Data & Analytics Portal (DAP):

A dapper solution to data disorder

Jason Tenter and Eleanor Crumblehulme
Saskatchewan Information and Library Services (SILS)

Tuesday, March 23 – Thursday, March 25

Presentation Contents

- What is SILS?
- Developing Data Services
- It’s Too Complicated!
- We Can Make It Better
- Assessment and Future Plans
- Questions?

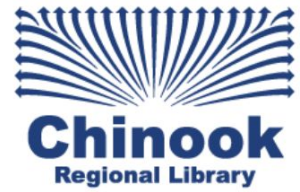
Presentation Contents

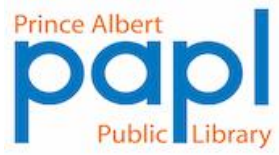
What is SILS?

What is SILS?

SILS is: Saskatchewan Information and Library Services

- A consortium of all the public libraries in Saskatchewan
  - Formed in 2009
  - 11 libraries (3 city libraries, 7 regional libraries, 1 northern library system)
  - Over 300 branches





What is SILS?

The SILS Office is…

- A team of 6 staff created by the consortium to provide technology support for the member libraries
  - Overseen by the board of library directors
  - An executive director, 2 sys. admins., an infrastructure analyst, a web developer, and an executive assistant
  - Shared ILS, website development and hosting, mobile apps, notification services, email support, OverDrive, staff intranet, and... *data reporting*
  - Library staff submit issues/requests through a ticketing system

Developing Data Services

Developing Data Services

- Post-migration to Polaris in 2015 we had:
  - Polaris out-of-the-box reports - through the desktop client and directly through **SSRS** (SQL Server Reporting Studio)
  - **SimplyReports**
- Didn't cover all needs, but SSRS and the Report Builder app. allowed us to customize
  - Copied and tailored Polaris reports and created some from scratch
  - Ensure comparability with data from previous ILS (Sierra), but also developing improved reports in Polaris/SSRS

Developing Data Services

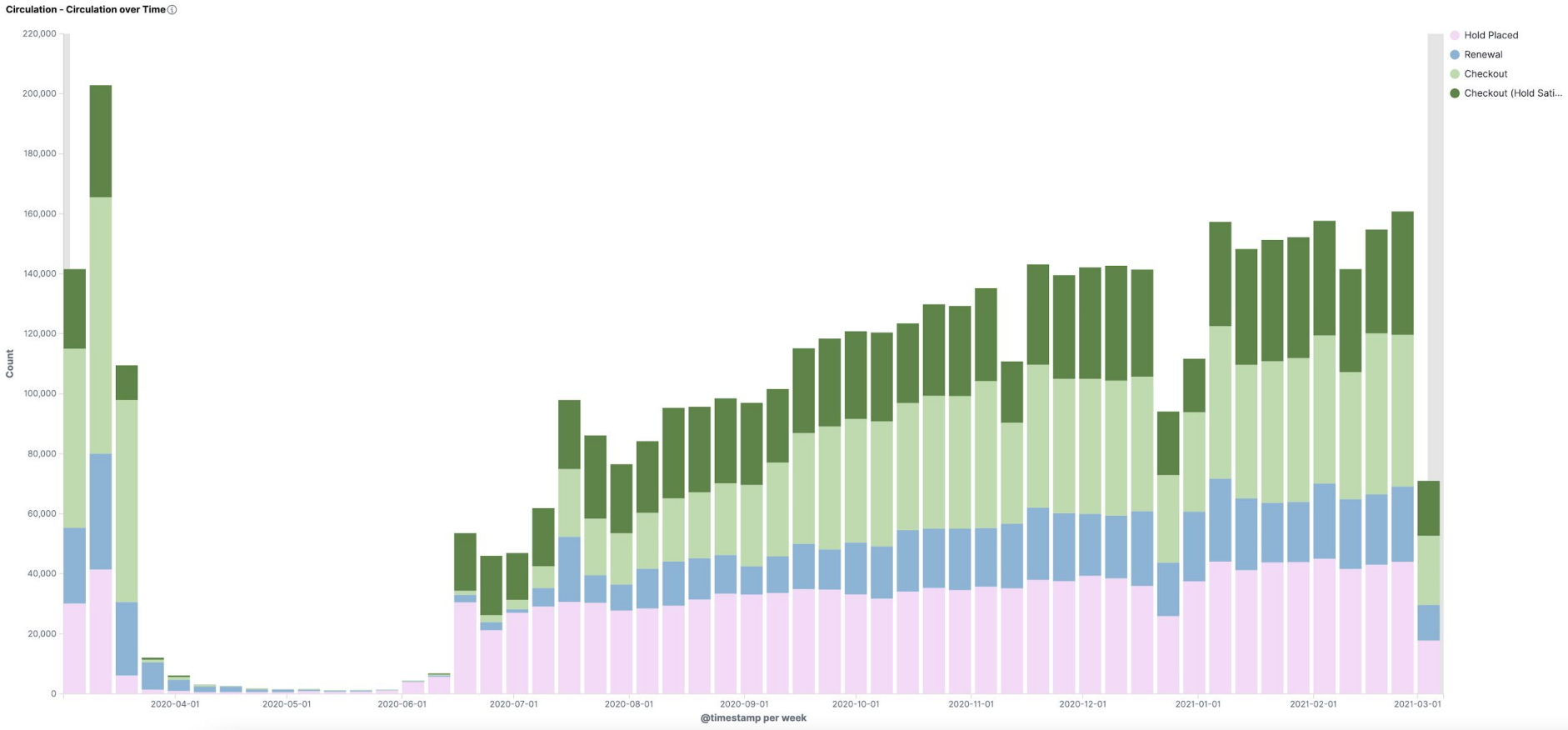
- Through consultation the consortium developed standardized, scheduled reporting
  - Prev. each library produced own reports, making comparison difficult
  - A committee was struck to lead the discussion and come to consensus on what data definitions to use and what to report on
  - Monthly & annual scheduled reports were developed, and exports saved to a Google Drive (our **Statistics Repository**)
  - SimplyReports used for ad hoc needs
- **Google Analytics** was adopted for website usage stats

Developing Data Services

- Kibana is a data visualization tool that allowed us to build accessible and visually appealing dashboards
- Allows imports directly from Polaris (through SQL and SimplyReports)
  - Data indexed using ElasticSearch (an open-source app.)
- Transactional data allows a view of trends over time, and much of the data is up-to-the-minute
- SSRS reports can have performance issues, Kibana is smoother
- Great for assessment and advocacy

