2018 Results deep dive – Information Technology

Topic 1: Decision Support Services

Introduction

The IT Department is leading efforts to make City data more readily available internally and externally.

- Internally, IT is leading an effort to develop an internal enterprise data warehouse (called *The Analytics Hub*) that integrates data from multiple City departments. The goal is to make it easier for City staff to access the data they need to do their jobs – within their own department or across departments.

- Externally, IT manages the Open Data Portal by helping City departments post their data and ensuring open datasets are refreshed regularly. The goal of this effort is to make it easier to provide data to the public.
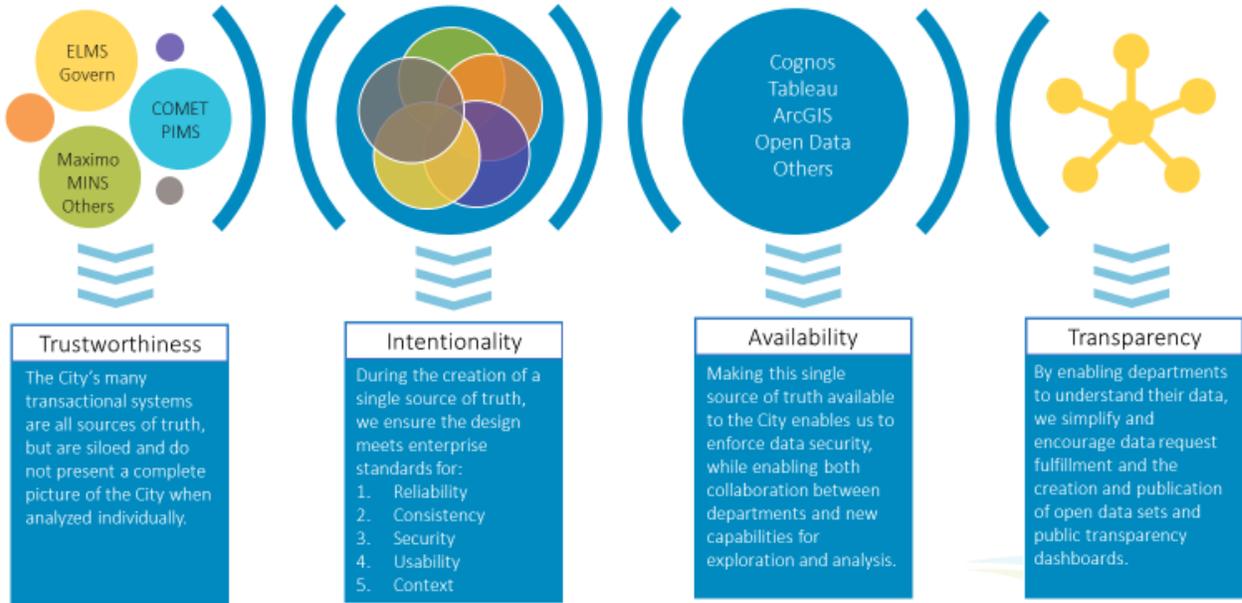
One key challenge IT faces is that department participation in the Analytics Hub and Open Data Portal is voluntary. Because of this, participation is uneven within and across departments, and datasets are prioritized based on which departments are willing to share their data rather than how frequently they are requested.

Discussion questions

1. **Is the City's goal to get to a point where data from all departments is available internally (on the Analytics Hub) and externally (on the Open Data Portal)? If so, what will it take to get there?**
    a. Each City department considers itself to be the owner of its data. They are deciding what data goes into The Analytics Hub.
    b. The emphasis on sharing data is not universal. Many departments control access to their data because of concerns about privacy, security, and how the data may be interpreted.

