Citizen-Centered Governance: The Mayor's Office of New Urban Mechanics and the Evolution of CRM in Boston Case Study
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At City Hall, we’ll forge ahead with a new kind of urban mechanics. The generation that gave us Facebook wants to engage in public service more than ever before. I say to them that Boston can be your proving ground and home to a wave of municipal innovation not seen since cities first brought water into people’s homes.

— Mayor Thomas Menino, announcing campaign for his fifth term, April 2009

**Executive Summary**

Over the last three years, the Boston Mayor’s Office of New Urban Mechanics, the innovative, collaborative ethos within City Hall fostered by Mayor Menino and his current chief of staff, Mitchell Weiss, and Boston’s launch of a CRM system and its associated Citizens Connect smartphone app have all attracted substantial media attention. In particular, the City of Boston’s strategy to put citizen engagement and participation at the center of its efforts, implemented by Chris Osgood and Nigel Jacob as co-chairs of the Mayor’s Office of New Urban Mechanics, has drawn attention to the potential power of collaboration and technology to transform citizens’ connections to their government and to each other. Several global developments have combined to make Boston’s collaborative efforts interesting: First, city managers around the world confront shrinking budgets and diminishing trust in the role of government; second, civic entrepreneurs and technology innovators are pressuring local governments to adopt new forms of engagement with citizens; and third, new digital tools are emerging that can help make city services both more visible and more effective. Boston’s experience in pursuing partnerships that facilitate opportunities for engaging citizens may provide scalable (and disruptive) lessons for other cities.

During the summer of 2013, in anticipation of Mayor Menino’s retirement in January 2014, Prof. Susan Crawford and Project Assistant Dana Walters carried out a case study examining the ongoing evolution of the Boston Mayor’s Hotline into a platform for civic engagement. We chose this CRM focus because the initial development of the system provides a concrete example of how leaders in government can connect to local partners and citizens. In the course of this research, we interviewed 21 city employees and several of their partners outside government, and gathered data about the use of the system. (Exhibit A is a list of interviewees.)

We found a traditional technology story—selection and integration of CRM software, initial performance management using that software, development of ancillary channels of communication, initial patterns of adoption and use—that reflects the commitment of Mayor Menino to personalized constituent service. We also found that that commitment, his long tenure, and the particular personalities of the people on the New Urban Mechanics team make this both a cultural story as well as a technology story. Here are the highlights:

- The combination of Mitchell Weiss’s vision for citizen engagement, Nigel Jacob’s expertise in software development and digital strategy, Chris
Osgood’s experience in navigating government bureaucracy, and Bill Oates’s (CIO) private-sector experience has allowed this team to launch successful projects and build valuable partnerships that focus on citizen-centered innovation;

• Even without budgetary authority or staff, the innovation office within the Mayor’s suite (the Office of New Urban Mechanics) has been able to nudge, encourage, and facilitate collaborations inside City Hall and across academic institutions, technologists, and other city governments that have been productive;

• As one example of the team’s joint efforts and partnerships, both inside and outside City Hall, the launch of Boston’s Lagan CRM system in October 2008 was followed by integration of the system into the operations of several constituent-facing service departments;

• The system has evolved over time to include, among other things, a mobile app for field workers in the Department of Public Works (City Worker), a smartphone app for citizens (Citizen Connect), reports that are useful for performance management, and several different channels through which citizens can interact with City Hall, while retaining its high-touch, personalized character;

• Although every CRM system case is assigned a case ID number, the CRM system as a whole does not automatically assign a unique identifier to citizens that would allow uniform tracking across different modes of contact (smartphone app, Web interface, phone call) or mapping of particular citizens to particular neighborhoods. Constituents who contact the system may voluntarily provide contact details (name, home address, email, and phone);

• Future versions of this system, and layering of CRM data over other City data (911, inspections, sensor data, social sentiment data, traffic data), could make possible much more extensive citizen collaboration, situation awareness, policy inputs, performance analysis, and co-creation of government services or policies. Although there are many channels for reporting into the CRM system—Citizens Connect, SMS, web chat, phone calls—all of the people reporting in are not connected to each other, and the lack of unique identifiers makes true "citizen relationship management" difficult. Customer satisfaction is also not measured by the system, as far as we can tell. Outbound calls, texting, and Twitter/social media sentiment mining might be useful tools for this assessment;

• Combining formal CRM requests with social sentiment information could provide useful guidance underpinning policy decisions and resource allocation. Connecting all of this information to job functions within City Hall would also clearly be productive. And if we believe that people in their
communities know more about their communities than all the gifted people in City Hall, how do we enable them to help themselves solve some of their own problems?

- Boston City Hall has not been focused on predictive analytics or the public release of data; rather, the team’s top priorities (in line with Mayor Menino’s strategy) have been to improve service delivery and encourage citizen engagement;

- Mayor Menino’s leadership style, strategic goals, and long tenure, together with the particular personalities of the members of the core team profiled in this study, have been essential to this narrative;

- The longterm effects on either the operation of City government or citizen engagement of the Office of New Urban Mechanics and the innovative, experimental ethos encouraged by that Office, Chief of Staff Mitchell Weiss, and CIO Bill Oates are unclear. Much will depend on the character and priorities of the new mayor.
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I. Following a Hypothetical Request Through Boston’s CRM System

We begin with a description of the current state of Boston’s CRM system. As of July 2013, when a citizen of Boston spots a pothole, there are seven different methods by which he or she can notify City Hall:

• Call the Mayor’s Hotline (60%)
• Live web-chat with Hotline employees
• Use the City Hall Web site’s self-service option (20-25%)
• Tweet at City Hall (@CitizensConnect or @NotifyBoston)
• Text City Hall
• Use CitizensConnect (15-20%)¹
• Walk into City Hall

(Exhibit B is a breakdown of constituent requests by year and method of reporting.)

Today, the Hotline receives roughly a quarter of a million calls a year, 95% of which a live person answers within 30 seconds.² (Exhibit C provides total constituent service requests since the launch of the Lagan CRM system.) During 2012 and the first six months of 2013, notwithstanding the introduction of multiple additional channels of communication, Hotline calls continued to make up a little more than 60% of constituent service requests.³

The call center employs a personal touch. "We probably sacrifice a little bit of efficiency and consistency for personal service since our agents are not scripted," Justin Holmes, Director of Citizen Engagement, said. "Our agents are given some flexibility, frankly some creativity in their job, which I think leads to some agent satisfaction to really help creatively solve problems…."⁴

The CRM system as a whole does not automatically assign a unique identifier to citizens that would allow uniform tracking across different modes of contact (smartphone app, Web interface, phone call) or mapping of particular citizens to particular neighborhoods. Constituents who contact the system may voluntarily provide contact details (name, home address, email, and phone). Every case is assigned a unique tracking number (the case ID number). Among the details captured for each record are constituent contact information (if any), type of report, location of issue, and the "channel" the constituent used in making the report (e.g., mobile, Web, phone).⁵

Notices of work completion and follow-up emails and phone calls are standard. "Contrary to belief, it’s not really so much that the first impression is the most important," said Holmes. "It’s really the last that lingers the most in the mind of our customer or in our case, the constituent. So what we do now, not only do we close
the loop with people by email—you report a pothole to us, you get an email when the case is closed by the public works employee and that affords you the opportunity to reply to us and have any further discussion that might be necessary by that report. We also pick up the phone and give you a call back every once a while just to check and make sure you’re satisfied.”

If a transfer to another department is necessary, the Hotline stays on the line with the constituent and makes the introduction.

In April 2010, Twitter became another channel for constituents to use to notify Boston of public works issues. The city uses @NotifyBoston or @CitizensConnect.

Texting to the Hotline is also available, although it has not been a popular route so far and the absence of location information makes texts less useful to the City.

