DESIGN
ACTION RESEARCH
WITH GOVERNMENT
a guidebook

created by

The City of Boston's Mayors Office of New Urban Mechanics **(MONUM)** has been a leading force in government innovation, and focuses on finding citizen-centered solutions to local problems. Need potholes fixed? MONUM has developed a mobile app that allows you to report such issues with just a few clicks, and one that automatically takes note of potholes as you drive.

The Engagement Game Lab **(EGL)** is an applied research lab at Emerson College that focuses on developing and studying playful tools for civic engagement. From web-based games to foster deliberation and debate around local planning issues to offline and SMS-based games that educate players about environmental risks and prevention, the lab focuses on educating and fostering participation in citizens.

Together, the **EGL and MONUM** developed the **Design Action Research with Government** project as a way to *foster research-based innovation* in cities across the country. This guidebook details the reasons behind this approach and strategies for undertaking it.
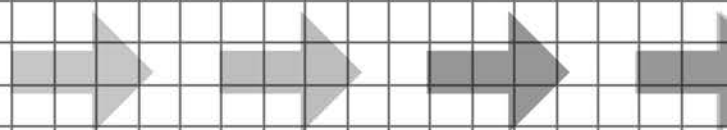
City governments are taking great strides to adopt and create new technologies that transform how they operate and how they govern. Increasingly, this work is citizen focused, with new tools offering to encourage feedback and deliberation in government decision-making. Development of new tools is rapidly increasing, with hack-a-thons and contests becoming regular practice in government outsourcing. There is no shortage of new tools. There is, however, a shortage of knowledge created from these tools. When a new app, website, or platform is used in a community:

what are the social, political and civic outcomes? How are the tools sustainable? And why should we care? It is government's responsibility to not only develop tools and programs, but to understand what they do, how they work, and why they are relevant.

What is DARG?

DARG: *därg.*

Abbreviation for Design Action Research with Government

A) A collaboration between academic researchers and government offices established to understand and improve civic innovation.

B) A citizen centered and research-based approach to engaging communities, based on the premise that engagement should mean more than just giving people services – it should provide opportunities for people to truly interact with one another, local institutions, and/or government.

C) A process that necessitates both research and iterative design: research, implement, research, iterate, repeat.

What is action research? Action research is a participatory approach that focuses on practical problem solving within a community. Rather than just analyzing events that have or are occurring, action research tries to solve a problem by intervening in a community.

What is design research? Design research is focused on attaining an understanding the development of products, services, and programs. It focuses on strategically learning about the process of design as it relates to users' needs.

Darg does this.

Tools For Civic Life

Cities big and small are trying to find new ways to help solve citizens' problems, provide better services, and improve participation in civic life. Increasingly, many are turning to civic technologies to do so. Although people often think of technology as meaning new, digital, programs, DARG is about developing innovative uses of tools—from a telephone hotline, to a plexiglass cart, to a mobile app. It's less important that people use new tools than it is that they focus on using the right tools. Tools can be digital or analog, online or off, but in all cases, the process of developing, adapting, or re-deploying tools is an important part of DARG.

Old Tools

Tools don't have to be new to work well! Telephone hotlines like 311 services continue to help citizens engage with local government and get services they need. Innovative uses of space or an interesting wall or window where citizens can give feedback can be innovative and engaging.

New Tools

Digital tools like mobile apps can not only engage new populations, but can structure engagement in new ways. Mobile apps travel with citizens wherever they go, and can be used at a moment's notice. Social tools can get citizens to engage with others in the community, rather than just with institutions. Games can encourage future action through incentives and compelling narratives.

You don't have to start from scratch! You can iterate existing tools to improve, supplement a specific aspect of what they do or who they help, or you can use something another city has used, but modify it for your local needs.

The Lifecycle of Innovation

DARG is a step-by-step approach to creating and implementing civic technologies.

STEP 1. **Decide on your goals.** What does success look like to you? What do you want citizens doing or thinking about? What are the social and civic outcomes you would like to impact?

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Partner. The sustainability of civic technologies requires partnership with community organizations or groups that have interest in using the tool. Is there capacity within the organization(s) to use the tool? How can capacity be built internally?

STEP 2.

Establish research questions and methods. Is success about what people do or what people think? What behavioral change is feasible and desirable? If those changes occur, what kind of claims can you make about the larger social, political or civic landscape? Can you measure your goals without talking to community members?

