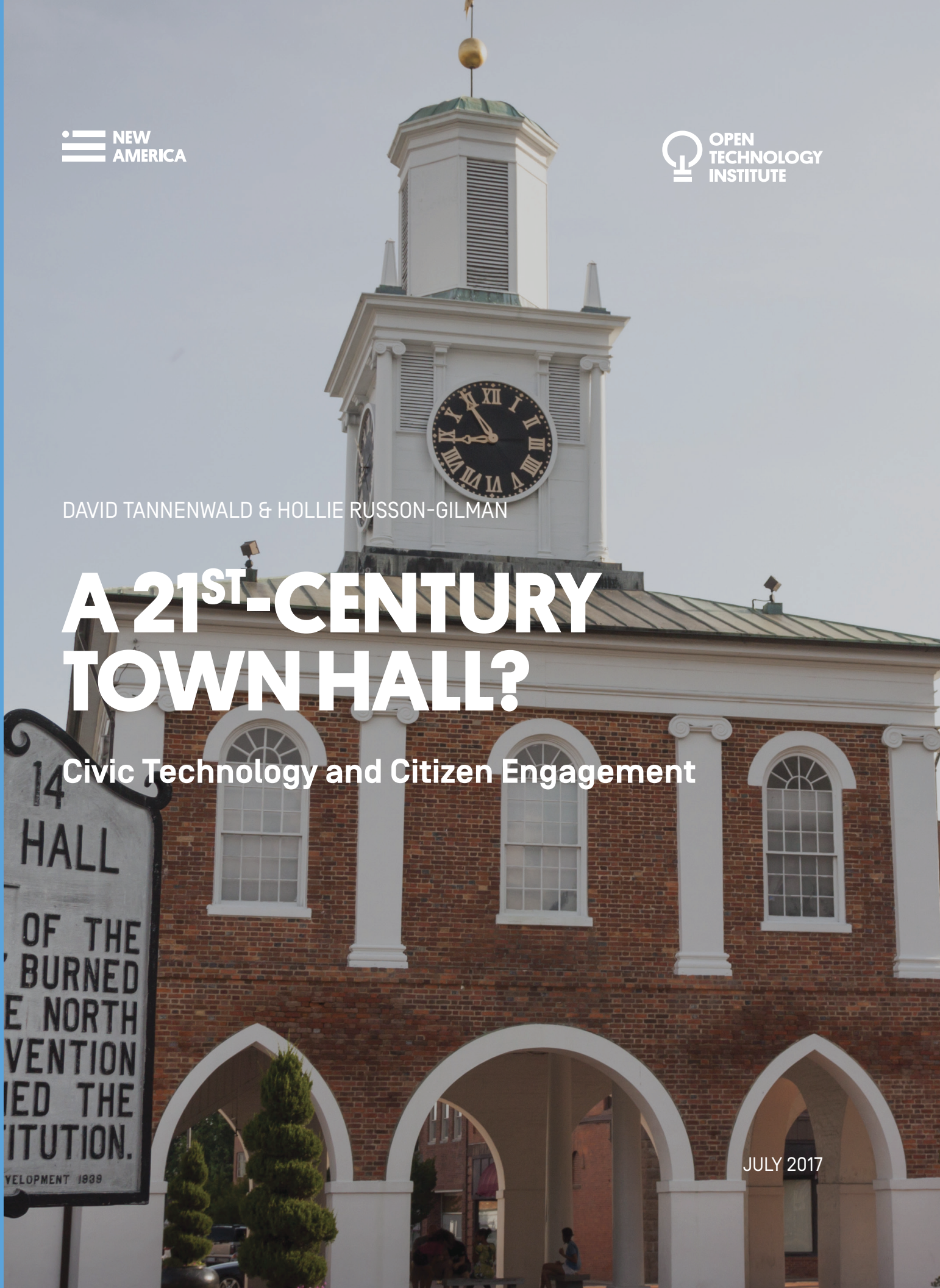

NEW AMERICA

OPEN TECHNOLOGY INSTITUTE

DAVID TANNENWALD & HOLLIE RUSSON-GILMAN

A 21ST-CENTURY TOWN HALL?

Civic Technology and Citizen Engagement

JULY 2017

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About New America

New America is committed to renewing American politics, prosperity, and purpose in the Digital Age. We generate big ideas, bridge the gap between technology and policy, and curate broad public conversation. We combine the best of a policy research institute, technology laboratory, public forum, media platform, and a venture capital fund for ideas. We are a distinctive community of thinkers, writers, researchers, technologists, and community activists who believe deeply in the possibility of American renewal.

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About OTI

The Open Technology Institute (OTI) works at the intersection of technology and policy to ensure that every community has equitable access to digital technology and its benefits. We promote universal access to communications technologies that are both open and secure, using a multidisciplinary approach that brings together advocates, researchers, organizers, and innovators.

About the Case Study

This case study was created as part of the Open Technology Institute's effort to create a curriculum focused on how digital technology is transforming public policy and governance. It is intended for use in a classroom setting.

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A 21ST-CENTURY TOWN HALL?

With its bright red brick chimneys and elegant white hue, the Town Hall in Pelham, Massachusetts stands tall against a tree-lined backdrop. For over 270 years, Pelham residents have convened there annually for a town meeting in which they "discuss and vote on vital town issues."[1] As Frank Bryan, a political scientist at the University of Vermont, argued, these meetings represent "real democracy." "Real democracy," elaborated Bryan, who introduced his book, *Real Democracy: The New England Town Meeting and How It Works*, with a vignette from a town meeting in Athens, Vermont, "(for good or ill) occurs only when all eligible citizens of a general-purpose government are legislators; that is, called to meet in a deliberative, face-to-face assembly and to bind themselves under laws they fashion themselves."[2]

Roughly 141 miles southwest of Pelham's Town Hall is Civic Hall, a "sun-drenched" space in lower Manhattan.[3, 4] At first glance, the facilities have little in common. The Pelham Town Hall is designed to accommodate the town's population of 1,321 people, whereas Civic Hall is ensconced in a city of approximately 8.5 million people.[5] What's more, Pelham residents typically convene to decide questions such as the salaries of public officials; by contrast, Civic Hall members—armed with laptops and smartphones—have collaborated to host an annual "Personal Democracy Forum"; produce *Civicist*, a publication devoted to civic technology news; and serve as an incubator for innovative ideas and initiatives.[6]

Still, much like the Pelham Town Hall is expected to act as a cornerstone for local government, Civic Hall was created to serve as a place where "a community of action-oriented, cross-sector professionals...aim to better the world through civic tech."[7] Thus, both structures and the communities that inhabit them embody an age- old question: what is the best way to engage citizens in the democratic process and governmental decision-making?

