



Using Tableau to derive insight from data at the University Library System (ULS), University of Pittsburgh

ULS

Purpose

In 2017, the University of Pittsburgh's Business Intelligence Unit subscribed to Tableau Server. The ULS's Assessment and Quality Assurance Unit was in the first group of early adopters at the University to create and publish Tableau dashboards on the Tableau Server. The aim of the initiative was to push all data collected and/or generated by the Unit to Tableau, in order to:

- streamline collection, storage, and presentation of assessment data
- increase access to data and analyses across the ULS
- facilitate understanding of complex data
- encourage data-driven decision making

This poster describes selected examples of Tableau visualizations created to support distinct projects, and how they were used by the stakeholders throughout the projects. It also discusses efficiencies gained by the Unit in producing new visualizations and updates to data.

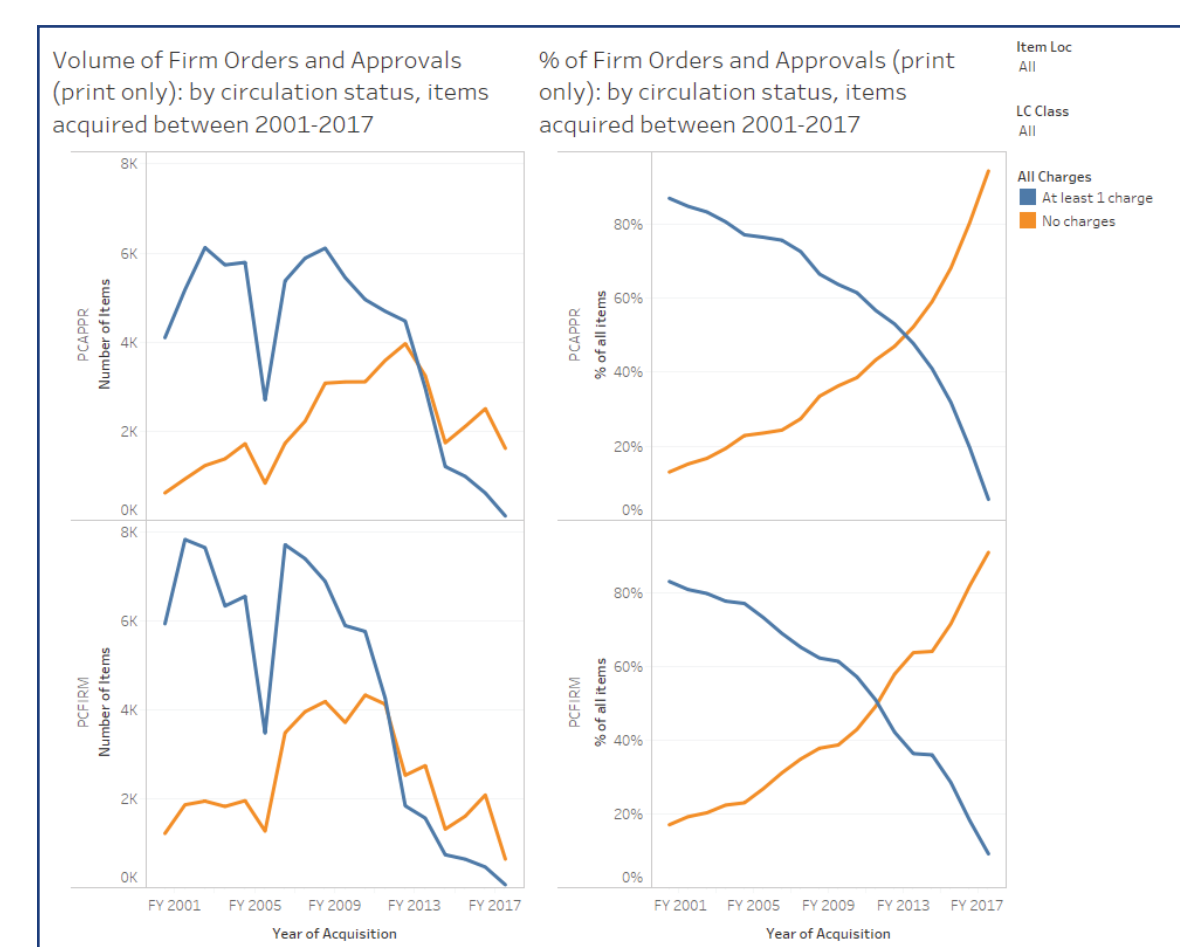
Design

Several projects, in which Tableau visualizations were used extensively, were selected to examine their role in planning, execution and assessment of those projects. We analyzed levels of engagement with the selected Tableau dashboards and solicited user feedback. We also tested data improvements and internal efficiencies by integrating direct ingestion of LMS data into the Tableau Server.

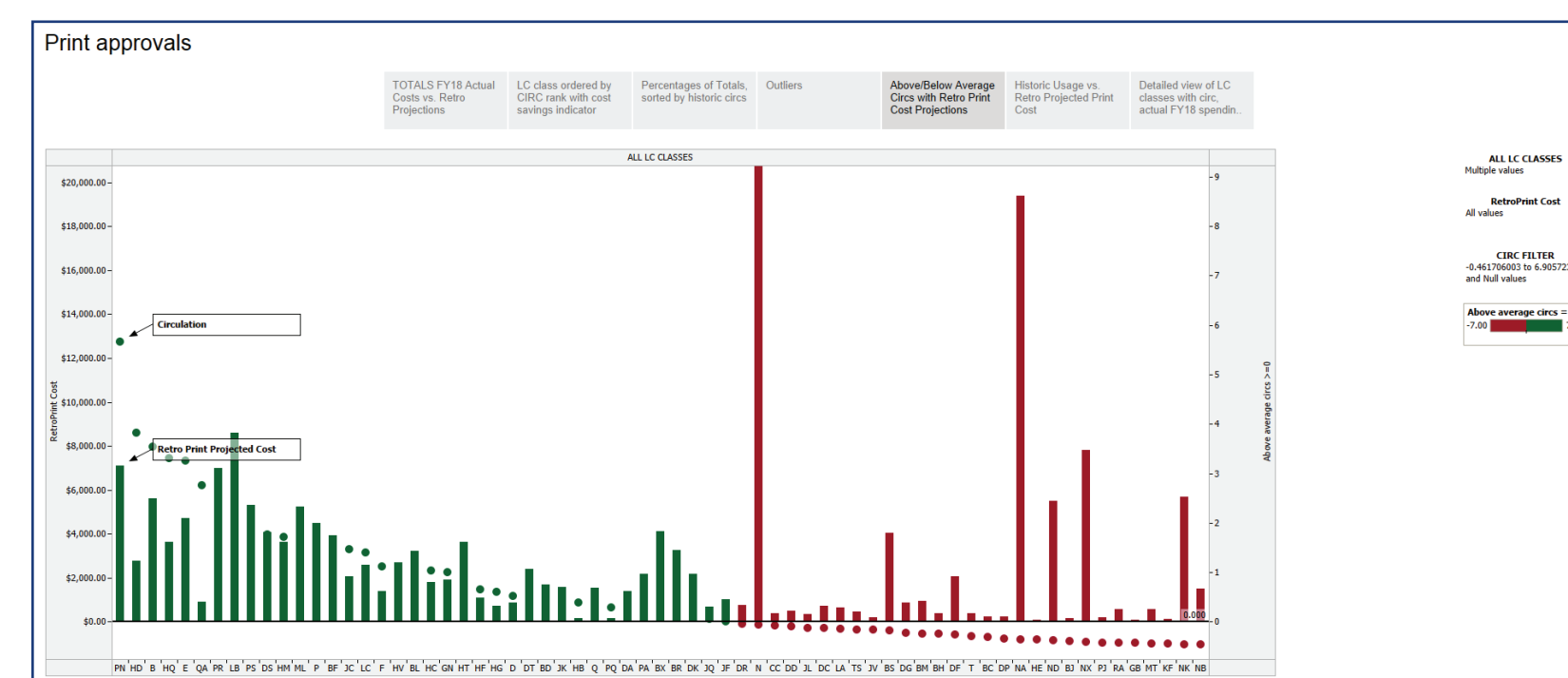
Berenika M. Webster, PhD
bwebster@pitt.edu | Director of Assessment and Quality Assurance
Anne Koenig, MPA, MLIS
amk979@pitt.edu | Assessment Senior Specialist

