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Civic Tech Cities

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This report, and accompanying material, can be downloaded at https://www.mysociety.org/civictechcities

About mySociety

mySociety is an international not-for-profit social enterprise based in the UK, where we run a number of projects designed to give people the power to get things changed. We invent and popularise digital tools that enable citizens to exert power over institutions and decision makers, and work internationally to support partners who deploy our technology in countries around the world. As one of the first civic technology organisations in the world, we are committed to building the civic technology community and undertaking rigorous research that tests our actions, assumptions and impacts.

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Executive Summary

'Civic technology' is mostly used to refer to NGO led digital initiatives designed to bridge the gap between citizen and institution. However, since the rise of Code for America and similar organisations around the world, civic citizen-focused tech has increasingly been developed and implemented by and with public bodies themselves in an attempt to reach out to citizens and increase engagement and participation. Whilst early civic tech tended to focus on country-level issues, these initiatives are now proliferating at sub-national levels, particularly in cities. These emerging sub-national and municipal level civic technologies form the focus of this research, which explores five case studies of municipal civic tech operating in the US. It examines not only the impacts of this tech upon citizen users, but the effects it has upon the implementing institutions.

Whilst many governments in the world are still working with centralised forms of digital governance, the US has over the last 10 years experienced a plurality of growth in sub-state civic tech usage by city and municipal governments. This nascent government civic tech environment provided a most fertile opportunity for research into the operations and impacts of civic tech employed by official institutions.

This project was designed to examine how civic tech implemented by government is currently operating, who is using it, and what impacts it is having upon service delivery. The aim of this research is therefore to provide a comprehensive picture of civic technology implementation by municipal level public bodies and the challenges and benefits that arise in the process. It is hoped that this report will be of practical use to both public bodies and civic technologists working with them.

The primary deliverable of this project was five case studies of civic tech projects that have been deployed by US cities since 2013:

- SpeakUpAustin (www.speakupaustin.org), in Austin, Texas
- LargeLots (www.largelots.org), in Chicago, Illinois
- RecordTrac (records.oaklandnet.com), in Oakland, California
- DC311 (311.dc.gov), in Washington, DC
- Office of Professional Accountability (OPA) Police Complaint Tracker (www.seattle.gov/opa/file-a-complaint-about-the-seattle-police), in Seattle, Washington

In the study, the users of the civic tech tools and the implementers of the tools within government were interviewed about the impact of the tool's introduction on the delivery of the relevant public service, how these additional sources of public input affected the departments where they had been introduced, whether the department had noted increased efficiency, and whether internal or external stakeholders perceived increased effectiveness.

The civic technology tools examined in this study were generally well-appreciated both internally and externally, receiving good reviews both from the government and non-government sides of their use. People inside and outside of government appreciated the benefits of using them, and expressed interest in maintaining and improving them.

Findings

The use of civic tech in municipal government in the US is acting as a driver for broader incremental institutional digital and service delivery change

The successful civic technology tools were inherently or increasingly embedded in the development process for city policy, merging technology more firmly with the core function of government. In addition, initial experience with the digital tools increased government implementers' interest in seeing more internal digital integration.

The co-production of civic tech and policy is operationally beneficial for both spheres, resulting in the production of more useful civic tech and more citizen-friendly policy

When policy development occurred alongside tool development, the intertwining of these processes meant that information-sharing possibilities described by developers or uncovered during technology development actively shaped policy outcomes, reducing complexity and increasing usability.

Two challenges were noted. For one, a number of people cited the need for additional outreach and communication services in order to bridge the institution-citizen divide, such as the challenge of translating internal government language, structure and knowledge to external audiences (both figuratively and literally). For another, the demographics of the civic tech users identified in this study match existing research on civic tech that suggest that those effectively engaging digitally at a local level are likely to be those that would also engage effectively offline, highlighting the ongoing existence and consequences of the digital divide.

