Online civic platforms are all the rage today. Platforms are emerging at an ever-increasing rate, all with a simple goal, to harness collective intelligence towards solving complex social problems and realizing opportunities for innovation.³ Robert Steele, author, activist, and advocate for open source intelligence, noted that citizen intelligence makes “possible the revival of the collective will of the people. Internet supplies a means for virtual freedom and is an instrument of frontline communication, largely uncensored, for those individuals who wish to communicate, calculate and inform themselves and each other and, in so doing, perform their responsibilities as citizens of the Republic.” The ability of citizens to transparently share information with no prohibitions leads to what Yochai Benckler calls *The Wealth of Networks*⁴ and Barry Carter calls *Infinite Wealth*⁵.

The greatness of crowds lies within the dispersion of knowledge available among many members of the group.⁶ Francis Galton, in 1907, was one of the earliest writers on the subject of the wisdom of crowds. He conducted a study where 787 participants were to guess the weight of an ox. One group of guessers where experts, such as butchers and farmers, and the other group of guessers were men ‘off of the street’ with no special knowledge of the matter. The group of non-expert guessers had an average guess of 1,197 pounds; the actual weight of the ox was 1,198.⁷

Civic platforms that leverage collective intelligence towards solving policy and planning come in varied shaped and sizes. Over the last few years, we have undertaken a study of the features of online civic platforms in major metropolitan areas within the United States and Europe. One feature is common across the range of platforms – engage the masses through technology to solve problems and realize opportunities that have an impact on all those who participate on the platform. At the Massachusetts Institute of Technology, the Climate CoLab is a collective intelligence platform developed to address the problem of global climate change.⁸ The platform is an online platform of nearly 4,000 people coming up
with proposals. Users (anyone can join the community and participate) are invited to submit proposals and comment on others. Users collaborate regularly with others they have met on the site to develop proposals.

Motivations for Citizen Participation
Citizens are getting involved because technology has enabled us to do more while going about our normal lives. A citizen with a smartphone or tablet can contribute to projects to grow and protect the community. For instance, outside of San Francisco, at Mt. Diablo State Park, hikers can take a photo at a marked hill and upload the photo to Flickr, Twitter, or Instagram using the hashtag #morganfire01. The pictures go into a bank that monitors that area’s ecological recovery after it was hit by a wildfire. Researchers compile the photos into a crowdsourced time-lapse series that shows the process of vegetation growing back. The information from the project helps researchers determine the long-term impacts of wildfires.

Clay Shirky posits the concept of cognitive surplus which allows us to collaborate and make the world better. According to Shirky, cognitive surplus is made up of two things: individuals’ free time and talents and the mediated landscape of today. You might be thinking…people with talent and free time have existed since forever. However, free time and talent, coupled with the technology present today makes individuals more likely to engage because it increases our ability to connect. For instance, following the 2007 presidential election in Kenya and the crisis that erupted thereafter, Ory Okolloh began blogging about it on her site. In the course of blogging, she would solicit more information about what was happening from commenters and information began pouring in. She noted on her site that there was more information for one person to manage and how she wished there was a way to automate things. Two programmers read her blog and did just that. They set up Ushahidi as a simple way of gathering information. The platform is now widely used across several countries.

Citizens are also motivated to share and transfer information as a matter of civic duty. In highly individualized countries such as the U.S., the notion of participation as civic duty doesn’t seem very strong; however, the reach of societal and world problems cannot be ignored. Citizens are dealing with the effects of terrorism, recession, poverty, crime, natural disasters, and unemployment and they feel compelled to improve quality of life. For instance, after the 2013 Boston Marathon bombing, law enforcement asked citizens to upload photos and videos that might aid in the identification and capture of suspects. In other pockets of the internet, citizens were already doing their own investigations by uploading information to online communities such as Reddit. In Waynesboro, Virginia, a fatal hit-and-run was being investigated by law enforcement. At some point, law enforcement was unable to move forward in identifying the car. The police department released a photo and description of a metal piece left at the site to see if the public could help identify it. Soon thereafter, a popular automotive blog picked up the information and commenters were able to identify the evidence. The blog contacted the police department with the information, which led to the positive identification of the vehicle, and the conviction of the perpetrator.

Four Archetypes of Civic Platforms

Technology platforms for citizen intelligence are springing up quickly. Platforms such as Deliberatorium, Debategraph, Cohere, YourView, and CoPe_it! all allow for greater discourse about issues. Each has special features such as a number of ways to contact other users, advanced discussion boards, social analytics, discourse analytics, content and social network maps. These sites allow users to gather information and debate ideas and solutions to specific community issues. Users can also add evidence and information to other users’ claims which triggers conversations and knowledge sharing. In cities across the U.S., leaders are finding value in citizen intelligence. Four dominant archetypes exist when it comes to technology-enabled (online) civic platforms.  

