

IBM's Smarter Cities Challenge

Edmonton

Summary report



Cities, when dealing with their operational objectives and responsibilities, traditionally act within silos or semi-autonomously. However, all cities whether large or small are outgrowing current systems and processes. The approach of the City to its overall management and operation has changed, with a shift towards a “systems of systems” view. This is driving significant innovation.

By “systems of systems” we mean that valued attributes of high-functioning urban environments – culture, mobility, safety and so on – “emerge” from the interaction of a variety of private and public systems or networks. Just as police alone do not create public safety nor museums generate urban culture, so no single system determines whether an urban environment is thriving or declining. Systems act in parallel, are interdependent and subject to non-linear dynamics.

Cities are not managed in a top-down fashion. The role of local government is to create the conditions within which such systems can effectively function. While the citizen may expect too much of their ability to impose desired urban outcomes, local governments can nevertheless shape the conditions that make these possible.

A Smarter City is a city that can balance its social, commercial and environmental needs whilst optimizing the resources it has available. By applying IT to plan, design, build and operate its infrastructure, a city can improve its quality of life and economic well-being.

Current transportation systems and associated infrastructures are strained. With a growing population and increased demands for mobility from a diverse community, these systems and networks will become even more burdened.

The key to smarter transportation lies in the ability to integrate various data sets from across static, real-time and dynamic data sources with the use of sensors, meters and software. This requires the application of a holistic data analytics framework and is fundamental to a smarter transportation and road safety system. Transportation authorities can improve capacity, enhance travelers’ experiences and increase the efficiency, safety and security of the city’s transportation system.

To change these systems, governments must transform not only the way they think about themselves and how they deliver services, but also the manner in which technology can enhance their engagement with citizens.

Highlights:

- IBM's Smarter Cities Challenge team recommended the formation of an Analytics Center of Excellence to support Edmonton's strategic road safety goals.
 - Governance, accountability and openness can also improve traffic safety outcomes.
 - Citizens can be empowered with the increased use of social media and other bidirectional communication.
 - Unique academic research can help Edmonton become a global center of traffic safety excellence.
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They must move away from a siloed approach to service delivery and move towards Smarter Government. Innovative and integrated governments focus on the increased adoption of shared information, transparency, instrumentation, collaboration across agencies and intelligent use of analytics. Smarter Government allows them to personalize services in order to meet very specific individual (rather than group) needs.

Importantly, it uses new social networking technologies in highly creative ways to predict the outcomes of decisions better. Through continuous and immediate feedback loops, governments learn about and respond quickly to what is happening on the ground as their citizens receive their services. This in turn allows them to tailor their offerings better.

Smarter Government also supports innovative leadership by creating a networked environment that inspires and encourages its policymakers to think innovatively, share ideas and consider the broader ecosystem. The City of Edmonton Strategic Plan 2009-2018, "The Way Ahead", focuses on the City's efforts to supply those services and infrastructure that are of the greatest value to Edmontonians, while managing the opportunities and challenges of this ever-changing city.

The Way we Move is The City's vision for an integrated and responsive transport system and sustainable land use. It encourages multi-modal transportation (freight, roads, rail, buses, sidewalks and light rail transit) to ensure the efficient and safe movement of its citizens.

Within the context of this strategic framework, Edmonton's mission is to be the global leader in urban traffic safety. It has adopted a longer term Vision Zero for fatalities and serious injury collisions, with shorter term strategies and targets using the Safe System Foundation approach. The City's Office of Traffic Safety (OTS) is renowned worldwide for its work and leadership. Its international conferences have sought greater collaboration amongst experts, enforcement agencies, governments, universities, sectors of innovation and communities, to drive forward the mission of better traffic safety.

Although the City has ambitious goals in urban traffic safety and transportation, it is well placed to achieve them. With its strong culture of innovation and its progressive citizen-focused services, the City has made significant investments in state-of-the-art road safety instrumentation.

Furthermore, the culture of business intelligence and analytics is embedded across Edmonton's transportation and policing portfolios. Crime prediction and prevention within the Edmonton Police Service (EPS) uses business intelligence and intelligence-led crime and safety predictive analytics.

For the Smarter Cities Challenge, IBM was tasked with providing the City of Edmonton with ideas and recommendations to improve the integration, analysis and dissemination of data used for decision-making on traffic safety issues, and the prioritization of road safety initiatives.

To achieve the desired Vision Zero and The Way We Move goals for Edmonton citizens, community and business, we are proposing that the City:

1. Creates an Analytics Center of Excellence to support a road safety data governance model and analytics leadership across the organization
2. Strengthens governance and accountability with respect to OTS
3. Further supports open government and open data for traffic safety and transportation
4. Simplifies performance measurements and aligns department traffic safety measures to corporate outcomes
5. Empowers citizens with timely traffic safety and transportation information via social media and embraces bidirectional citizen communication
6. Aggressively positions Edmonton as a global leader in smarter urban traffic safety, to include collaboration with global leaders in industry and academia to identify a unique traffic safety/transportation research project.

By building upon these foundations in partnership with enforcement agencies, the university sector and other leaders in traffic safety, both locally and internationally, we believe the City will be able to fast track its transformational roadmap for an integrated and smarter urban traffic safety framework. Edmonton can become a global center of excellence and expertise in urban traffic safety.

For more information

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

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