

**Implementing Open Government:
Exploring the Ideological Links between Open Government
and the Free and Open Source Software Movement**

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Abstract: This paper examines the ideological tensions inherent in the implementation of open government policies. I explore the rationale for open government by focusing on the philosophy of collaboration with citizens, one of the three principles of open government articulated in President Obama's Memorandum on Transparency and Open Government. The paper presents one empirical case of collaboration between the community of technologists and the city government in New York City. The theoretical framework combines the advocacy coalition public policy theory and the cognitive praxis sociological theory of knowledge production in new social movements. The juxtaposition of the belief systems of main advocacy coalitions supportive of open government policies and the ideology of the free and open source software movement indicates that the rhetoric of open government has imported social movement values. In particular, the collaboration principle reflects the interests of large web-based companies and of bottom up communities of technologists who frame open government as *innovative* government. In contrast, government transparency advocates frame open government as *transparent* government. All of these advocacy coalitions tap into the ideology of the free and open source software movement to pursue their distinct values.

Introduction

The Obama Administration has devoted considerable efforts to realizing its “open government” flagship policy initiative. On January 21, 2009, the next day following his inauguration, President Obama signed the Memorandum on Transparency and Open Government, which he addressed to the heads of executive agencies. The memorandum declares the new Administration's commitment to creating “an unprecedented level of openness in Government” and establishing a system linking three principles, “transparency, public participation, and collaboration” (Transparency and Open Government, 2009). The OMB Open Government Directive of December 8, 2009, operationalizes open government by defining specific actions each federal agency has to follow to implement open government policies (OMB Open Government Directive, 2009).

Two years after the memorandum on open government had been issued considerable confusion still exists in understanding the goals of open government policies by government officials and the public. On the one hand, open government means a *transparent* government. It aims to end “a culture of secrecy in Washington” (White House web-site), to create additional opportunities for citizen watchdog groups, and to reduce the influence of special interest groups. On the other hand, open government means *collaborative* government. Collaboration with citizens makes possible for government officials to improve government effectiveness by utilizing dispersed citizens’ “collective expertise and information” (Transparency and Open Government, 2009).

The debate about the meaning of open government has been recently initiated by Beth Noveck,

the first U.S. Deputy Chief Technology Officer for open government, who stated in her personal blog that, “in retrospect, ‘open government’ was a bad choice” (Noveck, 2011). Noveck distinguishes between two following “camps” behind open government: “Good government reformers who focus on a certain kind of transparency and the Open Government innovators who focus on collaboration informed by data” (Ibid). As a Deputy CTO Officer tasked with shaping federal open government policies from 2009 to 2011, she identifies with the latter camp: “open government was a shorthand for open innovation or the idea that working in a transparent, participatory, and collaborative fashion helps improve performance, inform decisionmaking, encourage entrepreneurship, and solve problems more effectively” (Ibid). Danielle Brian, a founder of the OpenTheGovernment.org web-site and a coalition of citizen watchdog organizations disagrees with Noveck and expresses by far the predominant view about the meaning of open government: “I don’t think anyone [in the coalition] ... was thinking about Silicon Valley when we formed it as part of our efforts to fight excessive secrecy” (Brian, 2011).

As the above tension between two different interpretations of open government illustrates, open government is a “wicked problem” (Rittel and Weber, 1973). It is wicked because open government as *transparent* government and open government as *collaborative* government suggest different policy goals and means in relation to transparency: transparency as intrinsically valuable democratic goal versus transparency as instrumental for greater government innovation and effectiveness. Most studies of the implementation of open government policies have not clearly distinguished between different open government policy goals and primarily focused on the technological dimension of open government (Lee and Kwak, 2011; Gant and Turner-Lee, 2011), such as the use of social media by government (Mergel, 2010). In their assessment of the

Open Government Directive, Wilson and Linders (2011) identify the directive as “technology-driven” and the overall vision of Obama Administration as “technology-enabled” but critique the directive for its failure to set clear goals: “the OGD does not fully define the problem it is supposed to solve” (Wilson and Linders, 2011; p.390). Interactive information and communication technologies (ICTs), such as social media tools, have been proposed as the uncontroversial means to implement open government. If both government officials and citizens use ICTs well, the open government goals will be achieved, we have been told. However, the disagreements among major stakeholders about the goals of open government imply that technologies will not solve the wicked problem of open government.

This paper explores the rationale for open government by examining the collaboration with citizens in implementing open government.¹ It draws from the empirical case of collaboration between the community of technologists and city government in New York City and further examines the social and cultural sources of open government policies. The paper builds on the theoretical tradition of the advocacy coalition framework (ACF) developed by Sabatier and Jenkins-Smith (1993, 1999). This approach enlarges the view on collaboration beyond ICT technologies by including social and cultural dimensions of collaboration. To accommodate for a deeper citizen perspective, I borrow from the “cognitive praxis” sociological approach developed by Eyerman and Jamison (1991) in relation to contemporary social movements. The cognitive praxis informs the discussion about the NYC community of technologies by grounding it in the values and social practices of the free and open source software movement (FOSSM). The paper

¹ My focus on collaborative government does not presume a value choice. Transparent and collaborative government are equally important elements of open government as the Memorandum on Transparency and Open Government makes it clear. By focusing on the principle of collaboration, this paper thus sheds light only on one dimension of open government.

argues that the articulation of the cultural and social practices of the FOSSM helps understand the goals of collaboration, one of the three principles of open government policies.

The case of open government collaboration in New York City

New York City government has been a leader in implementing open government principles. The NYC experience has been cited by federal government officials responsible for open government policies² as a benchmark in open government practices. Mayor Bloomberg has earned the reputation of one of the nation's most innovative mayors for his efforts to technologically upgrade the NYC government by engaging the city's community of technologists. The collaboration between the NYC government and technologists has primarily centered on public data held by City's government organizations. Public datasets such as those generated by the NYC's 311 non-emergency call system have stirred an intensive mobilization of technologists that the city has used to achieve its goals.

The NYC has recently introduced a new 311 Online in addition to its old phone-based 311 call system. This case exemplifies different understanding of the goals of open government by NYC officials and citizen-technologists. Essentially, 311 represents both a customer-oriented system aimed to give citizens an easy access to government information and services and a management system used to improve the quality of service through "measurement and analysis of service delivery" (NYC government web-site). The city launched 311 Online web-site in 2009 as an additional portal that citizens could access from their personal computers and mobile devices to

² According to the NYC press release of June 29, 2009, the Federal Chief Technology Officer Aneesh Chopra praised NYC government of its efforts: "We applaud New York City's leadership on delivering a more open and innovative government. ... These [NYC initiatives] align well to President Obama's Open Government Initiative and reflect best practices worthy of replication to achieve excellence in public sector performance" (NYC government Press Release, June 29, 2009).

ask questions or to report problems. 311 Online service relies on the existing social network technologies, such as Twitter, to reach out for citizens. To improve the quality of 311 Online, Mayor Bloomberg decided to release a number of 311 datasets to the wider community of technologists in 2009 (NYC government Press Release, June 29, 2009). The experience of Washington D.C. indicated that volunteer technologists could unleash the potential of public data by creating useful software applications cheaply or for free. The NYC government followed the contest engagement strategy that Washington D.C. has experimented with in the past (NYC Big Apps web-site). The NYC government presented its annual competition NYC Big Apps as aimed to “use private sector technological innovation to bolster [city] efforts [to increase the transparency of City government]” (Mayor Bloomberg cited in NYC government Press Release, June 29, 2009). On the same day, Mayor Bloomberg announced his decision to release some city data at the Personal Democracy Forum, the annual conference of leading advocates of open government in June, 2009.