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Find or create a tool that can test those goals. Are the actions taken within the tool (i.e. checking in, logging on, commenting), the desired outcomes or are they merely a means to an end? Are there data (demographic info, location, etc.) that will help your analysis if they are built into the system?

STEP 3. Implement in the community: *Launch!!*

STEP 4.

Study. Try to answer your research questions. Did the tool do what you hoped? How do you know? If it failed to achieve your desired outcomes, can you say why? You can often learn more from failure than success. Was your tool a runaway success or can it be improved? Be honest and accurate about your outcomes. What new questions did your study raise? Do these questions lead to a theory about how civic technologies work?

STEP 5. **Iterate!** How can you create a better tool, and one that will help answer your questions?

From Transaction to Interaction-- **StreetCred**

StreetCred builds off of an existing reporting app-Citizens Connect- combining it with other tools like Foursquare or Instagram to bring diverse civic actions together in a reputation and badging system.

Citizens Connect (CC) is a mobile app that helps residents report quality-of-life issues, such as graffiti, directly to the right person at City Hall to take action. When residents launch the app, they select the type of case they are reporting (e.g. pothole, graffiti), snap a photograph of it, and add a note if they are interested. When the resident submits the case, it is routed into the City's work order management system so that it gets immediately to the best person in City Hall to fix the problem. The resident receives a tracking number and an alert when the problem is resolved. The resident can chose to share their case publicly and see and follow other cases in their neighborhood and across the city. Other reporting apps like NYC311 and SeeClickFix are similar examples of how to make reporting easy, to facilitate citizens' ability to contribute to improving their neighborhood.
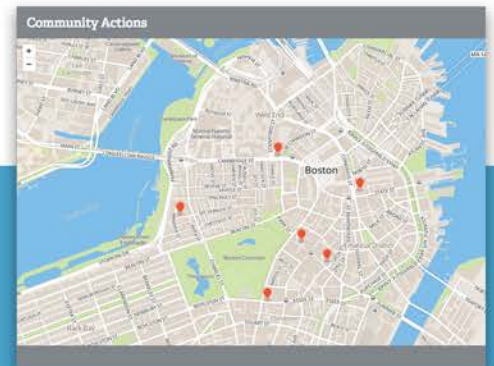
Screengrabs of the StreetCred interface

CC has been successful by many measures. It has attracted a large number of users, received great press, and has had marked impact on the delivery of services. Building on this success, we sought to improve on civic impacts. Moving beyond the efficient transactions enabled by CC, we wondered whether citizens associated individual government transactions with larger civic goals. Was reporting by phone different than reporting with a mobile app?

In a survey of telephone hotline and Citizens Connect users, we found:
- CC is not very social. It has social features, but people do not often use them
- 38% of users have never used the app to look at other reports.
- 41% report they use this feature "a minority of the time."
- People report very close to their home.

To build on Citizens Connect's success, we used the *DARG* approach.

Setting goals

What would it take to make reporting social? Could a different kind of tool lead to more actions, specific actions, and/or reporting across more spaces in the community? Could a well-designed tool make people feel more connected to their community and to other people?

Establishing Research Questions

Can a mobile tool change citizens' reporting habits in terms of type, frequency, and location of reporting?

Designing StreetCred

MONUM and the EGL collaborated to build StreetCred, a game-based API that serves as a reputation system for local civil action. Individual actions taken with such tools as CC, Foursquare, Instagram, SMS and email get framed within overarching civic campaigns. For instance, a Fall Clean Up campaign asks people to report using CC and email the location of street trees that need pruning or watering; or the Civic Engagement 101 campaign asks people to check in at community meetings or events, and report problems city-wide. The campaigns have both individual and communal goals, so as to transform previously isolated transactions with government into social, community-wide campaigns.

Throughout the development of Street Cred, we made sure that design corresponded to existing research questions. Weekly project meetings brought together technical and program staff to coordinate development, implementation and outcomes evaluation.

Launching

StreetCred launched in beta in October 2013 to select Citizens Connect users in Boston. The beta was followed by a public launch the following month.

From Classroom to Community : HABIT@

The Habit@ project grew out of a course led by Harvard professors Susan Crawford and Michael Hooper. In it, students from the Kennedy School and the Graduate School of Design engaged in co-design with several community organizations in Boston's Roxbury and Dorchester neighborhoods to create civic tools. Several tools were conceived of during the course, and a few were actually created and implemented. Because it was a student-led process within the context of a semester-long course, there was little ability for the design teams to stay involved with the community through implementation and evaluation.