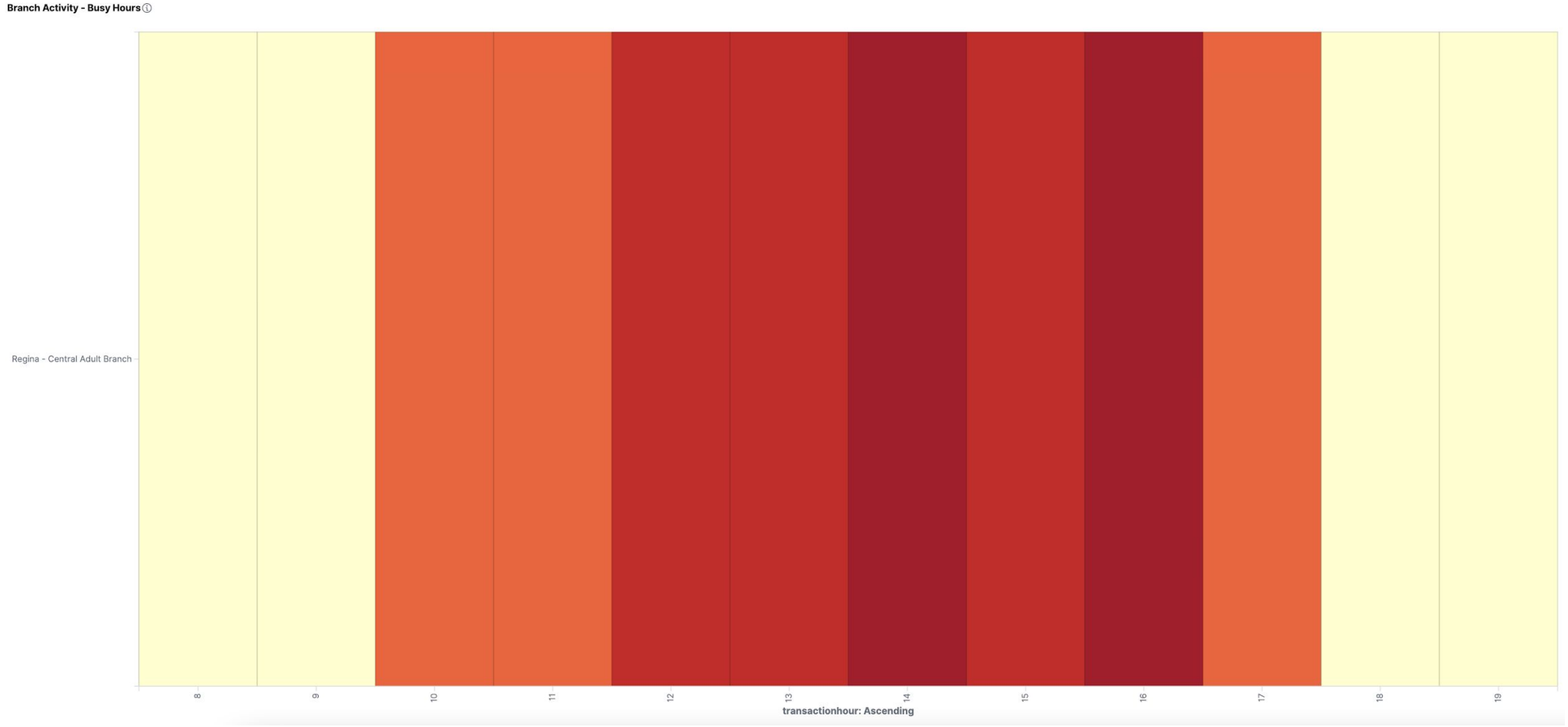
Developing Data Services

This visualization shows circulation over the pandemic, broken down by transaction type.



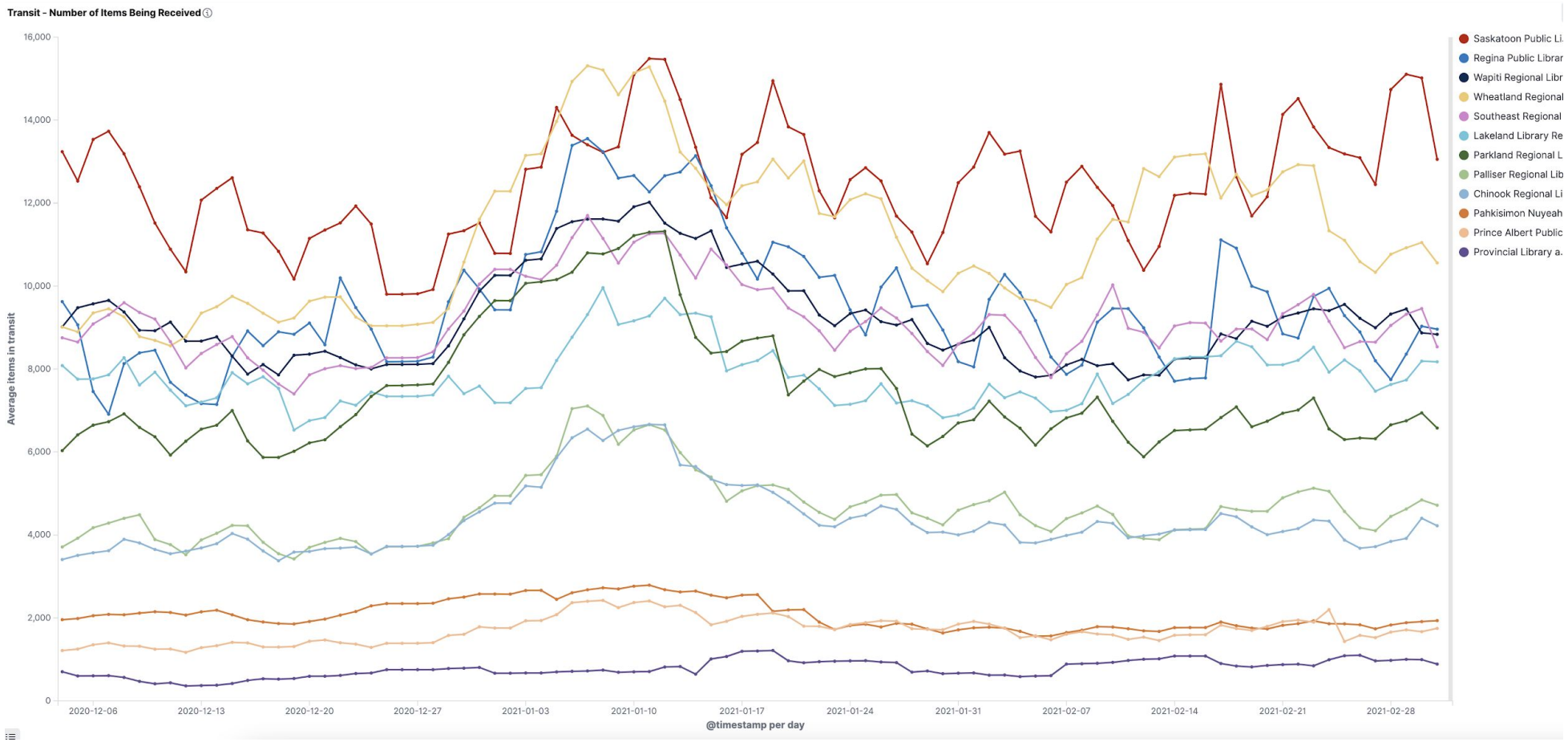
Developing Data Services

This visualization shows the busiest hours of the day at the Central Branch of the Regina Public Library.