The NYC Economic Development Corporation organized the contest. It called for “innovative and useful” software applications that would increase government transparency by delivering information about city services to citizens’ mobile devices. According to the BiggApps web-site, a successful application would use government data released by NYC government (82 datasets from 32 city agencies) in June 2009. A winner was promised a \$20,000 cash prize, marketing opportunities, and a dinner with Mayor Bloomberg, according to the contest call. During the contest, 112 Android and iPhone applications were submitted for review. The winner application WayFinderNYC offered smartphone users a convenient tool to find the closest subway entrance.

Many other applications became available for citizens for free as a result of this contest, which ultimately helped improve the quality of 311 Online.

The 2009 NYC Big Apps contest can be seen as the evidence of success of NYC government in implementing open government principles. The City has recently released more public data and organized the second BigApps contest to build on the success of the first contest. On a deeper level, BigApps contests highlights the differences in the goals of open government, from the perspective of NYC government, on the one hand, and technologists, on the other. Mayor Bloomberg views collaboration with technologists primarily as a way to improve the delivery of information to citizens by leveraging the entrepreneurial forces of the market. His philosophy is articulated in the *Connected City* vision (NYC Government Press Release, October 1, 2009). Fundamentally, it treats citizens as customers – not as partners to collaboration.³

From the point of view of the advocates of open government, Mayor Bloomberg's vision is not sufficient to realize the ideals of open government.⁴ Those city technologists who identify as “civic technologists” have been promoting a more radical view of collaboration with citizens that the one suggested by *Connected City* and technologically substantiated by 311 Online. NYC's leading civic technologist organization Open Plans initiated its own Open 311 project, a “collaborative effort to create an open standard for 311 services” in June 2009 (Open 311 website). Open 311 advocates for API (Application Programming Interface) real-time access to

³ See Vigoda (2002) for a theoretical discussion about the difference between government responsiveness to citizens-as-customers and government collaboration with citizens-as-partners.

⁴ According to Micah Sifry, a founder of Personal Democracy Forum and a leader of open-data movement, Bloomberg's team are “...still treating NYC.gov like a digital storefront: citizens can look in the window, or even knock on the door and get some information from the nice attendant at the desk. But we can't see what that person sees on her computer screen when she digs into 311 databases, or connect to other people like us with similar interests, the way we all do when we use social networking sites like Facebook or MySpace.” (techpresident.com blog).

NYC's 311 internal data systems, which would create completely new software ecosystem of 311 and would result in a much closer collaboration between citizens and the government. Open 311 web-site defines its purpose as follows:

Unlike the synchronous one-to-one communication of a 311 call center, Open311 technologies use the internet to enable these interactions to be asynchronous and many-to-many. This means that several different people can openly exchange information centered around a single public issue. This open model allows people to provide more actionable information for those who need it most and it encourages the public to be engaged with civic issues because they know their voices are being heard (Open 311 web-site).⁵

The NYC's civic technologists have also advocated for an unlimited city data access. Ideally, citizens should have the same real-time access to internal government data systems, according to civic technologists. In contrast, the Mayor Bloomberg Administration has provided a very limited data access for citizens. To realize their radical open government agenda, civic technologists formed a coalition in 2009. Gale Brewer, a NYC Councilmember and Chair of the Councils' Technology in Government Committee, has been their most important ally (Lee, 2009). Together with civic technologists, she prepared the Open Data Standards (Int. 991-2009) legislation. The bill required the creation of a centralized repository of all publicly available data (excluding the data that should not be public according to the law) that "would enable web developers and entrepreneurs to interact with City government in new and unforeseen ways" (NYC Council Press Release, June 25, 2009). However, the Mayor's Office came up with a less radical approach to opening government data that ultimately prevailed.⁶ The city released some

⁵ The Open 311's idea of community collaboration facilitated by civic technologies draws from the successful civil society initiatives of FixMyStreet in the UK, SeeClickFix in the U.S., as well as Open API experience in Washington D.C. followed by San Francisco, California. Based on these experiences, open government data and open API can increase the potential of good ideas, empower citizens, and allow cities to do more with less (Open 311 web-site).

⁶ When mayor Bloomberg announced his plan to open 82 city government datasets at the Personal Democracy Forum, this came as a surprise for Councilmember Brewer. In her interview to New York Observer, Brewer

datasets but largely refused to give up the control over data by appealing to its business-like customer service philosophy.

In summary, the experience of New York City with open government suggests that civic technologists constitute a particular group of citizens that the Memorandum on Transparency and Open Government urges government officials to collaborate with. Most importantly, civic technologists bring into the discourse on the implementation of open government policies their unique philosophy of collaboration. The encounter of civic technologists with NYC government in the context of 311 collaboration indicates that the Mayor Bloomberg Administration's strong business philosophy disguised under the rhetoric of transparent government conflicts with civic technologists' beliefs about collaboration. Clarifying this philosophy is thus needed to understand what drives one important group of stakeholders to open government who are also directly involved in the bottom-up implementation of open government policies.

Theoretical Framework

To explore the ideological foundation of open government policies, this paper merges the “advocacy coalition framework” (Sabatier and Jenkins-Smith, 1993, 1999), a public policy approach, with “cognitive praxis” (Eyerman and Jamison, 1991; Jamison, 2001), a sociological theory of knowledge production in social movements. By combining these two approaches, I articulate the philosophy of collaboration that underlies the open government rhetoric. In particular, I trace civic technologists' views on collaboration to the free and open source software movement.

commented that the Mayor's plan overshadowed her own proposal and she had no knowledge about it (Pompeo, 2009).

The advocacy coalition framework (ACF) is appropriate to examine the role of civic technologists in implementing open government because advocacy coalitions consist of “actors from a variety of institutions who share a set of policy beliefs” (Jenkins-Smith and Sabatier, 1999; p.9) and thus captures the involvement of bottom-up civic groups outside government. In addition, the ACF focuses on policy learning (Heclo, 1974; Sabatier and Jenkins-Smith, 1993) as a factor that drives policy changes by altering the secondary aspects of an advocacy coalition’s belief systems.

The cognitive praxis approach further opens up the belief system of civic technologists who identify with one particular social movement, the free and open source software movement. The cognitive praxis draws from the literature on identity processes as a major mobilization factor in “new social movements” (Melucci, 1980; Buehler, 1995). It defines cognitive praxis or knowledge practices, as “the concepts, ideas and intellectual activities that give [social movements] their cognitive identity,... both the worldview assumptions... and the specific topics or issues...” (Eyerman and Jamison, 1991; p.3). As part of their analysis, the authors of cognitive praxis address the dynamics of knowledge production in social movements. They distinguish between four movement phases: emergence, movement-building, movement fragmentation, and movement integration (Jamison et al 1990; Eyerman and Jamison, 1991; Jamison, 2001). Their periodization is based on the idea that cognitive praxis changes over time and passes through several phases, starting from the emergence of new ideas and practices and ending with the incorporation of movement cultural practices by the wider society.