The course resulted in a variety of civic tools, but no process, support or capacity to deploy them. We began to wonder: what does it actually take for community organizations to implement new technologies successfully? And, assuming the capacity was there, what happens when multiple tools are deployed in concert with one another? Are there increased social benefits when there is a greater concentration of tools? Do civic benefits arise in a direct relationship to a single technology and how, if at all, is that relation changed by the presence and accessibility of multiple technologies?

Goals:

To deploy and study multiple new technologies in the Dudley Street neighborhood of Boston to understand the organizational and community capacity for using and sustaining tools for civic benefit.

Research Questions:

Can a cohort of innovations affect **people's relationships to civic life** (relationship to community organizations, feelings of efficacy, social/communal connection) differently than a single intervention?

Can civic tools **impact more people** than those who actually use them? If there is a saturation of social reporting tools available in a neighborhood, do benefits extend to lurkers or bystanders?

What are the **organizational challenges** to implementing civic technologies and what capacity is necessary for sustainability?

What is the role of **digital media** in local community activism?

The Tool: HABIT@

A Habit@ is a clearly articulated ecosystem of civic technologies deployed simultaneously on a neighborhood scale. Six civic tools will be put in place (some of which were created during the Harvard course).

1 **Touchscreens**-- Two screens will be placed in the window of a local community development corporation called Dudley Street Neighborhood Initiative (DSNI). The screens will display information about jobs, transportation and events, as well as provide casual and fun interactive experiences..

2 **Rent-Check-Moment**-- In a low-income housing development in Boston, residents will vote on issues affecting them by placing their rent check in one of several boxes corresponding to their position on a question posed each month. The results of this informal pole will be projected on the side of the building as a means of sparking conversation in the neighborhood.

3 **Visioning Cart**-- To enable creative citizen input into solutions for empty spaces or new developments, a plexiglass cart on which citizens can draw will be available for use at events, or everyday placement on sidewalks.

4 **Planning on the Street**-- Questions about local planning issues will be sprayed on the street, and residents answer via text message, using the mobile application Textizen

5 **Community PlanIt game**-- As a means of fostering community-wide conversation, a social online game for deliberating and debating local issues will be deployed.

6 **StreetCred**-- A campaign to clean up the neighborhood and identify problems will be launched in the neighborhood, using the StreetCred API .

Implement!

A new Habit@ was created in Boston's Dudley Street neighborhood between September 2013 and June 2014, in partnership with DSNI.

The deployment is divided into three phases, with tools unveiled over the course of 8 months.

Implementation is a collaborative process, with tools fitting within existing goals and events the community has planned.

Research and future iteration.

The research uses a multimethod approach to learning about how community members use and are affected by a Habit@. The findings from the first Habit@ will be used to further develop the project on two levels. First, to assess best practices for how community groups can deploy these tools (or similar tools); and second, to develop a scalable model for how to develop Habit@s in other neighborhoods. The goal is to make recommendations for how to scale Habit@s that both repurpose the six technologies listed above as well as other technologies developed locally or that are included in a grab bag of open source and available tools.

Strategies for Success
Making a safe place to fail.

Taxpayers rightfully expect government to put their dollars to productive use. However, "productive" is most often understood as efficient. As a result, cities often focus on developing new programs that speed up or increase access to services, rather than fostering those that would focus on deepening citizens' civic capacity.

How new technologies affect citizen engagement is an open question without clear answers. Because city governments are not set up to experiment when it comes to procuring new tools or programs, that disallows for failure or anything short of success. By default, if not design, government tends to rely on tools or interventions that are known to have had some measure of success according to the efficiency metric, but are not necessarily forward-thinking or accommodating of social or civic changes brought about by new communication patterns. As a result, government agencies are often forced to focus on easy-to-measure and easy-to-meet findings, such as number of people using a tool or meeting attendance. But, innovation, which many civic offices now point to as a value, means experimentation, and an important part of experimenting is learning when and why things don't work out as planned, learning from failure to gain an understanding of how to improve outcomes in the future.

Reframe expectations. "Failing" should always be tied to learning.

A government service can fail if it doesn't reach enough or the right people. But innovation is about more than services. DARG reframes projects into a research-based inquiry. In research, we don't fail, we learn and adapt.

⇒ Goals aren't just actions, learning is always a goal.
⇒ Identified shortcomings are a net benefit.