That question is especially pressing in 2017. For much of U.S. history, citizens have relied on a traditional set of means—such as town meetings, voting, petitions, financial contributions, writing letters to the editor and opinion pieces, and demonstrating—to engage in the democratic process.[8] Now, however, in an era in which trust in government has eroded, political dialogue has become extremely polarized, and voting rates have ebbed, some believe that we need to find new ways to bolster citizen engagement.[9] "It falls to each of us," said President Obama in a farewell address that emphasized the multifold threats to U.S. democracy, "to be those anxious, jealous guardians of our democracy; to embrace the joyous task we've been given to continually try to improve this great nation of ours. Because for all our outward differences, we share the same proud title: Citizen."[10]

Some see civic technology—"technology that enables greater participation in government or otherwise assists government in delivering citizen services and strengthening ties with the public"—as a salve for democracy's woes.[11] The editors of the *Paris Innovation Review* argue:

> Amidst the crisis of our Western democracies, undermined by a growing gap between citizens and their representatives, by abstention and by the rise of extremism, civic technology revives the democratic process by improving information, enabling greater citizen participation and empowerment, ultimately improving government transparency.[12]

Others are skeptical of civic technology's transformative potential. This is in part because the field remains nascent, which make it difficult to gauge impact.[13] In addition, some lament that civic technology lacks a "shared identity" and "shared vision," let alone a universally agreed-upon definition of civic technology.[14] As Micah Sifry, the Editorial Director of Personal Democracy Media, argued, "It's not enough to assume that, like the Supreme Court and obscenity, we know good civic tech when we see it. And if we can't say why something is good (or even great), how can we know what to design for? Indeed, how do we even know if we're after the same design goals?"[15, 16]

Defining and measuring the impact of civic technology is beyond the scope of this paper; however, it does endeavor to introduce students to the field as well as provide a flavor for how different organizations are using civic technology to engage citizens. In particular, the case study that follows includes an overview of civic technology along with three vignettes about cities and organizations that have taken on some of the most innovative efforts in the country:

- In the City of Chicago, a group of municipal officials led by former Chief Data and Information Officer Brett Goldstein, have employed data "to improve the way city government serves its residents and established one of the largest open data programs in the country."[17]

- Neighborly, a for-profit company based in California, is transforming and "democratizing" the municipal bond market by bringing it "into the digital realm" and giving people a voice in how those funds are invested.[18]

- In the City of Boston, the Mayor's Office of New Urban Mechanics has launched and leveraged a number of innovative technological initiatives, including Community PlanIt, an interactive tool to engage citizens in planning and dialogue.[19]

These vignettes illuminate the kinds of questions with which leaders are grappling as they weigh how to move forward with civic technology. Among them: What are the different levers that government leaders and civic technologists can employ to engage citizens? In an era of rapid technological change, how much do more traditional factors—such as team building, leadership, and financing—matter? How can governments channel technology's benefits while mitigating risks? Most fundamentally, what is the best way to create a strong government-civic technology interface to maximize citizen engagement and ensure the continued strength of democracy in the twenty-first century?

BACKGROUND ON CIVIC TECHNOLOGY

The term civic technology has only entered popular parlance in recent years; however, the field stems from a set of ideas that have been gestating for decades. Dating back to the creation of the internet, many hoped that modern information technology would produce broader benefits, including, as Thierry Vedel, a French political scientist, said, "the improvement of democratic systems."[20] Unfortunately, that ideal initially ran up against the realities that government bureaucracies are often slow to adapt to and incorporate modern technologies as well as the fact that access to those technologies is distributed inequitably.[21] More recently, however, many have pushed back against these notions. This is in part because there is growing demand for "tech-savvy" government.[22] In addition, civic technologists are hoping to use technology's power to benefit a broader population. "For many," suggests Colin Wood, a former staff writer for *Government Technology*, "civic tech is the bridge between government's mission and modern technology's potential." Adds Candace Faber, a civic technology advocate in Seattle, "I think the reason civic tech exists is because, so far, technology has not fulfilled its promise to make society more equitable."[23]

Buoyed by leaders like Faber, civic technology has recently experienced a surge in activity and support. The field grew at an annual rate of 23 percent from 2008 through 2012; and from late 2013 to late 2015, actions and affiliations involving civic technology rose by 39 percent and 107 percent, respectively.[24] Civic technology has also expanded its geographic reach, establishing a significant presence in not only major U.S. metropolises, such as San Francisco and New York City but also smaller cities, including Virginia Beach and Kansas City.[25] Finally, financial support for civic technology has risen from $225 million in venture capital in 2013 to $493 million in 2015.[26]

Still, some remain uncertain of civic technology's capacity to effect change. This is primarily because even though the field has well-defined focuses (e.g., "government transparency through open data," "the democratic processes and voting," and "public decision-making"), there is no consensus regarding precisely what civic technology is.[27] The main source of definitional disagreement involves civic technology's breadth: some see it as a "catch-all term to explain all technologies related to the public sector and public life," while others argue that it applies more narrowly to innovations "where the public lends its talents, usually voluntarily, to help government do a better job."[28] Absent a sharp definition, the field has struggled to develop a "shared vision" and "shared identity" that bind

together its far-flung actors. This complicates efforts to attract talent and resources to the sector and in turn "drive greater impact."[29]

Thus, many believe that civic technology is rife with possibilities but has not yet fully discerned how to leverage its considerable strengths. As Stacy Donohue, an Investment Partner at the Omidyar Network, argues in the introduction to that organization's landmark study on civic technology, "it...seem[s] as if civic tech hovers continually on the edge of 'taking off' in ways that are both energizing (because of the potential) and frustrating (because of the pace) for those of us who have worked in the space for a considerable time."[30, 31]

BUILDING A PIPELINE: BRETT GOLDSTEIN AND THE CITY OF CHICAGO

In the spring of 2011, Brett Goldstein received an opportunity that was attractive but challenging: Rahm Emanuel, Chicago's Mayor-elect, wanted to know if Goldstein, then the commander of the Predictive Analytics Group in the Chicago Police Department, was interested in becoming the City of Chicago's first Chief Data Officer (CDO).[32] The post would give Goldstein the chance to expand the city's embrace of open data, push ahead with data-driven government, and leverage empirical insights to influence policymaking.[33] Still, Goldstein—who had been planning to transition to the start-up world—would face the challenges of navigating a large bureaucracy, operating in a resource-constrained environment in the aftermath of the 2008-2009 financial crisis, and building relationships and credibility in a high-stakes and highly competitive setting.

