



Storytelling with data

That's what you need for data-driven impact!

Brent Dykes | Analytics Evangelist, Adobe

 @analyticshero



“Numbers have an important story to tell.
They rely on **you** to give them a clear
and convincing voice.”

Stephen Few





**Inform or
tell a story?**

Stories Beat Statistics

More Memorable



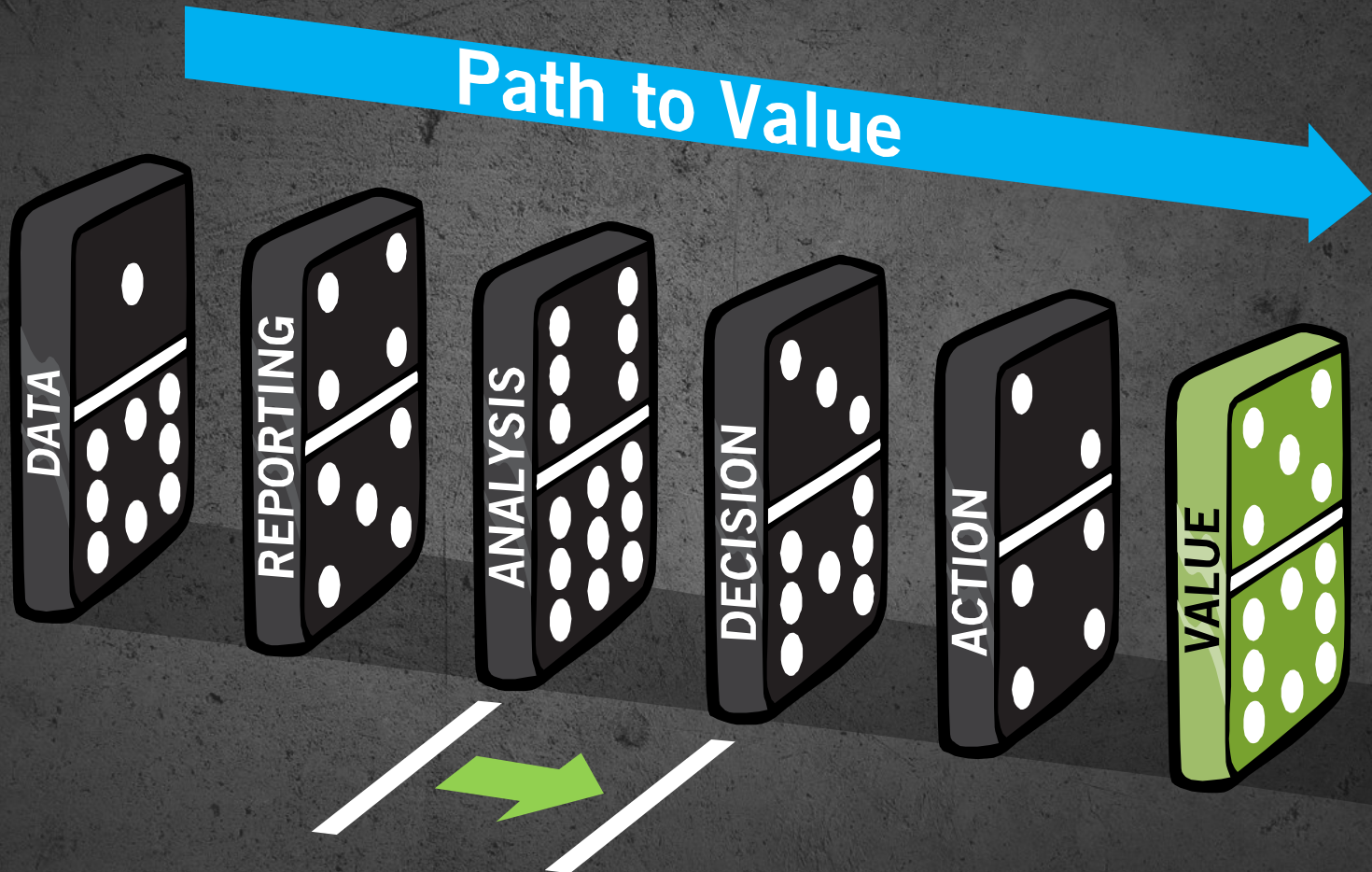
5% vs. 63%
statistics stories

More Persuasive

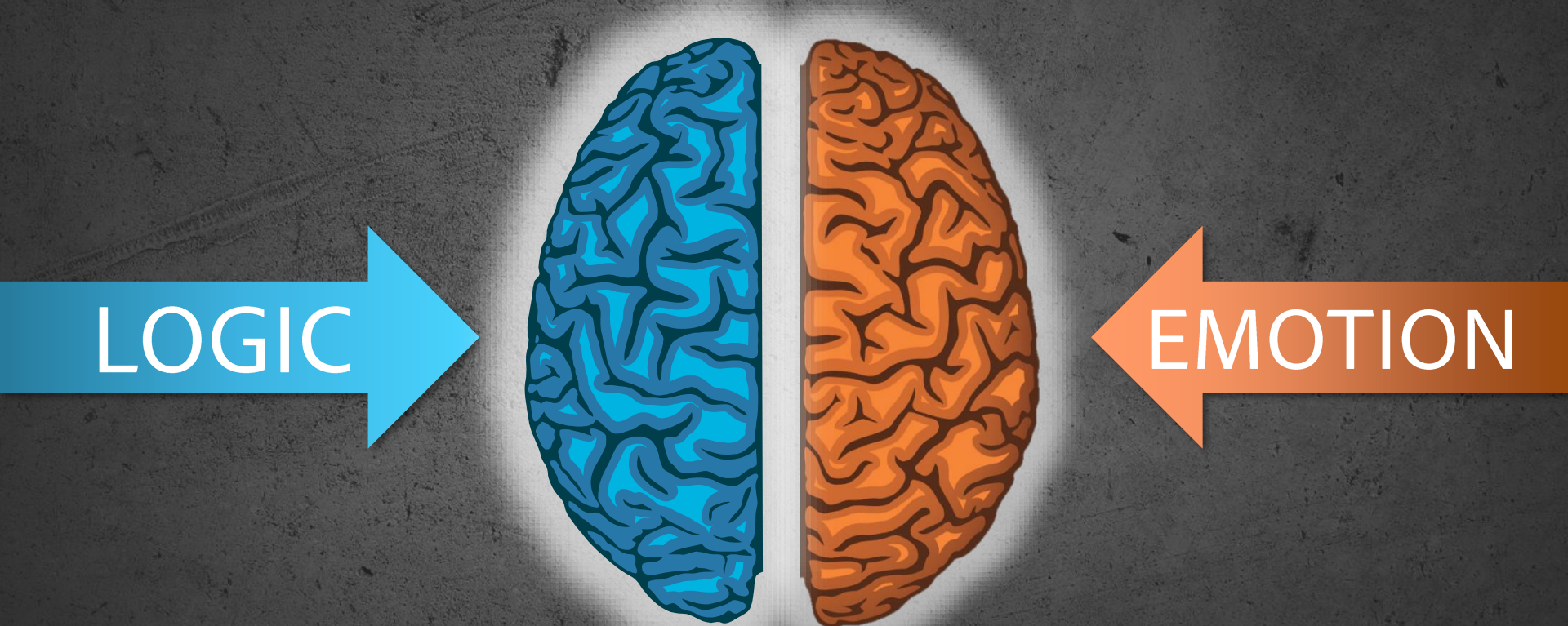


\$1.43 vs. \$2.38
statistics story

Analytics Path to Value



Influence Decisions?



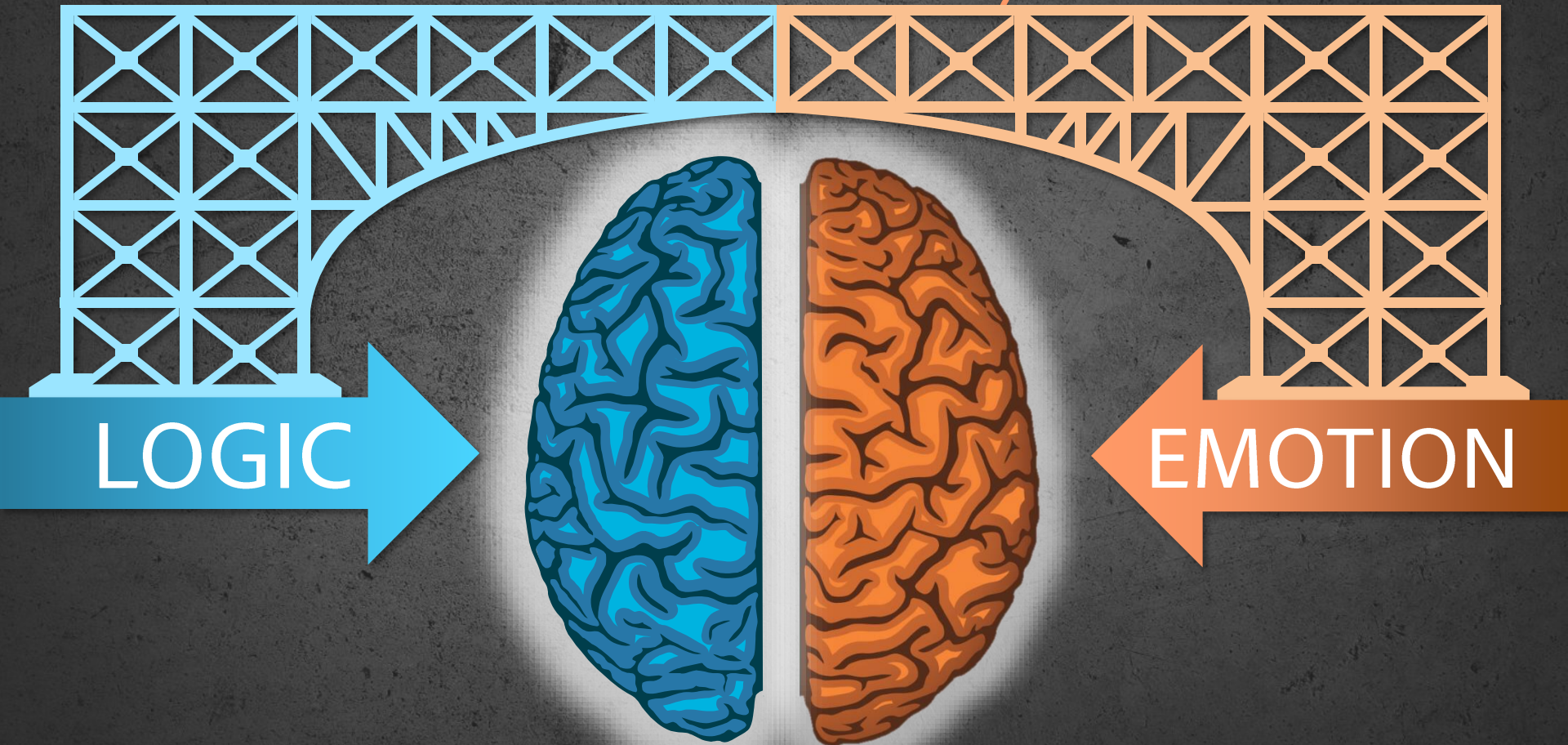


“Feelings are not just the shady side of reason, but they help us to reach decisions as well.”

Dr. Antonio Damasio

Why Data Stories?

Data Story





We hear statistics,
but we feel stories

Unique Effect on Audiences

"When we read dry, factual arguments, we read with our dukes up. We are **critical and skeptical...**"

Shields Up

DATA

Jonathan Gottschall
Author, *The Storytelling Animal*

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Unique Effect on Audiences

"...But when we are absorbed in a story we **drop our intellectual guard**. We are moved emotionally and this seems to leave us defenseless."