Approximately 20 percent of reports arrived via the Web last year, down from 25 percent in 2011. As of June 2013, Web reports were still just under 25 percent.7

Citizens Connect, the mobile app, was launched in 2009; a year later, about 12% of reports came through this channel. In 2011 and 2012, roughly 20% of the reports to constituent services arrived through the mobile app, and 2013 numbers reflect the same usage rates.8

A. Where the Report Goes

Our hypothetical pothole report, however received, funnels into the Lagan CRM system. (The CRM system handled 198 types of service requests as of July 2013.)9 Constituent Services sets the citizen’s expectation: potholes will be filled within 48 hours of the time City Hall hears of the issue.10

The request is then likely to be put in a queue on an Android phone carried by a city worker using an app called CityWorker. Matt Mayrl, Chief of Staff for the Commissioner of Public Works, emphasized the importance of the simple design of City Worker: "I still have [field workers] who don’t have a computer at home, never use the Internet, but now they come to work and they’re using an Android phone that creates cases in a state-of-the-art CRM system,” he said. "And that’s a testament to the way that we built technology, which was friendly to its users.”11

When the worker completes the request, he can close the work notice. That data feeds back into the same CRM system, triggering a notification to the citizen of the finished product—sometimes with a picture. Indeed, throughout this process the citizen who made the report may track its progress through the system. As Commissioner of Transportation Thomas Tinlin said, it’s “like tracking a package.”12

B. CRM Coverage

Currently, Mayor Menino’s 24 Hour Constituent Service Office, a department within City Hall whose tagline is "Connecting residents to city services: 24 hours a day, 7 days a week," works closely with five major departments: Public Works, Parks,
Transportation, Inspectional Services, and the "graffiti busters" in Property Management. Other departments such as Water and Sewers and Public School Transportation began actively working with the CRM system in the last year.\(^\text{13}\) (Exhibit D is a timeline showing when particular departments integrated the Lagan CRM system into their operations.)

Often, a service request enters the system that relates to a department not intimately integrated with the Lagan CRM system. In those cases, the Lagan system calls to the department’s separate system and tracks the emails between the two. If a citizen notices a problem with Jamaica Way, for instance, a state-owned roadway within the geographic parameters of Boston, he or she can still use Citizens Connect to report it but the path the request travels will be different: The CRM system converts it to a "general request" and emails it to contacts within the Massachusetts Department of Conservation Recreation. If an email is sent back noting completion, the Lagan system notifies the citizen of the closed case. No service level guarantees are possible in this circumstance.\(^\text{14}\)

"General requests" are more numerous than any other type of request, and range from Department of Neighborhood Development issues to Hubway bike problems.\(^\text{15}\) Since CRM in Constituent Services launched, over 10 percent of requests have been converted to "general requests" that leave the Lagan system.

Other City departments use different CRM systems; some communicate with the Lagan software and some do not.

- The Office of Business Development and the Boston Redevelopment Authority both use Salesforce.\(^\text{16}\)
- Licensing and Permitting uses a CRM system developed by Hansen Technologies.\(^\text{17}\)
- The street lights division and property management in Public Works uses Maximo as an Enterprise Asset Management system.\(^\text{18}\)

Both Maximo and Hansen can "speak" to the Lagan system for Constituent Services. The Commonwealth of Massachusetts also has a system that can communicate with Lagan. So when a request enters Lagan that is related to Licensing and Permitting, or to a state-level issue, Lagan transforms and classifies the request, and sends an email to the requisite department. Both Hansen and Maximo are built to receive that information as well as return the requisite closure information. Integration between Hansen and Salesforce is currently being explored, and some integration has been developed; the two systems are not now fully integrated.\(^\text{19}\)

Boston About Results (BAR), the performance metrics package used to score City Hall’s departments across platforms, uses SAP software to measure the achievement statistics it profiles. All of the Lagan CRM data from Public Works, the inspectional services data from Hansen, and more, enters the SAP platform.\(^\text{20}\)
Duplicate phone systems still exist across the City. In the Parks Department, for instance, a separate call center still functions for booking the Boston Common for events.\textsuperscript{21}

**C. Measuring Success**

CRM data feeds into BAR, allowing departments such as Public Works to measure their service levels. All of that data, in turn, is publicly available on both City Hall’s open data portal launched in October 2012 and the BAR website. But these systems do not track the success of the CRM system itself.\textsuperscript{22}

Every other week, Director of Citizen Engagement Holmes reports on fan mail during the Basic City Services meeting he holds with senior staff in Public Works and other departments. "People are usually astounded that people are taking time to write back to us and show their appreciation but they do because we’re good at it," he said. From December 2009 to August 2011, constituent satisfaction with the CRM system increased 21% (from 54% to 75%),\textsuperscript{23} a rise Holmes attributes to the institutionalization of best practices—"warm" transfers, follow-up calls, and setting expectations—as well as the increase in communications channels.\textsuperscript{24} (\textbf{Exhibit E} provides constituent satisfaction survey results.)

**II. The Mayor’s Leadership**

Mayor Thomas Menino, who has led Boston for the last twenty years, does things personally. The Boston Globe has described him as "an uncommonly intimate figure in a time when urban politics and American cities have become anything but," and a poll taken in early 2013 revealed that almost half of all Bostonians had shaken the mayor’s hand.\textsuperscript{25} His focus on personally delivered, high-quality constituent services is unremitting, according to his staff.

When he had a new mattress delivered to his house and the store followed through by calling him to find out how he had slept, his immediate reaction was to ask why the city didn't do the same thing for constituent requests.\textsuperscript{26} Street Bump was born from a plan to put a sensor in the mayor’s own car so that when it detected potholes it could record them.\textsuperscript{27} The city’s CRM system originated in a hotline that was physically run out of the mayor’s offices during emergencies—the Mayor’s Hotline. The deep imprint of the mayor’s leadership on Boston’s use of technology in governance and the provision of city services is undeniable.

Chris Osgood, who joined the mayor’s office as a Harvard Business School fellow in 2006 and has been sitting at the same desk in the mayor’s fifth-floor suite for the last six-and-a-half years, insists that the story of Boston’s CRM system and Office of New Urban Mechanics isn’t about technology at all.\textsuperscript{28} For Osgood, "It’s a story about how government is trying to actually better deliver services, whether it is using technology or not."\textsuperscript{29} The mayor, he says, has been focused on solving citizen’s problems with a personal touch, not on data or software.\textsuperscript{30}
The technology-related team brought by Mayor Menino to City Hall sees itself as implementing his vision of personal service and outreach. City employees frequently said that the mayor sees technology as a tool for engagement and resists its use to keep people at a distance.

The mayor long refused to permit voicemail use in City Hall, because he didn’t want people to get an automatic response of any kind when they called. The mayor’s Chief of Staff, Mitchell Weiss, said, "Not having voicemail is incredibly inefficient operationally but it’s about the most efficient cultural symbol that you will find."31 In February 2012, the mayor relented; voicemail was introduced as an option for constituents to choose—as long as they first spoke to a live person.32

"What makes Boston unique," Holmes said, "is not just that we’re high tech but we’re high touch."33

Commissioner of Transportation Thomas Tinlin, who has worked in Boston City Hall for twenty-five years, recalls sitting in the Mayor’s offices before the Mayor’s Hotline came into existence taking calls from residents during snowstorms. At that point, the "system" involved a call from a citizen, a pen and paper, and a call to a friend in another department to find the answer to the citizen’s problem. There were no follow-ups, no calls to note the completion of a request, and separate departments were connected only insofar as they spoke to one another via phone, memo, or in person.34 Later, a call center—officially called The Mayor’s Hotline—was created inside City Hall. Still, however, there was little tracking, great dependence on the operators’ personal connections to City departments, and no data reflecting how complaints were dealt with.35

The original impetus for the transformation of this somewhat ad hoc original Mayor’s Hotline can be traced to a speech the mayor gave in December of 2005 to the Boston Chamber of Commerce. The mayor announced three initiatives: First, he planned to create the first-ever cabinet-level CIO; second, he would create the Boston New Urban Mechanics fellowship program; third, his car would be put to use to sense potholes using a gyroscope and accelerometer.36

Chief of Staff Weiss, who drafted the speech while he was a Harvard Business School fellow for the City of Boston, said: "New urban mechanics. Obviously he [the mayor] was the urban mechanic. I believe deeply if we’re going to have an effort on technology, which is an effort of the mayor, ... it has to be massively linked to him. So it’s got to be named after him. And then I’m not a genius so I just said new."37

This speech led directly to the hiring of Bill Oates as CIO in June 2006 as well as several other key hires.38 And all of these new mayoral hires turned out to be intensely collaborative, open-minded people who were interested in both technology and new forms of constituent engagement.

