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Technology column: public libraries as civic technology hubs

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ABSTRACT

Civic technology is used to improve how citizens, businesses, and other groups engage and conduct business with governments. Libraries across the United States are uniquely positioned to be key players in the civic technology movement. Libraries offer community spaces where everyone is welcome and where people can come together, learn about new technologies, access information, and solve shared problems. By bringing our unique attributes and resources to bear, libraries can play a part in developing applications and services that power our communities.

KEYWORDS

Apps; civic apps; civic technology; collaboration; government; open data

Introduction

Have you ever paid a parking ticket online? Applied for a business permit on your local city's website? Used a mobile phone app to find out when the next bus or subway train is coming? Perhaps your library is adding a mobile application tied to your Integrated Library System (ILS) so that patrons can browse new arrivals and be alerted to overdue materials or waiting holds?

These are all examples of civic technology—the use of technology to improve how citizens, businesses, and other groups engage and conduct business with their government.

In small towns and large cities alike, civic technology is changing the relationship between citizens and their governments. At the federal, state, and local levels, government technologists are bringing the innovations of Silicon Valley to bear on the challenges and day-to-day business facing Main Street. Libraries, as well-respected local government entities, have an important role to play in their local civic tech ecosystem.

A new and growing movement

While there have always been innovative public-facing technology projects in certain locales, what we think of as civic technology boomed in the early part

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of this decade as social media and mobile devices achieved widespread penetration in the United States. The Knight Foundation (2013), which studies and funds many civic technology-related projects, released an initial survey of the civic technology market in 2013, citing over \$400 million investment in the arena over a two-year period from 2011 to 2013. By 2015, IDC/Accela (2014) predicted a civic tech market of over \$6 billion—over 25% of total government external Information Technology (IT) spending.

This growing market is now visible to the public—even small towns and villages are adopting online “report-a-pothole” and “garbage day reminder text” apps. Hundreds of start-ups and existing technology firms are racing to help build the digital connections between government entities and their constituents. These citizens are seeking the same convenience and “on-demand” relationships that they’ve been accustomed to in their online relationships with businesses. The infographic (in Figure 1) illustrates the breadth of services encompassed by constituent-facing civic technology applications.

Some of the first and most prominent examples of civic technology are mobile apps and sites that allow community residents to report problems such as graffiti, potholes, or broken streetlights, such as FixMyStreet in the United Kingdom and SeeClickFix in the United States. However, there are a large number of services, software, applications, and projects that are emerging in the sector that might not be visible to the majority of community residents.

In Palo Alto, CA, the municipal utility department participates in cutting-edge research using data from its utility service delivery network. Many utilities, including Palo Alto’s, offer customers detailed utility data about water, gas, and electricity usage that can help businesses and residents adjust their usage patterns in real-time, saving money and reducing environmental impact. By working with the Palo Alto Medical Foundation, the utility is piloting a new project that will monitor the utility usage of senior citizens living alone and alert remote family members if the data indicates a problem.

Businesses, governments, and technologists are forming communities around shared open source software and open data. The OneBusAway application began as a project by two graduate students in 2008, providing real-time transit data to Seattle-area commuters. Over the next several years, the application became an open source software success story, attracting participation from businesses, research foundations, and local, state, and federal government agencies. The software now powers the official mobile transit applications of New York City, Washington, D.C., and San Diego with new deployments popping up in the US and around the world.

The City of Chicago recently released OpenGrid, a powerful open source application for visualizing neighborhood, municipal, or regional data historically or in real-time (as shown in the screenshot in Figure 2). Citizens can use OpenGrid data to visualize data about their neighborhood, such as restaurant health inspection reports, criminal activity, or 311 (municipal non-



Figure 1. Infographic depicting various civic technology apps, courtesy APPCityLife.

emergency) service requests. Government agencies, community groups, and first responders can use the tool to visualize their own situational awareness data combined with state or municipal data, weather maps, and other real-time sources. Businesses can use the platform as a business intelligence tool as well.

