

# ADVANCING SMART & SUSTAINABLE CITIES

## CITIES ON SMART CITY TECHNOLOGY: SIX STRATEGIES FOR CITY DEPLOYMENT

Planning and building smarter cities is a critical path for tackling climate change. In the absence of binding climate action in national, state and provincial governments, cities are taking the lead in reducing emissions and addressing climate change impacts. Information and communication technologies (ICT), big data and other “smart” technologies show tremendous promise for meeting local, citizen-centric climate goals.

Yet, despite this promise and a massive influx in smart city technologies, most cities interviewed in this project reported a gap between the on-the-ground needs and capabilities of local governments and what the private sector is offering. To close that gap, the Advancing Smart & Sustainable Cities Project identified six key strategies that represent what cities need to make their cities smarter – not only in terms of actual tools, but also in terms of deployment support. Each strategy offers important market intelligence on preferred approaches taken by cities and potential partnership roles for the private sector.

### PARTICIPATING CITIES



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## 1. RECOGNIZE AND SUPPORT THE INTEGRATION OF TRADITIONALLY SILOED GOVERNMENT OPERATIONS

Historically siloed, most city agencies were established to focus on a specific mission, service or purpose within the city. As a result, city departments tend to establish separate data and management systems with little cross-departmental coordination. This limits governments' ability to scale cross-cutting initiatives and innovations, and often results in isolated, legacy operations and data systems. Cities need to find synergies across departments, sectors, and even jurisdictions that can advance technology and sustainability goals simultaneously, while avoiding top-down approaches.

Roles for the Private Sector:

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- **Join a City-Led Smart Cities Task Force.** Cities are starting to convene cross-sector stakeholders to discuss smart cities strategies. These task forces can bridge government operations, create innovation clusters, and drive local smart city markets. If a city lacks a task force, proposing and leading one might be a welcome leadership opportunity.
- **Assist with a Digital or Smart City Strategy.** Most US and Canadian cities have yet to develop a comprehensive vision for how technology will help meet sustainability goals. The private sector can support city governments by assisting with digital or smart city strategies that identify specific goals and identify the range of available technologies to meet those goals.
- **Develop a User-Centric Online Platform for City Services.** Cities are increasingly interested in developing a single login that allows citizens to access all essential city services. This is seen as an important step toward unifying departmental data while improving customer service functions.

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## 2. UNDERSTAND THE OUTCOME ORIENTATION OF CITY STAFF AND POLICY-MAKERS AND WORK TO DEVELOP SOLUTIONS THAT ACHIEVE CITY GOALS

City leaders are publicly accountable to meeting specific objectives, whether they are carbon reduction targets, mobility goals, or economic development projects. With the rise of ICT, big data, and data analytics new possibilities are emerging that can advance those objectives, but innovations must remain outcome-oriented.

Roles for the Private Sector:

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- **Join Cities in Achieving City-Led Goals and Outcomes.** Acknowledge specific constraints faced by cities in meeting public objectives and, when possible, offer customized solutions that fill specific capacity gaps. Keep innovations outcome-oriented, open and transparent. Assume the same level of public accountability as public-sector counterparts.
- **Meet Cities Where They Are in Technological Maturity & Capacity.** Cities fall along different points of the technology maturity scale, from ad-hoc and opportunistic to managed and optimized. As much as possible, tailor solutions to each city's specific capacities, and co-develop a plan to build capacity to get to the next level.

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## 3. DEVELOP COLLABORATIVE PARTNERSHIPS WITH DIVERSE CITY GOVERNMENT STAKEHOLDERS

Good public/private partnerships are essential to accelerating municipal adoption of smart city tech. City governments often do not have the capacity or desire to operate as an exclusive "provider" of smart city solutions, but their participation with private industry – for example, through the provision of data or convening of stakeholders – often remains critical. The quality of that partnership between city and industry is critical to success.

Roles for the Private Sector:

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- **Involve Cities in the Co-Creation Process.** Instead of leading with a boilerplate solution, start by providing a venue for city staff and stakeholders to share existing needs and sustainability problems. Sponsor a forum to identify needs and look for integrated solutions that include relevant partners and stakeholders and customize accordingly.

- **Create Flexible MOUs and Contracts.** Cities are less interested in large-scale, proprietary contracts. Rather, they are looking for flexible engagements that enable collaborative solutions.
- **Establish a Data-Driven Business Case.** Many cities lack evidence-based business cases for smart city solutions. Identify what data is needed to not only help cities prove benefits of smart city initiatives to taxpayers, but also to provide direction for future investment.

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#### 4. HELP CITY STAFF MASTER THE ART OF INNOVATION AND RAPID ADOPTION

As city staff and sustainability managers reimagine their goals and initiatives through a smart city lens, they are working to identify problems that are small enough that entrepreneurs can iterate, innovate and scale. Vendors, civic motivated citizens with IT skills and even taxpayers tend to expect adoption faster than cities can prudently accommodate, especially as private sector solutions are not always designed specifically for the unique needs of city government; some cities are addressing this disconnect in expectations head-on by focusing on new innovation practices that tailor the creative process to the needs of cities.

