

Data Management and Visualization with Tableau

Jeremy Buhler, University of

British Columbia

March 10, 2015

Webcast Series

- **March 3, 2015:** Sarah Anne Murphy, Ohio State University
- **March 10, 2015:** Jeremy Buhler, University of British Columbia
- **March 17, 2015:** Rachel Lewellen, University of Massachusetts Amherst
- **April 21, 2015:** Discussion and Q&A

Tableau at UBC Library

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What's Tableau?

A visual data analysis and presentation layer that connects to multiple data sources (e.g. databases, spreadsheets)



Why visual analysis?

- To explore and understand our data
- To communicate findings



“By thinking about visualization as a **process** instead of an **outcome**, we arm ourselves with an incredibly powerful thinking tool.”

Jer Thorp, former NYT Data Artist in Residence
<https://hbr.org/2013/04/visualization-as-process/>



Attentive
processing

987349790275647902894728624092406037070570279072
803208029007302501270237008374082078720272007083
247802602703793775709707377970667462097094702780
927979709723097230979592750927279798734972608027

Preattentive
processing

98734979027**5**647902894728624092406037070**5**70279072
803208029007302**5**01270237008374082078720272007083
24780260270379377**5**709707377970667462097094702780
92797970972309723097**9**5927**5**0927279798734972608027

From Stephen Few, Tapping the Power of Visual Perception
http://www.perceptualedge.com/articles/ie/visual_perception.pdf

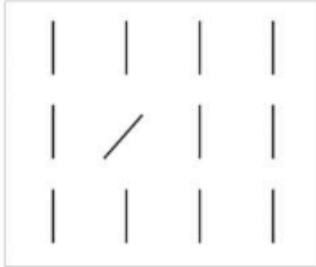


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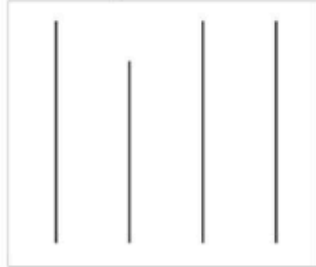
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Form

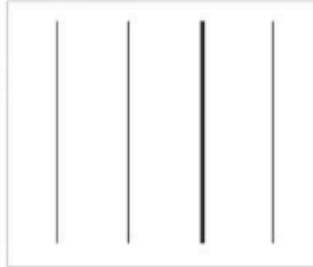
Orientation



Line Length



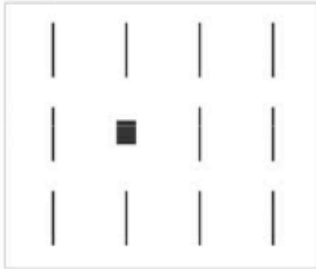
Line Width



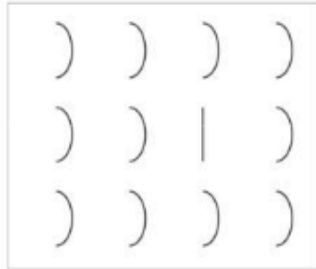
Size



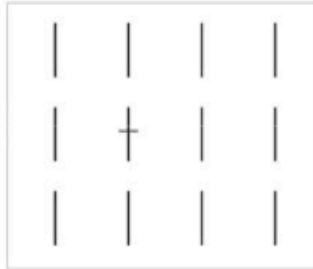
Shape



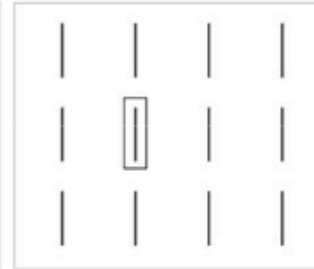
Curvature



Added Marks

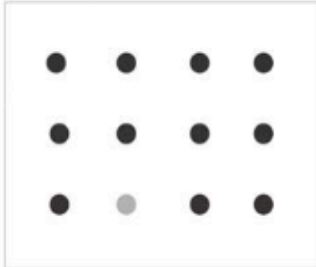


Enclosure

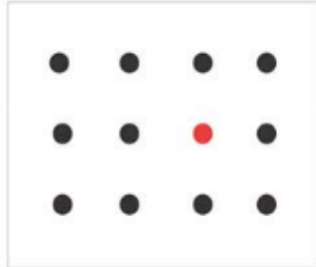


Color

Intensity

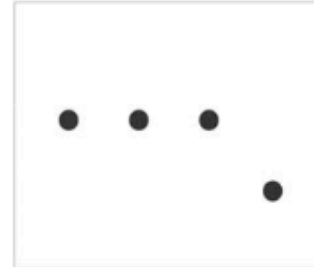


Hue



Spatial Position

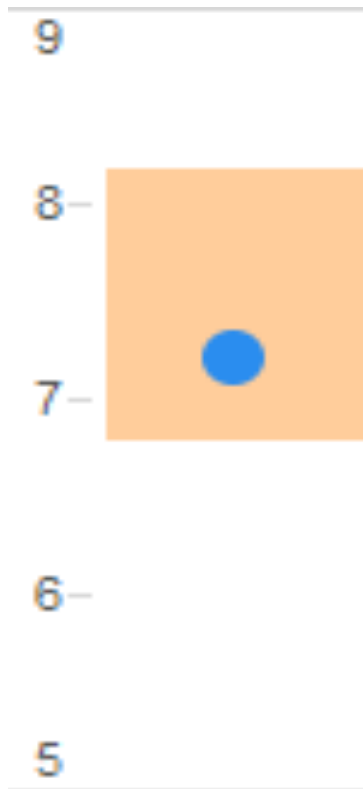
2-D Position



From Stephen Few,
Tapping the Power of
Visual Perception

[http://
www.perceptualedge.
com/articles/ie/
visual_perception.pdf](http://www.perceptualedge.com/articles/ie/visual_perception.pdf)

