

INTELLIGENT INFRASTRUCTURE

The smart city of the future will leverage technology to improve the overall quality of life for citizens, including their safety, health and more. Doing so could also create attractive new investment opportunities.



- Cities will have to become smarter to attract and retain citizens
- Smart-city technology and the data it generates are creating entirely new asset classes
- A new type of contractor is emerging to facilitate the innovations cities need

It's no surprise that many of the world's successful smart-city projects have focused their efforts on transport and real estate. Free-flowing streets and buildings that are comfortable to live and work in are sure ways to earn the support of city dwellers. But the real heart of a city lies both literally and metaphorically below its surface, in the infrastructure that delivers energy, safety, reliability and sustainability to its citizens.

While less visible than intelligent traffic lights or city-wide WiFi, these systems provide the backbone for the day-to-day features that future urban dwellers will come to rely on. And according to Clay Manley, portfolio manager at Invesco, they could also create significant new opportunities for investors.

"Technology investors focus on the picks and shovels and solutions that will be effectively creating these smart cities," he says.

"SMARTNESS" IS NO LONGER A CHOICE

In many cities, becoming smart has until now been viewed as a desirable option rather than a necessity, one to get round to once the more prosaic aspects of city management have been addressed. But, says Steve Hong, senior research analyst at Invesco, that is no longer the case. Cities will need to become smart to survive.

"Millennials, especially, are very tech-oriented," he says, "so to attract them to your city you need to be connected, you need to be up-to-date with technology and related infrastructure."

And Mark Gilley, Invesco's head of municipal credit research, adds that skimping on smart-city investment could, in the long term, damage a city's ability to raise capital as companies and individuals abandon it for smarter rivals elsewhere.

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“More people then move to smart cities because they are a more pleasant place to live,” he says, “so you have population growth versus population decline, which can reduce the tax base and lead to credit problems.”

MORE THAN JUST CABLES AND SENSORS

Michael Zeto, vice president, Internet of Things (IoT) at AT&T, which is working with a number of US cities to develop smart-city programmes, agrees. For him, a smart city is about providing a “sustainable and equitable environment for all its citizens”, which includes addressing broader challenges, such as crime and inequality.

In Atlanta, for example, LED street lamps are being fitted not only with sensors that monitor air quality but also with microphones that are able to detect unreported gunshots and automatically alert the emergency services. And in Miami-Dade County, AT&T is part of a partnership installing closed-circuit television security cameras in public-housing complexes that double as WiFi access points, bringing high-speed internet connectivity to areas of the city that have until now been underserved.

As Mr Manley points out, this in turn raises wider concerns beyond simple technological innovation.

“None of this is going to happen,” he says, “without solving issues around, for example, security and privacy.”

A NEW TYPE OF CONTRACTOR

The complexity of smart-city projects, which often involve multiple suppliers working together over a long period of time, has led to the emergence of a new type of company that is, in effect, offering a whole smart-city package—from financing through to construction, delivery and beyond.

One of these is Fort Lauderdale-based Smart City Capital, an end-to-end smart-city solution provider delivering a combined matched funding, advisory, project management and technology platform, which is involved in a number of smart-city programmes in the US and overseas. According to Oscar Bode, Smart City Capital's founder and CEO, cities have three challenges when they set out to become smarter.

“The first problem is know-how. A lot of cities around the world, whether it's Paris or Philadelphia, know they need to be smart to attract and retain industry and have their economic development take place,” he says. “But they don't know how to get there.”

Then, he adds, there is the challenge of understanding and harnessing new income streams that smart cities are creating.

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“You have new asset classes that are being developed, such as big data analytics, fleet-management savings, efficiency in trash-collection routes,” Mr Bode explains. Cities can, for example, offer investors the option of a value exchange. This might involve financing the set-up costs for a city’s smart transport network in exchange for exclusive rights to the premium data that the network generates.

And finally, there is the complexity that smart-city projects inevitably entail.

“There’s no longer a single provider,” he says. “You could have multiple application companies, hardware companies and construction companies, and they all need to work together.”

DATA ARE THE NEW OIL

A big attraction of smart-city projects for investors, according to Mr Bode, is the value of the data they will produce. And big cities won’t be the only ones to profit. Smaller cities will likely also be able to compete with their larger neighbours.

“A small city could have 150,000 trucks driving through it every month, and that’s going to generate data. So that city, which was ignored in the past, should also be able to benefit from investments by pooling its data with that of other, smaller cities.”



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The fact that funding can be raised on the basis of the long-term value of something as intangible as data is an indication of how new the smart-city sector is. But according to AT&T's Mr Zeto, we are now moving from a phase in which most of the initiative has been taken by city halls to one where citizens will be more actively engaged in the project of making cities better places to live. (For example, through citizens providing data that improve city life, such as updating traffic information through navigation app Waze to make commuting smoother.) And then, further in the future, "maybe 2025 and beyond", in Mr Zeto's estimation, we will attain "a utopia of technology being applied strategically to solve a lot of different problems at one time using the data from all these IoT-connected sensors."

But even then, says Tim Bellman, head of global research at Invesco Real Estate, smart cities will still continue to develop.

"The technologies will evolve and change," he says. "The data analytics, which are key underpinnings for smart cities, the management of information, the resources—those things are all going to go through cycles and revolutions. For me, 'smart cities' is an umbrella term, a general direction of travel: the use of technologies, policies and data to improve the lives of citizens. I don't think there's going to be a point at which you declare a smart city finished."





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