7 Emerging Trends in Citizen Engagement

Using place as an enabler for successful citizen engagement

Government directives and increasingly powerful communication technologies are driving a more open, transparent, and collaborative relationship between agencies and citizens. Beyond making public information accessible with the click of a mouse instead of a formal record request, web and mobile technologies are enabling powerful two-way communication between leadership and constituents. Government organizations of all sizes are rapidly developing interactive tools that enable a stronger dialog on nearly every aspect of civic life, from disclosing details on spending and development projects to streamlining requests for public services.

The technology that is proving to be one of the most effective platforms for citizen engagement—geographic information systems (GIS)—is already widely used by most governments. When governments apply a geographic framework to public discourse through map-based web and mobile applications, citizens get a clearer picture of the situation at a glance and can better determine their personal stake in an issue.

"The GIS technology governments use to enhance operations and support better decision making is the same technology that enables citizen engagement," says Christopher Thomas, director of government markets for Redlands, California-based Esri. "Citizens want to see things in local context—their neighborhoods and where their children go to school. It provides a context for the discussion."

Esri is seeing cities and counties around the globe leverage their GIS resources to illustrate location-based data and engage residents in new ways to conduct business and get involved in local affairs. Additionally, GIS technology is helping governments systematically organize, analyze, and route incoming data, building public input into their existing processes.

The following seven trends are emerging as governments develop creative, new, location-based tools.

1. Public Information

GIS enables state and local governments to depict public data on maps to improve transparency and accountability, but beyond that, it offers citizens the opportunity to participate by providing feedback. For example, Utah was one of the first states to open its redistricting process to the public via a flexible online application built by Esri that allows citizens to create, propose, and review redistricting plans. Illinois, Ohio, and Tennessee are planning broadband connectivity projects by publishing connectivity maps online. Citizens are contributing to the effort by using their smartphones and computers to report their broadband connection quality.

2. Public Reporting

Location is the foundation of public reporting. The first thing a person is asked when reporting a crime, graffiti, or a pothole is, "Where is it located?" Then, the key to responding quickly and effectively is the ability to use GIS to dispatch the service request. GIS also enables cities and counties to analyze public reporting trends to adjust programs and workloads and allocate budgets to the right areas of the community. Many cities and counties are using smartphone apps for public reporting to take advantage of the devices' GPS technology, which enables citizens to take a photo or video of a situation and automatically report its location to the city. When connected to a city's customer relationship management software, the information automatically populates work orders for city crews and identifies exactly where the problem is.
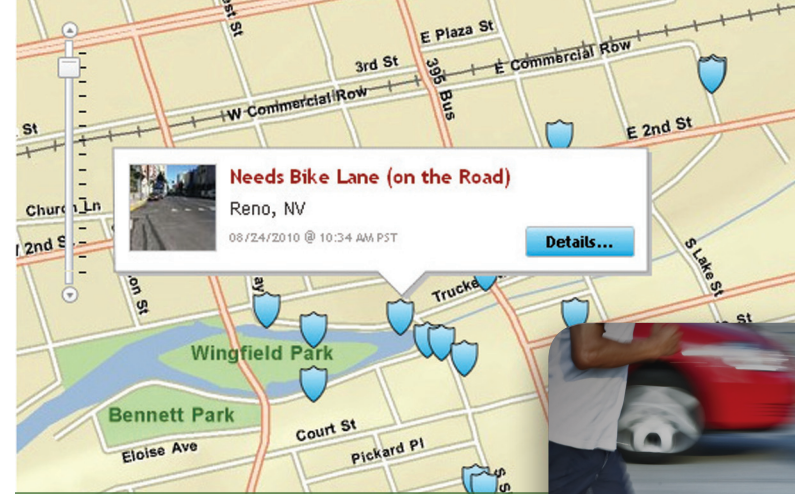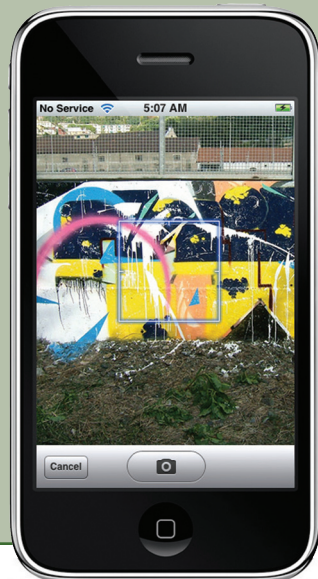
3. Unsolicited Comments

With cell phones and social media, citizens are talking about events and issues in their communities, but government agencies typically are not capturing those comments. Working parents may not be able to attend a town hall meeting to discuss plans for redeveloping a blighted area, but they can post their opinions on Twitter about the effect it would have on their property values. New GIS-based tools allow governments to capture Tweets and other social media comments about locations and events in their communities and post them to online maps to offer a robust picture of public reactions. During the Gulf of Mexico oil spill in 2010, for example, the technology was used to collect and organize social media comments, videos, and photos about damage along the shoreline and present them on online maps to keep the public and responders updated on conditions.