LibQUAL: visualizing results



LibQUAL service levels

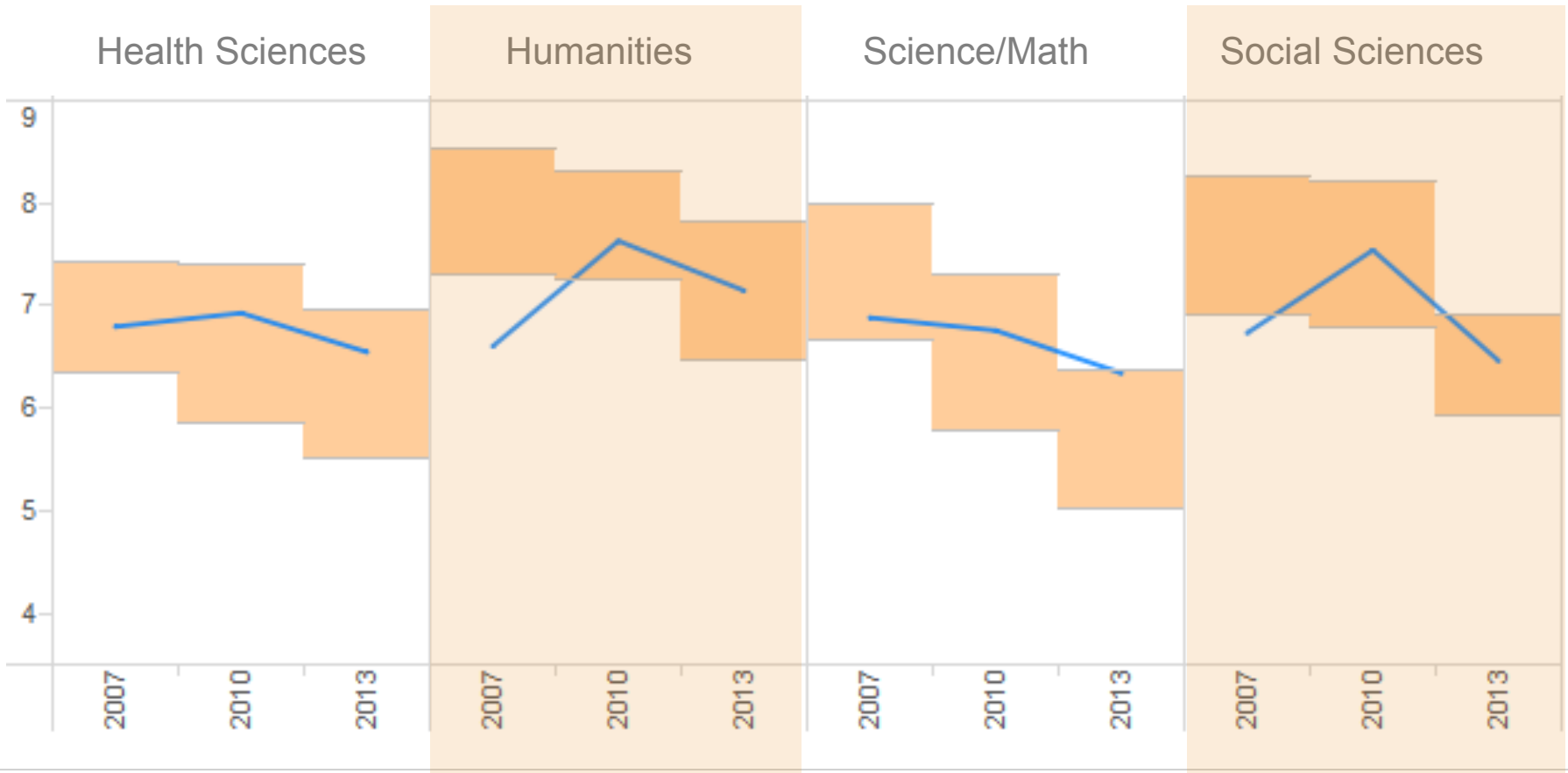
desired
perceived
minimum

orange band is the range between minimum (6.8) and desired (8.2) service levels

blue dot shows perception of the service UBC Library provides

LibQUAL: seeing change over time

The printed library materials I need for my work

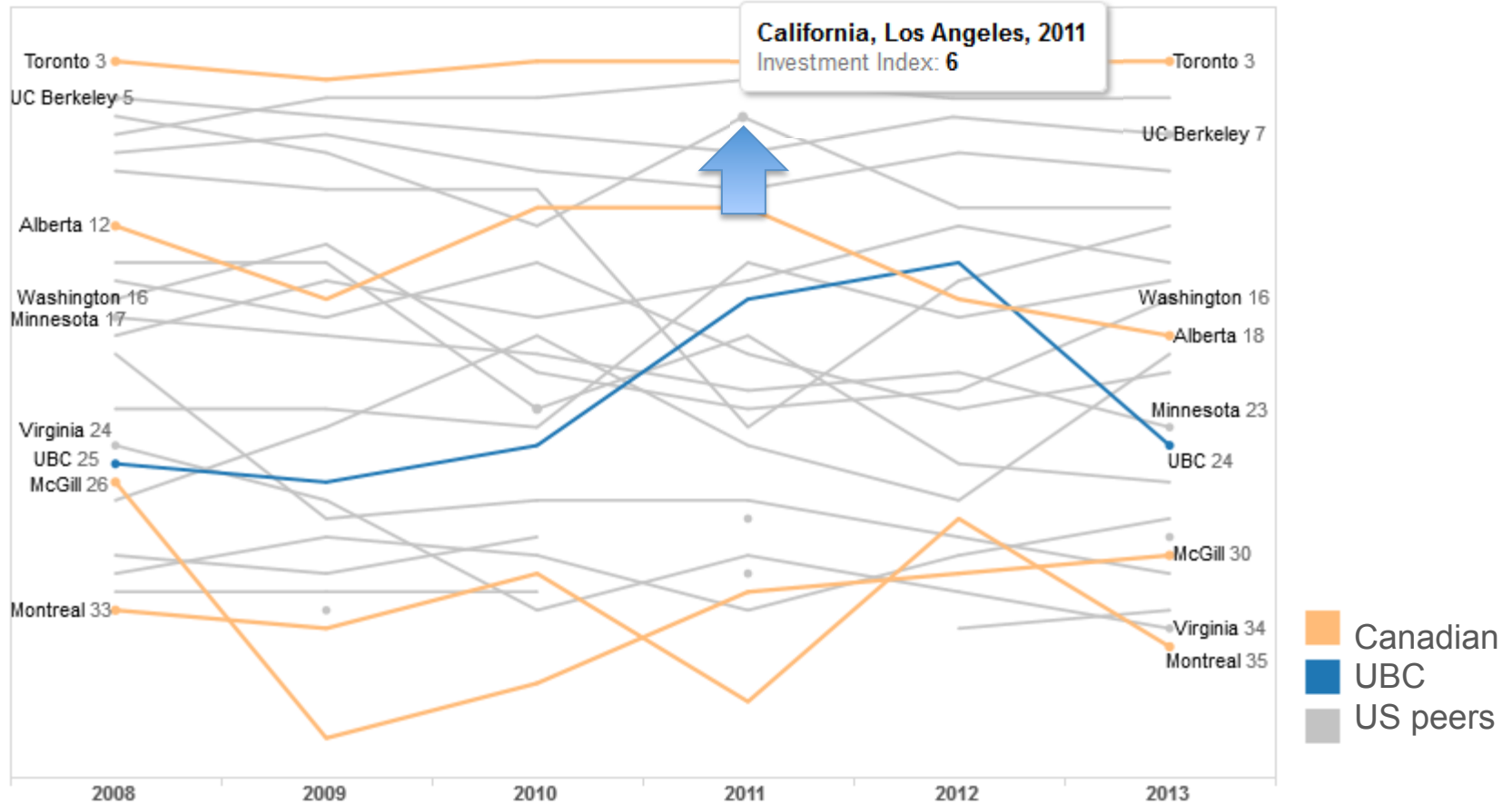


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ARL investment index rank

Top quartile of public academic institutions

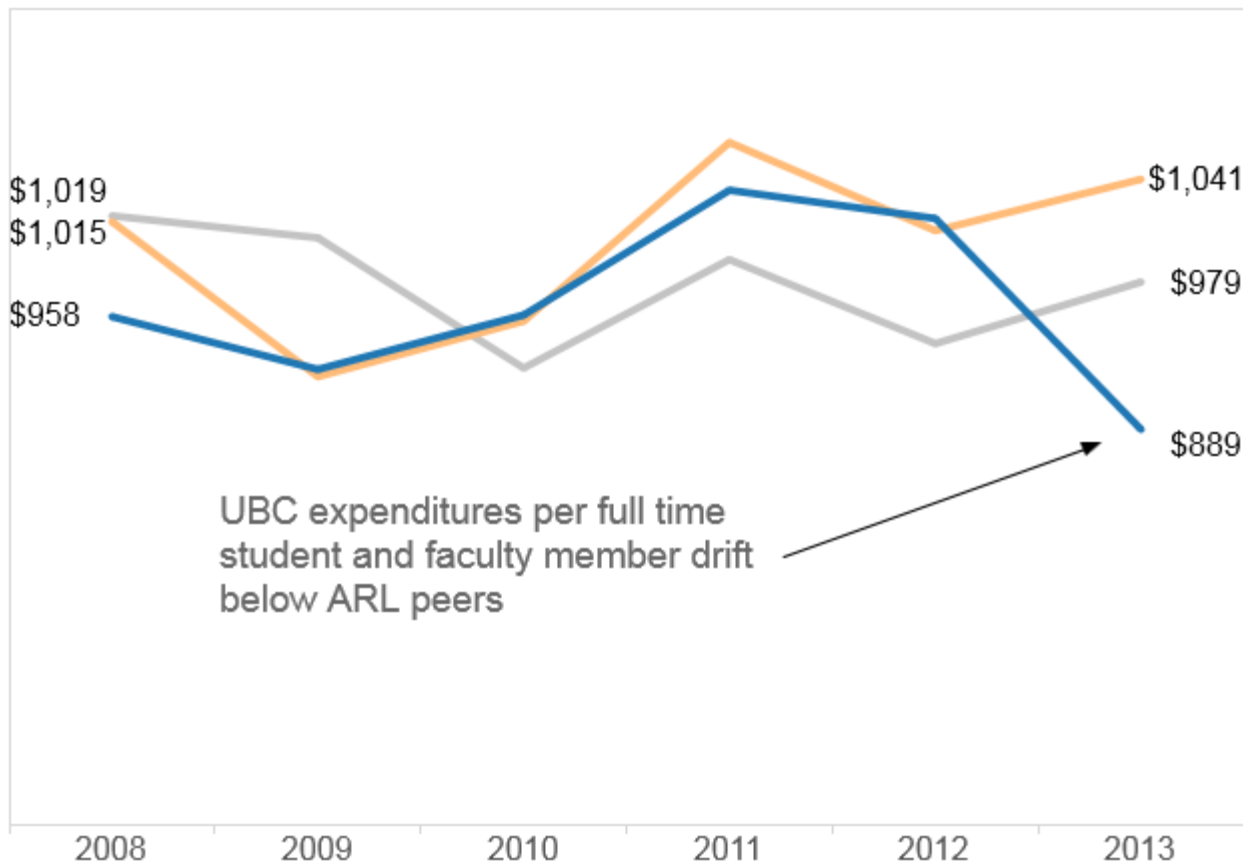


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ARL statistics

Median expenditures per full time student and faculty



UBC expenditures per full time student and faculty member drift below ARL peers

Showing top quartile of public academic institutions by Investment Index ranking

All figures in USD

- Canadian
- UBC
- US peers



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UBC Library Tableau ‘proof of concept’ project

