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MAJOR TRENDS



## Cities of the future will be smart

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 CLEAN GRID  DIGITAL SUBSTATION  
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*Jesse Berst, chairman of the Smart Cities Council, offers his vision of a smart city and what it can do for its inhabitants.*



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## We talk more and more about smart cities. How would you define a smart city?

**Jesse Berst:** In the broadest terms, a smart city uses computers and communications to improve livability, workability and sustainability. In terms of technology, a smart city collects, communicates and "crunches". It collects information about the city's conditions (its streets, buildings, energy, water, air quality, etc.). It communicates that information where it is needed using a citywide network. Then it "crunches" (analyses) the data to improve things.

In terms of what it can do, it offers 3 broad capabilities. The first is situational awareness – knowing what is going on all across the city in real time. Rio de Janeiro's control centre is a well-known example, since it integrates real-time information from 30 different departments into a room full of giant screens. The second is prediction. Not just knowing what is going on, but predicting what is likely in time so as to be able to do something about it. The world over, cities are beginning to send police to where they WILL be needed; repair crews to equip what WILL fail soon; and emergency services to areas that WILL experience a flood; and so on.

The third is optimisation. Humans could never hope to manually optimise an urban transportation system to reduce delays and congestion. But computers are doing just that in Dallas and Singapore and elsewhere. Likewise, computers can optimise power grids, water networks, building energy management, travel routes for delivery companies and hundreds of other systems.



**Is there more than one type of smart city (like metropolises/provincial medium and small cities)?**

**J.B.:** I would not divide smart cities so much by size. One of the beauties of cloud computing and managed services is that solutions developed for large, pioneering cities are now available to smaller towns, too. Small cities can get world-class, enterprise-level, ultra-secure solutions for a single monthly fee. Without capital expenditure. Without setting up a big data centre. Without hiring expensive computer experts. Rather, cities tend to differ by what they emphasise first. Some start with transportation. Others with smart energy and smart grid. Others with smart policing. Still others with smart payments to be more inclusive of low-income families. Others with Open Data and digital government services. Eventually, of course, every aspect of a city will become smart and be connected to the other departments.

*« The best cities have a vision for themselves – where they want to be in 20 years. Then they can apply technology to serve those larger goals. »*

**What could our cities look like in, let's say, 30 years?**

**J.B.:** Cities that choose to get smart will be far more livable in 30 years – healthier, safer, better air quality, far more convenient thanks to ubiquitous intelligence. Everything will be connected and everything will

adapt to you. Even your city government will come to you on your phone, tablet or (30 years from now) the computer implant in your brain. Smart cities will be far more workable. They will have lean, cheap, reliable, resilient electric power along with faster, less congested transit and many other functions that make a city globally competitive. And they will be far more sustainable. They will provide all these benefits without stealing from future generations. No more guilt!



## What contribution is expected from the power transmission and distribution sector to develop these smart cities?

**J.B.:** Electric power was the foundation of the Industrial Revolution. Along with computers and communications, it will also be the foundation for the Digital Revolution. Without clean, cheap, reliable electric power, the dream of a smart city is not possible.

## What are the decisive factors that could speed up this trend?

**J.B.:**

- Open standards. Organizations such as IEEE, ISO, ITU, IEC and others are already at work on this.
- Interoperability, which starts with standards, but also requires vendors to "pre-integrate" and test their solutions to ensure they work together.
- Financing solutions that let us get started now to build the digital infrastructure that will be the platform for decades of future prosperity.
- Visionary leaders who see the better world we can have for ourselves and our children and are willing to lead the way.

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