VISUAL DESIGN WITH DATA

Seth Familian
Founder + Principal, Familian&1

START HERE!
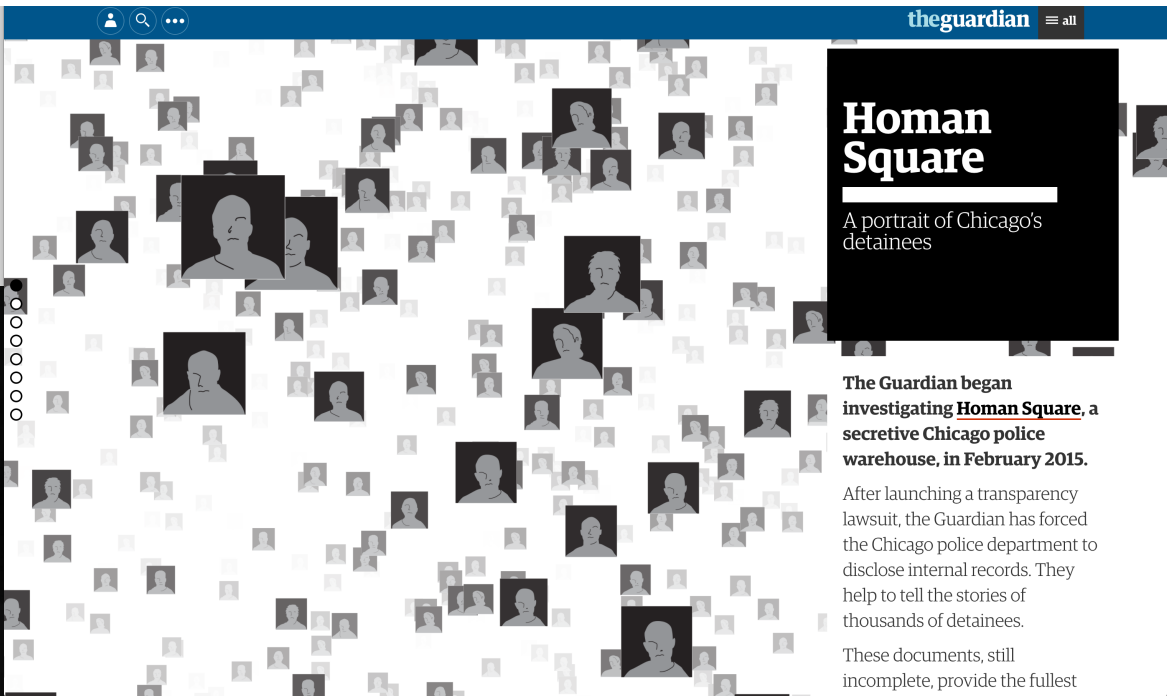familian1.com/vdwd

SOME DATA VIZ INSPIRATION!

HTTPS://WWW.THEGUARDIAN.COM/US-NEWS/NG-INTERACTIVE/2015/OCT/19/HOMAN-SQUARE-CHICAGO-POLICE-DETAINEES

HTTP://FALLEN.IO

SETH FAMILIAN, FOUNDER + PRINCIPAL, FAMILIAN&1

BUSINESS STRATEGY

Apple Inc.

BERTELSMANN
media worldwide

get satisfaction

PRODUCT MANAGEMENT

JPG

Everywhere
TRAVEL IS ALL AROUND YOU

GradMap
Alumni engagement, transformed.

Maptiv8
DATA MADE BEAUTIFUL

WEB PRESENCE

bergamot:station

BLUE FIELD
STRATEGIES
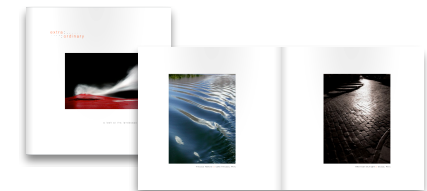
Living Room

GROWTH HACKING

if(we)

Glip

9

CISCO

TEACHING + EDUCATION

PRESIDIO
GRADUATE SCHOOL

IMPACT HUB

GA GENERAL ASSEMBLY

galvanize

PROCRAFTINATION

d r 8 r r
alpha

GA GENERAL ASSEMBLY

VISUAL DESIGN WITH DATA

Seth Familian
Founder + Principal, Familian&1

GA GENERAL ASSEMBLY

WORKING WITH BIG DATA

Seth Familian
Founder + Principal, Familian&1

FOLLOW ALONG!
bit.ly/wwbd-jan2016-part1

GA GENERAL ASSEMBLY

DIGITAL TOOLS FOR BUSINESS

Seth Familian
Founder + Principal, Familian&1

FOLLOW ALONG!
http://bit.ly/ga-dt4b

GA GENERAL ASSEMBLY

SQUARESPACE BOOTCAMP

Seth Familian
Founder + Principal, Familian&1

‣ What makes good (data) design?

‣ Creating effective charts

‣ Sparklines + Small Multiples

‣ Data viz techniques

‣ Tools beyond Google Spreadsheets

WHAT'S GOOD (DATA) DESIGN?

CONSISTENT.

	A	B	C	D
1	**Date**	**VSS**	**SVS**	*Total*
2	Jan-09	$39,123	$27,310	*$66,433*
3	Feb-09	$39,044	$27,041	*$66,085*
4	Mar-09	$39,064	$26,453	*$65,517*
5	Apr-09	$38,276	$	
6	May-09	$37,440	$	
7	Jun-09	$36,321	$	
8	Jul-09	$37,352	$	
9	Aug-09	$36,577	$	
10	Sep-09	$37,262	$	
11	Oct-09	$37,362	$	
12	Nov-09	$37,684	$	
13	Dec-09	$38,861	$	

	A	B	C	D
1	Date	VSS	SVS	Total
2	Jan-09	$39,123	$27,310	$66,433
3	Feb-09	$39,044	$27,041	$66,085
4	Mar-09	$39,064	$26,453	$65,517
5	Apr-09	$38,276	$25,979	$64,255
6	May-09	$37,440	$25,660	$63,100
7	Jun-09	$36,321	$25,019	$61,340
8	Jul-09	$37,352	$24,156	$61,508
9	Aug-09	$36,577	$23,625	$60,202
10	Sep-09	$37,262	$22,558	$59,820
11	Oct-09	$37,362	$21,844	$59,206
12	Nov-09	$37,684	$23,603	$61,287
13	Dec-09	$38,861	$22,949	$61,810

NINJA TIP:
Shift-select multiple columns/rows and drag-resize to make them all the same size with a single gesture!

LET'S GIVE IT A TRY!

visit familian1.com/vdwd

EXERCISE FOR GOOD (DATA) DESIGN

KEY OBJECTIVE

Emulate good data design.

AGENDA

10 mins

1. Visit familian1.com/vdwd
2. Click on "Visit the Exercises Spreadsheet"
3. Go to "1 - Consistent"
4. Normalize fonts, borders, and column widths
5. Go to "2 - Uncluttered"
6. Make it uncluttered!

DELIVERABLE

A cleaner spreadsheet!

RESOURCES

Google Spreadsheets

UNCLUTTERED.

	A	B	C	D
1	Date	VSS	SVS	Total
2	Jan-09	$39,123	$27,310	$66,433
3	Feb-09	$39,044	$27,041	$66,085
4	Mar-09	$39,064	$26,453	$65,517
5	Apr-09	$38,276	$25,979	$64,255
6	May-09	$37,440		
7	Jun-09	$36,321		
8	Jul-09	$37,352		
9	Aug-09	$36,577		
10	Sep-09	$37,262		
11	Oct-09	$37,362		
12	Nov-09	$37,684		
13	Dec-09	$38,861		

	A	B	C	D	E	F
1						
2		Date	VSS	SVS	Total	
3		Jan-09	$39K	$27K	$66K	
4		Feb-09	$39K	$27K	$66K	
5		Mar-09	$39K	$26K	$66K	
6		Apr-09	$38K	$26K	$64K	
7		May-09	$37K	$26K	$63K	
8		Jun-09	$36K	$25K	$61K	
9		Jul-09	$37K	$24K	$62K	
10		Aug-09	$37K	$24K	$60K	
11		Sep-09	$37K	$23K	$60K	
12		Oct-09	$37K	$22K	$59K	
13		Nov-09	$38K	$24K	$61K	
14		Dec-09	$39K	$23K	$62K	

NINJA TIP:
Adding a "spacer" row and column at the top and left of the page makes the sheet feel more like a document.

MUTED COLORS.

NINJA TIP:
Using 1-2 gradations on a single color enables endless formatting possibilities.

	A	B	C	D	E	F
1						
2		**VSS + SVS Revenue Trends**				
3			**Monthly**			
4		**Date**	**VSS**	**SVS**	**Total**	
5		Jan-09	$39K	$27K	$66K	
6		Feb-09	$39K	$27K	$66K	
7		Mar-09	$39K	$26K	$66K	
8		Apr-09	$38K	$26K	$64K	
9		May-09	$37K	$26K	$63K	
10		Jun-09	$36K	$25K	$61K	
11		Jul-09	$37K	$24K	$62K	
12		Aug-09	$37K	$24K	$60K	
13		Sep-09	$37K	$23K	$60K	
14		Oct-09	$37K	$22K	$59K	

ROLLED-UP.

NINJA TIP:
Pivot tables are super useful for rolling up data in powerful, flexible ways

VSS + SVS Revenue Trends

Monthly

Date	VSS	SVS	Total
Jan-09	$39K	$27K	$66K
Mar-09	$39K	$26K	$66K
Apr-09	$38K	$26K	$64K
May-09	$37K	$26K	$63K
Jun-09	$36K	$25K	$61K
Jul-09	$37K	$24K	$62K
Aug-09	$37K	$24K	$60K
Sep-09	$37K	$23K	$60K
Oct-09	$37K	$22K	$59K
Nov-09	$38K	$24K	$61K
Dec-09	$39K	$23K	$62K
Jan-10	$39K	$22K	$61K
Feb-10	$38K	$22K	$59K
Mar-10	$39K	$26K	$66K
Apr-10	$36K	$21K	$57K
May-10	$36K	$20K	$56K
Jun-10	$36K	$20K	$56K
Jul-10	$35K	$19K	$54K
Aug-10	$35K	$19K	$54K
Sep-10	$34K	$19K	$53K
Oct-10	$33K	$18K	$51K
Nov-10	$33K	$19K	$52K
Dec-10	$33K	$19K	$51K

Quarterly

Year	Q	VSS	SVS	Total
2009	Q1	$117K	$81K	$198K
	Q3	$111K	$70K	$182K
	Q4	$114K	$68K	$182K
2010	Q1	$115K	$71K	$186K
	Q2	$108K	$62K	$170K
	Q3	$104K	$57K	$161K
	Q4	$99K	$55K	$155K
2011	Q1	$97K	$55K	$152K
	Q2	$94K	$51K	$145K
	Q3	$94K	$52K	$146K
	Q4	$96K	$61K	$157K
2012	Q1	$97K	$63K	$160K
	Q2	$100K	$64K	$164K
	Q3	$94K	$72K	$166K
	Q4	$100K	$86K	$185K
2013	Q1	$103K	$88K	$190K
	Q2	$103K	$94K	$197K
	Q3	$109K	$93K	$202K
	Q4	$107K	$87K	$194K
2014	Q1	$113K	$83K	$195K
	Q2	$118K	$82K	$200K
	Q3	$123K	$86K	$209K
	Q4	$121K	$109K	$230K

Annual

Year	VSS	SVS	Total
2009	$454K	$296K	$751K
2011	$381K	$219K	$600K
2012	$390K	$285K	$675K
2013	$422K	$362K	$784K
2014	$475K	$359K	$834K
2015	$165K	$142K	$307K

CREATING EFFECTIVE CHARTS

WHICH IS BETTER?

FROM

SOURCE: "THE FUTURE OF PRODUCTIVITY," OECD, 2015

DIFFERENCE IN LABOR PRODUCTIVITY LEVELS FROM THEIR 2001 VALUES FOR "FRONTIER FIRMS" AND EVERYONE ELSE
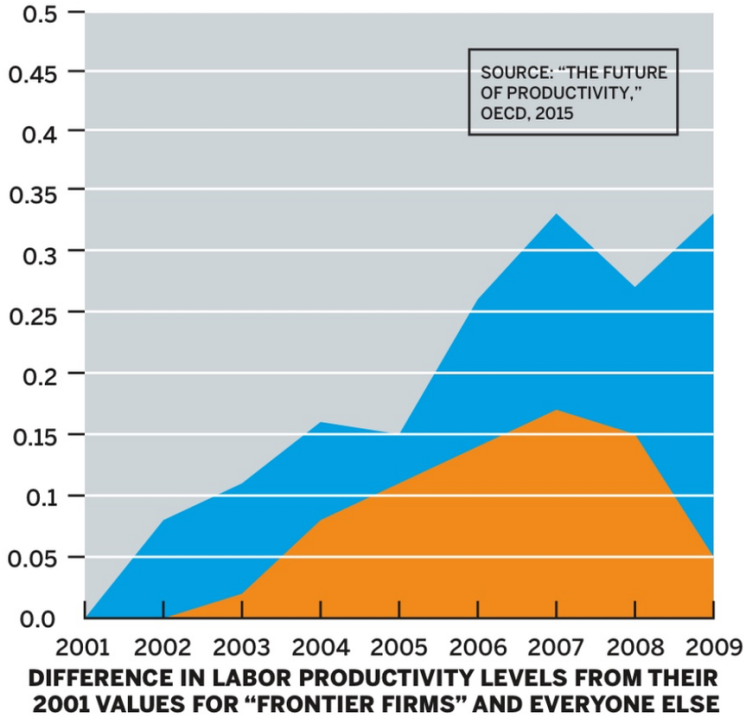
THE GAP BETWEEN THE MOST PRODUCTIVE FIRMS AND THE REST IS GROWING

PERCENTAGE DIFFERENCE IN LABOR PRODUCTIVITY LEVELS FROM THEIR 2001 VALUES (INDEX, 2001=0)

MANUFACTURING "Frontier" firms

Everyone else
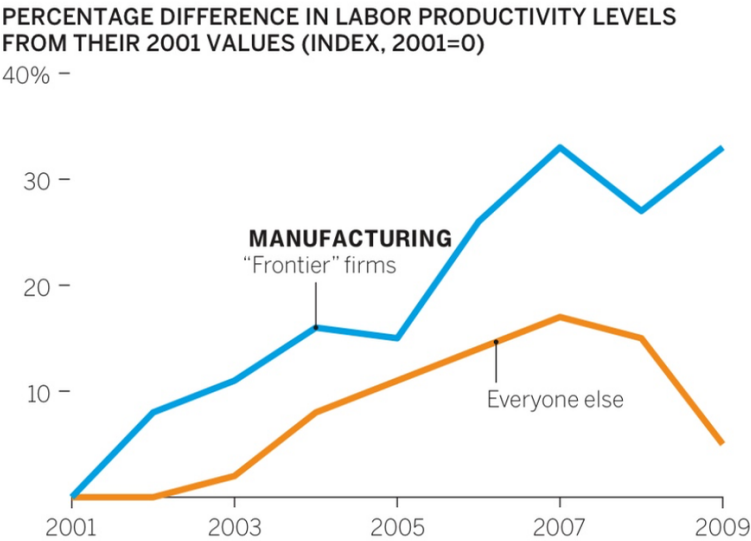
SOURCE: "THE FUTURE OF PRODUCTIVITY," OECD, 2015

WHICH IS BETTER?

FROM

HOUSEHOLD INCOME TRENDS

U.S. HOUSEHOLDS, AVERAGE WAGE
INCOME CUMULATIVE % CHANGE

- Top 1 percent
- 81st to 99th percentiles
- 21st to 80th percentiles
- Lowest 20 percent

SOURCE: CONGRESSIONAL BUDGET OFFICE

HOUSEHOLD INCOME TRENDS

U.S. HOUSEHOLDS, AVERAGE WAGE INCOME
CUMULATIVE % CHANGE

Top 1 percent

81st to 99th percentiles
Lowest 20 percent
21st to 80th percentiles

SOURCE: CONGRESSIONAL BUDGET OFFICE

WHICH IS BETTER?

FROM

GOLD PRICE PER OUNCE IN $US
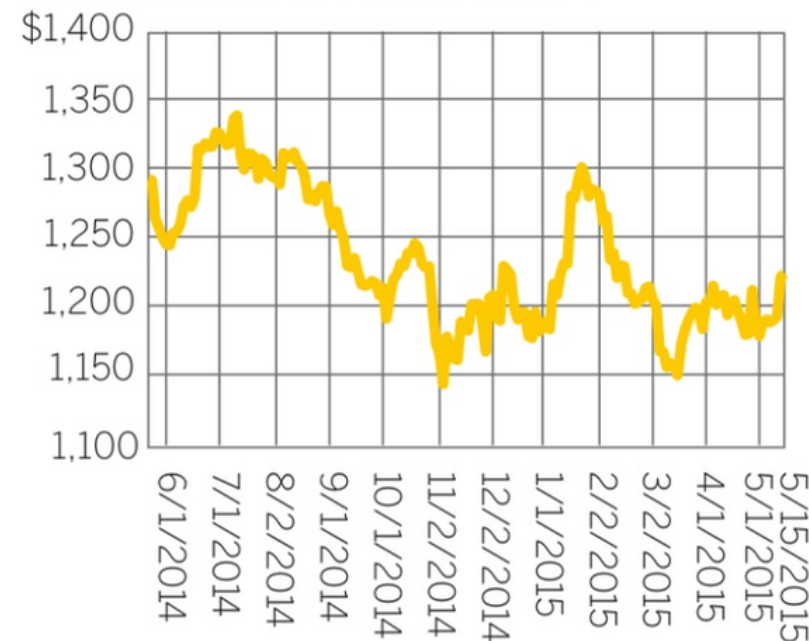
Context: "Let's talk about gold prices"
Use: Analysis, informal or formal, one-on-one, small group
Media: Paper, personal screen, public screen

GOLD PRICE PER OUNCE IN $US
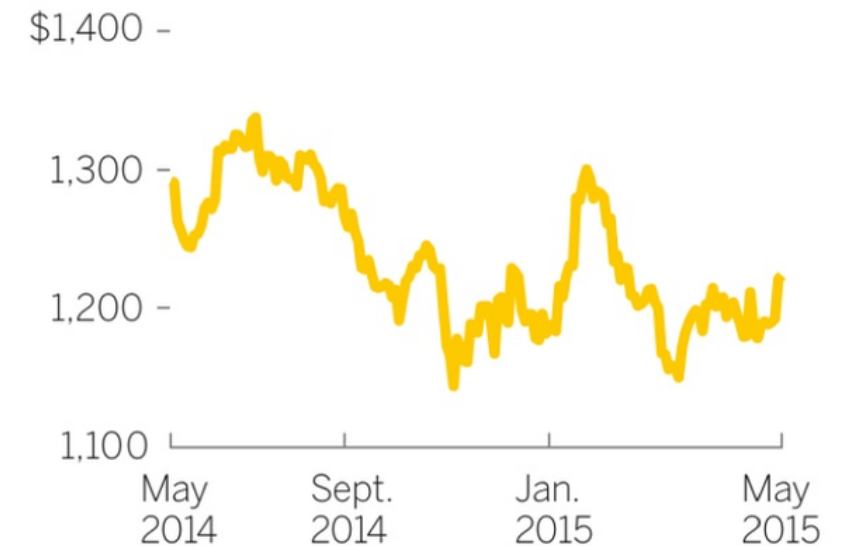
Context: "Gold prices are dropping this year"
Use: Presentation, formal, small or large group
Media: Paper, small screen or large screen