- document Tableau’s strengths and limitations as a report creation and publication platform
- help determine whether it’s a good investment for UBC Library



ILS circulation report

SQL query to Voyager (Oracle db)

Fiscal year

FY 2015

Transactions

- Charges
- Discharges
- Renewals

Type

- self serve
- staff mediated

Monthly transactions by branch

<input type="checkbox"/>	April	May	June	July	August	Septemb..	October	Novemb..	Decemb..	January	February	Total
<input type="checkbox"/> Koerner	10,753	6,274	6,823	6,930	5,238	11,870	13,416	17,139	6,706	10,743	6,085	101,977
<input type="checkbox"/> Barber	5,175	2,948	2,505	3,150	2,753	6,932	6,965	7,573	2,996	5,666	2,947	49,610
<input type="checkbox"/> Okanagan	2,853	1,327	1,515	1,379	1,207	3,823	4,309	4,753	1,695	3,463	1,982	28,306
<input type="checkbox"/> Education	1,471	1,332	1,315	2,105	1,161	2,573	2,762	2,259	1,021	2,589	1,325	19,913
<input type="checkbox"/> Woodward	1,701	1,571	1,331	1,158	1,126	2,912	2,715	2,348	1,102	2,440	1,083	19,487
<input type="checkbox"/> Lam Library	1,061	414	422	331	236	1,542	1,869	2,233	629	1,790	840	11,367
<input type="checkbox"/> Asian	667	515	474	494	590	772	886	833	649	617	314	6,811
<input type="checkbox"/> Law Library	744	308	431	364	264	687	831	1,005	489	759	369	6,251
<input type="checkbox"/> Rare Books	367	327	267	354	371	263	538	321	185	487	265	3,745
<input type="checkbox"/> XWM	263	180	352	271	124	325	524	420	115	230	178	2,982
<input type="checkbox"/> BMB	233	209	171	214	210	339	232	218	170	277	139	2,412
<input type="checkbox"/> Robs on	43	72	52	67	52	61	57	56	42	81	54	637
<input type="checkbox"/> Hamber								1				1
Total	25,331	15,477	15,658	16,817	13,332	32,099	35,104	39,159	15,799	29,142	15,581	253,499



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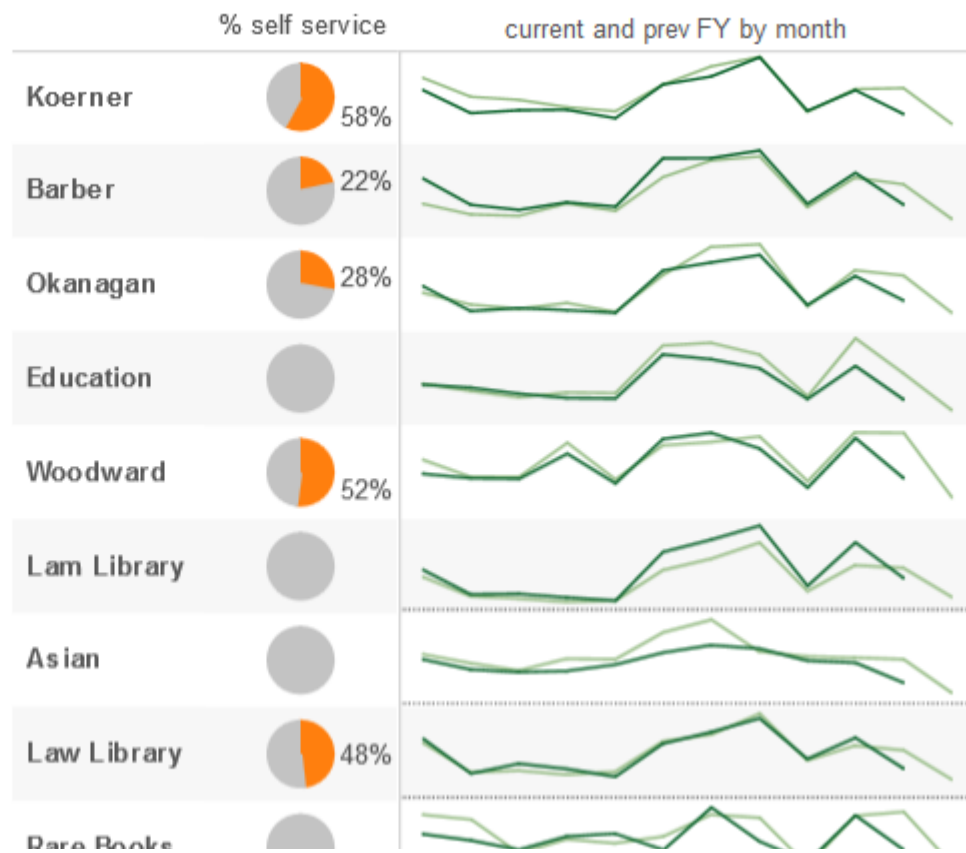
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ILS circulation report