The greatest risk to the success of civic tech is a lack of full institutional absorption of tech tools into structural and budgetary systems

It is rare for any form of digital tool, civic or otherwise, to endure and maintain relevance and usability without regular update and maintenance, and across the cases studied, interviewees flagged issues caused by the fact that the tools were not developed beyond their initial deployment to grow features and remain relevant to users. This was most acute for tools that were developed externally. A significant part of this problem, as described by internal users, appeared to come from a departmental failure to have a regular budgetary line-item for maintenance and improvement of the tool and related service. The presence or absence of digitally skilled employees responsible for the tools was also a resource consideration that either boosted or threatened the ongoing viability of digital tools.

Planning for ongoing support may have budgetary benefits. If the interactions produced through civic tech tools do not produce responses, citizens are likely to lose confidence in digital tools and refrain from using them in the future, returning communications to individualised email, in-person or phone interactions that ultimately are more expensive for government to provide.

This study provides encouraging evidence to proponents of institutional civic technology usage, and to supporters of agile and participatory policy development. Whilst a utopian version of e-government remains a distant possibility, the evidence provided in this report demonstrates that incremental digital integration and the development of online tools for, and within, government, provides fertile ground for increasing citizen engagement and improving service and policy.

1. Introduction

The field of civic technology is expanding and developing to tackle ever greater, more complex and vital issues in societies across the globe. From humble origins in which such tech simply linked individuals to their parliamentary representatives, these digital tools are now able to enhance institutional responses to everything from natural disasters to dog fouling. Civic technology has historically existed to raise the relative level of power held by the citizen over government, and the tech produced has, for the most part, enabled citizens to demand what they are legally owed, whether that be documentation, services or political debate.

Much has been written about the best way to define 'civic tech'. However, whilst such academic debates endure, the term continues to be applied to a wide range of digital tools. Civic tech tools are typically deployed by two kinds of person - those outside government, and those inside it. The norm for civic tech globally has been towards citizen/NGO development and deployment. To date, mySociety has limited itself to studying only those tools deployed by individuals outside governments, such as journalists, NGOs, business people, activists, civic-minded programmers and other non-government groups.

This leaves a substantial and important research gap focused on what happens when tools are deployed officially, by governments themselves either independently or in concert with external agents. Research into any form of civic technology is in its infancy; however, knowledge concerning those digital tools developed by public bodies is particularly sparse.

Whilst many governments in the world are still working with centralised forms of digital governance, the US has over the last 10 years experienced a plurality of growth in sub-state civic tech usage by city and municipal governments. This nascent government civic tech environment provided a most fertile opportunity for research into the operations and impacts of civic tech employed by official institutions.

With the generous support of Microsoft Technology & Civic Engagement, mySociety conducted case study-based research into five prominent examples of municipal-level civic technology in the US that were implemented by public institutions. This research provides a rich understanding of the benefits and challenges of such tech to municipal-level institutions, and its reception by citizen users.

2. Research aims

This project was designed to understand how civic tech implemented by government is currently operating, who is using it, and what impacts it is having upon service delivery.

The primary deliverable of this project was five case studies of civic tech projects that have been deployed by US cities since 2013.

This is one of a number of papers in which mySociety seeks to explore the impacts of civic technology through rigorous, original research. It attempts to shed light on one of the more opaque forms of civic technology implementation, namely, the tech developed and implemented by public institutions in response to their own assessment of service-user and citizen needs. This 'government civic tech' is slightly different than the concept of e-government, in that it is developed holistically to target specific policy goals, and takes a more citizen-centred approach than traditional forms of e-government.