Case studies

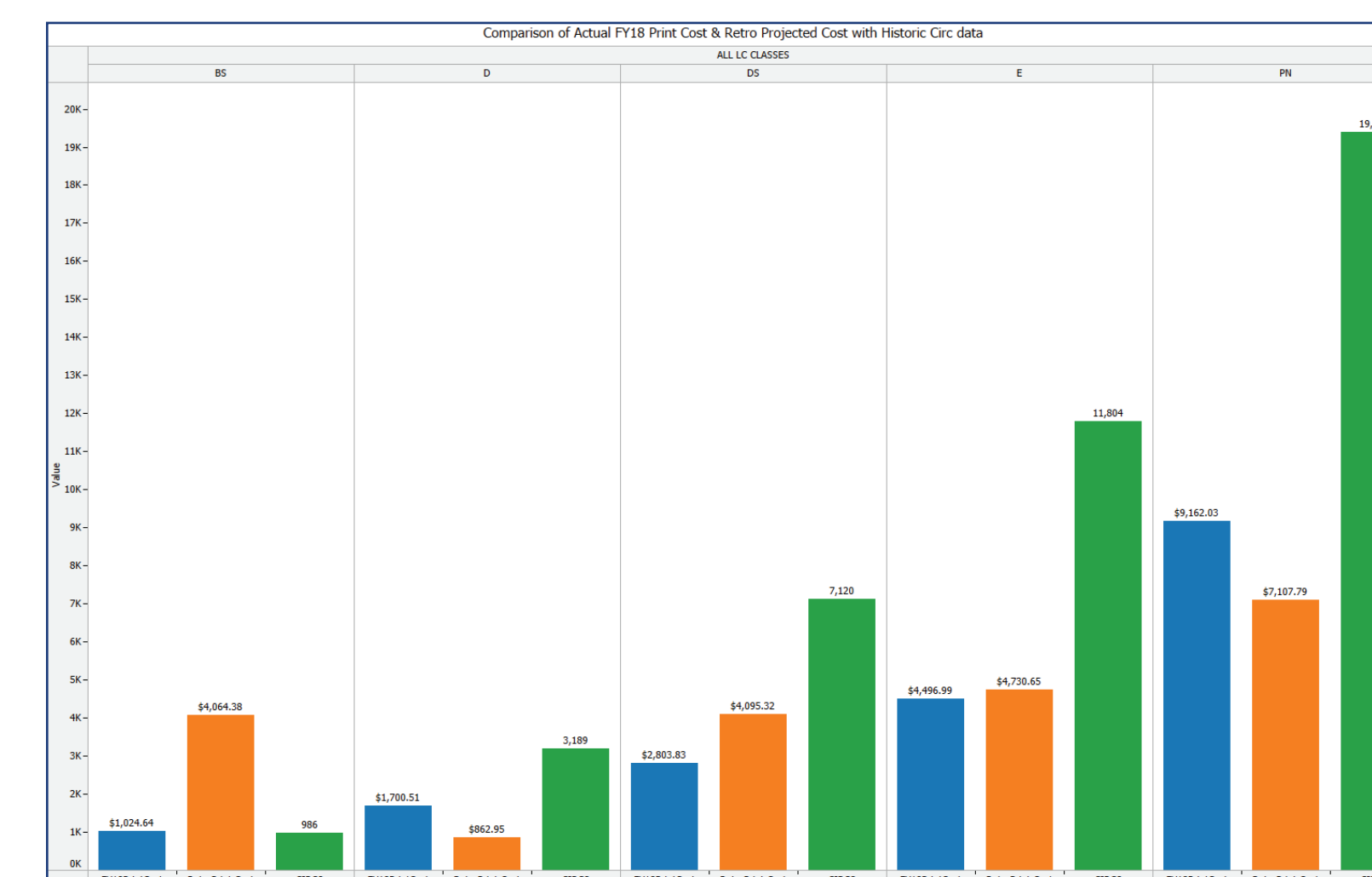
Analysis of collections use: approval plans