2. **What is the goal of open data, who are our target audiences, and what are the best methods to present data to the varied audiences?**
    a. The public would like free, easy access to understandable data. Theme from the 2018 Community Connections Conference: *"The community should have access to timely data and information, and it should be easy to access and freely available to anyone. In terms of resources and tools, the City should leverage technology to help the community search/sift data."*
    b. While the Open Data Portal is a home for raw data files, many residents tend to prefer data in context. Interactive visualizations have a significantly higher number of views than the open data portal page for the same data set. However, efforts to visualize Open Data sets are currently based in IT rather than in the departments, which adds to IT's workload.
    c. While many cities offer open data portals, each city organizes its data differently and provides different levels of detail. However, national models to measure transparency do exist, such as the U.S. City Open Data Census from the Sunlight Foundation and Open Knowledge International. (http://us-cities.survey.okfn.org/about/) The City's current score on the Open Data Census is 39%.

putting it together
The Analytics Hub

ELMS Govern · **COMET PIMS** · **Maximo MINS Others**

Cognos · Tableau · ArcGIS · Open Data · Others

Trustworthiness
The City's many transactional systems are all sources of truth, but are siloed and do not present a complete picture of the City when analyzed individually.

Intentionality
During the creation of a single source of truth, we ensure the design meets enterprise standards for:
1. Reliability
2. Consistency
3. Security
4. Usability
5. Context

Availability
Making this single source of truth available to the City enables us to enforce data security, while enabling both collaboration between departments and new capabilities for exploration and analysis.

Transparency
By enabling departments to understand their data, we simplify and encourage data request fulfillment and the creation and publication of open data sets and public transparency dashboards.

Public Data Comparison for Visualizations and Open Datasets

Ratio of Visualization Hits to Open Dataset Views

Category	Ratio
Air Quality in Minneapolis (one-time study)	3.3 to 1
Officer Involved Shooting	45.7 to 1
Police Stop Data	89.4 to 1
Police Use of Force	31.7 to 1
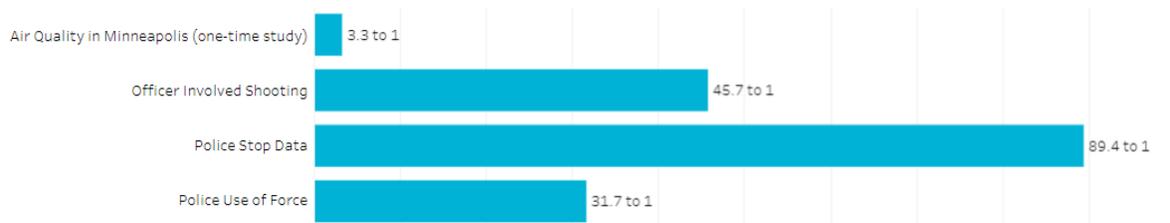
Counts of Visualization Hits and Open Dataset Views
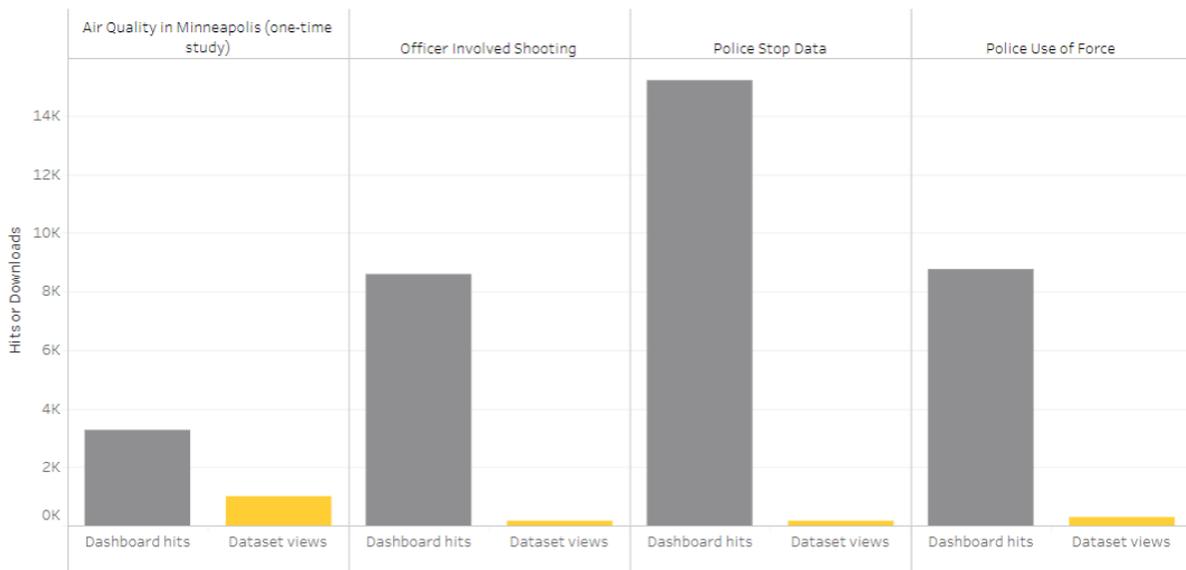
Current Open Data Portal and Analytics Hub participation by Department and Division

