



# Smart City Challenges & Opportunities

By Eric Woods

## Around the world. . .

cities are a focal point for some of the most profound economic, environmental, social, and technological issues facing the world today. Cities are playing a leading role in the mitigation of climate change and are increasingly focused on improving global adaptability to its consequences. The smart city is a simple label for the complex forces shaping urban life in the 21st century. It is a framing device for many of society's most important conversations about globalization, technology, and the environment.

Navigant Research defines a smart city as the integration of technology into a strategic approach to sustainability, citizen well-being, and economic development. These policy objectives are being met through innovation across all aspects of city infrastructure and operations, including the energy and water sectors, urban mobility, smart buildings, and improvements to government services.

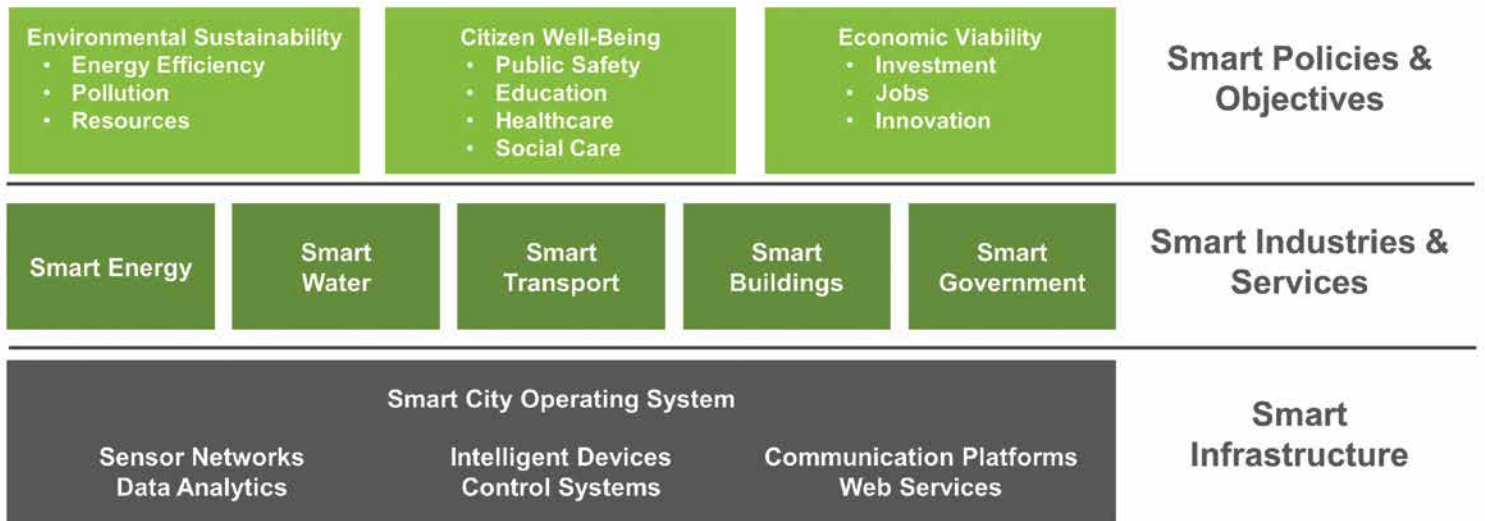
### A Market Opportunity

Smart city developments present considerable opportunities for the cleantech sector. Navigant Research expects the global smart city technology market to grow from

\$36.8 billion in annual revenue in 2016 to \$88.7 billion by 2025 at a compound annual growth rate (CAGR) of 10.3%. Cumulative 2016-2025 revenue is expected to reach \$606.4 billion. The North American smart city market alone is forecast to grow from annual revenue of \$10.9 billion in 2016 to \$23.1 billion by 2025 at a CAGR of 8.8%.

The North American smart city market has received a significant boost as federal, state, and municipal governments have all increased their focus on the importance of city development as part of broader economic, technical, and sustainability policies. In areas such as renewable energy, smart grids, water infrastructure, building efficiency, and new transportation systems, US cities are taking a leadership role in driving innovation and investment. National programs such as the federal government's Smart Cities Initiative and the US Department of Transportation's (DOT's) Smart City Challenge are helping cities develop strategies and implement ambitious projects.

In Colorado, the cities of Denver, Boulder, and Fort Collins have instigated a number of projects that fit into the



scope of smart city innovation. Denver was also one of the seven finalist cities in the DOT's Smart City Challenge, losing out to Columbus, Ohio for the \$50 million prize to support transportation innovation projects. However, the announcement of a major partnership between the City of Denver and Japanese manufacturing giant Panasonic in January 2016 has put Colorado on the map of global smart city projects. The proposed creation of a greenfield community southwest of the Denver International Airport called Peña Station NEXT has the potential to make the city a showcase for urban innovation.