Do materials purchased as firm orders circulate more than materials purchased on approval?

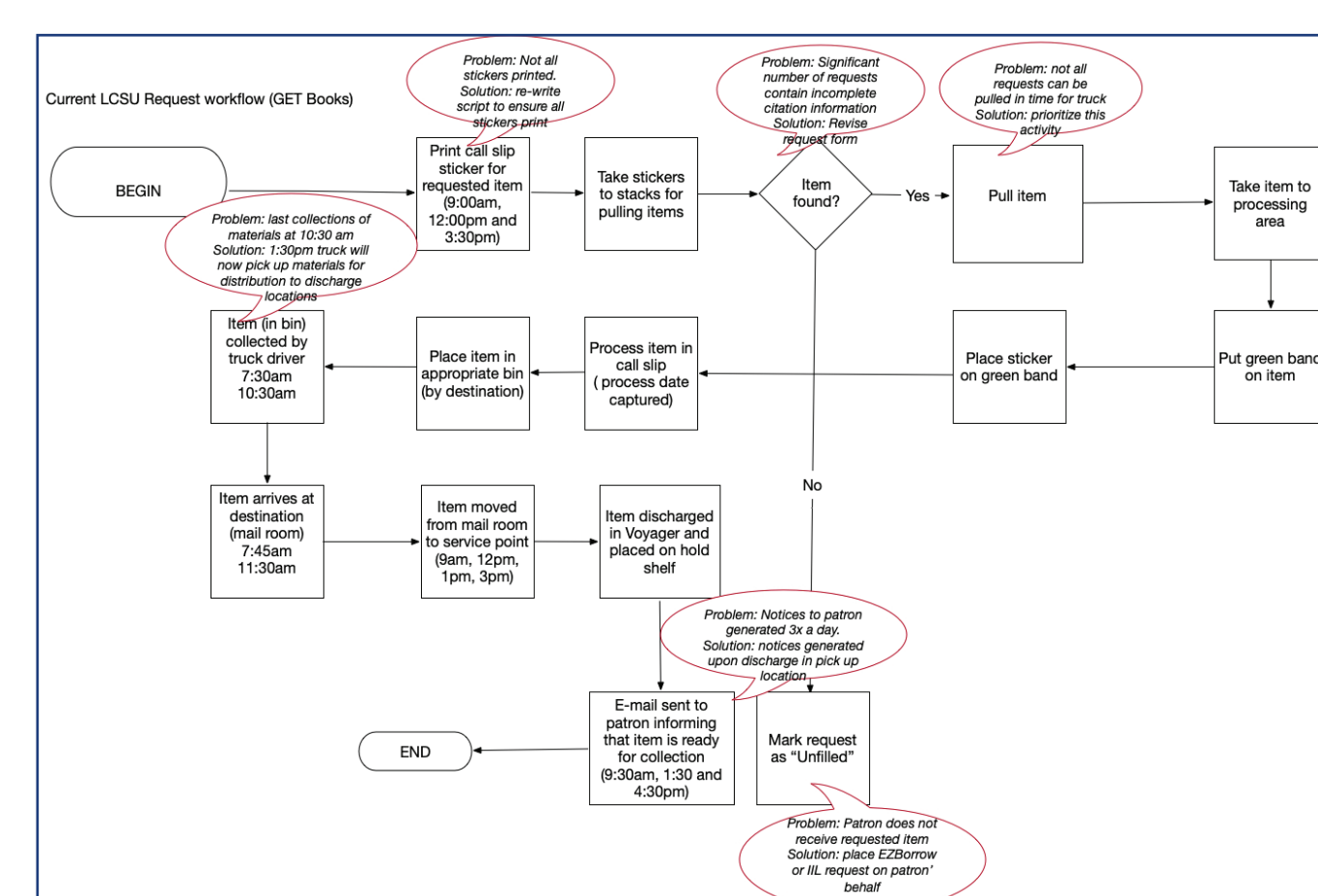


Which approval plan books circulate more/less than average, and