The potential role of libraries in civic tech

Microsoft's Technology & Civic Engagement Team defines civic tech simply, with a broad definition: "the use of technology for the public good"

(Stempeck 2016). The project goes on to classify civic tech into a large number of domains and technologies, shown in Figure 3.

The Knight Foundation divides civic technology into two main spheres: open government (transparency, accountability, open data, public feedback/speech, etc.) and community action (neighborhood organizing, civic/community groups, etc.) (Harris 2013). Obviously, each of these topics could be discussed at length, but we'll discuss examples from each sphere below.

Libraries can be a tremendous platform for local civic technology initiatives, with resources and attributes that make them uniquely welcoming to stakeholders of all types.

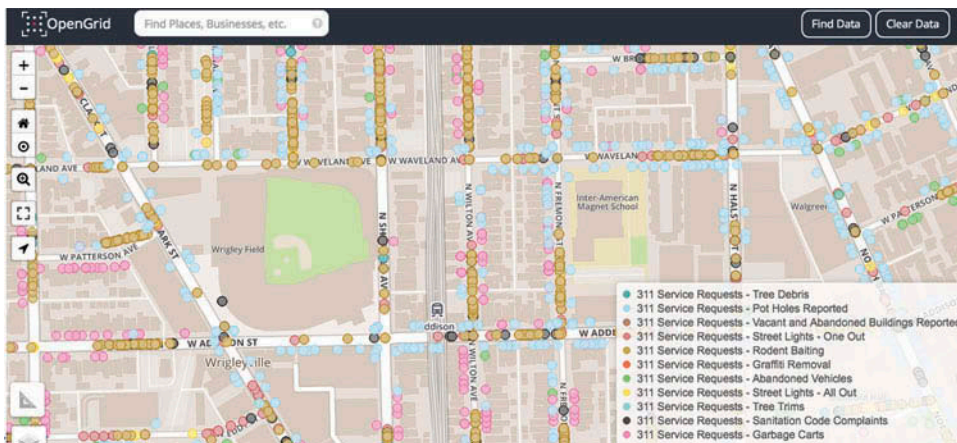


Figure 2. Screenshot of OpenGrid.io taken by the authors.

COMMON FUNCTIONS

Crowdfunding platforms	Group decision-making tools
Benefit navigation tools	Ideation tools
Campaign organizing platforms	Issue reporting platforms
Check-in tools	Legislation engagement platforms
Constituent to Government communication tools	Mapping platforms
Crowdsourced data collection	Marketplaces and Clearinghouses
Data schemas and standards	Neighborhood forums
Data Visualization tools and Platforms	Online Petition sites
Event organizing tools	Open data publishing platforms
Freedom of Information tools	Opinion matching platforms
Government to constituent communications	Resource matching/sharing sites
Group communication tools	Sensors
	Service alerts
	Watchdogging and Transparency projects

Figure 3. List of common civic technology functions as presented by Microsoft NY.

Public libraries are de facto community centers in most communities, often one of the last remaining physical public commons welcoming all members of the community. In addition, libraries are generally viewed positively by many members of the community. According to the Pew Research Center's "Libraries 2016" report, more than half of Americans consider libraries places where community members can assemble to address local challenges, learn about new technologies, and learn how to decide what information they can trust (Horrigan 2016). Helping foster the adoption and use of civic technology is an effective way that libraries can continue to serve all of those goals. The same Pew study reported that nearly three-quarters of U.S. adults feel that libraries "promote a sense of community among different groups within their local area"—bringing diverse groups of people together to work on a civic technology is another place where public libraries can shine.

In addition, public libraries have valuable assets to offer other government departments and citizens forming a local civic technology community. Most libraries offer some sort of meeting space, and coworking and incubation spaces are growing in popularity. In addition to WiFi and Internet access, many libraries offer advanced technology such as smart boards, video conferencing facilities, multimedia production capability—all valuable tools for various civic tech projects. And of course libraries can't be beat when it comes to offering broad and deep access to information resources, both online and in-person—all curated by the most valuable resource of all: a public librarian.