Many civic technologies grow from citizen frustration with established channels of communication between citizen and public institution. These platforms are therefore born with an element of 'user-centred design' that tailors the institution-citizen interaction towards the needs of the citizen. Digital tools, websites and platforms designed and implemented by public bodies, however, tend to be designed to conform to the logic of institutional bureaucracy. This bureaucratic structure applied to government-designed digital tools works for civil servants, and is perfectly rational internally within public organisations, but tends to narrowly define and confine channels of citizen-institution interaction that are not necessarily logical or useful to citizens, in particular those without a detailed understanding of the internal workings of public bodies.

The research aimed to understand how public bodies were implementing civic tech, and a review of the field demonstrated greater variance and volume of such tech at the municipal level. Therefore, the research focused more closely on municipal level digital tools than on national platforms.

The aim of this research is therefore to provide a comprehensive picture of civic technology implementation by municipal level public bodies and the challenges and benefits that arise in the process. It is hoped that this report will be of practical use to both public bodies and civic technologists working with them, and will contribute to the wider body of knowledge in this nascent field of research..

3. Selecting a sample

A number of potential platforms were reviewed and assessed for their suitability for inclusion in this study. The five cases included in this study were chosen on the basis of a list of agreed criteria that aimed to produce comparable information across different settings.

Criteria included:

1. Successful implementation
2. Scope
3. Functionality and features
4. Management/ownership
5. Length of operation

The first criterion required, very simply, that the public body had successfully implemented a civic technology tool. As a still-emergent concept, “civic technology tool” can have many meanings; for the purpose of this study, it is defined as a named online software function, located on a single website or mobile app, which was implemented to improve the experience of citizens through increasing opportunities for the public to participate in governmental decision-making or service delivery.

While a variety of types of local government are managing civic technology tools — including counties, regional entities, and special districts — this project focused only on projects implemented by US municipalities.

Further criteria related to the location and functionality of sites. All cases are online tools on a city-owned website which incorporate avenues for resident feedback. All cases feature tools which accomplish a single function and are managed by a single department, rather than being a multi-departmental or multi-functional tool. This criterion, which was put in place simply to ensure clarity regarding project goals and the entities responsible for the tool’s management, meant excluding significant government-led technology projects such as open data portals which have multiple components and serve many functions and audiences. In line with the definition of “civic technology” chosen for the purpose of this study, sites were also chosen on the basis of having a tool which enabled or furthered two-way interaction between the governmental department and the public.

Finally, in order to ensure that tools were viewed with an equivalent level of commitment across authorities and had developed a core user-base, the civic technology tools at all study sites had been operational for at least one year.

4. The five case studies

SpeakUpAustin (www.speakupaustin.org), in Austin, Texas

This is a public forum tool which allows Austin residents to respond to questions and surveys from the city, and to freely offer ideas about ways to make Austin a better place to live. It was first launched in 2008 and it is managed by Austin's Public Information Office.

LargeLots (www.largelots.org), in Chicago, Illinois

A tool developed to support a new city program where residents of some of Chicago's most disadvantaged neighbourhoods could purchase nearby vacant land lots for $1. It was launched in 2014 and is managed by Chicago's Department of Zoning and Land Use Planning.

RecordTrac (records.oaklandnet.com), in Oakland, California

This tool is for making requests to the city under California's Public Record Act (PRA). RecordTrac also serves as a platform for delivering responses for these requests and a publicly-searchable database of requests and responses. It was launched in 2013 and is managed by Oakland's Communications Department.

DC311 (311.dc.gov), in Washington, DC

A tool which serves as part of a comprehensive intake platform for residents wanting to obtain non-emergency city services. Initially conceived as a way to receive reports of city maintenance problems like potholes and overflowing garbage cans, DC311 now provides and receives information across a wide variety of city services. The first version of DC311's online component was launched in collaboration with SeeClickFix in 2011. The tool is now managed by the city's Office of Unified Communications.