how does this compare to our projected approval plan costs?

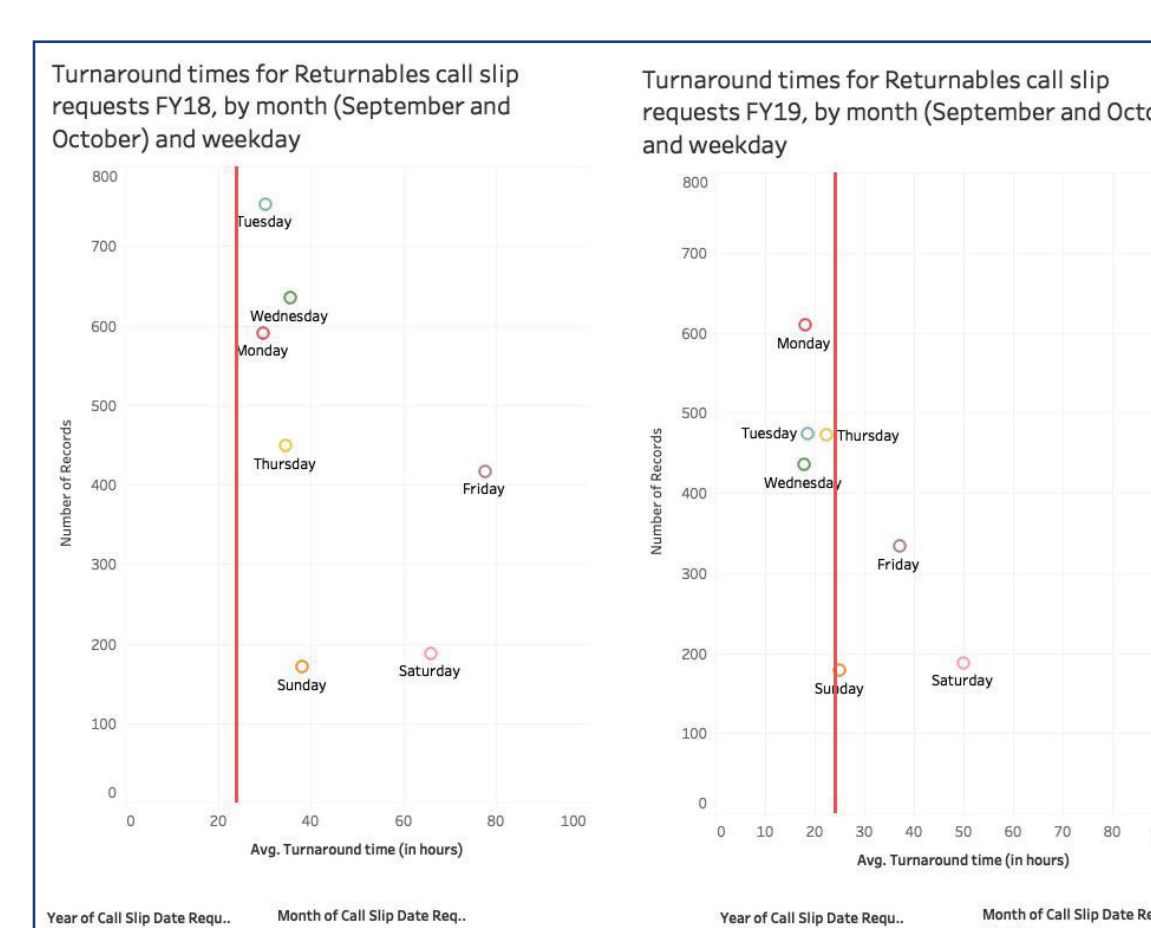


What are the specific actual/projected approval plan costs for a specific call number range?