SQL query to Voyager (Oracle db)



	# of trans. fiscal YTD	% change, prev. YTD	% of lib. total
Koerner	101,977	-17.0%	40.2%
Barber	49,610	7.5%	19.6%
Okanagan	28,306	-14.5%	11.2%
Woodward	19,487	-19.3%	7.9%
Education	19,913	-14.7%	7.7%
Lam Library	11,367	21.9%	4.5%
Asian	6,811	-20.6%	2.7%
Law Library	6,251	-4.1%	2.5%
Para Books	3,745	-16.5%	1.5%



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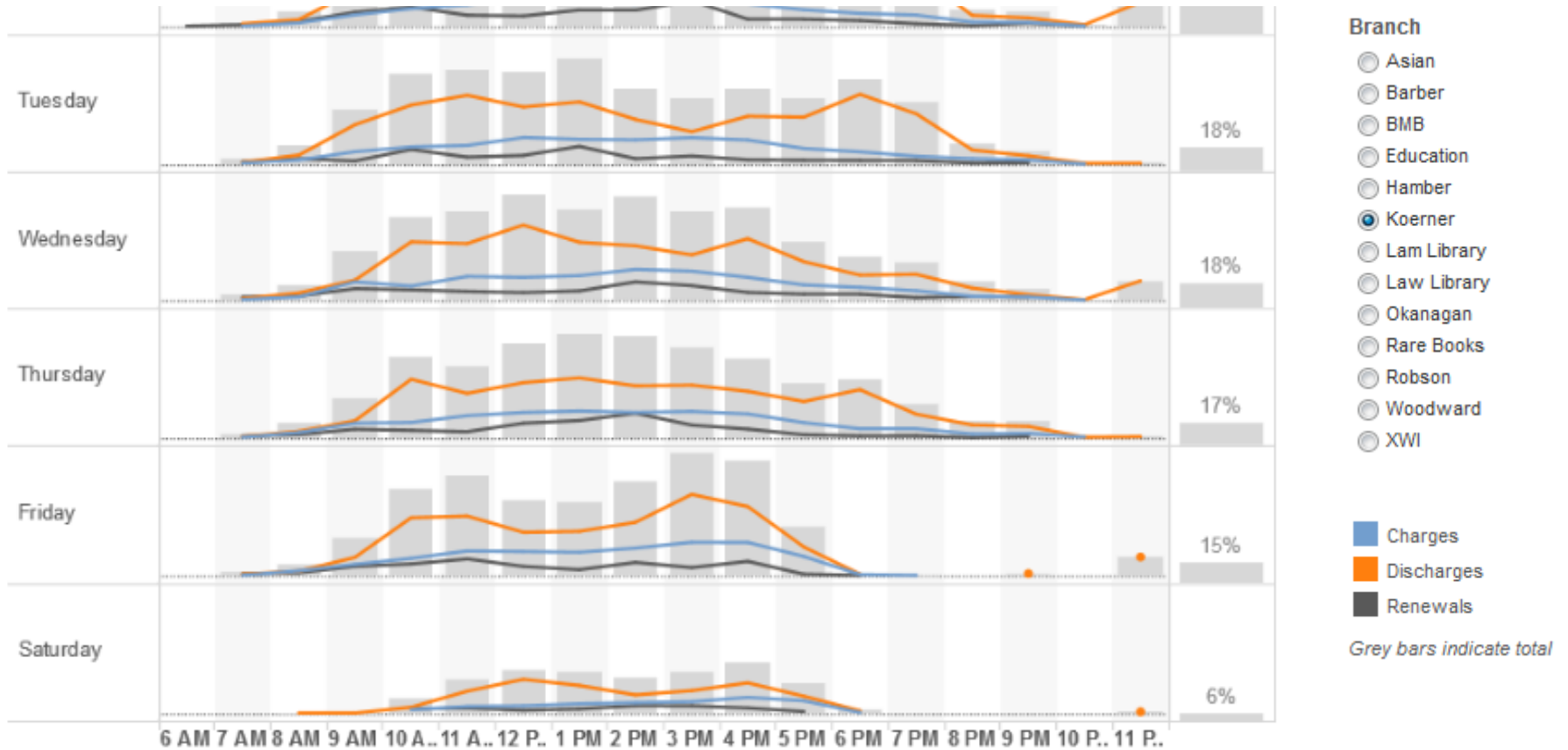
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ILS circulation report

SQL query to Voyager (Oracle db)