Mitchell Weiss was at the center. After serving as a fellow in 2004-05, he left to head the Tobin Project, an independent social science research organization. He had
become interested in the idea of "ambidextrous" organizations that explore breakthrough innovations as well as manage their basic services.39

Chris Osgood, working at the New York City Parks Department, had heard Weiss speak in 2004 about his year-long fellowship in City Hall and had decided he would go to Harvard Business School in order to get that fellowship himself.40 After being involved in a series of tech start-ups, Nigel Jacob had decided he wanted to be involved in public service.41 Bill Oates had had extensive experience in the private sector as CIO for Starwood Hotels and Resorts Worldwide. Boston City Hall was a second career, a favor for his friend the Mayor, and this position gave him what Lindsay Crudele, Community and Social Technology Strategist for the City of Boston, described as a "particular fearlessness."42

Osgood, Jacob, and Oates all arrived in City Hall about the same time—in 2006—met each other, and started to work together intensely. Their former hires, including fellows and interns, are now spread around Boston’s local government.

Formally, Jacob and Osgood are the core of the Mayor’s Office of New Urban Mechanics and Oates heads the Department of Innovation Technology, while Weiss is now the chief of staff. Informally, Weiss, Jacob, Osgood, Oates and their many partners and colleagues across the city work together on a host of projects and seem to pay little attention to titles.

Although titles may not have been central to their ability to get innovative work done, the mayor’s leadership style and executive imprimatur were essential to the team. For example, Justin Holmes said it was important to him that the CRM system was seen as a city-wide mayoral function rather than a technology effort or some side-effect of a budgetary conversation.

Holmes believes Boston is a success with technology "because of the mayor’s leadership and his very personal message and personal commitment and in the way in which that’s communicated to the rest of the city."43 Osgood said that absent alignment with the mayor "you would have a marginalized and weakened innovation group."44 Principal Data Scientist Curt Savoie said, "Not that the mayor doesn’t understand technology. Well, he doesn’t but he has people who does. He’s old school... I can’t imagine him doing something on the computer... I think having the right people has pushed things along fairly well but especially in a political organization having that executive stamp of approval ... carries a lot of weight."45

Jacob, Osgood, and Weiss all began as fellows, and Jacob said the mayor would tell the fellows "I want you to lead and I want you to cut through any BS that you see and just do things."46 They were empowered to act, within limits: They had to make sure that what they were doing was within the mayor’s strategic framework.

The team’s technology efforts always followed the mayor's mantra of "people first." They chose not to move to the three-digit "311" number for the improved Mayor’s Hotline, instead staying with the ten-digit phone number (617-635-4500) that had
been used for several years. Weiss said, "He [the mayor] felt like 311 sounded too bureaucratic ... faceless."  

For the mayor, the idea of using technology to reach even more people was very appealing. He was energetic in encouraging this collaborative team to forge ahead with the evolution of the Mayor's Hotline into a lightweight CRM system. Oates explained, "The mayor gave us his complete support through this whole thing. And in this city, I always say to people, when they say, 'Wow, how have you guys got so much done here?' I say, 'Because it's who we are and it's the way we're organized.' And you know, the mayor, in my view, is as empowered a CEO as any private sector CEO I've ever reported to, and so the fact is, it was a leadership issue. He was saying, "This is how we're going to do things."  

As Lindsay Crudele said, the mayor liked the idea "that he could be of service in even more ways, to be even more places at once." Crudele added: "He's just so open-minded. We come to him with new projects and we say let's do this and let's do that and here's a new idea."  

According to his staff, the mayor is a leader and not a manager—and that is a very positive thing. He is willing to trust his appointees to take risks. Crudele explained, "None of this [effort] from the Mayor to Bill [Oates] involves fear." She also said, "[W]e want to create a culture of experimentation and openness and boldness and bravery, specifically because we can't move forward if we don't."  

Memorably, Osgood said,  

I think of buzzwords we throw around like 'rapid prototyping' and 'human-centered design.' [Those words] actually deeply describe our mayor. ... What does that immensely strong concern about people actually mean? That just means ...that's where you start. That's what you're really trying to get at, right? Don't design your operations around what's good for government. Design what's good for people. ... It's totally where the mayor is.  

Colleagues credit the core team of Weiss, Osgood, Jacob, and Oates with being particularly successful in translating the mayor's obsessive focus on constituent services and personal touch into an integrated CRM platform that makes possible varied forms of two-way communications with real people while also facilitating the hard-nosed tracking of city performance.  

From Weiss's perspective, the importance of the system's evolution was not its facilitation of increased efficiency or performance management. "The biggest problem cities face are not efficiency problems," he said. "They're participatory problems. They're democracy problems." For Weiss, the CRM system was a tool to further engagement rather than to generate data.  

From the mayor's perspective, the enhanced CRM system—including its Citizens Connect smartphone application—was something citizens liked and responded to. It
represented a crystallization of his approach: The sign was still on the wall reading The Mayor’s Hotline, even though the system had become more than a phone number. It now could be directly accessed by Public Works employees in the field. Phone calls, Web chats, and Tweets were responded to by real people. It was not designed to keep constituents away from City Hall; for example, as Holmes put it, a live web chat "really gives us an opportunity to execute against the mayor's strategy overall, which is about helping people not overprogramming, not this computerized approach... using technology like the web to deliver that personal approach to government service."\(^{53}\)

Focusing on service delivery rather than internal government efficiency or government savings was the point, according to Jacob, because that was the mayor’s point:

Especially with the mayor whose entire focus is on what happens out there [in the world], [focusing on internal government innovation is] a low value innovation, right, because that doesn’t affect anybody’s life outside.. Instead, what we’ve said is if by focusing instead on the service delivery component and developing... the metrics and... operation capacity around that, that immediately gives you the ability to show value outside that people can see... And it gives the mayor [something] he can talk about immediately, right, and that defrays all kinds of risk, right, in terms of these projects getting cut. And so you end up doing both [saving money internally and getting to better service delivery] by [focusing on]... the value proposition...\(^{54}\)

Commissioner of Transportation Thomas Tinlin, himself a twenty-five year City Hall veteran who says he has always worried about technology replacing the "personal touch," said, "I see Tom Menino’s fingerprints on the city everywhere I go, but I also know why he and, by extension, we, have been so successful... We never relied on the old ways of doing business."\(^{55}\) The enhanced CRM system and the launch of Citizens Connect aligned with the mayor’s strategic vision. And the mayor’s leadership and innovative nature were essential to getting it done.

### III. Launch of the CRM System

As the mayor began his fourth term in 2006, the staff of the Mayor’s Hotline was made up of Janine Coppola (now the Director of the Mayor’s 24-Hour Hotline) and three other people sharing space with Department of Transportation employees working on the Big Dig.\(^{56}\)

At that point, Oates, new to government, was surprised by the barriers to collaboration that were both physically and virtually in place inside City Hall. "I remember talking to him and saying, 'Mayor, ... I just want you to turn the building upside down and shake everybody out of it,'" Oates said, "because I had never seen a building where the biggest challenge was fragmentation and poor communication,
you literally can’t even find where the other departments are in a building like this. It was horrendous."57

One of the mayor’s top goals was "improving city services at the same or better cost," according to Bill Oates.58 The idea that a CRM system could improve communications about city services among departments and constituents while simultaneously improving communications among the departments themselves made sense to Oates.

Oates, Osgood, and Jacob were all involved in early strategy meetings about a new CRM system, but it was Oates who took the lead. "I always remember the mayor at one point . . . saying, ‘OK, out of all of you, who owns this project?’" Oates recalled. "And then he pointed at me, and said, ‘Good, I’m glad it’s you,’ and not realizing that the other four were smart enough to step back, you know, because I was the new guy, I didn’t know that I really I didn’t want to be the owner of the project."59

In late 2006, the strategy group commissioned the Gartner Group, the technology research and advisory firm, to undertake a review of public sector CRM. Gartner confirmed the problematic divisions Oates saw in City Hall, discovering, for example, "thousands of listings for City of Boston services in local phone books."60 Some cities, Gartner found, had the front-end, the service-delivery component that allowed them to adequately address issues as alerts arrived, but could not capture alerts in a systematic fashion. Others had ways in which to manage the notifications of issues, but no way to address the problems and repairs.61

The strategy team emerged with the idea that what was needed was an RFP for a vendor to provide a front-end and a back-end that were both robust. Oates presented the team’s vision to the mayor and received his approval, but the budget for the project was far greater than Boston City Hall’s typical investment in IT. Getting buy-in from City financial officers was difficult.62

The team winnowed the eventual responses to the RFP down to two competing options: Oracle’s Siebel CRM system or an Irish company, Lagan. Oracle’s proposal was expensive and hefty, and its approach did not suit the "high-touch" atmosphere of Boston City Hall. Lagan arrived with good references, a lower pricetag, and it seemed as if adoption of its system wouldn’t up-end the culture of City Hall.63