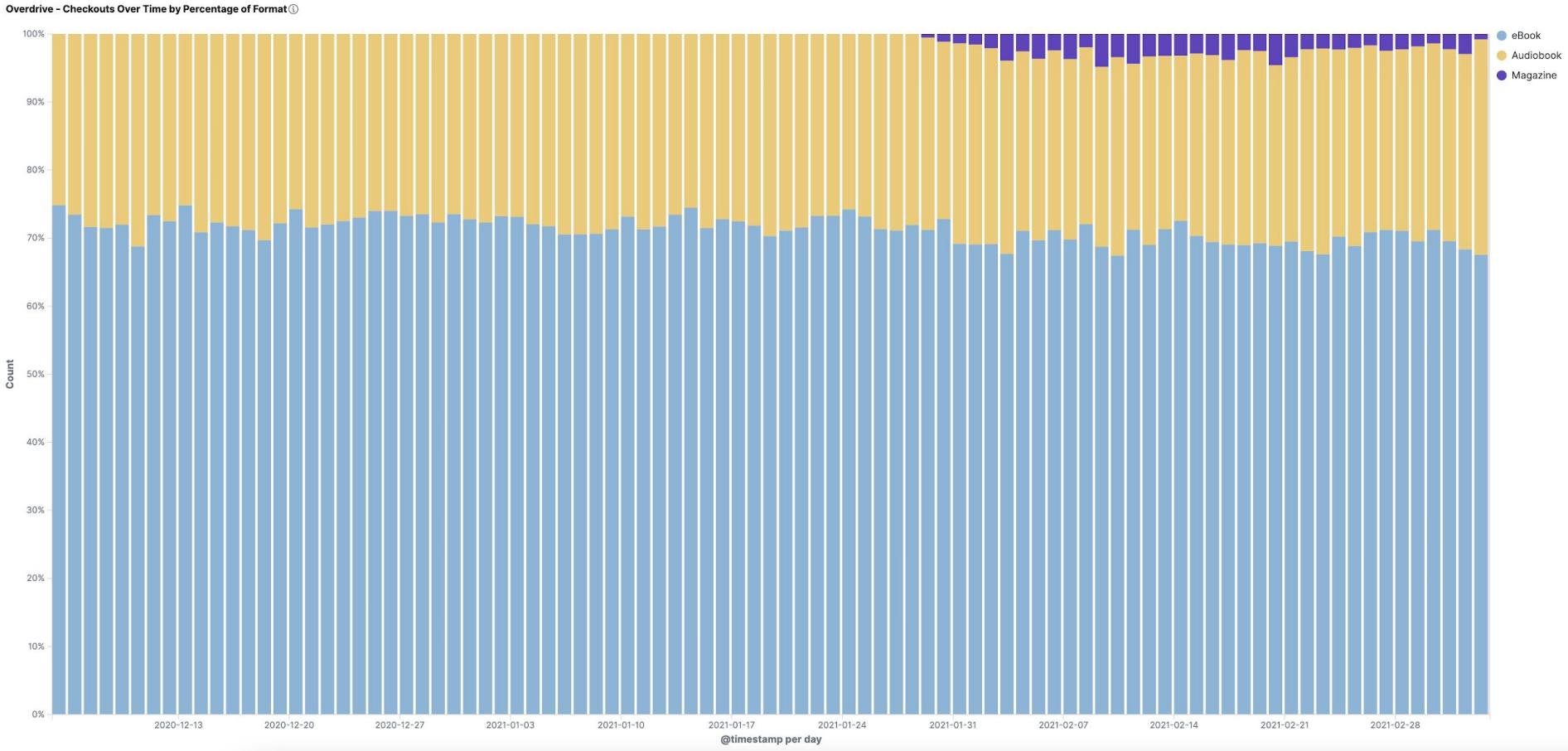
Developing Data Services

This visualization shows items in transit by receiving library.



Developing Data Services

This visualization shows OverDrive checkouts by format.

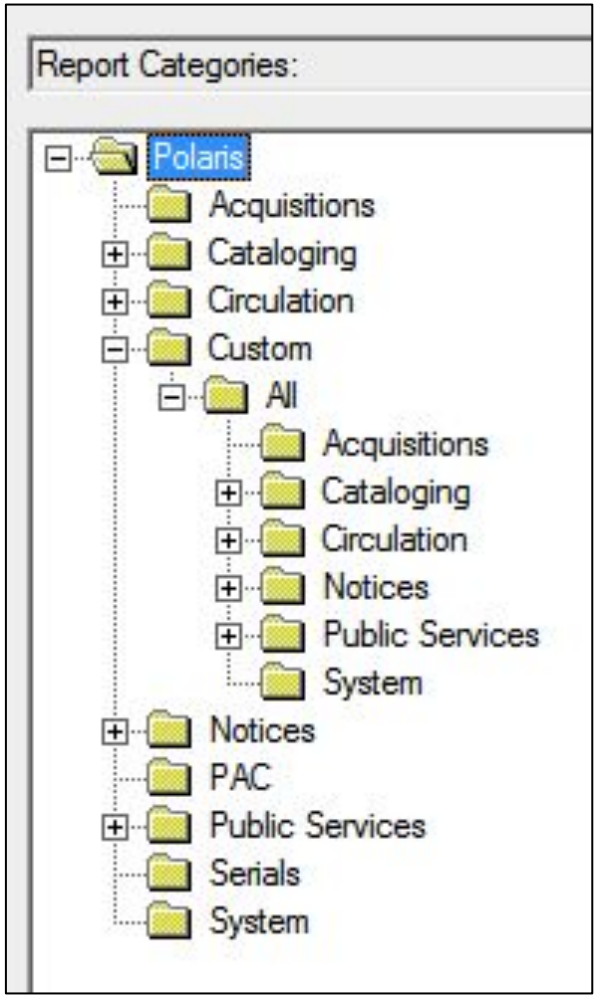


It’s Too Complicated!

It’s Too Complicated!

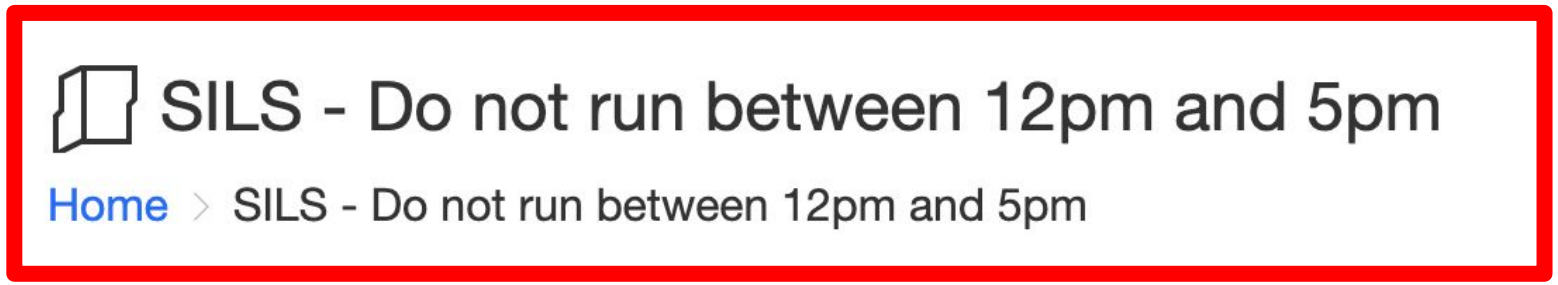
- Reporting developed as needed
  - Several reports duplicated data topics
  - Unclear which tool was best for certain data

- We received many questions about which reports to use and where to find them



It’s Too Complicated!