Ultimately, Goldstein—who emphasized that one does not "turn down" Emanuel easily—accepted the post, but his success was far from guaranteed Rather, as he joined the new administration in May 2011, he faced a number of challenging questions. With so many possible policy foci, how would he prioritize his energy and reform efforts? How would he build and sustain political capital with senior leadership? How would he cultivate his team? How would he ensure that the city was positioned to continue to thrive and innovate when he eventually transitioned to a new post? In short, how would Goldstein ensure that the municipal startup he had unexpectedly joined would make an impact?

An Unusual Background: 1999-2010

By his own admission, Goldstein had limited prior experience with government; instead, "he grew up in the start-up world." Specifically, in 1999, Goldstein had joined OpenTable, Inc.—a recently established online restaurant reservation business—as a key player scaling the company's IT infrastructure and data centers.[34] Over the next seven years, he helped the start-up grow into an extremely valuable firm with a global footprint.[35] Nonetheless, Goldstein—who had studied government and psychology at Connecticut College—felt a pull toward public service, a sentiment that grew stronger after the terrorist attacks on September 11, 2001. Goldstein had been traveling when the attacks occurred and, after his flight had been grounded at Chicago's Midway Airport, watched the World Trade Center towers collapse. "It was very personal," Goldstein recalled, adding:

> I came out of 9/11 saying, 'I want my story to be bigger than just restaurant reservations.' I didn't know what that really meant at that point, but I did vow to myself that after OpenTable was done, I would do something that had an impact beyond what I was doing.

Over the next six years, his general desire to serve crystallized into a specific decision to take the exam to join the Chicago Police Department (CPD).[36] After passing the test, he joined CPD and initially served as a police officer working the beat; but several years into his tenure, an opportunity emerged to become the Director of the Predictive Analytics Group in CPD's Counterterrorism and Intelligence Division. As Goldstein explained, CPD's Superintendent recognized that Goldstein, who also holds a master's degree in computer science, had a special aptitude for data and technology and offered him a chance to test his innovative ideas surrounding data-driven policing. The former start-up leader then built a team and system that used novel techniques for "predicting where shootings and homicides would occur based on robust, near real-time data."

Looking back, Goldstein suggested that it was his "no-nonsense" attitude, not just his innovative skillset, that convinced the CPD Superintendent to empower him. Goldstein elaborated, "I never wanted anything. There was no 'Brett' agenda…I was never playing a game. I was only doing what I thought was right, and I was willing to incur…the risk for that."

Serving as CDO: 2011

By late 2010, Goldstein was preparing to transition back to working in a start-up; however, he shifted his plans in early 2011 when Emanuel approached him with the opportunity to become the City of Chicago's first CDO.[37] The newly established role would focus on three main tasks: pushing ahead data-driven government, advancing the open data initiative, and joining the Mayor's policy group to "bring empirical and quantitatively driven thoughts to that group."[38] More broadly, Goldstein faced the challenge of how to legitimize a novel role. As Goldstein later said in an interview with *TechRepublic*: "I think if we have a CDO, the goal should be as the position evolves for it truly to be a C-Suite position. You don't want to have a chief who's not truly a chief. It needs to have the respect of the executive, the importance within the administration."[39]

Thus, as Goldstein began his work, he focused in part on strengthening community ties, drawing on data to shape policy, and disseminating data through the City's Open Data Portal.[40, 41] However, he also sought opportunities to effect more far-reaching change. For example, in May 2012, the city was scheduled to host the NATO summit. Unfortunately, as Goldstein realized several months before the event, the city lacked a system that would give it sufficient "situational awareness" about events across the city. Using the existing ESRI platform coupled with open source software, Goldstein therefore created a pilot version of WindyGrid, a computer application that gives city staff readily available access to a wealth of valuable data.[42, 43]

WindyGrid worked well during the NATO summit and was subsequently used for a number of major public events.[44] What's more, the manner in which Goldstein established the system is emblematic of how technologists can adroitly effect change in a bureaucracy. As Goldstein reflected, he did not seek a major grant or try to build a large staff to create WindyGrid; instead, much like he had when establishing new data systems at OpenTable, he had figured out how to do it inexpensively with existing resources. Goldstein explained:

> Sometimes people come and say, 'Oh, you have a terrible problem,' or 'Oh, we need to do this, but I need money, I need a team.' Or the classic, 'Well, I'm not a coder.' I would identify things and then say, 'FYI, I'm now going to execute upon this.'... WindyGrid started in my office. That started in my office. It was a stack of computers in there.

Adding CIO To Goldstein's Portfolio: 2012

In June 2012, just one month after WindyGrid's introduction at the NATO Summit, Emanuel approached Goldstein with another opportunity: adding the title of Chief Information Officer (CIO) to his portfolio. This represented an exciting chance to continue to effect significant change. Goldstein explained, "The theme across everything was consistent. I was put in as a change agent. When Rahm put in me in [as CDO], his mandate to me was, 'I want the best government data and analytics program.' And...when he asked me to be the CIO, he said, 'I want the best gov. tech. in the country.'" The newly appointed CIO also found motivation because people were skeptical of his ability to effect change. Goldstein elaborated:

> I was in multiple situations where people told me, 'It couldn't be done.' As CDO, people said, 'Oh, you can't build a data and analytics program on your own, you can't build situational awareness, we can't have a big open data program.' ... When I became the CIO...they [said], 'Oh, you can't have change, you can't improve. You can't have efficiency. You just need to hold course.' These were the perfect things that would motivate me.

Still, the addition of the CIO post to Goldstein's portfolio represented a significant managerial transition. As CDO, he had primarily worked independently and without a formal budget. As CIO, he would manage a staff of more than 100 IT personnel, work with numerous external vendors, and oversee a budget of approximately $21 million. What's more, he had to find a way to awaken a stagnant environment. "The culture I walked into," Goldstein said, "was more of the typical bureaucracy."