*Shields
Down*

STORY

+

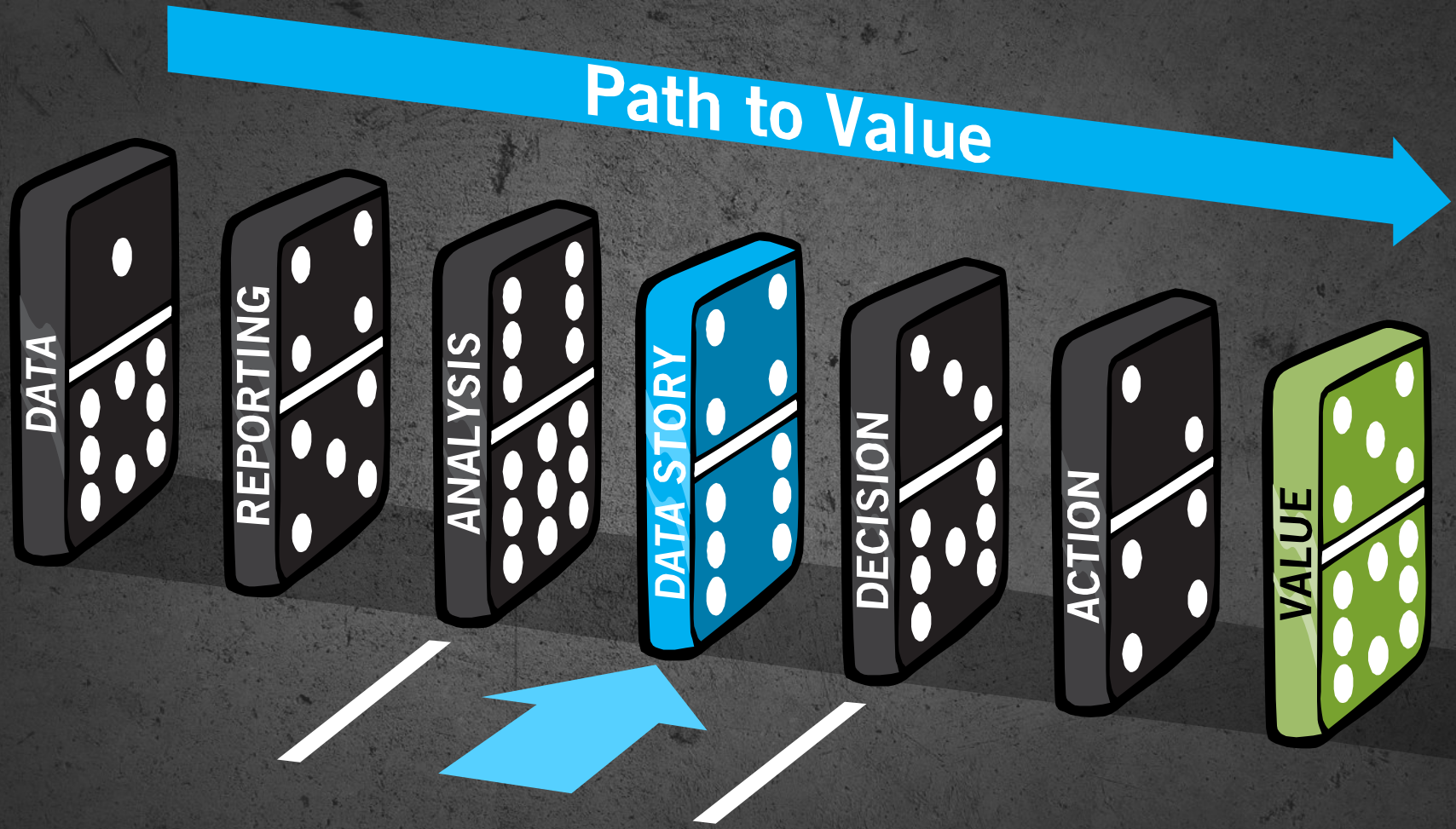
DATA

Jonathan Gottschall
Author, *The Storytelling Animal*

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Analytics Path to Value



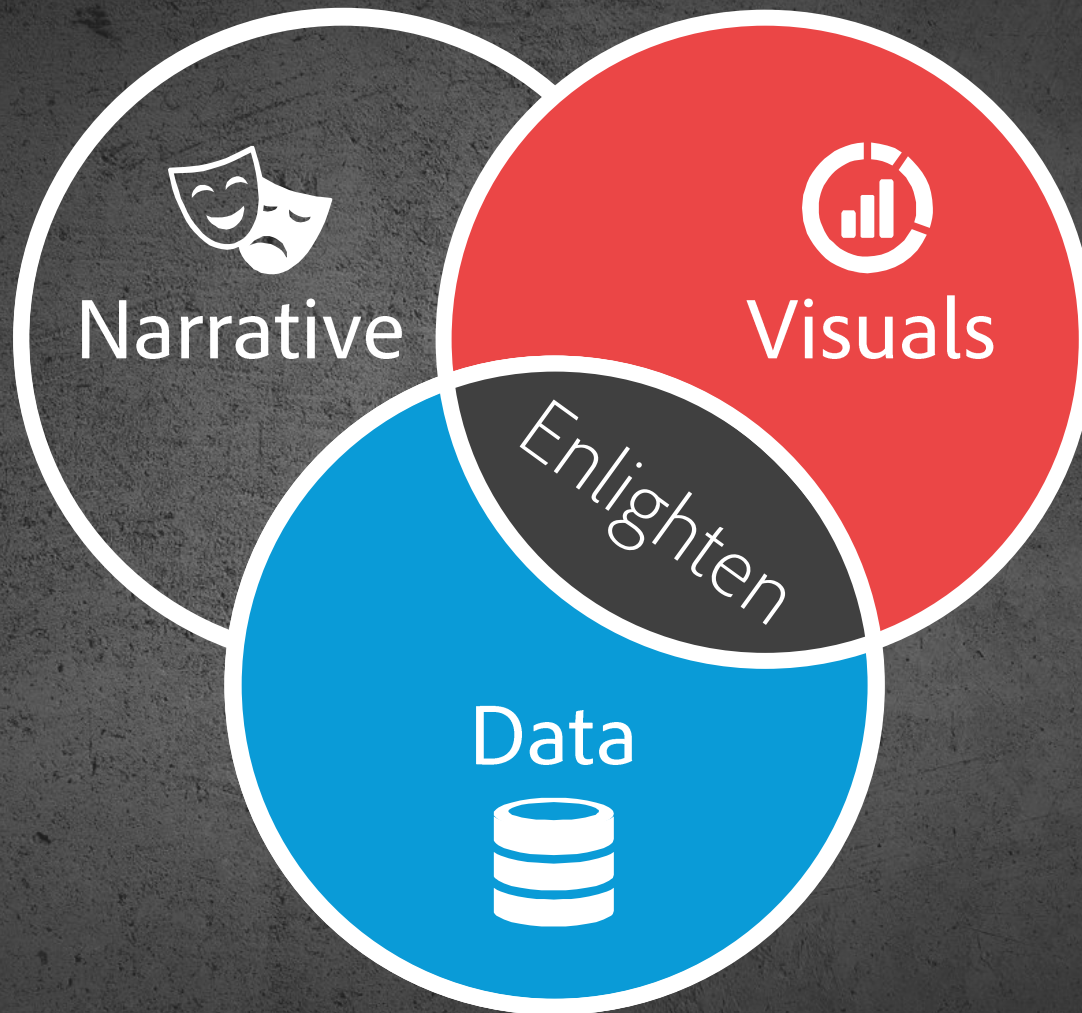
3 Keys to Data Storytelling



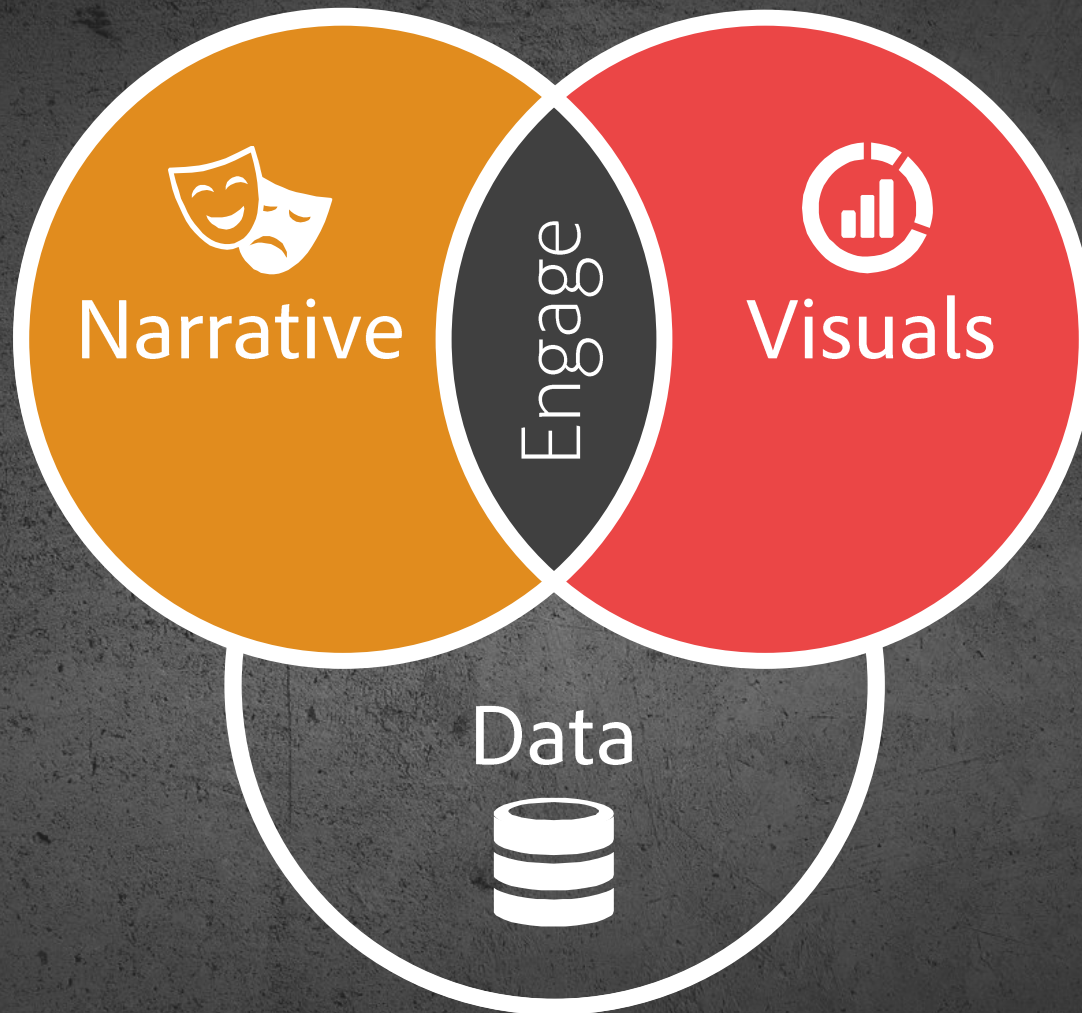
Explain: Narrative + Data



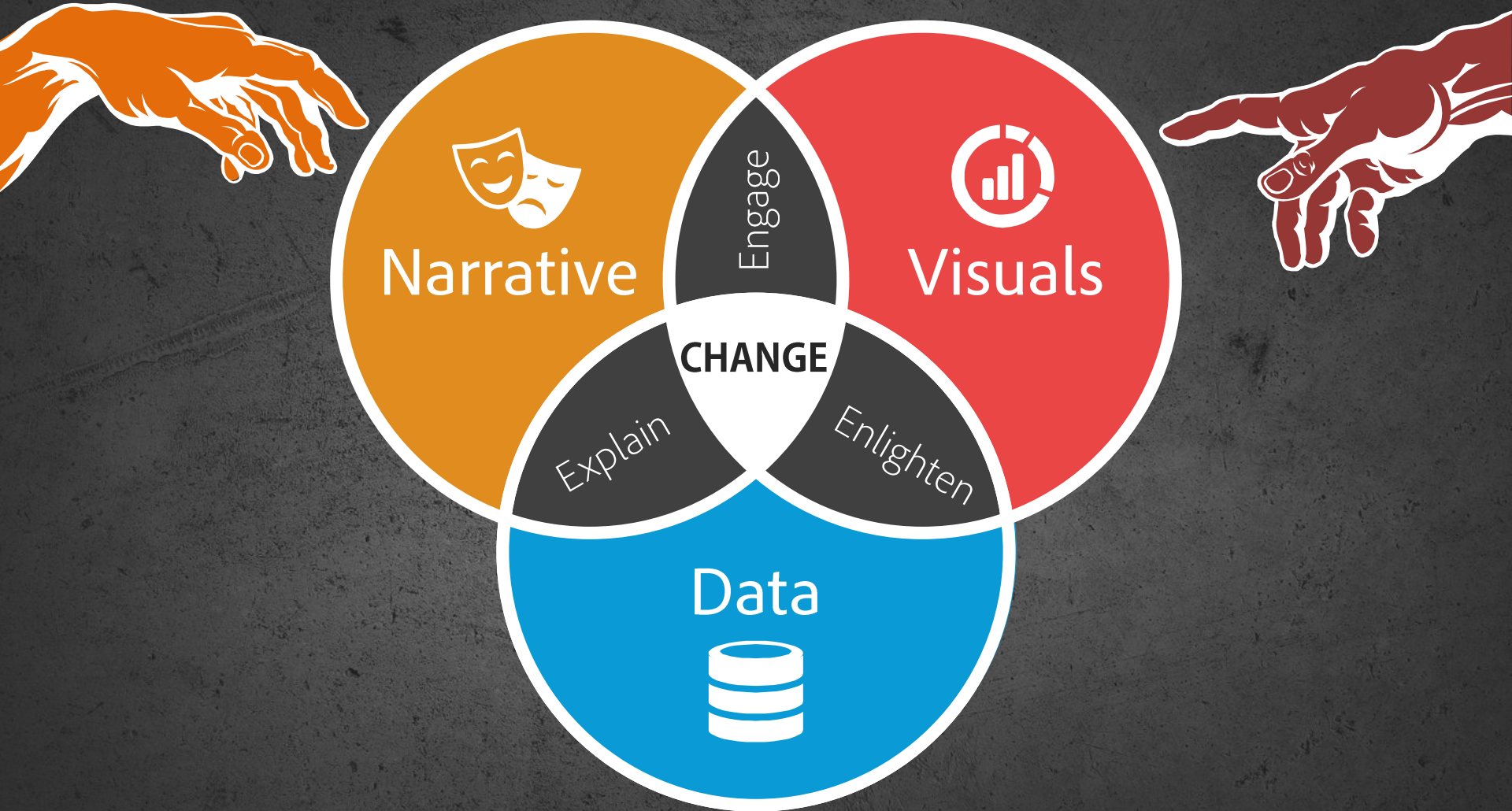
Enlighten: Data + Visuals



Engage: Narrative + Visuals



Influence Change With Data Stories



Become a Better Data Storyteller



Narrative

1. Know Your Audience
2. Structure Your Analysis Findings As A Story