Department/division	Open Data Portal	Analytics Hub - Available to all City analysts	Analytics Hub - Available to some City analysts	
Assessor	Yes	Yes	N/A	🟢
City Attorney	No	No	Yes	🟡
City Clerk	Yes	In progress	No	🟡
City Coordinator/311	Yes	No	Yes	🟡
City Coordinator/911	No	No	Yes	🟡
City Coordinator/Administration	Yes	No	N/A	🟡
City Coordinator/Civil Rights	No	No	Yes	🟡
City Coordinator/Communications	No	No	N/A	🔴
City Coordinator/Emergency Management	No	No	N/A	🔴
City Coordinator/Finance	No	No	Yes	🟡
City Coordinator/HR	No	No	Yes	🟡
City Coordinator/IT	Yes	Yes	N/A	🟢
City Coordinator/NCR	Yes	No	N/A	🟡
City Coordinator/Property Services	No	No	N/A	🔴
CPED - Development Services	Yes	Yes	N/A	🟢
CPED - Economic Policy and Development	Yes	Yes	Yes	🟢
CPED - Housing Policy and Development	No	Yes	Yes	🟡
CPED - Long Range Planning	N/A	N/A	N/A	🔴
Fire	Yes	No	N/A	🟡
Health	Yes	Yes	Yes	🟢
Police	Yes	No	Yes	🟡
Public Works - Business Administration	Yes	Yes	N/A	🟡
Public Works - Fleet Services	No	No	No	🔴
Public Works - Solid Waste & Recycling	No	No	Yes	🟡
Public Works - Surface Water & Sewers	No	Yes	No	🟡
Public Works - Traffic & Parking Services	Yes	No	No	🟡
Public Works - Transportation Engineering & Design	Yes	No	No	🟡
Public Works - Transportation Maintenance & Repair	Yes	No	No	🟡
Public Works - Transportation Planning and Programming	No	No	No	🔴
Public Works - Water Treatment & Distribution	No	Yes	No	🟡
Regulatory Services - Animal Control	No	In progress	Yes	🟡
Regulatory Services - Fire Inspection Services	No	Yes	N/A	🟡
Regulatory Services - Housing Inspection Services	Yes	Yes	N/A	🟢
Regulatory Services - Operations and Community Engagement	No	Yes	N/A	🟡
Regulatory Services - Traffic Control	Yes	Yes	N/A	🟢

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U.S. CITY OPEN DATA CENSUS
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Minneapolis, MN

35% Open	**39%** Score

Breakdown

Dataset	Breakdown	Year	Score ⬆	
Business Listings	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Crime Reports	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Parcels	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
⌐ Awaiting review 👤 anonymous 📅 6 days ago	🔓 👁 $ ▢ ⊙ ▤	2018	0%	☑
Police Use-of-Force	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Property Assessment	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Service Requests	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Zoning	🔓 👁 $ ▢ ⊙ ▤	2018	100%	☑
Property Transfers	🔓 👁 $ ▢ ⊙ ▤	2018	83%	☑
Budget	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Code Violations	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Construction Permits	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Emergency Calls	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Employee Salaries	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Lobbyist Activity	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Procurement Contracts	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Public Facilities	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Restaurant Inspections	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Spending	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Traffic Crashes	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑
Website Analytics	🔒 👁 $ ▢ ⊙ ▤	2018	0%	☑

Source: http://us-cities.survey.okfn.org/place/minneapolis

Topic 2: Infrastructure Services

Introduction

When City employees experience errors with City software, or other technology isn't working as it should, they call the IT Service Desk to help fix it. Each contact is tracked as an incident.