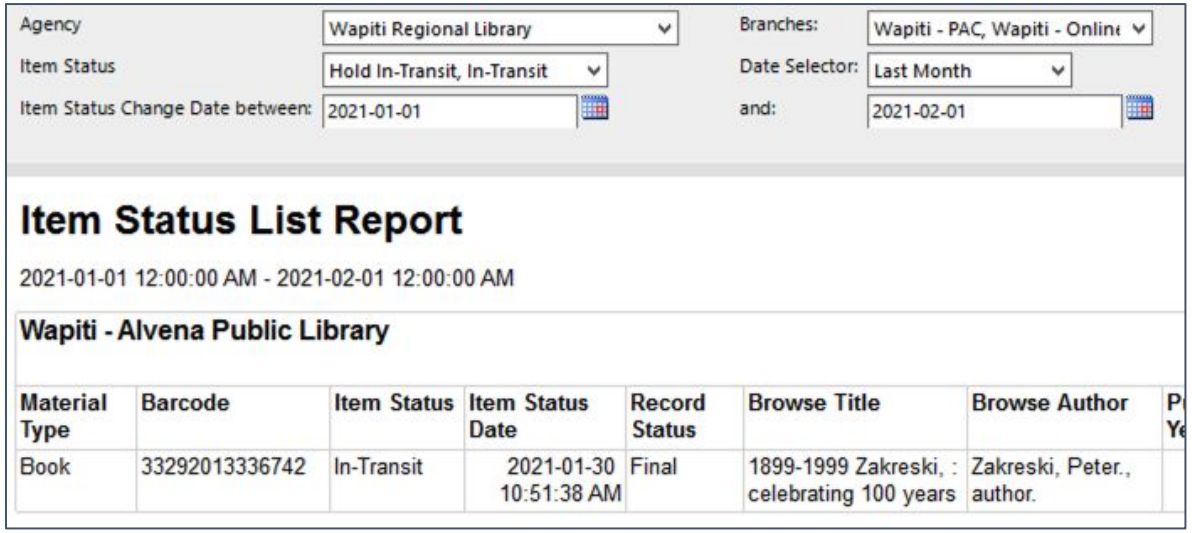
- We now had 500+ reports in SSRS
- The SSRS/client folder structure for custom reports repeated the OOTB structure - two versions of each folder
- Resource-intensive reports run at the wrong time could cause system slow-downs for the entire province! They had to be moved.
- Specialized folders broke the directory structure and made reports harder to find



It’s Too Complicated!

SSRS reports were not as helpful as they could be:

- Many did not have descriptions or definitions, e.g. type of branch being filtered on (transaction, patron, assigned branch)
- Library filters not configured well for consortium



Agency: Wapiti Regional Library
Branches: Wapiti - PAC, Wapiti - Onlin
Item Status: Hold In-Transit, In-Transit
Date Selector: Last Month
Item Status Change Date between: 2021-01-01
and: 2021-02-01

Item Status List Report

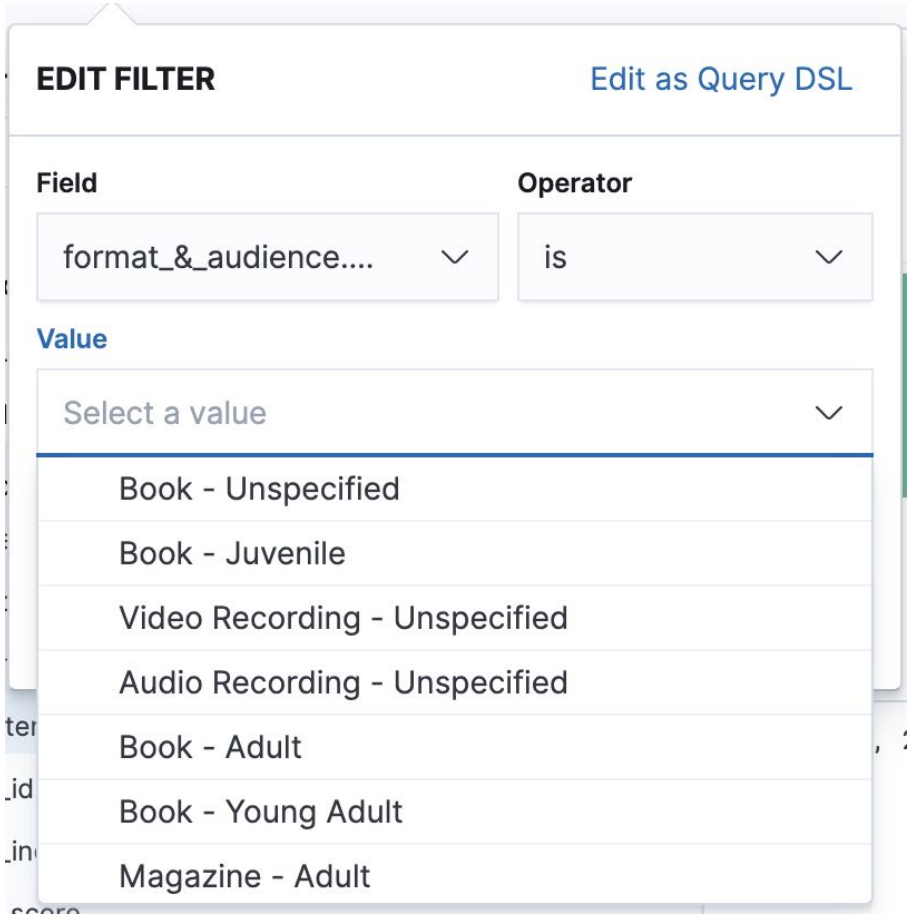
2021-01-01 12:00:00 AM - 2021-02-01 12:00:00 AM

Wapiti - Alvena Public Library

Material Type	Barcode	Item Status	Item Status Date	Record Status	Browse Title	Browse Author	P Ye
Book	33292013336742	In-Transit	2021-01-30 10:51:38 AM	Final	1899-1999 Zakreski, : celebrating 100 years	Zakreski, Peter., author.	

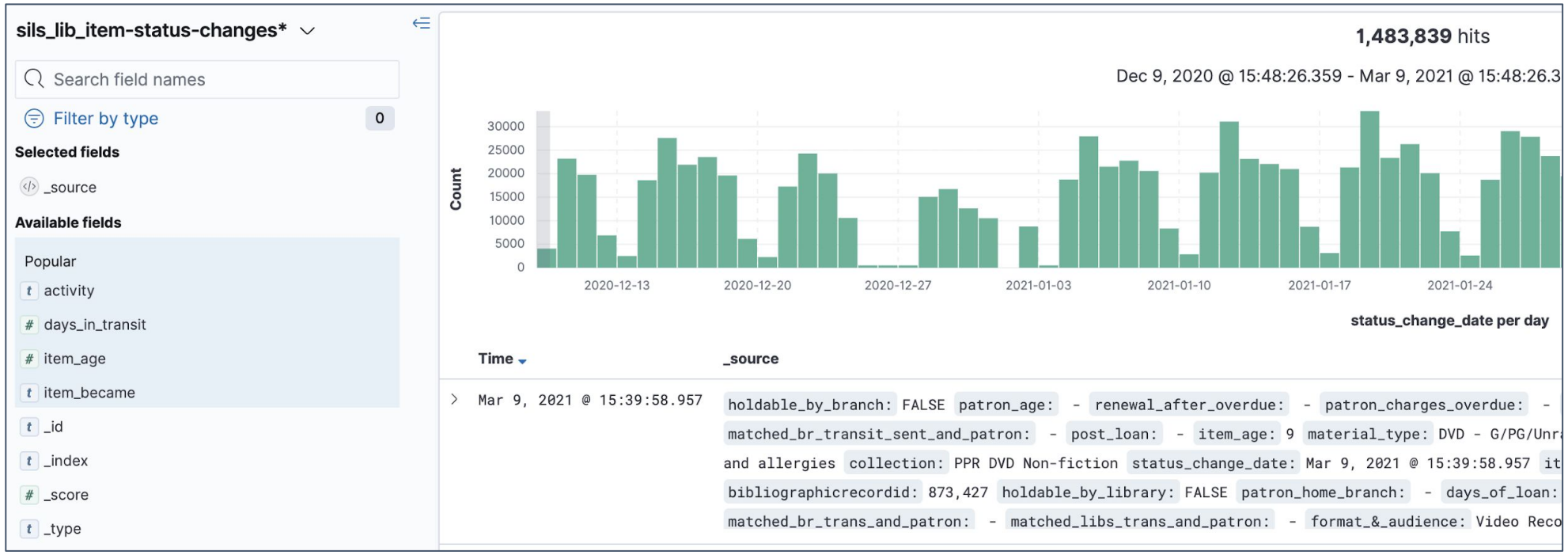
It’s Too Complicated!

