Civic Tech for Inclusive Governance

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The old saying that the cure for the ills of democracy is more democracy is not apt if it means that the evils may be remedied by introducing more machinery of the same kind as that which already exists, or by refining and perfecting that machinery. But the phrase may also indicate the need of returning to the idea itself, of clarifying and deepening our apprehension of it, and of employing our sense of its meaning to criticize and re-make its political manifestations.


**Abstract**

This article explores a unique subset of public sector innovations leveraging civic technology to achieve more inclusive and responsive governance. It argues that the growing field of civic technology (“civic tech”) and its public sector applications offer an opportunity for more inclusive governance in the practice of public administration. The article provides a unique definition of civic tech and then employs four illustrative case studies of civic tech being used to further inclusive governance in the United States to inform a typology of how precisely civic tech can be used in public administration. It extends beyond applying technology for modernizing government (“e-government”) or enhancing performance to articulate a framework for how technology can strengthen the democratic capacity of governance in order to engage a more diverse citizenry. Simply

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employing technology is not sufficient—rather, public leaders must work to embed the technology within a more inclusive and responsive governance process.

Practitioner Points

- Public sector officials can leverage multi-sector partnerships to capitalize and harness the expertise of academia, civil society, industry and philanthropy to spur civic tech for governance.
- Creating centralized repositories of interested funders, open source digital tools, collaborations, and best practices for civic engagement can streamline multi-stakeholder partnerships in order to circumvent some of the current institutional barriers facing government officials eager to implement change.
- In order to incorporate civic tech for more inclusive governance, practitioners can start small by piloting civic tech experiments and then move to embed and institutionalize new practices into governance.
- Public officials in the United States can learn best practices from a variety of global examples. Lessons learned can be shared internationally.

Introduction

It is common today to bemoan the state of our democracy, including such phenomena as growing citizen disaffection and the increasing influence of money in politics. In surveys about the country’s most serious problems, Americans continue to list government dysfunction over the economy. The 2015 Edelman Trust Barometer shows a global decline of trust in government, with numbers reaching historic lows. Further, a recent Pew survey found that trust in government remains at historic lows. Only 19% of Americans say they can trust the government always or most of the time. The majority of Americans (60%) think their government needs “major reform;” in the late 1990s, fewer than 40 percent of those surveyed thought so. Only 20% would describe government

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3 Edelman Trust Barometer, 2015.
programs as being well-run, and 55% of the public says that “ordinary Americans” would do a better job of solving national problems than elected officials.⁵

While these numbers are not conclusive, there is other data to suggest a weakening of the relationship between citizens and the State.⁶ As Archon Fung writes, “According to many indicia, the bond between citizens and political institutions has weakened in the United States and other industrialized democracies” (for discussions, see Fung, 2015, p. 3). A growing body of empirical research underscores the degree to which state institutions are subverted by disparities in political and economic power, which contributes to this crisis of democratic legitimacy. Some scholars point to the decline in traditional membership organizations (Putnam, 2001; Skocpol, 1999). Others demonstrate that political elites are beholden to special interests (Lessig, 2011) or disproportionately responsive to viewpoints of those in the top ten percent of the income distribution and not all sensitive to the middle of the distribution or below (Gilens, 2012).

Partly in response to citizens’ growing disaffection, however, a wave of participatory policy reform has emerged in America's largest cities, capitalizing on new technology and democratic experiments that aim to improve democracy. This typically includes local, place-based, community-driven interventions occurring both inside and outside of government. Often these approaches involve leveraging networks and digital tools. These instances of reform, collectively known as “open government,” “inclusive governance,”

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⁵ Ibid.
⁶ Throughout this article the term “citizen” denotes someone with the political standing to exercise voice or give consent to public decisions, not necessarily only someone with legal citizenship.
or “civic innovation,” are engaging policymakers, citizens, and civil society and revivifying long-dormant democratic instincts.

One example of this push for more participatory policy reform includes the recent Sustainable Development Goals (SDGs) and the commitment for furthering inclusive and responsive institutions. In September 2015, the United Nations voted on its SDG framework, the follow-up international agenda to the Millennium Development Goals. SDGs aim to eradicate poverty, build sustainable cities, and combat climate change. Unlike the Millennium Development Goals, which were largely devised in a top-down manner in New York and Geneva, the SDGs were conceived more democratically after three years of deliberation by a group of representatives from 70 countries.7 There was a high-level panel that included representatives from civil society, the private sector, and academia alongside local and national governments. In fact, the UN conducted the largest consultation in its history to shape SDGs.8 These conversations included thematic and national discussions, in addition to door-to-door surveys that sought feedback from a variety of stakeholders.9 There was also a MyWorld online.10

Perhaps as a result of this collaborative process, Goal 16.7 includes a commitment to:

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8 Ford, 2015.
10 See http://www.beyond2015.org/un-thematic-consultations
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels” to “ensure responsive, inclusive, participatory and representative decision-making at all levels.11

Collaborative Governance and Innovation

Governance innovations, unlike innovations in products or services, are concerned with “new forms of citizen engagement and democratic institutions” (Hartley, 2005, p. 28). Some have referred to a shift toward more “networked” or “citizen-centered” governance (Noveck, 2015; Benington & Hartley, 2001; Hartley, 2005).