There are some noteworthy similarities between the ACF and cognitive praxis. Both the ACF and cognitive praxis stress long time perspectives. According to Sabatier and Jenkins-Smith, “understanding the process of policy change ... requires a time perspective of a decade or more” (Sabatier and Jenkins-Smith, 1999; p.118). Similarly, Jamison (2001) utilizes time frames of three to four decades to describe the dynamics of cognitive praxis in the environmental movement. Also, both of these approaches pay attention to the role which different internal coalitions and movement groups play in the overall dynamic of a policy subsystem or a movement, respectively. Perhaps, cognitive differs from the ADF in one important respect. The ADF model presumes that advocacy coalitions are elite groups that remain relatively autonomous from external factors, such as social movements (i.e. social movement represent external factors that can affect policy change outside the coalition’s reach). In contrast, cognitive praxis illustrates how elite and “movement intellectual” groups in social movements professionalize and institutionalize over time as movement practices diffuse into the wider society. Using the language of the ACF model (Sabatier and Jenkins-Smith, 1999, p.149), cognitive praxis creates its own “external” forces which then affect the movement dynamics – most often dramatically disrupting the movement.

Open government through the lens of the Advocacy Coalition Framework

Information policies involve multiple and conflicting policy goals and values. Using the normative framework by Overman and Cahill (1990), open government policies endorse a “distributive” normative perspective and thus represent a step away from the “restrictive” perspective. To examine the ideological shift towards collaboration with citizens as one of the principles of open government, I further utilize the advocacy coalition framework (Sabatier and

Jenkins-Smith, 1993, 1983). According to the ACF, a limited number of advocacy coalitions can be identified in a policy subsystem within a particular policy domain. Each coalition is distinguished by a set of common policy beliefs which provide the principle glue of a coalition (Zafonte and Sabatier, 1998). Each coalition “shows a nontrivial degree of coordinated activity over time” (Sabatier and Jenkins-Smith, 1993; p.25). Policy change in a given policy subsystem occurs as a result of external factors, such as changes in public opinions, and/or internal factors related to the competition between different coalitions within the same policy subsystem.

The Obama Administration’s open government policies cross multiple subsystems of the U.S. information policy. I will focus on the Information Resources Management (IRM) subsystem to build on the earlier empirical study by Toavs (2004). Toavs chronicles the history of IRM subsystem from its formation in 1981-1996 to its maturation in 1997-2002. He identifies the following advocacy coalitions: Information Producers, Traditionalists, Public Interest, and Information Technologists. With the exception of Information Producers,⁷ the *policy core* beliefs of these coalitions support open government ideals even though their *deep core* beliefs (Sabatier and Jenkins-Smith, 1999) differ. According to the ACF theory, the examination of the belief systems of these coalitions is necessary to understand the policy change towards open government and collaboration principle in particular. Next, I will highlight the most important policy core beliefs of the three coalitions in relation to open government.⁸

⁷ Toavs defines “Information Producers” as those businesses that resell government and business information (Toavs, 2004). Open government policies thus might be detrimental for their commercial interests.

⁸ I assume that no new coalitions have emerged during the last decade, which is consistent with the finding of Toavs (2004) that the IRM policy subsystem had become mature by the early 2000s.

According to Toavs (2004), Traditionalists has been one of the oldest coalitions. It includes groups of public librarians such as the American Library Association (ALA) with a policy core belief that citizens should have a more open and equitable access to public information.⁹ More recent groups of advocates of open digital access to public archives can also be added to this coalition. Carl Malamud has been one notable public domain advocate.¹⁰ He initiated a two-day meeting with major open data movement activists in Sebastopol, CA in December 7-8, 2007. The Sebastopol meeting defined eight principles of open government data, which were consequently adopted by the White House as a result of the Open Government Dialogue organized by Noveck in May, 2009 (Open Government Dialogue web-site opengov.ideascale.com).

Public Interest coalition focuses on the issues of privacy and information access. Toavs (2004) identifies three large Public Interest groups: the American Civil Liberties Union (ACLU), OMB Watch, and Computer Professionals for Social Responsibility (CPSR). Each of these groups has a disposition towards libertarian values and advocates for those technological solutions that ensure a good balance of privacy and access to government information. Sunlight Foundation has been an important new actor in this coalition and a force behind open government since 2006. According to its mission, “The Sunlight Foundation uses cutting-edge technology and ideas to make government transparent and accountable” (Sunlight Foundation web-site). One of its

⁹ ALA sets access to information as its advocacy priority: “Core values of the library community such as equal access to information, intellectual freedom, and the objective stewardship and provision of information must be preserved and strengthened in the evolving digital world” (ALA web-site)

¹⁰ Carl Malamud, a public domain activist, has long advocated for a better public access to public information, and the law of the land, in particular (Malamud, 2010). Malamud created the first Internet radio station and posted on-line the U.S. Securities and Exchange Commission EDGAR database. He proposed the new definition of the term “public” in relation to public information: “Today, public means online” (Malamud, 2010; p.46). In his speech at Gov 2.0 Summit in February, 2010, he famously compared the government to a computer operating system that should be run as open-source with an unrestricted citizen access to all the nation’s laws (Ibid).

divisions, Sunlight Labs, employs software developers working on “digitization of government data and making tools and websites to make it easily accessible” (Sunlight Lab web-site). Some of these developers identify as “civic” or “government hackers” (Ibid).

Information Technologists is the most recent coalition formed by the late 1990s, according to Toavs (2004). It includes major nation’s Information and Communication Technology business associations. Toavs argues that because this coalition had a greater technological expertise compared to other coalitions, it had become closely involved in all e-government policies since the 1990s.¹¹ During the last decade, many Internet-based companies have joined this coalition. For example, Google Inc. has been a key business actor in realizing the vision of “government as platform” that O’Reilly articulated (O’Reilly, 2010) and major ICT companies have supported. Technological innovation in government constitutes the policy core belief of this coalition. Open government policies stimulate the adoption of new open data technologies by the government. Information Technologists ensure the flow of these technologies into government to make government on-line services comparable to those services provided by private companies.

Government Chief Information Officers (CIOs) constitute an important group in Toav’s analysis of IRM subsystem advocacy coalitions. They contributed to the establishment of IRM as a legitimate policy subsystem on the par with such traditional public management specializations as financial or human resource management (Toavs, 2004). Information policy implementation

¹¹ In particular, Information Technologists influenced specific IT policies developed as part of “reinventing government,” the Clinton Administration’s reform aimed to create the government that “works better and costs less” in mid-1990s. They also participated actively in substantiating the “Citizen-Centered E-Government,” a critical part of President’s Management Agenda aimed to introduce business management approaches, such as more customer-oriented on-line government services, into government by the Bush Administration in the early 2000s (Toavs, 2004).

has been their main responsibility and they had to work closely with those coalitions who could provide such technological tools. For this reason, CIOs have maintained close connections with Information Technologists. In the context of open government policies, both U.S. Chief Information Officer Vivek Kundra and the U.S. Chief Technology Officer Aneesh Chopra have repeatedly stressed the adoption of new technologies, such as social media, as their main priority, which is also reflected in the OMB Open Government Directive of December 8, 2009.

