Discover Why Investing in Smart Community Technology Solutions can be Rewarding

SenthiSYS · B2 Civic Solutions

Public officials are beginning to recognize the positive impact on their communities from investments in smart technologies, such as intelligent and connected wireless sensors.

As a public administrator, making decisions about your infrastructure, services, and the wellbeing for those that you serve can be difficult. Without smart technologies, public officials have had to rely on data and information about the quality of their infrastructure and services that is often outdated, difficult to collect, disconnected, or simply not very useful.

In this white paper, we want to walk public officials through the process of how to design a game plan to launch, invest, and implement smart technology solutions across their community.

What Are Smart Communities?

Smart Communities, commonly known as Smart Cities, are public organizations that invest in technology solutions with "intelligence" that can improve the quality of life in their community and make governing more rewarding.

Technologies that are called *smart* usually involve connected sensors ("Internet of Things", or "IoT"), communication networks, and software that can automatically capture, trans-

mit, analyze, and presents data and actionable insights to decision makers in a timely manner about the state of their community's infrastructure, services, and environment.

Smart technologies are often used to digitize physical assets, such as water networks, streetscapes or trash bins. Digitizing these assets means that we can monitor the condition of these assets in near real-time. This allows us to have more timely and useful information to make better repair, replace, budgeting and service decisions, and we can intervene earlier when data indicates an emerging problem.

Without the right technologies and strategy, it can be difficult to make good decisions because data about your infrastructure, your services, and your environment can be costly to collect, difficult to detect, and can include a large amount of noise that can make decision-making more challenging.

Why Are Smart Communities Gaining Traction?

There are several reasons why we see more communities of all sizes invest in smart technology solutions.

First, the technologies have become more affordable. Innovation in hardware, wireless networks, cloud computing, software analytics, interoperability, and financing models have

driven down the price of smart technologies. Now, communities, agencies, and departments of any size can afford to invest in smart technologies.

Second, there are more successful smart community case studies that have demonstrated the measurable value and benefits they have created. It's always easier making investment decisions when you can point to similar success stories.

Third, your residents, commercial businesses, and visitors expect a higher level of services, infrastructure, and quality of life from their local government agencies because they see the power of digitization and sensor in their homes and at work.

Fourth, more public officials are now realizing there is a greater risk of not doing anything than keeping the status quo. In fact, public officials now understand that there are many rewards from investing in smart communities – from reducing customer complaints to providing more services without increasing budgets.

Finally, aging infrastructure, more stringent environmental compliance requirements, and greater attention to the impact on our communities from the climate have become higher

66

*Water loss is a universal problem among US water utilities, with an **average estimated water loss of 16%**. But individual system water loss rates can be much higher—**over 30% in aging and economically-constrained systems**....Many of these wasted gallons are lost through the 240,000 water main breaks that take place annually across the United States.''*

Water Quality and Health Council, Water Finance and Management -- Chris Wiant, MPH, PhD, Chair of Water Quality and Health Council, November, 2017

priorities. As such, public officials are having to address these problems, but often lack the tools, the personnel, and the expertise to solve these challenges without more timely and accessible data.

Benefits to Your Community

The list of benefits from investing in smart technology is applicable to communities regardless of your budget, your personnel resources, and the size of the market you serve.

- Deliver higher quality services with fewer customer complaints
- Meet goals without increasing your budget;
- Find savings that can be redeployed to more important projects
- Detect and pinpoint problems, such as water main leaks, before they become a costly problem
- Build stronger resilience to adverse events, such as flooding
- Improve public safety and wellness
- Meet compliance regulations, especially where data reporting is required

Governing Can Be Rewarding

Governing your city, town or village can be hard. As local government professionals, you know that public safety, street and water pipe maintenance, trash collection, and park management often have a bigger and more visible impact on peoples' lives than the headlines on cable television.

As public administrators, you also want to make decisions that can leave a lasting legacy. However, none of us have a crystal ball to forecast outcomes from our decisions. In fact, no one wants to invest in a project without some certainty of success. For elected officials, changing the status quo often requires drumming up political courage.

The good news is that smart IoT projects do not have to be risky or moonshots. In fact, smart city IoT and analytics often serve to reduce risks by providing better and more timely information to make decisions.

Where Should You Start?

