

City of Los Angeles

California

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Honorable Members of the City Council
City of Los Angeles
Room 395, City Hall
Los Angeles, CA 90012

Attention: Information Technology and General Services Committee

Subject: **PREDICTIVE ANALYTICS DATA PLATFORM RECOMMENDATIONS
(CF NO. 13-0543)**

Dear Councilmembers:

Pursuant to City Council Motion (Wesson/Buscaino), Council File No. 13-0543, the Information Technology Agency (ITA) is submitting the following report on recommendations for establishing a predictive analytics platform that will help City leaders make better decisions to address and prevent problems before they develop.

Background

“Predictive Analytics” is the statistical study of current or historical data for the purpose of identifying patterns and solving existing, or even future issues. Predictive analytics tools have been used in a number of industries, including actuarial science (pension planning), marketing (customer behavior), finance (assessing market risk), and auditing (fraud prevention). In government, predictive analytics models have been successfully used to for crime prevention, reducing worker’s compensation fraud, improving revenue collections, and forecasting and/or analyzing the causes of other civic challenges. More and more, government entities are experimenting with predictive analytics as a means to quantify, correlate, and understand the complex problems facing their decision makers.

Predictive Analytics at the City of Chicago

The City of Chicago is a recent example of a local municipality investing in a data platform for predictive analytics. Over the last two years, Chicago has been consolidating various types of city data into a single data repository (an “Open Data” Initiative). The data is maintained in a central repository (<https://data.cityofchicago.org/>). The “datasets” include financial information, crime statistics, 311 service requests,



transit information, public works infrastructure, city permits, etc. After consolidating the data from various city departments, they partnered with private sector vendors and academia to brainstorm various city issues and develop predictive analytic models to extrapolate possible solutions. Through this effort, the City of Chicago has initially identified better methods for graffiti prevention, reduction in shopping cart thefts, and rodent control. Ultimately, the City of Chicago hopes to utilize predictive analytics to improve more prominent city issues, such as the homicide rate and natural disaster response.

Predictive Analytics at the City of Los Angeles

The City of Los Angeles has two notable initiatives that currently utilize predictive analytics models. The LAPD TEAMS II system consolidates information regarding LAPD officers, supervisors, and managers to promote best policing practices and identify potential at-risk behavior. The LADOT Automated Traffic and Surveillance Control (ATSAC) system monitors traffic conditions and adjusts traffic lights based on existing or predicted traffic congestion. In addition, various departments have implemented or experimented with smaller predictive analytics projects to improve their department operations.

What Would It Take for the City of Los Angeles to Develop A Comprehensive Predictive Analytics Data Platform?

1. **Centralize Key City Data** - As identified with the City of Chicago and other municipalities, the first step in a predictive analytics data platform is the consolidation of City data from multiple City departments and systems. Several cities have utilized Open Data Initiatives as a means to centralize high value city information into one standard platform and location. The Information Technology Agency believes that this is a good foundational start to the development of a cross-department predictive analytics data platform. This would require a partnership from other City departments to identify and electronically provide high value data to the common Open Data platform. This recommendation is further detailed in the ITA report to Council regarding a potential Open Data Initiative (CF No.13-0112). Initial pilot efforts have shown the feasibility and value of such an initiative.
2. **Hire a Chief Data Officer** - On June 6th, the City of Baltimore announced the establishment of a Chief Data Officer (CDO) to manage their open data initiative, "Big Data" reporting efforts, and predictive analytics projects. Other major cities with this CDO position include City/County of San Francisco and Chicago. The City of Los Angeles could greatly benefit from a CDO to centralize, coordinate, and leverage the multitude of high-value City data spread across its departments.
3. **Outreach to Other Local Government Entities** - The City should outreach to other local government agencies for the purposes of open data sharing and leveraging the relevant information that they independently gather. This includes:

- County of Los Angeles (health, housing, social services, etc.)
 - Metropolitan Transportation Authority (timetables, trip planning, etc.)
 - Los Angeles Unified School District (school facilities, adult learning, etc.)
 - Other local cities and counties.
4. **Identify Civic Challenges (“Problem Statements”)** - The City should solicit the various City departments, elected officials, and even the public-at-large to help define the civic challenges that the predictive analytics tool would seek to improve. These “problem statements” summarize the issues that need to be resolved and provide a necessary starting point for the development of predictive analytic tools.
5. **Develop Performance Analytic Tools & Techniques** - The City should then outreach to local universities and/or specialized predictive analytics vendors to develop the complex models used to analyze the consolidated City data for the specified civic challenges (problem statements).
6. **Establish A Long-Term Maintenance Strategy** - The City would need to ensure the Open Data website is properly updated, new datasets are published, and periodic outreach for public feedback occurs. In addition, the City would need to secure the necessary funding required to maintain and enhance the performance analytics tools and techniques utilized on the City data.

Fiscal Impact Statement

If the City were to implement the recommendations outlined in this report, the project would involve costs associated with the centralization of City data (vendor website hosting services and programming of department interfaces by departmental staff) and the development of performance analytics tools. Initial estimates are as follows:

- **Centralization of City Data (Open Data)**
 - **Vendor Website Hosting Services** – Annual cost between \$50,000 and \$80,000.
 - **Programming of Departmental Interfaces** – Depends on the number of datasets and level of difficulty for participating departments to develop. ITA estimates that 1 to 2 FTE would be required for 3 to 6 months to initially establish a substantial number of City datasets. ITA would recommend the use of contractor resources for this one-time development.
- **Development of Predictive Analytics Tools** – Depends on scope of civic challenges provided by the City and extent of specialized contractors required for the development of performance analytics tools. ITA estimates 1 to 2 FTE would be required to develop, enhance, and maintain the predictive analytics models used for this effort. Again, the use of contractor resources may be appropriate for this highly specialized, complex position.

Recommendations

ITA recommends:

1. Implement a City of Los Angeles Open Data Initiative program consolidating key datasets from City departments as a foundational step, as summarized in previous Open Data Initiative Feasibility report to Council (CF No. 13-0112).
2. Hire a Chief Data Officer, as described in this report and detailed in the previous Open Data Initiative Feasibility report to Council (CF No. 13-0112).
3. Establish a departmental working group to identify possible predictive analysis challenge areas as well as review governmental best practices in this area. The working group would then propose to the Council and Mayor two to three predictive analysis pilot initiatives and the funding/resources required for implementation.
4. Implement a predictive analytic tools pilot in partnership with local universities and specialized vendors and report back to Council and Mayor on findings and recommendations for expansion.

I trust that the information provided herein provides the necessary background and recommendations for the development of a predictive analytics data platform for the City of Los Angeles. Please contact me or Mr. Ted Ross, Assistant General Manager, at (213) 978-3311, should you have any questions or require additional information.

Respectfully submitted,



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