Civic tech for governance differs from standard applications of technology to improve government efficiency or modernize systems (“e-government”). Civic tech used for governance is less focused on finding the next “killer app” than on employing technology in order to achieve more responsive and inclusive governance. As such, this article situates civic tech for democratic aims in dialogue with literatures examining innovative and collaborative governance (for discussions, see Moore & Hartley, 2008; Sørensen & Torfing, 2011; Ansell & Gash, 2007).

The innovation literature meant for both the public and private sectors helps set limited boundaries for what is and what is not an innovation. Sørensen & Torfing (2011) define innovation as an “intentional and proactive process that involves the generation and

11 See https://sustainabledevelopment.un.org/focussdgs.html
practical adoption and spread of new and creative ideas, which aim to produce a qualitative change in a specific context” (2011, p. 849). Innovation is something new; it is not simply another name for the same thing (Lynn, 1997). For Moore and colleagues (1997), innovation must be “large enough, general enough and durable enough to appreciably affect the operations or character of the organization” (Moore and Hartley, 2008, p. 5). Importantly, innovation is context-specific (Sørensen & Torfing 2011; Zaltman, Duncan, & Holbek 1973). Even if a practice has already been instituted in a different institutional context, it can still be an innovation when applied in a new setting or manner.

There has been a resurgent interest in public-sector innovation (Altschuler & Behn, 1997; Borins, 2001, Moore & Hartley, 2008). Often the focus of these public innovations is intra-organizational, aiming to improve services, products, and processes. Public-sector innovation, in contrast with that in the private sector, is not “often seen as a virtue in itself” (Hartley, 2005, p. 23). Without clear new markets or a clear understanding of competition, public-sector innovation must show that it is advancing public value (Moore, 1997, & Moore, 2013, for definitions and discussions of “public value”).

Scholars are pushing for more external-facing innovations, including public-private partnerships (Sørensen & Torfing, 2011, p. 852). Moore (1997; 2013) articulated an idea of creating public value that encouraged public managers to look outside their environment to gain a better sense of what was possible and valuable. A notable recent example is the Obama’s Administration creation of 18F and the United States Digital
Service to deploy service-delivery teams throughout agencies to optimize user-centric service delivery. These teams include designers, programmers, and digital experts whose task is to modernize service delivery in order to enhance the experience of everyday people.

Attempts to optimize government by using the latest technology do not necessarily lead to such democratic outcomes as more inclusive, responsive, participatory, or legitimate governance. In fact, there is a growing set of studies showing the limitations of technology in empowering citizens and, in particular, marginalized people (Rumbul, 2015; Peixoto & Fox, 2016).

Despite these limitations, there are two steps that must be taken to bring governance into the twenty-first century. Modernizing government is the first critical step. One example is creating digital interfaces members of the public can use to acquire driver’s licenses or receive Veterans Affairs benefits. The second step works not only to modernize an individual process but also to ensure that technology creates the necessary channels to enhance the relationship between citizens and the State.

Within this second iteration, technology can be used for civic ends, i.e., to empower people to take part in the process of governance. There are different terminologies—

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12 USDS and 18F are federal agencies with the goal of improving service delivery for citizens; they are comprised of teams of engineers, designers, coders, and policymakers. USDS is housed at the Office of Management and Budget (OMB) and is actively deploying USDS teams throughout agencies. 18F is housed at the General Services Administration (GSA); the building is physically located at 1800 F St., NW, Washington, D.C. See more at: https://www.whitehouse.gov/digital/united-states-digital-service and https://18f.gsa.gov/. These agencies grew out of the Presidential Innovation Fellows program, a fellowship to bring in technology experts for a rotation in the federal government. They reflect a general trend in the Obama administration to integrate technology into the federal government, which included implementing the positions of Chief Technology Officer and Chief Data Scientist.
including “inclusive” or “collaborative governance” and “participatory democracy”—used to describe processes that enhance civic opportunities in governance. These concepts have in common a push to re-engage everyday people in the policy decisions that impact their lives; “in the participatory conception, citizens engage directly with one another to fashion laws and policies that solve problems that they face together” (Fung, 2007, p. 450). For proponents of participatory democracy such as Benjamin Barber, common values include self-government, political equality, and reasoned rule (Fung, 2007; Barber, 1984, pp. 1988-89).

The literature on collaborative governance focuses on the types of institutional arrangements to engage citizens in decision making. Collaborative governance at its core “aims to ‘empower, enlighten, and engage citizens in the process of self-government’” (Sirianni, 2006, p. 39). One characteristic of collaborative governance is that it ensures that diverse stakeholders engage in a “collective decision-making process that is formal, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets” (Ansell & Gash, 2007, p. 544). Collaborative governance literature, then, is a body of work that could provide a theoretical framework to assess the types of institutional arrangements that could foster such civic opportunities.