WHICH IS BETTER?
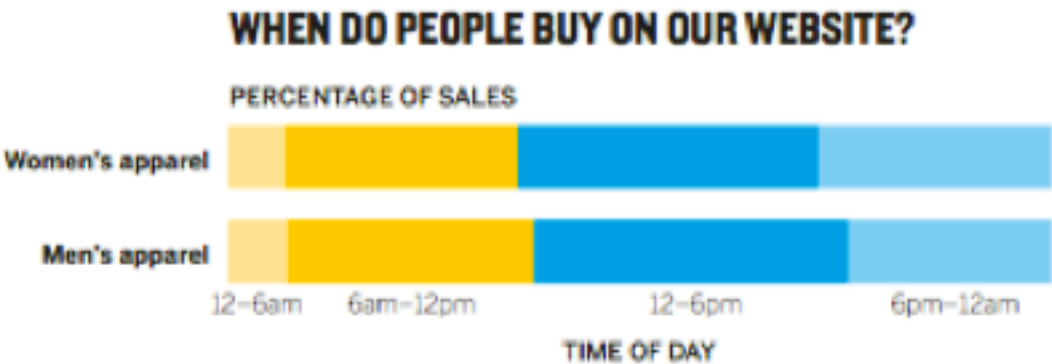
FROM

CHART TYPES
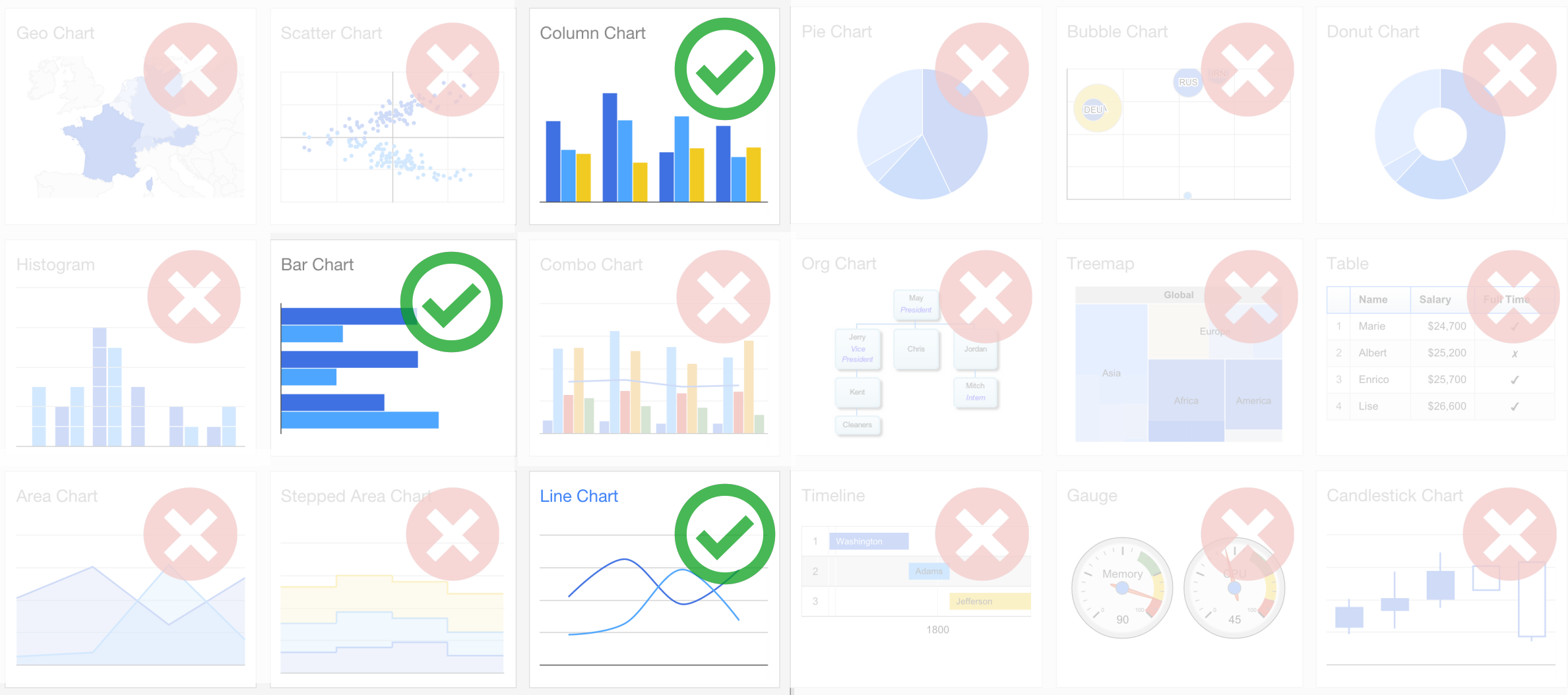
https://developers.google.com/chart/interactive/docs/gallery

ANOTHER APPROACH

FROM

SCOTT BERINATO
GOOD CHARTS
The HBR Guide to Making Smarter, More Persuasive Data Visualizations

COMPARISONS

NOTES

before/after
categories
compare
contrast
over time
peaks
rank
trend
types
valleys

BARS	BUMP	LINES	SLOPE	SMALL MULTIPLES

DISTRIBUTIONS

NOTES

alluvial
cluster
distributed
from/to
plotted
points
spread
spread over
relative to
transfer

ALLUVIALS	BUBBLE	HISTOGRAM	SANKEY	SCATTER

COMPOSITIONS

NOTES

components   slices
divvied up   subsections
group   total
makes up
of the whole
parts
percentage
pieces
portion
proportion

PIE	STACKED AREA	STACKED BAR	TREEMAP	UNIT

MAPS
NETWORKS
LOGIC

NOTES

cluster   places
complex   relationships
connections   routes
group   structure
hierarchy   space
if/then   yes/no
network
organize
paths

FLOW CHART	GEOGRAPHY	HIERARCHIES	2 X 2	NETWORKS

CHART ANATOMY

FROM

Title 12%

Subtitle 8%

Field 75%

Source line 5%

FIELD ELEMENTS

FROM

https://infoactive.co/data-design/ch14.html
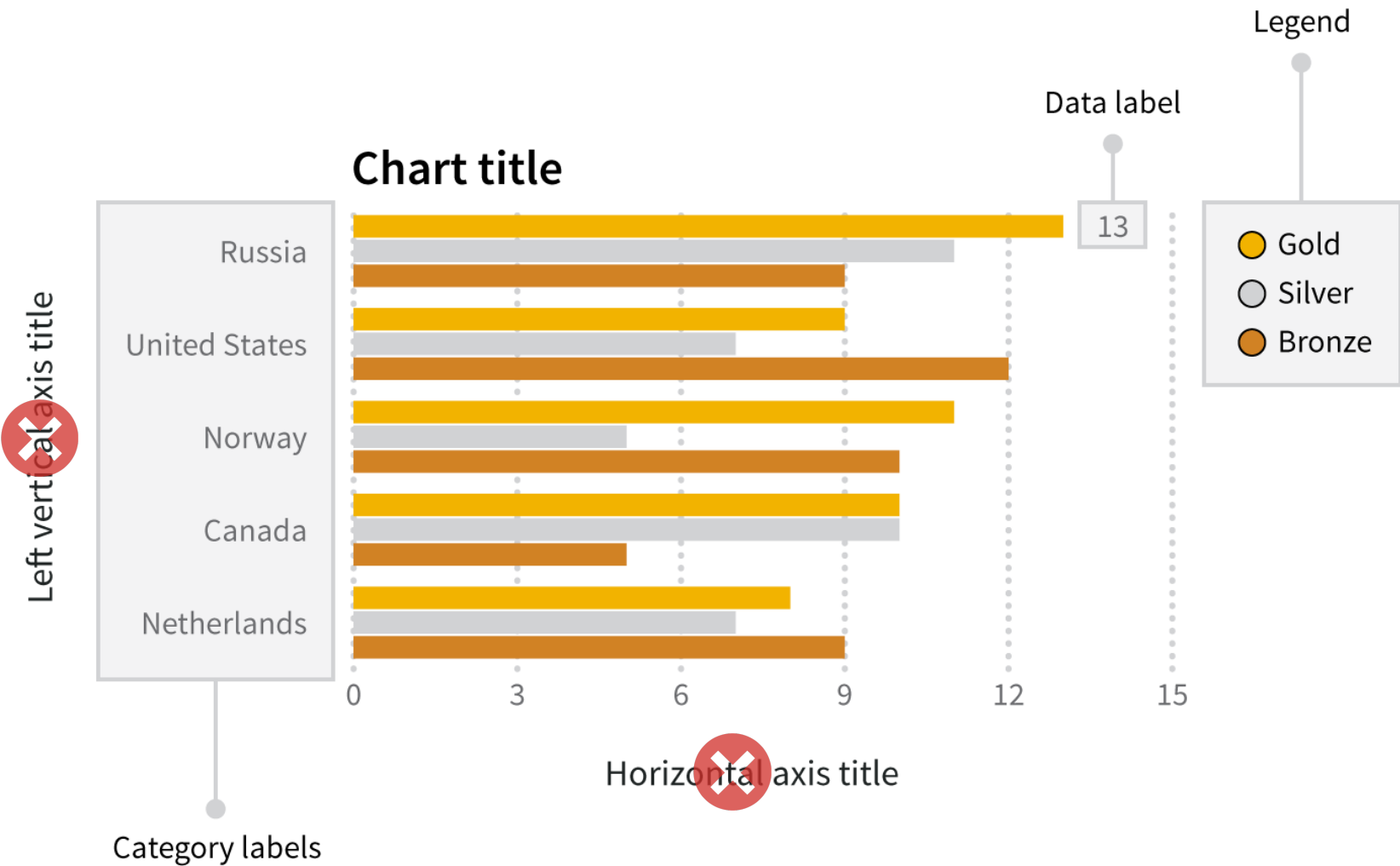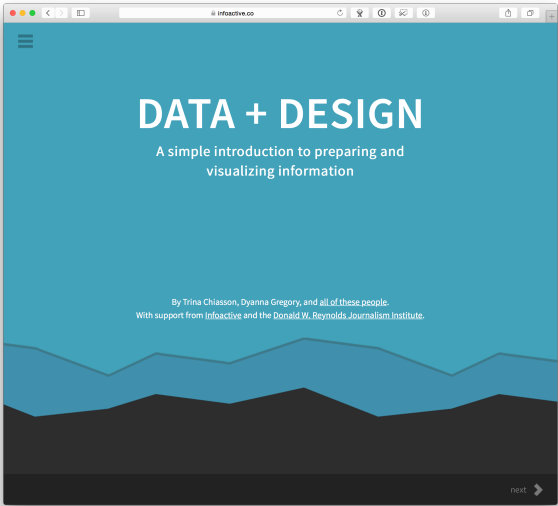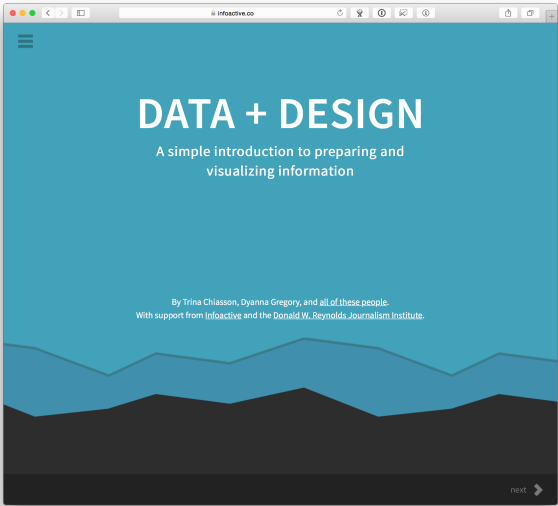
AXIS TITLES

FROM

AXIS TITLES

FROM
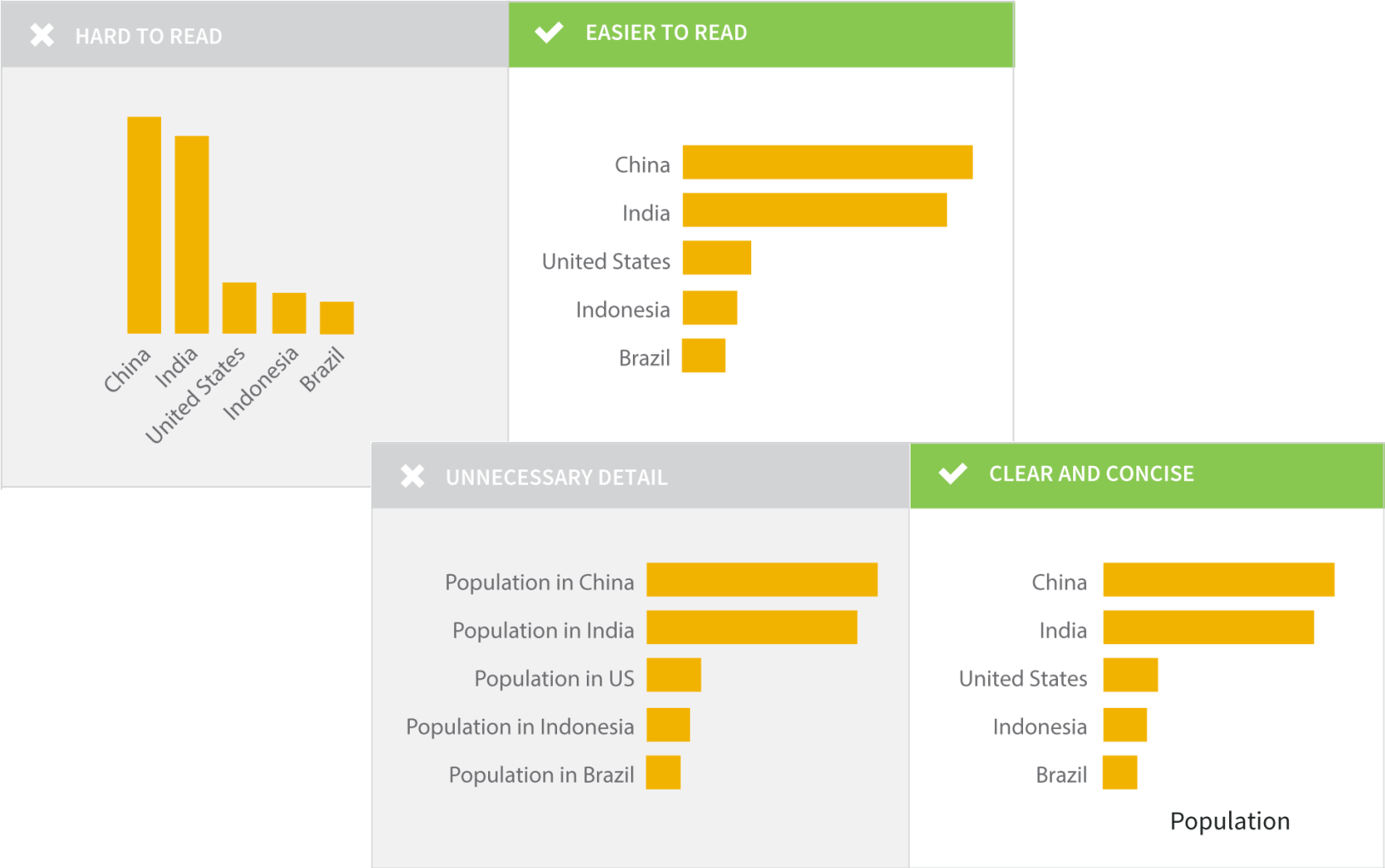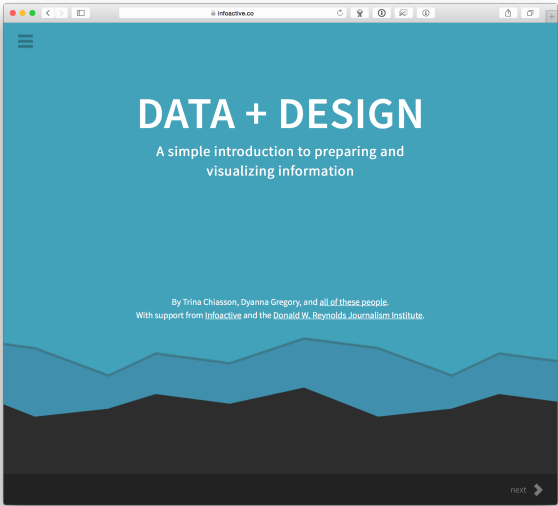
DON'T TRUNCATE AXES
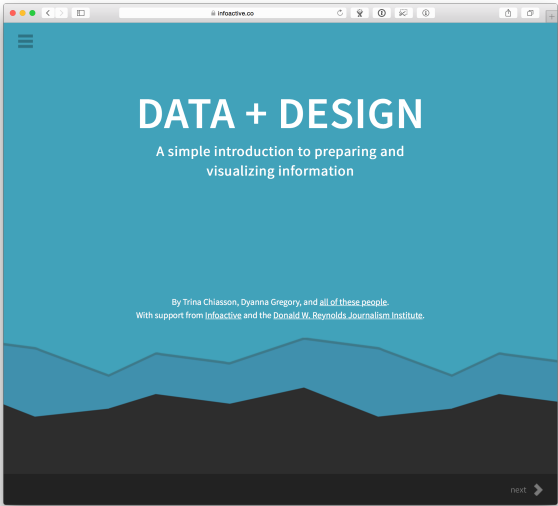
Effectiveness of Allergy Medicines

LESS IS MORE

FROM
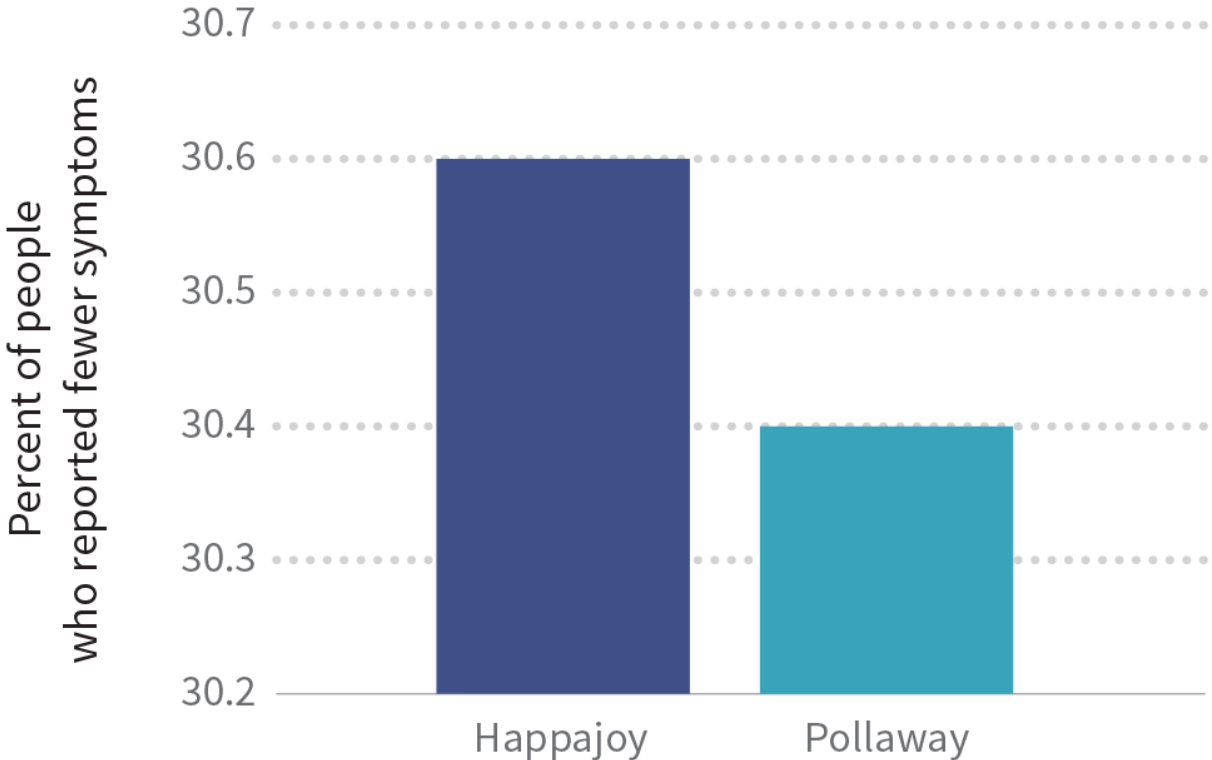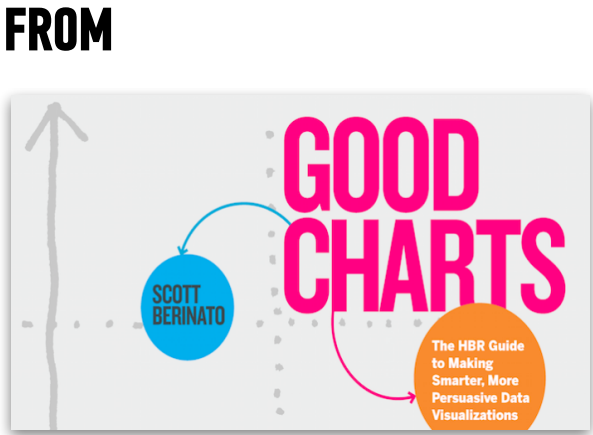
A REP'S PAST PERFORMANCE DOESN'T PREDICT FUTURE PROFITS

By looking not just at the revenue reps have generated but at their future profitability, you may find that your top performers are even more valuable than you thought—and your low performers even more costly.

