



i-Open Technologies is bringing the leading edge technology for Municipalities & Governments



Municipal field crews typically use paper version of service cards and maps; they're then forced to carry copies in every truck. Updating base maps can on average take up to one full week of work every year of Engineering Tech's time. Furthermore, on average of 20 times per week (depending on the size of the Municipality) someone is driving 15 minutes delivering service cards and other papers daily. Hand drawn markups on paper maps need to go back to Engineering for updating and any changes to base maps means they all need to be changed. Furthermore map books take 5 days to complete and are immediately out of date.

Enabling the capture of form-based data through a business rule driven methodology and a tool that can use a map-based interface to allow for location based functionality including "Follow me" type functions and interaction with key corporate mapping data, is a solution. It is often integrated with legacy systems to allow dissemination of key related data into the field.



<http://www.i-opentech.com/municipal>

Simplifying Field Data Capture.
Modular, Powerful, and Easy to Use.

Case Study

Streamlining Public Works Field Data Management

Background

The City seems to have very knowledgeable and well-experienced staff. Due to lack of a centralized tool, staff started to develop their own toolsets, often by creating extensive spreadsheets, or by creating self-administered database systems. Several on-site interviews were conducted with staff from the City by i-Open Technologies in order to find out the City's current status and where it needs to be in both short- and long term, as an enterprise wide strategy. In order to leverage existing investment in data and extend that data to other departments in order to streamline work in the field and capture data in the field, i-Open has developed a custom map based viewer on top of i-Open's inspectworX solution.

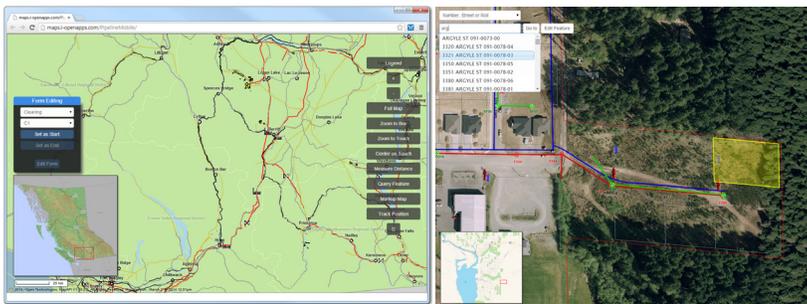
The Issue

The City has a number of corporate databases as well as an extensive set of data of digital and hard copy data within various departments in the organization. In many cases this data is disconnected from other relevant data. For example, while CAD files store information on the location of property throughout the City, it is not connected to the Financial system which stores the information about the assessment, taxes and owners. Further, high value utility data (water, sanitary, storm and roads) exists in CAD files, spreadsheets, databases, scanned and hard copy service cards. Staff have to look in multiple locations to get the required information to do their daily jobs and this takes extra time, results in duplicate and missing data and ultimately decreases their ability to service their constituents. City staff are mandated by their corporate Strategic Goals to: "ensure a responsive and high performance workforce". Current process require field crews to carry a paper version of maps and service cards in every vehicle. Preparing these documents takes a full week of work per year and have a high cost for production and they are out of date immediately. They are therefore only updated yearly and so current data has to be checked before heading out to the field.

The field staff also finds that they make numerous trips back to the office to verify information or pick up related service cards. Field updates to data may not make it back into the system if the paper does not get submitted to Engineering.

Solution

i-Open has worked with the City to implement tools to automate the linking of disparate systems to allow access both in and out of the office. InspectworX is a mobile app (specifically designed for iPads) using industry standard development tools (HTML5 and Javascript) to allow Public Works staff to access CAD maps, aerial photos, property and utility information as well as Service Cards on their iPads even with limited network connectivity. Based on their specific work flows field staff can make changes to information based on what they find in the field and submit it back to the appropriate staff for update. They can lookup detailed data about properties or assets based on links between various corporate systems. The application can utilize various features on the device such as the GPS and Camera to capture other valuable field data.



Result

The City has seen significantly reduced overhead in accessing maps and service cards and allows access to all historical and relevant data that normally wouldn't be available readily in the field saving further time by reducing return trips to the office. Markups that often went missing are now tracked as part of the digital record and photos of actual field conditions can be attached to the record easily instead of getting stuck on the camera. An unexpected side benefit is the access to information during "emergency events" such as blockages and water line breaks when time is of the essence is priceless.

Summary

Once siloed data is now freed and integrated through a mobile application improving service to constituents, increasing efficiencies through timely access to relevant data, reducing data duplication and improving the capture, quality and flow of data from the field into the corporate record.

Functional Challenge

- Need to deploy an affordable portable device
- Limited network connectivity
- Dead spots throughout city
- Large volume of data
- Various departments involved in managing data
- Variety of tools in use
- Needs to be simple to use
- Use common tools & formats

Technical Value Propositions

- Integrating various layers of Data:
 - Various departments: Finance, Eng, Public Works, Planning, Fire
 - Various sources: SQL Server, Excel, AutoCAD, DWG, MS Access, JPGs, PDFs
 - Various applications: Tempest, FDM, AutoCAD Map and Civil 3D
- HTML5 based application delivered on iPad but available in browser:
 - Device Agnostic
 - Platform Agnostic
 - Connected or Disconnected with Full Sync Ability
- Compiled iPad app leveraging:
 - Fast drawing speeds
 - Internal GPS
 - Internal Camera

So Why Is This Important?

- Significantly reduced overhead in accessing maps & Service Cards
- Leverage current data
- All historical Service Cards, photos and other relevant data is available to field in near real time and on demand
- Infrastructure and base data
- Offline access to full dataset



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7337 Welton St. Mission, BC
+1.877.256.7722