In 2008, Oates hired Unisys to implement Lagan. Integration was tricky and took longer than expected. Mayor Menino was the most frequent caller of the Hotline—often at 6:00am—and he noticed when he wasn’t able to reach a real person. The mayor would ask, "Billy, what are you doing to my hotline?"64 Oates would reply, "Mayor, just give me a little time."65

Outside City Hall, the press was becoming impatient. The mayor had announced in August 2006 that City Hall was working towards a new call center, but nothing had materialized after eighteen months. A Boston Globe April 2008 story quoted “senior city officials” as saying, "[...]It could be nearly two more years and $2 million more before the administration has a citywide system to keep track of residents'
complaints."\(^{66}\) After the article was published, the Mayor’s Office issued a press release ("Mayor Reaffirms Dedication to Constituent Services and Hotline") and appointed Patrick Harrington as special assistant to the mayor to lead the project.\(^{67}\)

In October 2008, the CRM system formally launched. By 2009, City Hall was touting its response to citizen inquiries as well as the speed with which city employees were performing repairs on public works. "The length of time it took city workers to deliver new recycling bins, for example, decreased from a month on average last fall to just one week earlier this month," said a Boston Globe story in May 2009. "City workers now fix burned-out street lights within a week, down from an average of 17.5 days last year. And park maintenance requests, which took an average of 10 days to be fulfilled last fall, are now being addressed within six days."\(^{68}\)

When CRM launched in Constituent Services, three departments piloted the program: the Department of Public Works, the Department of Transportation, and the Department of Parks and Recreation. While the Inspectional Services Department was already using Hansen to track its services, integration between the two CRM systems was carried out in October 2008. Graffiti Busters began actively using Lagan shortly thereafter, in March 2009. The Public Schools Transportation Department began using Lagan in December 2011, and Water and Sewage signed on in December 2011 as well.\(^{69}\)

In March 2010, Justin Holmes officially came on board to lead the Office of Constituent Engagement division. Oates felt that the new CRM system had been leaderless for too long, constrained by budget concerns. Everyone said "'Oh, thank God, we've got Justin,'" Oates recalls. "I said, 'Yeah, you're right.' Nobody remembers how hard it was to get that approved."\(^{70}\)

In April 2010, the mayor formally instituted a policy of ensuring customer satisfaction by requiring follow-up calls and emails. Commissioners from several departments, as well as Chief of Staff Mitchell Weiss, trekked down to the call center to surprise constituents with calls aimed at confirming that citizens were happy with their services.\(^{71}\) (Exhibit F is a ranking of top constituent service requests.)

The CRM system remains a work in progress. Oates plans to add Human Services departments (Veteran Services, the Women’s Commission, Boston Centers for Youth and Family) to the system.

**IV. Launch of Citizens Connect**

The launch of the wildly popular Apple iPhone during the summer of 2007 and the release of a software development kit for iPhone app developers in early 2008 gave Chris Osgood and Nigel Jacob, co-chairs of the Mayor’s Office of New Urban Mechanics, an idea: Jacob was interested in exploring how to use iPhone apps for government purposes, and Osgood had spent the previous two years focused on the Mayor’s Hotline and CRM. What if the city allowed people to take photos of city problems using their iPhones and send them in? And thus the Citizens Connect notion was born. (Exhibit G provides screenshots of Citizens Connect.)
Osgood and Jacob’s first stop was the MIT Media Lab. These were early days for smartphone apps, though, and no one at the Media Lab was working in the area. But Hal Abelson of MIT knew of Dave Mitchell of Connected Bits, and made the introduction. Mitchell had worked with Microsoft Research and MIT, and had started the company in 2003 with a coworker, Eric Carlsen. "We found we could do some interesting things on the phone and communicate it back to a browser," Mitchell says.72 Mitchell recalls an initial meeting with Jacob, Osgood, Oates, and some city GIS staff. Mitchell remembers:

So we [Connected Bits] were excited, did a bunch of work, and returned a few weeks later with a functioning prototype. We met with the same City Hall people and showed a demo that captured a photo, added a GPS location and some basic information, and transmitted it all to a server for managing. And if you closed the request on the server, it would send a text message back to the reporting phone... 73

He remembers that the City Hall staffers were stunned. "They're not used to that kind of turn around, going from concept to visible functional prototypes between two meetings." The problem with Connected Bits’s alacrity was that it was a private company that would need to be paid to go any further, and Osgood and Jacob were offering just $5,000—hardly enough for a functioning big-city product.

Luckily for Osgood, Jacob, and Oates, Connected Bits was generous. According to Mitchell, "We said, 'Look, this is what we’ve been working on for a while. And having a good partner and a use case and a reference is good. So we'll do it for free.' But we asked the city to kick in 25K for support for the first year, because we knew that once we launched it, support is a continuing ongoing thing."74 Oates agreed to the request on the spot.

Citizens Connect, according to Mitchell, was a cutting-edge application at the time: "Nobody was doing this." The largest portion of the work was getting the application to work smoothly with Lagan; integration took about six months.75

Integration may have been tricky technically, but at the time of the launch of Citizens Connect in October 2009, the key concerns focused on privacy and abusive behavior. These concerns turned out to be overblown. Mitchell again: "[A]fter a whole year and 10,000 reports going through, there were one or two slightly inappropriate things... But it turns out all of that worry was almost for nothing."76

Instead, Citizens Connect provided an additional channel for citizen reporting that was both novel and easier for people accustomed to apps rather than online sites to use. As Matt Mayrl explains it, Citizens Connect "was really usable to a group of people that, and I’m talking constituents now, that struggled to use other forms of technology. It was easier, it was always there... it slimmed it down, what previously was starting up a computer, waiting for it to start, loading the Internet, going to it, remembering the website page. It made that whole process easier. There’s a little button, ... there are four choices and you just do it."77 Justin Holmes believes that
adoption and use of Citizens Connect signals that the city is now "tapping into a population that would not have been engaged... previously had we not developed these new channels."78

Citizens Connect also allowed for the reporting of far more useful and actionable information. Sending in a geocoded picture allows a domain expert to determine exactly what the problem is. In the past, according to Mayrl, people might have called to report a light out, without being sufficiently specific:

Well, you know, there was always that margin of error. OK, is that a streetlight? Is that a light in a ball field? Is that a traffic signal that you referred to as a light? And we used script flow to help direct that and try to make sure that that was like correct. But there were errors in that. Now if somebody takes a picture of that, and it goes to the person whose job it is to know what the difference between all those different things are, and who might be responsible for this light is, we get a much better higher-quality service.79

Citizens Connect is currently in its third version, with a fourth planned for fall 2013. Each version was subject to extensive testing by beta users. The first version was focused on reporting by citizens. By the time the second version launched, in October 2010, the app allowed citizens to see what other issues had been submitted and resolved by the city, posted to a map. Output: Transparency.80

(Exhibit H is a timeline of New Urban Mechanics' app development.)

Michael Norton, a professor at Harvard Business School, calls this "showing your work." Just as Domino's Pizza adds to customer happiness by telling people watching its online ordering site that the pizza guy has just added pepperoni to their pie, so too (he suggests) can cities add to their citizens' sense of satisfaction by simply showing what the city has done for them lately.81 Dave Mitchell agrees: "[U]sually cities are fixing as many things that come in and more, but most people aren't aware of that. And so [adding transparency] was a good PR move for the city, because people who used the system would see, '[O]h, look, I see 50 things were opened today, but I also see 60 things were closed today.'"82

Version Three of Citizen's Connect came out in October 2011. Mitchell says Version Three was about "engagement"; the app was ported to a Web version and an Android version, as well as the iPhone app, and beefed up technically. "There were a lot of improvements for speed, performance, security, and adding richer support for different service types," Mitchell explains.83 Version Three was sufficiently robust that Mitchell felt it could be licensed to other cities in addition to Boston.84

In early 2011, Connected Bits released a related application called City Worker, available to city employees in the field rather than citizens. It allows workers to both respond to dynamically updated requests and to close them on the spot.
This is an enormous improvement in what had been a paper-based workflow system. In the past, suggestions for needed fixes would come into a traditional office, be printed out, and then handed to a worker before he or she went out into the field. Mitchell describes this static prior system:

And so city workers would arrive in the morning, get this printout, and then leave to visit the sites. Meanwhile new requests are coming in while they are out in the field. A city dispatcher might call them on the radio if it’s important. But usually they would go out and fix things, and at the end of the day return with a piece of paper filled with little Xes and checkmarks and notes scribbled on it. And so somebody in the city would have to enter that into the CRM. So then the next morning, it all begins again with a new round.

