

Makati City, Philippines

Smarter Cities Challenge executive summary

Introduction

In 2010, IBM Corporate Citizenship launched the Smarter Cities Challenge® to help 100 cities around the world over three years become smarter through grants of IBM talent. These cities have made great progress on the road to becoming more instrumented, interconnected and intelligent (see www.smartercitieschallenge.org).

In 2013, IBM selected the City of Makati in the Philippines to receive a Smarter Cities Challenge grant. During three weeks in March and April of 2014, a team of six IBM experts worked to deliver recommendations for solving a challenge identified by Mayor Jejomar Erwin S. Binay, Jr. and his senior leadership team:

Establish and operationalize an intelligent traffic information system that will enable more informed decisions and help improve quality of life for residents and commuters in the city.

The challenge

Makati is the financial capital of the Philippines and the country's central hub for domestic and international business. As a result, Makati experiences a daily stream of vehicular traffic that can swell its population to more than four million people — an eightfold increase above the city's nighttime population. With limited space for additional roads, this added daily traffic volume strains an already overburdened public transportation system, leaving commuters with few viable transit alternatives.

Findings and recommendations

With these issues in mind, the team delivered recommendations in four areas:

1. Enhance traffic management infrastructure by adopting new technology

- Collect traffic information through the use of video analytics technology to optimize traffic management and planning capabilities
- Create an integrated traffic information platform to advise citizens of current road conditions, weather and relevant public service announcements, including strategic placement of advisory billboards at key points of transit within Makati
- Partner with telecommunications service providers to determine predominant traffic patterns based on movements of mobile phones



Highlights:

- Develop integrated data and analytics capabilities to improve traffic management, urban planning, incident response and real-time communication with commuters
 - Optimize public transportation capabilities to increase predictability and sustainability
 - Improve communications to promote behavioral changes in citizens and commuters
 - Explore modern transportation policies and improve change management practices to accommodate growth
-

Our first and most significant finding is the absence of reliable traffic data that can be used to make more effective decisions. Significant investment has been made in building out a technology infrastructure capable of collecting, analyzing and implementing solutions. Yet during our three weeks, we did not observe a modern approach to leveraging these investments. As a result, we recommend that Makati enhance existing traffic management infrastructure through expanded adoption of technology.

2. Promote a shift away from single-occupancy vehicles to alternative means of transportation

- Optimize current transportation hubs and develop new hubs to provide a seamless linkage of transportation choices
- Expand the use of dedicated lanes for hybrid and electric public utility vehicles (PUVs) along major corridors, enabling more predictable public transportation schedules
- Increase alternatives to motorized transport by expanding pedestrian sidewalks, covered walkways, bike lanes and bike-sharing programs
- Expand the metro rail and ferry systems to increase capacity

During our time in Makati, we observed the vast variety of transport modes available in addition to privately owned vehicles. Trains, metro trains, buses, cabs, jeepneys, tricycles and pedicabs all exist in a complex alternative transport ecosystem with minimal rationalization or optimization. These overlapping modes of transport contribute significantly to the congestion challenge due to issues of enforcement, poor route planning and a lack of governance. As Makati begins to collect, store and analyze vehicular data, the effort will require a wholesale rationalization of its entire network of public transportation options. Our team recommends that Makati promote a modal shift away from single-occupancy vehicles and toward alternate means of transportation. This would include the adoption of strategic bus lanes and bike lanes, expansion of the rail and ferry systems and improvements to pedestrian walkways — all of which can be implemented with proper planning and enabled by the collection of data.

3. Establish a multidimensional transportation education strategy

- Create a comprehensive campaign to promote and encourage the use of preferred methods of public transportation
- Influence public educational curriculum, promoting concepts of sustainable transportation
- Increase educational efficacy for all traffic enforcement professionals
- Influence the public to make more informed transportation decisions
- Increase proper discipline of drivers through effective enforcement

With informed, data-based improvements to public transportation, steps should be taken to communicate these options to the public. In parallel, efforts should be made to promote a cultural shift away from private vehicular transport to more sustainable public options. We frequently observed the significant sense of pride associated with ownership and use of a private vehicle. While this is understandable given the complexity of public options, efforts must be made to reverse this perception. We recommend that Makati establish a multidimensional transportation education strategy to help reduce traffic congestion. This strategy would include improved documentation of non-private transport options for citizens, tourists and commuters, public events touting the use of eco-friendly modes of transportation and a focused attempt to promote sustainable transportation within Makati's various schools and universities.

4. Review and strengthen transportation policy

- Change laws and regulations to encourage preferred behaviors that improve traffic flow and to discourage behaviors that worsen congestion
- Increase the enforcement of existing laws through improved training and oversight
- Expand the City's transportation vision to ensure long-term overarching objectives are well understood and adopted
- Promote successful adoption with a comprehensive plan for communication, education and enforcement

Today, Makati faces a complex, multifaceted transportation dilemma. To achieve its goals of reduced vehicle congestion, increased productivity and improved modes of eco-friendly transportation, the City must develop a redefined, modern policy and governance system to meet the demands placed on it by citizens and visitors from surrounding cities. By incorporating the City's physical infrastructure with its current and future technology investments, public transportation and an enhanced educational platform, policy enhancements should provide and reflect collaboration among the various stakeholders, demonstrating a common vision and a well-defined set of goals.

Conclusion

Makati is a vibrant city with visionary leadership and a track record that has been emulated throughout the Philippines. Its ambitious plans to develop and grow make it critical to focus on relieving traffic congestion if Makati desires to remain competitive on the global stage. Following the recommendations in this report will help Makati create a solid foundation for sustained growth and the continued prosperity of its citizens, visitors and businesses.

For more information

To learn more, send an email to ccca@us.ibm.com or visit smartercitieschallenge.org

© Copyright IBM Corporation 2014
IBM Corporate Citizenship, New Orchard Road, Armonk, NY 10504
Produced in the United States of America – August 2014
All Rights Reserved

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, Smarter Cities Challenge 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

SmartGridCity is a trademark of Xcel Energy Inc.

Map data ©2014 Google