Incidents are a normal aspect of technology use, and in fact, IT staff are encouraged to create incidents so work can be better understood for strategic decision-making. However, increases in certain types of incidents, like break-fix incidents, can require a large amount of IT staff time.
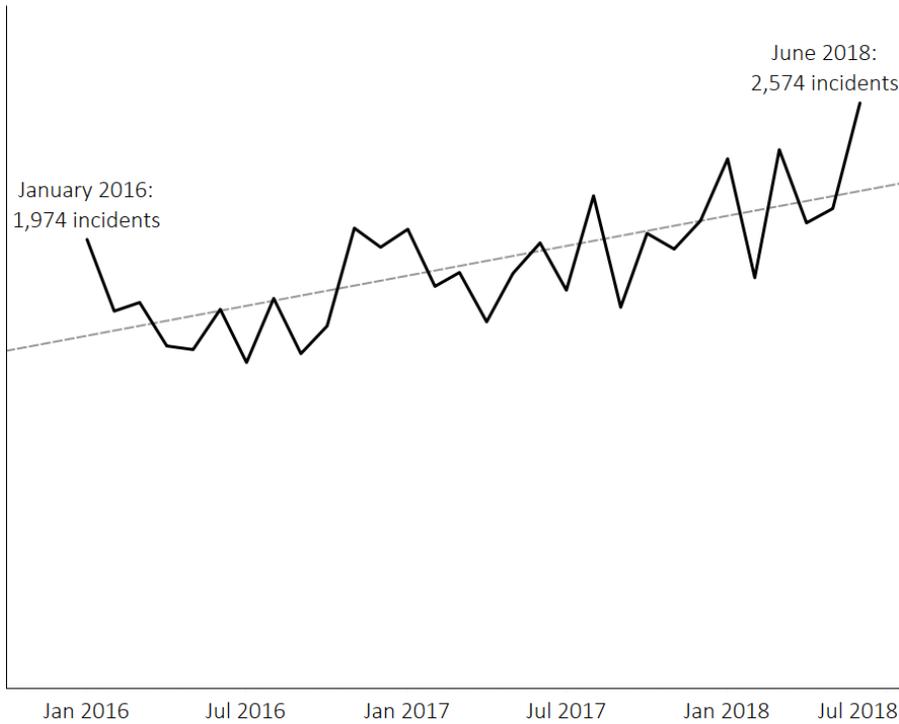
1. **How can IT help decrease the volume of repetitive incidents, like access and permissions?**
    a. While the total number of IT incidents varies by month, there has been a general upward trend. IT staff contribute to the increase as incidents are created to track work.
    b. Access and permissions account for the largest number of incidents in recent years. 80% of access and permissions incidents were due to passwords or getting locked out of accounts (representing 1/3 of total incident volume).
    c. Actions IT is taking to help decrease the volume of repetitive incidents:
        i. Better preparing for new technology by ensuring IT projects have improved change management and training plans.
        ii. Anticipating special and seasonal events – being proactive.
        iii. Supporting and equipping department staff with more tools to choose from for the task at hand.
        iv. Working to keep systems aligned (e.g. O365 and Office 2016).
        v. Increasing self-service.
        vi. Better communicating changes to department staff.
        vii. Better communicating the need for departments to consult with IT when making technology decisions (which may cause unintended problems).
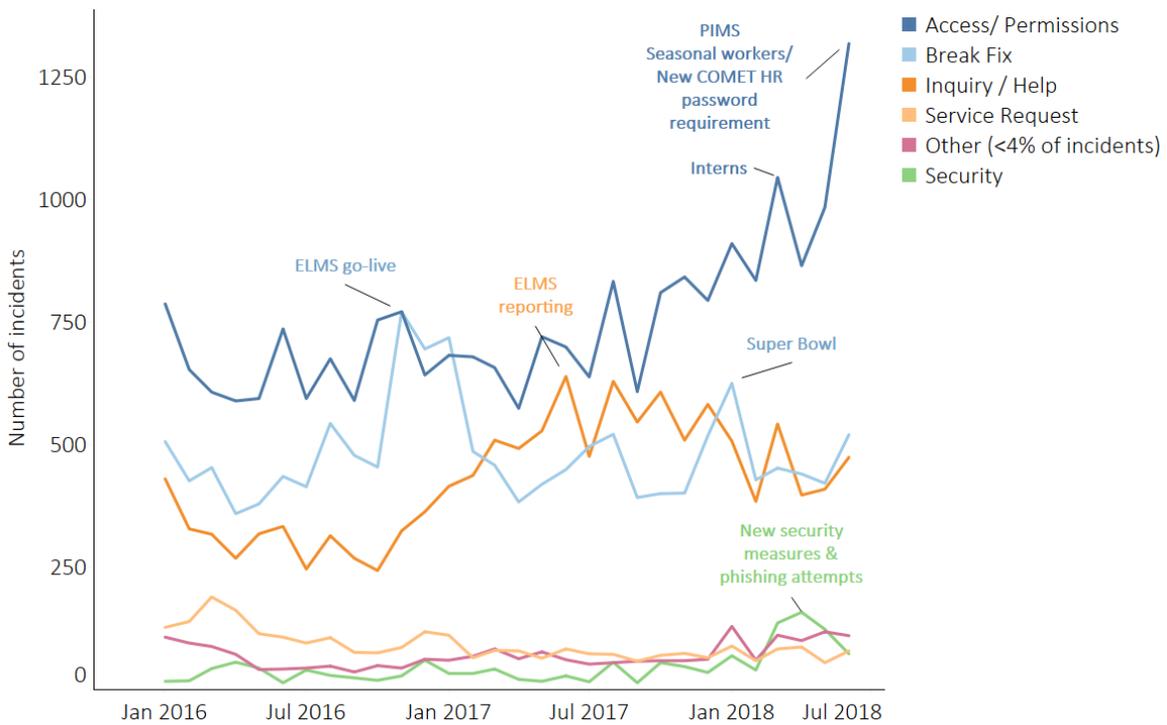
2. **How can IT help to proactively address issues contributing to the break-fix workload?**

