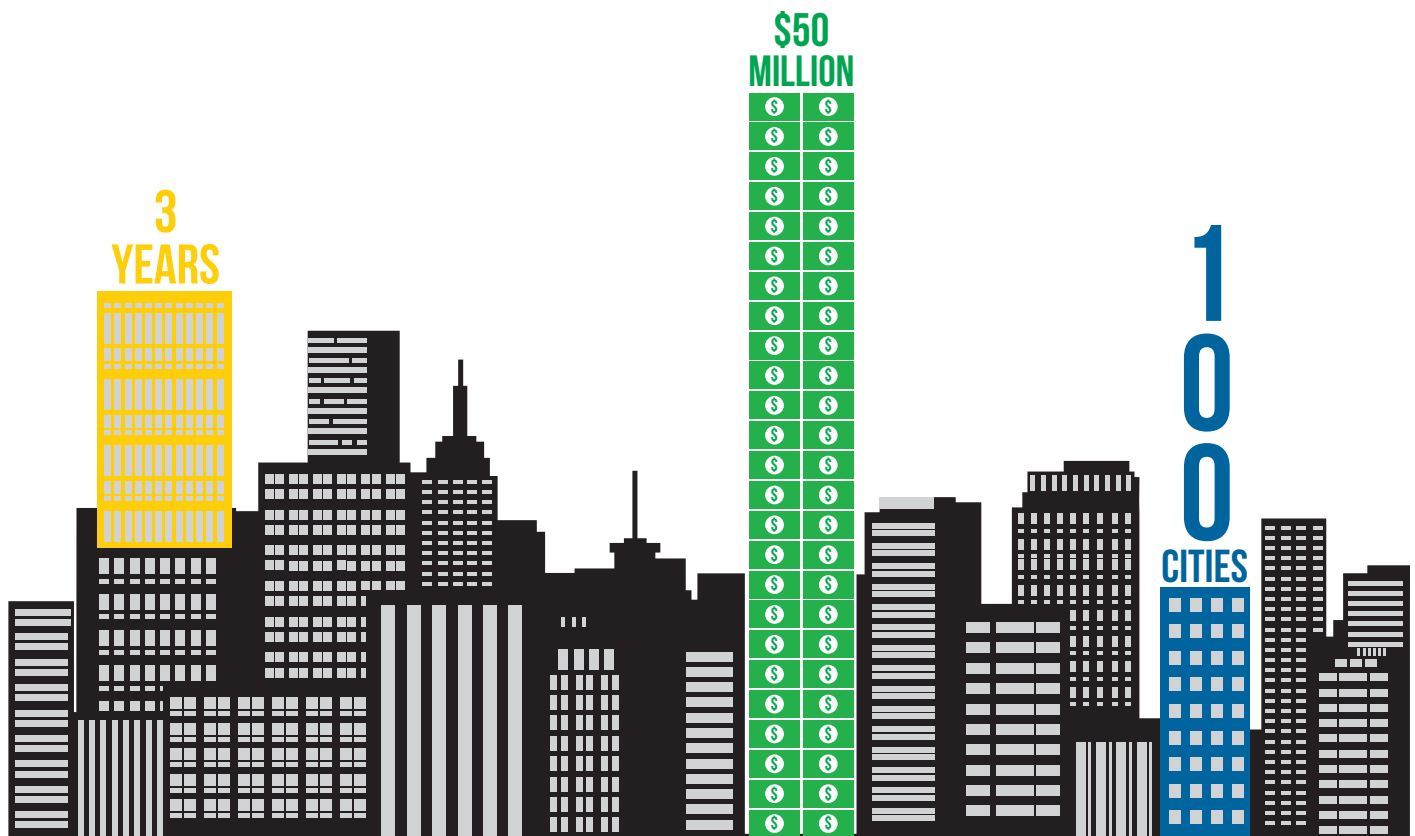


How to reinvent a city

Mayors' lessons from the Smarter Cities® Challenge





Not too long ago, cities were the world's problem children. In developed economies, people fled to the suburbs to escape crime, crowding, crumbling infrastructure, pollution, and failing schools. In emerging nations, the worst problems of society beset poor people living in vast urban slums.

What a difference a few decades make. Today, the best cities are dynamic and exciting. In developed economies, young people, professionals and empty nesters are reverse migrating into cities in search of economic opportunities, cultural enrichment and fun. Think of the trend as [Brooklyn-ication](#)—a reference to New York City's resurgent borough. Meanwhile, in the emerging world, cities are magnets for people from the countryside who dream of brighter futures for themselves and their children.