Goldstein therefore quickly worked to introduce a more agile approach. Internally, instead of waiting on department officials to schedule one-on-one meetings and have multiple consultations before making decisions, he instituted a daily "around-the-horn" meeting at 8:30 a.m. where people could rapidly make plans and solve problems.[45] He also had candid conversations with vendors to signal that he was going to hold them "very, very accountable." Finally, he continued to make inroads in the community. This included becoming more active on Twitter so that he could communicate with constituents, attending local technology meetups, and holding office hours at a local accelerator. This reinforced that he and his staff were going to be as transparent as possible.

A Succession Plan: 2012-2013

Even as Goldstein thrived in his work as CDO and CIO, he was planning for the future. Goldstein anticipated that he would eventually transition out of municipal government, and he wanted to ensure that he had a strong team in place to continue and build on his work. Soon after becoming CIO, he therefore began thinking seriously about how to create a strong succession plan. This included recruiting three leaders: Brenna Berman, a former Global Sales Leader at IBM then serving as the City's Deputy Budget Director, as his first deputy; Danielle DuMerer, a long-time IT Project Manager, who

became IT Director; and Tom Schenk as Director of Analytics.[46]

Berman, DuMerer, and Schenk went on to become the City of Chicago's CIO, CTO, and CDO, respectively, and from those posts, they helped the City of Chicago to continue to advance Goldstein's work.[47] For example, they expanded WindyGrid into OpenGrid (a map-based application that allows all city residents to interact with an array of municipal data). They have also enhanced community engagement through their work with (among other stakeholders) the Smart Chicago Collaborative, "a civic organization devoted to improving lives in Chicago through technology."[48]

Reflecting on the importance of succession planning, Goldstein—who concluded his work with the City in summer 2013 and is now a Senior Fellow at the University of Chicago and an advisor on technology and innovation to a number of organizations—emphasized that his experience at OpenTable impressed upon him the significance of not being a "one-hit wonder" and that it is especially important for municipal government leaders—who can be vulnerable to cyclical economic downturns—to think carefully about how their projects and staffs can evolve once they transition to new roles. More broadly, Goldstein suggests that Chicago's work points to a larger takeaway for civic technology: it is imperative to attract and develop people with the talent, skills, and experiences to effect significant change. Goldstein explained:

> We need players who can...bridge the world of policy, data science and computer science and all of these different pieces...We should all be worried about what is the pipeline to help getmore and more people...excited [and] trained to be able to be our leaders and folks in the administrations of tomorrow.

NEIGHBORLY: "THE NEXT GENERATION OF PUBLIC FINANCE"[49]

In late spring 2016, Neighborly CEO Jase Wilson snapped a photo of a park in Maryville, Missouri where he had frequently played as a kid.[50] The picture was more than a nostalgic moment. Growing up in Maryville, a 12,000-person town just under 90 miles from Kansas City, Wilson's life was not without challenges.[51, 52] As Wilson recalled, he "grew up in a broken home in dirt poor, bad circumstances [and had] a really rough upbringing." Nonetheless, he survived thanks to his mother, a handful of outstanding teachers, and, as he later realized, the presence of beautiful, open spaces in his community. Wilson elaborated:

> I used to spend a lot of time in those parks as a kid…Despite, [if] things were bad at home or things were bad at school, it didn't matter because there was this other place [that] I could go to be a kid and I could go and think about a future that is better than the thing that is now and develop body and mind in my own weird way. I fell in love with parks through that type of relationship with them.

That passion shaped Wilson's studies and career path. As an undergraduate at the University of Missouri-Kansas City (UMKC), he initially planned to study engineering, but after struggling with the problem sets, he stumbled upon the opportunity to study urban planning and design. That course of study, as well as Wilson's subsequent experience as a master's student in urban planning and design at the Massachusetts Institute of Technology, helped Wilson to appreciate the significance of the public spaces in which he had found solace growing up.[53] Wilson explained, "I realized through a decade of studying cities…that…parks and open spaces make humans, especially in built environments like cities. Yet I took it for granted as a kid that everybody has parks. That turned out not to be the case."

As an undergraduate at UMKC, Wilson had founded Luminopolis, a company that used open source software to help governments reduce spending on website design and development and other IT functions.[54] However, over time, he began to sense a bigger opportunity to apply his passion. His thinking evolved in parts thanks to a conversation that occurred at a coffee shop in Kansas City in 2012. Wilson and a friend, Patrick Hosty, were discussing a municipal bond when another friend questioned the wisdom of one of the pieces of the bond, which would fund a penguin exhibit at a local zoo. It turned out that Wilson and Hosty's friend had never invested in a municipal bond. "We realized right there," Hosty later told the *New York Times*, "that our generation – and in fact most people – do not understand how public finance works, or that it finances projects for the public good."[55]

Subsequent research and dialogue (including Wilson's presentation at an MIT conference on civic crowdsourcing), Wilson's work with Luminopolis, and additional conversations with Hosty contributed to another valuable realization: funding for parks is often one of the first items to get eliminated amid municipal budget cuts and municipal bonds can help to fund parks.[56] This led Wilson and Hosty to launch Neighborly, a company that aims to "make municipal bonds accessible and transparent."[57]

Recognizing that it might be too difficult to focus on municipal bonds right away, Neighborly initially created crowdfunding opportunities for community projects, including parks, bike lanes, and a bike-sharing project in Kansas City. In total, Neighborly used crowdfunding to raise $3 million for approximately 60 projects.[58]

However, in 2014, Neighborly decided to expand to the municipal bond market. This represented an enormous challenge because the market was considered extremely complex, Neighborly would have to navigate numerous regulatory structures that varied by state and locality, and some felt that municipal bonds were not ideal for young investors.[59] At the same time, democratizing the municipal bond market was an exciting opportunity. This was because of its size (the market is valued at approximately $3.7 trillion); the presence of numerous antiquated processes and intermediaries, which meant that Neighborly could leverage technology to decrease costs for municipalities and investors; and the possibility of giving citizens a chance to invest directly in their communities.[60] "If people had more ways to invest in these bonds they would," Neighborly Chief Product Officer Rodrigo Davies explained in an interview with *Forbes*. "It just hasn't been on their radar."[61]