Examples of institutional structures for more collaborative governance include minipublics and co-production. Scholarly work on “minipublics,” examines venues for direct citizen participation, such as the paradigmatic British Columbia Citizens’
Assembly (Fung, 2015; Fung, 2003; Smith & Ryan, 2014). There is a related literature on the opportunity for citizens to be co-producers of public services (Kettl, 2015; Boyle and Harris, 2009). Ostrom and Baugh first used the term “coproduction” in 1973 to refer to citizens’ more active roles in serving and improving government—and doing so more on par with the actions of elite professionals. An example of co-production includes Code for America’s “adopt a hydrant” campaign, in which people in California sign up for a specific hydrant (or even a rain duct) and assume responsibility for its upkeep during bad weather conditions (Kettl, 2015, p. 225).

This article aims to bring the nascent civic tech movement in dialogue with these more established frameworks on collaborative governance and innovation. Its goal is to conduct a rigorous inquiry that aims to understand the precise ways in which technology can affect public policy outcomes. The rise in access and availability of digital technology presents, at least in theory, an opportunity to deepen inclusive and collaborative governance. As a first wave of technological idealism adjusts to the realities of people, politics, and institutions, there is a need for more scholarly examination of the precise pathways by which digital technology can affect governance.

An initial wave of technologists was optimistic about the opportunity for information technology to transform democracy. Scholars examined the opportunity for new bloggers to enter into public discourse (Chadwick, 2006) with the promise of bringing about a

14 See Code For America “Adopt a Hydrant” retrieved from https://www.codeforamerica.org/products/adopt-a-hydrant/
newly networked public sphere (Benkler, 2006). In 2004 Joe Trippi noted, “The Internet is the most democratizing innovation we’ve ever seen–more so than even the printing press” (2004, p. 235). Clay Shirky outlined a vision of co-production in which the Internet enables people everywhere to work together: “These changes will transform the world everywhere groups of people come together to accomplish something, which is to say everywhere” (2008, p. 24).

However, the last decade has made manifest some of the challenges in implementing this utopian vision, in part due to the character of political incentives and institutional constraints. For example, Hindman’s (2009, 104) research illustrates that the most popular political bloggers have elite resumes. Fung, Gilman, & Shkabatur (2013) have argued that Internet Communications Technologies (ICTs) are more likely to have an incremental, rather than a transformative, impact on politics. In particular, ICTs will be most successful when they work within existing political ecosystems and leverage traditional organizations, such as media outlets or NGOs.

This paper examines the opportunity within governance structures, primarily on the local level, for fostering more inclusive governance. Below it presents the current landscape of discussions of civic tech and provides a stylized definition of civic tech for governance innovation. Rather than being exhaustive, the definition aims to narrow the field of civic tech so that it encompasses only that area of the field aiming to further democratic goals such as inclusion and participation.
Civic Technology

Civic technology is an emerging field lacking a universally accepted definition. This causes confusion about its contours—particularly about to what extent it is public and to what extent it is private—but also provides opportunities for creativity. According to a Microsoft vice president, “Broadly defined, civic tech ranges from engagement between the city government and its population on social platforms, all the way to enterprise solutions that offer deep government IT problem-solving.”\(^\text{15}\)

Despite the lack of a coherent definition, civic tech continues to grow as a field. In 2014, a $23 million venture fund called GovTech launched to focus on technology to improve government services. According to a study by the International Data Corporation (IDC), sponsored by the software company Accela, civic tech investment will reach $6.4 billion in 2015 (Clarke, 2014).\(^\text{16}\) This figure is just a piece of the $25.5 billion the government spends on external information technology (IT). The IDC report defines civic tech as merging “technology innovation with civic purpose” and cites its rapid growth, particularly in state and local government. One area of this form of civic tech is upgrading legacy government systems, generating citizen-facing services, and ensuring websites have mobile access. Another is creating greater access to, and transparency of, data and policy performance.


\(^{16}\) This large investment represents just a fraction of the $25.5 billion expected to be spent on government IT services.
Further, contentiousness among stakeholders about definitions evidently has not dampened either the excitement or the funding in the civic sector. In 2013, the Knight Foundation released a report showing that the number of civic tech organizations had grown 23% in 2008, with a total investment of more than $431 million. The report cited two broad themes: community action and open government. Within these categories fell: collaborative consumption; government data; crowd funding, community organizing; and social networks. Some critiqued the report because of its inclusion of peer-to-peer sharing and other for-profit entities such as Airbnb (funded at $118.6 million) and Waze (funded at $30 million).\footnote{See Nathaniel Heller “The Sharing Economy is Not Civic Tech,” Global Integrity, retrieved from www.globalintegrity.org/2013/12/the-sharing-economy-is-not-civic-tech/}

The Knight Foundation’s definition of civic tech is broad and includes projects that are not directly related to politics, such as: peer-to-peer sharing projects (e.g, Peerby, Lyft, Relayrides, Uber); neighborhood-level social networks (e.g. nextdoor); and data utility (e.g., textmybus). The Knight Foundation’s $431 million figure limited civic tech to investments by foundations and corporations, thereby excluding government and public funding. But they still estimated that, as noted above, there has been 23% growth in this area from 2008 to 2013.