Roles for the Private Sector:

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- **Scale Solutions with Need.** Cities are interested in testing and piloting smaller projects that have the potential to scale over time, and that are conducive to open-source solutions that encourage greater innovation. Take the time to understand the appropriate scale for successful adoption of technologies, rather than trying to sell off-the-shelf solutions. Design solutions that help cities plan for “technology obsolescence” and are flexible or swappable over time.
- **Develop and Promote Innovative Financing Models.** Cities do not have “smart city” budgets. Typically, the financing for technology comes from individual city agency budgets. In addition, the costs of infrastructure maintenance, and not necessarily improvements, are often prioritized. By providing “low barrier of entry” financing models – revenue sharing, no upfront cost, bond financing, private investment – vendors encourage cities to adopt new technologies.

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#### 5. EMBRACE THE GRASSROOTS CIVIC TECH MOVEMENT AS PART OF THE SOLUTION FOR CITIES

More cities are turning to crowdsourcing apps like MindMixer and SeeClickFix to engage citizens in government, and they are publishing open data sets to drive government innovation by civic motivated citizens with IT skills. These initiatives represent a significant change in the way local governments interact with their citizens and open new possibilities for collaborative governance.

Roles for the Private Sector:

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- **Design People-Centric Solutions.** Cities are interested in technologies that result in a direct benefit to quality of life, and that engage citizens in new, practical ways. Technology that only focuses on infrastructure without intentional regard to the people it serves is less appealing.
- **Nurture the Startup Community.** Tech-focused startups can play a key role in local economic development, innovation and culture. Cities are interested in ways that established companies can collaborate, rather than compete with startups to drive more innovation and growth in the tech sector.
- **Bridge the “Digital Divide.”** While innovations in tech can address some of a city’s goals, cities need to ensure equity for all community members, especially low-income or less tech-savvy citizens. The private sector has an important role to play in driving down the cost technology and creating apps that are relevant to all socioeconomic classes and a broad array of community members.

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## 6. PRIORITIZE INFORMATION SHARING AND EDUCATION ON DATA PRIVACY CONCERNS AND REALITIES

While there is a clear benefit to making city data available for smart city technologies, cities are rightfully cautious how data is being shared publicly. They are increasingly establishing, publishing, and enforcing privacy rules and regulations meant to keep up with rapidly changing smart city applications.

### Roles for the Private Sector:

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- **Establish Shared Privacy Standards.** Private and public sectors may have differing privacy standards and guidelines designed for different applications. A cornerstone of any partnership with the public sector should be a transparent evaluation of privacy risks and existing rules. Private sector companies need to be responsive to local privacy concerns and be willing to customize privacy standards to local circumstances.

## WHERE DO WE GO FROM HERE?

Smart city applications hold much promise to usher in success at meeting the next generation of urban climate and sustainability goals. However, these technologies will only truly work for citizens if developed in collaboration or partnership between cities and the private sector. Cities are unlike most traditional technology customers in terms of public trust, technology needs and implementation capacity. When approaching cities, vendors must respect the need for transparency and stakeholder-driven design in the development process. They should also help invent ways to innovate within local government, and focus on smaller, shorter-term, modular projects which can scale to larger goals. Flexibility, inclusiveness and ease of implementation are touchstone approaches for vendors to adopt when working with cities to drive smart city solutions.

## ABOUT THE ADVANCING SMART & SUSTAINABLE CITIES PROJECT

Supported by a grant from the Urban Sustainability Directors Network (USDN) Innovation Fund, the Advancing Smart & Sustainable Cities Project is a collaboration of high-level sustainability, technology & innovation practitioners from within 12 US and Canadian city governments intended to identify “smart city” tools and approaches that advance sustainability and increase citizen engagement. The project’s goal is to provide strategic smart city guidance to city staff, as well as provide insight to the smart city industry by communicating the needs of municipal governments in the use of and rollout of smart city technology.

The project evaluates:

- Issues and decisions involved in creating smart city deployment strategies for local governments.
- The benefits and challenges of implementing such strategies.
- Existing and emerging smart city technologies, definitions of smart cities and related frameworks as well as supporting data infrastructure.

The first USDN Smart Cities Summit was held at the Presidio Graduate School in San Francisco on August 6-8, 2014. The Summit brought together the project’s 12 participating cities, including Sustainability Directors, Chief Technology Officers, and Innovation Directors, and select private sector representatives to share experiences and best practices and agree to next steps toward advancing partnerships between the public and private sectors.

The project is managed by Nutter Consulting in partnership with the Institute for Sustainable Communities (ISC). Participating cities include Boston, MA; Boulder, CO; Burlington, VT; Chicago, IL; Columbia, MO; Houston, TX; Palo Alto, CA; Raleigh, NC; San Francisco, CA; Seattle, WA; Vancouver, BC and Washington, DC.