The involvement of Information Technologists in open government has extended beyond its capacity as technology providers. A number of the Information Technologists coalition individuals have been directly involved in shaping open government policies as members of White House's open government policy team.¹² Importantly, government CIOs and CTOs share the successful experience in the implementation of open government policies at various forums, such as Gov 2.0 summits organized by O'Reilly, a key voice of Information Technologists. Many benchmarking open government practices are bottom up and developed by communities of technologists. For example, prior to his appointment as the U.S. CIO, Vivek Kundra worked with iStrategyLabs, a civic technologist group who developed a pioneering Apps for Democracy project in Washington D.C., which has set an important benchmarking standard in open government at all levels.

Therefore, the ACF describes a fine mechanics behind open government policies that goes beyond technology issues. Consistent with the ADF theory, external factors, such as new

¹²For example, Andrew McLaughlin, a U.S. Deputy CTO responsible for technology policy, served as the Director of Global Public Policy for Google prior to his joining the White House. A former Google project manager Katie Stanton worked as the director of citizen participation, a position created by President Obama in 2009 (Helft, 2009).

technologies, affect policy change. However, these external factors influence policy change through processes internal to a policy subsystem. In the case of open government policies, the policy core beliefs of three major coalitions, Traditionalists, Public Interest, and Information Technologists (Toavs, 2004) aligned for a short time. Open government policies and the use of new technologies address these policy core beliefs and provide new opportunities to pursue the values important for each of these coalitions. However, the examination of their belief systems reveals the different meanings they attach to open government. As indicated by the debate between Beth Noveck and transparency advocates, open government might mean less secretive or more innovative government for different coalitions. The WikiLeaks case is likely to intensify the tensions between these two visions of open government and might lead to new policy approaches in the future.

In relation to the collaboration principle that has been integral to the current open government policies, the above ACF analysis suggests that collaboration approach most closely aligns with the agenda of Information Technologists coalition and government CIOs responsible for the implementation of open government policies. Government CIOs represent an important link between different advocacy coalitions in the IRM subsystem. They ensure policy learning in the subsystem (Sabatier and Jenkins-Smith, 1999), which means learning about those policy implementation tools that work, giving feedback to other coalitions, and also mediating between coalitions' different belief systems and interpreting those belief systems for the purposes of policy implementation. Assuming that collaboration principle serves as the identifier of open government as Beth Noveck does, and a key policy change (Sabatier and Jenkins-Smith, 1993,1999) in the IRM subsystem, the actual collaboration practices provide an important source

of policy learning that government CIOs cultivate. The NYC case described earlier in this paper indicates that bottom up civic technologists' initiatives serve as an important source of policy learning for open government policy makers. Even though civic technologists do not form a distinct advocacy coalition, it can be argued that civic technologists' philosophy of collaboration serves as one ideological source underpinning open government rhetoric because the activities of civic technologists embody the democratic spirit of collaboration. This philosophy is also present in on one way or another in belief systems of all advocacy coalitions supportive of open government – Traditionalist, Public Interest, and Information Technologists. Next, I will trace the cultural roots of this philosophy to one particular social movement, the free and open source software movement.

Open government and the free and open source software movement

This section provides an overview of the FOSSM history and its cognitive praxis, first. Second, it highlights major ideological links between the late FOSSM phase and open government. Third, it revisits the collaboration of NYC community of civic technologists with the NYC government and shows how the FOSSM cognitive praxis might inform the challenge of understanding the goals of open government, from civic technologists' perspective.

The cognitive praxis of the FOSSM

Movement emergence, 1950s - 1970s

The free and open-source software movement can be traced back to computer developers' innovation subculture that emerged at MIT in the late 1950s. This subculture became known as Hacker Ethics. Steven Levy defines a "hack" as a technical solution "imbued with innovation,

style, and technical virtuosity” in his popular book *Hackers: The Heroes of Computer Revolution* (Levy, 2001; p.23). The honorary title of a “hacker” was awarded by the community to its most brilliant peers. Hacker Ethics praised sharing and openness among computer technologists. The famous hacker principle “all information should be free” aimed to guarantee that any technical improvement was validated, recognized, and disseminated. Together with the “hands-on” attitude hackers’ creativity and motivation to “improve the machines, and to improve the world” (p.7) ultimately materialized into such tangible hacker products as ARPAnet, a communication network funded by the Department of Defense and a prototype of the Internet, and the first personal computer assembled by the members of the hacker Homebrew Computer Club Steve Wozniak and Steve Jobs in 1976 (Levy, 2001).

Movement-building, 1980s

The commercial success of hacker products produced major disagreements between leading hackers in the 1980s. The issue whether hacker products could become proprietary divided the hacker community. A small group of hackers revolted against market forces because the latter challenged the Hacker Ethic’s principle that “information should be free.” Richard Stallman, an MIT leading hacker, decided to create a new organizational space – a social movement – which he named the “free software movement” (FSM). He started the movement by writing the *GNU Manifesto* in 1983. Stallman stated that he needed help to write a complete UNIX-compatible software system. The system would emulate UNIX, an operating system that was designed by AT&T hackers and became fully commercial in 1983 (Weber, 2004; p.40). Unlike UNIX,

Stallman's operating system would be free for all. He gave it the name "GNU," a recursive acronym which, in the hacker giddy logic, stood for GNU's Not Unix.¹³

Technologically, GNU did not differ from other hackers' projects. However, Stallman placed core hacker beliefs above technology. In particular, he stressed the value of freedom of digital information (code). Free code was meant to supplement other fundamental human freedoms, such as free speech. For Stallman, free software was all about freedom-as-social-value rather than price: "think free speech, not free beer." According to his philosophy of free-software, a good and free society needed freedom for several reasons. First, it needed free information truly available to its citizens." (Stallman, 2002; p.49). The information included "programs that people can read, fix, adapt, and improve, not just operate" (p.50). Second, users of programs needed autonomy. If the program was owned by somebody else, the user would lose its autonomy and control. Third, society needed freedom to encourage the voluntary cooperation of its citizens. In contrast, software ownership polluted "our society's civic spirit" (Ibid).

Movement fragmentation, 1990s

Stallman's movement-building GNU project strengthened the hacker community. The next generation of hackers could stand on the shoulders of his Free Software Foundation (FSF) by using the quasi-legal principle of "copyleft" that prevented the commercialization of the code once it was created by a hacker as a free code. At the same time, hackers such as Linus Torvalds

¹³ Stallman explains why he believed GNU had to be free: "I consider that the Golden Rule requires that if I like a program I must share it with other people who like it. Software sellers want to divide the users and conquer them, making each user agree not to share with others. I refuse to break solidarity with other users in this way. I cannot in good conscience sign a nondisclosure agreement or a software license agreement. For years I worked within the Artificial Intelligence Lab to resist such tendencies and other inhospitalities, but eventually they had gone too far: I could not remain in an institution where such things are done for me against my will" (Stallman, 1985).

and Eric Raymond decided that Stallman's copyleft rule restricted hackers' freedoms. Torvalds organized a collaboration of volunteer developers on the Linux operating system in 1994, which became a major operating system on the market later in 1996 (Raymond, 1999). Raymond developed an ideological foundation of the open source movement (OSM), the successor of the free software movement. Unlike Stallman's FSM that promoted a moral cause and shunned commercialization, the OSM set the goal of remaking the commercial-software world "in the image of the hacker culture" (Raymond, 1999; p.25). Those developers who favored collaboration with the private sector chose the term "open source" software that was more marketable than the term "free software"¹⁴ and the movement was consequently renamed as "open source movement."