The Library



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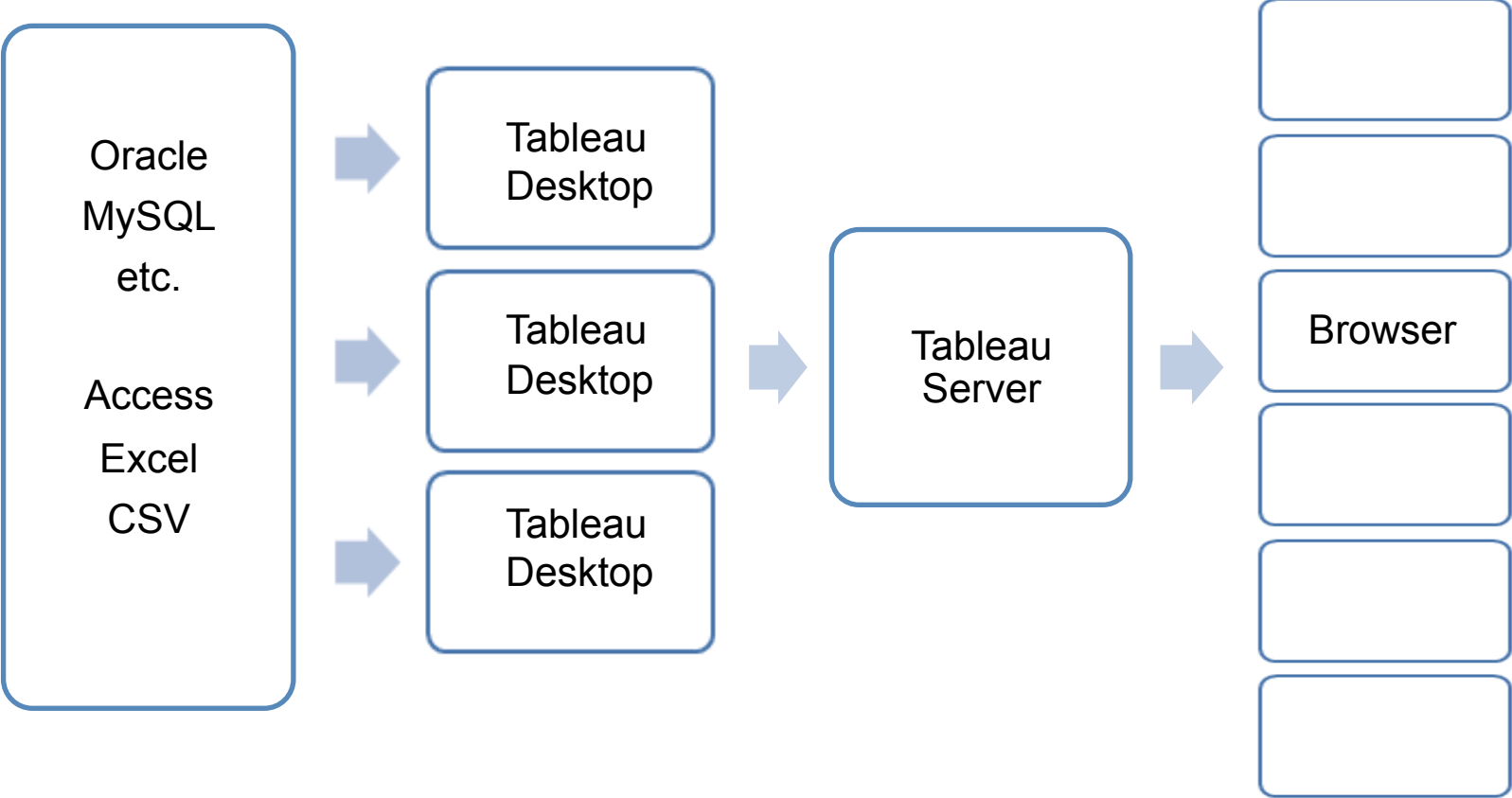
Strengths of Tableau in UBC Library context

- Alignment with campus partners
- Publishing and authentication options
- Automatic updating of reports
- Interoperability (connect to multiple data types)

...but effective implementation requires a service 'owner,' measurable objectives, and a commitment to staff training and development