3. Insert Heroes Into Your Data Story

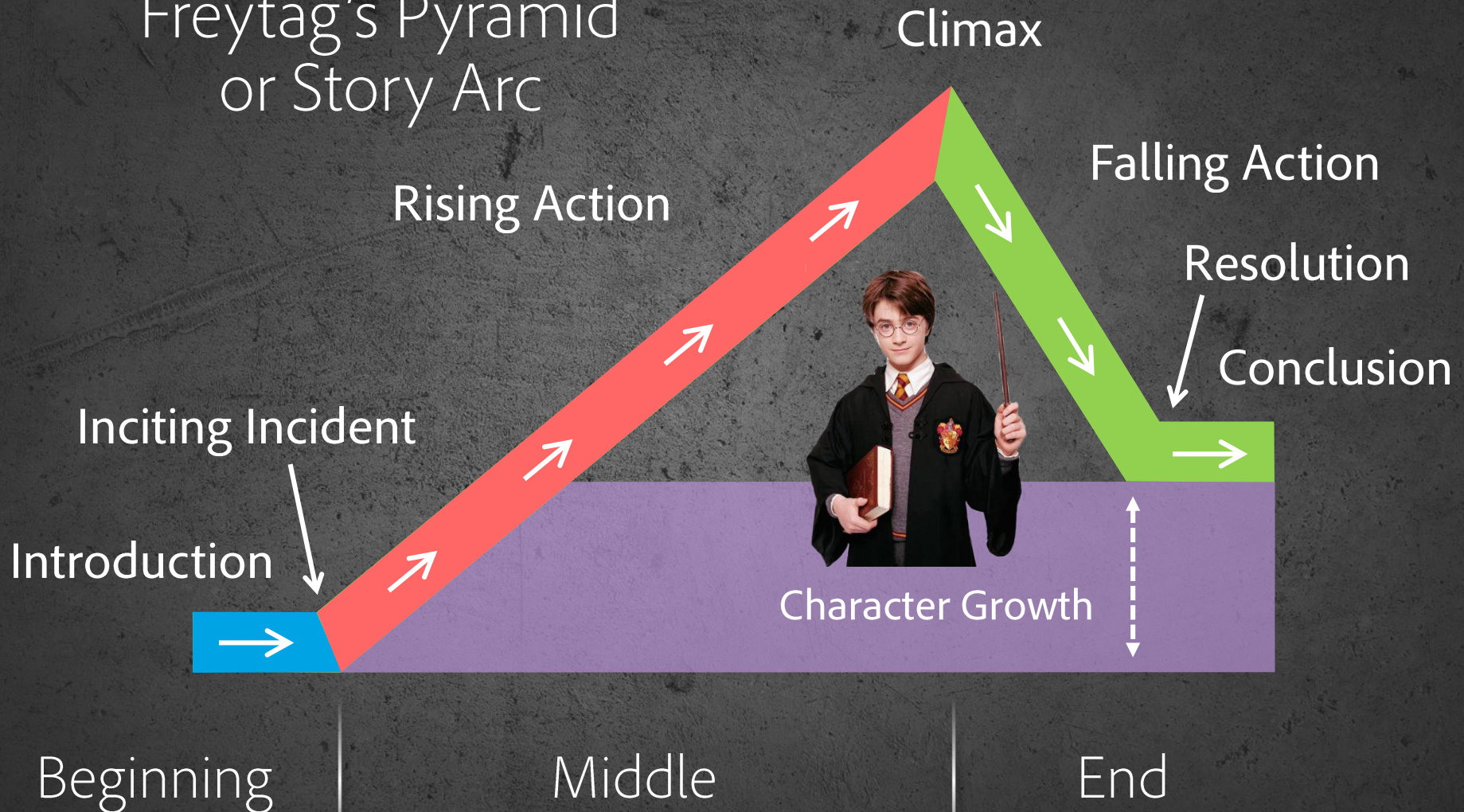


How Well Do You Know Your Audience?

	Considerations
1. Key business goals & priorities?	Ensure data stories are relevant
2. Specific needs & questions?	Anticipate what they want to learn
3. How familiar with topic?	Less familiar—More context & conceptual
4. How data-savvy?	Less savvy—Less detail and jargon
5. Seniority level?	More senior—Lead with summary
6. Delivery method? (Direct/Indirect)	Indirect method—More annotations

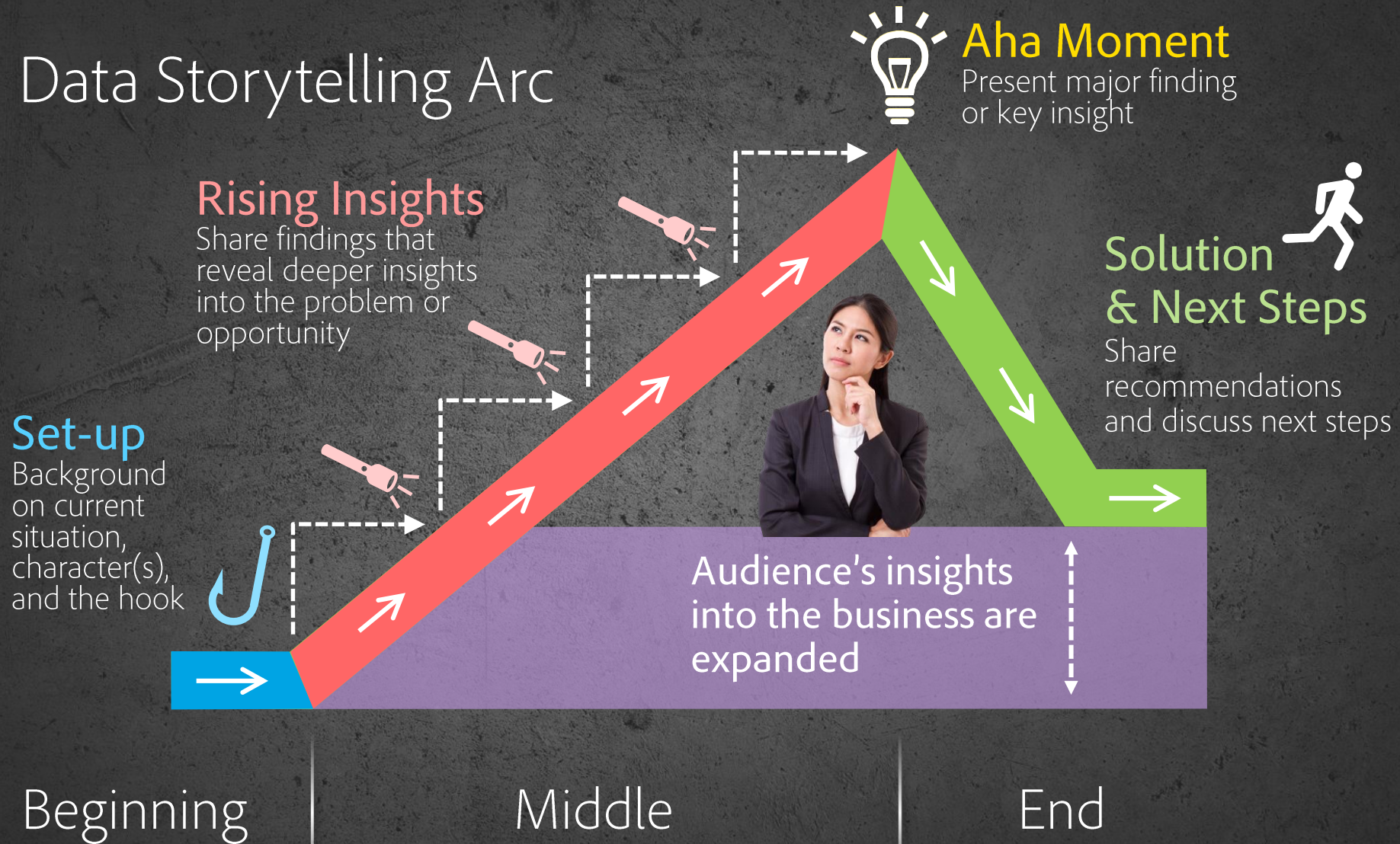
What Is The Structure Of A Story?