The commercialization of the movement split the hacker community.¹⁵ Raymond, a hacker and the hacker culture's ethnographer, redefined the new movement identity around the Linux success. According to him, Linux became a triumph due to the voluntary mass collaboration of programmers, a collaboration model he named "bazaar" (Raymond, 1996). He contrasted the

¹⁴ Raymond learned from his efforts to promote Linux software in the private sector that the term "free software" sounded like anathema for corporate executives. The effective marketing campaign of Linux thus had to rebrand the free software movement (FSM): "our success after Netscape would depend on replacing the negative FSF stereotypes with positive stereotypes of our own – pragmatic tales, sweet to managers' and investors' ears, of higher reliability and lower cost and better features" (p.206). The term "open-source" emerged as a compromise. It was adopted by the participants of the Free Software Summit organized by Tim O'Reilly on April 7, 1998 (<http://press.oreilly.com>). A press conference held during the summit was attended by reporters from major newspapers such as *New York Times* and *Wall Street Journal*. In a few weeks, Linux leaders Linus Torvalds and Eric Raymond received wide national publicity. "Open source" became the free software movement's new identity and a marketing brand.

¹⁵ Richard Stallman disagreed to compromise his moral principles. In particular, he opposed to the business-like agenda of open source advocates: "For the free software movement, however, nonfree software is a social problem, and the solution is to stop using it and move to free software" (Stallman, 2009). In contrast, Eric Raymond questioned Stallman's moral crusade as the right strategy for the movement: "Big win, big score that gave us mainstream visibility and credibility from investors came not from bottom-up evangelism ... but because one strategist on the top saw the power in that method...and imposed that vision on everybody underneath him" (interview with Raymond, Revolution OS documentary).

bazaar model with the “cathedral” model, which stood for the traditional hierarchical model of organization based on proprietary contracts. Raymond’s idea of bazaar as an effective collaborative arrangement became the main identifier of the open source movement.

Movement institutionalization, 2000s

During the last decade, FOSSM cognitive praxis has been incorporated into the mainstream society. The FOSSM adjusted its philosophy and values to fit the socio-technological potential of the Internet. Open source software became a market success in the early 2000s, after large corporations such as Mozilla, IBM, and Oracle started investing into Linux. Subsequently the open source movement changed its focus from *software* to Internet *data*. “Open data” rather than “open source” has increasingly become the movement’s new identity. Tim O’Reilly, the CEO of O’Reilly Media, Inc., reframed the meaning of open source practices to capture the new potential of Internet. He argued that open source movement had caused a paradigm shift in the society but FOSSM leaders failed to understand the most important movement’s contribution.¹⁶ For O’Reilly, the real value of open source was the open data that the Internet generated: “the frontier of open source is actually open data, not open code” (Williams, 2003). He referred to the experience of several new companies, including Google and Amazon, which used both open source software and open source principles in order to capitalize on their users’ data (Ibid).¹⁷

¹⁶ Raymond publicly rejected the idea of applying open-source principles to other than software domains (music, books) because these new domains were different, did not require debugging, and also because he did not want to “weaken the winning argument for open-sourcing software by trying it to a potential loser” (Raymond, 2002; p. 226). However, at about the same year he expressed his skepticisms, new companies emerged that had determine how open-source principles would be actually implemented beyond the FOSS movement. In particular, Google was incorporated in 1998. Wiki on-line encyclopedia and the World of Warcraft, the most popular massively multiplayer online role-playing game (MMORPG), both started in 2001. All major social media companies (Friendster, LinkedIn, MySpace, Facebook) were created in 2002-2004.

¹⁷ Google, amazon, google, ebay, and Yahoo! Companies use open-source ideas to build their communities but use them for commercial reasons. For example, Amazon has developed one of the best peer-review systems which ultimately determined the company’s success. Also, these companies use open-source software to cut costs of

The incorporation of the FOSS movement practices by the society through commercial means came at a cost for the movement: “[it]...sounds like a victory for open source, but it could easily be a defeat” (Williams, 2003). As business companies adopted FOSS movement practices, the concept of open source had been stripped of its moral message and, ultimately, became independent from the movement. Many companies that shape the mainstream open source discourse, such as Google Inc., do not identify with the FOSSM. At the same time, the recent technologies have created a new space to realize core Hacker Ethics values – personal autonomy, sharing, and decentralization. Open data or open content projects such as Wikipedia have revived these core FOSSM values by expanding to non-software areas. The emerging open data movement can be viewed as a new movement or an offshoot of the FOSS movement. While its future remains unclear, it stands on the shoulders of the movement and profits intellectually from its legacy. This legacy includes both the technological and ethical parts. Technologically, interactive Web 2.0 tools initially developed by hackers provide a foundation for the further development of open-data principles.¹⁸ Ethically, the open-data movement can take the value of openness for granted, as one’s fundamental right and a universal principle.¹⁹

doing their core business. Thus Google’s several million servers use free Linux operating systems, which saves the company billions of dollars (the cost of alternative server software such as that offered by Microsoft ranges from 1000 to 2000 dollars per server).

¹⁸ For example, the influential book *Wealth of Networks* by the Harvard professor Yochai Benkler highlighted the transformative role of networks and network collaboration technologies for post-industrial network society and draws on open source principles (Benkler, 2006). The book *The Wisdom of Crowds*, another popular book by James Surowiecki, introduced the term “crowdsourcing” based on the Raymond’s insight that effective open-source collaboration and problem-solving requires large numbers of participants: “given enough eyeballs, all bugs are shallow” (Raymond, 1996).

¹⁹ It is highly symbolical that the Wikipedia article on “open-source” explains open source as a universal model of collaboration rather than a history-specific concept. The term “source” in “open-source” refers to the content rather than software code. The article lists several open source applications in various societal domains, such as academic research, teaching, arts, and government to illustrate the universality of open source (http://en.wikipedia.org/wiki/Open_source).

Table 1 summarizes the history of the FOSSM. Hacker Ethics has been the glue holding the movement together. It was articulated at the early movement phase in the 1960-70s. At each consequent movement phase specific hacker values were highlighted by movement leaders to promote specific movement strategies. For example, the values of freedom and openness referred to the same hacker principle of sharing software but different understanding of these values by Stallman and Raymond caused the fragmentation of the movement in the 1990s. Most importantly, as FOSSM practices successfully had won the marketplace, they underwent professionalization and commoditization. As a result, the movement space created by hacker hobby clubs in the 1970s shrank as they were replaced by more professional and formal organizations, which started to define the movement course in the 2000s.