With an estimated one million people worldwide moving into cities each week, experts predict the global urban population to double by 2050 to 6.4 billion—making up 70% of the total world population. Yet, at the same time, many of the problems that sent people fleeing from cities decades ago remain—stubbornly resisting traditional fixes. It's clear now that the future of cities is the future of the planet. So it's essential that solutions be found.

Fortunately, cities are tremendous engines of innovation. The urban center is where the dreamers, planners, engineers, builders, social activists and artists congregate. The more people interact with one another, the more likely it is that new ideas will germinate and take root. Add to that the elements of bold leadership and new technology tools, and we have the potential to spark a renaissance for cities, so they're not just bigger, they're better.

A new generation of mayors is taking on the challenge of reinventing cities for the 21st century. While many governmental leaders at the federal, state and province levels are stymied by economic sluggishness, political stalemates and austerity budgets, mayors have refused to be stopped. In fact, they can't. Their constituents demand action. So mayors are rising to the occasion and using innovative approaches for getting stuff done, or "GSD," as Philadelphia Mayor Michael A. Nutter calls it.

Mayors have an ally in IBM's Smarter Cities Challenge grant program, a three-year, 100-city initiative. IBM is donating \$50 million worth of its employees' time to help cities get started on ambitious projects. IBM dispatches five- or six-person teams of experts with a range of backgrounds, skills and experiences that bring fresh perspectives and help cities formulate strategies for improving the quality of life and the prospects of their citizens. The program encourages leaders to view their challenges holistically, and to try new methods for getting things done. 300 IBM experts with a wealth of experience who have already participated in the Challenge back up the IBM teams.

The cities are chosen based on having a critical issue to resolve and a strong commitment to action from the mayor or city manager. The leaders must be willing to share information and open doors in their communities for IBM, and to engage with citizens, other elected officials, non-profits, business and government agencies so their communities can make more informed and collaborative decisions. At the end of each engagement, the team hands over a detailed report sizing up the issue and making recommendations for getting things done.

Early in 2012, IBM produced a white paper, *How to Transform a City*, laying out the lessons that IBMers had learned from Smarter Cities Challenge engagements. In this report, we present insights from participating mayors. Most of these views were harvested at the Smarter Cities Challenge Summit, a gathering of mayors and other city leaders held November 14-15, 2012, across the Hudson River from New York City. Participants hailed from more than 30 cities, ranging from Philadelphia and Burlington in the United States, to Nice and Katowice in Europe, and to Tshwane in Africa, Porto Alegre in Latin America and Cheongju in Asia. Here are lessons for leaders, from leaders:



Think like a CEO

When city leaders are trying to overcome inertia, it helps to radically rethink what a city is and does. Traditionally, mayors have defined their cities and their leadership roles within the parameters of politics and traditional public services. That's too narrow a view. Today, some of the more innovative leaders see their cities as businesses and themselves as chief executives.

Take Philadelphia, the original capital of the United States. The city went into decline in the 1960s and 70s but is now coming on strong. That's thanks in part to its location between Washington, D.C. and New York City, its high concentration of universities and stubbornly persistent efforts by government leaders, businesses and civic organizations to address the city's problems head on.

Mayor Nutter calls Philadelphia a "business enterprise." He has a board of directors, the 17-member city council; shareholders, the taxpayers; and 1.5 million customers, the city residents. "I'm fighting for market share every day, and if I don't deliver my product more efficiently and effectively and cheaply, my customer base will find somebody else," he says.

Improving education and skills training are his core business strategy. [IBM's Smarter Cities Challenge team](#) helped city leaders develop the [Digital On Ramps](#) program, which is designed to provide education to residents anywhere, any time and on any communications or computing device they have access to.

Mayor Nutter considers access to education to be the essential civil right for our era, the key to helping people lift themselves out of poverty. He was encouraged recently when a longtime city employee approached him and proudly announced that she had taken advantage of a city program that offers tuition discounts at 12 local universities and colleges for city employees and family members. She will graduate soon. "With tears in her eyes she talked about how important this is for herself and her family," Nutter says. "People want the opportunity to move up. They understand that education is the way."