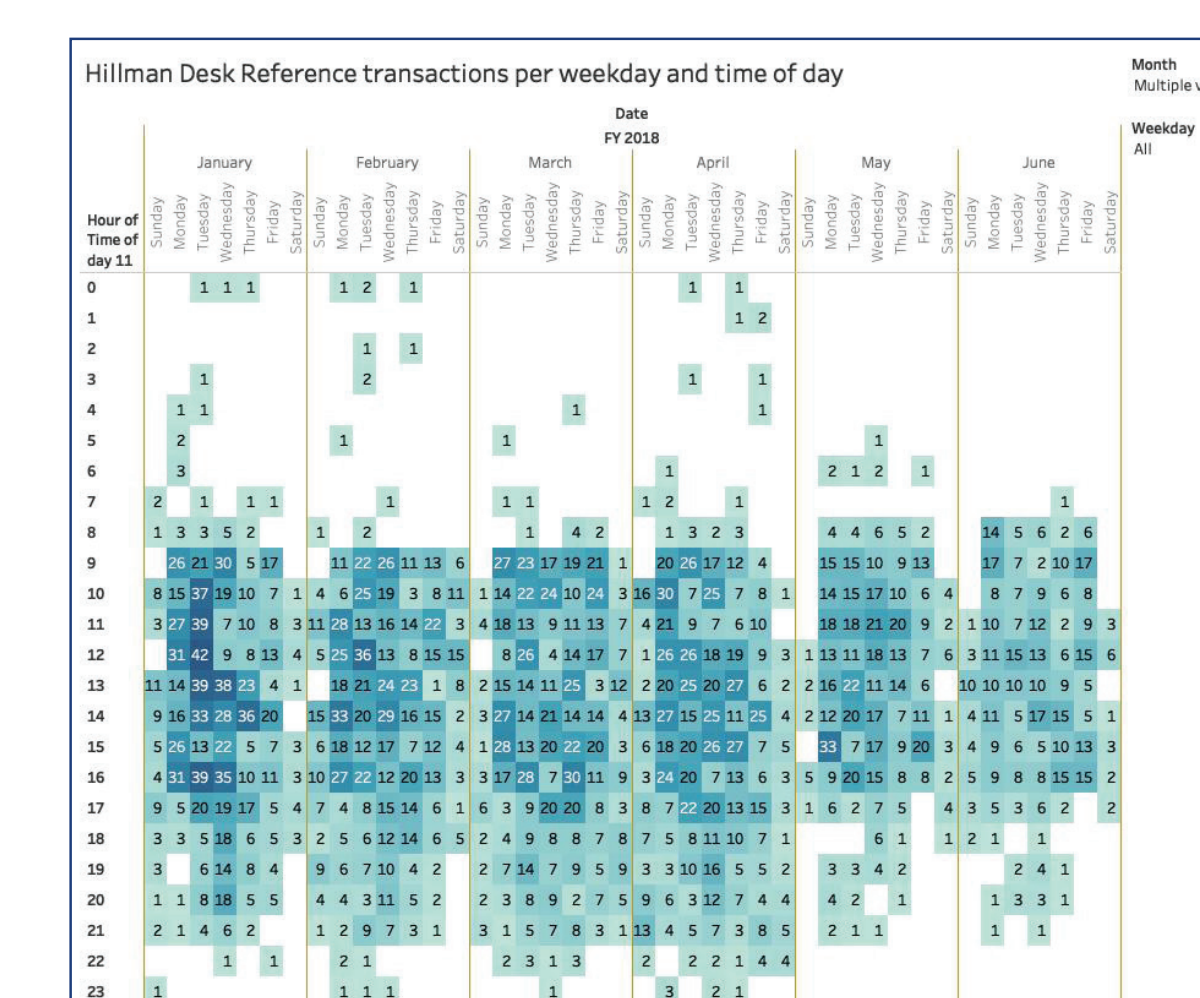
Service improvements



What is the workflow for retrieving off-site materials?