Freytag's Pyramid
or Story Arc



Structure Your Analysis Results As A Story

Data Storytelling Arc



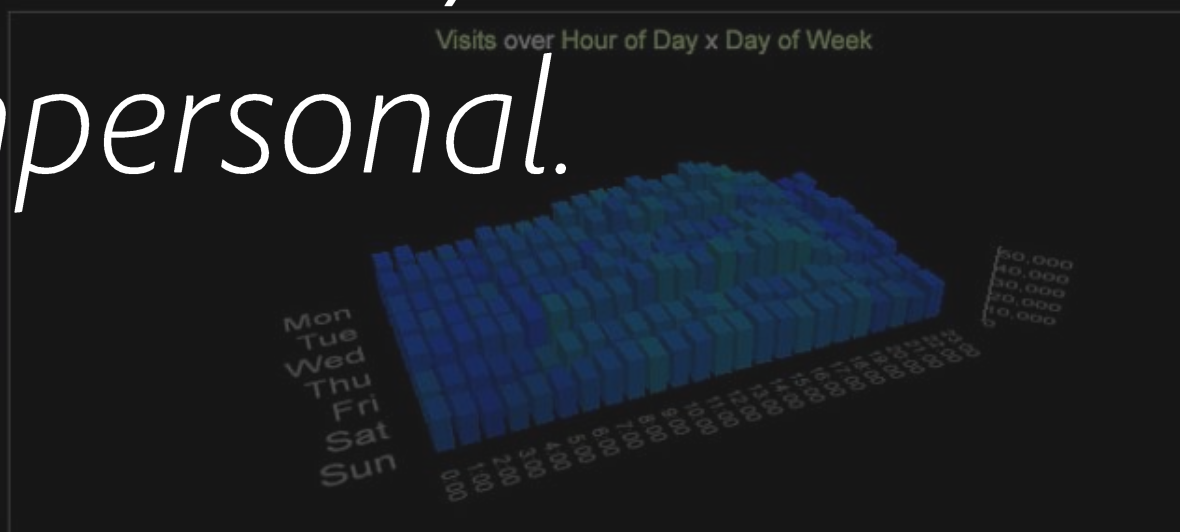
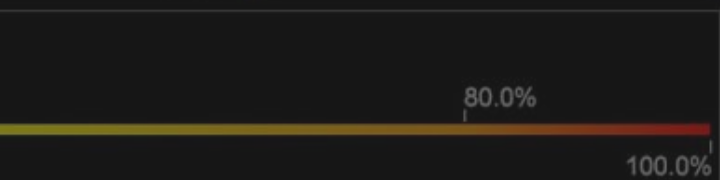
Impressions	Conversion	Visits	Online Orders	Call Center Orders	InStore Orders	Weighted Re
17,195,654	2.3%	245,652	22,205	10,436	14,877	\$33,692,224
15,739,419	2.5%	224,849	22,420	10,537	15,022	\$28,547,750
18,433,077	1.5%	263,330	15,414	7,245	10,327	\$25,511,580
13,868,193	2.5%	198,117	19,618	9,220	13,144	\$25,306,974
7,266,088	3.1%	103,801	12,719	5,978	8,522	\$19,221,062
5,741,945	2.7%	82,028	8,839	4,154	5,922	\$15,112,240
5,719,309	2.8%	81,704	9,162	4,306	6,139	\$15,007,167
7,522,627	1.9%	107,466	8,084	3,800	5,416	\$14,716,987
6,262,568	2.7%	89,465	9,809	4,610	6,572	\$13,457,817
5,968,303	3.2%	85,261	10,887	5,117	7,294	\$12,490,013
4,602,610	2.3%	65,752	6,114	2,888	4,116	\$12,112,809
6,436,109	2.3%	91,944	7,575	4,002	5,705	\$10,417,680
5,077,962	2.7%	72,542	7,639	3,698	5,272	\$10,139,093
5,274,139	2.5%	75,345	7,335	3,546	5,055	\$9,662,825
3,576,455	3.2%	51,092	6,467	3,040	4,333	\$9,304,312
7,711,259	1.3%	110,161	5,928	2,786	3,972	\$8,844,406
2,776,657	3.5%	39,667	5,605	2,634	3,755	\$8,509,143
3,697,179	3.0%	52,817	6,252	2,938	4,189	\$8,455,044

Data.

Visits	Online Orders	Call Center Orders	InStore Orders	Weighted Revenue
690,607	60,254	28,320	40,370	\$87,726,142
527,845	58,530	27,509	39,215	\$75,462,115
429,002	40,205	18,897	26,938	\$60,590,396
402,809	39,128	18,390	26,215	\$61,155,310
299,008	25,773	11,124	20,145	\$44,243,827
214,932	17,354	8,116	16,627	\$23,940,645
79,010	7,006	3,293	4,694	\$9,301,013

Cold, distant, and impersonal.

Visits
62,302
66,937
197,901
161,253
828,578
213,100
236,598
20,480
16,707
33,307

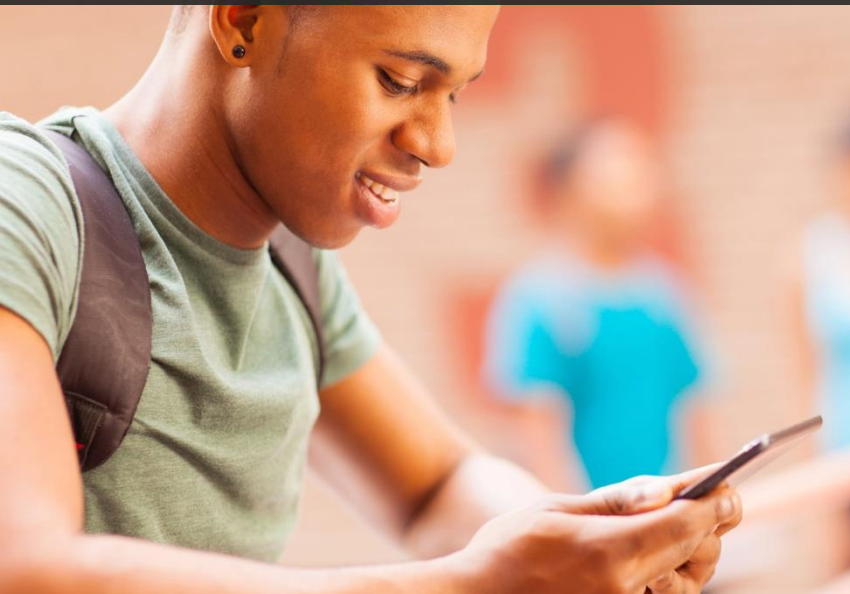




Who is
your
story's
hero?



Lots of heroes are hiding within your digital data.
You just need to bring them to life.



Insert Heroes Into Your Data Story



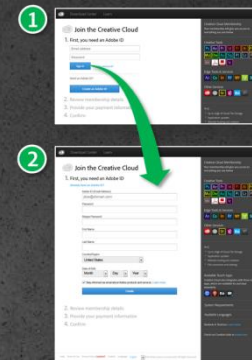
Stock photos



Qualitative data



Screenshots



1

Determine which user segment matters to your story

2

Build a rich, data-driven profile of your hero

3

Give your hero a face



4

Give your hero a voice



5

Show their digital journey



Become a Better Data Storyteller



Narrative


1. Know Your Audience
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Visuals

1. Use Content Staging To Reveal Insights
2. Choose The Right Visualizations
3. Ditch The Defaults
4. Remove Competing Noise
5. Draw The Audience Into Your Analysis
6. Make Your Data Relatable

Don't Overload Your Audience

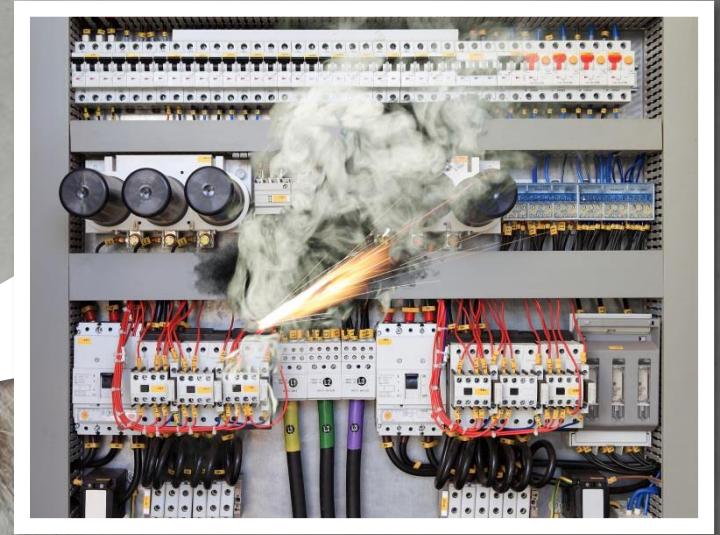

Sensory
Memory




Working
Memory

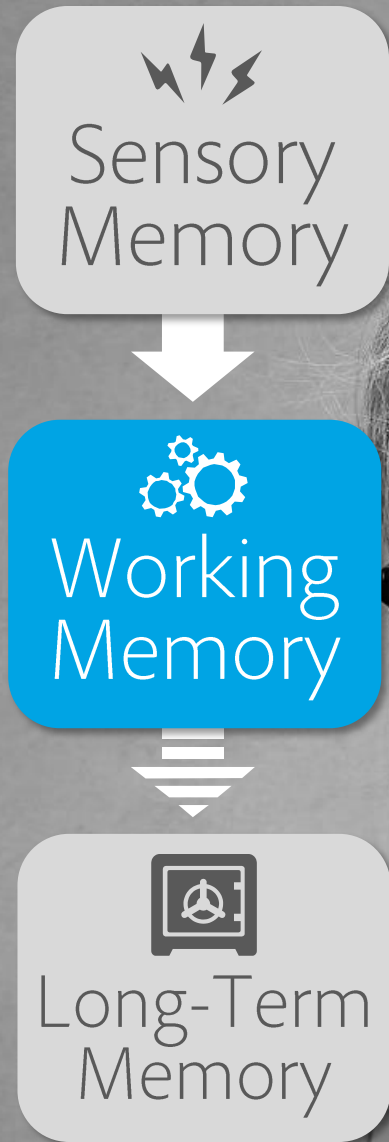



Long-Term
Memory



WARNING!