By 2017, Neighborly had made significant progress toward achieving its goal. To begin with, it had attracted a total of $35 million in funding.[62] In addition, the firm had developed a substantial coterie of participants, with 11,000 investors and 50,000 issuers on the Neighborly platform.[63] Finally, Neighborly had launched or formalized plans

to create investment opportunities in numerous locales, including Cambridge (MA), Austin (TX), Burlington (VT), and Lawrence (KS).[64, 65] "I hope voters will see in this news," said Burlington Mayor Miro Weinberger, "another example of how the City is using innovation and hard work to bring down the cost of necessary, responsible local government investment."[66]

Despite having stretched its work to municipalities across the country, Wilson and his team saw significant potential for growth. Wilson told the *MIT News*, "Eventually we want to be interplanetary. Mars will require many projects to get off the ground."[67] More immediately, Neighborly was focused on continuing to make inroads in municipal bond markets across the United States and eventually globally. "There are many parts of the world," Wilson noted, "that don't even have public finance, at least not at the community level. We're very excited by the chance to bring about a new era of civic innovation and help communities make decisions about the nature and the scale of the projects."[68]

Even as Neighborly strives to expand, the experiences of the nascent firm and its leaders carry valuable lessons for organizations and individuals hoping to effect significant change in civic technology and related fields. One is the importance of having a passion that inspires persistence. "It feels so good," Wilson said, "to jump out of bed every morning and know you are building this thing that's in the service of civic visionaries, taking the decision making out of the hands of that invisible force and putting it back in the service of the people."[69] Another is the need to be inquisitive. Explained Wilson, who emphasized how he challenged the status quo in the municipal bonds market. "Ask: 'Why is it the way it is? Why is it as complicated as it's become?'"[70] Finally, Wilson highlighted the value of exploring possible synergies between—and learning to speak the dual language of—civic technology and venture capital. Wilson explained:

> Civic tech to me is an area I'm passionate about...I was trained in the crucible of raising venture capital in Silicon Valley to disavow labels like civic tech. The fear from the venture capitalist's perspective...was, 'OK, it's civic, it's non-profit, it's government, which is really long and scary sales cycles.'...We took a step back and looked at, 'What does resonate with the VC [Venture Capitalist] community, and what can we say about it that helps us to frame our thinking about where we sit?'
>
> What we realized is that, in our hearts, we sit at the intersection of civic tech, government tech, and finance tech. To a VC...we're doing smart enterprise software for public finance, meaning it's taking the best of the past decade of consumer technology and applying it into the outdated, complicated, ineffective systems of enterprise software inside of government and inside of the public finance deal teams who serve those governments.
>
> So civic tech to me is bittersweet because we started Neighborly thinking that this is unambiguously civic tech; and then over the course of the last four years, seeing the reactions of people in this community to that word and the idea of casting yourself into a space that is notoriously hard to invest in made me really think about the value of the term in the first place.

THE MAYOR'S OFFICE OF NEW URBAN MECHANICS AND COMMUNITYPLANIT

Former Boston Mayor Thomas Menino—who held that post for 20 years (from 1993-2014)—was affectionately referred to as an "urban mechanic."[71] This was in part because of his near omnipresent presence throughout the city. According to a 2009 *Boston Globe* poll, he had met 57 percent of city residents.[72] More importantly, he developed a reputation for his extraordinary attention to detail, ranging from monitoring the progress of snow plows to street cleaning to efforts to repair potholes. "This is a mayor," said then Massachusetts Governor Deval Patrick, when Menino passed away in 2014, "who made his politics so personal, so understanding of, and so close to people."[73]

Menino also recognized that he needed to position the city to continue to innovate and fulfil his vision in the modern era. In 2010, he therefore launched "The Mayor's Office of New Urban Mechanics," "one of the first municipal innovation offices in the world."[74] The purpose of the office—which has a portfolio that runs the gamut from streets and housing to education and engagement—is to function "as the City's civic research and development team" and "pilot experiments that aim to improve the quality of life for Boston's residents.[75]

According to Nigel Jacobs, a computer scientist who co-founded the office along with Chris Osgood, a Harvard Business School alumnus, the broader aim of the initiative is to create an office that can carry on Mayor Menino's legacy while injecting a startup mentality into the city's government. He explained:

> The idea was to create a team [to implement Mayor Menino's] philosophy, mainly this very people-oriented approach to running a city, and then would jump start new approaches, new thinking, new partners, new roads, all those kinds of things. So that's what New Urban Mechanics was intended to be. It started out as a start-up of two people inside of local government tasked very specifically with inventing the future of city services.
>
> Our job is really to go at street level and test out new ideas. So we don't spend all that much time sitting in City Hall as a result, and we're always trying to connect with new potential partners and innovators in other departments. We're kind of like the entrepreneurial explorers of the place.[76, 77]

Initially, the Mayor's Office of New Urban Mechanics focused on developing technologies and applications that could help it gather data and complete transactions to serve people more efficiently. For example, the office launched 311, a mobile application that allows "residents [to] report non-emergency issues with the City directly from their smartphones."[78] However, as the office evolved, it started to explore ways to use technology to engage citizens in a more sophisticated fashion. As Stephen Walter, a Program Director in the Mayor's Office of New Urban Mechanics, explained, Urban Mechanics staff challenged themselves to think "about the more nuanced [and] more deliberative connections that people should have as part of a democracy." As Walter recalled, the staff also asked themselves, "How can the interconnectedness and the dispersal and the cheapness of internet-connected technologies actually create more nuanced conversations where diverse forces connected?"[79]

Leveraging CommunityPlanIt

This dialogue led to a partnership with the Engagement Lab at Emerson College to employ Community PlanIt, "a local engagement game designed to make community-planning fun, while providing a context for learning and action."[80] Developed by Emerson College's Engagement Lab, "an applied research lab…for reimagining civic engagement in a digital culture," CommunityPlanIt allows residents to "complete challenges and missions to contribute to the planning process and win money for local causes."[81] At the same time, participants have the opportunity to engage in dialogue with other residents, which allows them to develop a broader understanding of their community while simultaneously shaping the planning process.[82] As Walter explained, this reflects the notion that design can and sometimes should be an adversarial process.[83] It also leverages the concept of "meaningful inefficiencies," which refers to "a way of thinking about civic systems that are open to the affordances of play, where users have the option to *play* within and with rules, not simply to *play out* prescribed tasks."[84]