Filtering in Kibana dashboards is not always intuitive.



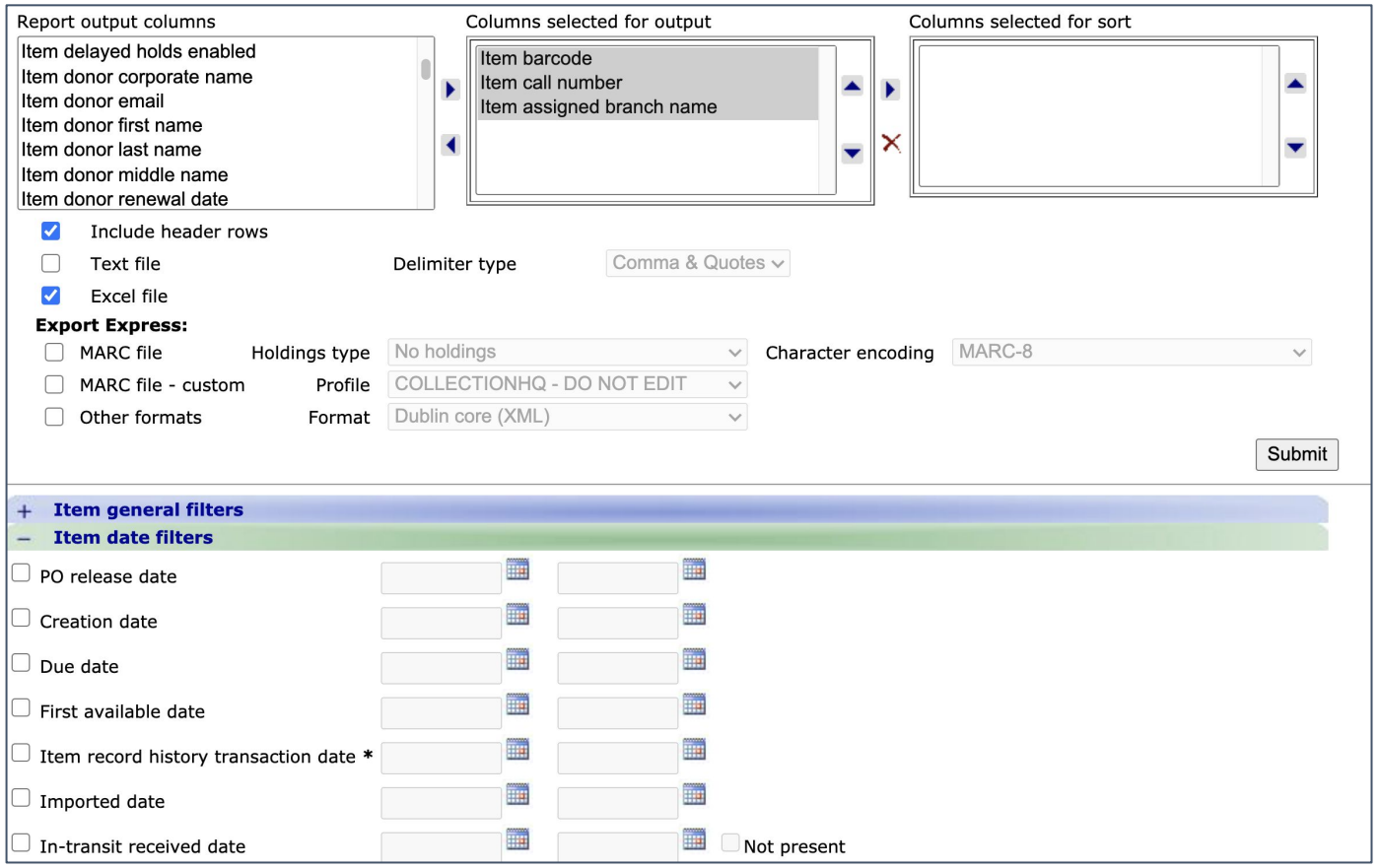
It’s Too Complicated!

The learning curve for working with raw data in Kibana can be steep.



It’s Too Complicated!

SimplyReports has a confusing filtering mechanism and data limitations.



It’s Too Complicated!

Too many options!