Model 1: Citizen Centric and Citizen Sourced Data
Citizens are the principal actors on these platforms; they create and setup the platforms themselves, engage their community members, build the rules of the platform, and setup the moderation of content. To engage with citizens, they can create group discussions on thematic issues, setup competitions to crowdsourced ideas, and requests votes for selection of ideas or they can just be a repository of key concerns and information that are of interest to the community. They seek to contribute to solving local governance challenges through their ideas. Local government has no formal role in this model and can only have a passive role. Such passive roles can include receiving information and solutions once they have been chosen and vetted by the citizen users. Along with their passivity, they are not bound to implement the solutions offered.

For instance, Change by Us Philly is an online platform for community projects that was launched by CEOs of Cities, Local Projects, and Code for America in collaboration with the City of Philadelphia. On this platform, citizens can suggest changes they would like to see, join grassroots projects, or create small groups to discuss issues. When citizens submit ideas, the ideas are reviewed and, if approved, are passed along to city leaders. Similarly, Localocracy services Massachusetts cities Arlington, Cambridge, Granby, Milford, and South Hadley as a site that allows users to discuss local issues, generate ideas, and select ideas. To engage, citizens must register with their actual identity (to ensure that they are registered voters), then they are allowed to view reasons from their leaders and neighbors for supporting or opposing an idea. Once an idea is selected, they propose the solution to the appropriate public agency. The local governments also play a passive role but Localocracy invites public agency representative to actively monitor the suggestions. Implementation of the ideas is at the discretion of the agency.

In Kampala, Uganda, citizen groups are testing an anti-corruption app that is in development. Uganda commonly has corruption at all levels of government. The apps is called ‘Action or Transparency’ (A4T) and it allows citizens to see how much money schools and health center are allocated, for what reasons, and how much money is being spent, or not being spent properly. When citizens see signs of impropriety, they can ‘blow the whistle’ and notify one of their partners, Transparency International.

Model 2: Citizen Centric and Government Open Data
Similar to Model 1, citizens are the principal actors. The focus of these platforms is to harness open public data. Unlike Model 1, here open data is the main attractor and the majority of interaction happens between citizens and the open data. There is limited citizen-to-citizen or citizen-agency interaction. Citizens are

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usually engaged with simple tools to download information and explanations about the datasets as well as discussion groups and forums where they can post questions and seek thematic communities that are working on similar datasets (e.g. crime data or housing data).

For instance, on www.data.gov/cities, any user can retrieve the City of Seattle’s fire 911 calls in real-time. All that is required of the user is to decide how the user would like to filter the information (i.e. by day, by incident (medical or fire), by location) and download the data in a number of different formats (i.e. CSV, PDF, RDF, JSON, RSS, XLS). Users can also post comments on page and dialogue with other open data users. Finally, the user can view the information about the data such as a description, how many times it has been downloaded, licensing and attribution, and information about the data owner.20

A citizen developed the NYC Health Ratings21 website using data for the New York Department of Health and Mental Hygiene. The data offers citizens easy access to health safety ratings. In Oakland, the Oakland Crimespotting22 website was developed to provide citizens with up-to-date information about criminal incidents. Utilizing open data information on crime incidents from law enforcement agencies, the website displays information on an interactive map. This website allows citizens to track crimes based on type and leave comments on an incident. In Chicago, the Transit Future23 app is a campaign to encourage the city to build new rail lines. It is an interactive map that explains the future of transportation in the city using city transportation data.24

Model 3: Government Centric and Citizen Sourced Data
In this model, public agencies take the lead to develop citizen intelligence through participatory platforms. Unlike Models 1 & 2, the public agency is not a passive actor and this model involves substantial local government-citizen interaction. Local governments are engaging citizens by requesting ideas and feedback. This platform generally allows the public agency to set and control the narrative of the problem. In this case, citizens can hear and be heard but they lack the proper channels to ensure that their opinions and feedback are truly taken under advisement. In other cases, the public agency is near-equals to citizens and the flow of information is bi-directional; citizens are enabled with conveyance capabilities that helps citizens communicate with public agencies quickly. However, idea implementation is still at the discretion of the agency.