Salesperson future value · Salesperson revenue

For both high—and low—performing sales reps in a B2B company, revenue generated was not a good indicator of expected future profitability, calculated using a special formula.

ANNUAL AVERAGES (THOUSANDS)

Decile of sales force — 1ST 2ND 3RD 4TH 5TH 6TH 7TH 8TH 9TH 10TH

<<< Revenue undervalues reps' future profitability | Revenue >>> overvalues reps' future profitability

SOURCE: V. KUMAR, SARANG SUNDER, AND ROBERT P. LEONE

A REP'S PAST PERFORMANCE DOESN'T PREDICT FUTURE PROFITS

SALES REPS' AVERAGE ANNUAL REVENUE (IN THOUSANDS)

Valuable reps | Costly reps

Current
Future potential*

REPS' DECILE RANKING WITHIN SALES FORCE
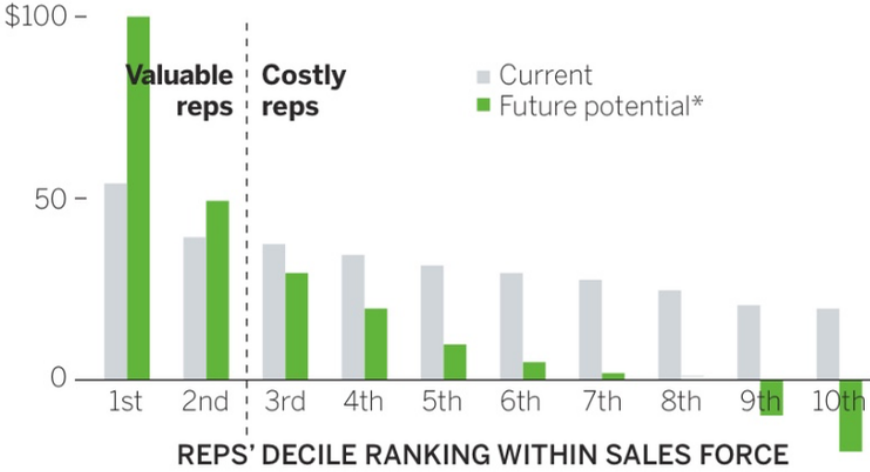
*CALCULATED USING A PROPRIETARY FORMULA.

SOURCE: RESULTS FROM A STUDY OF ONE B2B COMPANY BY V. KUMAR, SARANG SUNDER, AND ROBERT P. LEONE

BACK TO OUR DATA…

Monthly Trends			
Date	VSS	SVS	Total
Jan-09	$39K	$27K	**$66K**
Feb-09	$39K	$27K	**$66K**
Mar-09	$39K	$26K	**$66K**
Apr-09	$38K	$26K	**$64K**
May-09	$37K	$26K	**$63K**
Jun-09	$36K	$25K	**$61K**
Jul-09	$37K	$24K	**$62K**
Aug-09	$37K	$24K	**$60K**
Sep-09	$37K	$23K	**$60K**
Oct-09	$37K	$22K	**$59K**
Nov-09	$38K	$24K	**$61K**
Dec-09	$39K	$23K	**$62K**
Jan-10	$39K	$22K	**$61K**
Feb-10	$38K	$22K	**$59K**
Mar-10	$39K	$26K	**$66K**
Apr-10	$36K	$21K	**$57K**
May-10	$36K	$20K	**$56K**
Jun-10	$36K	$20K	**$56K**
Jul-10	$35K	$19K	**$54K**
Aug-10	$35K	$19K	**$54K**
Sep-10	$34K	$19K	**$53K**
Oct-10	$33K	$18K	**$51K**
Nov-10	$33K	$19K	**$52K**
Dec-10	$33K	$19K	**$51K**
Jan-11	$32K	$18K	**$50K**
Feb-11	$32K	$19K	**$51K**

Quarterly Trends			
Quarter	VSS	SVS	Total
Q1-09	$117K	$81K	**$198K**
Q2-09	$112K	$77K	**$189K**
Q3-09	$111K	$70K	**$182K**
Q4-09	$114K	$68K	**$182K**
Q1-10	$115K	$71K	**$186K**
Q2-10	$108K	$62K	**$170K**
Q3-10	$104K	$57K	**$161K**
Q4-10	$99K	$55K	**$155K**
Q1-11	$97K	$55K	**$152K**
Q2-11	$94K	$51K	**$145K**
Q3-11	$94K	$52K	**$146K**
Q4-11	$96K	$61K	**$157K**
Q1-12	$97K	$63K	**$160K**
Q2-12	$100K	$64K	**$164K**
Q3-12	$94K	$72K	**$166K**
Q4-12	$100K	$86K	**$185K**
Q1-13	$103K	$88K	**$190K**
Q2-13	$103K	$94K	**$197K**
Q3-13	$109K	$93K	**$202K**
Q4-13	$107K	$87K	**$194K**
Q1-14	$113K	$83K	**$195K**
Q2-14	$118K	$82K	**$200K**
Q3-14	$123K	$86K	**$209K**
Q4-14	$121K	$109K	**$230K**
Q1-15	$122K	$106K	**$229K**
Q2-15	$43K	$36K	**$78K**

Chart title

Left vertical axis title

Horizontal axis title

VSS
SVS
Total
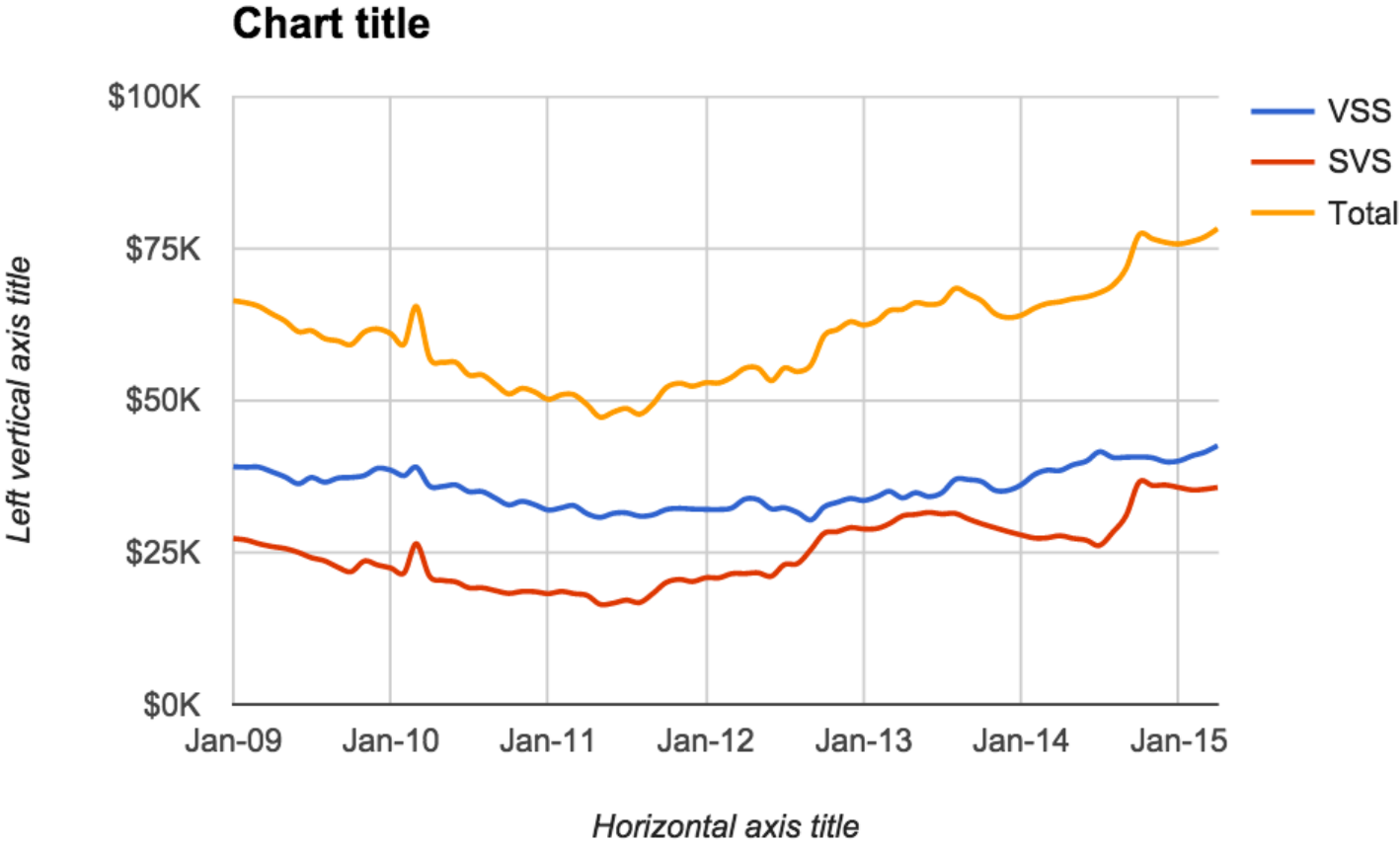
APPLYING DESIGN PRINCIPLES

Chart title

Monthly Gross Revenues by Facility
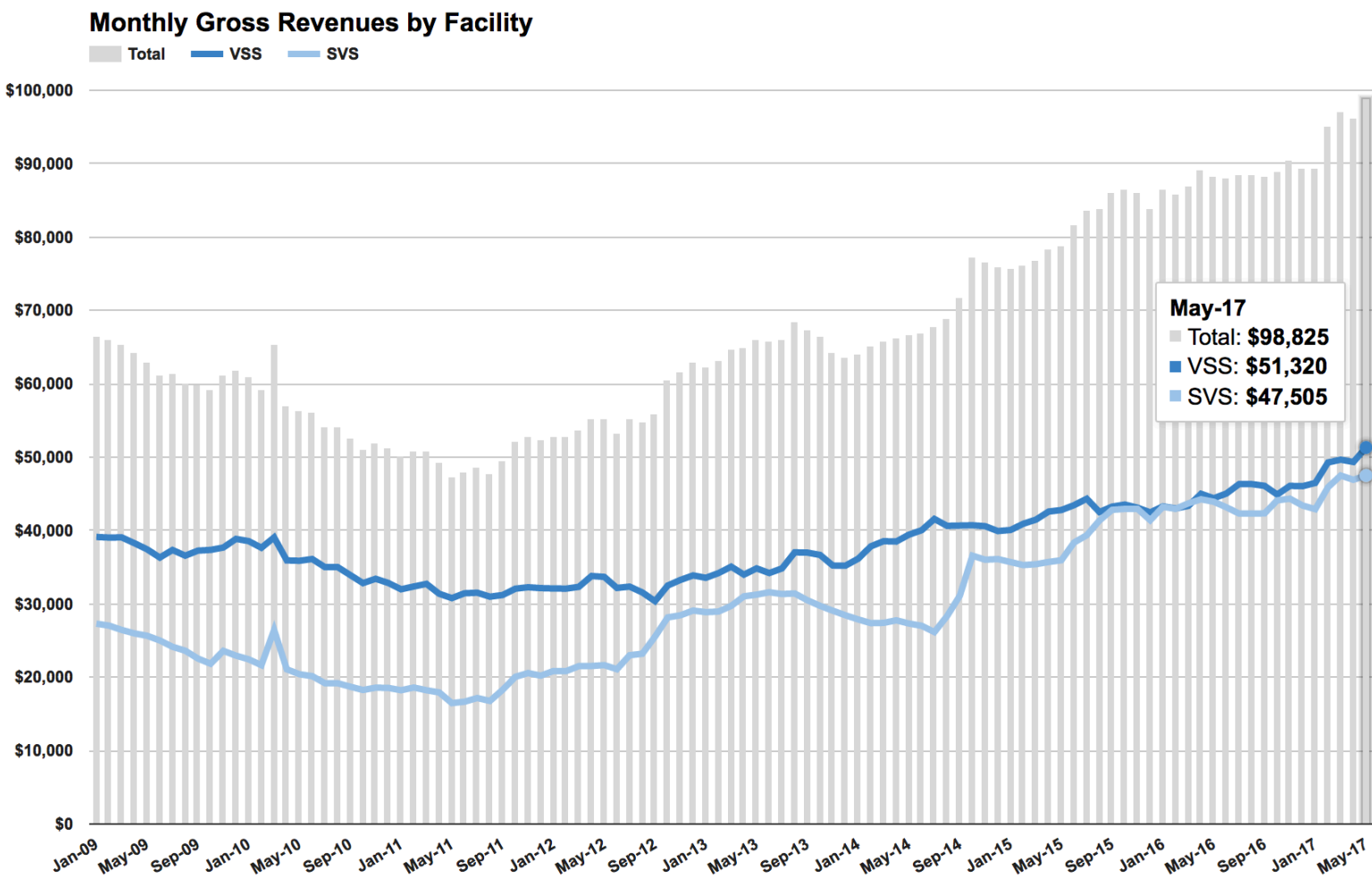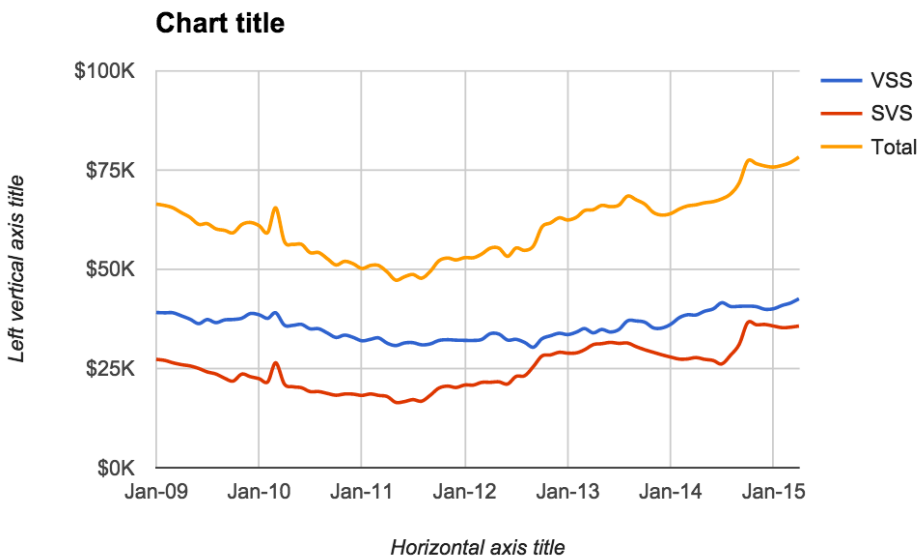
LET'S GIVE IT A TRY!

KEY OBJECTIVE

Create an effective chart

AGENDA

15 mins
1. Visit your copy of the exercises spreadsheet
2. Go to "5 - Effective Charts"
3. Make a monthly line chart on all the data
4. Clean up the formatting + add comparisons
5. Experiment with switching chart types

DELIVERABLE

A cleaner spreadsheet!