Engage citizens on their terms

City leaders understand that citizen engagement is essential to understanding the wishes of their constituents—not to mention getting re-elected. But some of the typical methods yield unsatisfactory results. Traditional community meetings, for example, tend to attract people with extreme positions. So the process of engaging citizens needs to be rethought. The public needs easy, open and continuous access to a wide variety of data and planning information, and people must be brought into a project early so they can participate in designing it.

Consider Geraldton, a city of 40,000 people on the remote west coast of Australia. Its economy is built on mining, wheat farming and a bit of tourism—since the area boasts some of the world's best windsurfing. Not too many tree-huggers in the local population, you'd think. Yet when city leaders conducted surveys of local residents about their aspirations for the future, they discovered that Geraldtonites were pro-growth but also wanted to grow sustainably. "They want a low-carbon future," says Tony Brun, Geraldton's chief executive officer. The city's goal now is nothing less than to become the first carbon-neutral industrial region in the world.

Geraldton's citizen outreach effort was part of a long-term planning initiative called the [2029 Vision](#). A local university encouraged city leaders to experiment with "deliberative democracy" so its vision would be both defined and supported by the citizenry. To avoid hearing just from the usual outspoken people, they conducted a series of surveys and choose a handful of "community champions" randomly from the electoral rolls. These volunteers led public meetings to draw their neighbors out on the themes that surfaced in the surveys. At some of the meetings, experts debated the issues and attendees voted on them. The 2029 vision emerged out of this process.

[IBM's Smarter Cities Challenge team](#) focused on the town's energy future, making recommendations on how to develop solar, wind, wave, geothermal and biomass energy production capabilities.

Other mayors stress the importance of tapping technology to communicate with citizens. In [Málaga, Spain](#), where the IBM team helped address transportation challenges, the city is using technology to help people navigate both the public transportation system and the city bureaucracy. Digital signs at bus stops and near Mediterranean beaches tell people when the next bus will arrive. People with sight problems can press a button at a kiosk and listen to service updates. Webcams in city offices provide sign language services for deaf citizens. “To be useful for citizens, technology has to be cheap, simple and easy to use,” says Málaga Mayor Francisco de la Torre Prados.

Set clear lines of authority and cooperation

It’s vital for police, courts and corrections authorities to cooperate with one another, yet in St. Louis, which has been labeled the “most dangerous city in America,” the government agencies involved in crime fighting are fragmented. Some report to the mayor; others to the state governor; and, in an unusual arrangement dating back to the Civil War, the police department is overseen by a state board. Because of this complex set of structures, or governance, the mayor has limited authority over interlocking issues. As a result, according to Mayor Francis Slay, the agencies weren’t doing enough to coordinate their activities and the police department wasn’t able to suppress crime.

That’s why Mayor Slay asked the IBM Smarter Cities Challenge team that visited St. Louis in March, 2012, to suggest ways the agencies can get the the right information to the right people in a more timely manner. [The IBM team recommended](#) that the city create an IT system that produces a shared view of each individual who enters the criminal justice system, that all of the agencies convert to electronic records and that the mayor appoint a chief performance officer to drive accountability.

The mayor is doing all of that—and more. Not only are the agencies cooperating to set up a new data-sharing system, but also the mayor has established a St. Louis Public Safety Partnership to coordinate crime-fighting strategies. Professors at the University of Missouri – St. Louis are playing an essential role by gathering best practices from around the country and measuring the effectiveness of St. Louis’ new initiatives. A new crime-suppression strategy, called Hot Spot Policing, which floods high-crime neighborhoods with police officers, has already reduced the rate of violent crimes in a dozen neighborhoods by more than 50%.

The most significant shift is truly momentous. Starting in July 2013, the police department will come under local control for the first time in 151 years. This move was underway before the IBM team’s arrival, but Mayor Slay believes that the IBM team’s recommendations helped influence voters who approved a statewide referendum on the matter in November.

Slay’s advice to other mayors is to decide on a governance model and put it in place before addressing technology. “Technical solutions must be built on human relationships,” he says. “You can have all the technology you want, but it takes people working together to find the right solutions.”

Collaborate or risk failure

The issues that cities face don’t respect geographic or organizational boundaries, so mayors must team up with other institutions that have a stake in the city and its future. The mayors of several of the Challenge cities have formed new broad-based alliances aimed at sharing ideas and resources and taking on challenges that none of the institutions could tackle on their own. In fact, in some situations, finding common ground in this way is helping to overcome deep-rooted conflicts that exist in communities.