Office of Professional Accountability (OPA) Police Complaint Tracker (www.seattle.gov/opa/file-a-complaint-about-the-seattle-police), in Seattle, Washington

This is a lightweight application which allows Seattle residents to register complaints about Seattle police practice (with the option to do so anonymously) and then track the outcome of that complaint. The site also provides reports on complaint review and disposition on a rolling basis, as well as OPA's recommendations to Seattle's chief of police for remediation. The tool first launched in 2015 and is managed by the Seattle Police Department's Office of Professional Accountability.

5. Research methods

As detailed in previous sections, a case study method was employed for this research. Whilst it would have been possible to do a larger scale survey-based research project encompassing a higher volume of civic tech implementations, such a method would inevitably be unable to provide the deep and rich understanding of policy practice and behaviour that can be acquired through detailed one-on-one interviews. A case-study approach provided the necessary scope and contact with civic tech implementations to investigate in greater detail the nuances, benefits and challenges of digital tools for citizen interaction at the municipal level.

Data for each case studied was drawn from two primary sources: surveys of civic tech users, and from semi-structured interviews with civic tech users and implementers. Both data collection activities were conducted at the five case-study sites across the US.

Surveys targeted at civic tech users themselves were conducted online, and were promoted using Facebook ads to citizens within the five case study areas. This participant recruitment was not targeted at any specific demographic, but was targeted at individuals residing in the case study geographic areas. While this was not expected to provide a definitively representative sample of civic tech users, it was an efficient and cost-effective method of collecting a reasonable indication of demographics and attitudes. These surveys sought to build a better picture of the types of users of civic technology. This activity collected 543 responses across the five sites. Surveys were live between January 2016 and May 2016, and were collected via SurveyGizmo.

Face-to-face, one-to-one interviews of between 1-2 hours were conducted with a standardised set of internal and external stakeholders with experience of each specific municipal government civic tech implementation, aiming to assess their perception of the way that the city's implementation of a civic technology tool affected their service delivery or use. Interviews were then coded using RQDA, a program for conducting computer-assisted qualitative data analysis to identify clusters of common sentiment, and analysed for frequency, similarities and differences.

Interviews were conducted in person between January and May of 2016 and a total of 38 respondents were interviewed from the five study sites. Interviews included project managers, department heads, internal users, external users, and the tool's software developer from nearly every city. The identification of intervewees was made through online investigation, liaison with each case studied and through snowball sampling.

Respondents were interviewed using a standard group of questions as a basis for discussion which aimed to determine, from the interviewee's perspective, the impact of the tool's introduction on the delivery of the relevant public service. Interviewees were asked how these additional sources of public input affected the departments where they had been introduced, whether the department had noted increased efficiency, and whether internal or external stakeholders perceived increased effectiveness.

Once interviews were concluded and interview transcripts finalised, interview notes were entered into RQDA. Qualitative data analysis provides a method of systematising findings from qualitative data sources like interviews. The use of software helps with the three-stage process of qualitative data analysis: data reduction, data display, and conclusion drawing/verification. RQDA is a free and open-source project which enables data reduction and data display by permitting the coding and sorting of interview snippets. Interview statements were coded by aspect of service-delivery process (tool, policy, service-delivery) and

affective valence (problem, benefit, neutral) and then clustered to identify similarities and differences across the cases. “Clustering” is a method to inductively form categories in qualitative data that allow a researcher to describe regular features across a large quantity of text.

6. Analysis and findings

6.1 Demographic findings

The surveys collected basic demographic information, such as age, gender, income and educational attainment. Due to constraints on resources and privacy considerations within the cases studied, it was not possible to conduct a full statistically representative survey of the users of each technology. These surveys were targeted through Facebook, and through referrals, and nonetheless provided a valuable snapshot of users' attitudes and their demographic composition. Whilst overall results varied between locations, the age, relative wealth and educational attainment of respondents showed similarities in each area. Respondents were disproportionately older than the general population. Over 50% of respondents were 50 years old or over, compared to a general mean age of 38.6 in the US. Respondents also tended to be slightly more affluent than the general population, with over 50% of respondents recording a household income of $50,000 per year or above.