For instance, the City of Austin developed SpeakUpAustin25 to engage citizens on local issues. City agencies identify problems and made those problems available for citizens to read and propose resolutions. Citizens can vote on proposed solutions. After a solution has been voted on, the application idea portal remains open to keep citizens updated on the progress of the idea. The City of Wichita used MindMixer during a drought to ask citizens what they would be willing to do to conserve water.26 The City and County of San Francisco placed a request to the community for library card redesigns and received more than 5,000 submissions.27

The Regional Transportation Commission in Washoe County, Nevada developed an online web map and app for the Reno Sparks Bicycle and Pedestrian Master Plan. The Master Plan seeks to create a

24 http://opencityapps.org/.
comprehensive system of bicycle and pedestrian routes.28 They program solicits resident opinions on new locations for bike trails.29 Along with public meetings, citizens can take photos of a bike lane, curb, or intersection and submit a comment to the web map such as “needs crosswalk” or “nice scenery.” The comments are displayed on an online map.30

Model 4: Government Centric and Citizen Developed Solution
In this model, the public agency develops a platform for citizens to develop actual solutions such as mobile apps. Like Model 3, the public agency is still the primary actor where they are actively seeking and incentivizing citizens to become citizen developers. Citizens are given tools to engage in this platform such as open data and mentorship to create a solution. This model can be classified as a true partnership because it is government centric with a high level of citizen power. It requires a significant amount of collaboration because the public agency expects to use the citizen outputs as a mainstream technology. When complete, information is exchanged with the public agency in the form of a website or app.

Many times, the agency will offer monetary prizes to encourage developers to engage in the application development process. In addition to monetary prizes, prizes such as coaching, mentorship, and training are also great motivation for citizen developers.31 For instance, the New York Big Apps competition was hosted by the City of New York. The competition set out to have groups use city data sets and create novel applications with the information. Entries were voted on by a panel of judges. New York City offered a few different incentives to developers to participate such as money, three months of workspace, meeting the Mayor, and access to organizational connections.32

In 2014, the United Kingdom was battered by storms that led to mass flooding. In response to this, the Environment Agency called on developers to create solutions with government data (including flood sensors) in a competition called ‘Flood Hack’. Here are a few solutions that came from Flood Hack: Flood Feeder aggregates flood information such as warnings, alerts, mobile phone mast locations, and transport routes. Citizen Flood Journalism and Fludbud helps to connect people tweeting from flood-affected areas. FloodRelief connects volunteers, local authorities, and emergency services.33

Moving Forward and Encouraging Citizen Intelligence
Encouraging citizens to use their talent and skills to help grow and improve their city and themselves is absolutely the promise that lies ahead in using citizen intelligence. Some suggested guidelines for planners and public officials:

1. **Become familiar with citizen intelligence platforms.** Each offers different capabilities that you should be familiar with. Many sites have different foci and there is sure to be a platform right for your organization.

2. **Investigate each platform** to understand which are working well and how to partner with them. Eventually, this will become a very crowded space and only the most relevant and engaging platforms will survive. Think of how quickly technology is in vogue (i.e. BlackBerry, MySpace) and falls out of the mainstream. Finding the right platform is paramount to success.

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3. Try to **build links and connections** to those that are running these platforms. Much of these operators truly believes in the power of citizen intelligence and wants to engage with as many entities as possible.

4. Figure out which **problems can be sourced out** to these platforms for citizen deliberation. This involves understanding the capabilities of the platform. Traditionally, many researchers would say not to engage citizens in difficult tasks or decisions but, in this space, it is warranted. These are high-level platforms for solution generation and evaluation of ideas. They are capable of facilitating detailed, in-depth conversations.

5. Understand that you are seeking intelligence on community issues. You can end up with unwanted or undesirable outcomes. You will be out of control of the narrative so your city must **accept early on that citizen ideas might not align** with city constraints or priorities. Remember, citizen intelligence is far more transparent than other forms of intelligence because it only holds the public’s interest. While you hold the public interest, you also hold interests of job security, political agendas, and budgetary constraints. If you engage in this, you must be willing to **go the distance** no matter the outcome.

Social problems that local governments seek to solve are wicked problems because they are messier than their technical problems. Wicked problems are more dynamic and complex due to the high volume of stakeholders involved and the numerous feedback loops. In citizen engagement, all too often wicked problems are boiled down to a superficial view of the issue when, in fact, they have not begun to even solve the issue. Consider the wicked problem of homelessness in any city. This is one of world’s largest problems. This is such a huge and expansive issue that concerns several key stakeholders such as human rights advocates, economic development, housing, community development, social services, law enforcement, nonprofits, and healthcare. This issue cannot be solved by public meetings alone. However, all too often, local governments are happy with the dialogue and not the outcome.

In hopes of reaching a quality outcome, Christian Sarkar developed the concept of the ‘$300 House’ to help improve housing for the world’s most poor to help break the cycle of poverty.\(^\text{34}\) In an open design challenge issued to the community, experts in design, energy, finance, and urban planning worked to develop and sharpen ideas on how to execute a $300 house. Still in the early testing and experimentation stages of the project, the developers are finding how expansive their work truly is.\(^\text{35}\) This is not just about houses; issues such as pollution reduction, extreme unemployment, health, sanitation, sustainability, government relations, and policy are all involved.\(^\text{36}\) Collective intelligence platforms offer netizens the opportunity to engage in important civic discourse as well as develop solutions collaboratively.

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