RESOURCES

Google Spreadsheets

ALTERNATIVE TIME-SERIES
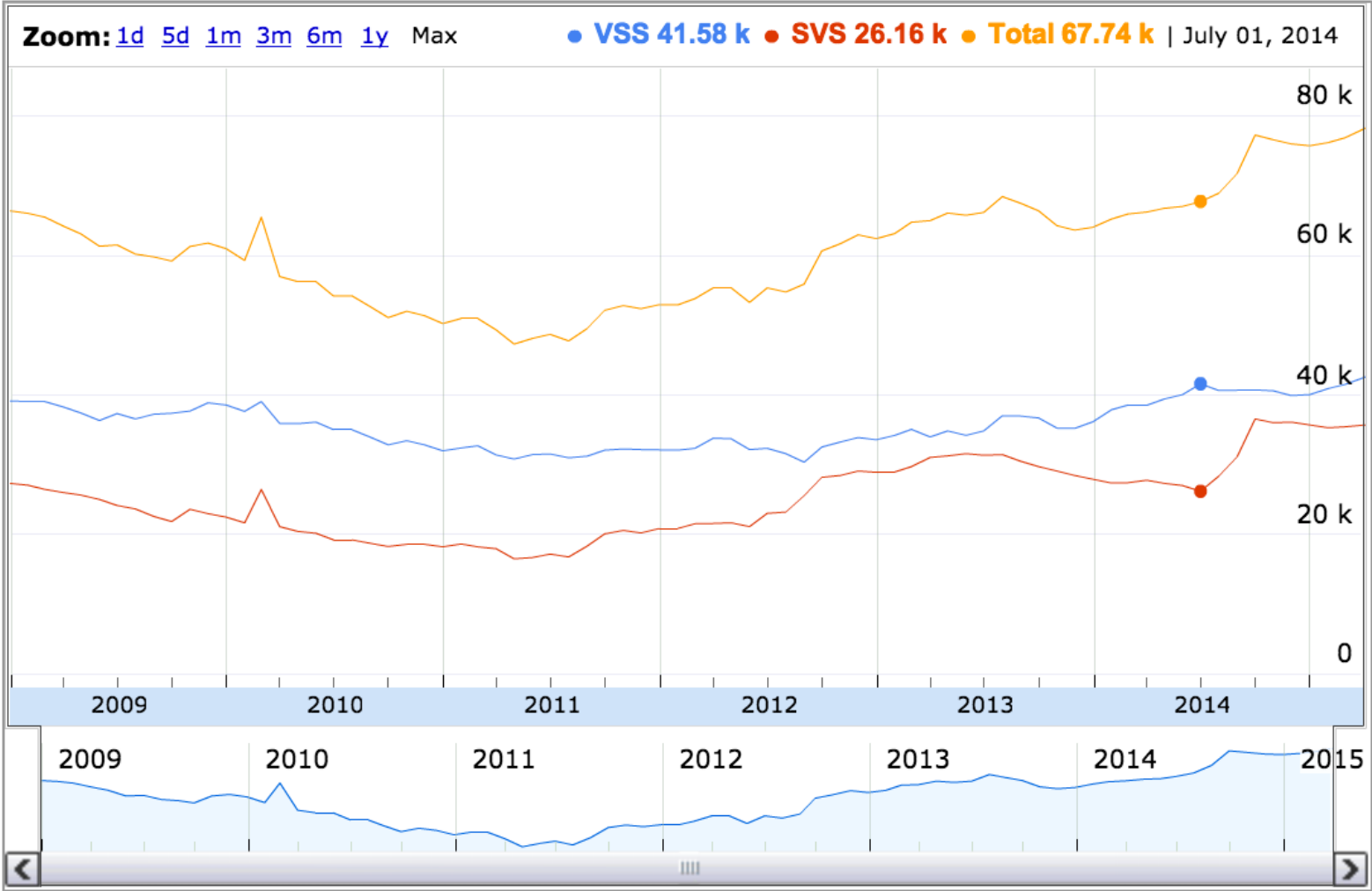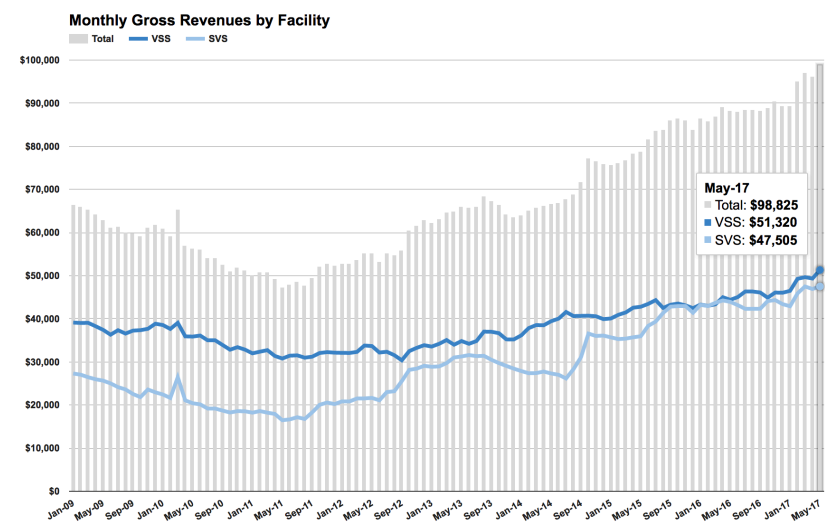
STACKED BARS
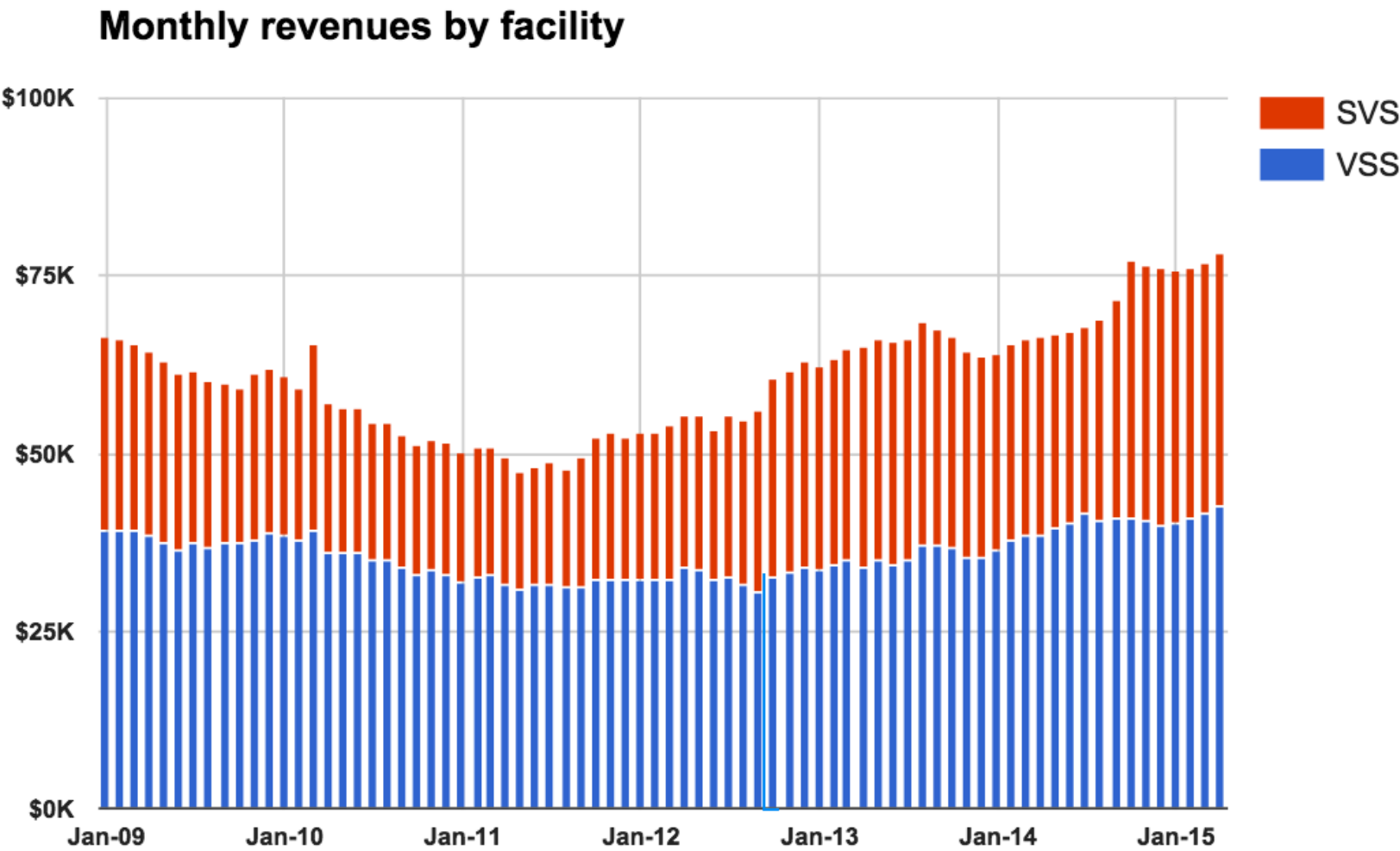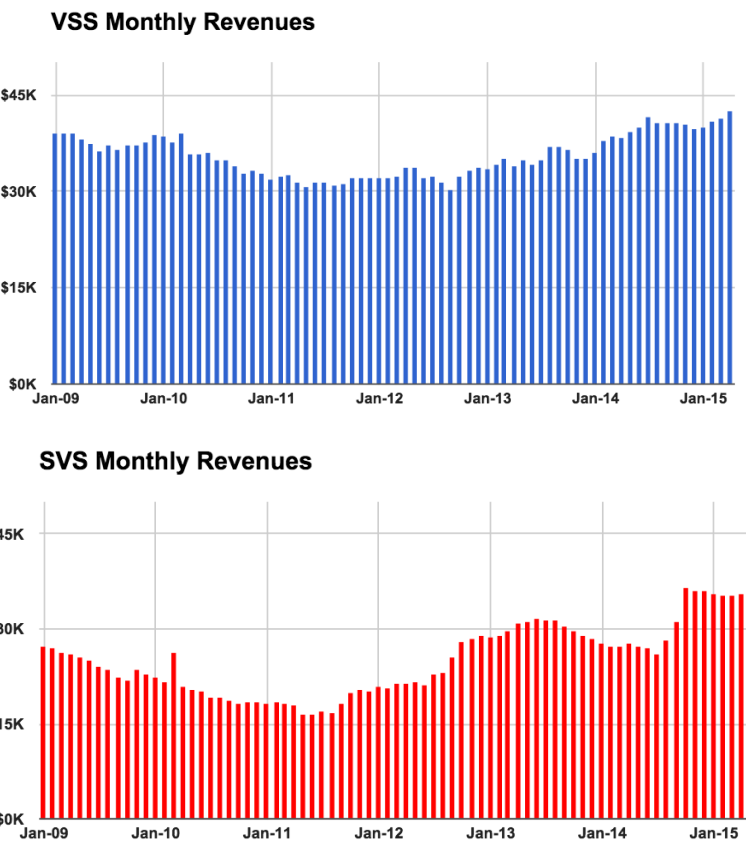
COMBO CHARTS

WITH CHARTED.CO

Monthly revenues by facility

Note the big jump in SVS from July-October 2014!

21.5K
SVS

- ● SVS
- ● VSS

Total revenues

Nice solid gains month-over-month since July 2011

53.8K

- ● Total
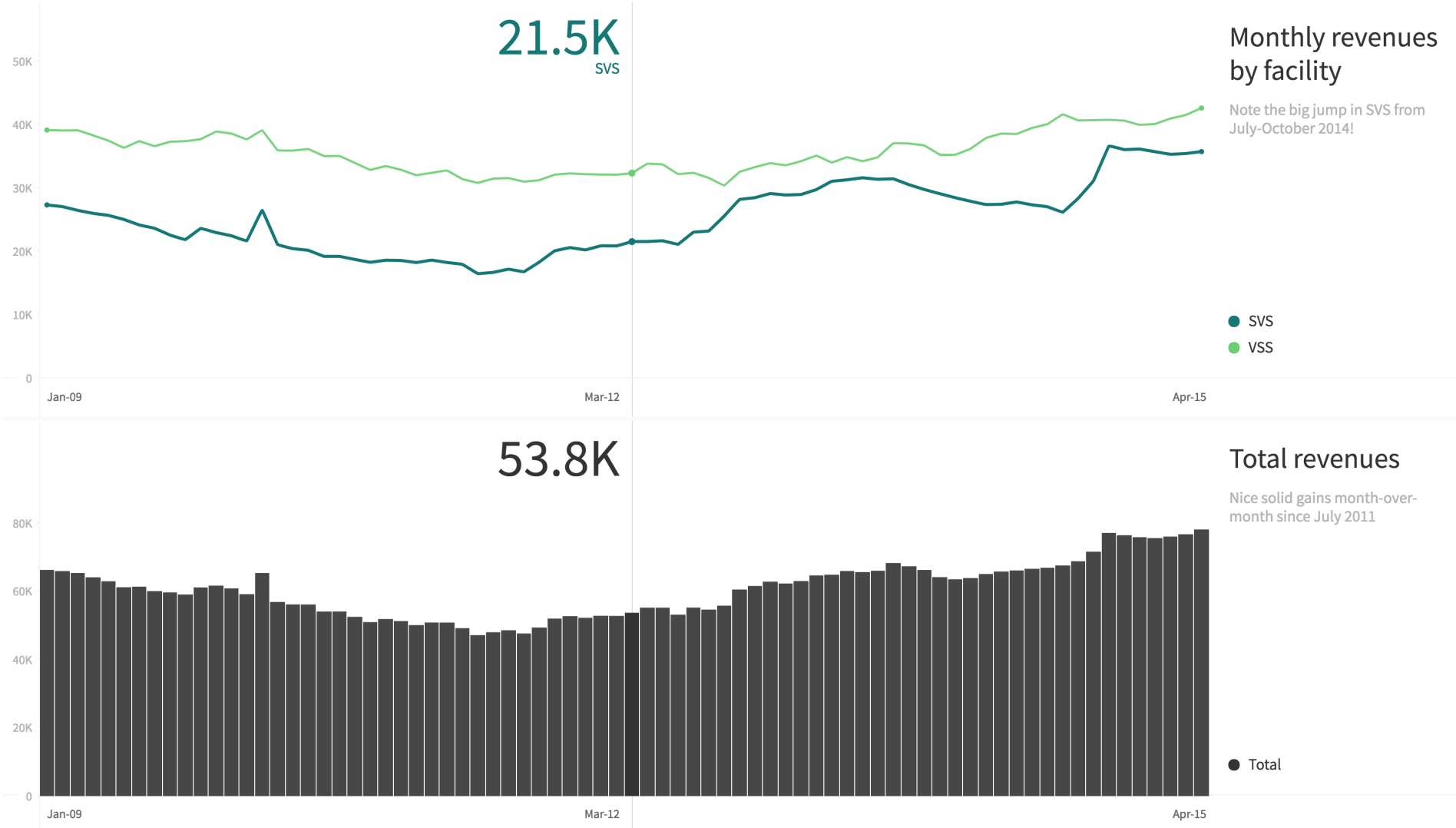
PLOTTING ACTUALS V. PROJECTIONS

Signups	Sep-2014	Oct-2014	Nov-2014	Dec-2014	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016	Apr-2016	May-2016	Jun-2016
Actuals	16.2K	18.4K	22.8K	20.K	22.2K	20.6K	25.5K	24.K	28.6K	25.3K	27.9K	29.6K	33.1K									
Q4 Target														33.5K	36.K	63.1K						
LT Target																	69.4K	76.4K	84.K	92.4K	101.6K	111.8K

MAU	Sep-2014	Oct-2014	Nov-2014	Dec-2014	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016	Apr-2016	May-2016	Jun-2016
Actuals	22.K	23.2K	28.3K	35.4K	34.1K	35.K	41.6K	44.7K	49.9K	48.6K	53.9K	57.3K	63.7K									
Q4 Target														64.3K	65.6K	80.4K						
LT Target																	88.5K	97.3K	107.K	115.6K	124.9K	134.9K

ARR	Sep-2014	Oct-2014	Nov-2014	Dec-2014	Jan-2015	Feb-2015	Mar-2015	Apr-2015	May-2015	Jun-2015	Jul-2015	Aug-2015	Sep-2015	Oct-2015	Nov-2015	Dec-2015	Jan-2016	Feb-2016	Mar-2016	Apr-2016	May-2016	Jun-2016
Actuals	$.2M	$.2M	$.2M	$.2M	$.3M	$.4M	$.4M	$.4M	$.5M	$.5M	$.5M	$.5M	$.6M									
Q4 Target														$.8M	$1.M	$1.4M						
LT Target																	$1.6M	$1.9M	$2.1M	$2.4M	$2.7M	$3.M

BREAK TIME!

‣ Stretch your legs

‣ Hydrate or grab a snack

‣ We'll start again in 10 mins!

SPARKLINES
+ SMALL MULTIPLES

SPARKLINES

Tasks completed by team members
(last 26 weeks, YoY change shown in %s)

Team Member	Total Tasks Completed			w1	w2	w3		w25	w26
Julie		▲	46%	13	15	19		11	19
John		▲	45%	11	18	11		14	16
Jabba the hut		▼	-20%	15	14	14		19	12
Johnson		▲	6%	18	17	14		12	19
Jeremy		▲	43%	14	20	10		12	20
Josh		▼	-33%	15	12	19		11	10

Sum of Net Sales		Month ▾					
Salesman ▾	Region ▾		Jan 07	Feb 07	Mar 07	Apr 07	May
⊟ Joseph			4655	3928	4462	4171	64
			2680	4604	4727	5668	5
			5423	5566	3503	4008	56
⊟ Lawrence			3840	3925	5928	5132	396
			4627	4219	5205	5309	770
			4896	5240	3516	6609	472
⊟ Maria			6580	2984	5375	5078	391
			3467	4710	4575	3661	523
			5152	6215	2783	6549	502
⊟ Matt			4204	5886	3238	5634	47
			4512	5330	4052	3061	3
			6850	5277	4257	4901	6
Grand Total			56886	57884	51621	59781	624

Types of Sparklines

Regular Sparkline	
Min and Max Points	
First and Last Points	
Markers	
Colum Chart	
Win Loss Chart	

Sample Usage

```
SPARKLINE(A1:F1)

SPARKLINE(A2:E2,{"charttype","bar";"max",40})

SPARKLINE(A2:E2,A4:B5)
```

https://support.google.com/docs/answer/3093289?hl=en

http://chandoo.org/wp/2010/05/18/excel-sparklines-tutorial/

AREN'T THEY PERTY?

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Monthly Trends					Quarterly Trends					Annual Trends			
2		VSS	SVS	Total			VSS	SVS	Total			VSS	SVS	Total
3	Date					Quarter					Year			
4	Jan-09	$39K	$27K	$66K		Q1-09	$117K	$81K	$198K		2009	$454K	$296K	$751K
5	Feb-09	$39K	$27K	$66K		Q2-09	$112K	$77K	$189K		2010	$426K	$245K	$671K
6	Mar-09	$39K	$26K	$66K		Q3-09	$111K	$70K	$182K		2011	$381K	$219K	$600K
7	Apr-09	$38K	$26K	$64K		Q4-09	$114K	$68K	$182K		2012	$390K	$285K	$675K
8	May-09	$37K	$26K	$63K		Q1-10	$115K	$71K	$186K		2013	$422K	$362K	$784K
9	Jun-09	$36K	$25K	$61K		Q2-10	$108K	$62K	$170K		2014	$475K	$359K	$834K
10	Jul-09	$37K	$24K	$62K		Q3-10	$104K	$57K	$161K		2015	$122K	$106K	$229K
11	Aug-09	$37K	$24K	$60K		Q4-10	$99K	$55K	$155K					
12	Sep-09	$37K	$23K	$60K		Q1-11	$97K	$55K	$152K					
13	Oct-09	$37K	$22K	$59K		Q2-11	$94K	$51K	$145K					
14	Nov-09	$38K	$24K	$61K		Q3-11	$94K	$52K	$146K					
15	Dec-09	$39K	$23K	$62K		Q4-11	$96K	$61K	$157K					
16	Jan-10	$39K	$22K	$61K		Q1-12	$97K	$63K	$160K					
17	Feb-10	$38K	$22K	$59K		Q2-12	$100K	$64K	$164K					
18	Mar-10	$39K	$26K	$66K		Q3-12	$94K	$72K	$166K					
19	Apr-10	$36K	$21K	$57K		Q4-12	$100K	$86K	$185K					

CUSTOM SPARK-LINES

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Monthly Trends					Quarterly Trends					Annual Trends			
2		VSS	SVS	Total			VSS	SVS	Total			VSS	SVS	Total
3	Date					Quarter					Year			
4	Jan-09	$39K	$27K	$66K		Q1-09	$117K	$81K	$198K		2009	$454K	$296K	$751K
5	Feb-09	$39K	$27K	$66K		Q2-09	$112K	$77K	$189K		2010	$426K	$245K	$671K
6	Mar-09	$39K	$26K	$66K		Q3-09	$111K	$70K	$182K		2011	$381K	$219K	$600K
7	Apr-09	$38K	$26K	$64K		Q4-09	$114K	$68K	$182K		2012	$390K	$285K	$675K
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10	Jul-09	$37K	$24K	$62K		Q3-10	$104K	$57K	$161K		2015	$122K	$106K	$229K
11	Aug-09	$37K	$24K	$60K		Q4-10	$99K	$55K	$155K					
12	Sep-09	$37K	$23K	$60K		Q1-11	$97K	$55K	$152K					
13	Oct-09	$37K	$22K	$59K		Q2-11	$94K	$51K	$145K					
14	Nov-09	$38K	$24K	$61K		Q3-11	$94K	$52K	$146K					
15	Dec-09	$39K	$23K	$62K		Q4-11	$96K	$61K	$157K					
16	Jan-10	$39K	$22K	$61K		Q1-12	$97K	$63K	$160K					
17	Feb-10	$38K	$22K	$59K		Q2-12	$100K	$64K	$164K					
18	Mar-10	$39K	$26K	$66K		Q3-12	$94K	$72K	$166K					
19	Apr-10	$36K	$21K	$57K		Q4-12	$100K	$86K	$185K					

```
fx | =SPARKLINE(F5:F80, {"charttype","column"; "ymax", 100000})
```

KEY OBJECTIVE

Emulate good data design.

AGENDA

20 mins
1. Visit your copy of the exercises spreadsheet
2. Go to "6 - Sparklines"
3. Add a sparkline for each column
4. Make the sparkline a spark-column

DELIVERABLE

In-line sparklines!