This paper proposes to narrow the definition to put democratic institutions front and center. It defines civic tech as: technology that is explicitly leveraged to increase and deepen democratic participation. This definition includes both the use of new digital tools specifically designed to promote democratic deepening and the repurposing of old
digital tools (e.g., webcam sit-in, mail campaigns) with the new objective of deepening
democracy. By design, this is a stylized definition that excludes technology used solely
for modernization or market gain.

Method

The purpose of this article is to begin a rigorous, detailed investigation into a particular
application of civic technology. This type of civic technology is used for the more
inclusive and collaborative governance that seem increasingly important for public
policy, yet remain less well understood by political science and public policy literature.
The method employs a small number of public-sector applications of civic technology
(based on first-hand interviews, documentary evidence from case studies, and official
reports) that fall within a broader set of civic technology for governance. These cases are
not aimed at offering a complete evaluation of social impact or comprising a
representative sample. Instead, they are offered as particular examples of innovations
that are not currently accounted for by existing theories. They are valuable cases in the
opportunity they provide to change conceptual understanding. The cases illustrate the
opportunity to reframe the discussion of civic tech around promoting democratic
outcomes such as enhanced citizen engagement with governance. The cases lead to a set
of public policy recommendations to inform researchers and practitioners.

Civic Tech for Inclusive Governance: Important Paradigms

Boston New Urban Mechanics
In 2010, at the beginning of Mayor Menino’s fifth term, Boston launched the first Mayor’s Office of New Urban Mechanics (MONUM).\textsuperscript{18} The office was designed to pilot experiments and work directly with entrepreneurs. The goal was leveraging technology and innovation to improve the quality of City services and to strengthen the relationship between citizens and the City to promote “peer-produced governance.”\textsuperscript{19} Menino had long been interested in the process of tinkering with tools, which gave him the nickname “The Urban Mechanic.” Since 2010, the office quickly gained momentum, with the two co-heads receiving an award as the Public Officers of the Year from \textit{Governing Magazine}.\textsuperscript{20} MONUM has been recognized as a global example, including by the UK Innovation Unit NESTA, and recently received $1.3 million as part of the Bloomberg Philanthropies Innovation Team program aimed at developing solutions to the middle-income-housing challenge.

MONUM grew out of a desire to leverage technology to modernize government services and to enable the overworked staff of City Hall to run innovation projects, often with international policy experts and external entrepreneurs. A core principle was to more deeply engage residents with City Hall. Though only an initial team of five, the team was able to permeate the city culture and create a test environment for civic experiments.

Prior to officially launching MONUM, its co-founders took advantage of the momentum and distribution of smart phones to develop a cutting-edge application, \textit{Citizens Connect},

\footnotesize{\textsuperscript{18} Retrieved from http://newurbanmechanics.org/boston/ \\
in 2009 (Crawford & Walters, 2013). The app creates a streamlined process for residents to report local issues directly to the right municipal agency, empowering them to improve the condition of their neighborhoods. It has been used by over 70,000 residents across multiple platforms, including a web-based interface and Android. The app now accounts for one-fifth of all city service requests, or roughly 10,000 per year.21

Since its launch, the project, now called Commonwealth Connect, has expanded from Boston to encompass over forty Massachusetts communities. The latest version of Connect includes a mini Customer Relationship Management (CRM) system with a call center, visible city worker completion of a task, and the capacity to generate reports (Crawford & Walters, 2013). Residents may even “thank” city workers for completing a task. As Crawford and Walters write, “Boston may be the best in the country in late 2013 at engaging people and building relationships that further the aims of city government, but it is not clear what will happen to this culture when the key people leave the building in January 2014 (2013, p. 25).”

Since Boston’s new mayor took office, the MONUM have moved from a pilot initiative to become more embedded and institutionalized within government. Importantly, from the start, MONUM has been focused on civic engagement—not only on modernizing performance management—and is currently using its expertise in civic engagement to address several core policy areas for City Hall. This includes: enabling Boston to be a premier digital school district by 2020; increasing access to city services with a refurbished truck, City Hall to Go, that delivers services directly to the people; and

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21 Schreckinger, 2014
running a Housing Innovation Lab committed to attracting small business and retaining affordable housing. The support of Bloomberg Philanthropies has enabled increased staff capacity as well.