Don't Overload Your Audience



Cognitive Load Theory

Intrinsic Load

+

Extraneous Load

+

Germane Load

Cognitive Load Explained

INTRINSIC



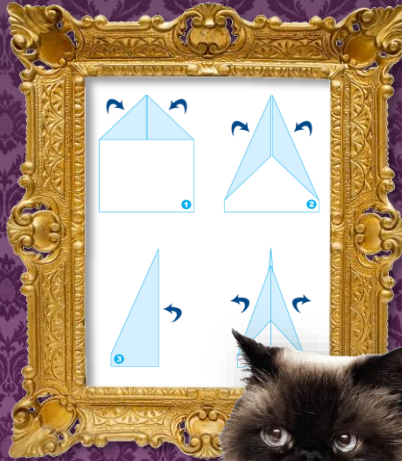
How to fold a paper plane



How to pilot an airliner

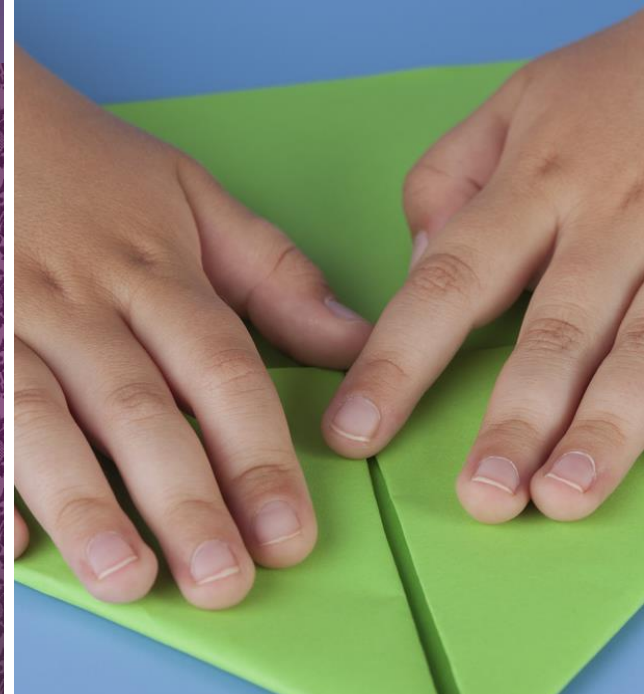
MANAGE

EXTRANEEOUS



MINIMIZE

GERMANE



MAXIMIZE

Six Tips to Better Engage Your Audience

INTRINSIC



1 Use content staging to reveal insights

EXTRANEOUS



2 Choose the right visualization

3 Ditch the defaults

4 Remove competing noise

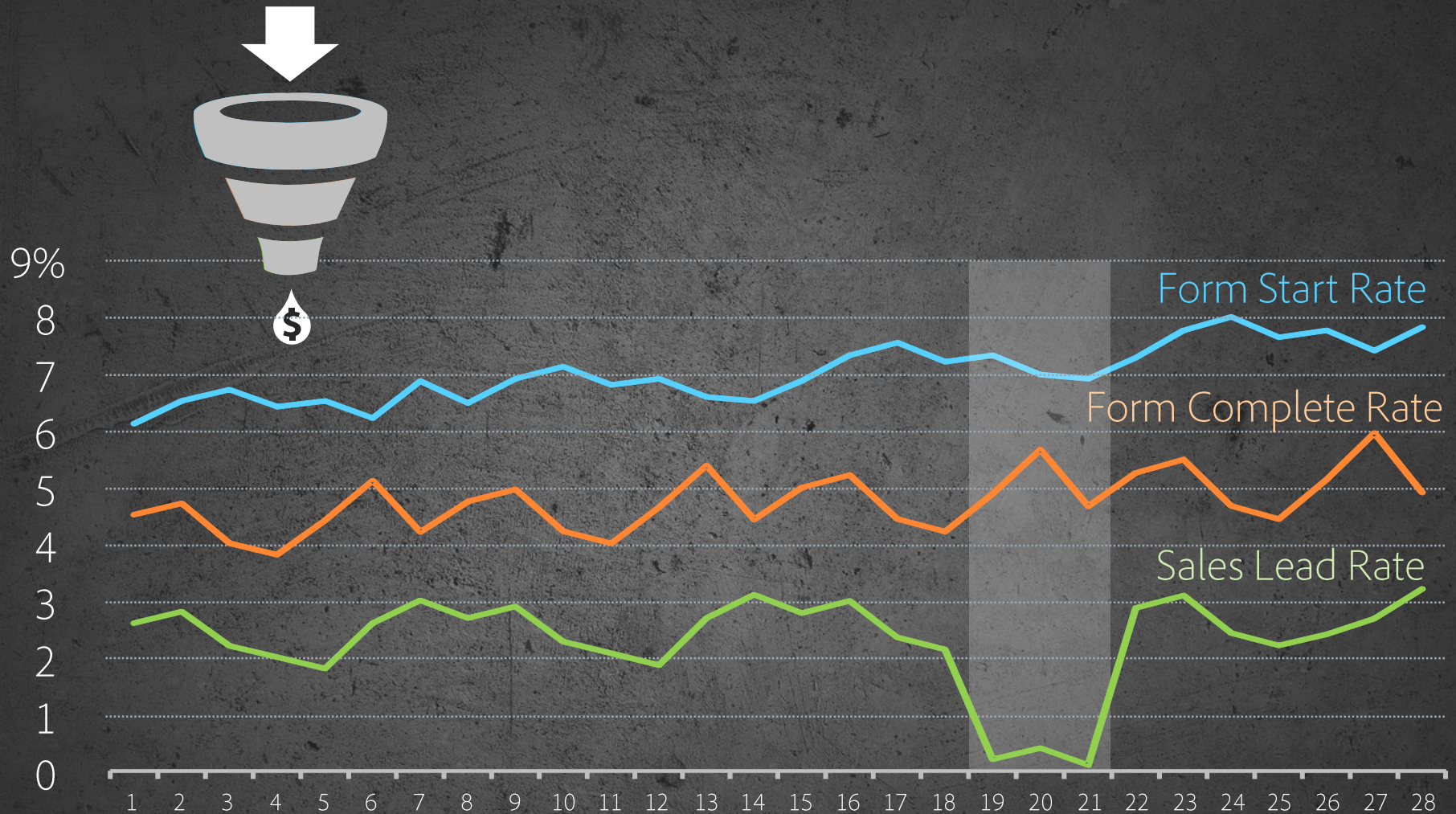
GERMANE



5 Draw the audience into your analysis

6 Make your data relatable

1. Use Content Staging to Reveal Insights

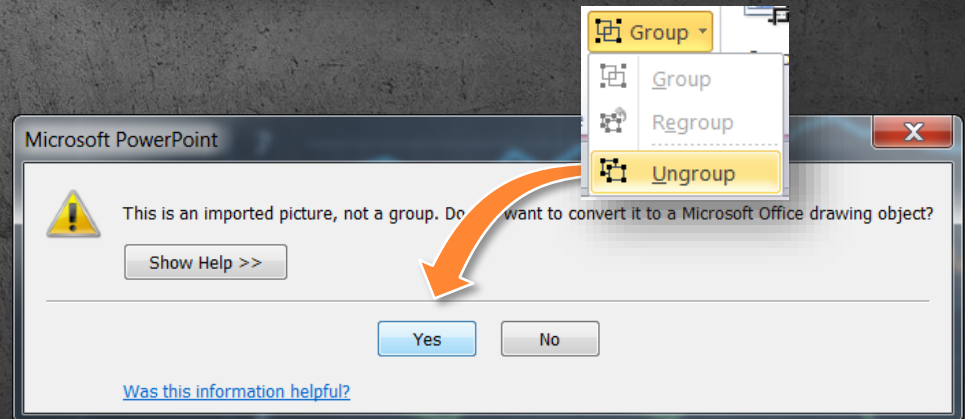
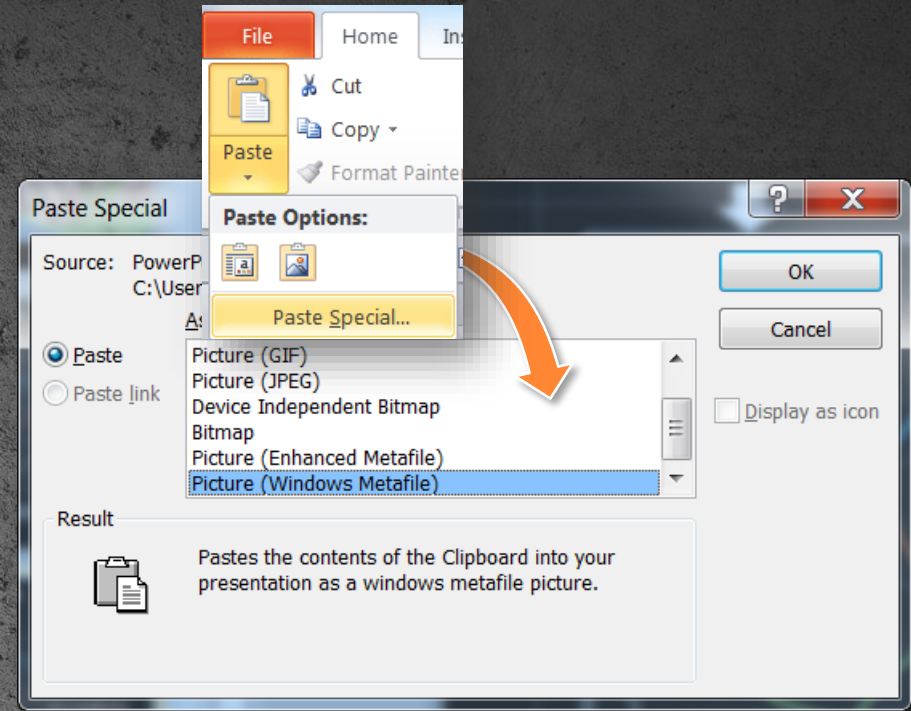


Feb 19-21: A new spring promotion led to a high level of unqualified leads. It was stopped after 2 days.

Steps for Content Staging Your Charts



1. Select entire chart
2. Create a copy
3. Select "Paste Special" as Picture (Windows Metafile)
4. Ungroup chart
5. Click "Yes" to convert to Microsoft Drawing object
6. Add animations to parts of the chart



Steps for Content Staging Your Charts

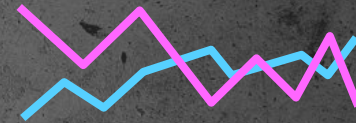


1. Select entire chart
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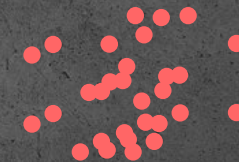
Donut & Pie



