



# ENGAGING THE CONNECTED CITIZEN

**GOVERNMENTS SERVE THEIR TECHNOLOGY-SAVVY CITIZENS FASTER, BETTER AND WITH DRAMATIC IMPROVEMENTS IN COLLABORATION WITH HIGH-SPEED WIRELESS COMMUNICATIONS.**

“Government services are potentially a gateway...to civic engagement... not just about politics and government but also about the city and how we use it.” ~ Nick Grossman, Director TOPP Labs

MIT World Webinar, “The Future of Government-Citizen Engagement” March 1, 2010, Lecture Abstract, Nick Grossman, Director TOPP Labs, The Open Planning Project, New York, New York

## INSIDE:

PUBLIC SERVICES



CIVIC ENGAGEMENT



WIRELESS: THE  
DIFFERENCE MAKER



WIRELESS  
LEADERSHIP

What are your constituents saying about you? What are people saying about the government services they rely on day-in and day-out? Most governments are accustomed to listening to citizens talk about high costs, slow service and too much red tape. Lately, however, a growing number of government agencies are finding their citizens saying good things about them and their services. The game changer is technology, notably high-speed wireless communications technology that allows citizens to get faster, more efficient service through the so-called “civic web.” Instead of having to wait in line at city hall to pay a bill, they can do it online, without having to pay for bus fare, gasoline or parking.

Today’s most forward thinking government leaders realize that communications is more than a one-way street. By encouraging citizen feedback, by establishing a two-way conversation and following up, these government agencies are doing more than just communicating with constituents. They’re engaging them in the workings of government through real-time web-based communications. In the process, they’re turning a significant number of potentially adversarial citizen relationships into collaborative ones. Which can go a long way toward making life in the big city — or small village or rural province — a lot better.



More and more governments are using interactive technology to allow easier citizen access to services.

## PUBLIC SERVICES

Many citizens are intimidated and frustrated by what they perceive as the size and complexity of government. More and more governments are using interactive technology to allow easier citizen access to services, such as online registration and licensing, payment of fines, purchase of rapid transit tickets, paying water, gas and electric bills, making reservations for public facilities and more. Wireless technology helps governments make interactive citizen communications more efficient, more immediate and more personalized. In addition, wireless technology enables government officials to provide faster, more effective service, and allows them to follow up with the citizen on the website or by e-mail, confirming information, providing service updates and offering a method for further feedback. Functionalities enabled by wireless networks include:

### EVERYWHERE ACCESS.

*A building inspector at a site accesses the Internet and instantly downloads current blueprints and building history to a mobile computer or handheld device, resulting in more accurate inspections with results instantly available. Mobile connectivity also reduces the need to drive back and forth to the office when additional data is needed, improving productivity, lowering fuel costs and helping to reduce greenhouse gas emissions.*

Wireless communications networks provide every employee in every department with immediate access to the information needed to do their job. This capability enables advanced information sharing that results in faster responses, higher productivity and better outcomes, as well as helping to create more successful relationships with constituents.

### MOBILITY.

*A municipal transportation agency strives to reduce traffic and CO2 emissions by enticing more people to use the bus or light rail system. The system updates passengers on schedules via electronic signage at bus or rail stations. Locations of mass transit buses and trains are linked to the traffic control system to optimize commuting.*

Wireless solutions enable workers to access information not only when they need it, but where they need it: in the office, on the move, at a job site. Using powerful mobile devices such as laptops, tablets and smartphones, workers can communicate via voice, data and video across the entire organization using a powerful wireless broadband network.

**INTEROPERABILITY.**

*A supervisor at the public works department receives a report of a large sinkhole tying up traffic on a major thoroughfare. He immediately transmits the information — including location and photos or video of the situation — to all relevant departments including the road commission. In seconds, appropriate response is set in motion, including dispatch of the right work crews with the right equipment to the right location, automated traffic light reprogramming, alerts sent to real-time electronic traffic signage and more.*

Workers responding to situations ranging from the mundane, like a large pothole, to an emergency, such as an overturned tanker truck, need to communicate with supervisors, other team members, other agencies and other jurisdictions. Reliably and in real-time. They need the interoperability that allows voice, video and data to flow seamlessly across disparate networks and devices. Wireless interoperability enables essential real-time connectivity within departments, throughout the entire government enterprise and across neighboring communities.

**REMOTE CONNECTIVITY.**

*Medical specialists at public hospitals can perform diagnostics remotely using patient test data sent in real time. They can also access the patient's medical records and consult on a care protocol with other physicians at remote locations such as clinics and neighborhood health centers. Equally important, network security systems allow total compliance with global medical record security regulations and other industry security standards.*

Wireless communications infrastructures enable some of the most advanced public service applications available. These include telemedicine, distance learning, remote training, video conferencing, webinars and more. In addition, residents, private businesses and city workers alike can access the network to receive or transmit information at WiFi hot spots located throughout the community.