TABLE 1. Cognitive praxis of the free and open source software movement

	Emergence	Movement-building	Movement Fragmentation	Institutionalization
Chronology	1950s - 1983	1983 - 1991	1990s	2000s
Practices/ projects	Hacking Personal computing	GNU project	Linux	Open data projects
Values	Hacker Ethics	Freedom	Openness	Collaboration
Sources of meaning	Peer-oriented	Peer-oriented/ market-oriented	Market-oriented/ peer-oriented	Market-oriented/ user-oriented
Organizational forms	Hobby clubs	Web-site (Free Software Foundation)	Web-site (Open Source Initiative), business organizations	Web-site/ social media, business and non-profit organizations

Movement institutionalization and open government

Open government can be seen as a particular manifestation of FOSSM’s institutionalization. Similarly to the institutionalization of other social movements, such as the environmental

movement, the emergence of new institutional actors has been the corollary of the integration of FOSSM practices by the wider society. These actors often employ the rhetoric associated with core movement values but use it for their narrow interests. For example, sustainable or “alternative technologies” were initially developed within the environmental movement to advance environmental movement goals in the 1970s (Kirk, 2007). However, the rhetoric of sustainability is now used by many business companies eager to capitalize on the environmental ideology (Jamison, 2001). Three groups of stakeholders to open government can be distinguished that have relied on the FOSSM ideology and practices: open source software organizations, open data web-based businesses, and civic hackers. They do not represent the great variety of FOSSM but has been selected here because each of these groups has influenced the shaping of open government agenda and the rhetoric of collaboration, in particular.

It should be noted that none of these groups has used traditional movement tactics of “contentious politics” (McAdam, Tarrow, and Tilly, 2001; Tarrow, 1998). With few exceptions such as political “hactivism” (Thomas, 2002), the movement has been politically “invisible.” It rarely interacted with the state before the mid-2000s. Unlike other social movements, such as civil rights or workers movement, it had few reasons to challenge the state as a movement “enemy.”²⁰ In addition, open source organizations do not promote open source software in

²⁰ Stallman excluded government from the list of the free software movement’s enemies because all government-produced software was released as free. In fact the software released by government was even less restrictive than the code released under Stallman’s GNU GPL license. (See Stallman’s comments on the use of GPL license by the government: <http://www.gnu.org/licenses/gpl-faq.html>.) Similarly, the open source movement did not interact with or campaigned against the government in the 1990s. Eric Raymond who identified as libertarian and anarchist (Raymond’s personal web-site catb.org) believed that FOSS movement activists had to focus on technological rather than political issues. Like the free software movement, the open source movement most frequently campaigned against the Microsoft Corporation, the movement’s chief antagonist.

government using traditional lobbying methods.²¹ Instead, they promote open source by educating government officials and public administrators in particular.²² For example, the Open Source for America (OSA) coalition formed in 2009 defined its mission as raising the “awareness in the U.S. Federal Government about the benefits of open source software” (OSA web-site).²³

Internet-based business companies, such as Google Inc., are another powerful stakeholder to open government. They do not necessarily identify with the FOSSM but use many FOSSM principles and practices. Tim O’Reilly, a technology entrepreneur and a key open source movement ally in the late 1990s, had indirectly promoted the business agenda of these companies by advocating for open data revolution as a frontier of technological progress in the 2000s. User-generated data constitutes a critical asset for many web-based companies. Public data generated by government organizations includes GPS, transportation, crime data, public library materials, and laws. O’Reilly’s idea “government as platform” envisions the government that opens up its internal informational infrastructure to its citizens in order to facilitate the

²¹ Michael Tiemann, the President of the Open Source Initiative, comments on Argentina’s (first in the world) public policy on open source software: “unlike many policies that are drafted by powerful lobbyists, I can assure you that this policy, written in June 2004, was never lobbied by anybody at the OSI. The government came to this conclusion the old-fashioned way-through observation and real-world experience. The growth of open source policies among local, state, national, and transnational bodies like the European Union, and the fact that the OSI has virtually no lobbying capacity whatsoever, should be considered a major victory of public interest over private interference” (Tiemann’s blog, opensource.org/node/417).

²² The Open Source Initiative, the main organizational force behind the open source movement, focused on educating government officials about the values of open source by providing benchmarking cases. Also, a major Linux distributor Red Hat has actively marketed Linux in government organizations by creating a Public Sector Specialty (redhat.com/solutions/government)

²³ The coalition initially included about seventy companies, academic institutions, and individual technologists. The coalition is not a legal entity and does not participate in collective lobbying activities (even though each individual member might be involved in lobbying its specific interests). It describes its main activities as follows: “[W]e’re focusing on developing an effective messaging strategy aimed at federal government leaders. We anticipate organizing events which bring open source advocates in contact with federal government decision makers, cultivating relationships with policy experts and organizations to develop thought leadership around open source software, and developing tools which enable grassroots communities to engage with political leaders about the open source message” (opensourceforamerica.com).

collaboration between citizens and the government and the “crowdsourcing” of government work to the market (O’Reilly, 2010).

Finally, civic-minded young programmers who often self-identify as “civic hackers”²⁴ have been instrumental in pushing government to open its data. These programmers have a technical capacity to digitize, aggregate, and visualize government data. Civic hackers create online tools which helps citizens to use government data in a “user-friendly” way. For example, most city governments collect data about traffic conditions and roads. Civic hackers can use these data to create a cell phone application that would suggest a bicyclist a safe and a convenient route to a specified destination. Other applications use federal datasets to inform citizens about how budget moneys are being spent. The recently launched recovery.gov web-site thus provides open data on the implementation of American Recovery and Reinvestment Act of 2009. Technologists can use this data to create detailed interactive maps showing where the Recovery Act money is going at the local level. Many civic technologists use their experience in creating civic applications as an opportunity for professional development and to build prestige among peers. Some of them start their own small businesses afterwards (personal interviews).

²⁴ Luigi Montamez from Sunlight Labs, a non-profit organization promoting government transparency, is a civic hacker. He defines civic hacking as follows: “A civic hacker is an open source software developer who uses his or her skills to make their community and country a better place. Examples of civic hacking include building web apps to help people recover from a natural disaster, creating visualizations of the influence of money in politics, and cleaning up unstructured data on state legislation in order to make it more developer-friendly for others. A civic hacker will just do something, not asking for permission, ignoring government bureaucracy, in order to build tools and technologies with a civic-minded bent. Often, open government data is all one needs to create a compelling, novel app” (thebitsource.com).

Besides these three groups, many law professionals have been active in promoting open source principles in government.²⁵ Essentially, they have pushed for the creation of a government regime with few legal and administrative barriers to accessing government data. Beth Noveck, the first U.S. Deputy Chief Technology Officer for open government, exemplifies these efforts. A law professor at the New York Law School (NYLS), she relied on her prior successful experience with open source collaboration in the U.S. Patent Office.²⁶ While in the White House, she had repeatedly referred to open data philosophy in explaining transparency, participation, and collaboration – the three principles of open government listed by President Obama’s Memorandum.²⁷ Also she acknowledged that open-source movement has influenced the open government: “a lot of this collaborative activity started off in the open source community and has found its way into other social practices. Similarly for open government data - it started with the geeks, from them to the artists, from them to the public and the policymakers will be last” (Millar, 2011). Noveck made the above statement indicates after she stepped down from her position as U.S. Deputy CTO where she had worked for two years. This statement is an evidence of the penetration of FOSSM philosophy into government.