With City Worker, by contrast, about 200 Boston Public Works employees, many Parks employees, Waste Management employees, and others have with them in the field a personalized window on Boston’s CRM system. Mitchell:

Potholes, graffiti, or any of the common requests that come in via the system automatically are automatically placed in a queue for the field workers to work on. And they now have a mobile device that, boom, it’s going to show up on. Here’s your list of things to do. And it’s just showing them, here’s your queue, and here’s what items there are. And they can view the photos and all the details. They can reassign it. They can put notes in. They can take photos. They can finish the case and close it, all in real time. And so when new things come in, they can say, ‘Oh, okay, I’m doing this one and there’s one right next to me.’ They can create new cases as well.

Commissioner of Public Works Joanne Massaro, who struggled at first to persuade her staff to use the CRM system as a whole, said that resistance to the City Worker app was minimal. "The more we could make it user-friendly, the more easily they adopted it," she said.

Holmes feels that City Worker has "dramatically improved [the] efficiency [of] service delivery. It allows [workers] to stay on the road, stay focused on what they do." The dynamic delivery of new projects allows workers to see images and requests when they’re in the right place to resolve them, without needing to return to the yard to grab a printout.

Plus, the City Worker app works just like mainstream apps, according to Mitchell, which reduces the barriers to usage by tech-phobic field workers:

[ Citizens Connect is] very single purpose, one thing you can do. Here’s a list of issues. Tap it, it says, do you want to inspect it? Do you want to close it? Do you want to assign it to somebody else? And if you say assign to somebody else, it says, well, who? Or where do you want it
to go? If you say, new pothole, it will then ask you [for] just the pertinent information.

Workers that might have said "I'll quit if you make me use a computer" are fine with it; it's not a computer, it's a phone app, and it's not intimidating.

City Worker app adoption has also been driven in DPW because it is now part of job descriptions and performance management using the CRM system as a whole, according to Matt Mayrl:

So when we did the [CRM integration] and all this stuff could be digitized, we started measuring each of the district yards on the number of mobile cases that their inspectors created. And then we put in a system to track the number of hours that people were assigned to... so we could manage the number of cases... But the foundation was, we had one core set of data that was undeniably accurate and... people were fully bought into [it].

Citizens Connect Version Four, to be released later in 2013, will incorporate an end-to-end reporting system for citizens that can be licensed as a turnkey hosted solution to a city. Mitchell describes Version Four as a mini-CRM system: It includes a call center, allows for city worker completion of tasks to be made visible, and generates reports. A dashboard will allow citizens to watch reporting at a neighborhood level, and will allow for triggered alerts to be sent to constituents. Citizens Connect Version Four will connect the city worker to the constituent—the "grand unification," Mitchell calls it—making it possible for a worker to communicate with a constituent about repair options. Constituents may be able to "thank" workers. The theme of Version Four: Collaboration.

The launch of Citizens Connect has not led to a decrease in traditional phone calls to the Mayor's Hotline. According to Holmes, that wasn't the point:

We really suspect [the people using Citizens Connect are]... a subset of population that maybe did not feel like dialing a 10 digit number... but they're much more comfortable using Smartphones to navigate. So it's really interesting to me and I tell this to other cities all the time. ... Don't launch mobile because you want to cut down on hotline calls. In our experience, you're not going to see that. But a reason to do it is to better engage your citizens.

In fact, calls have also increased.

Janine Coppola, longtime City Hall employee and current Director of the Mayor's 24-Hour Hotline, says the impact of Citizens Connect has been "huge." She continues:

[Take] yesterday alone. I was here early yesterday morning because of the blackout and I processed... about 50 mobile cases [in the "other" category].... From Sunday morning, 10 o'clock to this
Adoption has been steady, if slow, even though the app has not been promoted by the city; about 175 people run across the application every week and download it, according to Mitchell. When an article is published about Citizen’s Connect, adoption spikes.

More iPhone users adopt it than Android users (by a factor of 3:1, according to Mitchell), even though there are more Androids than iPhones in use. "It’s one of those cases that the people who use iPhones tend to be using more app usage and looking for things to do," he says. The iPhone version of the app has been downloaded about 37,000 times as of July 2013.

(Exhibit I provides download rates by month and year and Exhibit J shows recent usage rates for Citizens Connect.)

The New Urban Mechanics office has worked closely with Dan O’Brien of the Boston Area Research Initiative housed at the Radcliffe Institute for Advanced Study. O’Brien, an ecologist, has used data coming from the Lagan CRM system to understand neighborhoods as ecosystems. He has looked at why people call in vs. use Citizens Connect, studied calling patterns for individuals, and mapped how the system is used at the neighborhood level. According to O’Brien's research, the majority of CRM request-makers report just one case, 90% of users report two or fewer issues, and 80% make reports about issues within two blocks of their home. (Exhibit K shows sample BARI mapping of CRM cases.) New Urban Mechanics’ partnership with O’Brien has been fruitful; understanding the territorial motivation of users will help the office amplify citizen engagement on multiple platforms.

In September 2013, another layer of Citizens Connect will be released: Street Cred. Born out of a partnership among New Urban Mechanics, Connected Bits, and Emerson College Professor Eric Gordon and his colleagues at the Engagement Game Lab, Street Cred is an API that allows for the creation of civic "badges" based on reporting issues to the CRM system through Citizens Connect and other activities. The Street Cred app will collect information about Citizens Connect use and connect it to other civic engagement activities.

According to Mitchell, a citizen submitting a pothole report and opting into Street Cred may receive an email reading, "Congratulations, you're enrolled in this campaign, and you’re three steps away from a prize." The prize may be a digital badge, a thank-you note from the mayor, or a bumper sticker. The app may interface with City Worker, placing gold stars next to the names of citizens who make accurate, non-abusive reports. Citizens will be able to publish this information to social media. Gordon describes Street Cred as a way "to test the value of reputation and social interactions within service delivery."

Chris Osgood feels that Citizens Connect has "been a great service improvement and culture change for the city as a whole." Dave Mitchell agrees. He thinks the same
V. Performance Management

City Hall had been doing performance analysis for years as a measurement function within the Budget Office. BAR, or Boston About Results, was launched in 2007 within the Office of Administration and Finance. The idea was to help City Hall departments manage and improve their performance; the function was made active, rather than passive, and taken out of the Budget Office. In 2009, BAR began releasing public "performance scorecards," with the aim of holding Departments accountable to both the City and constituents when goals were not met.

During the budget process, all 45 departments set performance goals and analyze the returns at the end of each quarter. BAR also works with departments to improve their work, and ensures that performance metrics are not based solely on budgetary concerns. Commissioner of Transportation Tom Tinlin describes this back-and-forth as a fair process, one in which the department sits down with the Budget Office to make a case for "here’s what we should be measured on and why." This is a discussion between the two divisions, not a mandate that Budget hands down to Transportation.

In early 2010, prompted by the wealth of data coming out of the Lagan CRM system and feeding into BAR, Justin Holmes, newly arrived at the Office of Constituent Engagement, began hosting Basic City Services meetings with the heads of Parks, Public Works, Transportation, Inspectional Services and Property Management. These meetings, held every two weeks, continue to this day, allowing core public-facing service managers to analyze their performance using raw data.

In June 2010, the City hired Devin Quirk to become Boston’s first Citywide Performance Manager. (Before that, Chris Osgood and Matt Mayrl had helped lead BAR efforts.) Quirk had written his Kennedy School Policy Analysis Exercise on how Boston could manage performance better using collaborative techniques, and he aimed to make his thesis a reality.

Quirk asked each Department three questions: "What is it we’re doing? How well are we doing it? And how can we do it better?" Rather than enter departments with the goal of reforming them, Quirk saw himself as an aide, collaborator, resource, and outside analyst. He began doing intensive consulting projects, such as in Inspectional Services.