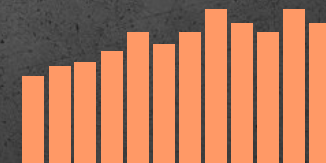
Line



Scatterplot

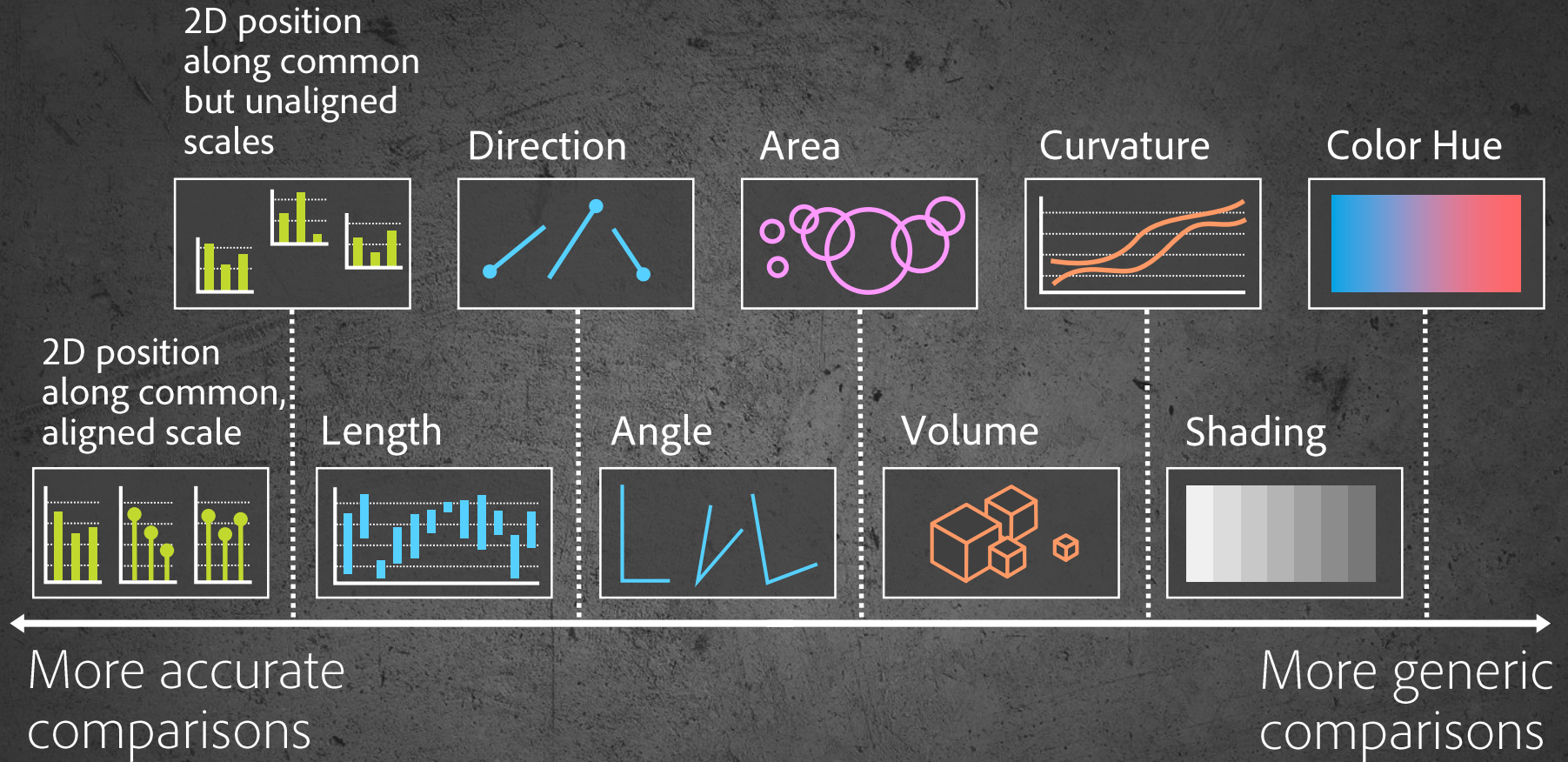


Bar & Column



Bitmap

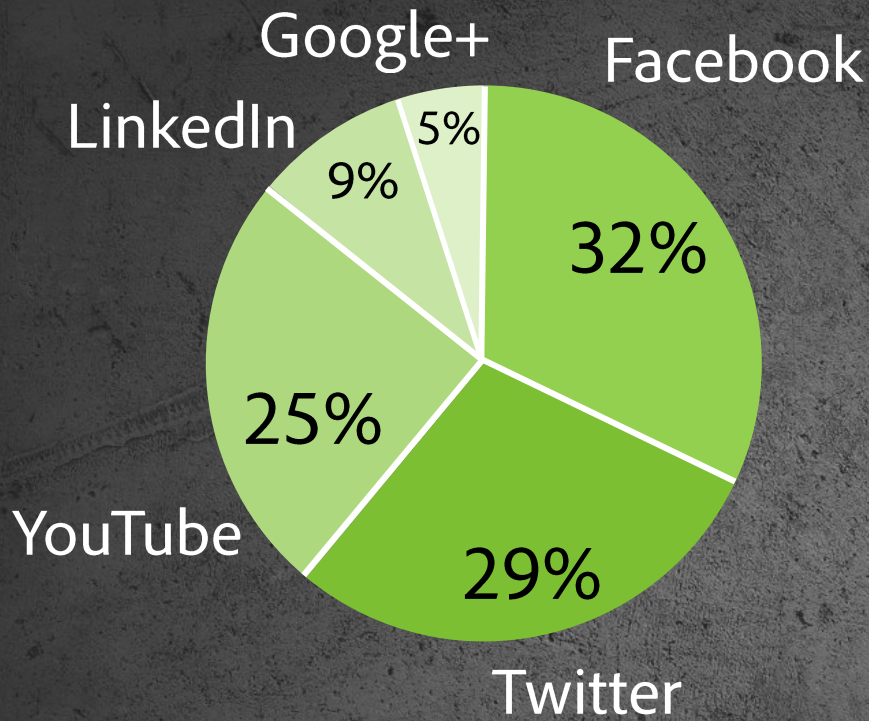
2. Choose the Right Visualization



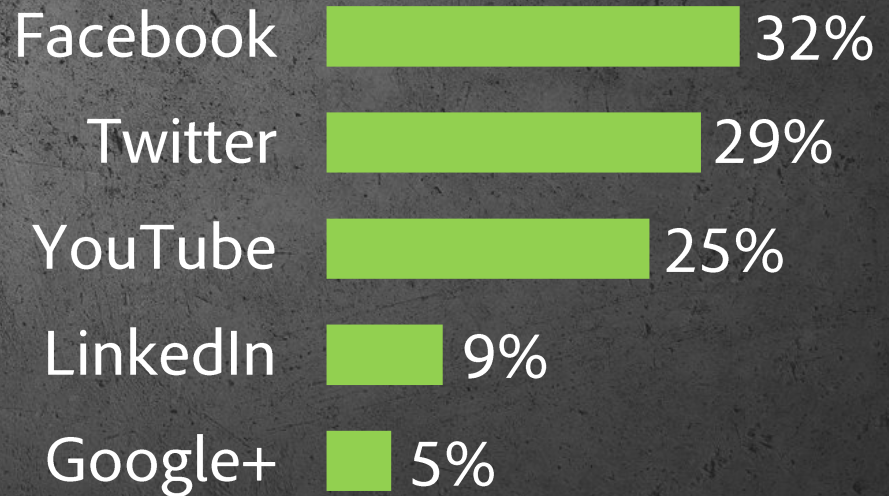
Graphical Perception: Theory, Experimentation, and Application to the Development of Graphical Methods (Cleveland & McGill, 1984) via The Functional Art (Alberto Cairo, 2013)