The MONUM model has spread to Philadelphia and Salt Lake City and continues to serve as an international paradigm for cities. The success of MONUM illustrates the opportunity for digital technology to alter institutional culture, making it more amenable to experimentation and focused on residents. MONUM takes the needs of the citizens as users very seriously—even conducting a thorough ethnographic study to understand housing needs for lower-income communities. Throughout these endeavors, MONUM has worked to produce the types of tools and technologies that can be easily accessed by residents. Further, MONUM’s ability to become more embedded in the structure of City Hall provides a promising model for transforming experiments from ad hoc processes to core governance functions.

**Participatory Budgeting in New York City**

While participatory budgeting (PB) is just now taking root in the United States, it traces its origins to a unique initiative started in 1989 in Porto Alegre, Brazil, by the leftist Partido dos Trabalhadores (Workers’ Party, henceforth PT). Participatory budgeting gives citizens the opportunity to learn about government practices and to come together to deliberate, discuss, and substantively have an effect on budget allocations (Shah, 2007). In its original campaign for participatory budgeting, the PT outlined four basic principles guiding PB: (1) direct citizen participation in government decision-making
processes and oversight; (2) administrative and fiscal transparency as a deterrent against corruption; (3) improvements in urban infrastructure and services, especially in aiding the indigent; and (4) a renewed political culture in which citizens serve as democratic agents. Recent research convincingly demonstrates that in the last twenty years PB has enhanced the quality of democracy in Brazil, improving governance and empowering citizens. Other positive outcomes linked to specific uses of PB in Brazil include increased municipal spending on sanitation and health, increased numbers of CSOs, and decreased rates of infant mortality (Touchton & Wampler 2014, p. 1444); Goncalves (2014).

Since then, PB, often supported by the World Bank or foundations and civil society, has spread across the globe to over 2,500 localities The process first came to the United States in 2009 in Chicago, where an alderman used $1.3 million of his discretionary funds to make American civic history.22 Since then, the process has continued to expand with political support from the White House, with over $50 million in local based public funds being allocated. In New York City, the Participatory Budgeting Project has worked closely with Community Voices Heard, a local membership-based organization that focuses on women of color and low-income families, to support and expand the process. In 2011, New York City launched the largest domestic project with bi-partisan support and four City Council members implementing PB. Since then, the process has grown to over half the City Council, with 27 of 51 Council members implementing PB

22 Newcombe, 2012; See Weeks, 2000, for large-scale deliberative processes in the early 1990s that engaged citizens to address municipal-budget concerns in Eugene, OR, and Sacramento, CA. For other examples of U.S.-based citizen engagement on budgeting, see Center for Priority Based Budgeting 2015 (retrieved from http://www.pbbcenter.org/).
for 2015-2016. NYC’s PB has been effective at ensuring that PB voters represent a larger percentage of previously marginalized residents than do voters in traditional elections. In 2014-2015, 51,000 residents voted. The majority of PB voters (57%) identified as people of color, in comparison to 47% of local election voters and 66% of the total population of the twenty-four districts participating.23

New York City is experimenting with a range of digital tools to engage people in the PB process, exporting successful examples from other countries. For example, Belo Horizonte, Brazil, has solely online PB, through which roughly 10 percent of the city’s eligible voters participate (Sampaio & Peixoto, 2014). Online participation was between three to five times higher than participation rates in face-to-face rounds of PB occurring in the same year (IBM Center, 2011, p. 36).

In 2015 New York’s PB used electronic ballot counting and a partnership with Textizen, which started as a Code for America project.24 The City Council has created a web-based mapping tool for gathering crowdsourced public input for project submissions. The geo-


targeted maps enable people to drop a pin on a map and provide ideas, suggestions, and comments. The maps are powered by OpenPlans open source technology.25

In the 2015 PB vote, New York City, in partnership with Stanford University’s Crowdsourced Democracy Team and Democracy 2.1, tested alternative ways of voting with the goal of making voting “as easy an ATM.”26 New York City employed a digital ballot experiment, with both iPads for mobile kiosks and computers for in-person voting. In 2016, New York’s PB is slated to conduct the first-ever remote online voting with an integrated online/offline ballot. Researchers from universities across the world are partnering with Public Agenda, a New-York-based non-profit, and the Participatory Budgeting Project, to conduct research on the process and its impact.

The rise of the PB process and civic tech experiments in New York illustrate the opportunity for cross-national learning to engage citizens in governance. While it started in Brazil, PB continues to grow and change shape based on the specific context in which it is deployed. Similarly, the precise application of digital tools also varies among specific communities. Sharing these lessons learned, including obstacles, creates an opportunity for illustrative civic tech to translate across borders in order to inform a deeper practice of innovation.