While CommunityPlanIt quickly emerged as a technology that could provide the desired deliberation and dialogue, staff from the Engagement Lab and City officials realized over time that the game was better suited to specific settings. For example, as Christina Wilson, the Programs Manager at the Engagement Lab, noted, people were less enthusiastic about using a playful tool in a setting when a service might be taken away (e.g., a game involving the Boston Public Schools about whether public transportation passes should replace school busses for middle school students). By contrast, when a service was not being removed but a broader policy was being addressed (e.g., a recent planning game to examine the city's plans to deal with climate change), the tool was far better received.[85]

The Path Ahead

Buoyed in part by the insights gleaned from applying Community PlanIt in different settings, the tool has been exceptionally successful. Since its launch in 2013, the Community PlanIt tool has been used 17 times.[86] In addition, it has received significant public recognition, including being named a semi-finalist for Harvard Kennedy School's Innovation in American Government Awards.[87] Finally, it has received high marks in formal academic evaluations, such as in a study from Eric Gordon, the director of the Emerson Engagement Lab, and Jessica Baldwin-Philippi, a professor at Fordham University, that concluded that "CPI creates and strengthens trust among individuals and local community groups that is linked to confidence in the process of engaging, and it encourages interactive practices of engagement that we define as *civic learning*."[88]

More broadly, city officials and faculty at the Emerson Engagement Lab can take pride in the broader contributions they are making to local government in the twenty-first century. They have been at the forefront of an international effort to

make municipal government more innovative, and their efforts and use of technology have become more advanced and sophisticated over time. What's more, their work is contributing to a conversation about how civic technology can be used to enhance the democratic process. As Walter explained, "the biggest issue in civic technology is not thinking through with communities the values that underpin the design tactics that we're taking."

CONCLUSION

Whether civic technology is an effective tool to mitigate the threats to democracy and reinvigorate citizen engagement remains to be seen. As the experiences of officials in Chicago and Boston and at Neighborly illustrate, this is a field that is rife with potential but also faces significant challenges. Still, that leaders in such a broad cross-section of areas and locales have made positive inroads suggests that institutions like Civic Hall—and the energy, expertise, and constituencies they represent—could provide a valuable clue for how to carry out the crucial tasks of sustaining and enhancing democracy in the twenty-first century.

Notes

1. Todd Newcombe, America's Oldest Town Hall Meeting," *Governing*, December 2010, available at http://www.governing.com/topics/mgmt/267-year-old-community-tradition-Massachusetts.html (accessed on May 30, 2017); and Todd Newcombe, "Slideshow: The Oldest Town Hall Building in America," *Governing*, December 2010, available at http://www.governing.com/topics/mgmt/The- Oldest-Town-Hall-in-America.html (accessed on July 3, 2017).

2. Frank Bryan, *Real Democracy: The New England Town Meeting and How It Works*, Chicago: The University of Chicago Press, 2004, pp. 19-21; and "Frank Bryan," The University of Vermont, available at https://www.uvm.edu/~fbryan/ (accessed on July 3, 2017).

3. "About Civic Hall," Civic Hall, available at https://civichall.org/about-civic-hall/ (accessed on April 12, 2017).

4. The distance between Pelham, Massachusetts and Civic Hall was calculated using the "'As The Crow Flies,' Distance Calculator," available at http://tjpeiffer.com/crowflies.html (accessed on May 30, 2017).

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6. Newcombe, "America's Oldest Town Hall Meeting"; and "About Civic Hall."

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9. "Beyond Distrust: How Americans View Their Government," Pew Research Center, November 23, 2015, available at http://www.people- press.org/2015/11/23/beyond-distrust-how- americans-view-their-government/ (accessed on April 13, 2017); Russell Berman, "What's the Answer to Political Polarization in the U.S.?" *The Atlantic*, March 8, 2016, available at https://www.theatlantic.com/politics/archive/2016/ 03/whats-the-answer-to-political- polarization/470163/ (accessed on April 13, 2017); and Gregory Wallace, "Voter Turnout at 20-Year Low in 2016," CNN, November 30, 2016, available at http://www.cnn.com/2016/11/11/politics/popular- vote-turnout-2016/ (accessed on April 13, 2017).

10. In his farewell address, President Obama addressed the corrosive impact of social media. He said, "For too many of us, it's become safer to retreat into our own bubbles, whether in our neighborhoods or college campuses or places of worship or our social media feeds, surrounded by people who look like us and share the same political outlook and never challenge our assumptions. The rise of naked partisanship, increasing economic and regional stratification, the splintering of our media into a channel for every taste – all this makes this great sorting seem natural, even inevitable. And increasingly, we become so secure in our bubbles that we accept only information, whether true or not, that fits our opinions, instead of basing our opinions on the evidence that's out there. This trend represents a...threat to our democracy." "Transcript of President Obama's Farewell Speech," *The Los Angeles Times*, January 10, 2017, available at http://www.latimes.com/politics/la-pol-obama-farewell-speech-transcript-20170110- story,amp.html (accessed on January 22, 2017).

11. Colin Wood, "What is Civic Tech?" *Government Technology*, August 16, 2016, available at http://www.govtech.com/civic/What- is-Civic-Tech.html (accessed on April 13, 2017).

12. "Civic Technology – 1 – Saving Democracy?" *Paris Innovation Review*, March 8, 2017, available

at http://parisinnovationreview.com/2017/03/08/civic-technology-1-saving-democracy/ (accessed on April 13, 2017).

13. Wood, "What Is Civic Tech?"

14. "Engines of Change: What Civic Tech Can Learn From Social Movements," Omidyar Network, pp. 3, 11, 20-22, and 26-27, available at http://enginesofchange.omidyar.com/docs/OmidyarEnginesOfChange.pdf (accessed on April 13, 2017); and Jason Shueh, "Civic Tech Sees Strong Growth, Despite Disunity, Report Says," *Government Technology*, June 9, 2016, available at http://www.govtech.com/civic/Civic-Tech-Sees- Strong-Growth-Despite-Disunity-Report-Says.html (accessed on April 13, 2017).

15. Sifry, "Civic Tech and Engagement: In Search of a Common Language"; and "About Personal Democracy Media," Personal Democracy Media, available at https://personaldemocracy.com/about-us (accessed on July 3, 2017).

16. Personal Democracy Media is an online "hub for the conversation already underway between political practitioners and technologists, as well as anyone invigorated by the potential of all this to open up the process and engage more people in all the things that we can and must do together as citizens." "About Personal Democracy Media."

17. "About Brett Goldstein," Harris School of Public Policy, University of Chicago, available at https://harris.uchicago.edu/directory/brett-goldstein (accessed on May 30, 2017).