Putting the pieces together

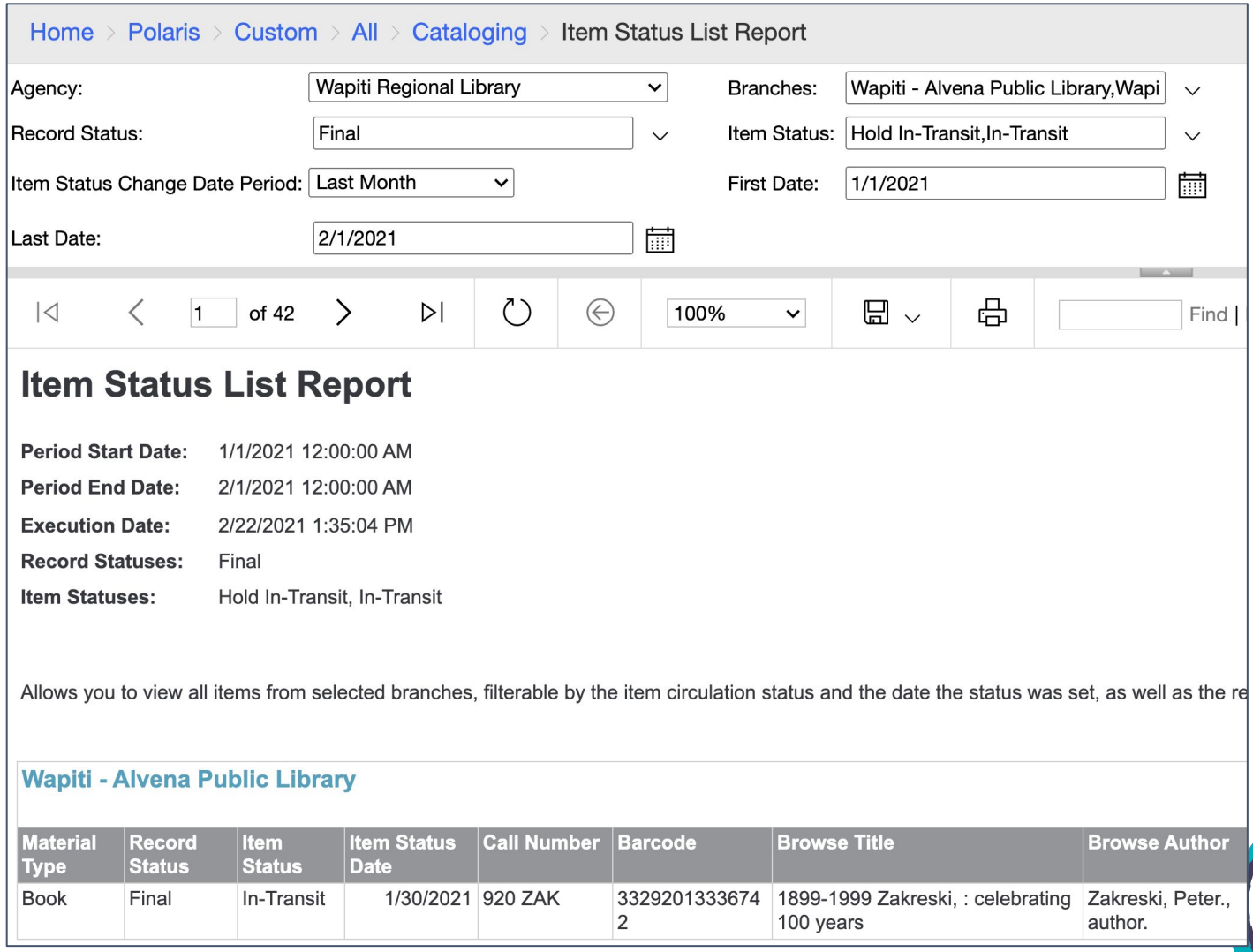
Putting the pieces together

- 2 system administrators - more capacity for improvements
- Began cleaning-up SSRS/Polaris client reports:
  - Clearer descriptions & improved filters
  - Contextual info in report exports, like begin and end dates
  - Assessed areas of report coverage, merging similar reports and filling gaps
  - Looked at usage data and developed priorities
  - Improved performance of resource-intensive reports

Putting the pieces together

A “refurbished” SSRS report:

- Filters improved
- Metadata about applied filters and description added
- Still a challenge to understand the report content without running it

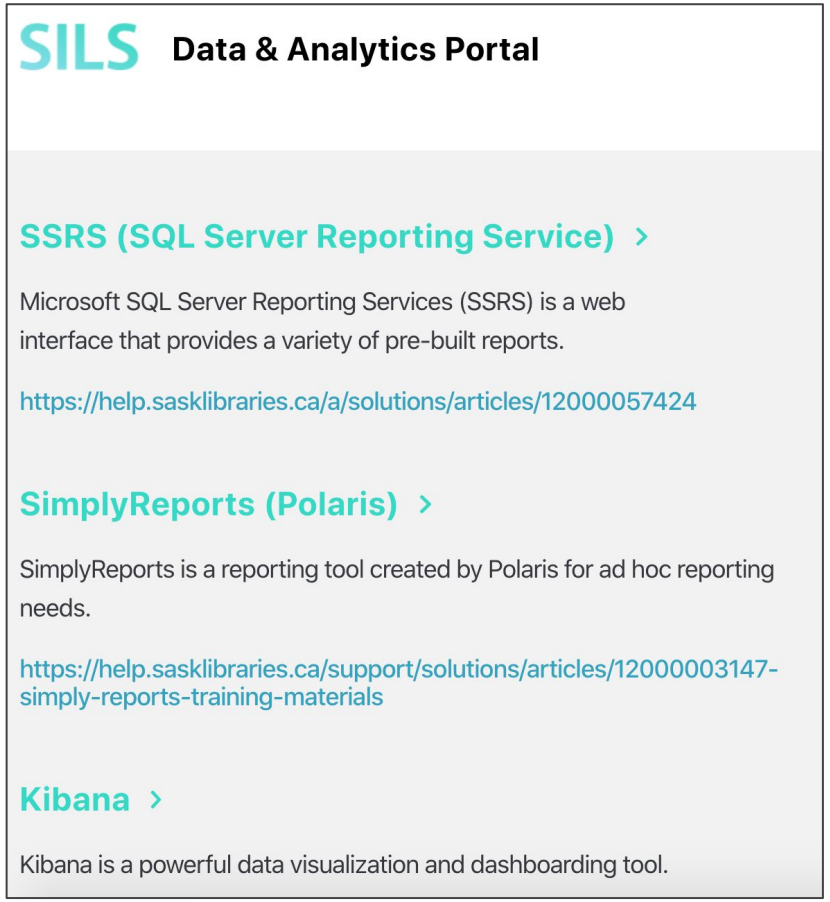


Putting the pieces together

Through this work, **DAP** (the Data & Analytics Portal) was developed!

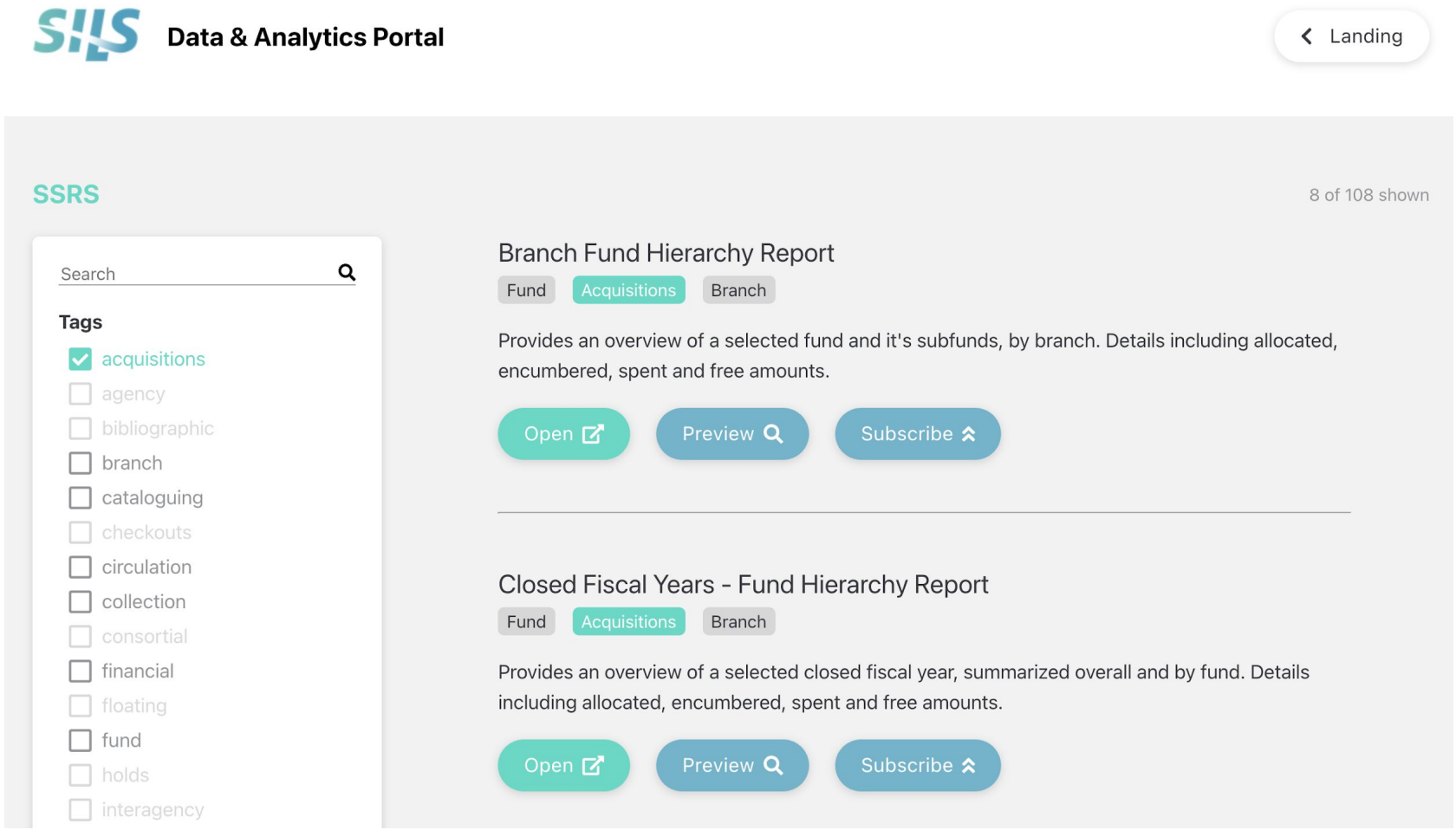
DAP is a single entry point for all SILS supported reporting tools and resources.