Chicago OpenGrid

Chicago has created OpenGrid to provide an open source, situational awareness system to that enables people to easily access a centralized open source repository of public information.27 OpenGrid reflects one of the most advanced deployments of government data to empower citizens.28 It also reflects the latest project in Chicago to build open source data efficiency that is scalable.29 Chicago’s WindyCity platform integrated seven million pieces of data from city departments every day and paired it with a powerful analytics tool to create data visualization to equip managers with new insights on city operations in real time.30 It won $1 million from Bloomberg Philanthropies Mayor’s Challenge.31

OpenGrid also includes a series of data installments led by the Chicago city government. An earlier project, WindyGrid, provided an open-source situational awareness system for government employees, which Chicago helped roll out in other cities. WindyGrid led to internal efficiency that, in turn, informed the building of a public facing interface.

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27 See also “Chicago Tech Plan,” City of Chicago, retrieved from http://techplan.cityofchicago.org/
earlier processes to modernize government have directly led to a more engagement-oriented design.

Now Chicago has moved beyond internal efficacy to create an external situational awareness interface that allows everyday people to engage with the city’s information. Even with open data portals in many major cities across the globe, it can be difficult for a layperson to quickly find the relevant data in a sea of information. OpenGrid is a map-based application made by Chicago’s Department of Innovation and Technology (DoIT) that provides an intuitive visual so that residents may understand complex municipal data and use that understanding to interact with their community.

The city is partnering with outside collaborators whom they see as key beneficiaries, including the University of Chicago’s Urban Center for Computation and Data and the Smart Chicago Collaborative, comprised of local civic organizations including MacArthur and the Chicago Community Trust. According to Chicago CIO and DoIT Commissioner Brenna Berman, “At the Department of Innovation and Technology, our clients are the residents and businesses of Chicago. We’re driven by what they need, and how we can serve them.”32 For example, prospective entrepreneurs can use OpenGrid to identify nearby permits and licenses. Residents, researchers, or community organizations can understand the pulse of the city, ranging from crime and environmental inspections to 311 calls.

32 Thornton, 2016.
OpenGrid reflects the latest version of open data being released to spur civic education, agency, and industry. For example, in the 1970’s the United States’ National Oceanic and Atmospheric Administration began releasing its daily weather data to the public. That data, in turn, helped spawn the modern weather industry and is used by hundreds of companies, from Weather.com to countless smartphone apps. Similarly, the government’s releasing GPS data in the 1980’s led to the creation of an entire industry, from car GPS devices to Google Maps.

In contrast to the older examples, in which data was simply released without an engagement strategy, OpenGrid is designed for participation, collaboration, and replicability. Chicago’s Civic User Testing Group is comprised of residents from across the city who test civic websites and apps and then provide direct feedback. The Grid is engaging these users to understand how residents can most benefit from the information. The coding and user documentation is publically available on the file-sharing site GitHub. In theory, other cities can leverage the code for their own databases. OpenGrid won Amazon’s “Dream Big” award in its City on a Cloud innovation Challenge. Now, Amazon Web Service is providing support that can also enable other cities to leverage this model.

OpenGrid illustrates that opening up data alone will not necessarily lead to more democratic outcomes. Citizens are living in a supersaturated data environment that does not inescapably lead to more informed or empowered citizenry. Cities across the country,
nevertheless, are taking lessons from Chicago in order to implement experiments with their own platforms to democratize access to open data.

**Rhode Island Civic Crowd Funding**

Central Falls, Rhode Island, is a densely populated community in a small geographic area, with Rhode’s Island only majority-Hispanic community. In 2011, Central Falls declared chapter 9 bankruptcy, marking the first time a city in Rhode Island had declared bankruptcy. In this socio-political climate, the city government decided to try something new to engage the community around a shared project. They partnered with Citizinvestor, a crowdfunding and civic engagement site similar to a Kickstarter for governments, to launch a civic crowdfunding campaign, one of the first in the United States. Municipalities post a project with a funding goal. Citizens donate online. If the goal is met, the municipality receives the funds minus fees. It's an all-or-nothing model—in order for the entity to receive the funds, the fundraising goal must be met.

Central Falls hosted town halls about the funding proposal in order to gauge where community interest lay. The community responded by talking about the lack of proper trash bins in the central park of the city. Central Falls launched a Citizinvestor campaign that hit their goal of $10,044. Local residents were active participants in every part of the process: identifying the area for fundraising; pledging their own dollars; and collaboratively designing artistic trash cans, working directly with local arts nonprofit

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The Steel Yard. Community members even came out to directly place the trashcans and paint them. The project invigorated the community in a way that was both functional and led to direct improvements in public life.

What precisely is civic crowdfunding? Rodrigo Davies provides a definition: “Civic crowdfunding projects can therefore be defined as projects that produce some non-rival benefits that serve either the non-excludable public or broad sections of it” (Davies 2014, p. 29). According to Davies the most popular civic crowdfunding projects involve parks.

Several cities across the United States have been experimenting with civic crowdfunding, and they are learning from one another. Philadelphia was the first city to partner with Citizinvestor in a campaign to fund TreePhilly.35 While they did not meet their $13,000 funding goal, their lessons learned have shaped further civic crowdfunding experiments. This includes launching more focused projects that are applicable to specific communities and ensuring that crowdfunding does not become a substitute for existing public resources. Instead, it should be used to supplement public funding.