RESOURCES

Google Spreadsheets

WHAT'S POSSIBLE

KPI Data Triangulation — 180-day Trends

| | | CORE TRACTION METRICS | | | | | | | | | | | DAUs by CUSTOMER TYPE | | | |

	Daily User Signups			New Company Signups			Daily Active Companies			Daily Active Users			Non-RC		RC	
	SQL	Mixpanel	Vertica	SQL	Mixpanel	Vertica	SQL	Mixpanel	Vertica	SQL	Mixpanel	Vertica	Mixpanel	Vertica	Mixpanel	Vertica

		C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S
149	42 10/6/2016	141	549	594	98	122	267	3,912	5,616	0	10,746	22,081	0	11,165	0	10,916	0
150	41 10/7/2016	457	468	487	221	95	273	5,834	5,088	0	20,259	20,536	0	10,088	0	10,448	0
151	40 10/8/2016	441	123	218	202	35	79	6,087	2,175	0	21,645	7,495	0	4,264	0	3,231	0
152	39 10/9/2016	436	179	258	210	36	97	6,030	4,197	0	21,511	8,872	0	5,164	0	3,708	0
153	38 10/10/2016	398	577	450	187	98	203	6,090	5,793	0	21,600	20,950	0	10,561	0	10,389	0
154	37 10/11/2016	367	543	449	195	92	203	5,759	5,766	0	20,438	22,464	0	11,162	0	11,302	0
155	36 10/12/2016	122	508	565	97	115	203	3,860	5,838	0	10,142	22,306	0	11,051	0	11,255	0
156	35 10/13/2016	144	489	539	153	101	176	4,842	5,783	0	13,145	22,559	0	11,191	0	11,368	0
157	34 10/14/2016	488	396	610	211	74	200	7,411	5,303	0	26,106	20,559	0	10,074	0	10,485	0
158	33 10/15/2016	432	118	164	210	30	80	7,557	2,274	0	26,527	7,380	0	4,188	0	3,192	0
159	32 10/16/2016	533	171	287	243	40	158	7,590	4,373	0	26,809	8,851	0	5,279	0	3,572	0

DATA VIZ TECHNIQUES

NARRATIVE!

NARRATIVE!

NARRATIVE!

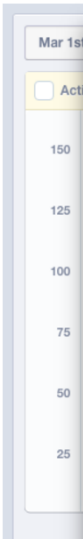**VIA MIXPANEL SCREENSHOTS**

RC Active User Growth has been STRONG

This growth has been driven in part by new RC user signups:

But just as critical is the fact that RC users post to _ _ 2.5x more than non-rc users!
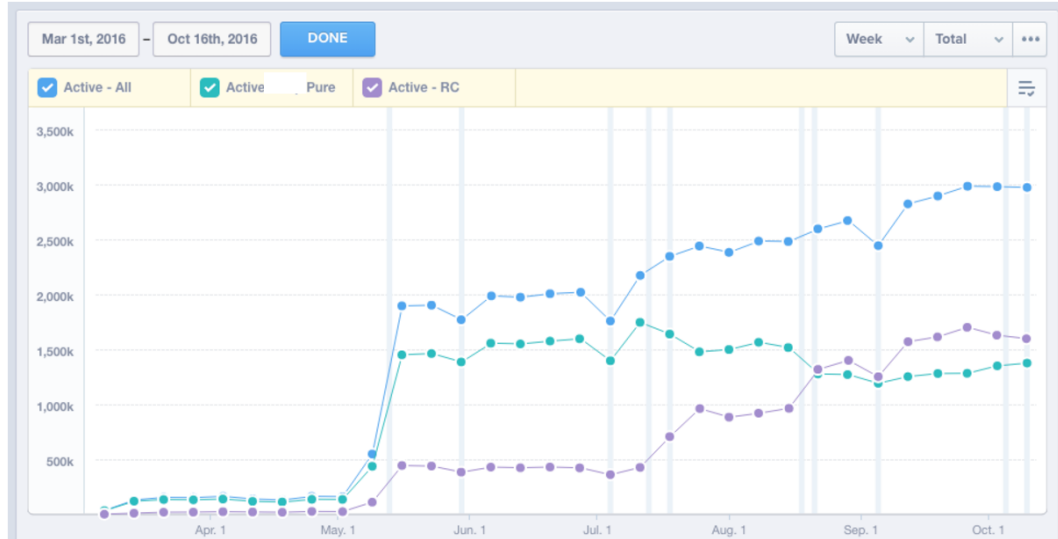
And new RC users' 4-week retention is 2.4x higher than new non-RC users:

So as more RC users sign up, they drive an increasingly larger share of total _ posts:

And this, in turn, has helped recently drive total posts past 3MM per week!

THE POWER OF NARRATIVE

HTTP://FALLEN.IO

SMALL MULTIPLES

HTTPS://PROQUESTIONASKER.GITHUB.IO/PROJECTS/MOVIEDIALOGUEINTERACTIVE

Gender Equality and Dialogue in 2016's Highest Grossing Films

In 2016, several new movie releases featured a lead female character. Does that indicate males and females now share equal roles and dialogue in films? To answer that question, I counted the number of words spoken by each character in 2016's Highest Grossing Films.

Every circle represents a single speaking character. The size of each circle is scaled based on the number of words spoken by that character.

2000 words
1000 words
100 words

● Male   👤 Characters
● Female   💬 Dialogue

Gender Equality

50

Gender Split/Mix Toggle

Rogue One

The Jungle Book

Suicide Squad

Batman Vs. Superman

The Secret Life of Pets

Deadpool

Captain America: Civil War

Fantastic Beasts

NESTED CHARTS + SMALL MULTIPLES

2x2s

GARTNER'S
MAGIC
QUADRANT
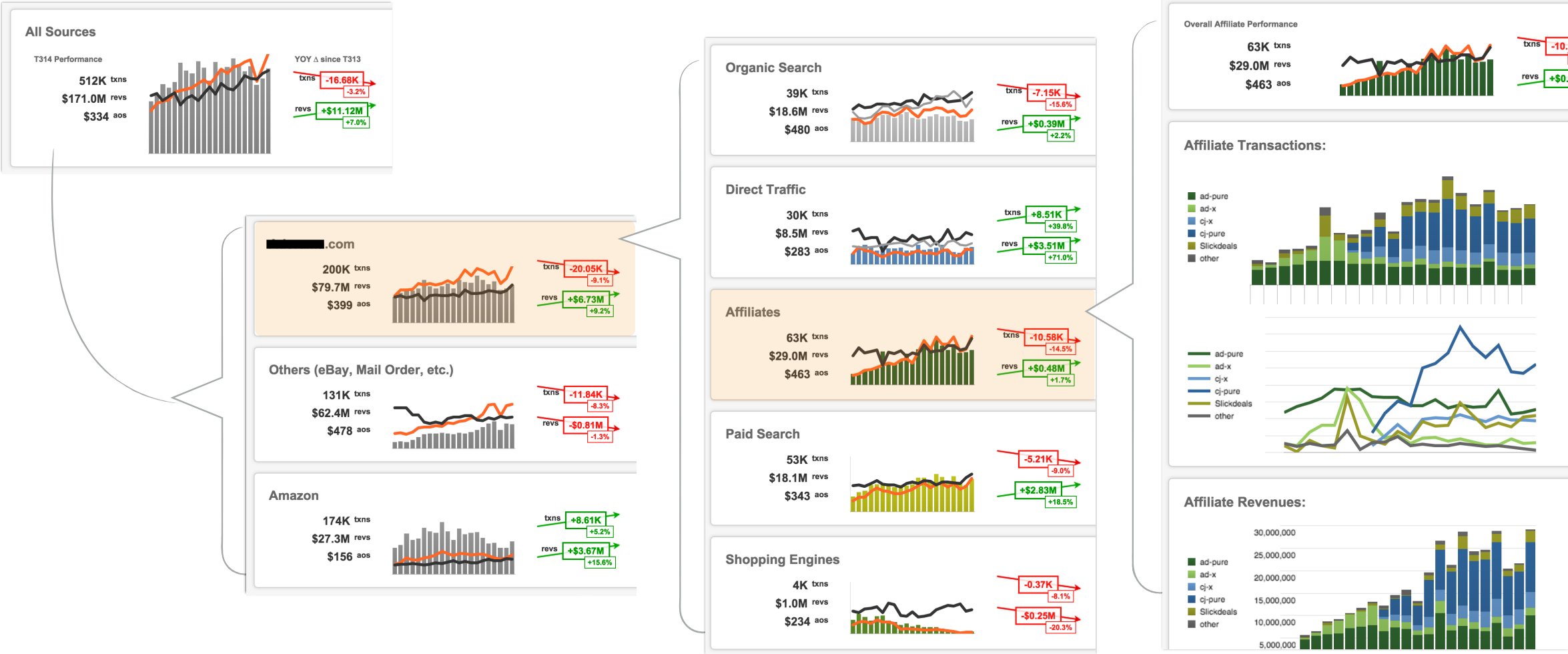
Figure 1.   Magic Quadrant for Business Intelligence and Analytics Platforms
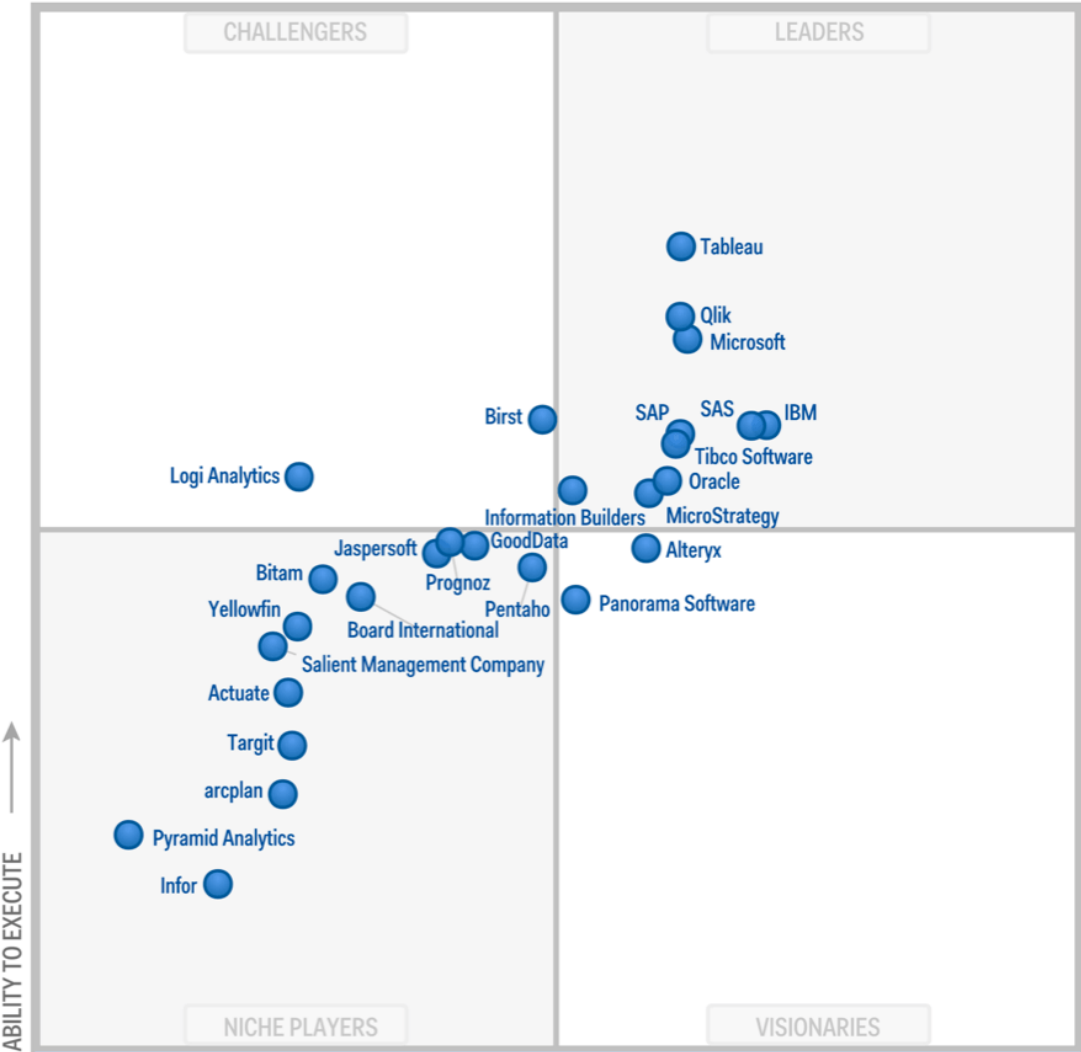
2x2s
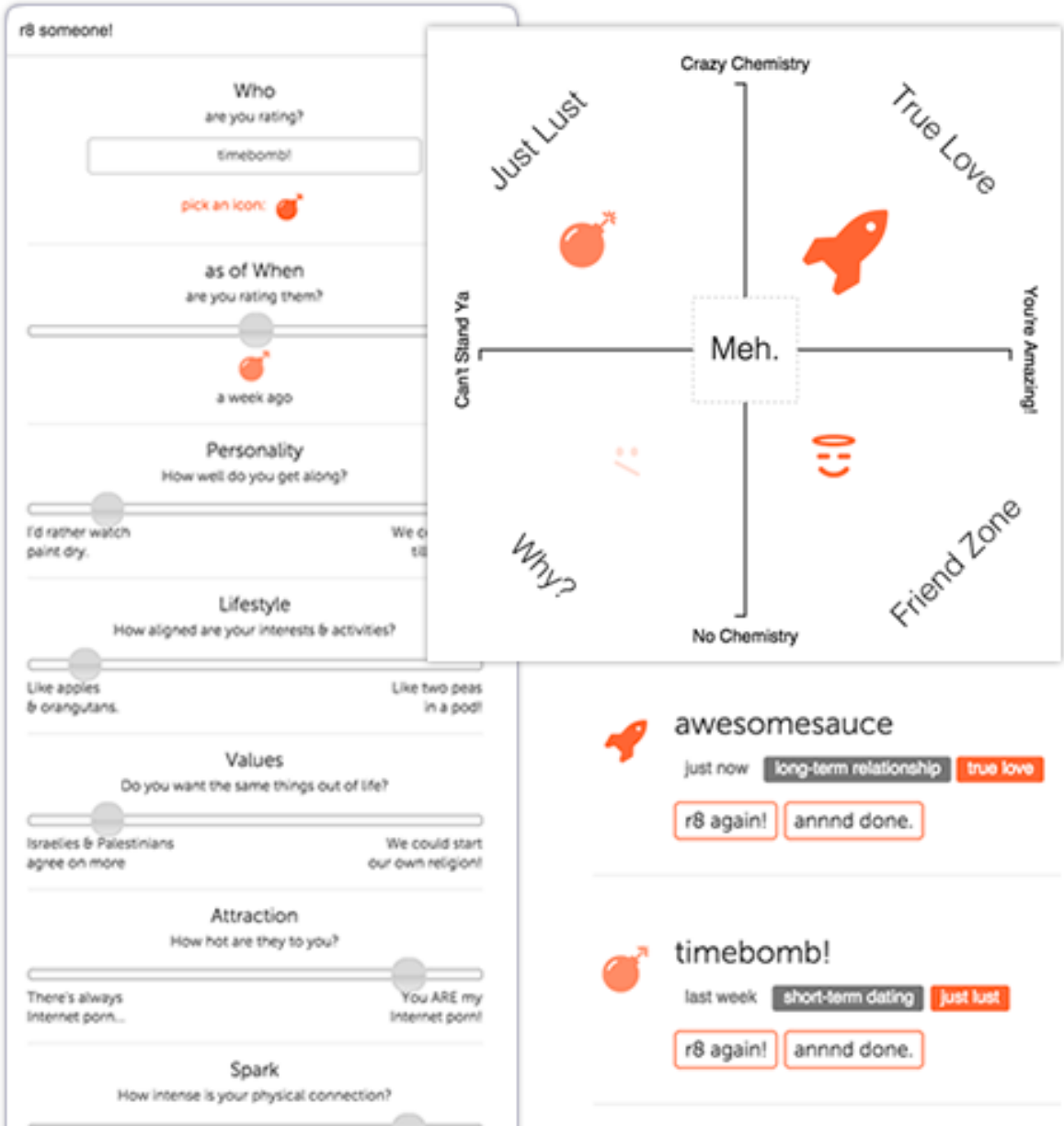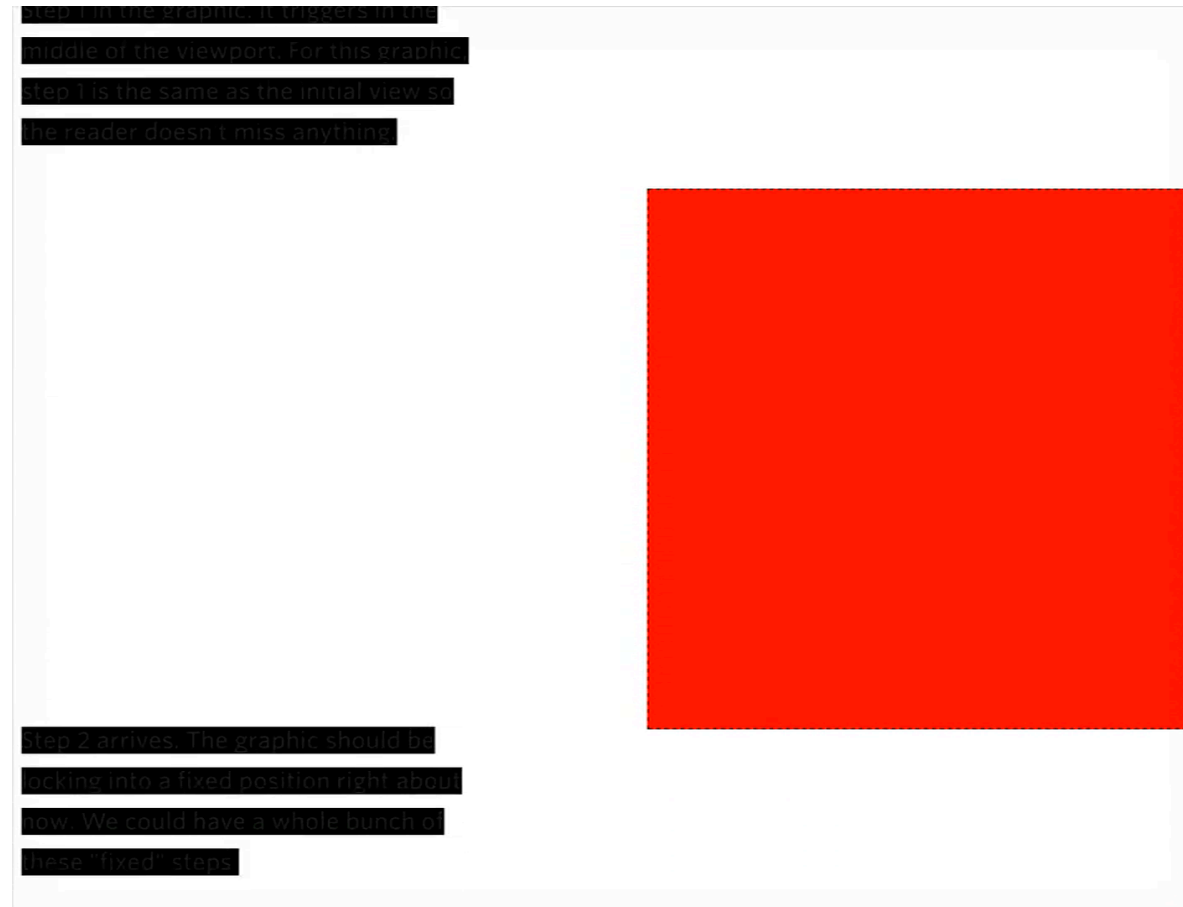
SCROLLYTELLING!