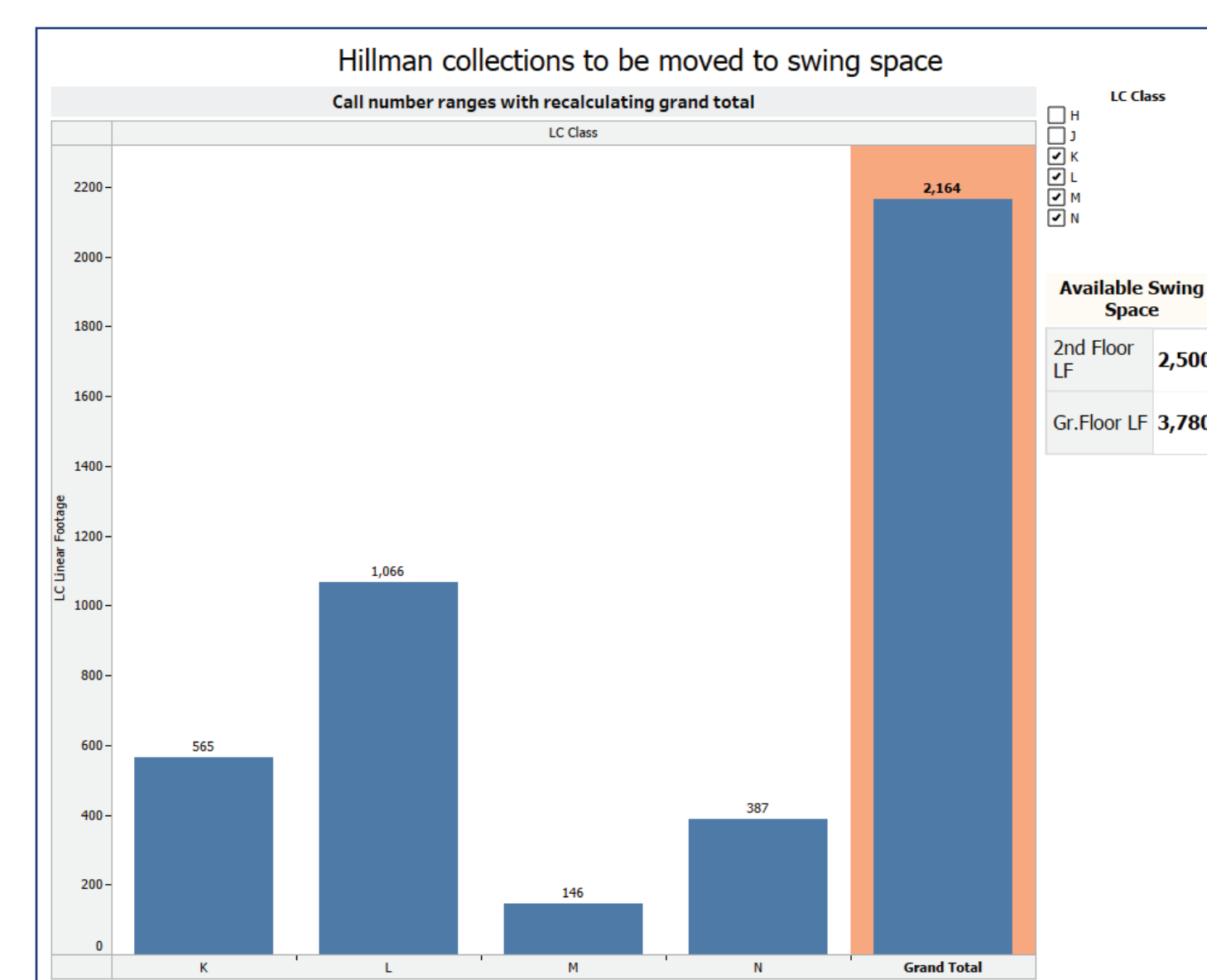


Did changes to the processing of requests from off-site storage result in improved turnaround times? (goal - 24 hours or less)



How many staff do we need at the Hillman Information Desk?

Collection Move Management



Which volumes will fit on the 2nd floor without splitting call number ranges? What is the most logical way to provide access to our general collections in swing spaces during renovation?

Review of print serials with no recent usage

Title Name	ULS Number	Location
Accounting horizons	1481211	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481212	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481213	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481214	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481215	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481216	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481217	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481218	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481219	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481220	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481221	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481222	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481223	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481224	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481225	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481226	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481227	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481228	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481229	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481230	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481231	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481232	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481233	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481234	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481235	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481236	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481237	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481238	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481239	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481240	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481241	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481242	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481243	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481244	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481245	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481246	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481247	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481248	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481249	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481250	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481251	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481252	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481253	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481254	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481255	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481256	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481257	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481258	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481259	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481260	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481261	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481262	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481263	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481264	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481265	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481266	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481267	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481268	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481269	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481270	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481271	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481272	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481273	