# Smart Cities to Wise Cities

By **ANDRÉS PASTRANA**

ACCORDING to the United Nations, half of the world's population already lives in cities, with that proportion estimated to increase to 66 percent by 2050. If we are to progress, we must manage our cities both efficiently and humanely.

Smart cities are defined by the use of data captured by cameras, sensors, and other devices, and then analyzed by artificial intelligence to provide real time information to decision makers and citizens. It is a technological advance that many believe will make our cities safer, wealthier, healthier, and more environmentally sustainable. But as with the use of all big data projects, there are also real concerns about citizen privacy and who will own and use the data collected by the wired cities of the future.

My region of Latin America is one of the planet's most urbanized: In just two generations, from 1950 to 2010, the proportion of people living in cities in Latin America grew from 35 percent to 85 percent. How we manage our cities will largely determine the quality of life for most Latin Americans.

One of the most dramatic applications of data to the daily life of people is occurring in the city of Medellin, in my home country of Colombia. In the 1970s and 1980s, Medellin was best known as the home base of a notorious drug cartel. In recent years, Medellin has transformed into a smart city so much so that in a global competition organized by the Urban Land Institute for the *Wall Street Journal*, Medellin was voted as the world's most innovative city. It is the perfect place to examine the potential of technology to enrich urban life.

With a population of 2.5 million, Medellin is Colombia's second largest city. Beginning in the mid-2000s, Medellin decided to invest deeply in technology both to improve urban living and to cleanse itself from the stain of drugs. According to an in-depth study by the Inter-American Development Bank, as early as 2007 the city had decided on a strategy of "Digital Medellin."

**At the 2nd Digital China Exhibition held in Fuzhou on May 7, 2019, a scaled model on how a smart city should run attracts a lot of people.**

The Internet of Things (IoT) technology is a network of physically connected devices that collect and exchange data, combining the physical with the digital, to produce real time information for citizens and decision makers to use. Medellin was the first city in Colombia to employ such a smart city development strategy.

Medellin uses connected cameras and sensors in a variety of areas and services, but transportation serves as a ready example. The city installed 40 electronic traffic cameras that can detect infractions such as speeding, red light running, driving in pedestrian walkways, etc. The system reads one million circulating plates daily. Beyond detecting infractions, the city has installed 80 visualization cameras that allow sight monitoring of the roads to detect accidents and traffic flow, allow-

ing operators in the Transit Control Centre to respond to accidents in the fastest possible time. Information about traffic conditions is then relayed to drivers on 22 electronic messaging boards, allowing drivers to make informed and timely decisions about alternate route selection. Sensors installed on the road feed information to 600 traffic light intersections interconnected by a fiber optic broadband communication network owned by the city. The system also monitors 6,000 buses in the metropolitan area, supplying information for better planning of routes and frequencies.

Improvements in traffic efficiency have been dramatic since the systems were installed, with highlights that include a 35 percent reduction in the traffic accident rate for every 10,000 vehicles in areas covered by the photo detection cameras and almost 200,000 less hours of congestion in 2014 over 2010.

Medellin has emphasized a similar strategy of linked cameras, sensors, and data analysis in other policy areas such as security, with cameras placed in districts with a high rate of criminal activity; the environment, with environmental noise monitoring and early warning systems in emergency risk management; and for sustainable energy development, the city has created a smart electrical grid program.

According to Darío Amar Flórez, author of the international case study on Medellin's innovation, "Smart city innovation is not only technological, it must also be social." The first objective listed in the Medellin smart city vision is to engage citizen participation and impart knowledge. Medellin has set up free Internet access zones and installed communication infrastructure in 48 community centers. The city has trained more than 100,000 citizens on how to best use this new technology. There is also a community portal where citizens can make suggestions to the mayor on how to improve city services. The Medellin vision is not only about top down experts using citizen information, it is also about bottom up citizen engagement to hold officials accountable and to suggest new ideas.

In the same era that Medellin began to take the lead in Colombia as a community investing in smart cities, China was doing the same for the whole nation. China's five-year plan in 2011 highlighted smart city technology as one of China's main investment priorities so that today China is promoting half of the smart city projects in the world. It was after hearing about this intense Chinese activity in smart city technology at its September 2018 Beijing plenary, that the InterAction Council put this important topic on its future agenda. China expects to double its investment in smart cities from US $30 billion in 2018 to US $60 billion in 2023. Smart cities are another area in which China is a world leader.

Like Medellin, the city of Hangzhou, for example, has created a City Brain, invented by the company Ali Baba, which uses cameras and sensors to examine traffic flows with links to traffic lights so that red lights turn green to help ambulances make their way to hospitals. Traffic police in Hangzhou arrive at incidents or accidents within five minutes. Shanghai has a Citizen's Cloud that aggregates data and provides easy access for people to use over 100 city programs. China is also a world leader in mobile cashless financial transactions. In 2008, there were 17 million personal phones in China; today the number is over a billion. In Beijing, phones are swiped for public transit fares, saving time in buying and collecting tickets. China has bet big on smart cities as one way to cope with the fact that it has one third of the world's cities with populations of over a million.

The penetration of information technology in sensors and in all manner of physical objects like smart meters, solar panels in buildings, and personal devices like smart phones, combined with algorithms created by artificial intelligence able to show patterns in the data, has the potential to transform our lives and the cities in which we live. Many aspects of this transformation are profoundly positive. Thanks in part to the security cameras and systems installed in Medellin; the murder rate per 100,000 people has fallen by 80 percent since the early 1990s. To build a livable city, one must begin with a safe city, but there are obviously dangers as well with the control of such massive amounts of information.

The way forward is to begin with a vision that makes the well-being of citizens and their engagement in the process the starting point of investment. We have advanced from digital cities, when information devices were first introduced, to smart cities where these devices are networked, and the data analyzed by artificial intelligence. Now we must move from smart cities to wise cities, where that technology is used to enhance well-being, a much more worthwhile goal than the current concentration on technological efficiency alone.

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