

Five Focal Points for Smart City and Community Development

by Clint Vince and Jennifer Morrissey



In the midst of the massive growth in urban populations across the globe, there is tremendous hype in town halls, board rooms, and media about making cities and communities “smarter”. Yet the definition of a “Smart City” is elusive. Conversations about Smart Cities often convey complexity, with primary focus on technology. However, while technology is the key enabler for Smart Cities, it is not an end in itself. The point of a Smart City is the betterment of the lives of residents and businesses through application of advanced technologies and data-driven decisions and operations.

The concept of Smart Cities is, in fact, relatively simple and elegant. A smart city uses an integrated approach to coordinate all essential services. It modernizes digital, physical and social infrastructure to make delivery of city services more efficient, innovative, equitable, connected, secure, sustainable and exciting. And in an era where two thirds of the planet’s inhabitants are expected to migrate to cities over the course of just one generation, the transition to smarter cities and communities couldn’t be more urgent.

Over half of the global population now live in urban areas. Cities produce 80% of global GDP and produce 70% of carbon emissions. The projected growth trajectory for urban environments means that cities will face increasing challenges in all aspects of their operations. Cities are particularly vulnerable to problems such as social imbalances, traffic congestion, pollution and strain on resources, and this will only increase in severity if no action is taken. Viewed more positively, mayors around the world are realizing that integrating smart technologies into planning and sustainability strategies will improve quality of life, which in turn attracts investment and leads to positive growth in cities.

There are many ways to conceptualize a smart city, but any successful initiative will target five basic areas in a holistic and integrated manner: backbone infrastructure, city and community leadership structures, sustainable provision of services, developments in technology and innovation, and community social infrastructure.

Grid modernization is the essential platform for smart development

Modernization of “the grid” as the backbone infrastructure of any smart and connected community will jump-start efforts. Grid modernization begins with the electrical system, then layers on advanced telecommunications, advanced mobility systems and smart buildings as essential foundations for the city as a whole. The grid becomes the nerve center supporting the IoT, AI, EVs and beyond. All of these components become hosts for sensor technologies that will allow the collection of data to support planning, management, and operations throughout the city or community, and privacy and data sharing strategies can be interwoven with the infrastructure as it is upgraded or deployed. Focusing first on grid modernization and advanced telecommunications and transportation also offers the advantage of familiar and proven financing models that will allow a city or community to move its efforts forward, while other aspects of a smart cities plan will require creative thinking and cooperation among entities that traditionally have operated separately.

Leadership, policy and regulation are the drivers for investment and growth

Courageous leadership, forward-looking policy and flexible regulatory structures must be put into place. Scaling up infrastructure to meet the needs of the future in a secure, fair and cost-effective manner requires government officials, policy makers and city and community leaders need to create a new paradigm. Among the greater challenges at the moment are a lack of comprehensive decision-making, obstacles to securing adequate funding, and disparate regulatory authority regarding issues that need to be dealt with in a unified manner. Integration of infrastructure must go beyond the physical technologies to include the institutional structures that inform how the physical structures are erected, funded and managed. City and community leaders, regulators and planners must create incentives for businesses of all sizes to invest in the deployment and adoption of advanced technologies while ensuring the trust and safety of residents.

Sustainable services improve quality of life and reduce financial, health and safety risks

Research indicates a strong correlation between cities’ environmental performance and their prosperity. Municipal governments must implement strategies for sustainability and, in some regions, for adaptation to a changing climate. This requires rapid acceleration towards a cleaner, healthier, and more economically viable city growth through improvements in efficiency, investments in renewable energy technologies, and corresponding regulatory reform. It also requires greening of urban infrastructure, transportation, land-use and development policies. Failure to make this shift leads to increased financial, public health and safety risks. Attention must also be given to digital security and safety, as the risks of cyber intrusion are magnified as digital infrastructure expands.



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Partnerships with centers of innovation will ensure adoption of best technologies and practices

The notion of “interconnectedness” goes far beyond sensors and apps. Technology, properly used, can help cities to improve the enjoyment of all of the things that communities value – including the parks, neighborhoods, public spaces and economic opportunities. Leveraging advanced technologies does not necessarily mean that everything is new. Advanced analytics can integrate and improve existing systems through data that is already collected for other purposes, thus increasing efficiency and reducing costs in delivery of services, yielding tremendous benefit for residents and cities themselves, which frequently operate under constrained budgets.

Smart community leadership will also leverage relationships with innovators -- technologists, government labs, universities and NGOs that are already working to address the challenges that face cities and communities today and in the future. These entities already serve as test grounds for technologies, practices and ideas that can be shared with community leaders, businesses and inhabitants for the benefit of all.

Attention to community social infrastructure is indispensable

Cities are first and foremost about people. Smart cities and communities programs should be focused on the betterment of the lives of the inhabitants of the city. Whether existing digital and physical infrastructure is upgraded or modernized, or a new city is built where previously there was none, the purpose of the city is as home, workplace and playground to its residents. Building broad community support for any Smart

Cities/Communities program is a complex process that requires significant outreach to and collaboration with community anchor institutions as well as to individual stakeholders. A smart community can only thrive if its members are interacting with and leveraging the resources and services that are provided.

Given the scale of modernization that needs to occur at the physical, digital and social levels, and the extraordinary pace at which new technology is overtaking social infrastructure, cities and communities need to “up their game” with a greater sense of focus and urgency. Most are far behind in comparison to the speed with which the urban migration is occurring. And most are lagging in terms of creating governance structures that can address modernization of urban infrastructure on a holistic and integrated basis and develop financial mechanisms to pay for it all.

Essential projects need to be envisioned and selected through a rigorous public process. Public/private partnerships and other funding sources need to be developed quickly. Privacy and data sharing and other elements of sound social infrastructure need to be established near the beginning of the process. And flexibility needs to be built into the planning structure to allow for rapid change in all aspects of the endeavor and ever-accelerating technological development.



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