Library projects in the civic technology sphere

Chicago is one of the leaders of grassroots civic technology adoption in the United States: the city government has fostered many open data and public-facing Internet projects, many of which were launched by organized groups of volunteer developers from the community. The city's "Chi Hack Night" is a monthly event hosted at a local technology incubator which has spawned a large network of civil servants, community organizers, and technologists focused on improving the lives of Chicagoans. The Chicago Public Library (CPL) is an active supporter of these efforts.

- (1) CPL participates in a number of local digital initiatives, including the Smart Chicago Challenge and the Time to Tech training program.
- (2) CPL leadership and staff participate as active members of the Connect Chicago community website initiative.
- (3) Assisted by the Knight Foundation and Smart Chicago, CPL piloted a home hotspot program including skills and digital literacy training.

The Hennepin County Library in Minneapolis realized they had key assets for hosting local developer events focused on civic technology—

Internet access, meeting spaces, accessibility, and most importantly, a commitment “to engaging with the community and making connections” (Bushey, Clausen, and McGraw 2016). By partnering with the local civic technology community (Open Twin Cities), the Library helped host a number of events, including as follows:

- (1) Geo:Code, a cooperative “hackathon” where developers and community members built map-based applications centered around bicycling, child safety, accessibility, and more.
- (2) Accessibility Jam, a community event where local accessibility issues and solutions were discussed. Held in collaboration with city, county, and state government stakeholders, potential projects included 3D-printed Skyway maps for people with visual impairments and job-connection apps for people with disabilities.

Chattanooga, TN is another leader in the local civic technology movement, especially pioneering an active library-led open data project. “Open data” refers to data, usually government-collected or government-generated data, released to the public for use in applications, websites, academic reports, etc. As mentioned in our previous column (Ayre and Craner 2017), governments of all levels are releasing data, from local small business license registrations to federal environmental data. This data is usually maintained on a website known as an “open data portal.” (Check out the federal open data portal, including links to state and city data portals, at <https://data.gov>)

The **Chattanooga Public Library** maintains the local open data portal, serving as the curator for the city’s public data from all departments: from police reports to park department bicycle trail usage. On top of this data, citizens have built analytical applications (e.g., this visual map analysis of crime reports [<http://chattcrimes.com/>]) as well as helpful tools, like this bicycle parking locator map [<http://openchattanooga.com/chattanooga-bike-parking-locator/>]. The Chattanooga Public Library team served as the focal point of a multiorganizational effort, working with local volunteers (Open Chattanooga <http://openchattanooga.com/>), a national nonprofit organization (Code for America), and the City’s Mayor’s Office [<http://www.chattanooga.gov/mayors-office>] to make the open data project a reality (Hill 2014).

Moving forward

Where does your library fit in? As a physical platform for the gathering of a nascent or an existing local civic tech community? As a community gateway to the government departments that civic tech seeks to open to the public? As a trusted partner that can bring diverse communities to the table, ensuring civic tech is implemented in your community in a fair and equitable manner?

- **Start Local:** Is there already a civic tech movement in your community? Find local gov staff or elected officials who may be interested. Search for civic-minded technologists in your area, those affiliated with the open government, government transparency, or community development projects. Introduce yourself. Offer library meeting spaces, and maybe even a pizza or two.
- **Educate Government Partners:** As mentioned before, libraries are often a trusted and respected government agency. Use your institutional gravity to encourage local, city, and regional partner agencies to support civic technology projects, open data publication, and similar efforts. At this point, almost every state has both commercial and government actors working on civic technology projects.
- **Observe National Trends:** Keep an eye on organizations working on civic technology issues, including nonprofit organizations, government initiatives, and corporate technology firms. As mentioned previously, the Knight Foundation has been the leader in funding non-commercial civic technology projects in U.S. libraries and continues to work at the intersections of community, government, journalism, and technology. Code for America is a nonprofit organization committed to the development of civic technology applications in state and local government. (Disclosure: author Craner was one of Code for America's 2012 City Fellows.)
- **Build a Diverse Community Stakeholder Group:** Civic technology projects should benefit the entire community, so it's important to bring as many groups as possible to the table so that everyone—especially marginalized or disadvantaged groups—has a voice in the process. The Smart Chicago Collaborative organization's "Civic User Testing Group" has perfected this process: they've enlisted a diverse population of volunteer testers who meet at local public computer centers to test civic technology applications and provide feedback to the government and corporate developers of those applications. On a smaller scale, your library can reach out to members of the public and assemble similar groups.