Between 40%-60% of respondents (dependent upon area of residence) were educated to at least Bachelors Degree level or above. Even taking into account the wide margin between cases, this is higher than the population average for the US, which stood at approximately 33% of the population holding Bachelors Degrees or above at the time of the last census (2010).

Such demographic findings are in line with existing research into civic technology, including mySociety's own research (Who Benefits from Civic Technology? mySociety, 2015), and provide further evidence of the existing digital divide. Significantly, previous research into the demographics of civic tech users in the US conducted by mySociety in partnership with GovTrack.us at a national, rather than local level, mirrored the age, wealth and educational demographics collected as part of this study almost exactly. This is significant because commentators and practitioners within the civic tech sphere have hypothesised that local level digital engagement in specific day-to-day services could be likely to engage individuals that are not already highly educated and politically efficacious more effectively than national level digital tools concerned with higher levels of politics or policy. The demographics collected for this study suggest that such a hypothesis is not currently being borne out, and that those effectively engaging digitally at a local level are likely to be those that would also engage effectively offline.

Interestingly, whilst many respondents noted that they would be happy to approach their local government for a variety of possible interactions, consistently fewer than 25% of respondents indicated that they were confident that their local government would assist or be helpful in dealing with their issue, whether that interaction was online or offline.

6.2 Thematic findings

The interviews covered a range of themes using a structured set of questions as a basis for discussion. Findings from the interviews were grouped into three general categories:

- Observations relating to the ways that governmental processes adapted to civic tech,
- Observations on co-production,
- Observations relating to the problems and needs that the digitization created or failed to resolve.

These three categories encompass the key areas of impact detected by this study that the development and implementation of civic technologies have had upon municipal government.

6.2.1. Tool Use Advances E-Government Processes

The first overall finding from the interviews was that internal use of the individual civic technology tool added to that user's interest in seeing more internal digital integration. The interest and 'buy-in' of internal government employees was found to be crucial not only for the success of the first tool, but in providing inspiration for such tools to be expanded, increased in number, and most importantly, properly integrated and synchronised with existing structures and processes. In all cases, this inspiration was in a nascent form, not yet able to move towards operationalising the possibilities imagined by internal civil servants. However, should such inspiration be taken further and fulfilled, it would advance the aim and practice of e-government to deepen information and service integration, and would likely have the necessary support and ownership of government workers. The civic technology tools examined in this study were generally well-appreciated both internally and externally, receiving good reviews both from the government and non-government sides of their use. People inside and outside of government appreciated the benefits of using them, and expressed interest in maintaining and improving them.

Internal managers and tool-users expressed a number of thoughts about the kinds of data integrations that would make their tool even more useful. These comments reveal how use of the tool immediately demonstrates the value of digitisation. Taken as a whole, it suggests the cohort of tool-users has a strong interest in continuing existing digitisation processes and moving towards new digitisation efforts.

These successful civic technology tools also were inherently or increasingly embedded in the development process for city policy, merging technology more firmly with the core function of government. This interest in improving the experience of government service both for government workers and for members of the public was reflected in the motivations of tool developers, who spoke about their interest in making things as simple as possible for both internal and external tool users.

6.2.2. Tool and Policy Co-Development Processes

Given the often siloed nature of public bureaucracy, the researchers did not have an expectation that the design and development of any civic tech tool would necessarily have been conducted alongside the development of policy it was relevant to. Indeed, for many years the public sector was prone to parachuting in IT and digital solutions or processes that had not been subject to any internal or external user-testing at all. However, certain cases within this study demonstrated a clear move away from viewing IT and digital as fixed and determinative packaged solutions, and moving towards viewing digital development as a complementary part of the policy development process. This simultaneous tool and policy development practice indicates a significant progression towards e-government principles in municipal government. In three of the studied cases, policy development occurred alongside tool development, and the intertwining of these processes meant that information-sharing possibilities described by developers or uncovered during technology development actively shaped policy outcomes. In other words, official city policy was fundamentally altered by the design options presented by software developers.