    a. Break-fix incidents were the second highest incident category, amounting to 26% of all IT incidents in recent years. The main drivers of break-fix incidents over the past several years have been the Enterprise Land Management System (ELMS) launch and Outlook.
        i. The ELMS launch in November 2016 resulted in 700 incidents in 2017 (13% of the 2017 break-fix total); and 92 incidents in the first half of 2018 (3% of the 2018 break-fix total).
        ii. Break-fix incidents related to Outlook have remained relatively consistent since 2016 (6.5% of the 2017 break-fix total). The City has complex integrations that require significant testing when the City adopts new versions of Office. As a result, the City is not a first adopter of new releases.
        iii. City employees have experienced Outlook mail send/receive errors, due to incompatibility of Office 2010 and O365. The current rollout of Office 2016, which will be complete in August, will address these errors.
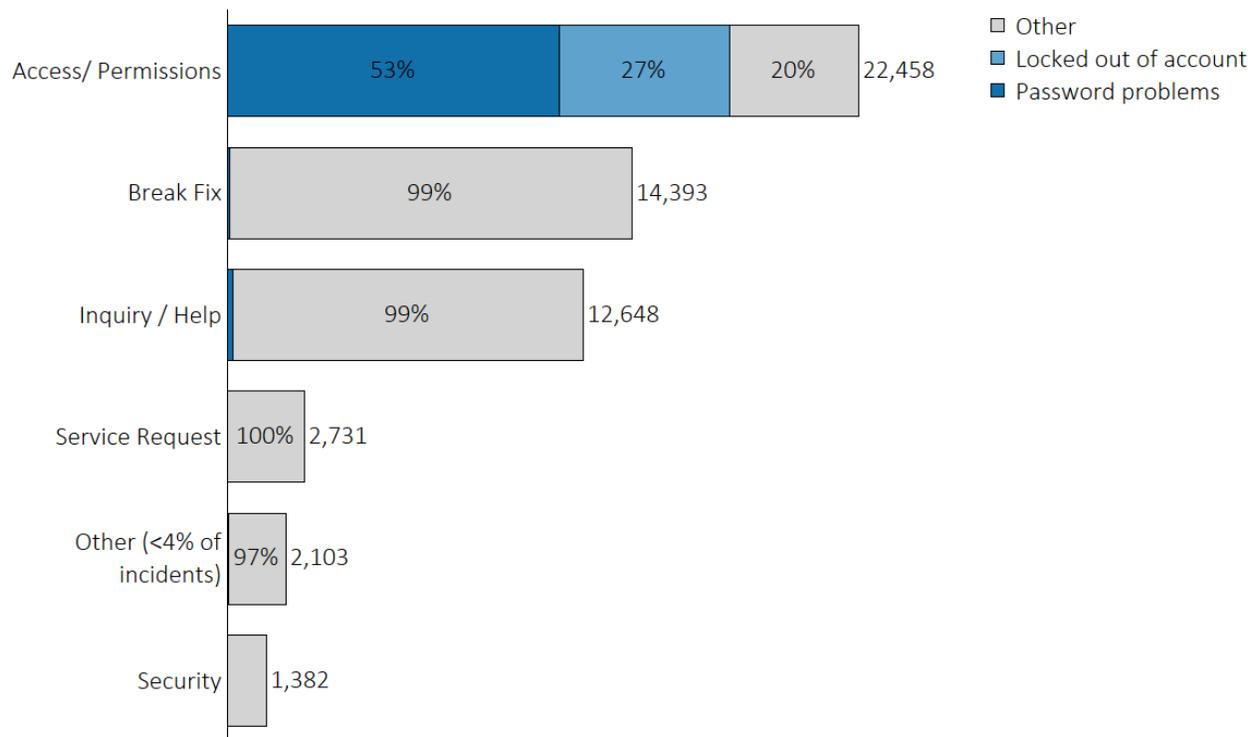
While the total number of IT incidents varies by month, there has been a general upward trend.