2. Choose the Right Visualization



BETTER



Stephen Few article on pie charts ➡ <http://bit.ly/1kNp8Gx>



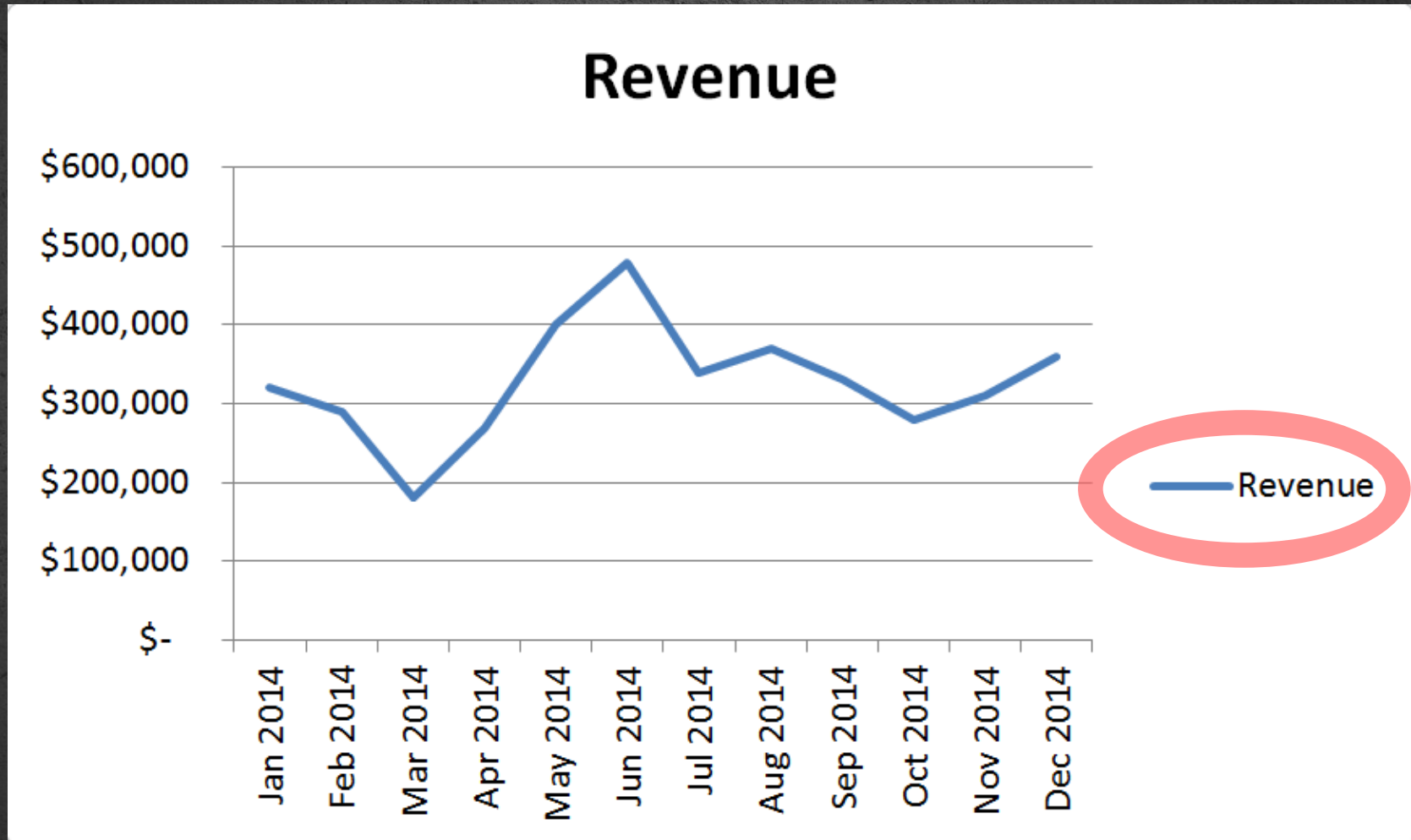
3. Ditch the Defaults



3. Ditch the Defaults



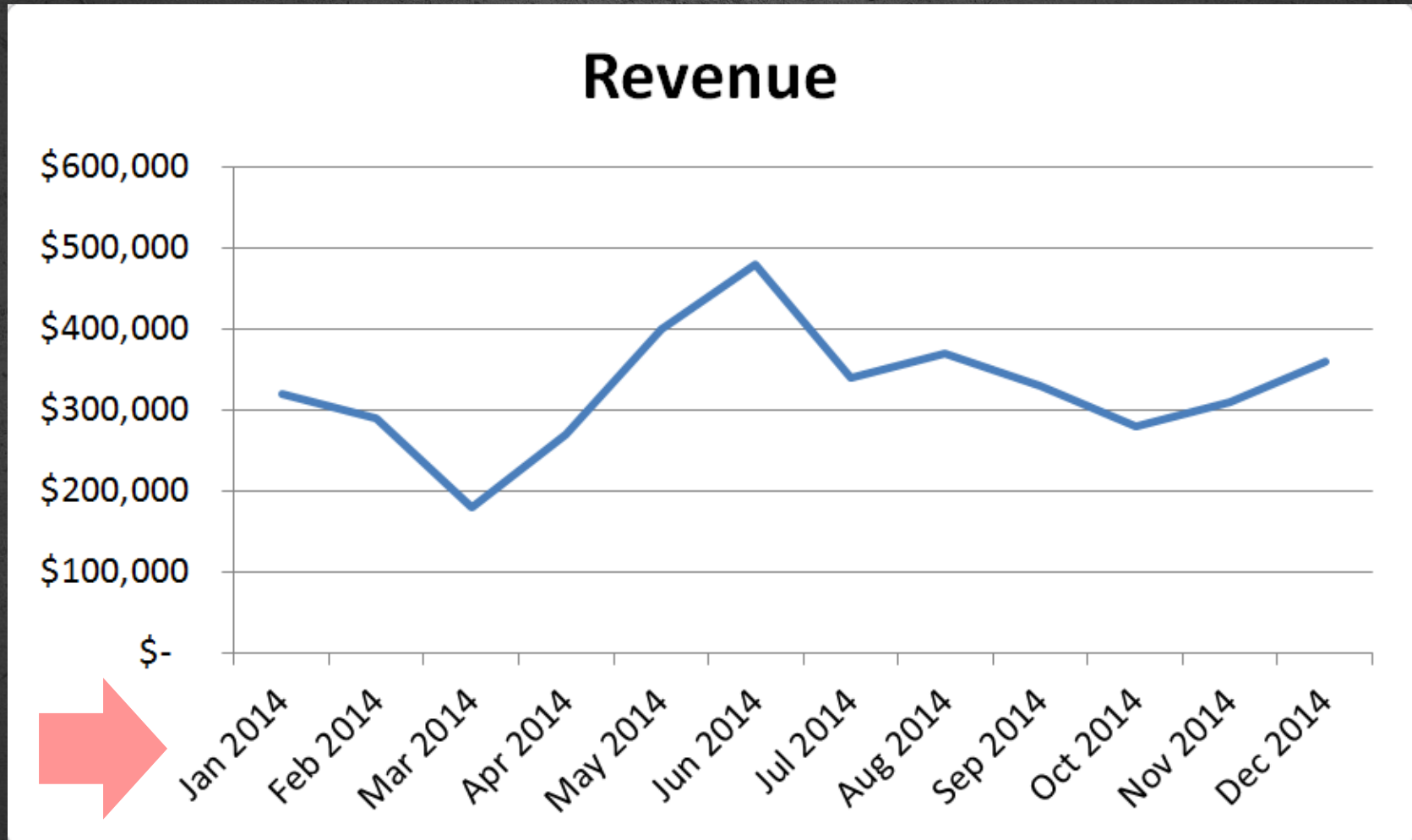
Remove unnecessary legend



3. Ditch the Defaults



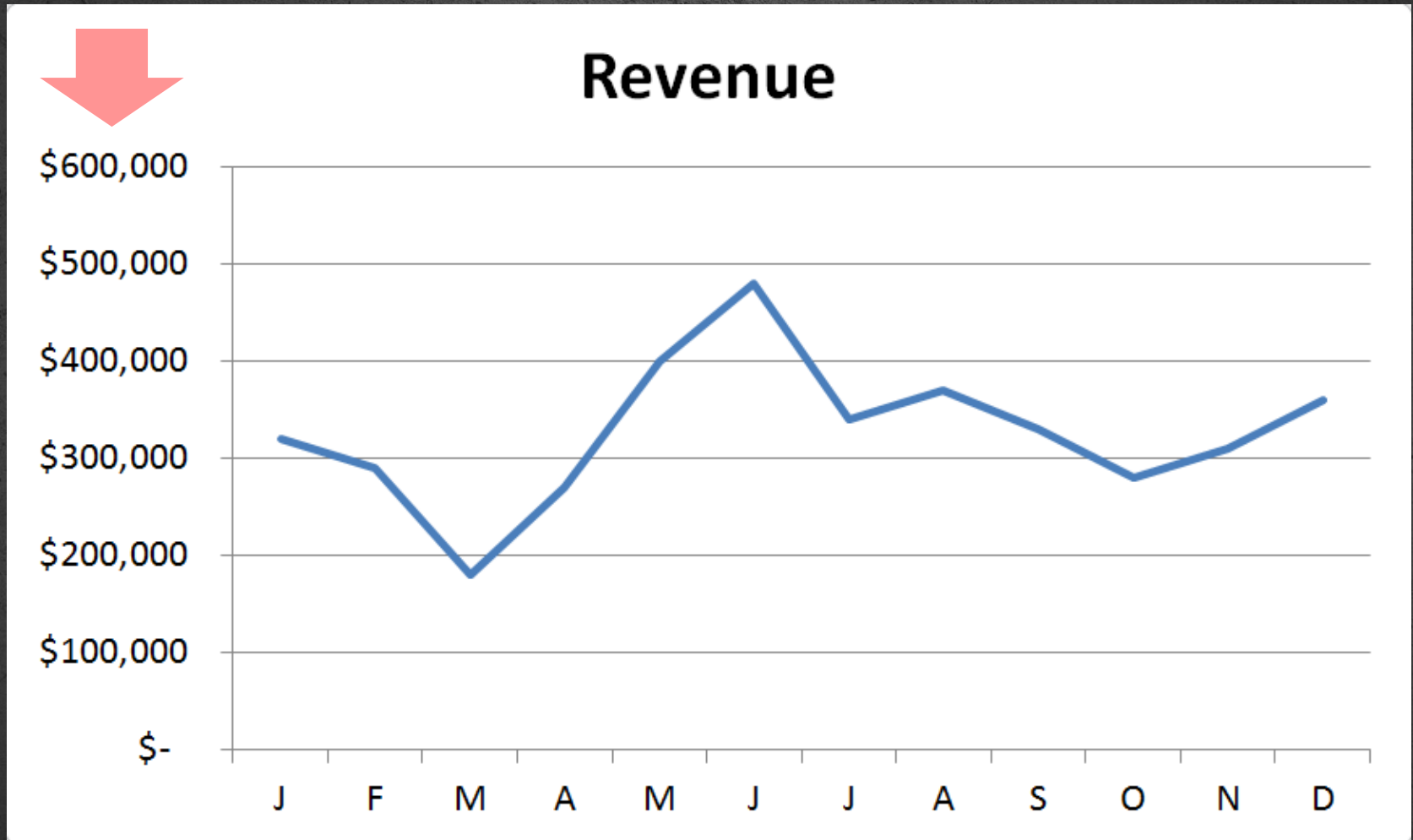
Fix horizontal date axis



3. Ditch the Defaults



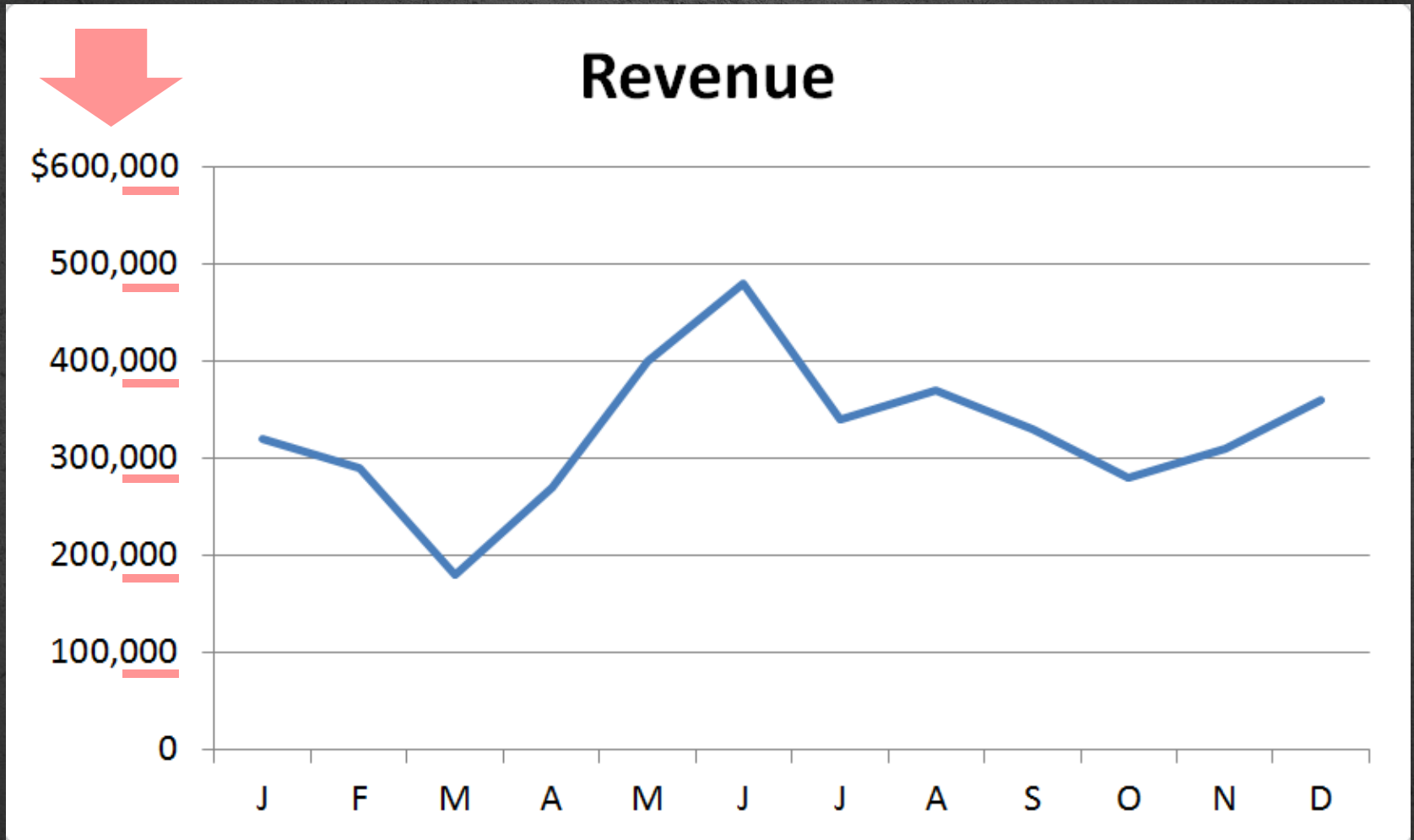
Fix the vertical revenue axis