SCROLLYTELLING!

The lake had long been vulnerable.

SCROLLYTELLING!

DATA VIZ TOOLS

CHARTED

FOR SUPER SIMPLE CHARTS
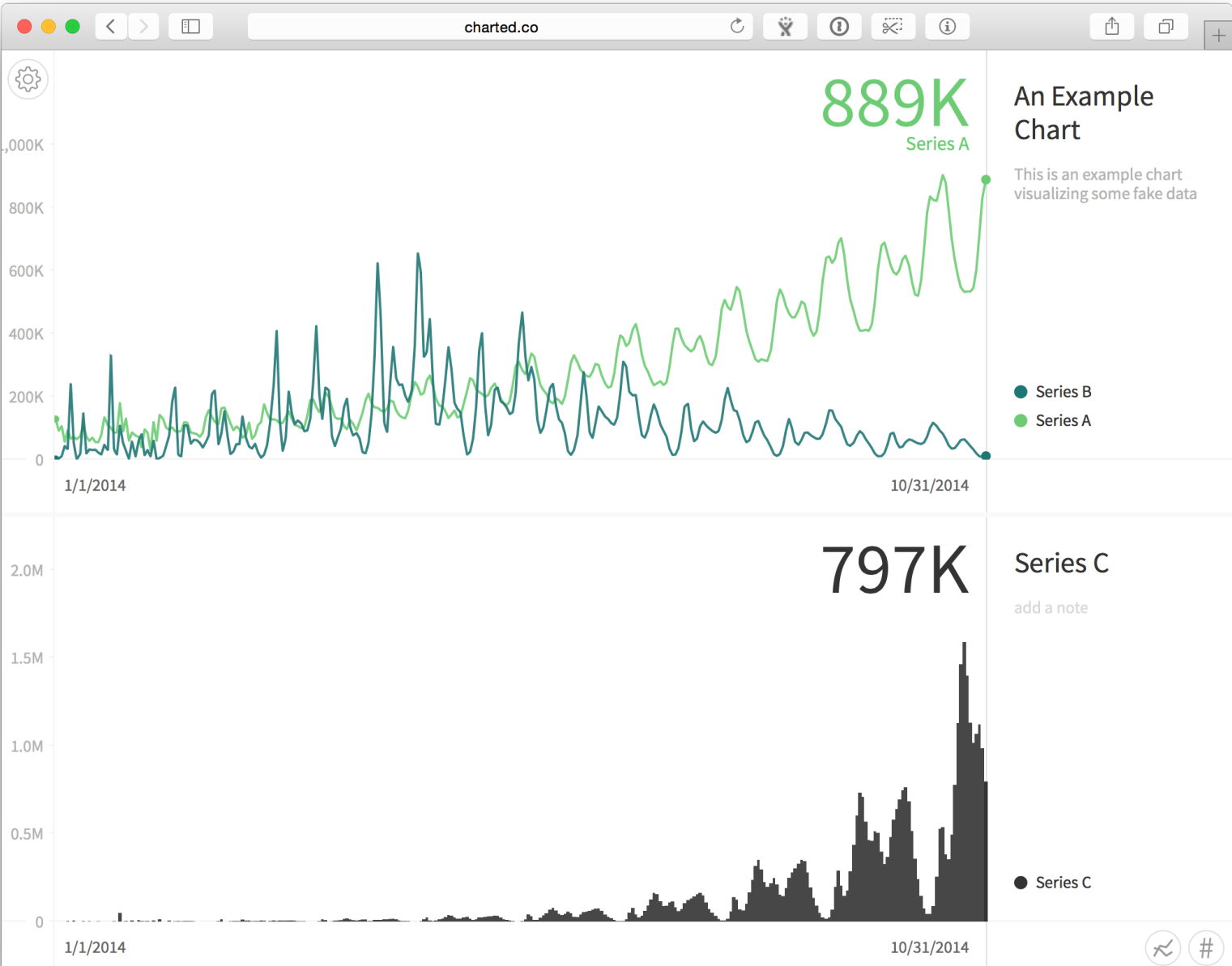
TAGUL

FOR GORGEOUS WORD CLOUDS

QUID

FOR UNSTRUCTURED ANALYSIS

Seth

https://quid.com/product#/knowledge-download

Quid®

PRODUCT   OUR STORY   CAREERS   LOG IN   TRY QUID

Competitive Intelligence

A look at what your competitors are doing, saying, investing in and acquiring. Follow company footprints over time and gain insights on how to get ahead of them.
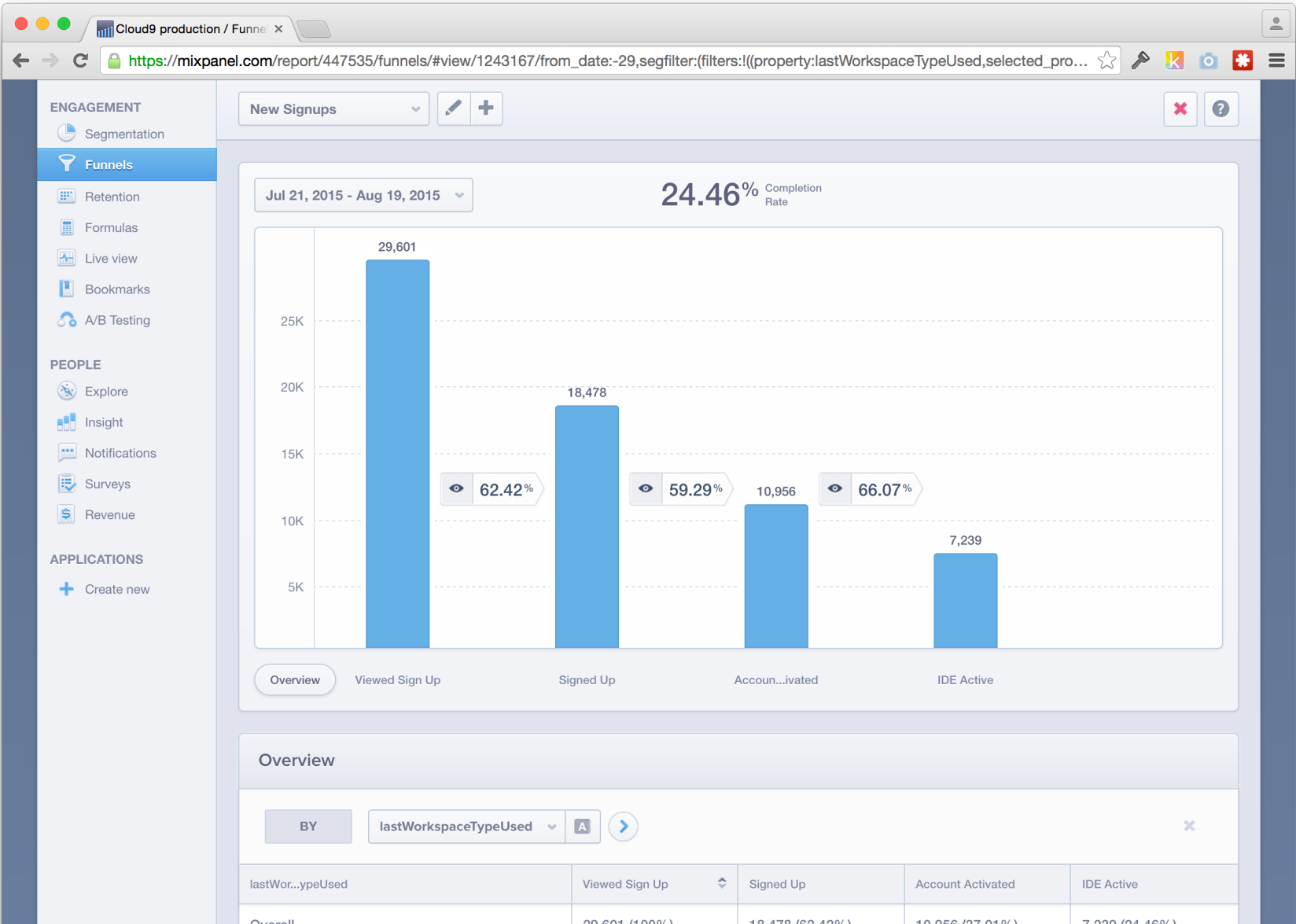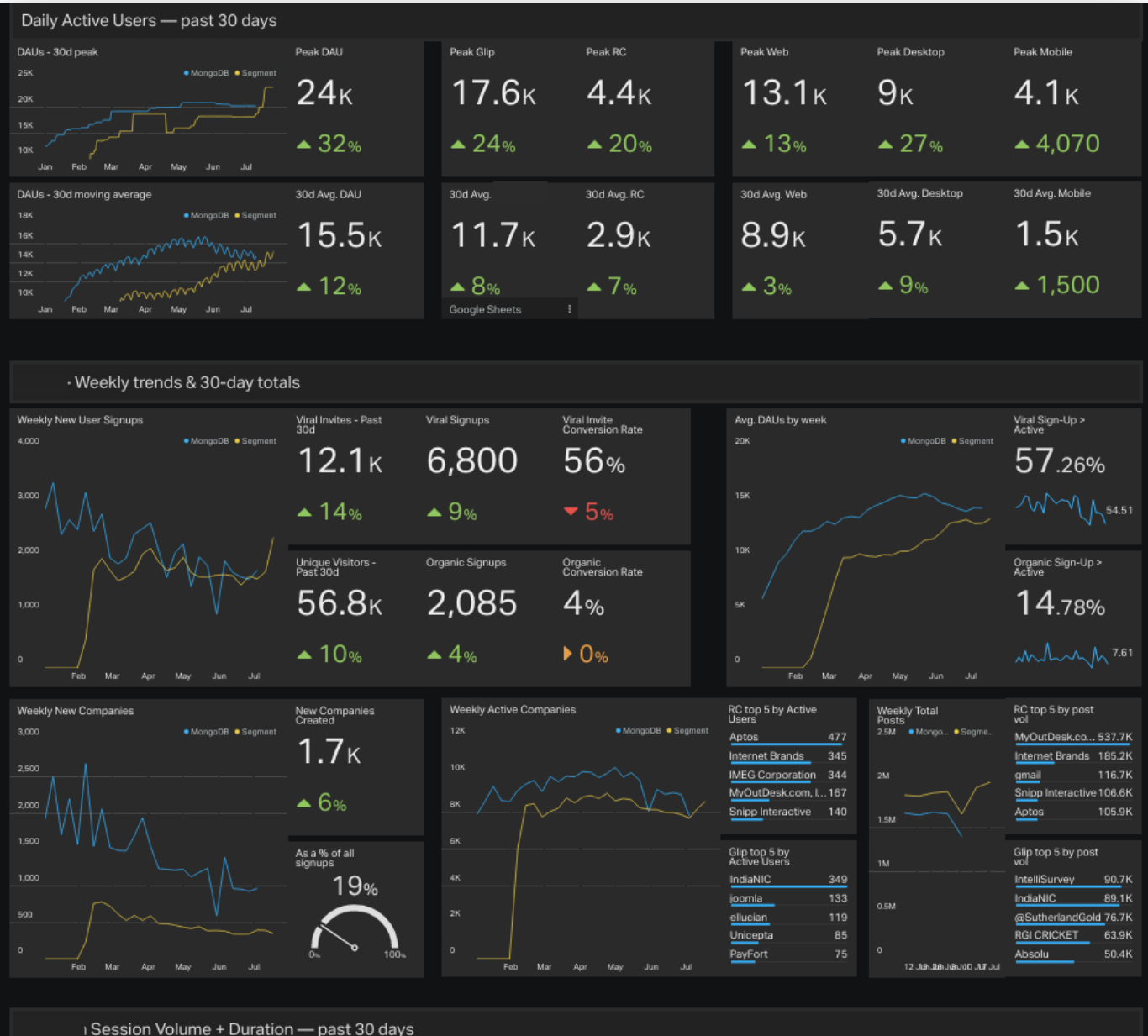
Coloring by Company

Google		13%
Facebook		10%
IBM		9%
Yahoo		6.5%
Microsoft		5.4%
Hewlett-Packard		4.9%
NTT		4.7%
Qualcomm		4.7%