Advocate for big picture goals. Be clear that projects are trying to improve civic attitudes or deepen people's connection to the community, not just help mete out what are often limited resources.
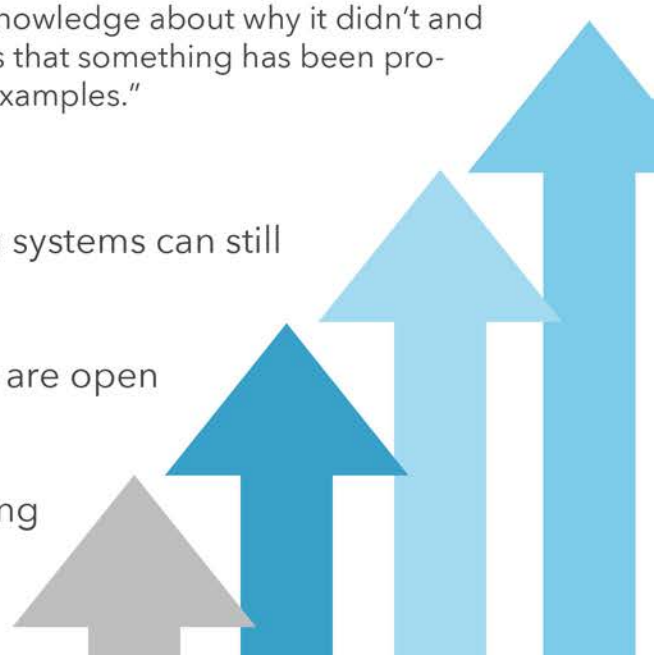
Make what you've learned public.
Even if a project doesn't get the kind of results hoped for, the knowledge about why it didn't and what can be done in the future is an asset to the public. It shows that something has been produced by the project, and helps other cities build on "worked examples."

Fail fast, fail cheap.
You don't have to be a startup to fail the right way--big systems can still fail quickly and cheaply.

Plan to improve existing tools (your own or others that are open source), building on your iterations each time.

Release in beta. Let the community know that something is in progress and that they can help make it better.

Ask better questions.

The questions we ask reflect the goals we have. If we ask how many people use a tool, our goal is to get people using it, regardless of how that use affects them or the community. Because we see the goal of government to foster an interactive relationship with citizens (rather than a transactional one), we have to ask more of our tools, and ask better research questions when measuring those tools.

Go beyond numbers. We are still learning how governments innovate, and how citizens use civic tools. Rather than just deductively measuring the success of interventions, we still need to inductively assess what technologies are doing to relationships and/or individuals, what citizens think tools can do for them, and what constitutes "deep" engagement.

Ask how people engage in a variety of ways, why they do so, rather than how many instances of use there were.

These methods are often qualitative—it requires asking people **why** and **how** they are using tools, not just if they are.

Iterate tools, iterate measures. Once you learn something new about how people engage or what is happening, ask more questions. Was there a particular reason something worked that you can test? Is it important to test how the tool works to achieve related goals?

Go beyond common measures. There is a history of traditional measures of civic engagement research—participation like voting or attending meetings is what counts. But that's not all that civic engagement is. We can ask MORE questions too—are people connected to communities? Each other? The city?—without them coming at expense of necessary measures.

Our measurements reflect our ideals about what citizenship should be. Do we just want more people, or do we want people to act differently? connected to communities? Each other? The city?—without them coming at expense of necessary measures.

for examples of research instruments click here

Partnerships

Universities, community groups, and governments often exist in separate silos. DARG works best when those groups come together, and everyone has input—groups should develop together, research together, iterate together.

Why partner?

Partnerships can create conditions to learn from experimentation. So often, researchers are brought in at the end of a project to analyze data. But when government, researchers and community organizations partner from the beginning of a project, they are able to iterate goals more effectively.

Partnerships provide a more reliable way to fund work. Private foundations are more likely to fund projects with clearly articulated research and implementation goals, with partners in place that can reliably execute.

Technologies need a sustainability plan. Deploying tools means getting people to use them and maintaining the technology once they do. Governments, universities and community groups all have important characteristics that necessitate collaboration. Governments are typically not equipped to directly connect with citizens or maintain non-enterprise technologies. And universities work on semester cycles, often with no lasting connection to communities. Community groups lack connection to city services and the capacity to do research; however, they are best poised to directly connect with citizens and build local capacity to maintain technologies or tools.