The OPA Police Complaint Tracker, for example, was developed as one of several features of a broader push for transparency under a new departmental director. While the department had been accepting e-mail complaints before their new website was implemented, the development of a dedicated website made it technically possible to establish an anonymous webform for the submission of complaints, adding a new level of protection for people worried about facing repercussions from submitting a police complaint. This ability to offer anonymity, and the desirability to do so, was specifically identified during the development of new transparency policies that would be available and integrated with the new website. It is unlikely that such a feature would have been included in the site design had the policy development not occurred alongside.

Similarly, the LargeLots case also represented a policy development process where the substantive policy change could not have been easily effected without collaboration with developers and a significant online public presence. In this case, several community organisations worked with the City of Chicago's planning and zoning department in order to develop a better way for the city to sell vacant city-owned lots in low-income neighbourhoods. The process also included technologists, who could see how creating an online information and application process would make the program easier for both city staff and community applicants to understand and use with relative ease.

An interesting feature which emerged from discussions of the co-production of technology and policy is that policies developed in concert with technology tools appear to lead to simplified policies, with fewer restrictions and requirements. This may be due to developers' greater focus on user experience than legal concerns, and their position outside of conventional municipal bureaucratic structures. This simplification of policy and implementation may also be caused by the use of technology focusing attention towards expressed user behaviours, rather than towards a plurality of hypothetical scenarios that are unlikely to occur. Civic technology, with its explicit focus on improving government-community communication, may frame the question of "policy effectiveness" differently than would either governmental or community representatives working within established frameworks.

6.2.3. Tool Use Heightens the Recognition of Resource Needs

While respondents documented many positive outcomes advancing the integration of technology in government, they also pointed to the many problems stemming from inadequate resourcing of existing and future e-government work. In particular, the second category of interview responses detailed above concerned with dual policy and tool development highlighted the specific areas where additional resources were necessary to fulfill suggested uses and features of the tool. Resource needs and challenges were cited across all cases, although cities varied substantially in their ability to respond to them.

Specifically, a number of people cited the need for additional outreach and communication services in order to bridge the institution-citizen divide. One major problem related to the challenge of translating internal government language, structure and knowledge to external audiences (both figuratively and literally). This issue was cited as an issue and a potential barrier to use even by those people who enjoyed using the service. It caused an additional layer of distance where digital divide issues – and a concomitant lack of outreach resource – meant that only people who were inherently comfortable using digital government services and speaking often opaque bureaucratic language were accessing city department services through the tool.

Another area of cross-case agreement was the need to continue to improve the tools beyond their initial deployment. Where tools were developed internally or in a continuing public-private partnership, this resource need was not viewed as an acute problem: simply a recognition that the tool could continue to improve. Where tools were developed externally, however, the problem of how to contract for improvements or how to acquire enough money from the municipal budget to pay for adequate improvements became a more serious issue. These tools were viewed as a 'one-off' piece of work that once implemented, would tick along without development or maintenance. However, it is rare for any form of digital tool, civic or otherwise, to endure and maintain relevance and usability without regular update and maintenance.

A significant part of this problem, as described by internal users, appeared to come from a departmental failure to have a regular budgetary line-item for maintenance and improvement of the tool and related service. As a result, where a tool was not integrated into a progressive budget and maintenance model, it was squeezed for resources. Out of the cases examined, respondents in three cases — RecordTrac, SpeakUpAustin, and OPA Police Complaint Tracker — cited resource constraints as an issue which prevented them from improving the tool or service as much as they'd like. In two cases in which the authority had budgeted ahead — DC 311 and LargeLots — respondents did not cite resource constraints as a primary problem. The presence or absence of digitally skilled employees responsible for the tools was also a resource consideration that either boosted or threatened the ongoing viability of digital tools. Where teams responsible for the tools included individuals with developer skills, maintenance or updating was considered less of an issue. The failure to obtain sufficient human and financial resources for the maintenance and improvement of tool-based services may lie with the failure to calculate beyond the initial development of a tool. The civic tech community itself is currently concerned with addressing these kinds of issues, in particular, to improve government procurement of technology to prevent a cycle of tool build - tool use - tool disrepair - tool decay - new tool build.