Part of Quirk’s reform of the performance management system across City Hall was working to ensure the accuracy of the data being used. When he entered the division, the reports that were generated did not seem to match Departments’ business processes or create incentives to improve them:
If you want to use data to manage people, you have to let them know the data’s being used. Right? Because otherwise they’ll just, they’ll track things in a system to the point where it’s useful to them, but if you issue the permit, someone actually physically gives it to them, why do you care about going back to your desk and saying, I issued it to them, if no one ever tracks that?¹⁰⁹

Quirk instituted a system within Inspectional Services in which each individual inspector had ownership over his or her own performance report. These reports were shared with managers. Performance reports reflected the previous day’s statistics as well as the queues for the upcoming day. Communication among inspectors, managers, and customers increased. At the beginning of his Inspectional Services project there were roughly 600 overdue permits. Six months later, Quirk reran the numbers and there were three.¹¹⁰

For Quirk, a key indicator of his division’s success was when departments started coming to him for help:

One of the things I said to our team often was, we are performance measurement, like our success should be judged by how often people are coming to us to ask them to help them solve their problems...if people care about what we’re doing, and they see us as a resource, then they’ll keep coming to us...¹¹¹

Quirk’s aim is to improve operations that will make constituents’ lives better: Improving performance in Inspectional Services, for example, will allow more permits to be issued, leading to job-creation and economic development.¹¹²

Making constituents understand the context for performance management is difficult. As Tinlin notes, "I think the numbers are great, but the context is important, and not everybody reads the context, you know. People just see a green dot, a yellow dot or a red dot."¹¹³ (Exhibit L shows CRM closure rates mapped to service level agreements.)

As this performance management shift was underway, Joanne Massaro was in the process of revitalizing the Public Works Department. A longtime City Hall employee, Massaro had worked in the Department of Neighborhood Development for years before moving to the Department of Administration and Finance. It was there that Massaro began working on Public Works as a "special project" in the spring of 2009, eventually moving inside Public Works as Acting Commissioner in January 2010 and Commissioner as of July 2010.¹¹⁴ Public works had undergone some rough leadership transitions. Massaro, a self-described implementer, took charge.

Massaro was data-driven, having worked with performance analytics in BAR. When she arrived in 2009, typewriters were still being used in Public Works and the only entries in personnel files were requests for time off.¹¹⁵ She found that overtime "was out of control" as employees routinely reported working overtime to compensate for low wages.¹¹⁶
The state of Public Works made the department a good guinea pig for the new CRM system being implemented by Bill Oates’s team in DoIT, Nigel Jacob, and Chris Osgood. Public Works had piloted the Lagan CRM system just prior to Massaro’s entry, and she pushed it forward.

Adoption by Public Works field workers of the City Worker app in February 2012 has improved efficiency: In May of 2012, the Department of Public Works reduced the service level agreement level for receiving a recycling sticker from five days to two, a change Public Works Chief of Staff Matt Mayrl attributes solely to use of City Worker.\textsuperscript{117} Pothole repair rates measured against the SLA of two days have improved from 48\% (February 2011) to 96\% (January 2013). (Exhibit M provides percentages of pothole cases closed within the SLA over time.)

In June 2011, Massaro and Mayrl began holding data-focused performance analysis meetings for the ten district yard managers across the city. During the meetings, the group uses BAR reports to discuss CRM responsiveness, lost time (employees not showing up for work), and other matters. Mitchell says these data-based meetings are highly motivating for Public Works employees: "They all want to be best," he says, "and they can’t help it."\textsuperscript{118} Mayrl says that, "In the two months prior to starting the stat meetings (April/May of 2011), a pothole took an average of 3 days to fill (2.91) and a sidewalk make-safe took an average of 5.04 days. By April of 2012, both had dropped to about one day: potholes 0.6 days; sidewalks 1.09 days."\textsuperscript{119}

In the next version of City Worker, Mitchell would like to add a view of real-time statistics for the mobile individual worker, displaying performance metrics for the worker, the district yard, and the city at large:

> Because right now, two days before the end of the month when their meeting is, they all of a sudden put on a big burst of energy and go fix those potholes that are overdue. And they all come in, bated breath, waiting to see. 'Oh, just missed it.' Or, 'Oh, yes, I’m on top.' But they really don’t know where they are throughout the week. And so giving them a real time perspective graphically of how they are in terms of their goals—individually and as a group—we think will be empowering.\textsuperscript{120}

For Public Works, BAR has been a vital internal tool. Still, BAR has suffered from a lack of consistency. Data is still stored in different formats—in PDF form or in an interactive website—and in different classifications, and is not available through the City’s Open Data Portal website.\textsuperscript{121} Osgood, who worked on BAR when he first arrived at City Hall, attributes this problem to conflicts over BAR’s function. Some people have seen BAR as a budgetary tool for financial control, others as an internal tool for department managers to measure employee performance, and still others as a transparency tool to show the public what their tax dollars are funding.\textsuperscript{122}

While acknowledging BAR’s utility for Public Works and other departments, Chief of Staff Mitchell Weiss believes BAR does not adequately represent Mayor Menino or
his leadership style, which prioritizes engagement over efficiency. "The only thing I hate worse than performance management ..." says Weiss wryly, "is using [it] as a motivating tool for accountability for our employees." He clearly is focused on performance, accountability, and data, and acknowledges that BAR data helps for "storytelling internally."123

VI. The Role of Collaboration

The Mayor’s Office of New Urban Mechanics is highly collaborative. The low egos of Osgood and Jacob, and their feeling that the work is more important than who gets credit for it, has allowed relationships to form with ease. This culture works through loose allegiances and trust in partners to "own" certain projects. (Exhibit N is a list of projects with which New Urban Mechanics has been involved.) Osgood and Jacob describe themselves as a bridge connecting departments within City Hall to the outside world of academia, the private sector, and nonprofits. When asked what defining characteristic Boston leads in nationally, Weiss said, without hesitation, "Relationships."124

With Citizens Connect, the idea originated inside MONUM but the product was created through a collaboration between City Hall and Mitchell. And within City Hall, Citizens Connect evolved over time because of relationships among Bill Oates, Justin Holmes, Joanne Massaro, and Matt Mayrl.

For Osgood and Jacob, this was the only approach that was possible. "How do you pull people together—agencies together—that we have no direct control over but figure out a way to align themselves around a particular mission and orientation?" Jacob asked.125 Oates said, "It’s not about me, it’s not about the New Urban Mechanics. It’s about the city and it's about the mayor. So, it was pretty easy to just kind of relegate your ego to whatever the heck is going on."126

It was Weiss who pioneered the New Urban Mechanics brand and its conceptual approach. When he returned as Chief of Staff in 2010, Citizens Connect had already been through one iteration and was on its way to a second, all through the agency of Osgood, Jacob, Mitchell, and Oates. Prior to Weiss’s formalization of the New Urban Mechanics space within the Mayor’s Office, Citizens Connect was a project for Constituent Engagement, funded through the CIO’s office, worked on by Osgood from the mayor’s office and Jacob from the Department of Information and Technology, and developed outside City Hall. And Citizens Connect was working.

Weiss called Osgood and Jacob on his return to City Hall, and the three met. Weiss suggested that the creation of an Office of New Urban Mechanics might be a way to make more concrete the work the two had already doing, and might help drive additional work forward. The three decided that the focus of New Urban Mechanics would be about democracy and engagement and would be in the mayor’s office rather than under the CIO.

Until October 2012, Osgood and Jacob were the sole full employees of the Mayor’s Office of New Urban Mechanics. For years, MONUM was otherwise staffed by interns
and fellows. Some came through Harvard Business School, others through the Rappaport Institute. In 2011, the City of Boston established a partnership with Code for America, and every year a batch of fellows has entered through that collaboration as well.

The New Urban Mechanics fellowship Nigel Jacob held continues to thrive under the direction of Patricia Boyle-McKenna, a long-time Bostonian who seeks out talented innovators. More than 90% of these fellows have stayed on in different roles in City Hall.

Boyle-McKenna attributes this high retention rate to what she, crediting Weiss, calls "the government bug." The fellows see "how much you can make a difference, how much you can impact people’s lives in a quick, short year."127

For Weiss, the fellowship program is essential. "There’s no question in my mind that our fellowship programs have been part and parcel to this [the talent in City Hall]. I wouldn’t have been here. Without an HBS scholarship program, there’s no question New Urban Mechanics never happens. It does not exist."128

VII. Hard Questions

Despite the enthusiasm with which core City Hall staff talk about the New Urban Mechanics ethos and the evolution of Boston’s CRM system, the significant cultural changes that the team has brought about over the last several years may have had limited effects within city government. "There’s still a lot of bureaucracy in the building. We haven’t ended that," says Mitchell Weiss.129

As a result, these changes may not have been adequately institutionalized; they may not survive the city’s transition to a new, inexperienced mayor. 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.