How to find common ground with collaborators:

Make goals parallel. Collaborate, don't just cooperate.

Local government offices should be on board with using new tools and taking risks. They should also be willing to share owner-ship and control of projects with other partners.

Researchers should be familiar with action research and invested in doing inductive research. Collaborations with both qualitative and quantitative researchers will likely be necessary in order to measure a variety of outcomes.

Know each others' weaknesses.

Researchers face pressure to publish in academic journals. Because action research makes for slow data, know that they will likely have other additional research questions, or want to collect more data.

Government is there to provide services. They need to take advantage of openings they may be given, so timelines for research may get sped up. Public opinion falls on them more than anyone; showing off successes—and focusing on the learning outcomes of failures—is necessary.

Community organizations can be weary of their community "being stud-ied." Be clear about the collaborative nature of the project, and try to engage in co-design when possible. Staffers are often overworked and underpaid. If you can pay for some of staffers' time to collaborate on the project, it goes a long way toward making sure the project doesn't fall to the bottom of their priorities list.

Barriers to Collaborating

Government procurement processes make collaboration difficult. City governments have rules regarding how much funding a project can use before it requires more paperwork. It is often a good idea to keep project costs below that number.
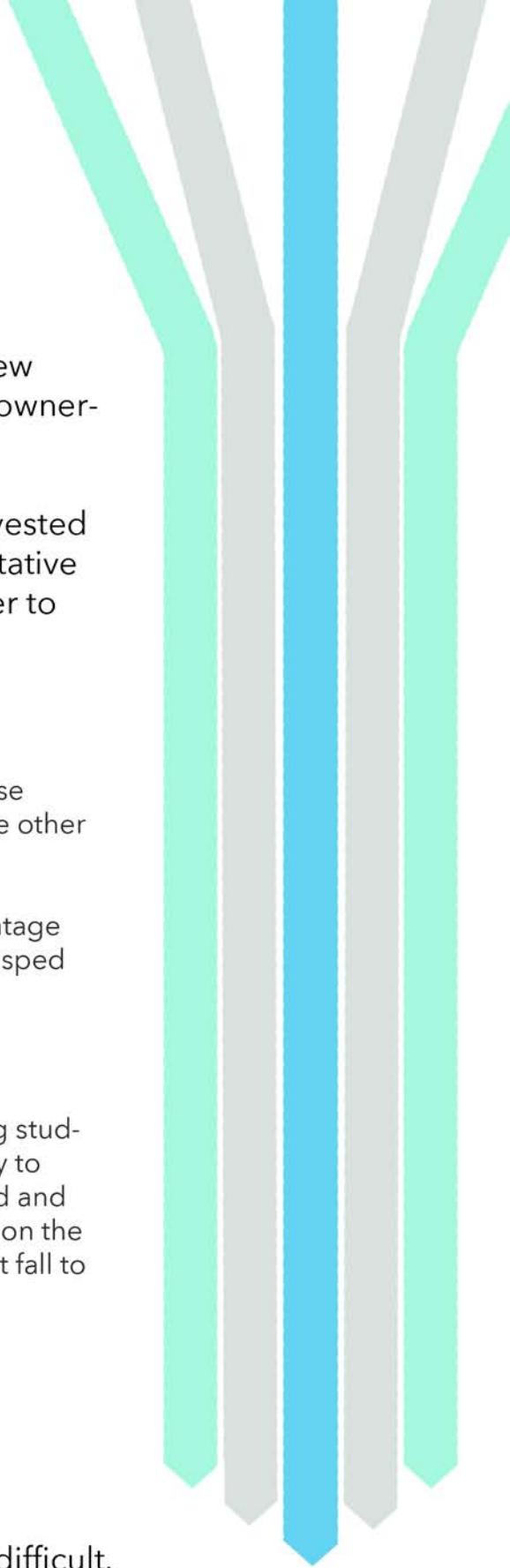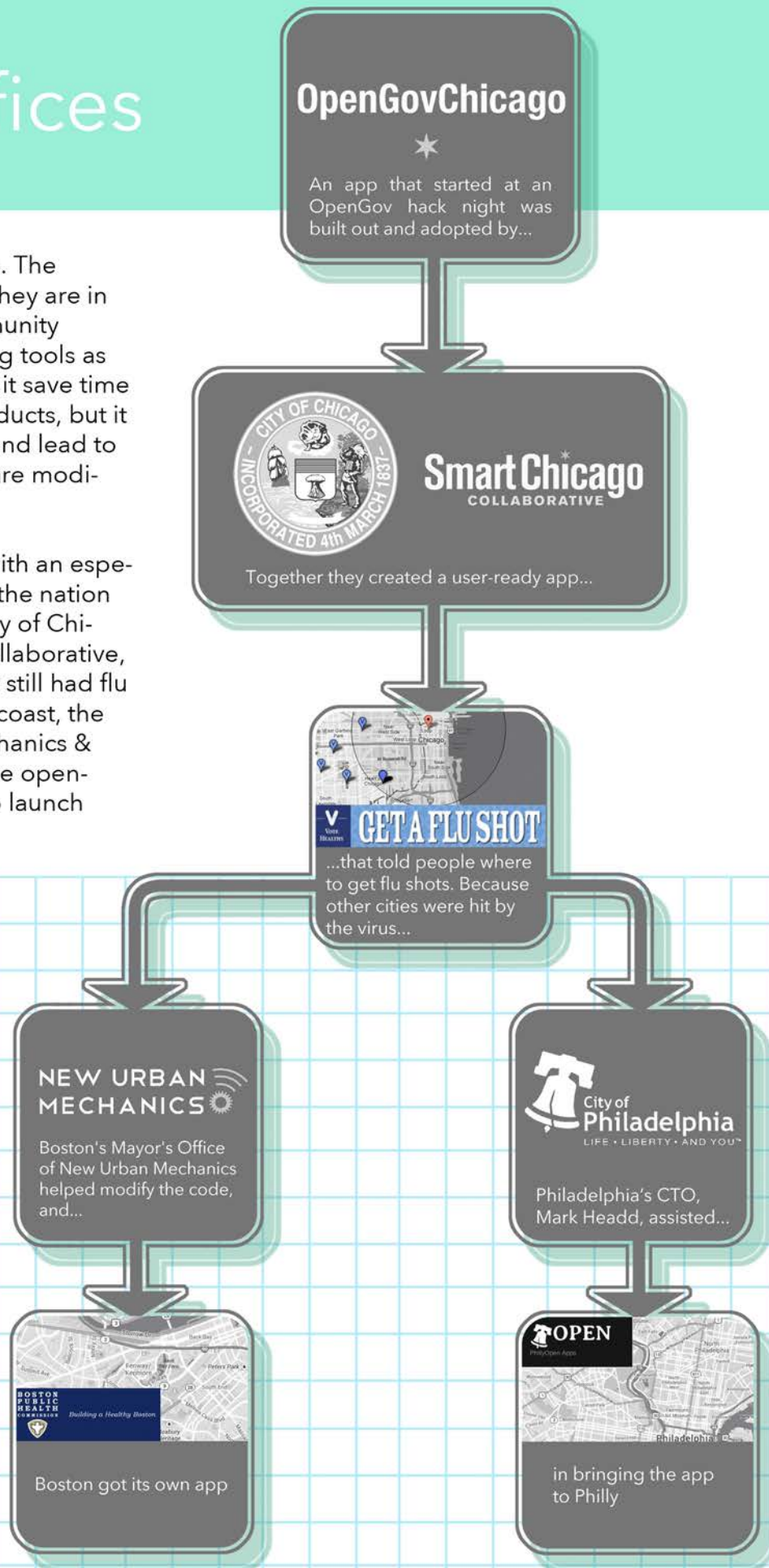
Networking Innovation Offices

Collaboration across cities is important, too. The DARG approach asks innovators—whether they are in city hall, an academic institution, or a community group—to share their best practices for using tools as well as the tools themselves. Not only does it save time and effort spent on replicating existing products, but it can also improve the chances for success, and lead to deeper questions and better tools as they are modified for particular places or purposes.

In 2013, a shortage of flu shots coincided with an especially bad virus, and people in cities across the nation had a hard time getting vaccinated. The City of Chicago, with help from the Smart Chicago Collaborative, developed a tool to find health centers that still had flu shots available. When the virus hit the east coast, the Boston's Mayor's Office of New Urban Mechanics & Philadelphia's Chief Data Officer re-used the open-sourced code for Chicago's Flu Shot app to launch similar apps in their cities.

By collaborating with other cities—and tech groups outside of municipal government—existing apps can be easily iterated for slightly different contexts.