It includes descriptions of each tool and documentation on how to use it.



Putting the pieces together

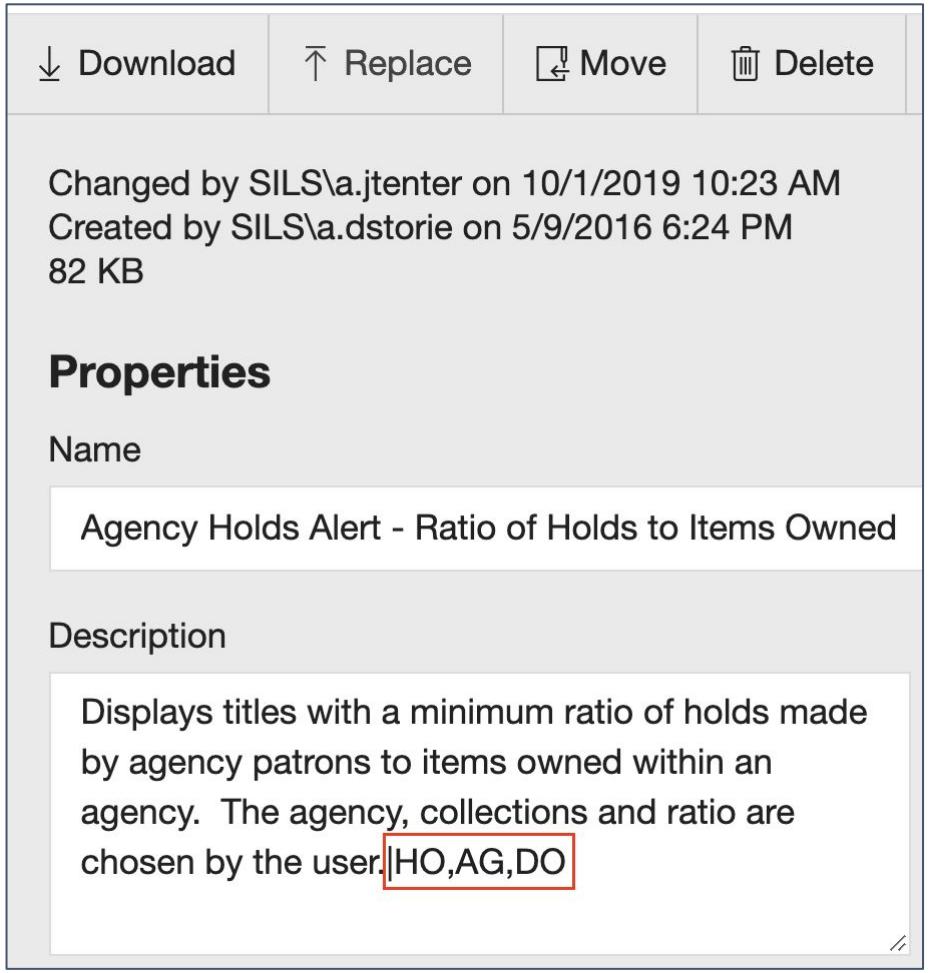
DAP's SSRS search page with tag filters applied:



Putting the pieces together

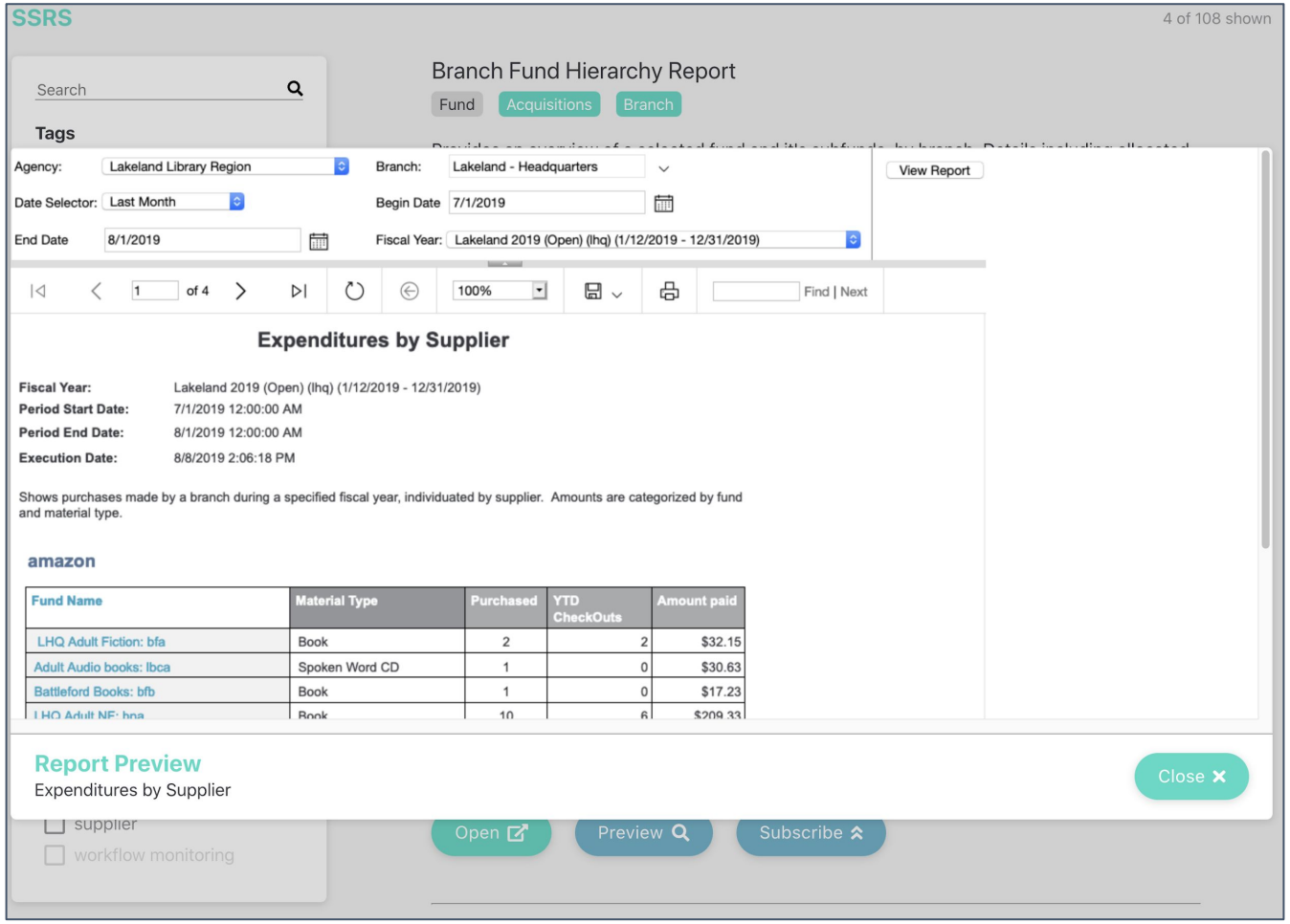
The file used to add reports to DAP includes (for each report):