**RURAL AND REMOTE CONNECTIVITY IN OHIO**

In Coshocton County, Ohio, citizens, businesses and educators approached county commissioners to make the case for a countywide broadband network to keep up with its 36,000 residents' connectivity demands, to ensure its 800 businesses would remain viable and to enable electronic learning environments for students and teachers. The commissioners quickly determined that a wired network solution was too costly, so they turned to a Cambium Point-to-Multipoint wireless broadband system. The county was able to form a public-private partnership with a local wireless provider to deploy a single wireless network that now connects the entire community, including rural and remote offices... at virtually no cost to the citizens. The system now has more than 1,600 customers with 80 percent of the county covered.

**TEMPORARY NETWORKS.**

*A county sets up a quick-to-deploy, cost-effective temporary wireless broadband network at a large county fairgrounds. The installation enables coordinated communications, allows for electronic ticketing, enhances crowd control, enables merchants to accept credit card payments, connects health care workers with EMTs and other emergency personnel, directs and monitors clean-up crews, provides for video surveillance to help increase safety and security, and much more. Enhanced wireless connectivity provides exhibitors with a more profitable experience, and the public with a more enjoyable one.*

Wireless technology makes it easy to set up ad hoc remote networks at a variety of locations. These networks can provide remote connectivity and high-speed communications for a wide variety of users in situations ranging from parade routes to sporting events to community street fairs and other events.

**ONLINE, NOT IN LINE**

Citizen engagement doesn't happen overnight. It's part of a process that begins with communications, often web-driven communications that provide easy electronic access to government information and services for citizens using today's pervasive wireless devices that range from smart phones to pad computers to netbooks to laptops.

Who are these e-citizens? She's the executive who uses her lunch hour to pay her utility bills online from her laptop computer. He's the community college student using his laptop to submit an assignment electronically while riding a bus home from campus. They're the construction businesses who apply for permits and check status on the Building Department website. They're the amateur sports leagues that reserve fields and facilities online. He's the out-of-town businessman who pays a traffic ticket from his computer hundreds of miles away. They're the growing legion of citizens of all ages who have discovered it's a lot easier to do business with city hall online rather than in line.

**REALITY CHECK**

Of course, the goal of the government enterprise is always to provide the best possible service to every resident. This is easier said than done. The reality of today's economics is that virtually every government department is under intense pressure to reduce costs, reduce staff and reduce services... at exactly the time when citizens are demanding more and better service. The realities of today's economic environment require government to adopt a new public service paradigm. The easiest budget, staffing and services cuts have already been made. The most challenging cuts are now under consideration and most governments are seeking a reasonable and effective way to address the challenge. It's clear that business as usual won't cut it, and that innovation is the order of the day.



E-citizens are the growing legion of citizens of all ages who have discovered that it's a lot easier to do business with city hall online rather than in line.

More and more citizens around the world want to become more involved with government. They want to know how they can become more involved in making their city or community a better place to live.

## CIVIC ENGAGEMENT

### FROM SERVICE DELIVERY TO ENGAGEMENT

Creating and managing a successful online program focused on streamlining service delivery is a huge step in improving citizen relationships. Everywhere access to services online is proving to be highly successful at both improving public service delivery and pleasing constituents. The question is, how and where do governments take online communications beyond online transactions and information access?

More and more citizens around the world want to become more proactively involved with government. What do they want? They want to be able to access information about government programs and activities when and where it's convenient for them. They want to have ongoing two-way conversations about government programs and services that affect their day-to-day lives. And they want to know how they can become more involved in making their city or community a better place to live. In a word, they want to be engaged with government.

### PARTICIPATORY GOVERNMENT

Growing numbers of constituents are eager to participate in government programs such as community clean-up, volunteer groups, job and health fairs, educational workshops and much more. In a great many communities across the world, citizen engagement is a strategy just waiting to be activated, and wireless networks are the technology waiting to implement it. The need is there, the will is there and the technology is there. All that's needed is leadership committed to innovation.

### ENGAGEMENT OBJECTIVE

In most governments, the overarching goal of a citizen engagement initiative is the creation of two-way communications that enable citizens to keep informed on government activities, and that make it easier for citizens and government to work together more collaboratively. In most communities, no matter how large or small, civic engagement initiatives are likely to have a simple, but crucial objective: helping citizens find and access the information, the tools and the services they need to play a more participatory role in community life.