Researchers can also work on projects in a variety of cities. The research team in Boston has worked on research surrounding the planning game Community PlanIt in several cities throughout the country.

OpenGovChicago

An app that started at an OpenGov hack night was built out and adopted by...

Smart Chicago COLLABORATIVE

Together they created a user-ready app...

GET A FLU SHOT

...that told people where to get flu shots. Because other cities were hit by the virus...

NEW URBAN MECHANICS

Boston's Mayor's Office of New Urban Mechanics helped modify the code, and...

Boston got its own app

City of Philadelphia
LIFE · LIBERTY · AND YOU

Philadelphia's CTO, Mark Headd, assisted...

in bringing the app to Philly

Citizen-**oriented** Design

The projects that are designed and evaluated with the DARG model involve the community at every step.

In the development of new tools, it is important to investigate the on-the-ground needs of communities, engaging in processes of iterative co-design.

When deploying tools, it is important that the timeline coincide with events in the community or ongoing efforts of local groups. The more tools are connected, the more useful they will be, and the more use they will get.

In doing evaluation, it is important to create questions in which all partners have an interest. Subsequently, it is necessary to create mechanisms to disseminate findings to multiple audiences.

Advice for Government

When government seeks to innovate, its first imperative is often to "fix government!" But internal motivation is not the same thing as fostering citizen engagement. While both are important and new tools are effective ways of achieving both goals, it is necessary to be aware of the distinction between them. Just because government agencies can communicate more efficiently does not mean that communities are stronger or more capable of taking action.

Make sure to ask the right questions with the right partners. Good questions will lead to good solutions.

Do people need an easier way to report potholes? The New Urban Mechanics' *Street Bump* automated the process.

Should people have a variety of avenues through which to make their voices heard? The DARG team decided a Habit@ was the way to do that.

Advice for Researchers

Researchers have a history of parachuting into a community, collecting data and darting out. While this may fit academic standards of sterile, unbiased research, DARG researchers are much more embedded in the communities they research. Trusting relationships with a community does not preclude quality evaluation; in fact, while it takes longer to establish relationships, the findings can be more valuable in the long run (certainly for the community)

trouble-shooting

How can I find researchers to partner with?
Contact local universities and contact people whose research is aligned with the project's goals.

How will I know which community groups to partner with?
Community organizations often provide services and social connections within communities. They are an important part of people's everyday lives. Being aware of the community organizations that are working in an area is an important first step in doing any community-level project.

My office (in government) measures success by the number of people we have participating. You say not to do that. What should I do?
Work with university partners and community organizations to ask better questions. You should consider every launch of a new technology an important learning experience, not just for your office, but also for people in similar positions throughout the country. An experiment with poor questions is a wasted experiment.

How can my community group ensure we get a say in how the project turns out?
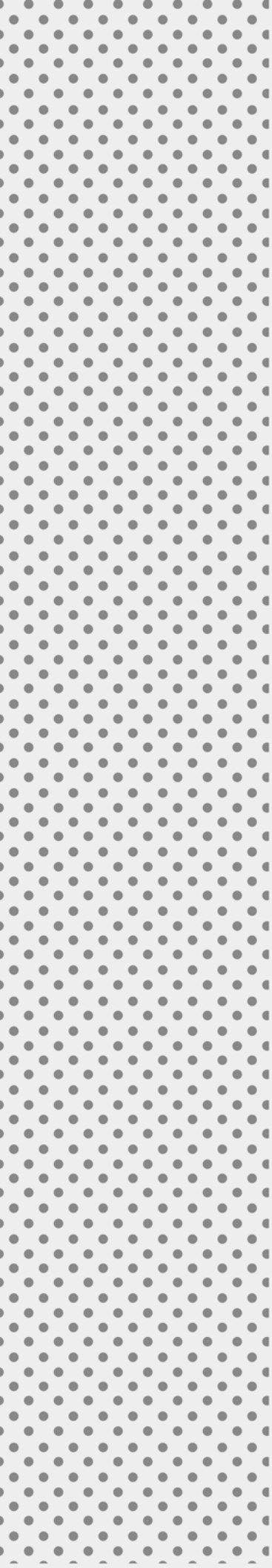Pick partners wisely. Make sure that university partners understand what you need to know, and make sure government partners understand the organization's needs. Ultimately, the community organization should be the driving force in any collaboration.