Creating a short and long-term plan is a good starting point. We see this done at both a department level as well as at the agency/city/county leadership level. We recommend that you define your challenges, risks, objectives and opportunities before you even begin to investigate technologies. Some helpful question to ask include:

- What are your service, infrastructure, environment, and regulatory challenges, risks and opportunities and what are their costs and scope of impact on the community and your operations if nothing new is done?
- How does the state of your services, infrastructure, and environment align with the

goals of your community and agency?
- What are the expected benefits from solving these problems?
- What financial, human resource, systems, other agencies, and other stakeholder resources and buy-in will be necessary to address each challenge?
- What data do you have and what data would you want to collect and utilize as it relates to each of these challenges?

Most smart technology projects start with a problem that impacts a large part of your community, including your residents, commercial businesses, and visitors and where you can define and communicate the problem and the expected benefits from solving the problem. In addition, look for problems that maybe recurring, and those that your community can see, feel in their pocketbook, or disrupt their services. Some of the problem may seem simple, such as complaints about water bill errors, overflowing trash bins, environmental compliance requirements, or the demand for more public parking.

Culture: The Elephant in the Room

Culture inside and outside of local government agencies and utilities tend to limit the speed and scale of change. The requirements fac-

ing directors of public works, utilities, public safety, and other departments lend itself to a conservative approach. Public expectations continue to increase despite outdated infrastructure, declining budgets, smaller workforces and competition with other cities for state or federal dollars. The risk of making changes that make the current situation worse is a serious issue that can limit the flexibility to pursue cutting-edge technology.

However, leveraging IoT and other smart technologies to benefit the community should be viewed as an opportunity to reduce risks and consequences from uncontrollable events, as opposed to generating something disruptive or creating a breakpoint.

For example, digitizing your drinking and storm water distribution system so that you have more precise and timely information to predict and respond to potential disruptive water main breaks, storm water runoff contamination, or flash flood events are good examples of averting and mitigating risks.

Costs and Savings

Innovation and investments do not necessarily mean higher costs.

In fact, one of the most impactful outcomes for smart technologies is reduced or reallocated costs, in terms of both operating and capital expenses. Those savings can also be realized through cost deference achieved through consolidation of independent systems (e.g. department-specific work order systems).

Civic innovators can overcome the challenge of getting approval for technology spending by placing the products being offered within the context of existing budget lines. For example, can the product or service demonstrate greater efficiency compared to a 1-for-1 replacement over the existing solution or product? Maintenance requirements are a necessary budgetary line item; embracing the culturally accepted budget priority list may take more time than a flashy tech deployment, but it is much more likely to succeed.

"

When combined with the benefits gained from predictive and proactive asset management on top of the more intangible service improvements, the return on investment often makes a compelling case.

What Next?

In our next white paper, we will provide guidance on high impact smart city applications. Our paper will also cover proven methodologies for successfully implementing these projects, including communication, integration, and data management strategies, and resources and case studies to guide you through your smart city deployment.

SenthiSYS™

MeterSYS is a smart solutions consultant and systems integrator. SenthiSYS is our brand of end-to-end smart community solutions. We have been delivering smart infrastructure solutions since 2015, primarily in advanced metering solutions, and our expertise is providing our public clients with an reliable and cost-efficient wireless sensor network solution. We have expertise in vendor evaluation, bidding and procurement, project management, installation, systems integration, change management, and data management analytics and services.

B2 Civic Solutions

Bob Bennett is the Principal and founder of B2 Civic Solutions, an international Smart Cities consultancy firm based in Parkville, MO. He chairs the Cities Today Institute and also serves as a Senior Fellow at the Digital Governing Institute. From 2016-2019, he served in Mayor Sly James' administration as the Chief Innovation Officer for the City of Kansas City, Missouri. During his tenure, he oversaw the City's Smart City initiatives including a 54-block comprehensive digitalization pilot, strategy development for the city and P3-based expansion plans for the City. Kansas City's initiatives earned the City an Edison Award (Gold) for "Collective Disruption" and civic innovation in 2017, and Bob was named one of GovTech's 25 Dreamers, Doers and Drivers in 2018. Before his role with the City, Bob completed a 25-year career in the US Army which included service as a Strategist, a Battalion Commander and multiple combat tours.

SenthiSYS™

Headquarters
Caviness Building
703 West Johnson Street
Raleigh, NC 27603

West Region
333 University Avenue
Suite 200
Sacramento, CA, 95825

www.metersys.com
Tel: 844.881.8685
Fax: 336.790.5510
info@metersys.com