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481274	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481275	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481276	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481277	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481278	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481279	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481280	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481281	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481282	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481283	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481284	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481285	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481286	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481287	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481288	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481289	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481290	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481291	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481292	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481293	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481294	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481295	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481296	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481297	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481298	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481299	
Acta archaeologica et ethnographica Musei Historici Naturalis Hungarici	1481300	

Which print serials may be candidates for cancellation and/or relocation off-campus?

Case studies findings

Approval Plan Review

Tableau allows for large amounts of complex data to be combined from different sources, and enables users to view either the "big picture" or drill down to specific subject areas, and identify outliers. Visualizations were used to prepare for vendor meetings and review projected plan changes in terms of usage and cost.

Service improvements (delivery of off-site materials)

This visualization provides near real-time information on the turnaround times for patron requests from our off-site storage location. It also enables users to see how different process improvements, implemented incrementally, affect the turnaround times.

Service improvements (Information Desk staffing levels)

The purpose of this visualization is to uncover temporal patterns and the volume of traffic at the main Service Desk at Hillman Library. Reference activity, together with similar visualizations of circulation data helps in planning for optimal staffing at this service point.

Collection Planning

We are in the midst of a multi-year renovation project and plan to shift and move several collections within limited swing-space over the next several years. Visualizations assisted collection move planning within swing spaces, and also helped identify material that could be shifted off-site.

Conclusions

By analyzing stakeholders' engagement with Tableau dashboards, we conclude that they:

- helped encourage larger groups of colleagues to interact with the data
- facilitated deeper engagement with data for better understanding and decisions
- established dashboards as "go to" places for relevant information
- provided "ready" graphics for the use in reports, presentations, outreach and marketing materials

Internally, with the Assessment & Quality Assurance Unit, Tableau Server:

- helped with the collection and management of data (in absence of ULS data warehouse)
- streamlined our processes by enabling anyone in the Unit to edit and share content
- enabled automated updates of many dashboards via integration with our LMS
- increased visibility of the Unit's support services and analyses across the ULS

Next steps

- identify more data sources for automated Tableau ingestion
- explore opportunities for combining ULS data with other University-collected data
- communicate added value of Tableau visualizations to support projects and decision making
- test additional Tableau integrations as an alternative to a data warehouse

University Library System (ULS)
University of Pittsburgh, Pittsburgh, PA 15260
library.pitt.edu/assessment