No one's using our app. What can I do?
Often, launching a successful app takes more human time than anticipated. Potential users often don't trust new tools, so time needs to be devoted to building trust and comfort with the technology. If you build it, they will not necessarily come. Sometimes, you have to hold their hands and walk them there.

We've launched an app, what more success could there be?
It's hard to know until you've asked the right questions. Are people using the app? Has it changed attitudes, opinions or actions? Can the app be iterated? Can it be shared or scaled?

Everyone's using my app-- that means I'm succeeding, right?

You are succeeding in getting people to use an app. But you might not be succeeding in producing the civic and social outcomes you set out to create. Go back to your research questions and evaluate success based on them.

My data doesn't answer the questions I want. What should I do?

Iterate. Go back and collect more data and see if you can get closer to answering your questions. Maintain an open dialogue with all the partners to assure that questions are meeting individual needs.

## We didn't reach our goal. What now?

Try to figure out why. Did you not meet your needs because the outreach failed? Are there things in execution that can be changed to change outcomes? Whatever the answer, be sure to document your process and share, so others can benefit.

Where should I put our findings?

In as many places as possible. Academics are going to want to publish in peer-reviewed journals, but community organizations and governments are going to be more interested in sharing in a blog post, listerv, or website. Consider making short, readable documents (even multimedia) that can be shared widely.
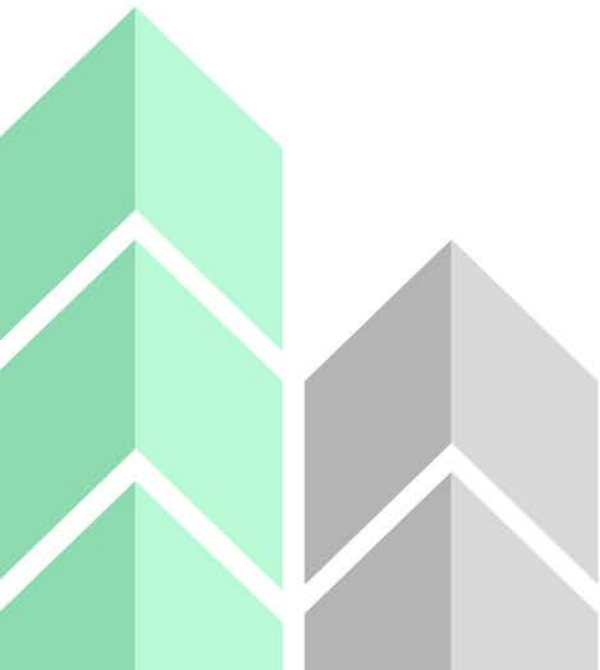
Shouldn't the government be improving how it works?

Yes. Inter-governmental efficiency is an important part of this work. But social and civic goals are different and should be considered separately.
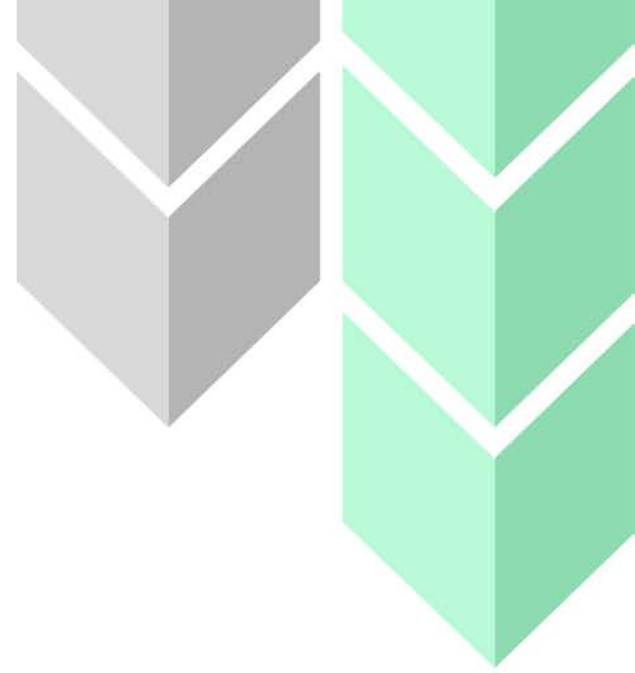
Innovation needs to be research-based--both in terms of what tools are created and how they are assessed.

Open data is not enough. Civic innovation is about solving on-the-ground problems that citizens face every day.

Collaboration across institutions is necessary. Cities, community groups, and researchers need to work together for innovation to be successful.