to underfunded nonprofits, and nothing or nominal fees to struggling groups. Braithwaite says the system is designed to allow Free Geek to work with organizations and projects that share the NTAP’s ideals but cannot afford services.

The significance of an NTAP such as Free Geek lies not in the power or leverage it has in the field but rather in its ability to legitimately represent F/OSS to the sector (see Figure 4). In social movements, organizational form matters as an expression of movement ideals (Clemens 1996). Free Geek puts politics into organizational form as an expression of movement ideals. By applying the distilled essence of the open source model, being cooperative, collaborative, free, and even anticapitalist, Free Geek claims to represent the fulfillment of F/OSS ideals to the nonprofit sector. Adopting the organizing principles of F/OSS allows Free Geek to make legitimate claims of representation and fend off possible challenges to such claims.

## Mounting a Challenge

The networks I have drawn connect the circuit riders to a variety of actors and bring the chains of association up to the front doors of the nonprofit and grassroots organizations they are in business to serve. Enrolling these organizations represents the final link that the circuit riders must forge to have successfully translated their interests. As explained above, with more than 90 percent of the nonprofit sector using proprietary solutions (Forster 2003), this is the most difficult link to forge. Organizations such as Free Geek, with its free computers and software, make it much easier for nonprofit and grassroots organizations to adopt F/OSS. NOSI’s “Open Source Primer” targets nonprofit managers to convince them of the technical merits of the software platform. Aspiration’s coordination of F/OSS projects ensures that there will be sector-appropriate software available. However, the circuit riders’ translation project is not solely about advancing the use of F/OSS in the nonprofit sector. It is also about denouncing the incursion of more commercial elements into the nonprofit technology assistance arena, especially as they are represented by Procyon and its partnership with the for-profit proprietary software firm, Sirius. The circuit riders’ association strategies had several outcomes:

**Figure 4**  
**Free Geek Representing the Interests of Various Actors**



Note: F/OSS = free/open source software.

*1. Revitalizing the movement.* Circuit riders revitalized their movement. Circuit riders have witnessed their ranks grow once again as they bring members from the F/OSS developer community into the fold. More important, the movement has taken the circuit rider international. Organizations such as Advocacy Net send circuit riders to postconflict regions of the world. Calling themselves global e-riders, these new circuit riders are establishing similar infrastructures and organizational forms as their U.S. counterparts. And since proprietary software regimes are not as deeply entrenched in other parts of the world, especially the developing world, the global e-riders are shaping the technology choices of entire nonprofit sectors.

2. *Reproducing the circuit rider identity.* Circuit riders gained a new identity as champions of F/OSS to the nonprofit sector. Circuit riders once boasted agnosticism when it came to technology platforms. Following the work of association and translation, to be a circuit rider is to advocate for open source solutions. For example, the LINC project, a seminal circuit rider organization working with economic justice groups, now includes F/OSS programming skills in its qualifications for the job of circuit rider.

3. *Generating new funding.* Circuit riders have generated funding for their work once again. The Open Society Institute funds circuit-riding programs throughout the world and will only support technology projects if they use open source technologies. As a major international foundation, it sets trends for other foundations. Recently, grant makers at the Ford Foundation have funded open source projects as well.

4. *Mounting a legitimate challenge to proprietary solutions.* Most important, the circuit riders have mounted a legitimate challenge to the hegemony of proprietary solutions in the nonprofit sector. While Sirius software remains the most widely used platform in the sector, more nonprofits are aware of and are using F/OSS, especially in back-end applications. They have enrolled an organization called Groundspring, a major nonprofit that develops software exclusively for the sector, to switch to F/OSS development, meaning that much of the nonprofit-specific software that is produced in the future will be open source. These challenges reassert the circuit riders' ideals of progressive social change in the sector.

## Conclusion

While the circuit riders' attempts at politicizing technology achieved certain outcomes, they have yet to spread the use of F/OSS widely throughout the nonprofit sector. The sector itself presents formidable challenges, as proprietary technology standards remain deeply embedded in organizations. The challenge of getting U.S. nonprofits to adopt F/OSS, as noted, is more than technical or political: it is embedded in organizational leadership (Berlinger and Te'eni 1999). Thus, the nonprofits themselves remain the final link in the chain of association and possibly the most difficult to forge. While this last link remains, they have managed to enroll important actors in their cause. As the work continues, these legions of F/OSS advocates will likely make inroads in spreading the use of F/OSS in the U.S. nonprofit sector.

In this article, I have shown how a technology movement attempts to politicize technology to defend a position within a field of organizations. Technology movements are important actors in spreading technology (Kling and Iacono 1988; Hess 2005). Insofar as these groups, like all movements, express ideology, they will attempt to spread their ideals through the technology choices they make and espouse. As contracting becomes an increasingly common form of work (Barley and Kunda 2004, 2006), consultants, as “merchants of meaning” (Czarniawski-Joerges 1990, 139), will politicize technologies through the practice of association.

## Notes

1. Although exact definitions and rights vary, free/open source software (F/OSS) developers are quick to explain what they mean by “free.” The analogy the Free Software Foundation provides is “free as in speech, not as in beer.” In other words, as they further explain: free as in *libre* (freedom) not as in *gratis* (no cost) (Anderson 2004). However, much of the software falling into this definition is available without cost on any number of Web sites, including those of the developers themselves.

2. “Source code” refers to the formula or recipe for the program. Open source software, by definition, distributes this recipe with the product; proprietary software manufacturers retain intellectual property rights over the product. The classic analogy is Coca Cola (see Lawton 2002). Coca Cola is a proprietary good, meaning that you may purchase the finished product and even see what is in it, but the actual recipe, the formula of exact ratios of ingredients, is kept from the consumer. The recipe is Coca Cola’s trade secret and has been kept from consumers for over a century. By contrast, a Toronto-based software developer created a recipe for a soft drink called Open Cola (<http://www.opencola.com>). When you buy Open Cola, you get the product, a listing of its ingredients, and the recipe, which you are free to change and distribute. Using the open license, the user can take the Open Cola recipe, add cherry or some other flavor, and republish his or her version of the recipe. Analogously, proprietary software can only be used, not modified. To change proprietary software is to break the license and the law. Open source software allows users to access the code, modify it, and redistribute the product.

3. Due to confidentiality agreements with the author, Procyon and all its affiliates are pseudonyms. The names of circuit riders, their organizations, and affiliates are real.

4. These are quotes from the author’s interviews with open source advocates and their writings, respectively: Katrin Verclas (2003), Carnet Williams (telephone interview with author, September 16, 2003), and Reuben Silvers (telephone interview with author, May 18, 2004).

5. It is important to specify what actor–network (ANT) theorists mean by interests. By understanding interests as interpretations, ANT puts critical distance between itself and methodological individualist approaches (Homans 1958), such as rational choice theories in sociology (Coleman 1990). Besides disregarding nonhuman actors, rational choice theories reduce interests to the subjective psychological states of actors and attempt to deduce theory from utility functions based on maximizing returns on those interests. ANT, on the other hand, holds that while rational calculation may come into play when actors attempt to promote their interests, it is only one (and not necessarily the most important) evaluative framework that actors employ.

6. This is less an altruistic move than a competitive one. In 2001, Tech Rocks and Procyon were central competitors in the nonprofit technology assistance provider (NTAP) field.

7. The penguin is the mascot of Linux, the dominant open source programming platform.

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**Paul-Brian McInerney** is an assistant professor of sociology and social informatics at Indiana University South Bend. His research concerns how organizations express values through forms, practices, and claims, which become conventionalized through field-level interactions.