## Accelerating Smart City Innovation

The most successful cities are combining an understanding of the potential of new technologies and a detailed understanding of how they fit local priorities and needs. In particular, five key themes are common across the leading cities:

### 1. Leadership and Vision.

Strong leadership from the city council and executives is vital to developing a coherent and sustainable smart city strategy. The leading cities have not only produced a guiding vision for a smart or future city, they are also embedding these ideas into their programs for service improvement and capital investment. There is strong leadership from the top

and clear accountability for delivering the plan.

### 2. A Focus on Local Priorities and Strengths.

Each city has its own priorities in terms of social, environmental, and infrastructure challenges, but each also has distinct strengths in terms of skills and resources. Successful smart city programs build on those assets to develop a distinct smart city vision that is aligned with local needs and goals.

### 3. Engagement with Communities.

Cities need to work with local communities in all aspects of their smart city programs, from initial strategy to project design, deployment, and data collection. A smart city strategy that does not engage with local communities has little chance of long-term success.

### 4. Building Partnerships.

Smart city solutions can only be delivered through a network of partnerships. The leading cities are notable for their ability to bring together public sector agencies, the private sector, and academia.

## 5. Understand the Data Revolution.

Smart cities are looking at how they can better use data to improve services and boost innovation. The rapid growth in the number of sensors and other intelligent devices deployed across the city landscape is creating an immense amount of new data that cities need to manage and learn to exploit to the benefit of all.

As cities address these issues, the momentum behind the smart city market continues to grow. There are undoubtedly significant limitations on the ability of a simple two-word label to cover the complexities of global urban development, but that simplicity allows the smart city to act as a signpost to some of the most exciting and pressing developments in society and technology. □

### About the Author



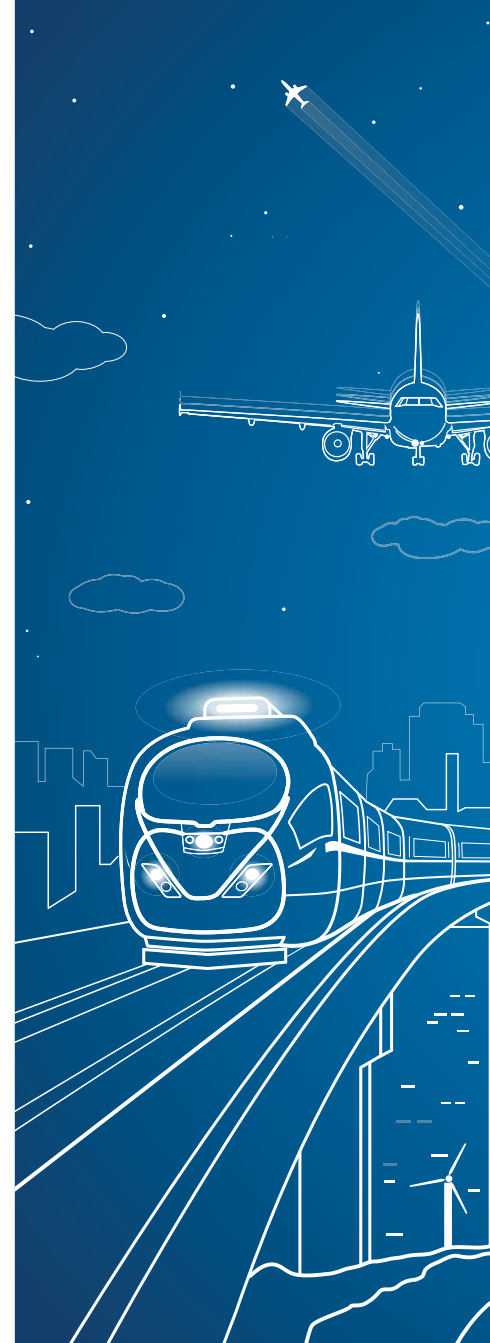
#### Eric Woods

*is a research director leading Navigant Research's coverage of smart cities. He has written numerous reports on smart city markets and technologies and has more than 20 years of experience as an analyst and consultant on new technology trends.*



#### About Navigant Research

*Navigant Research, the dedicated research arm of Navigant, provides market research and benchmarking services for rapidly changing industries. Additional information about Navigant Research can be found at [navigantresearch.com](http://navigantresearch.com).*



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