Network

Nodes   Labels   Links

Company (Primary Mention)
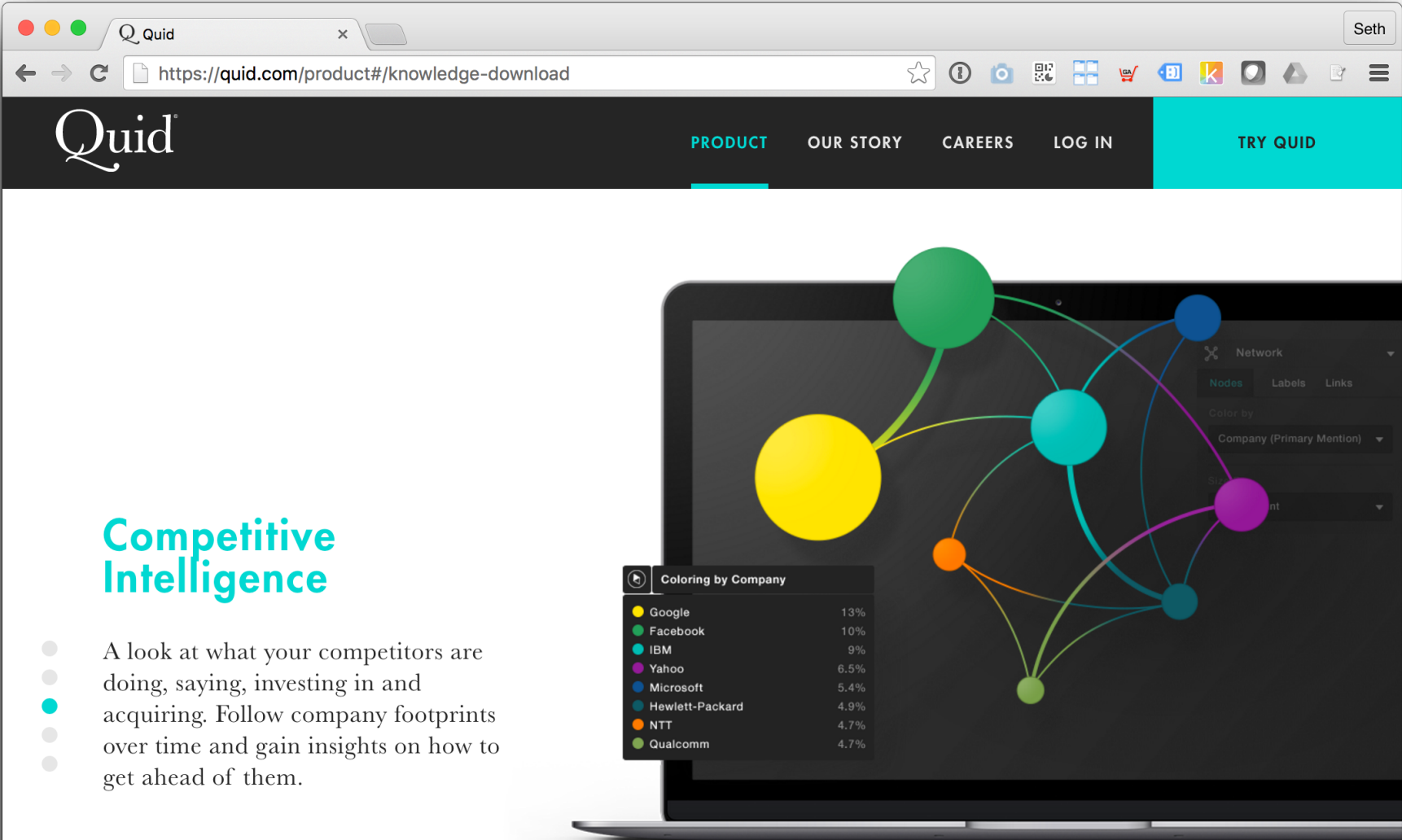
MAPBOX

FOR GEOGRAPHIC DATA
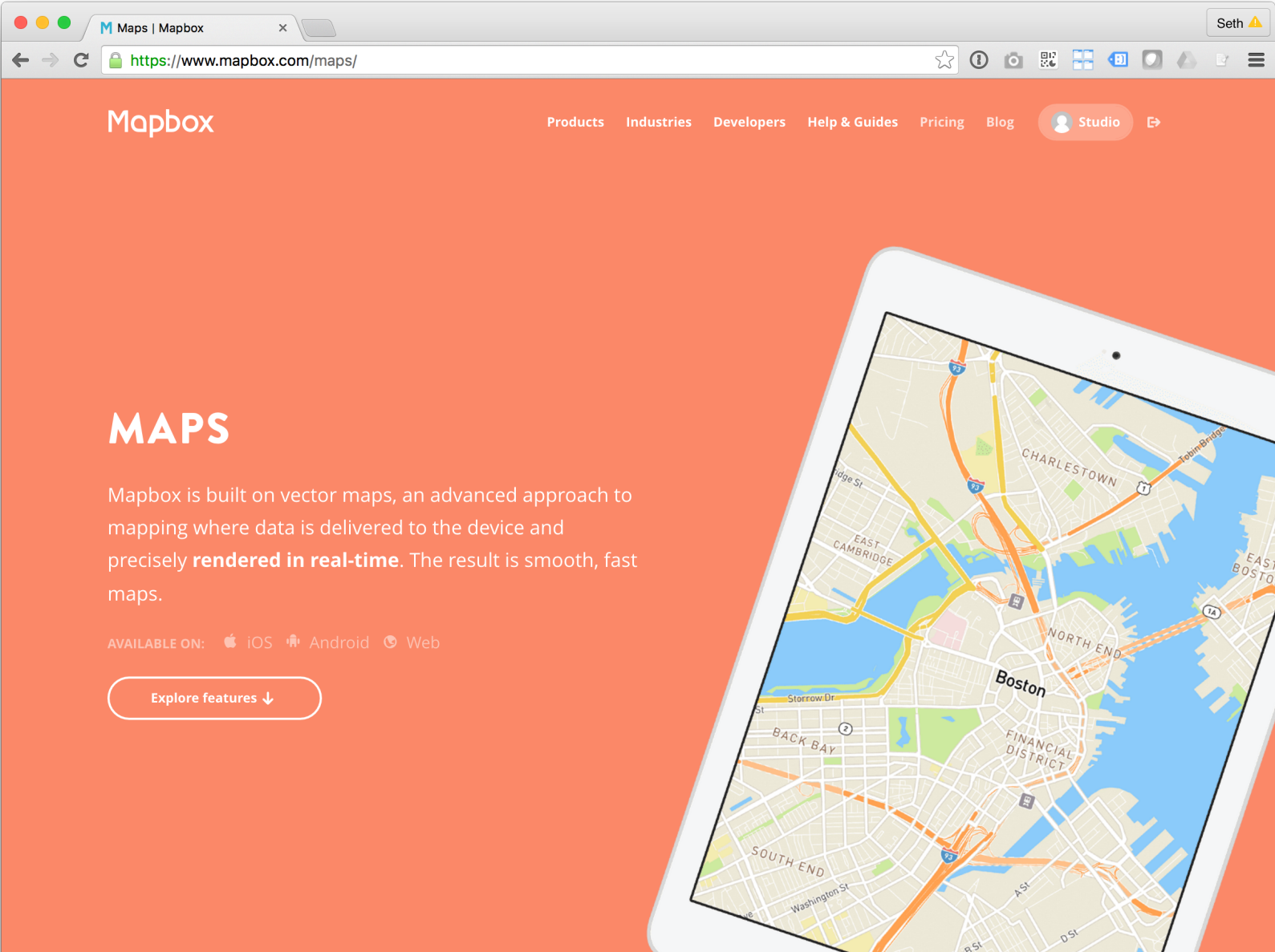
MIXPANEL

FOR USER-EVENT DATA

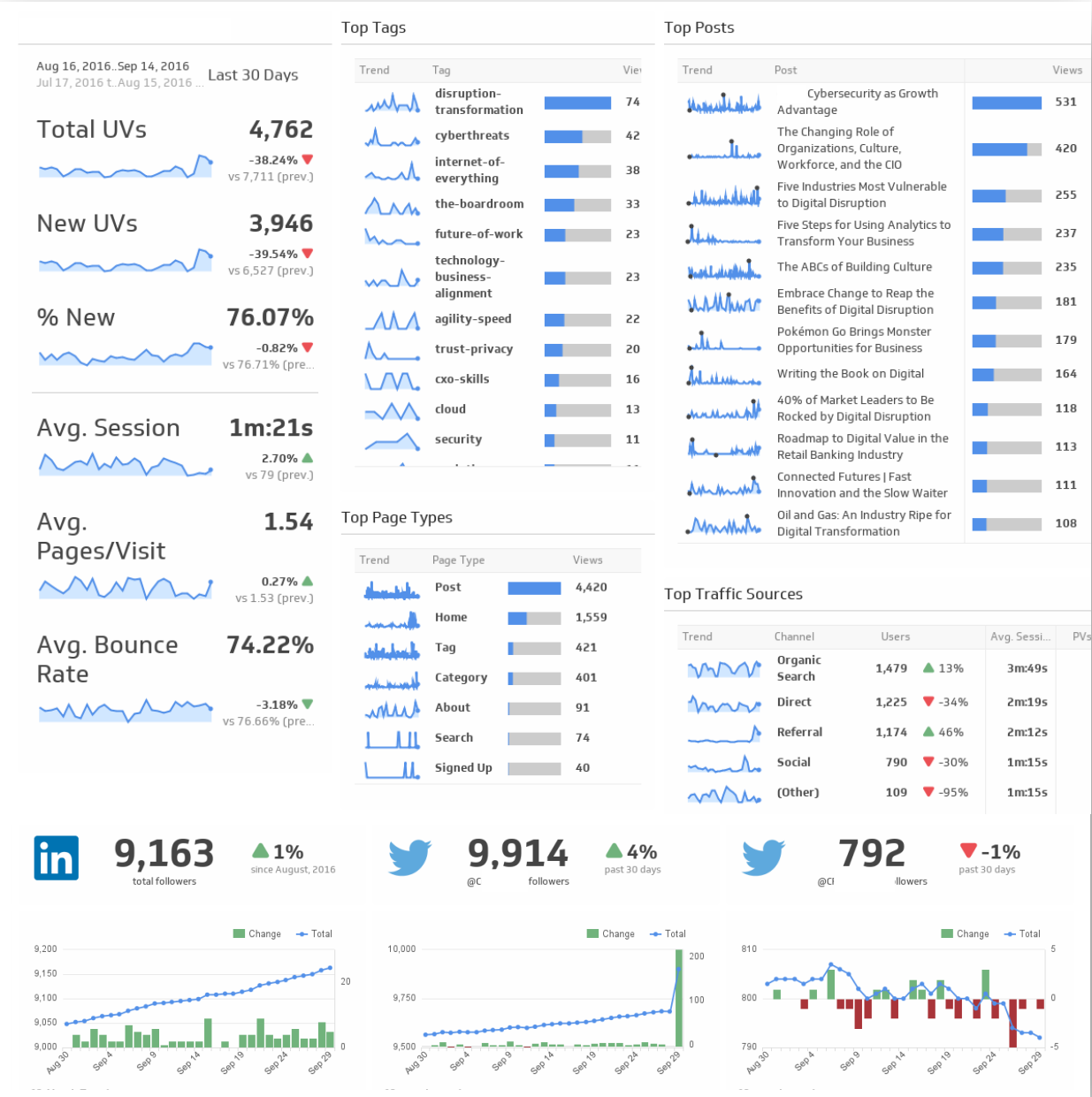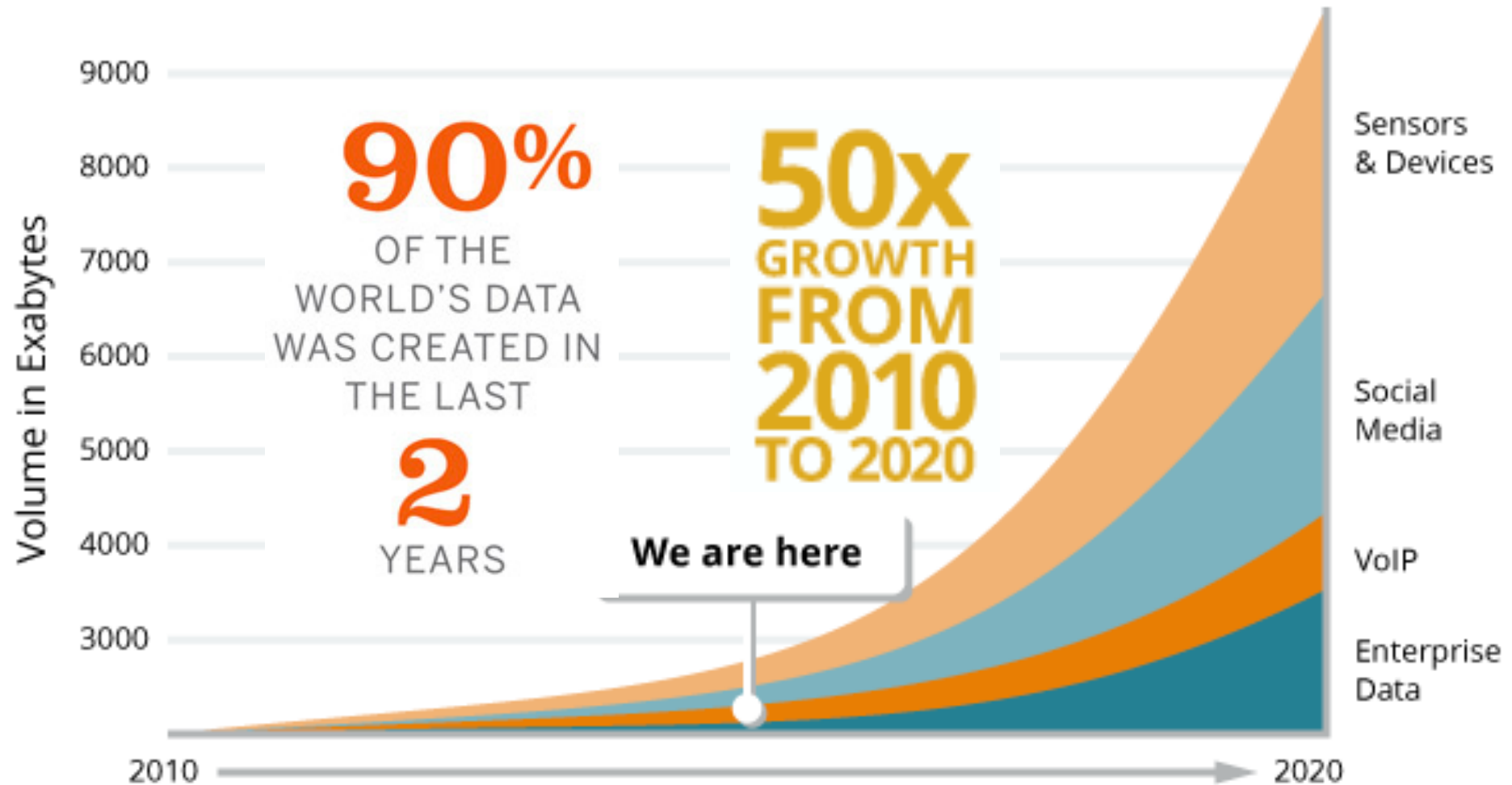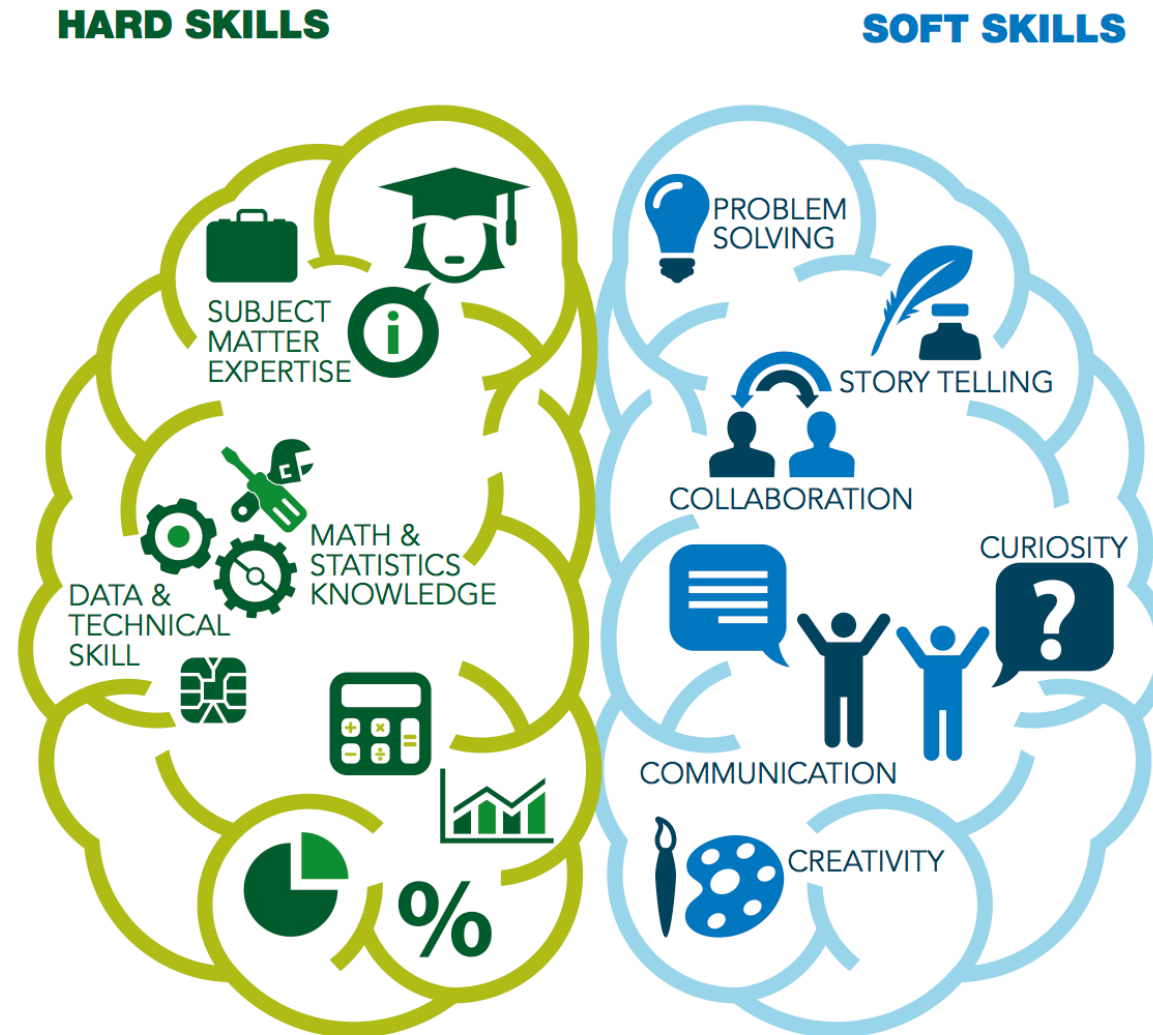# GECKOBOARD

KLIPFOLIO

FINAL THOUGHTS

DATA OBESITY!

A NEW TYPE OF KNOWLEDGE WORKER

AN INCREDIBLY VALUABLE SKILL

"I keep saying that the sexy job in the next 10 years will be statisticians. And I'm not kidding."

— HAL VARIAN, chief economist at Google

Source: "For Today's Graduate, Just One Word: Statistics," New York Times, August 5, 2009

TREND AMONG MAJOR COMPANIES

90% of **Fortune 500** companies are predicted to have at least some big data initiatives under way.

Source: "Billions and billions: big data becomes a big deal," Deloitte, Technology, Media & Telecommunications Predictions 2012

3/4 of executives at large companies in the U.S. and U.K. said they are working to increase their company's use of analytics.

Source: "Counting on Analytical Talent," Accenture, March 2010

GROWING JOB MARKET

$97,000–$108,000 The **mean salaries** for positions in the data analytics field.

Source: Burning Glass International report of job postings for bachelor's and graduate degree holders in the data analytics field during 2012

140,000-190,000 The predicted **shortage of talent** in the next five years with deep analytical skills to take advantage of big data.

Source: "Big data: The next frontier for innovation, competition, and productivity," McKinsey Global Institute, May 2011

https://studentforce.wordpress.com/2013/09/21/umuc-big-data-revolution-is-here/

DATA AS INTERFACE
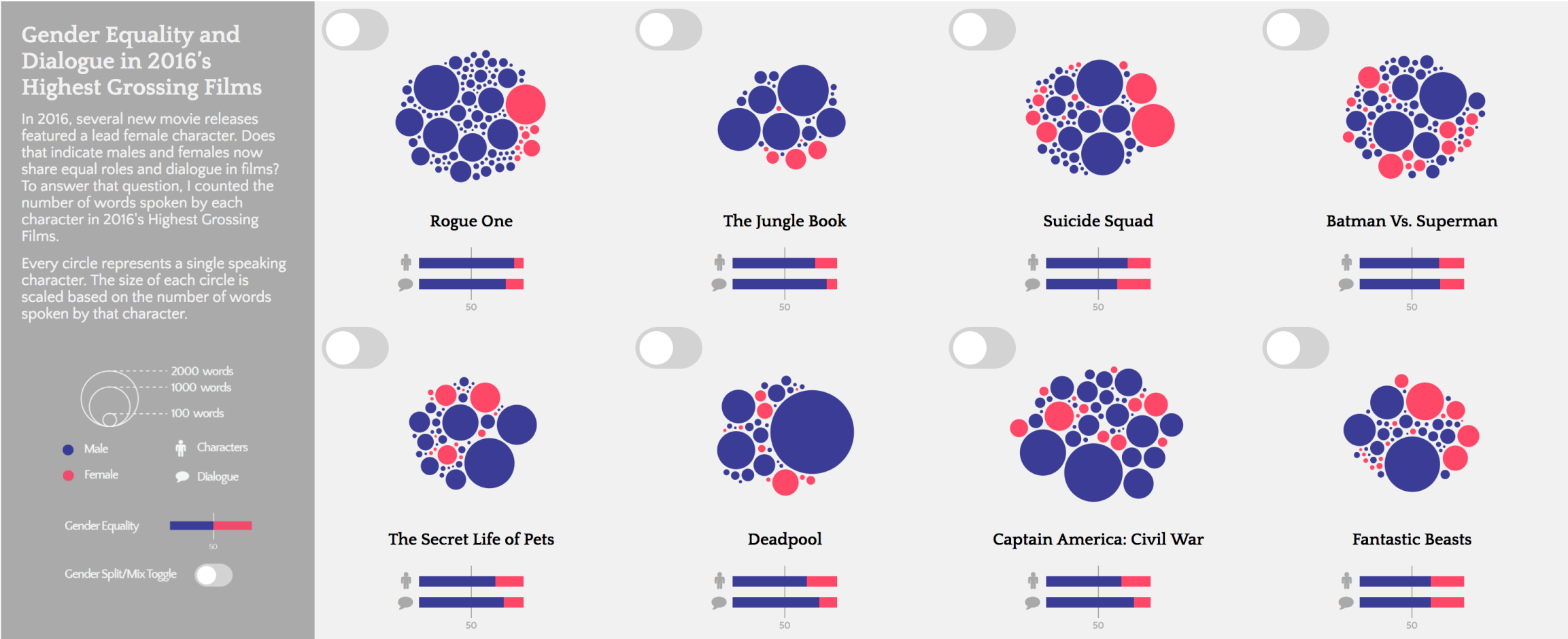

VISUAL DISCOVERY: DATA-DRIVEN, EXPLORATORY VISUALIZATIONS
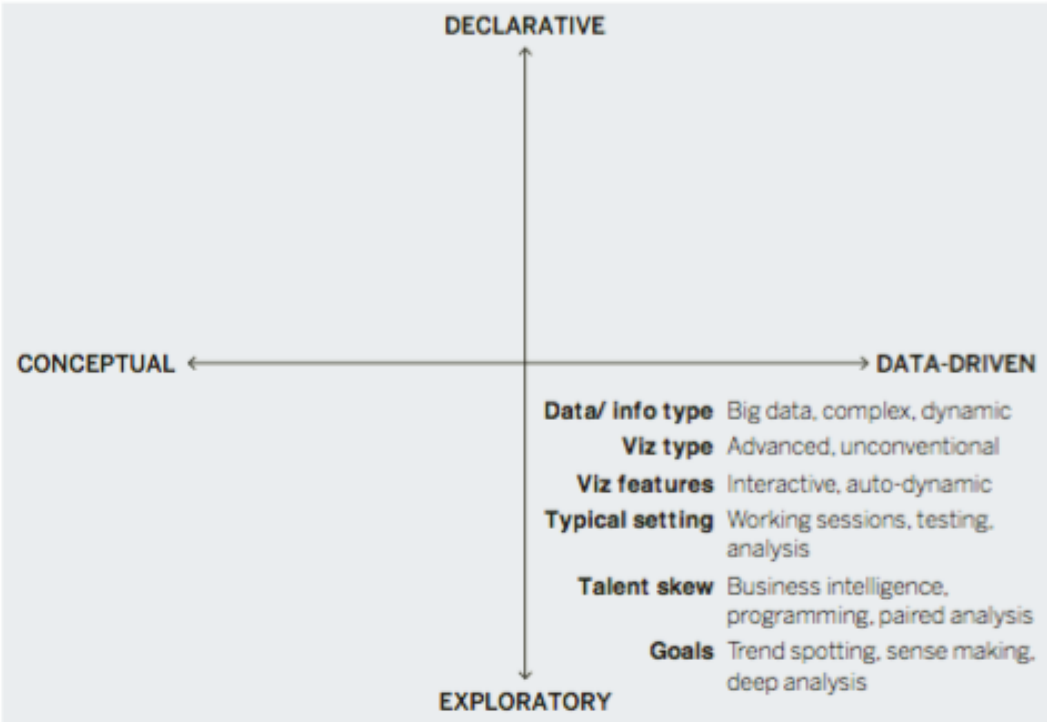
INDUSTRY CLUSTER SEMANTIC ANALYSIS