²⁵ Lawrence Lessig, a law professor at Harvard University and the founder of the Creative Commons non-profit organization, was among the first to express the idea that legal code regulates social behavior in the same way as computer code regulates the “behavior” of the computer: “code is law” (Lessig, 2006). Carl Malamud, a public domain activist, has long advocated for a better public access to public information, and the law of the land, in particular (Malamud, 2010). He proposed the new definition of the term “public” in relation to public information: “Today, public means online” (Malamud, 2010; p.46). In his speech at Gov 2.0 Summit in February, 2010, he famously compared the government to a computer operating system that should be run as open source with an unrestricted citizen access to all the nation’s laws (Ibid). Also, Carl Malamud initiated a two-day meeting with major open data movement activists in Sebastopol, CA in December 7-8, 2007. The Sebastopol meeting defined eight principles of open government data.

²⁶ Noveck initiated the innovative Peer-to-Peer Patent project to do public patent examination by volunteer experts outside the U.S. Patent Office in 2006 (Noveck, 2009). The project received support from the U.S. Patent Office, large corporations (such as IBM and Microsoft), and the New York Law School (NYLS). It became one of the first government agency’s experiments with crowdsourcing.

²⁷ As part of her implementation strategy, Noveck initiated the Open Government Dialogue, a brainstorming on-line civic engagement session, which the National Academy of Public Administration hosted in May, 2009. Based on the results of the brainstorming, the June 02 summary report by Noveck specified transparency, participation, and collaboration – three themes stressed by President Obama’s memorandum. In particular, eight principles of open government data initially proposed by the 2007 Sebastopol meeting were adopted as new government transparency principles (See opengov.ideascale.com).

The above overview of the three stakeholder groups in open government provides the anecdotal evidence that FOSSM values and practices have influenced the open government ideology both from the top and from the bottom. “Change agents” such as Beth Noveck have directly shaped the Obama Administration’s open government policies from the top by adding the principle of collaboration as a guiding principle of open government. Civic technologists helped substantiated collaboration in a bottom-up way by showing how collaborative technologies could work for the public interest in practice.

FOSSM cognitive praxis in the NYC’s community of civic technologists

The cognitive praxis approach helps understand the cultural roots of NYC’s community of civic technologists that has been instrumental in implementing open government by NYC government. Cognitive praxis assumes the existence of ideological core in a social movement, a specific new worldview or a “cosmological dimension” (Eyerman and Jamison, 1991). At the same time, every movement usually develops a great diversity of concrete technological and organizational practices. Similarly, the FOSSM has been very diverse and fragmented. Despite this diversity, hacker identity and hacker values have been upheld by movement activists in one way or another. The NYC’s community of civic technologies is one particular FOSSM sub-community. It primarily identifies with the late open source movement and thus has a significant tolerance for the commercialization of movement practices. It should be noted that the community of civic technologists does not represent all variety of the FOSSM in NYC and has been selected merely for its relevance for the implementation of open government policies in NYC.²⁸

²⁸ For example, 2600 hackers has been by far the oldest FOSSM community in New York City since it was formed in 1984 (Thomas, 2002). The community embraces the city’s strong tradition of political activism. 2600 hackers

A snapshot of values and identities in NYC's civic technologist community

The direct or indirect evidence of the influence of the FOSSM worldview on the NYC's civic technologist community can be found in the technologists' self-representation and specific practices. References to the hacker ethics are evident in the terminology civic technologists use to describe their identity. Many technologists identify as "civic hackers" and work for those IT companies sympathetic to open source principles rather than for proprietary companies (personal interviews).²⁹ For example, the NYC's leading civic technologist organization Open Plans presents itself as a "non-profit technology organization focused on civic engagement and open government" (Open Plans web-site). Open Plan's organizational blog is called "Civic Hacker." Open Plans is supported by Mark Gorton, an open source businessman and an advocate.³⁰ Other civic technologist organizations in NYC similarly use open source values to define their identity.³¹

Also, the evidence of the hacker ethics can be found in the way civic technologists justify their organizational practices. Essentially, the community has a very loose network structure, which is

identify with the libertarian message of the free software movement. They praise their isolation from the "mainstream" and their ideological opposition to the government (Kroll, 2006). 2600 hackers do not collaborate with government officials on any specific civic projects (Personal interviews). Therefore, their contribution to open government will not be discussed here even though they have been a leading voice for the protection of digital liberties and privacy (Coleman, 2008).

²⁹ Asking civic technologists about their identification with FOSSM directly might be difficult. I learned it when I asked this question to one of the participants of a civic technologist meeting and received a somewhat angry response: "We are all open source here!" (Personal interview).

³⁰ Gorton founded Open Plans in 1999 "after realizing the incredible potential of the open source movement to create tools that catalyze civic engagement" and produce "transformative change" (Open Plans web-site). He runs several successful businesses including Lime Wire LLC, a producer of the world's most popular file-sharing software. According to Gorton, he has "imbued in Open Plans the same entrepreneurial spirit and results-oriented methods as [his] other companies" (Ibid; Kassenaar, Bloomberg March 23, 2007).

³¹ Another civic technology and arts organization Eyebeam defines its mission as follows: "Eyebeam challenges convention, celebrates the hack, educates the next generation, encourages collaboration, freely offers its contributions to the community, and invites the public to share in a spirit of openness: open source, open content and open distribution" (Eyebeam web-site).

consistent both with the anti-authoritarian decentralization Hacker Ethics principle and Eric Raymond's model of bazaar collaboration. Collaboration within the community is organized on an ad-hoc basis around "unconferences" and "hackathons," semi-formal conferences that encourage sharing of new ideas, collaboration, and learning. Many collaborative places, such as the Open New York Forum meetup group,³² have been created through online social networking sites. The network of civic technologists maintains good relationships with journalists. Some journalists established new media projects based on open source principles.³³ These journalists often identify with hacker values.³⁴

Collaboration practices of NYC's civic technologists

As noted earlier, NYC's civic technologists were involved in political lobbying of NYC Council to make public data open in 2009. However, these political activities represent a small fraction of technologists' other collective activities in promoting open government. First, many technologists' projects replicate bottom-up citizen projects such as FixMyStreet that was

³² Open New York Forum is a civic group that focuses on "the intersection of open government and civic technology" and promotes "local open government initiatives through workshops, education, and collaboration" (Open New York Forum web-site). Matt Cooperrider, a civic technologist, started the group in 2009 by registering the online Open Government NYC meetup group. He set a goal of implementing the open government agenda at the local level "in a grass root open government way" (Cooperrider, December 2009, presentation "OpenNY Past and Future"). As part of his strategy, he focused on strengthening the "ecology" of open government enthusiasts and has worked with other city groups, such as Open Plans, to achieve his goal (Ibid)

³³ DIYCity.org (Do-It-Yourself City) web-site, launched by its founder John Geraci in 2008, is an example of the application of open source technologies by a professional journalist. DYICity represents a web-site and a "global online discussion ... about transforming local communities with the help of free and open web technologies" (Geraci's personal web-site johngeraci.com). In the words of Geraci, DYICity is a web-site that invites people "to reimagine our cities" so that cities become more effective, efficient, and sustainable (Interview to Smart City Radio, January 1, 2009)³³. Geraci envisioned DIYCity as a forum for sharing ideas developed at the local level in communities all over the world. Today, the web-site hosts over 100 local groups that include software developers, urban planners, and government workers (DIYCity web-site).