June 2018:
2,574 incidents

January 2016:
1,974 incidents

| Jan 2016 | Jul 2016 | Jan 2017 | Jul 2017 | Jan 2018 | Jul 2018 |

Access and permissions account for the largest number of incidents. Break-fix incidents spiked in late 2016 due to the ELMS launch.

■ Access/ Permissions
■ Break Fix
■ Inquiry / Help
■ Service Request
■ Other (<4% of incidents)
■ Security

PIMS
Seasonal workers/
New COMET HR
password
requirement

Interns

ELMS go-live

ELMS
reporting

Super Bowl

New security
measures &
phishing attempts

Number of incidents

80% of access and permissions incidents were due to passwords or getting locked out of accounts (representing 1/3 of total incident volume).

Category	Password problems	Locked out of account	Other	Total
Access/ Permissions	53%	27%	20%	22,458
Break Fix			99%	14,393
Inquiry / Help			99%	12,648
Service Request			100%	2,731
Other (<4% of incidents)			97%	2,103
Security				1,382

Legend: Other, Locked out of account, Password problems

Example of how new system can impact infrastructure costs and incidents

New Technology (ELMS)

↑ Infrastructure costs — Increase from 3 servers to 15 servers

↑ Calls to Service Desk — 13% of break/fix in 2017; 3% of break/fix 1H2018