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DIGITAL COMMUNITIES

How Cities Can Get Smart: 6 Tips from Local CIOs

Local CIOs gathered in Sunnyvale, Calif., on Thursday to discuss what it means to be a smart city and how to position today's government for the future.

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There are plenty of people out there who want to make their cities “smart.”

Now if only they could figure out how to do it.

Sitting down together at Sunnyvale, Calif.'s Plug and Play Tech Center on Thursday, Feb. 25, seven public information technology professionals from cities and agencies throughout the Bay Area talked about the ways smart projects could transform cities. By connecting objects together into an Internet of Things, by speeding up data collection and breaking down data silos, cities could prevent problems before they happen, make operations more efficient, spend less money and create opportunities for entrepreneurs.

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And they see excitement and public support for such projects growing — like the Obama administration **announcing \$160 million in funding** for smart city projects last year, or the U.S. Department of Transportation **offering \$50 million** for smart transportation projects in medium-sized cities.

The group identified several ways they think government can help build smart cities.


1. Make the ROI case

Though smart city technology might be new, Roger Jensen, CIO of Mountain View, sees some of the same problems facing its implementation that have always faced IT public-sector projects in the public sector: namely, describing its value.

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In the business world, he mused, an IT project's value can be demonstrated in terms of how much money it saves or how much it increases revenue. But public IT projects aren't going to bring in more money — so they have to save on cost, without costing too much themselves.

“You need a pretty direct return on investment in order to justify that investment,” he said. “And something like a smart city (project) that takes a lot of work, it's a major construction investment — (you need) to get your city manager and your city council on board. I think they're going to have to see some successes in order to get the investment from the city.”

On top of that, local government entities often face a scarcity problem when it comes to funding for new initiatives. So ing the money for a smart city project might mean taking it away from something else.

“It’s a zero-sum game,” said Sean Thakkar, CIO of San Mateo County. “You’ve got to rob Peter somewhere to pay for Paul.”

2. Connect the old and the new

Another old problem standing in the way of smart city projects is their incompatibility with existing systems.

“The functionality is not great, particularly in the areas of public safety systems, permitting systems, even financial systems,” said Sunnyvale IT Director David Jensen.

That’s a problem for concepts like the Internet of Things, which involves bringing together data from, in a word, everywhere. Cities already gather plenty of data, but if it’s closed off in an ancient system, it might not plug directly into the new systems meant to make better use of it.

“It’s a tough thing to do in some cases because a lot of government systems are old legacy systems,” said Mountain View's Roger Jensen. “And if you’re going to ... make some automated feed for (a legacy system), it takes work.”

If, however, governments can find ways to hook up old systems with new ones, that could open up paths to using the data in novel ways.

3. Build a network

Before the Internet of Things can reach its potential, there needs to be a way for objects to connect with one another. That’s why Miguel Gamiño, CIO of San Francisco, said he’s looking first at establishing connectivity.

Most cities already have an established wireless network in the form of LTE. And while that might work for **some projects**, Gamiño said it’s not a very cost-effective way to operate.

In October, Gamiño's office announced the launch of a **citywide wireless network** in partnership with the French company SIGFOX dedicated specifically to IoT projects. Then it hosted a hackathon, where **winners proposed** to use the network to build out audio analytics systems, water-saving solutions and bicycle traffic monitoring capabilities.

"I believe that connectivity is a civilization changer," Gamiño said. "It's the thing that's going to create the domino effect and the next wave of innovative technology that will impact not just the civic sorts of operations and transactions and services, but kind of just the common way of life. And that's going to be part and parcel to how we make decisions."

4. Work regionally

Cities may operate independently of one another, but that doesn't mean their citizens do. Especially when it comes to traffic issues, the CIOs onstage in Sunnyvale acknowledged that solving problems is going to take a regional, collaborative approach.

That was the approach three Bay Area cities took in October when they started **installing sensors in parking spots** that monitor whether they are occupied in real time. The city officials who participated in the project acknowledged that it made sense to deploy the technology on a regional scale for the benefit of citizens who want to travel around the area.

There are benefits to regional collaboration for governments as well. If one city's officials wait for a neighbor to deploy a technology, they can see how it works before buying in themselves. But if they work with that city and deploy the technology at the same time, Belmont Director of IT Bill Mitchell said they can save money. For example, Mitchell said he is working with officials in nearby cities to launch a regional Wi-Fi network.

"If I can get my cohorts to buy into this as well, my costs go down," Mitchell said.

5. Emphasize flexible tech

Much of the concept behind smart cities involves breaking down barriers, bringing together data sets so they can work together and deploying new data-gathering infrastructure that can add insight where it didn't exist before. That's the

idea behind Los Angeles' **GeoHub project**, which allows city officials to map data sets side by side. It's also the idea behind Chicago's **Array of Things project**, which involves placing sensors that can collect data ranging from pedestrian and vehicle counts to environmental measurements.

Gamiño said having that flexibility is important when installing new projects. It's better to invest in technology that can easily integrate with others so that cities don't end up building new silos. If a technology can be used for more than one thing, he said that makes it more attractive as a candidate for public investment.

"I'm personally a fan of things like SIGFOX or a Wi-Fi network or things like that, that can be leveraged to multiple use cases, as opposed to a smart parking meter app that has its connectivity limited to it ... I think you've seen it go from use case-specific to more of citywide deployments," he said.

6. Find ways to turn data into action

Ultimately, though, Roger Jensen said that the usefulness is not so much in gathering new data as it is in what the government does with it. There's more data available to cities, counties, states and the public than ever before — but that alone doesn't make cities smart.

So Jensen said that as cities begin to invest in new technologies, they need to look for ways to act on that technology to improve operations by becoming more efficient and better delivering services to their constituencies.

"I think everyone gets overwhelmed with data. We have more than we can deal with," he said. "So (you want) to set up processes where you can actually act on that. Some common cases now — there's police predictive surveillance. ... When you are actually responding, either in processes or systems, based on the data you're getting in, to me that's when you become a smart city."





Ben Miller

Ben Miller is the associate editor of data and business for Government Technology. His reporting experience includes breaking news, business, community features and technical subjects. He holds a Bachelor's degree in journalism from the Reynolds School of Journalism at the University of Nevada, Reno, and lives in Sacramento, Calif.

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