San Diego launches public reporting app

San Diego 311 is a GIS-based public reporting application that launched in May 2011 that enables citizens to easily notify the city of problems in their community. Designed for use on smartphones, the app takes advantage of the devices' GPS technology to automatically include the location of the citizens' reports when they submit them along with photos and video of the problem. "Having the GPS from the phone be able to sniff out the latitude and longitude, coupled with the photo and video, give the public works and public safety teams the visibility they need to verify the issue remotely," says Kurt Daradics, director of business development for Santa Monica, Calif.-based CitySourced, which worked with the city to create the app. "They don't have to drive out to do an inspection, which not only saves time, which is a hard labor cost, it also reduces fuel costs."

With the GIS technology in the app, citizens also can view maps of their community and see other problems that have been reported nearby. "Not only does it help us improve services, it allows us to expand transparency," says Carl DeMaio, San Diego councilmember, who led the creation of the San Diego 311 app. "You are able to click on another screen in San Diego 311 to see the complaints in your neighborhood or wherever you are, so you can see other people's pictures of potholes or graffiti. You can track what's been reported, so there's a lot of transparency you can achieve."

The app enables citizens to become more engaged in their community using the devices they have come to rely on to stay connected to family, friends and colleagues. "This is where your customer has migrated to," DeMaio says. "You need to meet them at their terms. They're on Facebook. They're getting smartphones. They want to use the Internet to transact business."

4. Public Input/Solicited Comment

Location has always been the foundation for public comments. At live public hearings, citizens report their addresses before offering their input, which can be organized in a GIS that brings context to their comments. GIS also helps convey information at public forums about plans or issues in the community. Government agencies are asking citizens for feedback about specific issues and using GIS-based tools to collect and organize their comments. The Regional Transportation Commission (RTC) of Washoe County, Nevada, created an online web map and smartphone application so residents could propose new locations for bike trails as part of the Reno Sparks Bicycle and Pedestrian Master Plan. In addition to attending public meetings, citizens could use their smartphones to take a photo of a bike lane, curb, or intersection and submit a comment to the web map, for example, "needs crosswalk," "needs bike lane," or "good scenery/environment for walking." The georeferenced electronic comments and photos were displayed on an online map at RenoSparksBPP.com. Showing public feedback with GIS helps planners see where issues are most pressing to the community and create a plan that reflects those desires.

5. Citizens as Sensors

With access to GIS-based web and mobile apps, a citizen walking through a park can pull out a smartphone and provide a real-time report on problems or ideas for improvement. Citizens' eyes, ears, and technology can be tapped to supplement observations from government staff and law enforcement officers. If a citizen witnesses a crime, he can use a smartphone to submit exact location information about the crime directly to police. Police, in turn, publish crime reports to online GIS maps and can notify citizens of crimes that occur in their neighborhoods and criminals to watch out for. With citizens as sensors, law enforcement agencies and other government departments have a broader net with which to gather information about the community. With GIS, they have robust tools for organizing and distributing that information.

6. Volunteerism

Many citizens would like to volunteer to share their skills and time in the community, but they have to balance the locations of volunteer events with the amount of time they have to participate, the travel time from home or work, and whether the locations are accessible by mass transit. Governments are developing GIS-based applications that help citizens navigate those factors and generate greater community involvement. Citizens can sign up to volunteer skills in a certain area of town, and event organizers can use GIS to send targeted notifications to interested residents, such as, "We're going to have a graffiti paint-out; everyone come out Saturday between 8 and 5." Boston, Massachusetts, built a cell phone app that allows residents to adopt fire hydrants and volunteer to clear the snow away from them after a winter storm. Citizens use the app to report when they have cleared the snow, and the city tracks participation using GIS, allowing it to better direct limited city crews.

7. Citizens as Scientists

Many residents have specialized skills, hobbies, or special interests that they would be interested and willing to share for special projects in the community. Those individuals can be recruited to act as data sensors to help populate research databases, and governments are beginning to tap into that knowledge with GIS-based applications. The Mojave Data Ecosystem Program/Desert Managers Group, in cooperation with cities, counties, and states, built the Mojave Desert Tortoise smartphone application that lets people with interest and knowledge about tortoises learn more about the threatened species and submit data about sightings of the creatures in the desert. They send photos, locations, and other information through the app to the US Fish and Wildlife agency, which uses GIS to collect the data and track the threatened creatures.

Getting Started: Esri Makes It Easy

Governments can build on their existing GIS assets and apply free resources from Esri to create public apps quickly and efficiently. A variety of templates are available on Esri's ArcGIS for Local Government site at esri.com/arcgisforlocalgov. Offerings include mapping applications designed for topics such as public infrastructure, elections, planning, and public safety. Government agencies are also sharing their GIS data publicly so citizens can build applications based on authoritative information.

Maximizing the Value of Your Maps and Apps

Even if a government creates an interesting, useful GIS-based application, it will fail if citizens are not aware of it. Promotion is critical to the success of citizen engagement efforts, whether it's through the media, at public meetings, or as part of customer service interactions. To centralize online public offerings, governments can build web portals that make it easy for them to publish, organize, and promote their applications and data. A web template for such portals is available on the ArcGIS for Local Government site.

Government agencies are extending their investments in GIS by using technology to engage citizens in civic discussions; draw on their opinions, expertise, and energy; and build strong communities that are more aware, informed, and involved. With everyone working together and using dynamic tools, governments and their citizens are succeeding in making their communities better places.

Using free templates from Esri, cities can build their own app stores to help citizens find all interactive maps and apps in one place online.

To learn more about how GIS enables better citizen engagement, visit www.esri.com/ACC