Brand awareness of the Office is likely low among Bostonians, although citizens have probably noticed increased city responsiveness. People love Citizen’s Connect when they run across it. But Bostonians might not necessarily notice right away if the Office of New Urban Mechanics or the ethos of innovation within City Hall disappeared. Director of Street Bump James Solomon says this is a problem for the institutionalization of an innovation office within the Mayor’s Office: "'You could change New Urban Mechanics and keep Citizens Connect and there’s not necessarily a vocal external constituency that’s going to politically pressure the [new] mayor to . . . keep New Urban Mechanics.'"130 Although Osgood’s goal is to make Bostonians feel as if they are co-creators of city government, he acknowledges that actual progress against this measure may take ten years or more to assess.131

On the other hand, the Mayor’s Office of New Urban Mechanics, the innovative ethos of Boston’s 2013 City Hall, and Citizens Connect are all very well known in government innovation circles—thought leaders, the press, foundations, other
mayoral offices—even if Bostonians don’t know the players or the office. The Office accomplished a good deal in a relatively short period of time. The open question is whether its accomplishments will be enough to allow it to survive a change in administrations.

Weiss thinks the legacy of Mayor Menino will be the good shape in which he left the city: Boston now enjoys low unemployment, population growth, job growth, school graduation rates, cleaner public works, etc. He does not claim that the mayor’s technology innovation program will be heralded on the mayor’s way out the door; he does believe, however, that the increased trust brought about by the city’s use of technology to engage citizens has been important. He also thinks that the mayor’s technology efforts were part and parcel of his opening up of the city, making it livable, and earning its people’s trust. Weiss points to the mayor’s extraordinary 80% approval rating as evidence that a trust-based approach works.132

Beyond the question of whether an innovative approach to governance has been adequately institutionalized either inside or outside City Hall, it is apparent that Boston has not systematically harnessed data tools like its CRM system in the service of policy—to spot waste, fraud, and abuse, to predict where government intervention is needed, or to assist in the allocation of resources beyond fixing street elements. Mayrl says that the city is not currently using Twitter conversations as a sentiment sensor about city functions or gathering GPS vehicle data about plow location or other city issues in order to map it. (In the future, he would like to use GPS vehicle data to "predict" unplowed areas.)133 City Hall staff have recently begun to use Topsy for social media sentiment analysis, but they believe that people won’t say much publicly and are not putting much store at the moment in Topsy’s results.134

The CRM system itself has not been fully integrated into the business of all city agencies. Business Development is using Salesforce, not Lagan. Separate call systems continue to exist, in Parks and in other agencies, although they can be called into by the Lagan system. Neighborhood Services is not connected to the CRM system; Weiss says that if they were this could be a tool for community innovation.

Data generated by the CRM system is not systematically being combined with other databases under the City’s control. It would be useful, for example, to layer 911 data over inspections data, census data, and CRM information, among other feeds, to allow City officials to have a dashboard view of neighborhood wellbeing over time. The patterns revealed by the combination of all of this information would allow for predictions and policy interventions that at the moment are not possible.

Although there are many channels for reporting into the CRM system—Citizens Connect, SMS, web chat, phone calls—the people reporting in are not connected to each other. There is clearly more to be done on this front. Customer satisfaction is also not measured by the system, as far as we can tell. Outbound calls, texting, and more advanced Twitter/social media sentiment mining might be useful tools for this assessment.
All of this information would have to be organized by neighborhood and type of service. Even though the CRM system has become much more of a platform for Boston than it has ever been before, combining formal CRM requests with social sentiment information could provide useful guidance underpinning policy decisions and resource allocation; connecting all of this information to job functions within City Hall would clearly be productive. And if we believe that people in their communities know more about their communities than all the gifted people in City Hall, how do we enable them to help themselves solve some of their own problems?

Boston’s approach to data is, at this point, intentionally different from that of Chicago and New York City. Jacob, Osgood, Oates, and Weiss have been working within Mayor Menino’s strategy of deepening the personalization of government services. As a result, they have not been as data-focused as other city teams. Nor have they wanted to be. ”We should be using it [data] to tell the story of what we’re doing. Not this massive analytics stuff,” Weiss says.135

From Weiss’s perspective, cities do well by citizens by getting them involved. For him, increasing government efficiency is not the goal. Engagement is the goal. He finds low voting rates in big cities—28-30%—to be an alarming indication that people have given up on government. ”We’ve probably never been more efficient than we ever have in the history of our … government and yet our trust is basically as low as it is,” Weiss said (quoting Osgood).136 Weiss believes that trust in the City of Boston’s government, by contrast, is relatively high. Weiss’s view is that data can be useful to highlight successes or get staff anxious about problems, but that it should not be the driver of all things, a cure-all, or the single idea around which all government should be organized.137

In fact, Boston explicitly separates performance management or other forms of big data analytics from the functions that Jacob, Osgood, and Oates perform. Jacob and Osgood are ”about” engagement. Weiss says ”the danger is… getting sucked into these CRM databases and… you forget that the most important thing was that the person has a number they can call… I don’t want the world’s best [software] wizard. I want the person they can call. And that’s what the mayor said, would say.”138

The future of the municipal mayoral-level innovation function exemplified by the Boston Mayor’s Office of New Urban Mechanics is not clear. Nigel Jacob is excited about working with other cities internationally to directly solve problems. ”We need to get on the same page and we need to make sure that we’re intersecting our services effectively,” he says.139

Boston’s deeply personal, high-touch approach to governance and services may not work in larger cities. Indeed, it may not work outside Boston in 2013; the particular personalities and predilections of Mayor Menino, Chris Osgood, Nigel Jacob, Bill Oates, Mitchell Weiss, and their internal collaborators—as well as the long tenure of the mayor and the concomitant security that alignment with his strategy gave the team to take risks—have been vital to the success of the effort.
On the other hand, the basic idea of a mayoral-level innovation function outside the CIO’s office is easily duplicated. Weiss, for his part, believes the New Urban Mechanics model or ethos can spread successfully to other cities.\textsuperscript{140} For him, the key barrier is not sharing information about innovation models—cities are already good at that, he thinks—but actually starting an innovation function at the city level.\textsuperscript{141} Philadelphia has already begun that effort, Mexico City is talking about it, and Weiss is committed to helping the model spread.

Insofar as a key barrier to improving the operation of government is a poverty of imagination, the Boston Mayor’s Office of New Urban Mechanics has shown great leadership. Seen as a mayoral-level innovation catalyst, their combination of nudging inside City Hall, openness to internal collaboration, emphasis on engagement, work with outside partners, development of cross-agency products (like Citizens Connect), and mission-driven ethos has been successful. Importantly, however, they have been successful because of their neat alignment with Mayor Menino’s personal strategy.

Now that the Mayor’s Office of New Urban Mechanics is in the city budget and occupies slots in City Hall—and is not under the CIO function—the next mayor would have to affirmatively cut the office to eliminate it. Holding the new mayor accountable for an innovation office, or an innovation function, will be important if it is to survive. Weiss is optimistic: ”I don’t know what incarnation of New Urban Mechanics will live on here although I’m hopeful...this one will. But I do know that it has started something important...that will...live on in other places.”\textsuperscript{142} James Solomon sounds a warning note: For him, the future of the New Urban Mechanics idea in Boston is "really going to depend on the character of the new mayor."\textsuperscript{143}

On March 28, 2013, after twenty years in office, Mayor Tom Menino announced that he would not seek a sixth term: “I am here with the people that I love, to tell the city I love, that I will leave the job that I love.”\textsuperscript{144} While the Mayor’s Office of New Urban Mechanics may not stay in the new mayor’s organizational chart, the idea behind its work will likely persist. Chris Osgood calls its output the "learning city." It’s a place that can be open to failure and be organized to both execute and learn. In his view, "the innovation of New Urban Mechanics is to re-embed the learning capacity into local government." Citizens Connect, City Worker, Street Cred, and other Boston City Hall projects came out of this attitude, as did the evolution of Boston’s CRM system as a whole.
Exhibit A: Interviewees

Collaborators Inside City Hall

Janine Cospola
Director of the Mayor's 24-Hour Constituent Service

Mitch Weiss
Mayor's Chief of Staff

Rafael Carbonell
Deputy Director, OBD

James Solomon
Street Bump Director

Joanne Massaro
Commissioner of Public Works

Brian Goodman
Innovation and Systems Manager, OBD

Carl Allen
Director of Transportation, PPA

Thomas Tinlin
Commissioner of Transportation

Matt Muryl
Public Works Chief of Staff

Katharine Lusk
Advisor to the Mayor

Bill Gates
CIO

Patricia Boyle-McKenna
Director of the New Urban Mechanics Program

Vineet Gupta
Director of Planning, Dept. of Transportation

Justin Holmes
Director of Constituent Engagement

Lisa Pollock
Director of Media and Public Relations, DND

Curt Savoie
Principal Data Scientist

Devin Quirk
Formerly Citywide Performance Manager (New DND Director of Operations)