18. "About," Neighborly, available at https://neighborly.com/about (accessed on January 21, 2017).

19. "Community PlanIt," Mayor's Office of New Urban Mechanics," City of Boston, last updated on April 3, 2017, available at https://www.boston.gov/departments/new-urban- mechanics/community-planit (accessed on May 30, 2017).

20. Qtd. in "Civic Technology – 1 – Saving Democracy?"; and Rachel Donadio, "A French Campaign Waged Online Adds a Wild Card to the Election," *The New York Times*, April 22, 2017, available at https://www.nytimes.com/2017/04/22/world/europe/france-election-jean-luc-melenchon- web.html?_r=0 (accessed on July 4, 2017).

21. Emily Badger, "The Rise of Civic Tech," *City Lab*, December 4, 2013, available at http://www.citylab.com/tech/2013/12/rise-civic- tech/7765/ (accessed on April 13, 2017); and Lee Rainie, "Digital Divides – Feeding America," Pew Research Center, February 9, 2017, available at http://www.pewinternet.org/2017/02/09/digital- divides-feeding-america/ (accessed on April 13, 2017).

22. Badger, "The Rise of Civic Tech"; and Parija Kavilanz, "Their Mission: A Tech-Savvy Government," CNN, June 22, 2016, available at http://money.cnn.com/2016/06/22/technology/nic- government-technology/index.html (accessed on July 4, 2017).

23. Wood, "What is Civic Tech?"

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25. Shueh, "Civic Tech Sees Strong Growth, Despite Disunity, Report Says."

26. "Engines of Change: What Civic Tech Can Learn From Social Movements," p. 13.

27. Wood, "What is Civic Tech?"; Badger, "The Rise of Civic Tech"; and Shueh, "Civic Tech Sees Strong Growth, Despite Disunity, Report Says."

28. Wood, "What is Civic Tech?"

29. "Engines of Change: What Civic Tech Can Learn From Social Movements," pp. 3, 20-22, and 26-27.

30. Ibid., p. 2.

31. Omidyar Network is "a philanthropic investment firm." For additional background, see "Omidyar Network," available at https://www.omidyar.com (accessed on July 10, 2017).

32. "Brett Goldstein," Ekistic Ventures, 2016, available at https://www.ekistic.com/brett-goldstein/ (accessed on May 30, 2017); and Interview with Brett Goldstein, by telephone, April 5, 2016. Unless noted, the data in this vignette—and any subsequent quotations from or attributions to Goldstein—come from this telephone interview and a follow-up interview, also conducted by telephone, on June 7, 2016. Hereafter cited as Goldstein interviews.

33. According to the Open Data Handbook, which was produced by Open Knowledge International, a non-profit "focused on realizing open data's value," "open data is data that can be freely used, re-used and redistributed by anyone – subject only, at most, to the requirement to attribute and sharealike." When released online, open data is typically disseminated in one of two ways: as "bulk data," which "refers to putting all of the data into a file, or a set of files, so that all of the data can be acquired with a few simple downloads"; or an "API," which is "a method for providing small slices of the data." One important kind of API is the "read-write API," which "refers to the ability for users not only to get (read) data but also to submit (write) data into the system." "About," Open Knowledge International, available at https://okfn.org/about/ (accessed on May 26, 2017); "What is Open Data?" Open Data Handbook, available at http://opendatahandbook.org/guide/en/what-is- open-data/ (accessed on May 26, 2017); and Joshua Tauberer, "Bulk Data or an API?" in Open Government Data: The Book, Second Edition: 2014, available at https://opengovdata.io/2014/bulk-data-an-api/ (accessed on May 26, 2017).

34. Goldstein interviews; and "About Us," OpenTable, 2017, available at https://www.opentable.com/about/ (accessed on April 20, 2017).

35. In 2014, Priceline purchased OpenTable for $2.6 billion. Trefis Team, "How Much Is OpenTable Really Worth To Priceline," *Forbes*, June 16, 2014, available at https://www.forbes.com/sites/greatspeculations/201 4/06/16/how-much-is-opentable-really-worth-to-priceline/#4d1691f958de (accessed on April 20, 2017).

36. Goldstein had a longstanding interest in law enforcement, having obtained a Master's Degree in Criminal Justice from Suffolk University. Goldstein interviews; and "About Brett Goldstein," Harris School of Public Policy.

37. For Emanuel, appointing a CDO was a significant move and a high priority in part because he had campaigned about the importance of open data and transparency. Brett Goldstein, "Open Data in Chicago: Game On," in *Beyond Transparency*, available at http://beyondtransparency.org/chapters/part- 1/open-data-in-chicago-game-on/ (accessed on April 20, 2017).

38. Goldstein interviews.

39. Alex Howard, "Chicago's First CDO On Getting Early Wins, Informing Policy, and Developing Your Own View," *TechRepublic*, April 13, 2015, available at http://www.techrepublic.com/article/chicagos-first-cdo-on-getting-early-wins-informing-policy-and-developing-your-own-view/ (accessed on April 20, 2017).

40. Goldstein interviews; "Socrata Interview Brett Goldstein City of Chicago," *Socrata*, February 5, 2013, available at https://socrata.com/open-data-field-guide/socrata-interview-brett-goldstein-city- chicago/ (accessed on April 20, 2017); and Nicole Laskowski, "Cop-Turned-CIO Uses Open Data To Improve Chicagoland," *Tech Target*, November 2014, available at http://searchcio.techtarget.com/feature/Cop- turned-CIO-uses-open-data-to-improve- Chicagoland (accessed on April 20, 2017).

41. The dissemination of data through the City's Open Data Portal facilitated the creation of new apps, such as SweepAroundUs, a site that allows Chicagoans to type in their address and find out when their street will next be cleaned. Laskowski,

"Cop-Turned-CIO Uses Open Data To Improve Chicagoland"; and "SweepAroundUs," 2017, available at https://sweeparound.us (accessed on April 20, 2017).

42. Goldstein interviews; and Sean Thornton, "Chicago's WindyGrid: Taking Situational Awareness to a New Level," Data-Smart City Solutions, Harvard University, June 13, 2013, available at http://datasmart.ash.harvard.edu/news/article/chica gos-windygrid-taking-situational-awareness-to-a- new-level-259 (accessed on April 20, 2017).