### ENHANCING CITIZEN INVOLVEMENT

Communications technology also makes it easier for citizens to become involved in various initiatives aimed at improving life in the community. Neighborhood Watch programs can be planned and coordinated online in real time. Emergency and relief operations can be coordinated via web communications. Community health programs can be publicized and explained on the government website. Council meetings can be broadcast online for people who cannot attend in person. Questions can be answered and appointments can be scheduled online.

The bottom line is, civic engagement programs will go a long way toward helping citizens and governments work together actively and proactively. These programs are already playing significant roles in government constituent relationship management, or CRM.

### BRIDGING GAPS IN PENNSYLVANIA

Located in the state of Pennsylvania, an area particularly hard hit by the recent economic downturn, the city of Altoona faced the difficult task of balancing the need to do more for its citizens with the twin realities of fewer resources and reduced budgets. City officials embraced wireless technology in the form of a Cambium wireless broadband communications network developed to help public works employees, bridge inspectors, technicians and other employees for example, to work faster and better. Altoona has 50 bridges that need to be inspected on a bi-annual basis. The Cambium network allows inspectors to access the city's database and make reports directly from the field, rather than have to drive back to the office to deliver the information. This not only saves time and fuel, but also improves accuracy by minimizing or even eliminating manual entry of data.

### ENGAGEMENT TOOLS AND TRENDS

What technologies will be most important as cities plan and implement civic engagement programs? Around the globe, there are three major technology trends that will affect public engagement with and participation in government.

**MOBILITY.** As web-enabled smartphones and smaller pad and notebook computers proliferate, governments must ensure that their portals and websites are accessible by a wide variety of these mobile devices. They must also make sure their system is capable of supporting advanced communications applications — like GPS locationing, photos, video and more — enabled by mobile devices.

**SOCIAL MEDIA.** Civic engagement plans are also making increasing use of the social media. According to the United States FCC's National Broadband Plan, "social media presents a tremendous opportunity for [citizens] to provide meaningful input into their democracy. [People] use these tools in their daily lives and are more likely to interact with government officials and agencies if these tools make it easier." That's why more and more cities are exploring use of applications ranging from Twitter to texting to blogging to creating Facebook pages.

**TECHNOLOGY ADAPTATION.** It is crucial for government IT departments to stay current with the most innovative technology and applications as they evolve. Some of the most successful civic engagement tools will use or be adapted from leading edge applications already used and understood by citizens. Examples include providing access to meetings from multiple locations through webinar or video conferencing applications such as Skype. Many communities also

leverage geographic information systems (GIS), global positioning systems (GPS) and applications such as Google Earth for locationing and interactive map-based communications.

## MAKING TECHNOLOGY WORK FOR THE CITY

These technology trends are already being put to use in local, state and provincial websites and portals the world over. One example in the United States is the city of Seattle, Washington, which has developed a website that encourages and facilitates citizen engagement. The initiative makes good use of many of these trends in its mission to help city government serve Seattle's residents and businesses through the use of computers and telecommunications. "We have a mandate," says Bill Schrier, Chief Technology Officer of the City of Seattle, "to make technology work for the city."



More and more cities are exploring the use of applications ranging from Twitter to texting to blogging to creating Facebook pages.

One of Seattle's most effective technology tools is the use of the social media. For one thing, as CTO, Schrier communicates with citizens regularly through his own blog site, "the Chief Seattle Geek blog." Twitter is another example. "Many of our departments use Twitter to send communications, or tweets, to constituents," continues Schrier. "In particular, our police department tweets about major crimes or investigations directly after an incident occurs — within just a few minutes or hours — and then includes a link back to a website containing more information about the incident in those tweets."

"In this manner," says Schrier, "we've improved constituent information, and we've also reduced the amount of time the public information group within the police department spends answering the same question from different media outlets. Instead, the media outlets can immediately go to the Twitter or the blog to get the information. That's really helped save us time and money."

Schrier also has his eye on Facebook. "We have several hundred block watches in the city, which are relatively small groups of people — typically the neighbors on a single block — that get together to help keep the neighborhood safe and also to prepare for emergencies," he explains. "If we have a disaster in Seattle, we try to train the block watches how to survive on their own for a couple of days until help can arrive. I'd love to use Facebook to improve how those block watches interact with each other and communicate back to city government."

## ENERGIZING CONNECTED CITIZENS

All governments today find themselves providing public services to — and engaging with — a kind of citizenry that's never existed before. Today's connected citizens want to interact with their government the same way they interact with virtually everything and everyone else in their lives. In other words, instantly and, more often than not, electronically. Cambium is a leader in delivering the high-speed wireless systems and solutions that encourage citizens to become more connected to government, and more actively involved in making their communities safer, more productive and more satisfying places to live and work.