Conclusion

Civic technology promises a revolutionary new way for governments—of the people, by the people, and for the people—to interact **with** the people. Libraries across the United States are uniquely positioned to be one of the most significant parts of the civic technology ecosystem. By bringing our unique attributes and resources to bear, we can bridge diverse groups and ensure everyone has access to the applications, data, and services that power our communities.

Notes on contributors

Lori Bowen Ayre is the Principal Consultant at The Galecia Group, a library technology consulting firm. She is nationally recognized as an expert in automated materials handling, Radio Frequency Identification (RFID), library workflow optimization, and open source library system software. Recognizing that technology is a catalyst of change, she works to help libraries harness the power of technology as they navigate the changing needs of their communities.

Jim Craner is the Development & Operations Manager for The Galecia Group. A former Code for America Fellow and AmeriCorps volunteer, he has extensive experience building websites and mapping applications for libraries and nonprofit organizations.

References

- Ayre, L., and J. Craner. 2017. OpenData: What it is and why you should care. *Public Library Quarterly* 36 (2):173–84. doi:10.1080/01616846.2017.1313045.
- Bushey, B., K. Clausen, and M. McGraw. 2016. Libraries as third Places: Meeting the community where it's at with civic technology. Accessed November 1, 2017. http://digitalcommons.maclester.edu/cgi/viewcontent.cgi?article=1542&context=libtech_conf
- Harris, K. 2013. *The emergence of civic tech*. Miami, FL: Knight Foundation. <https://knightfoundation.org/articles/emergence-civic-tech>.
- Hill, N. 2014. Chattanooga public library and open data. Medium. Accessed November 1, 2017. <https://medium.com/@natenatenate/chattanooga-public-library-and-open-data-a6e3724afaba>
- Horrigan, J. B. 2016 September. *Libraries 2016*. Washington, DC: Pew Research Center. <http://www.pewinternet.org/2016/09/09/2016/Libraries-2016/>.
- IDC/Accela. 2014. Civic tech fuels U.S. State and local government transformation. Accessed November 1, 2017. http://engage.accela.com/RLWhitePaperIDCCivicTechReport_RLWPCDWhyCloud.html
- The Knight Foundation. 2013. *the emergence of civic tech: Investments in a growing field*. Accessed November 1, 2017. https://www.slideshare.net/knightfoundation/knight-civic-tech?qid=f9ff6a44-7939-4c86-ac5c-b5844a11ae46&v=&b=&from_search=1
- Stempeck, M. 2016. Towards a taxonomy of civic technology. Microsoft on the Issues blog. Accessed April 27, 2016. <https://blogs.microsoft.com/on-the-issues/2016/04/27/towards-taxonomy-civic-technology/>

Links

- Chattanooga Public Library open data portal - <https://data.chattlibrary.org>
- City of Palo Alto Municipal Utility Department: http://www.cityofpaloalto.org/gov/depts/utl/projects/program_for_emerging_technologies/default.asp
- Code for America: <https://www.codeforamerica.org/what/>
- FixMyStreet: <https://www.mysociety.org/better-cities/fixmystreet-in-the-uk/>
- Knight Foundation: <https://knightfoundation.org/>
- OneBusAway application: <https://onebusaway.org/the-onebusaway-project/>
- OpenGrid: <http://opengrid.io/>
- Palo Alto Medical Foundation: <https://innovation.pamf.org/linkages/>
- SeeClickFix: <https://seeclickfix.com/>
- Smart Chicago Collaborative “Civic User Testing Group”: <https://knightfoundation.org/articles/how-smart-chicago-gets-everyday-people-guide-future-civic-tech>