DATA AS INTERFACE

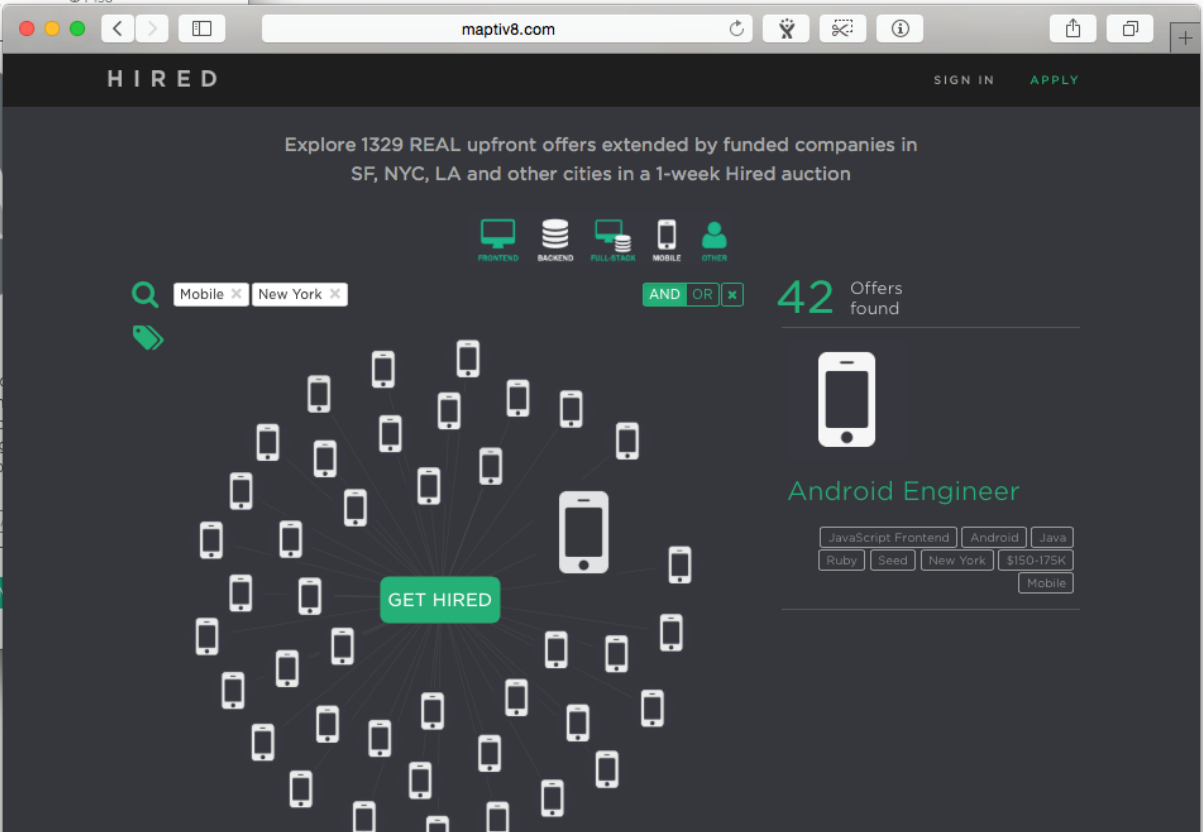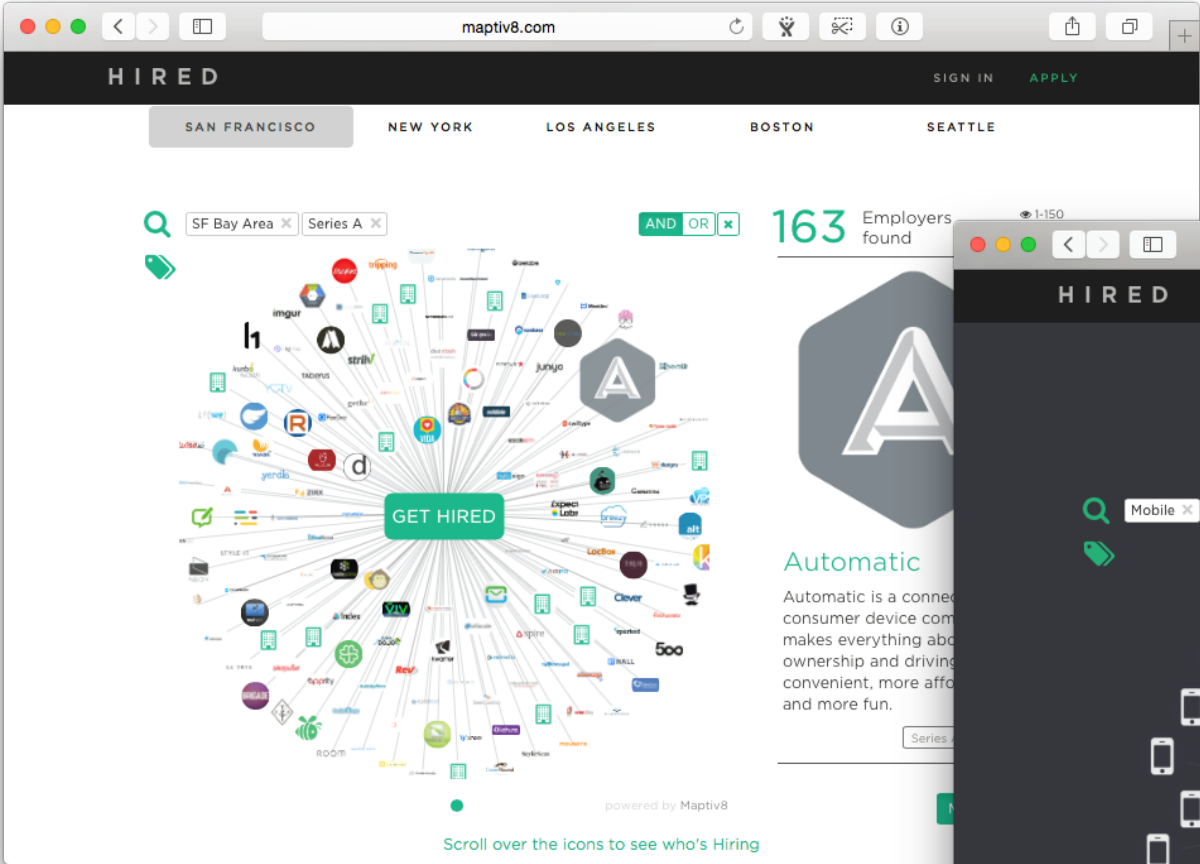HTTPS://PROQUESTIONASKER.GITHUB.IO/PROJECTS/MOVIEDIALOGUEINTERACTIVE

DATA AS INTERFACE

for HIRED

using **Maptiv8**
DATA MADE BEAUTIFUL

START HERE
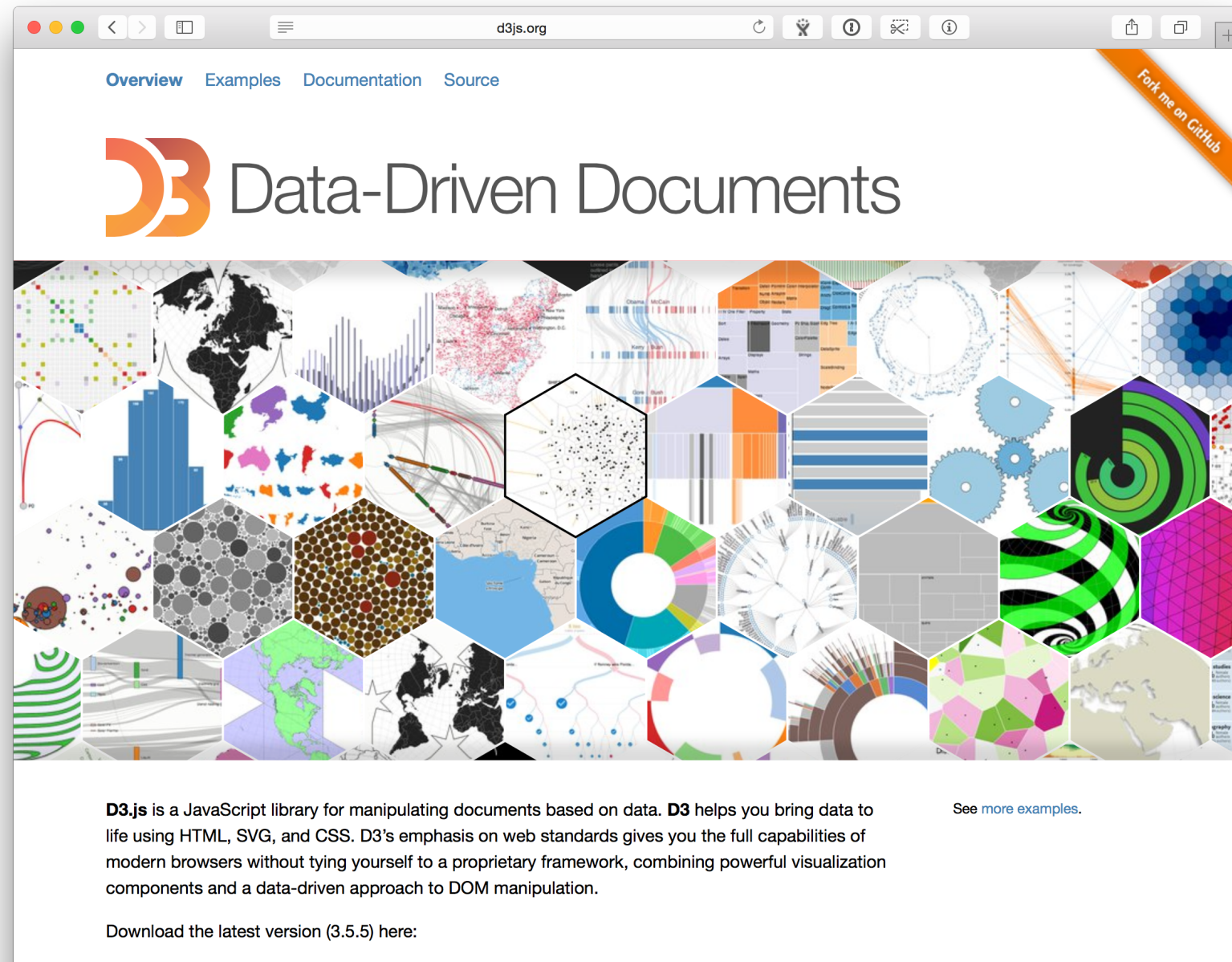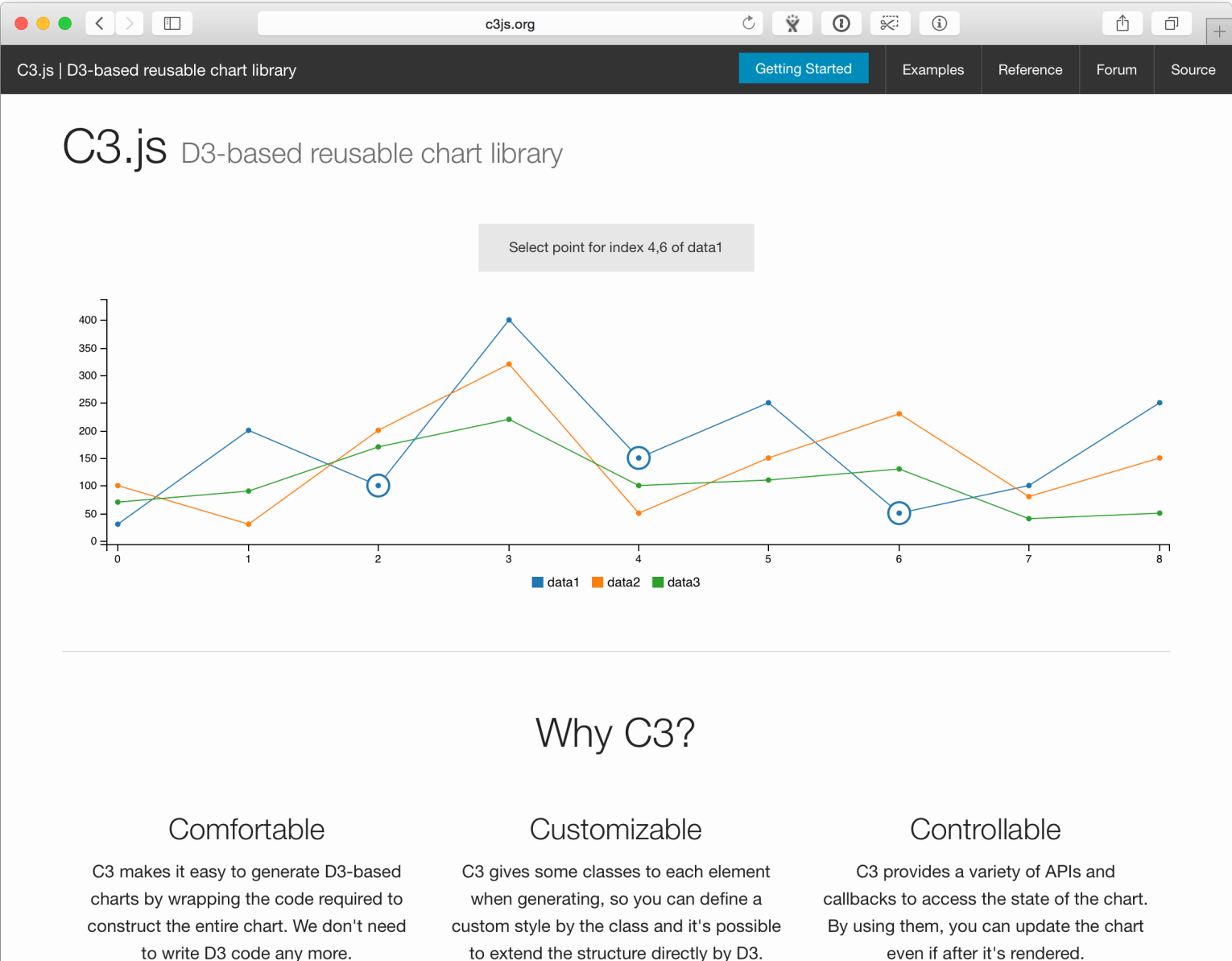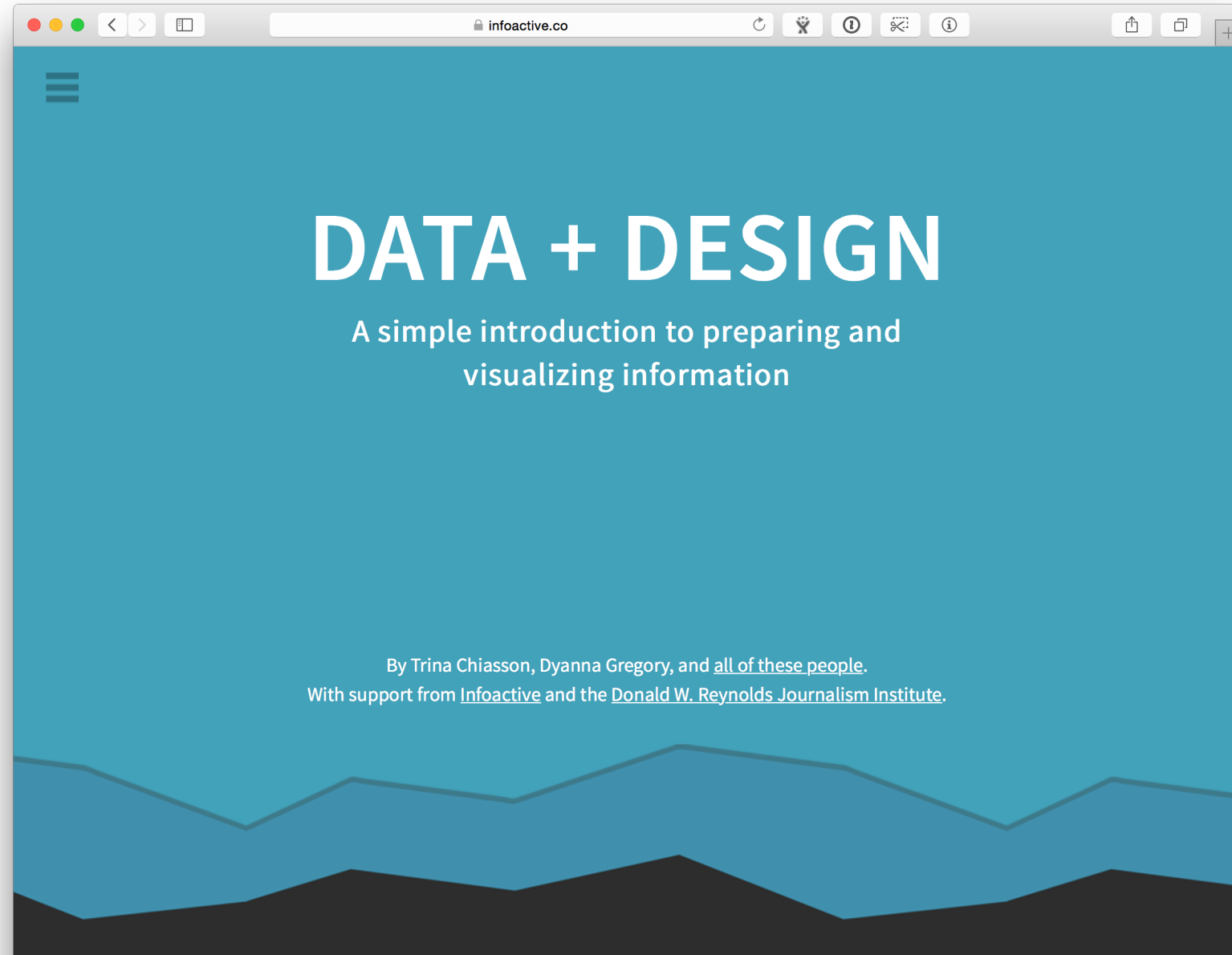
Overview   Examples   Documentation   Source

D3.js is a JavaScript library for manipulating documents based on data. **D3** helps you bring data to life using HTML, SVG, and CSS. D3's emphasis on web standards gives you the full capabilities of modern browsers without tying yourself to a proprietary framework, combining powerful visualization components and a data-driven approach to DOM manipulation.

See more examples.

Download the latest version (3.5.5) here:

OR HERE

OR HERE

OR HERE

OR HERE
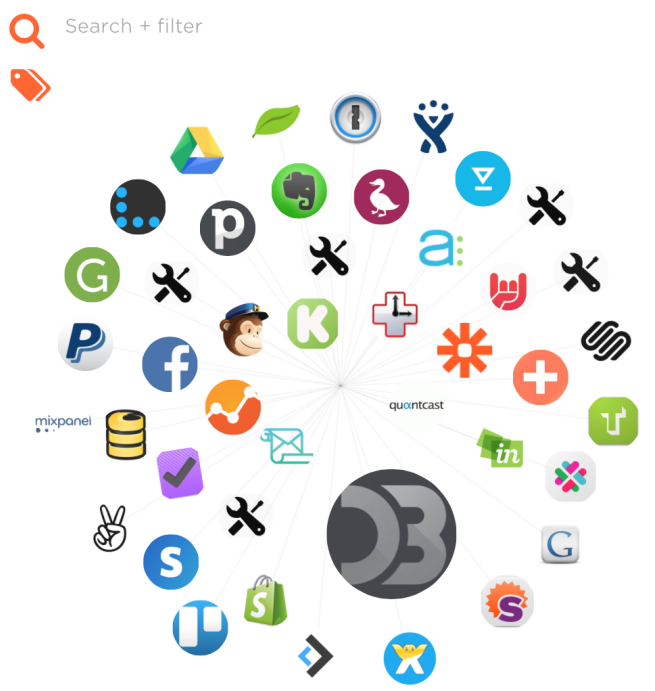
HAVE FUN!

SURVEY TIME!

HEAD BACK TO

familian1.com/vdwd

AND SCROLL TO THE BOTTOM

BECAUSE FEEDBACK IS KEY :)

GA GENERAL ASSEMBLY

VISUAL DESIGN WITH DATA

Seth Familian
Founder + Principal, Familian&1

GA GENERAL ASSEMBLY

WORKING WITH BIG DATA

Seth Familian
Founder + Principal, Familian&1

FOLLOW ALONG!
bit.ly/wwbd-jan2016-part1

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Founder + Principal, Familian&1

FOLLOW ALONG!
http://bit.ly/ga-dt4b

GA GENERAL ASSEMBLY

SQUARESPACE BOOTCAMP

Seth Familian
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KEEP IN TOUCH.

SETH@FAMILIAN1.COM · @SETHFAM1