Some states are starting to develop laws to govern crowdfunding. One such state is Oregon, which allows Oregon-based companies to raise up to $250,000 from Oregon Investors to start new businesses or fund existing operations. No single investor can invest more than $2,500 in any one project.

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Civic crowdfunding is concerned with distributional equity, more specifically with ensuring that it is not only wealthier residents who can afford specific amenities for their communities. Civic crowdfunding has been limited to specific projects and can help generate immediate gratification for citizens. Each project can also generate larger lessons—insight from Philadelphia helped inform future efforts in Central Falls. As the process continues to spread, each experiment creates a valuable model that can help generate a set of best practices and considerations to inform future projects.

**Initial Inquiries and Limitations**

These applications of technology seem to warrant their own classification and further inquiry. How can we understand these civic tech applications? They seem to inform a more comprehensive toolkit for re-engaging citizens in governance and policy decision-making. In this article, I have limited the discussion specifically to civic tech used within a governmental capacity. There is additional research needed both to assess implementation in organized civil society and to do a deeper assessment of how civic tech can better strengthen the interface between government and people. I have also only focused on “positive” examples that fall into the schema I have outlined. There are methodological limitations to this approach. The four cases above are, however, valuable because they can change people’s conceptual understanding of how technology can be employed in governance. These cases show that the conversation about technology need

not be limited to its potential to modernize government performance; in fact, technology can also enhance the democratic capacity of governance to engage a more diverse citizenry. Outlined below are three unique characteristics of civic tech for governance with relevant policy recommendations.

**Lessons Learned: Civic Tech for More Inclusive Governance**

**Leveraging Multi-Sector Partners**

Each of the examples took advantage of a wide range of talent and expertise—from technologists and entrepreneurs in the MONUM to well-organized membership-based civil society in PB in New York City. Each of these initiatives has had a partnership with external experts, such as the Citizinvestor platform, and external entities such as the Amazon Web Services in Chicago, from which OpenGrid leveraged resources. MONUM now has more staffing capacity because of Bloomberg Philanthropies. PB has spread across the United States with the backing both of philanthropies such as Omidyar Network’s Democracy Fund and grassroots-level support. OpenGrid has partnered with the Smart Chicago Collaborative, which is funded by the MacArthur Foundation, and the Chicago Community Trust.

The civic tech examples here also utilized university expertise. This could take the form of fellowships (e.g. MONUM), computing power (e.g. OpenGrid), or research support (PBNYC). The methods employed enabled public-private partnerships and created entry points for the public sector to leverage external resources.
These cases show that policy makers can think more expansively about the resources at their disposal and structure civic tech experiments with the deliberate intent to engage multi-sector stakeholders. The result is securing more resources to fund public projects and harnessing experts who may not typically be associated with governance. Structuring projects to include diverse stakeholders is a key strategy for more inclusive governance.

**The Embedding and Institutionalization of Pilot Programs**

Many of these examples started as pilots and went on to become more embedded in institutionalized structures. When they started, the Boston New Urban Mechanics were able to create prototypes of several kinds of programs in a lean and agile way. Because their work gained momentum and won support from citizens, they now are being asked to solve critical problems for the city systematically. PB also began as a pilot with $1 million in public funds, and now upwards of $50 million is being allocated through the process. In Central Falls, Rhode Island, city managers explored new ways of engaging citizens in decision-making regarding precisely where and how to fund public programs. Considerable improvisation was needed, as the city had never before used civic crowdfunding. Citizens were involved in identifying projects, spending their own dollars, and even setting up the trash bins ultimately paid for by the crowdfunding.

The leaders of these projects were able to take otherwise impossible risks because they were starting out with small and nimble programs. This fact produced both less pressure from the outset and the ability to think more creatively about implementation. Learning
from mistakes, leaders and participants were able to refine processes and gain external validation. As the projects gained traction and support, they could become more embedded into institutional processes.

Policy makers can see a certain type of freedom in pilot projects, in which the stakes are lower than usual, creating less pressure. Experiments offer an opportunity to reach citizenry in non-traditional ways, which is particularly helpful for outreach to traditionally marginalized communities, as well as to expand the traditional public service delivery model of citizen as mere customer. Instead, citizens can be empowered to participate in more inclusive decision-making through well-structured pilots.

**Learned Lessons Across Contexts**

Because civic tech is not bound to one geographic region, many of these examples take a more networked and global approach. Such networks enable project developers and participants to apply lessons learned from various contexts. Participatory budgeting first began in the Global South and is quickly spreading across the North. Philadelphia was the first city to experiment with a Citizinvestor public funding campaign, and, though they did not reach their goal, valuable insights from their process directly improved the processes in other cities. The Chicago DoIT ensures that all the code for the city is open source and available on GitHub. Other cities, in turn, can use this code for their own public interfaces, which creates more open and democratic data.