In Siracusa, Sicily, for instance, there's tension between the ancient city's draw as a tourist destination and its large petrochemical industry. How do you reconcile the seemingly incompatible needs of the two sectors? Siracusa Mayor Roberto Visentin set out to bridge the gap by creating a multi-stakeholder organization called The Table for the Future, which includes representatives from Confindustria Siracusa, a business interest advocacy group, as well as from government and cultural non-profit groups. The goal, says Mayor Visentin, is social cohesion.

The way Visentin sees things, The Table provides a mechanism for helping to transform Siracusa into "a modern European city." The organization emerged out of one of the recommendations of IBM's Smarter Cities Challenge team. Various constituencies within the city had previously worked together on an informal basis, but The Table provides for ongoing collaboration on setting a shared vision and identifying projects that the different groups can take on together—including addressing concerns about Siracusa's brand, the mobility and traffic problem, and air and water pollution. Visentin also hopes that the institutions will share expertise. The city government, for instance, can learn a lot from businesses about how to operate more efficiently and effectively.

In the province of Cebu, in the Philippines, a destructive flood in January 2011 prompted the leaders of 13 municipalities with a total population of 2.5 million to form a coordinating body, the Metro Cebu Development Coordinating Board, which includes government and private-sector representatives. The Board has begun developing a regional water drainage plan designed to address flooding issues on a macro scale. Next, the organization plans on addressing regional transportation needs.

The Board asked IBM's Challenge team for help in developing its governance model, setting priorities and coming up with recommendations for the individual municipalities. For Nicepuro Apura, mayor of Carcar City, a sprawling suburb with a population of 110,000, [the team suggested](#) creating a true town center—compact and pedestrian friendly. Through the Board, Apura has received advice from an urban planner and is on his way to developing a transportation terminal, market and sports facility that will serve as focal points for the town center. "The goal," he says, "is to make Cebu a more workable and livable place."

Exploit the value of data

The availability of vast collections of data about all aspects of city life makes it possible for civic leaders to understand how things really work so they can make better decisions. Much of this data comes from sensors and video cameras that are being used to monitor everything from public safety to traffic jams. In addition, city agencies are increasingly sharing their data with one another and with the public. This allows leaders to get a holistic view of the city, and to unlock the value of all of that data they're collecting.

When Luke Ravenstahl became mayor of Pittsburgh six years ago at the tender age of 26, he was the first mayor in the city's history to have a personal computer in his office. That circumstance speaks volumes about the difficulty of getting established institutions to change how they operate.

Pittsburgh is making up for its slow start and reinventing itself as a modern, technology-savvy regional center. After the steel industry collapsed in the 1980s, the city built a new economic foundation based on higher education and healthcare—"eds and meds" in the local parlance. The leading universities, healthcare institutions and philanthropic organizations are now partnering with municipal leaders to address issues such as economic development and transportation—which was the focus of the [IBM Smarter Cities Challenge team](#).

In one transportation project, Traffic21 (initiated by the Hillman Foundation and supported by the US DOT), researchers from Carnegie Mellon University are using southwestern Pennsylvania as a living laboratory for experimenting with smart transportation solutions. They're addressing everything from bus scheduling, to parking, to pothole monitoring, to automated traffic light switching. "We face fiscal challenges, but we're embracing technology," says Ravenstahl. "We have our eyes on being faster and more efficient and using realtime data."

In Birmingham, England, a former automobile-manufacturing city, the fiscal crunch is even more severe. The city council must reduce the city's operation budget by 25% in just four years. Clearly, many programs will have to be cut back significantly or eliminated entirely. But, which ones? To figure that out, the city has embarked on an ambitious data analysis initiative, called Modeling Birmingham, with guidance from the IBM Smarter Cities Challenge team. The analysis measures the funding and results from each of its governmental programs to determine the return on investment. "We're exposing the evidence and making comparisons. We'll get rid of ineffective programs," says a consultant to the city council, Tony Bovaird, professor of public management and policy at the University of Birmingham.

Be Bold and Brave

Access to an abundance of data helps city leaders understand how things work and how they might work better, but unless mayors are bold they won't get big things done. Politics will get in the way. So it's essential for mayors to not only propose bold plans but to make it clear to those around them that they are deeply committed to making them work. They have to become the chief sales person for their vision and push for progress relentlessly.