³⁴ Hacks/Hackers is a recent NYC's forum that brings together journalists (hacks) and technologists (hackers). It was established by a group of journalists, who work for major media companies (including The Associated Press and New York Times), and media professors in June, 2010. Hacks/Hackers is a community of people "who seek to inspire each other, share information (and code) and collaborate to invent the future of media and journalism" (Hacks/Hackers web-site).

pioneered by MySociety.org, a UK non-profit organization and a “juggernaut of civic hacking” (MySociety web-site) in mid-2000s. These online projects do not depend on government data because they generate their own data by facilitating community collaboration through independent social networks. Community networks have a long history in the FOSSM with the first such network, Community Memory terminal, created in 1973 (Levy, 2001).

Second, NYC technologists collaborate with technologists from other U.S. cities. Most often such collaboration involves sharing and learning new ideas related to the technological implementation of open government principles independently from the government. For example, Open Plans has been a partner to Code for America and Civic Commons, two nation’s leading open source advocacy coalitions (Open Plans web-site), in developing a national API system. Also, these two coalitions help communities of civic technologists all over the country to better articulate their organizational strategies to further promote open source principles. One curious way to promote open source philosophy of collaboration is educating public administrators on how they should collaborate with civic technologists.³⁵

Third, civic technologists have succeeded in establishing good relationships with the NYC media community, such as the Hacks/Hackers journalist forum in NYC. The collaborative projects between civic technologists and journalists benefit both sides as journalists get access to open data technologies and technologists build a positive media image. Finally, NYC’s community of civic technologists nurtures informal bottom-up collaboration with government IT professionals

³⁵ For example, Open Plans offers 10 recommendations for NYC administrators on collaborating with outside software developers on open data projects (Grossman, 2010). Open Government Initiative is another interesting project of the open source coalition. It offers a public policy template for local government leaders “to institutionalize to institutionalize open government principles within local government” (Open Government Initiative web-site).

(personal interviews). Civic technologists inside the NYC government serve as knowledge brokers who help realize the ideal of collaboration with citizens as it is understood by civic technologists.³⁶

Therefore, the NYC's civic technologist community employs different collaborative practices that can also be identified as typical for the FOSSM in general. In particular, this collaboration involves sharing new technological ideas through forums, such as hackathons, organized in accordance with open source traditions. Hacker Ethics provides the foundation that shapes civic technologists' philosophy of collaboration.

Conclusion: making sense of open government collaboration principle

This paper presents the evidence that social and cultural practices of the free and open source software movement constitute an important ideological source of open government policies. The Advocacy Coalition Framework (Sabatier and Jenkins-Smith, 1993, 1999) helps identifies key policy coalitions who support open government policies and stresses the importance of understanding their belief systems in relation to open government. The cognitive praxis (Eyerman and Jamison, 1991) sociological theory locates these beliefs within the FOSS movement and also describes how the hacker culture, the deep core movement ideology, evolved and was modified by movement leaders at different movement stages.

³⁶ Many entrepreneurial civic technologists who work for government have been key actors in NYC's open source community and helped bring technologies to the community. For example, Noel Hidalgo, a software developer and an advocate of open-source, works as the Director of Technology Innovation for the New York State Senate and also mobilizes NYC's technological community to promote open government practices. Hidalgo is a co-organizer of the Open NY Forum and thus bridges together the world of government and the world of civic technologists. In particular, he organized one event on open government in collaboration with Eyebeam and Open Plans (Hidalgo's personal web-site).

According to the Advocacy Coalition Framework (Sabatier and Jenkins-Smith, 1993, 1999), the belief systems of advocacy coalitions affect policy change in a policy subsystem. Based on the empirical study by Toavs (2004) that identified four advocacy coalitions in the Information Resource Management policy subsystem, three coalitions support open government policies: Traditionalists, Public Interest, and Information Technologists. Information Technologists include web-based ICT companies, such as Google Inc. Such companies view collaboration as promoting technological innovation in government. The bottom up groups of civic technologists, such as Open Plans non-profit organization in New York City, supply knowledge about the implementation of open government policies by showing how collaboration principle works in practice. Government Chief Information Officers constitute an important policy group responsible for the implementation of open government policies. CIOs maintain close connections with both corporate Information Technologists and civic technologist groups to ensure policy learning (Sabatier and Jenkins-Smith, 1999).

The analysis of the cognitive praxis of the FOSSM suggests the existence of multiple links between open government policy coalitions and movement values and practices. First, Information Technologists frame the collaboration principle of open government in accordance with O'Reilly's vision of "government as platform." This model represents a product of FOSSM's institutionalization and draws from the FOSSM social practices and the Raymond's model of collaboration, in particular. Second, bottom up civic technologist groups often identify with the hacker culture and explicitly embrace the principles of open source movement in their activities. Third, the Public Interest advocacy coalition taps into the FOSSM ideology and expertise to pursue its vision of a more transparent government. Government transparency

projects of civic hackers at Sunlight Labs have been instrumental to this vision. WikiLeaks project exemplifies the application of a radical political tradition of hactivism to government transparency and has its roots in the libertarian philosophy of the free software movement organized by Stallman in the 1980s.

The debate on the meaning of open government initiated by Beth Noveck has revealed ideological disagreements between advocates of government transparency, on the one hand, and advocates of government innovation, on the other. These disagreements also mirror the conflict between the leaders of the free software movement and open source movement, the moral and the pragmatic expressions of the hacker culture: while some hackers believe that the principle “information should be free” is intrinsically valuable, other hackers view it as instrumental to other goals. Even though it would be premature to directly apply FOSSM values to open government, some lessons can be learned from this hacker movement. Most importantly, the experience of FOSSM suggests that hacker culture has not been homogeneous as it has produced conflicting philosophies. At the same time the FOSSM’s different fractions share the common Hacker Ethics, which provides a strong foundation in dealing with any actual conflicts. For open government policies this means that the three advocacy coalitions will continue using FOSSM ideology as a common source of citizen mobilization to further promote open government policies.

On a broader scale, this paper contributes to our understanding of the impact of contemporary knowledge-based forms of civil society on policy change. In the words of the founder of the free software movement Richard Stallman, the movement has “changed the society in a smart way”

(Stallman, in Moore, 2001). The connections between the FOSSM and open government policies might indicate the structural transformation of contemporary information societies towards the network form (Castells, 1996) and towards a more distributed knowledge production model in general (Gibbons et al. 1994). A parallel shift towards distributed and network forms of governance requires better understanding of how these emerging forms of governance should be reconciled with public policy and public administration democratic institutions.

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