Tableau report creation workflow at UBC



data source

report creation

publishing

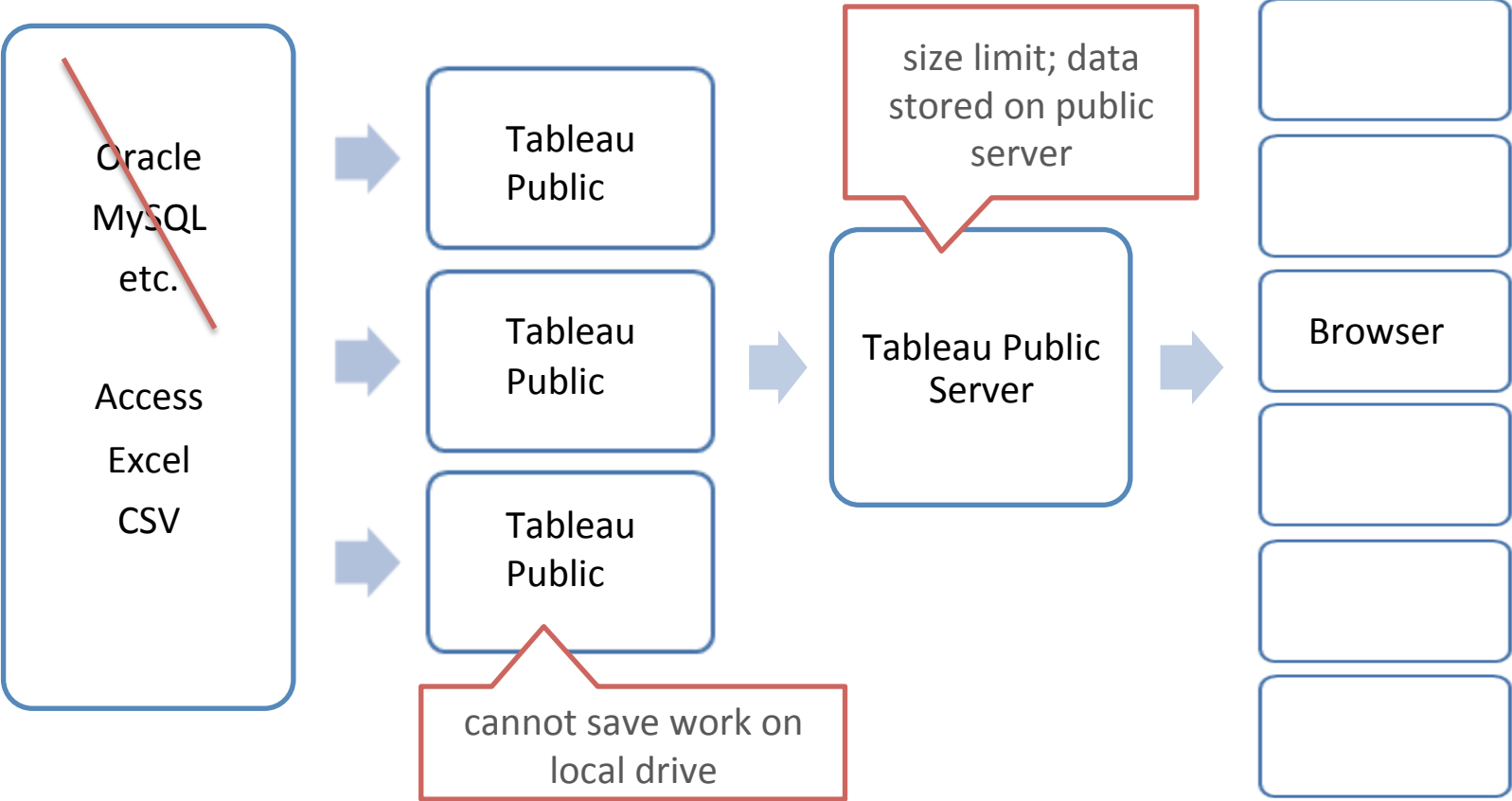
end user



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Tableau report creation workflow (free/public)



data source

report creation

publishing

end user



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This is all new to me... where to start?

Free trial version of Tableau desktop to test report building interface

Browse Tableau Public dashboards for ideas and inspiration



Questions



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IT support requests: number and status by creation date



Limit by creation date

1 February, 2015



10 March, 2015

Target days to resolve

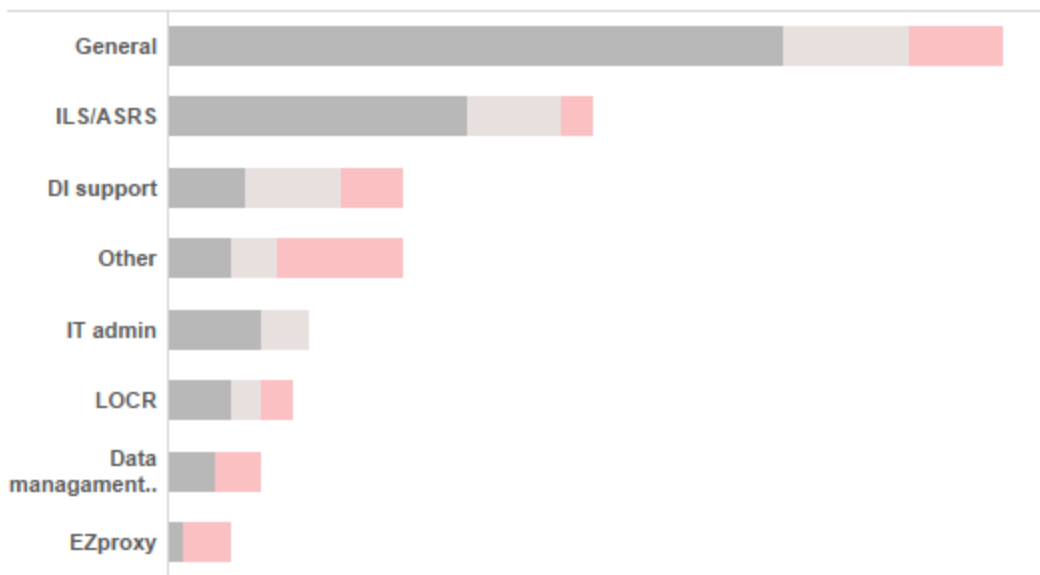
14

Target % (dark band)