However, in all of the examined cases, the tool has either continued to evolve beyond its initial development or been the subject of frustration for failing to evolve. This need for continued maintenance and improvement is true even of lightweight tools like LargeLots and the OPA Police Complaint Tracker (which, according to their developers, were developed over the course of just a few weeks).

7. Conclusions

This research project has demonstrated that, while some e-government theorists (and civic technology advocates) have argued that adoption of technology will have a transformative effect on government function, the change so far appears less dramatic. Civic tech-style tools employed by municipal governments in the US, whilst often effective and popular with users, remain ad-hoc, niche, and vulnerable to personnel and budgetary changes.

Exploring the impact of several civic technology tools implemented by US municipal governments strengthens the evidence that technology does not abruptly change the nature of public services or their administration. However, they do appear instrumental in encouraging incremental change. Civic technology tools, in providing a better online interface for communication between the public and municipal services, contribute new forms of motivation to departments to improve their ability to support digitally-transmitted service requests.. Appreciation for the value of the tool creates internal and external pressure on the department to provide ongoing maintenance and improvements to the tool and its related public service. Even if those improvements are presently out of reach for some departments, appreciation for the digitised service, plus a clearer understanding of the ways that service could be enhanced, suggests the creation of fertile ground for further incremental e-government evolution.

The direction of these interests and incremental improvements suggest that civic technology tools move departments down the path towards providing further integrated, digitally-accessible services. In other words, it appears that civic technology tools are helping propel local governments towards realising more comprehensive e-government. Instead of departments internally digitising and then reaching out, the process may in fact sometimes work the other way, or be self-reinforcing and iterative.

If civic technology tools help to speed the adoption of further aspects of e-government, more governments will need to strategise funding and support models that support not just the introduction of civic technology tools, but their maintenance and improvement over time. This project found that civic tech tools needed ongoing development support in order to grow features and remain relevant to users. Any digital tools that become unused or unusable due to poor maintenance are likely to reduce the confidence that citizens have in the effectiveness of the tools and the commitment of the public body responsible. This research has already shown that citizens generally have a low level of confidence that interactions with government will result in positive outcomes. If the interactions produced through civic tech tools do not produce responses, citizens are likely to lose confidence in digital tools and refrain from using them in the future, returning communications to individualised email, in-person or phone interactions that ultimately are more expensive for government to provide.

The surveys conducted for this research evidenced once again that the digital divide persists in the US, and as such, without sufficient outreach, digital services will reach only those who are already comfortable with technology. Without funding improvements, enthusiasm for the tools will potentially wither and the added public value provided by the improved digital services will disappear. However, if governments are interested in eventually reaching the promised utopia of e-government, in which seamless internal integration and maximised public participation are a reality, investment is worthwhile.

Civic technology tools, rather than representing citizens at the very end of a policy development process, provide motivation to public bodies to develop better policies and services in concert with citizens throughout the legislative, policy and service delivery cycle. Their integration alongside policy development

has been shown by this study to improve policymaking itself, reducing complexity and increasing usability for both government officials and independent citizens.

This study should provide encouragement to proponents of civic technology within government, and to supporters of agile and participatory policy development. Whilst a utopian version of e-government remains a distant possibility, the evidence provided in this report demonstrates that incremental digital integration and the development of online tools for, and within, government, provides fertile ground for increasing citizen engagement and improving service and policy making itself, reducing complexity and increasing usability.

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