- Subject tags, interpreted from abbreviations in the SSRS description
- Name
- Description
- URL for the SSRS report
- URL for the subscription page



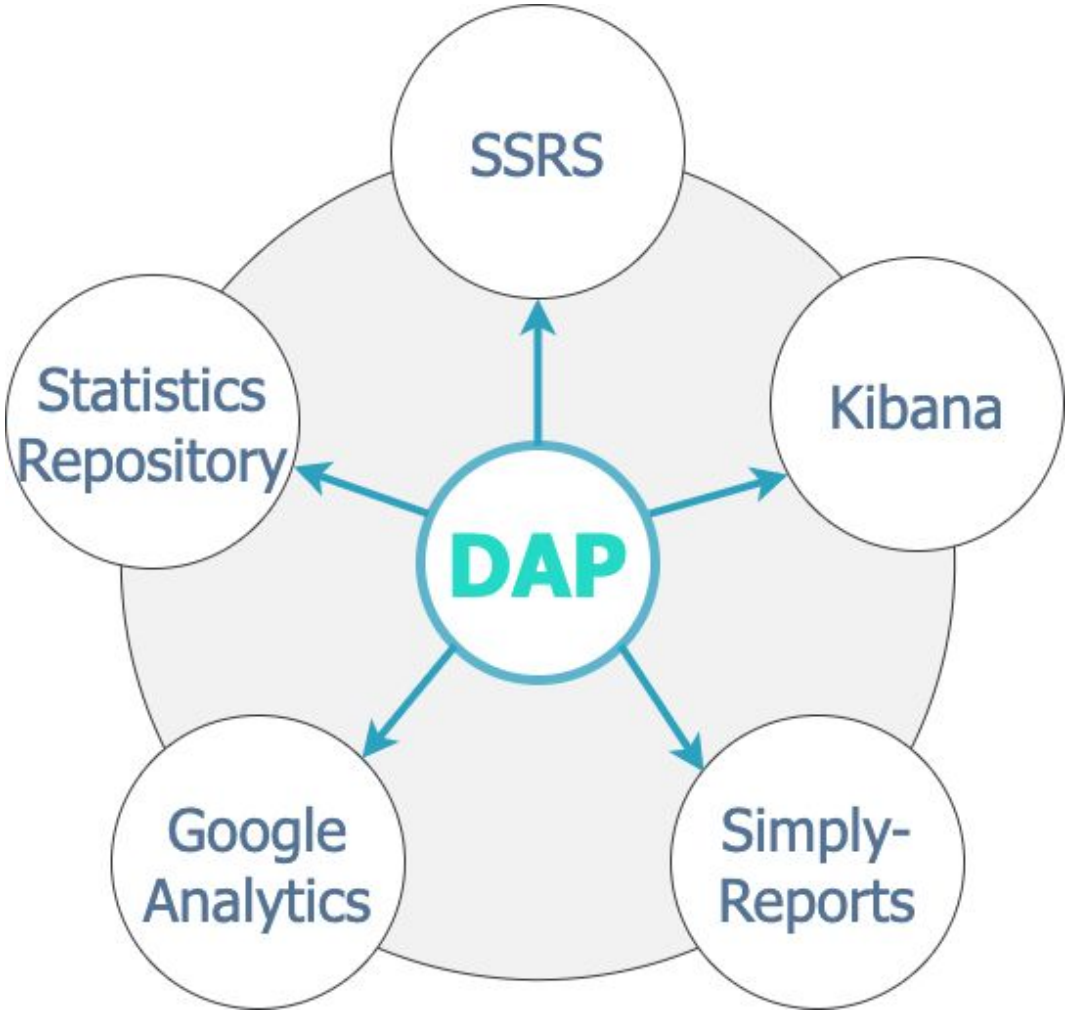
Putting the pieces together

DAP's SSRS page showing a preview screenshot:



Putting the pieces together

Reporting options are organized and accessible!



Putting the pieces together

Putting the pieces together

Additional Reporting Developments

- Report Lab:
  - A mailing list of reporting stakeholders from across the library systems
- Documentation:
  - Rewritten and made available in multiple locations
- Kibana:
  - Updated to cloud-based version
  - Recreation of dashboards/development of new dashboards

Assessment and Future Plans

Assessment and Future Plans

It's not perfect…

- Having multiple reporting sources isn't as tidy as having only one; DAP provides a unified entry point for reports, but it is a compromise
- Upkeep of SSRS report metadata (tags, screenshots) takes time/attention
- Adoption of DAP by established/existing staff members:
  - While new people who are shown DAP are making use of it, existing staff often have URLs bookmarked or other paths to reports memorized
  - The pandemic also sidetracked efforts to direct staff to DAP - everyone's attention has been elsewhere for a while

Assessment and Future Plans

It's not perfect…...but it's a big improvement

- A centralized access point for multiple resources provides context and organization to a previously disordered environment
- *We* find it helps us get to the right SSRS report!
- Improved documentation helps with onboarding new staff members, and refreshing skills for existing staff
- The cleaner, clearer reports are more helpful for interpreting and sharing data

Assessment and Future Plans

It's not perfect……yet!

- More communications and training!
- Kibana restructuring gives us an opportunity to re-think what data we want to share in dashboards, and how we want to present it
- Embed Kibana visualizations into websites (DAP, our intranet site, library web-pages) and link directly to specific Kibana dashboards from DAP
- Integrate external resources, such as Statistics Canada and other demographic data, into reporting
- Further improve and curate the SSRS reports shared in DAP

THANK YOU

We look forward to your questions!

Contacts & Links

Eleanor Crumblehulme: ecrumblehulme@sasklibraries.ca

Jason Tenter: jtenter@sasklibraries.ca

SILS: https://www.sasklibraries.ca/

Elastic Search: https://www.elastic.co/