## WIRELESS: THE DIFFERENCE MAKER

For many government departments, innovation comes in the form of high-speed wireless information technology. Wireless networks augment wired and cellular networks by providing cost-effective high-speed wireless connectivity. These wireless broadband solutions provide connectivity whether inside a building, outside a building, between buildings or throughout the community. They not only provide the enhanced information and ease of contact that improve citizen communications, they also enable information sharing across departments and agencies, while significantly reducing operating expenses. This internal cooperation also helps governments deliver citizen services faster and better.

## OPERATIONAL BENEFITS

How is wireless technology helping governments do a better job of serving citizens more efficiently and more cost-effectively? By delivering a broad range of operational improvements.

**EFFICIENCY.** Wireless networks enable advanced applications that improve operations among and within departments. In a growing number of agencies, wireless cloud computing is also on the horizon, with web-based applications being delivered all the way to the network edge via technology such as Cambium's Point-to-Point and Point-to-Multipoint wireless networks, WLANs and wireless user devices. Wireless technology also helps reduce human error and increase accuracy with automated data capture and data entry, virtually eliminating inefficient and costly manual and paper-based processes.

## MORE COST-EFFECTIVE BROADBAND IN FRANCE

Because the village of Mutzig, located in the Alsace region in France, is situated in a so-called "white zone," it was unable to obtain broadband communications from incumbent service providers. Thus the village, home to 6,500 residents, was forced to deploy a private wireline network to deliver broadband connectivity to its town hall, its four schools and other government buildings. The village found its wired system too costly and chose to deploy a Cambium fixed Point-to-Multipoint solution. The wireless system is performing exceptionally well, delivering reliable broadband access to all municipal buildings at significant monthly savings over its previous leased lines. The Cambium infrastructure enables high quality voice, data and video capabilities simultaneously, has multiple levels of security and provides for monitoring and management from a single centralized control center.



“A key priority... should be to continue applying new technology to create deeper relationships between the government and the public.”

Dr. Jerry Mechling  
Lecturer in Public Policy  
Harvard Kennedy School of  
Government

Governing.com, *Civic Engagement: Your Next Technology 'Sweet Spot'?*  
Dr. Jerry Mechling, Lecturer in Public Policy Harvard Kennedy School of Government, May, 2010

**PERFORMANCE AND RELIABILITY.** No matter how convenient it is for citizens to access information and interact with government departments online, they won't stand for slow or interrupted service and dropped connections. Continuity of operations is expected. Today's powerful new wireless technologies deliver high-speed performance and 24/7 reliability comparable to that of wired networks, and usually at a substantially lower cost.

**SECURITY.** The cost of a computer system or database that is compromised is astronomical. Wireless infrastructures improve security by using advanced encryption protocols that meet national and international standards. These systems include video capabilities — ranging from surveillance cameras to streaming, real-time video to telemedicine and more — that help increase security while lowering costs by offering 24/7 monitoring, automated alarming and immediate response capabilities.

**ECONOMIC DEVELOPMENT.** Communities the world over realize that they are in competition to attract residents and businesses to spur and sustain economic development. Citizens and corporations alike value broadband communications networks highly, giving governments with strategic plans that involve broadband a discernable competitive edge. Sandie Terry, IT Director of Franklin County, Virginia, comments, “Broadband is quickly becoming a utility, same as electricity and phone service, and is critical for communities to attract new development and support both existing businesses and the growth of new business.”

## ABOUT CAMBIUM NETWORKS

Cambium Networks provides world-class wireless broadband and microwave solutions for military, government, municipal and enterprise customers around the world. It currently has more than 3.5 million products deployed in thousands of networks in over 150 countries, with its breakthrough

technologies providing reliable, secure, cost-effective connectivity that's easy to deploy and proven to deliver outstanding metrics. Cambium's ecosystem of partners, development engineers, and support teams work together to design and deliver innovative, forward-looking solutions that provide data, voice and video connectivity when and where it's needed.

## WIRELESS LEADERSHIP

Cambium has widespread experience in partnering with government leadership, IT departments, public service professionals, business communities and residents. Today, we provide a wide variety of wireless connectivity solutions for a growing number of cities, counties, states and provinces. With our history of technology leadership and government partnership, we can help you use wireless technology to dramatically improve constituent relationship management programs and activities. You'll find our high-speed communication systems can help improve service delivery, increase citizen engagement and inspire people to say a lot of good things about you.

### CAMBIUM NETWORKS LEADERSHIP SERIES

This article is one of a series examining the challenges, the opportunities and the realities of how technological innovation is affecting the markets that most influence and affect the global community.