In several of these examples, prior experiments and pilots in different locations generated shared lessons. Best practices from global experiments can be adapted to fit specific
contexts and local needs. These experiments do not need to be viewed in isolation from one another; rather, each can serve as a useful breeding ground for ideas for further implementations.

Policy makers can learn lessons from many types of actors across diverse contexts. The result can be a more expansive approach to innovation, which is inclusive of diverse cultures and backgrounds. But it is critical to apply these lessons in context and in a way that is sensitive to the local socio-political context and environment.

**Can Civic Technology Really Enhance Democracy?**

The article’s examples illustrate a new way of doing business, one in which citizens themselves are put front and center in discussions of technology. Although there will be many debates on how to measure and deploy digital tools, there are certain questions specific to the realm of civic tech for inclusive governance. Consider the following three:

First, what are the incentives for government officials to implement these civic tech innovations? These processes are labor-intensive by design. Engaging citizens for more inclusive governance requires resources, time, and intentionality. In times of spending cuts and austerity, how can government prioritize citizen engagement? This is especially true given normative views of a less robust democracy, in which voting is considered sufficient for participation.\(^{37}\) While I have outlined the potential for multi-stakeholder partnerships to buttress these programs, government buy-in and support are still required.

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\(^{37}\) There are more minimalist conceptions of democracy, such as aggregative democracy. For discussions, see Fung, 2007. Throughout this paper I am arguing for a more participatory approach to democracy.
to structure the partnerships. Getting officials to agree to these projects will require building a robust evidence base of what works and why. Even well-intentioned public administrators may face ossified political structures that prevent them from fully engaging with citizens (Peixoto & Fox, 2016). Creating centralized repositories of interested funders, open source digital tools, collaborations, and best practices for civic engagement can streamline multi-stakeholder partnerships in order to circumvent some of the current institutional barriers facing government officials eager to implement change.

For those officials more reluctant to take the risk of innovating, successful examples in other localities across the globe may provide necessary political cover for further experimentation. In all of these cases, external support can accelerate implementation and serve as a public endorsement.

The second, related, challenge is, how can we measure the impact of nebulous concepts such as inclusive governance? How can we measure feedback loops from civic participation back to the people? Is it simply the number of people who participated or the type of people who engage (including their demographic diversity as well as prior levels of civic engagement)? Or should we be measuring the quality and efficacy of their engagement? These processes may take a long time to show results. Positive community indicators from deploying Participatory Budgeting in Brazil, for example, are only evident after many years. We need to do longitudinal studies of impact in a political environment that rewards instant gratification and success. As evidenced in Chicago, simply providing open data is not enough. Metrics on government’s releasing of data are insufficient on their own. Rather, this data must be strategically deployed to engage
citizens when and where they need information the most. Textured measures combining quantitative and qualitative metrics are therefore more valuable than numbers alone. A metric that simply captures the number of open data sets will not tell the whole story.

Finally, how do we balance one-time experiments with the need for institutionalization? As mentioned earlier, there is a certain type of power that comes from pilot and ad hoc experiments. There is greater willingness to explore and take risks during these types of pilots. Citizens can serve as true co-producers when the bureaucratic rules are not yet fully formed. There is a tension, however, between conducting small pilots and building more inclusive governance institutions. Smaller pilots are more likely to get off the ground quickly within a climate of at least some bureaucratic constraints. However, if pilots are limited to engaging citizens to solve only small-scale problems, citizens may become disillusioned with a process they view as trivial (Fung, 2015, p. 9). Archon Fung describes this as “the park bench problem” (Fung, 2015, p. 9). If pilots are viewed as trivial in the sense of pertaining only to small-stakes politics, such as whether there are enough park benches, they will lose their ability to bring about lasting change. Smaller-scale experiments within government institutions, therefore, should be viewed as vehicles for achieving quick victories and fostering more institutionalized forms of inclusive governance. A one-time small pilot, however, is not enough to transform citizen engagement, which is why longer-term institutionalization is so important. Once projects are embedded within agencies and institutional structures, they are less vulnerable to leadership turnover and may, as a result, be able to expand in scope. Embedding pilots within government agencies has its own challenges, including securing a continuous
pipeline of leadership and resource support. Showing the quick victories from initial small pilots can be very helpful in overcoming these obstacles.

Conclusions

This article has tried to show that the conversation about civic tech need not be divorced from discussions on governance innovation and collaboration. On the contrary, civic tech can be used precisely to support more inclusive and responsive governance.

Incorporating these techniques into a broader public administration toolkit requires an understanding of the lessons learned from prior implementations as well as dedicated leadership, structured multi-sector partnerships, and shared learning across contexts to deepen these processes. It will not happen overnight. However, democracy at its core has always been about experimentation and adaptation. Now is the time for public administrators to put these principles to the test.
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