Begin by choosing goals that are transformational, rather than incremental, and which have the potential of making a major difference in peoples' lives. That approach signals to everyone that something important is coming and that it will require new ways of thinking and doing. For Christian Estrosi, the mayor of Nice, France, having one audacious goal isn't enough. He envisions Nice becoming both the leading intelligent and sustainable city in the Mediterranean. In fact, the business strategy is to turn Nice into an innovation hub for creating the technologies that will help cities everywhere become smarter and more sustainable.

Sometimes making a personal commitment to achieving a goal takes more than strategic vision and enthusiasm. It requires courage. Kgosientso Ramokgopa, the executive mayor of Tshwane, the capitol of South Africa, faces major challenges in his quest to make his hometown a model capital city for Africa. His priorities are good governance, improving city services and establishing Tshwane as a regional knowledge capitol. He had to fight hard to convince members of the cash-strapped city council that they should invest in widespread broadband network connectivity. He has made enemies by firing corrupt city managers. And he gets pushback from citizens when he enforces policies that they find disagreeable.

Just a few weeks ago, two elderly women who sell merchandise on the street came to his office to protest his decision to restrict such sales to certain parts of the city. They complained that it would put them out of business—with dire consequences for their families. Ramokgopa didn't back down. Street merchants were blocking sidewalks and making it difficult to navigate the city. "We need to be bold and make unpopular decisions. Somebody had to handle it, and it was me," he says. Ultimately, though, the street vendors found that they made more money in an organized marketplace where the pedestrian traffic is steadier.

Take a Long View

The demands on mayors are intense, constant and endless. Citizens want things fixed immediately. Election cycles pressure leaders to take on projects that can be accomplished in two years or less. Yet short-term fixes seldom solve long-term problems. In fact, they can make them worse. So participants in the Smarter Cities Challenge advise their peers to take the long view. They need to build processes, organizations and alliances that will sustain a long-term vision, even if there are personnel changes at or near the top of the city org chart. But they also have to structure their initiatives so they make measurable progress along the way—achieving quick wins that get, and keep, the momentum going.

Thomas Bonfield, the city manager of Durham, North Carolina, who has been in public service for 35 years, says today's urban problems are more complex than those of the past and defy easy solutions. The [Challenge project in Durham](#) addresses one of them helping “disconnected” young people who don't have the education and job experiences that they need to succeed in today's economy.

Bringing this group into the mainstream will require adjustments and coordination throughout the institutions of society, ranging from parenting to elementary and secondary education, to vocational skills training, and to law enforcement. Bonfield and Durham Mayor William Bell are spearheading an initiative aimed at identifying at-risk young people and creating a support network for them. They understand that this problem will likely take years to fix. “Things move more slowly than you expect or want, so you have to be patient,” says Bonfield.

One of the most effective ways of dealing with problems is preventing them from occurring in the first place. You've got to anticipate what's coming and take action to head it off.

That's the approach leaders are taking in Cheongju, a fast growing city in South Korea. The city doesn't have serious traffic congestion problems now, but Mayor Beum-deuk Han expects that crowded streets and highways will be a major issue in just a few years as the population swells and families acquire more cars. With guidance from the [IBM Smarter Cities Challenge team](#), he's trying to get out in front by putting in place efforts to convince citizens to use public conveyances. They include new means of transportation, including trams, and the use of information technology to make mass transit more convenient. “We need a paradigm shift from car-oriented cities to human-oriented cities,” Han says.

Conclusion

The Smarter Cities Challenge has come a long way from the pilot programs that kicked off in Austin, Texas; Katowice, Poland; Rio de Janeiro, Brazil; Mecklenberg County, North Carolina; and Ho Chi Minh City, Vietnam, in 2010. One of the biggest surprises for the IBMers is how much cities have in common. Whether they're overgrown towns or giant metropolises, fast-growing or mature, the problems cities face are amazingly similar. And so are the potential solutions. Participants in the Smarter Cities Challenge Summit asked for an “encyclopedia” that would detail all of the projects and lessons learned by participants. You can find a wealth of information — and inspiration — at <http://smartercitieschallenge.org/>

© Copyright IBM Corporation 2013
IBM Corporate Citizenship, New Orchard Road, Armonk, NY 10504
Produced in the US – January 2013

The information in this document is provided “As Is” without any warranty, express or implied, including any warranties of merchantability, fitness for a particular purpose and any warranty or condition of non-infringement.

IBM, the IBM logo, ibm.com and Smarter Cities are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at: ibm.com/legal/copytrade.shtml