0%

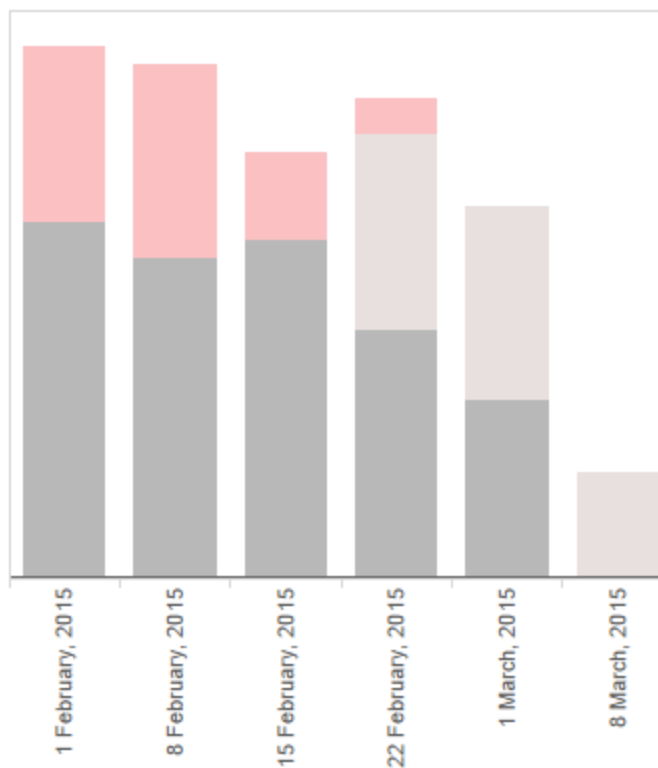


Requests by type



■ past target
■ unresolved, but still within target
■ resolved within target

Requests by week



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IT support requests: number and status by creation date

Limit by creation date

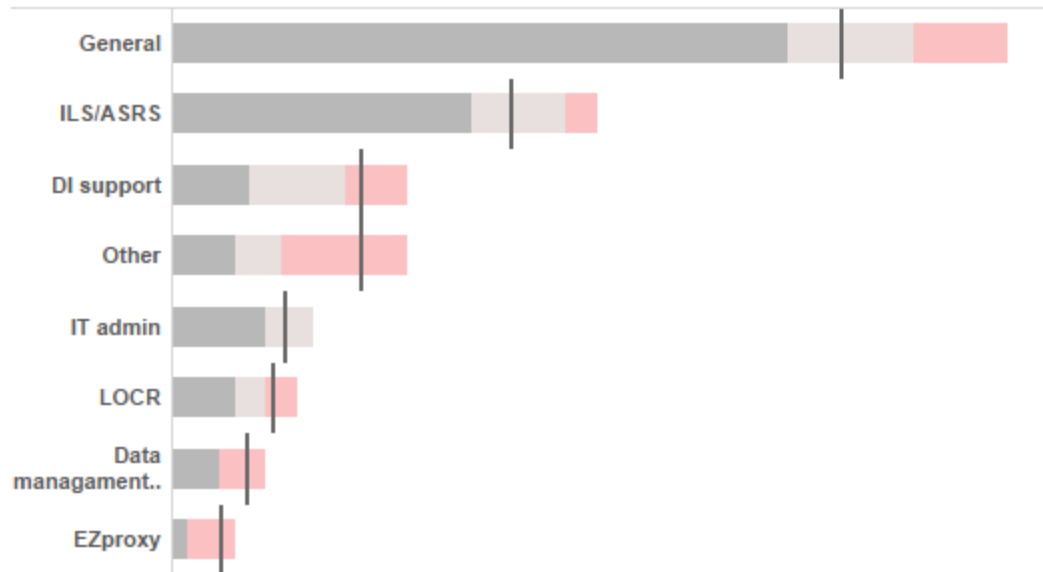
1 February, 2015  10 March, 2015

Target days to resolve

Target % (dark band)

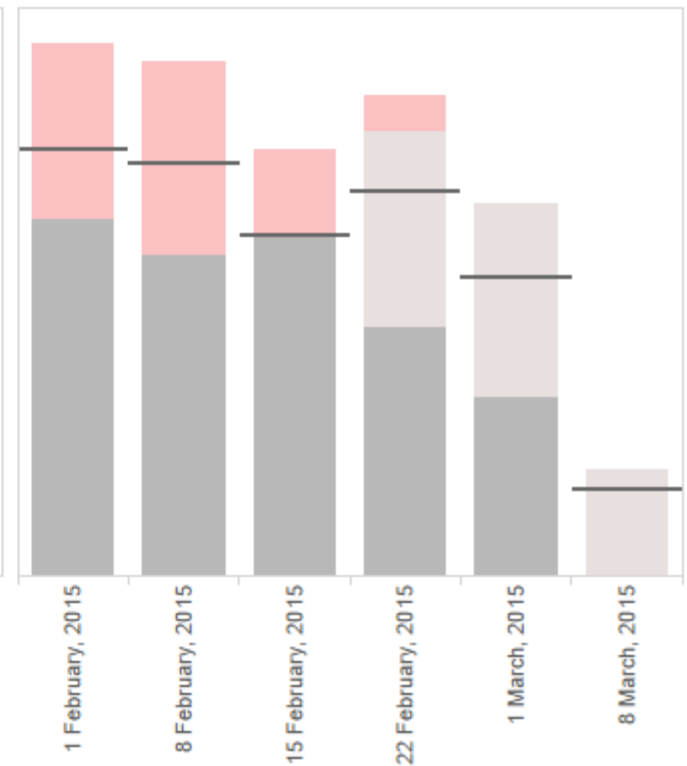


Requests by type



■ past target
■ unresolved, but still within target
■ resolved within target

Requests by week



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If you are using Tableau or other data analytics platforms, please join and post your examples in

arl-assess@arl.org

ARL-ASSESS Google group



THANK YOU