



Building a Smarter Planet: 9 in a Series

Smarter lessons from our smarter cities.

An estimated one million people will move into the world's cities this week. And next week. And the week after that. We're adding the equivalent of seven New York Cities to the planet every year. Experts predict the world's urban population will double by 2050.

This unprecedented urbanization is enormously hopeful. As hundreds of millions of country-to-city migrants recognize, cities offer large economic, social and political opportunities—not to mention the potential for significantly greater environmental sustainability. But to achieve these benefits, we'll need to find new ways to manage complexity, to increase efficiency, to reduce expenses and to improve quality of life. As our planet gets more urban, our cities need to get smarter.

Fortunately, they can. At IBM we've learned how, through more than 2,000 engagements with cities around the world over the past three years. Forward-thinking leaders are connecting core city systems, eliminating operational silos, and pinpointing which departments, agencies and communities are crucial to coordinate. By analyzing the vast quantities of data their cities generate, they can remain prosperous and sustainable in the face of unprecedented urban growth, economic and technological change, and increasing social mobility.

Consider San Francisco, which has instrumented 1,000 miles of sewer system pipes and three treatment facilities—that can warn against pump failure, broken pipes and overflowing storm drains in real time, resulting in an 11% improvement in the ratio of preventative to corrective maintenance. The Washington DC Water Authority is extending the life of their own infrastructure through data and insight, with an ROI of 629%—and a projected average annual savings of \$6,559,000.

Consider Singapore, with its traffic system designed to lower congestion and carbon emissions by recognizing traffic patterns on a whole-city scale. Civic leaders are developing one of the world's most sophisticated systems for leveraging road pricing, integrated fare management and deep analytics to help predict—and thus mitigate—traffic congestion up to an hour in advance, with accuracy as high as 85%.

Consider Rio de Janeiro, which is coordinating information from more than 20 city departments into one operations center for real-time visualization, monitoring and orchestration of response to incidents across the entire city. The system uses a new high-resolution weather-prediction technology to help pinpoint where a tropical storm will strike, while proactively addressing such questions as which hills are most likely to suffer mud slides.

And Madrid has coordinated emergency resources across the city through its data. When authorities receive information about an emergency, they can identify it as a unique or a duplicate event. With a unified view, the city's stretched resources can be deployed with the right equipment to the prioritized situations. Emergency response times have been reduced by 25%.

The innovations described here exemplify the Smarter Cities vision. Their lessons are clear. Progress lies in an accurate view across urban infrastructure; the right level of intelligence to optimize resources; and the ability to integrate information from all departments to anticipate and respond to events. Best of all, the insights from today's pioneers can now be adapted to the next several thousand smarter cities—providing good lessons for all of us to learn.

Let's build a smarter planet. Join us and see what others are doing at ibm.com/smarterplanet

