Dallas, USA

Smarter Cities Challenge executive summary

Introduction

The City of Dallas, Texas, was selected through a competitive process as one of 16 cities to be awarded a Smarter Cities Challenge® grant in 2014. During a three-week period in February 2015, a team of seven IBM experts worked in Dallas to deliver recommendations around key issues for Mayor Mike Rawlings, City Manager A.C. Gonzalez and their team: David Brown, Chief of Police, Dallas Police Department; Bill Finch, Chief Information Officer; and Cornell Perry, Senior IT Portfolio Manager Public Safety for the City of Dallas.

As the ninth-largest city in the US, Dallas is rightly proud of its recent achievements in crime reduction and economic growth. But chronic issues of poverty and urban blight remain, and in affected neighborhoods, the City is determined to address related public safety issues. The Mayor, City Manager, Chief of Police and head of Communication and Information Services (CIS) all believe that data and technology can play a key role in resolving these chronic issues and so asked IBM to investigate.

The challenge

The City of Dallas faces the challenge of creating a comprehensive public safety management database that is flexible, scalable and intraoperationally usable across departments. The City maintains an overload of data, compiled in separate databases, which tracks crime statistics and code enforcement issues, fire-related incidences and emergency management operations. Though the data is useful within individual departments, the data sets don't "talk" to one another or connect departments. The City would like help in creating better links.

The City asked the IBM Smarter Cities Challenge team to address the following challenge statement:

How can the City of Dallas and its citizens best exploit the multiple data stores they own and to which they have access? How can they use the latest-available technologies to derive insights from this data — and to share and publish information — in order to make the city a safer, more pleasant environment for all its inhabitants?

Highlights:

- The City of Dallas has a wealth of data, which it must consolidate and organize more effectively

- Consolidating data into a central "data lake" will enable the City to build advanced search and analytic tools that allow users faster access to the data they seek

- The City needs a major new focus on user experience to improve the effectiveness of City departments and to build the trust of citizens

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Findings and recommendations

The team met with more than 80 City staffers, community leaders and other public officials. It identified the following:

1. **Data and insights are trapped inside of isolated and disparate databases.** For a given task requiring data, users retrieve information serially from the limited databases to which they have access. Calling on other users is key to getting additional information needed. The overall effectiveness and inefficiency of this ad hoc process correlates directly to the current state database structure.

2. **Users have a poor experience getting data needed for specific tasks.** City employees and citizens expressed frustration, lost time and lack of awareness of where data exists and how they interact with and use technology. This is a critical area for improvement.

3. **A "protective" culture exists when it comes to sharing data with others.** Domain owners within each department typically build datasets and information for their respective area. Legitimate fear of litigation and concern over privacy are major barriers to free and open sharing of information. Sharing does occur when requests are made, but this remains a challenge and an area for improvement.

4. **Trust and perception can continue to be improved between the City, neighborhood associations and citizens.** One measure of this need is how DPD engages with communities outside of crime incidents. While DPD has a very strong emphasis and programs in this area, there is still a perception that more can be done in revealing more data about Dallas services and crime through the open data portal.

5. **Initiation of and support for citywide IT projects is challenging.** That said, the City has made great strides with a disciplined IT governance process that does support the business technology requirements set forth by departments. This governance has eliminated redundancy and helped to see common requirements across departments.

The Smarter Cities Challenge team recommends a new approach to data management with three main components as listed below:

1. Organize, consolidate and govern data

CIS is already conducting a big data study, which should lay the foundation for a "data lake" that consolidates the City's reporting data. Comprehensive access controls will be needed to achieve the right balance between making data available and ensuring that individuals' right to privacy is protected.

2. Create query and analytics capability

This integrated capability should span both City-owned data sources and data sets owned by Dallas County, the State of Texas and other related agencies. The objective is to deliver relevant data to users, irrespective of source or ownership.

3. Improve user experience

The City should introduce a new focus on user experience, concentrating on key roles and their use of data. It should master the discipline of user-centered design and appoint user champions as part of CIS. It is particularly important that a user champion for external users (communities and citizens) is appointed.

Conclusion

Better and easier access to data could open up huge new opportunities for analysis by users, as well as insights that are derived by, and shared with, citizens. Besides the obvious direct benefits from data analysis, the underlying objective is to grow the engagement of the community and rebuild trust in the City — both key enablers for improving public safety. This vision for data management is ambitious but can be tackled in steps.

For more information

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