43. Sean Thornton, a Program Advisor for the Civic Analytics Network at Harvard's Ash Center for Democratic Governance and Innovation, described the services/information that WindyGrid provides: "It's quite a bit more complex than a thermometer: as a geographic information system, the application presents a unified view of City operations—past and present—across a map of Chicago, giving key personnel access to all of the city's spatial data, historically and in real time. This includes data categories such as 911 and 311 service calls, transit and mobile asset locations, building information, geospatially-enabled public tweets, and other critical information." Thornton, "Chicago's WindyGrid: Taking Situational Awareness to a New Level."

44. Ibid.

45. In an effort to create a more relaxed and collaborative environment, Goldstein would also regularly head out into his department's common space and brainstorm approaches with his staff. On Friday afternoons, he would also work from the common space and blast Def Leppard songs.

46. Goldstein interviews; "City Council Approves the Nomination of Brenna Berman as Chief Information Officer and Commissioner of the Chicago Department of Innovation and Technology," City of Chicago, July 24, 2013, available at https://www.cityofchicago.org/city/en/depts/doit/pr ovdrs/software_development/news/2013/jul/city_co uncil_approvesthenominationofbrennabermanaschiefinformati.html (accessed on May 30, 2017); and Interview with Brenna Berman and Danielle DuMerer, City of Chicago, by telephone, August 11, 2016. Hereafter cited as Berman and DuMerer interview.

47. In 2017, Berman transitioned from her role as CIO to a position at UI Labs, "a consortium of industry, academic, community organizations, and government actors to expedite P3s [public-private partnerships] that can tackle problems too large for any one organization." DuMerer became Acting CIO, and Mayor Emanuel introduced his official appointment of DuMerer as CIO to City Council on May 24, 2017. Ryan McCauley, "Chicago's Brenna Berman Leaves City Hall, Continues To Use Technology To Help Government," *Government Technology*, May 1, 2017, available at http://www.govtech.com/people/Chicagos-Brenna- Berman-Leaves-City-Hall-Continues-to-Use- Technology-to-Help-Government.html (accessed on May 30, 2017); and "Mayor Emanuel Appoints Danielle DuMerer as Commissioner of the Department of Innovation and Technology," Office of the Mayor, City of Chicago, May 24, 2017, available at https://www.cityofchicago.org/content/dam/city/de pts/mayor/Press%20Room/Press%20Releases/2017/May/052417_DanielleDumerer.pdf (accessed on July 4, 2017).

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49. "Neighborly," available at https://neighborly.com/about (accessed on May 4, 2017).

50. Interview with Jase Wilson and Rodrigo Davies, by telephone, June 24, 2016. Hereafter cited as Wilson and Davies interview. Unless noted, the data in this vignette—including subsequent quotations from and attributions to Wilson and Davies—come

from this interview and a separate telephone interview with Davies on April 12, 2016.

51. Michael Blanding, "Visible Hand," *MIT News*, February 8, 2016, available at http://news.mit.edu/2016/visible-hand-neighborly- jase-wilson-0208 (accessed on May 4, 2017).

52. The distance between Maryville and Kansas City was calculated using the "As The Crow Flies" Distance Calculator, available at http://tjpeiffer.com/crowflies.html (accessed on May 4, 2017).

53. Blanding, "Visible Hand"; and Wilson and Davies interview.

54. Wilson and Davies interview; and "Luminopolis: WordPress for Government Websites," Office Port, available at http://officeportkc.com/members/luminopolis/ (accessed on May 4, 2017).

55. Amy Cortese, "Putting the Public Back in Public Finance," *The New York Times*, July 10, 2015, available at https://www.nytimes.com/2015/07/12/business/mut fund/putting-the-public-back-in-public- finance.html (accessed on May 4, 2017).

56. Wilson and Davies interview.

57. Ibid.; Cortese, "Putting the Public Back in Public Finance"; and "Neighborly," available at https://neighborly.com/about (accessed on May 10, 2017).

58. "Crowdfunding To Modernize The Municipal Market," *CoCity*, October 18, 2016, available at https://cocity.co/2016/10/18/crowdfunding-to-modernize-the-municipal-market/ (accessed on May 29, 2017); Curt Hopkins, "Can Crowdfunding Kickstart Struggling Cities?" *Salon*, March 12, 2013, available at http://www.salon.com/2013/03/12/can_crowdfundi ng_kickstart_struggling_cities_partner_2/ (accessed on May 10, 2017); and Cortese, "Putting the Public Back in Public Finance."

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63. "Neighborly," available at https://neighborly.com (accessed on May 10, 2017).

64. Beth Healy, "Cambridge To Offer Minibonds To Small Investors," *The Boston Globe*, January 25, 2017, available at https://www.bostonglobe.com/business/talking- points/2017/01/24/cambridge-offer-minibonds- small-investors/4dMnmKKjLoxdWx6gEDbbzN/story.html (accessed on May 10, 2017); and "Getting Started with Neighborly," Neighborly, available at https://learn.neighborly.com/investing/getting- started-on-neighborly/ (accessed on May 10, 2017).

65. In fall 2016, Neighborly issued a "challenge for five municipal bond issuers to use the Neighborly platform to finance their projects, and offered to waive issuance fees for the winners." 43 issuers applied (with projects valued at more than $100 million), and the winners were Austin, Texas; Burlington, Vermont; Somerville, Massachusetts; Housing Trust of Silicon Valley; and Lawrence, Kansas. "Meet the Winners of the Neighborly Bonds Challenge," Neighborly, October 7, 2016, available at https://learn.neighborly.com/news/meet-

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73. David Boeri, "'Urban Mechanic' Menino Never Wanted To Be Anything More Than Mayor," WBUR, October 30, 2014, available at http://www.wbur.org/news/2014/10/30/menino-remembrance-boeri (accessed on May 10, 2017); and "Funeral Held for Longtime Boston Mayor Tom Menino," WMUR, November 3, 2014, available at http://www.wmur.com/article/funeral- held-for-longtime-boston-mayor-tom-menino/5194640 (accessed on May 10, 2017).

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77. The Mayor's Office of New Urban Mechanics website adds, "Ultimately, we believe that civic innovation is more than just increasing government efficiency. It is also about improving the experience and well-being of our residents and visitors. A democracy is sometimes messy, unpredictable, and playful – all for good reason. So we ask: *How can we make civic life more meaningful for more people?*" "New Urban Mechanics," City of Boston.

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