Lindsay Cruikshank
Community and Social Technology Strategist

Michael Evans
Designer/Developer for MONUM

Joel Mahoney
Former Code for America Fellow

Dave Mitchell
Founder of Connected Bits

MONUM Outside Collaborators

Eric Broido
Emerson Professor, Director of the Engagement Game Lab, and Community Plant Creator

Jeff Friedman
Philadelphia Mayor’s Office of New Urban Mechanics

Dan O'Brien
Research Director for the Boston Area Research Initiative

Marc Duggan
Tech4Autism Now
Exhibit B: Constituent Requests by Type

Lagan CRM Requests by Method Reporting

Source: Justin Holmes Presentation on Constituent Service Requests, Jun. 6, 2013
Exhibit C: Number of Constituent Requests Over Time

Source: Lagan CRM Data, Jul. 13. 2013
Exhibit D: Timeline of Lagan CRM Adoption by City Agencies

Timeline of Adoption for Lagan CRM System

Source: Justin Holmes and Agnieszka Ilnicka, Jul. 15, 2013
Exhibit E: Constituent Satisfaction Poll Results

Source: Boston About Results, Operation Callback II, Aug. 4, 2011
**Exhibit F: Top Five Constituent Service Requests as of Jun. 6, 2013**

<table>
<thead>
<tr>
<th>Request</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schedule a bulk item pickup</td>
<td>75,153</td>
</tr>
<tr>
<td>Request for snow plow/salt</td>
<td>34,238</td>
</tr>
<tr>
<td>Street light outages</td>
<td>27,009</td>
</tr>
<tr>
<td>Missed trash/recycling</td>
<td>22,113</td>
</tr>
<tr>
<td>Request for recycling cart</td>
<td>19,917</td>
</tr>
</tbody>
</table>

*Source: Lagan CRM data provided by Justin Holmes, Jun. 6, 2013*
Exhibit G: Citizens Connect Screenshots

Exhibit H: Timeline of Mayor’s Office of New Urban Mechanics App Production

Timeline of MONUM Apps:
Citizens Connect, City Worker, and Street Bump

Source: James Solomon, Justin Holmes, Dave Mitchell, Agnieszka Ilnicka
Exhibit I: Downloads of Citizens Connect

Source: Dave Mitchell and Nigel Jacob
Exhibit J: Citizens Connect Use Rates

Source: Dave Mitchell
Exhibit K: CRM Maps from the Boston Area Research Initiative

1. Heat Map of Engagement in Boston

2. Heat Map of Concern for Public Space in Boston

Exhibit L: Lagan CRM Cases Closed Within SLA Over Time

Source: Devin Quirk, Curt Savoie, Lagan CRM Data
Exhibit M: Pothole Cases Closed Within SLA of 2 Days

Exhibit N: Mayor's Office of New Urban Mechanics Projects

Endnotes

1 Lagan CRM data as of June 5, 2013.
2 Interview with Justin Holmes, June 5, 2013, p. 21.
3 Lagan CRM data.
4 Holmes interview, p. 23.
5 Email from Justin Holmes, Jul. 25, 2013.
6 Holmes interview, p. 19.
7 Lagan CRM data.
8 Lagan CRM data.
9 Lagan CRM data as of July 3, 2013.
11 Interview with Matt Mayrl, June 5, 2013, p. 13.
12 Interview with Thomas Tinlin, June 20, 2013, p. 19.
13 Holmes interview, p. 30.
14 Holmes interview, p. 32.
15 Lagan CRM data as of July 1, 2013, retrieved from City of Boston’s Data Portal: https://data.cityofboston.gov/City-Services/Mayor-s-24-Hour-Hotline-Service-Requests/awu8-dc52.
16 Interview with Bill Oates, June 20, 2013, p. 38.
17 Interview with Brian Goodman, June 28, 2013; Lagan CRM data as of July 1, 2013.
As we understand it, Maximo is integrated with Lagan. The Lagan dataset includes cases that are labeled "Maximo Integration." Goodman interview; Lagan CRM data as of July 1, 2013; City of Boston Enterprise GIS, http://www.cityofboston.gov/MAPS/initiatives.asp.

Goodman interview; email from Brian Goodman, Jul. 27, 2013.

Boston About Results; email correspondence with Devin Quirk, July 8, 2013.

Holmes interview, p. 63.

Presentation by Curt Savoie for the Boston Expo.

Boston About Results, Operation Callback II, August 4, 2011.

Holmes interview, p. 8.


Holmes interview, pp. 18-19.


Interview with Nigel Jacob and Chris Osgood, May 29, 2013, p. 71.

Jacob and Osgood interview, p. 3.

Id., p. 8.

Interview with Mitchell Weiss, June 20, 2013, p. 36.


Holmes interview, pp. 51-52.

Interview with Tom Tinlin and Vineet Gupta, June 20, 2013, pp. 5-6, 34.

Interview with Janine Coppola, June 7, 2013, p. 6-7.


Weiss interview, p. 4.

Jacob and Osgood interview, p. 71.

Id., p. 88.

Crudele interview, p. 42.

Holmes interview, p. 50.

Jacob and Osgood interview, p. 59.

Interview with Curt Savoie, June 4, 2013, pp. 34-35

Jacob and Osgood interview, p. 95.

Weiss interview, p. 21.

Oates interview, p. 27.

Crudele interview, p. 42.

Id., p. 45.

Jacob and Osgood interview, pp. 97-98.


Holmes interview, pp. 20-21.

Jacob and Osgood interview, p. 8.

Tinlin and Gupta interview, p. 36.

Interview with Janine Coppola, June 20, 2013, p. 5; Oates interview, p. 50.

Oates interview, p. 2.

Id., p. 9.

Id., p. 11.

Id., pp. 11-12.

Id., p. 14.

Id. p. 14.

Id., p. 17.


Email correspondence with Agnieszka Ilnicka, Business Analyst with the City of Boston, Jul. 22, 2013.

Interview with Matt Mayrl, June 4, 2013, p. 15.

According to Connected Bits, it has been licensed to Grand Rapids, Baltimore, and Brookline, among other cities.
86 Id.

87 Interview with Joanne Massaro, June 20, 2013, p. 52.

88 Holmes interview, p. 36.

89 Mitchell interview, pp. 15-16.

90 Id., p. 28.

91 Holmes interview, p. 36.

92 Id., p. 15.

93 Interview with Janine Coppola, June 10, 2013, p. 9.


95 Email from Nigel Jacob, Jul. 18, 2013.

96 Interview with Dan O'Brien, June 11, 2013.


98 Mitchell interview, pp. 18-19.


100 Jacob and Osgood interview, p. 39.


102 Interview with Devin Quirk, June 14, 2013, pp. 6, 18.

103 Email correspondence with Devin Quirk, Jul. 9, 2013.

104 Tinlin and Gupta interview, p. 24.
Holmes interview, p. 49; Performance in Basic City Services, http://www.cityofboston.gov/bar/basicservices.asp.

Quirk interview, pp. 6, 12-13.

Id., p. 14.


Id., p. 23.

Id., pp. 18-20.

Id., pp. 21-22.

Id., p. 28.

Tinlin and Gupta interview, p. 25.

Massaro interview, p. 4.

Id., p. 14.

Id., p. 7.


Mitchell interview, p. 23.

Email from Matt Mayrl, Jul. 23, 2013.


Id.

Meeting with Nigel Jacob and Chris Osgood (recording), Jul. 17, 2013.

Weiss interview, pp. 14-17, 44.

Id., 19.

Jacob and Osgood interview, pp. 16-17.

Oates interview, p. 71.

Interview with Patricia Boyle-McKenna, Jun. 19, 2013, p. 5.

Weiss interview, p. 49.

Id., p. 45.
130 Solomon interview, p. 21.

131 Jacob and Osgood interview, p. 63.

132 Weiss interview, p. 41.

133 Mayrl interview, pp. 21, 30.

134 Crudele interview, p. 31.

135 Weiss interview, p. 17.

136 Id., p. 16.

137 Id., p. 15.

138 Id., pp. 20, 29.

139 Jacob and Osgood interview, p. 61.

140 Weiss interview, p. 47.

141 Id., p. 48.

142 Id.

143 Solomon interview, p. 20.