3. Ditch the Defaults



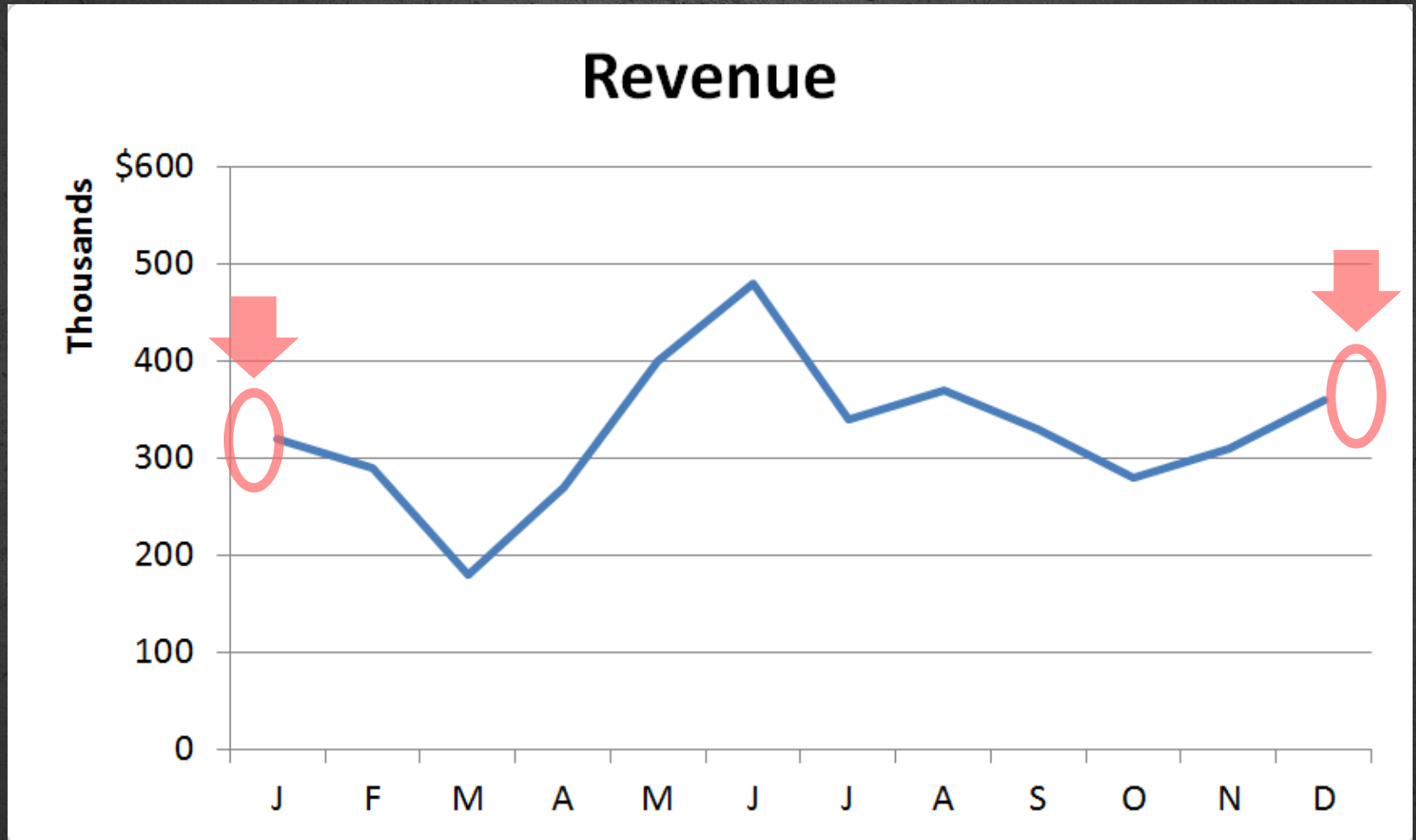
Remove unnecessary zeroes



3. Ditch the Defaults



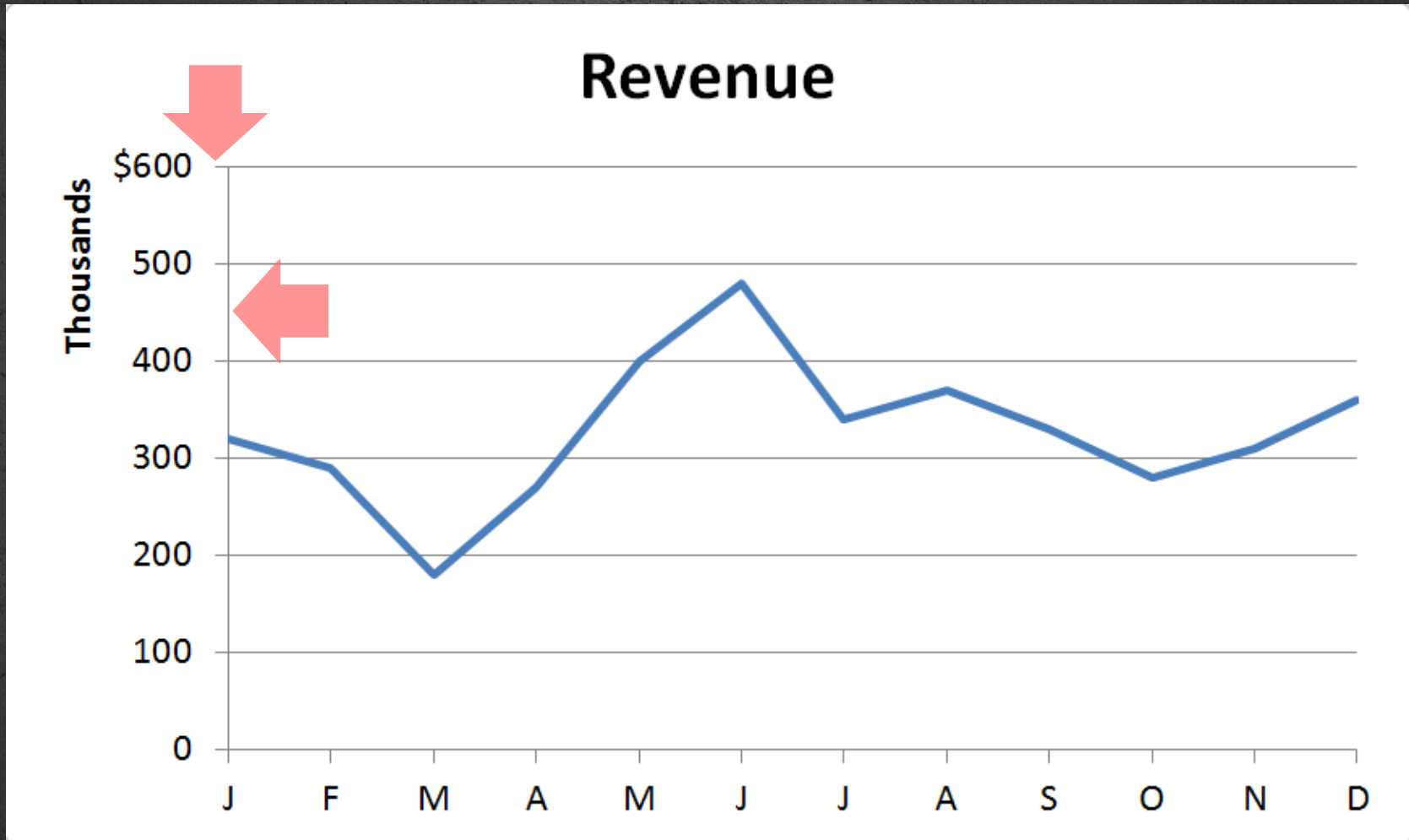
Remove unnecessary spacing



3. Ditch the Defaults



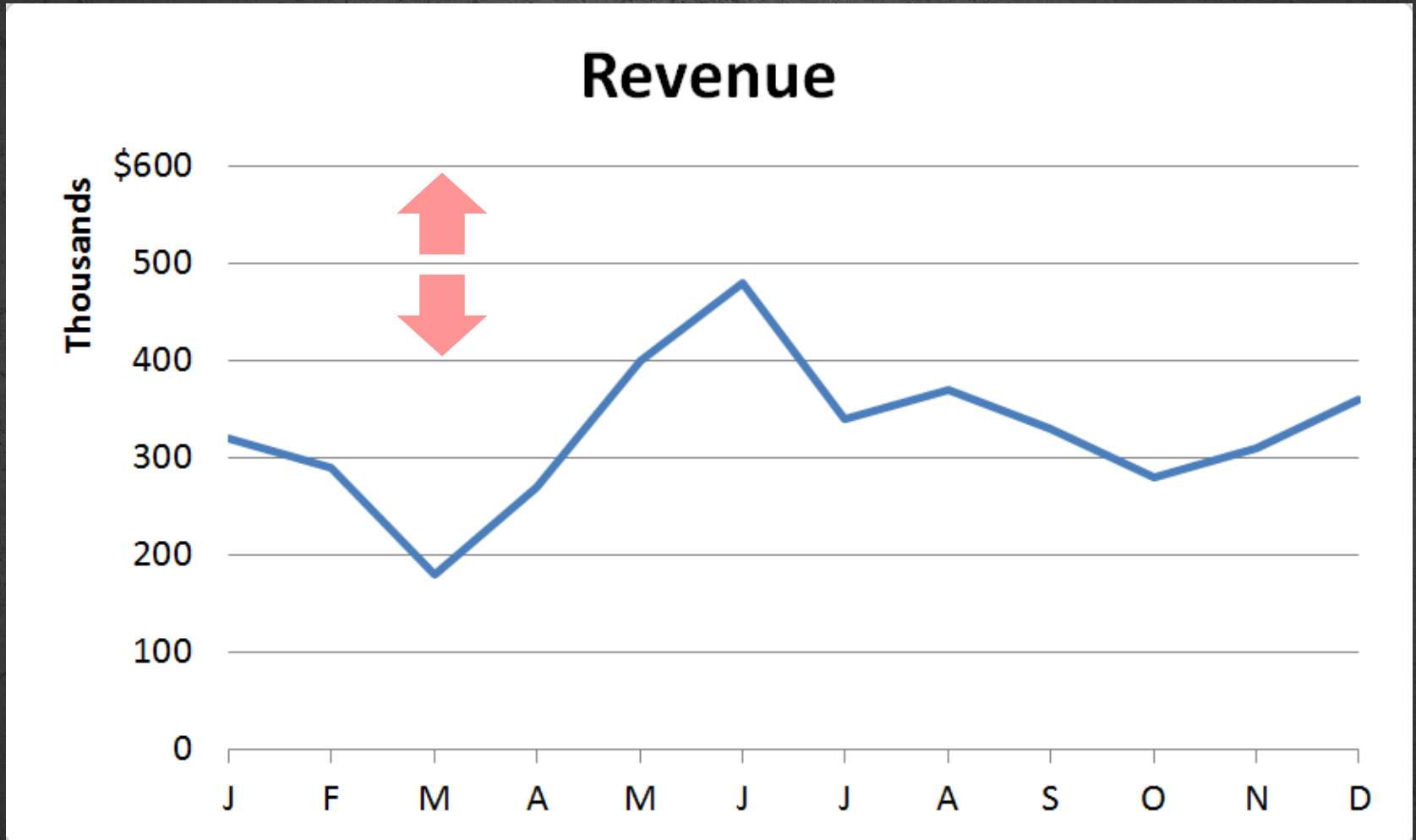
Remove vertical axis and tick marks



3. Ditch the Defaults



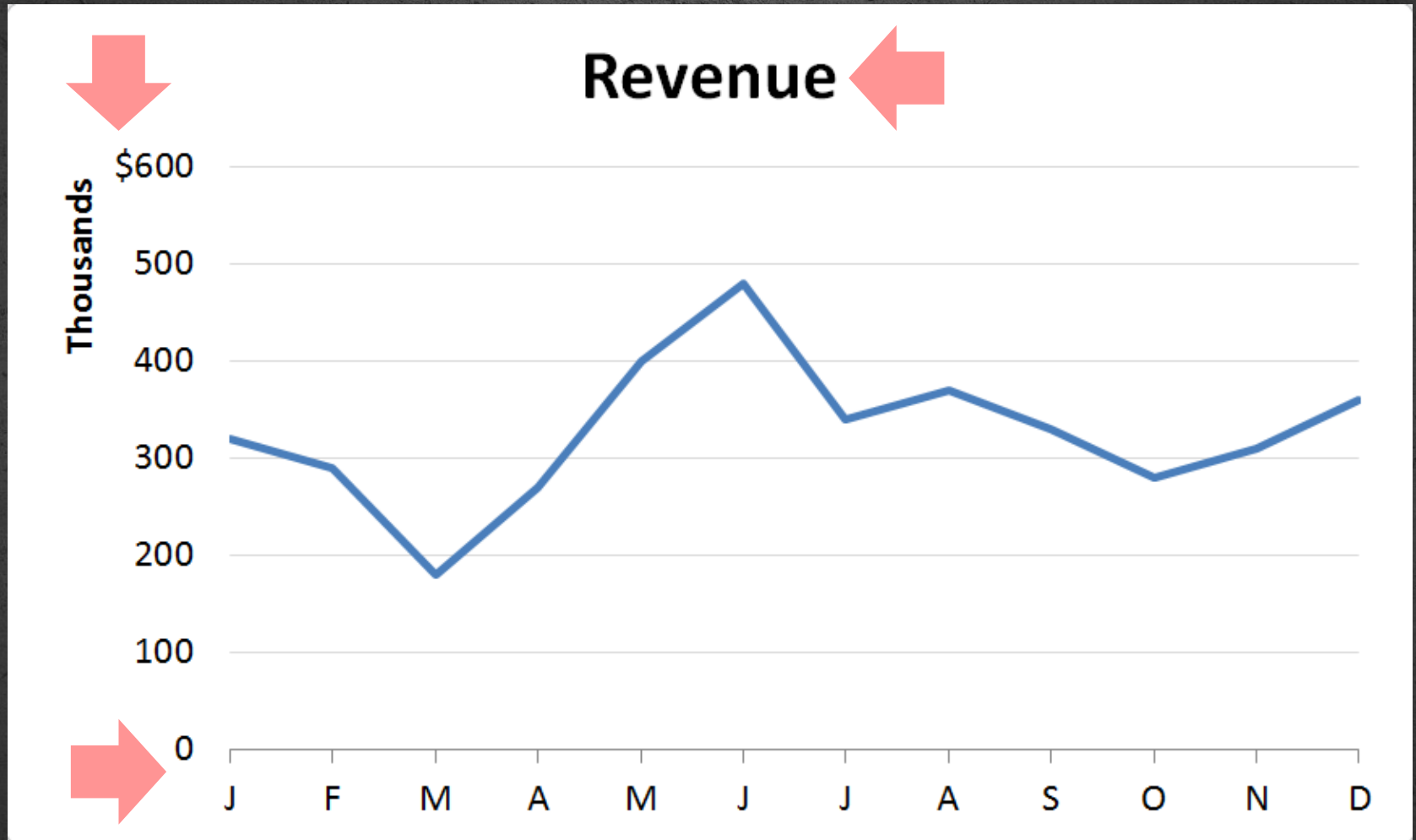
Lighten gridlines



3. Ditch the Defaults



Change to corporate fonts



3. Ditch the Defaults



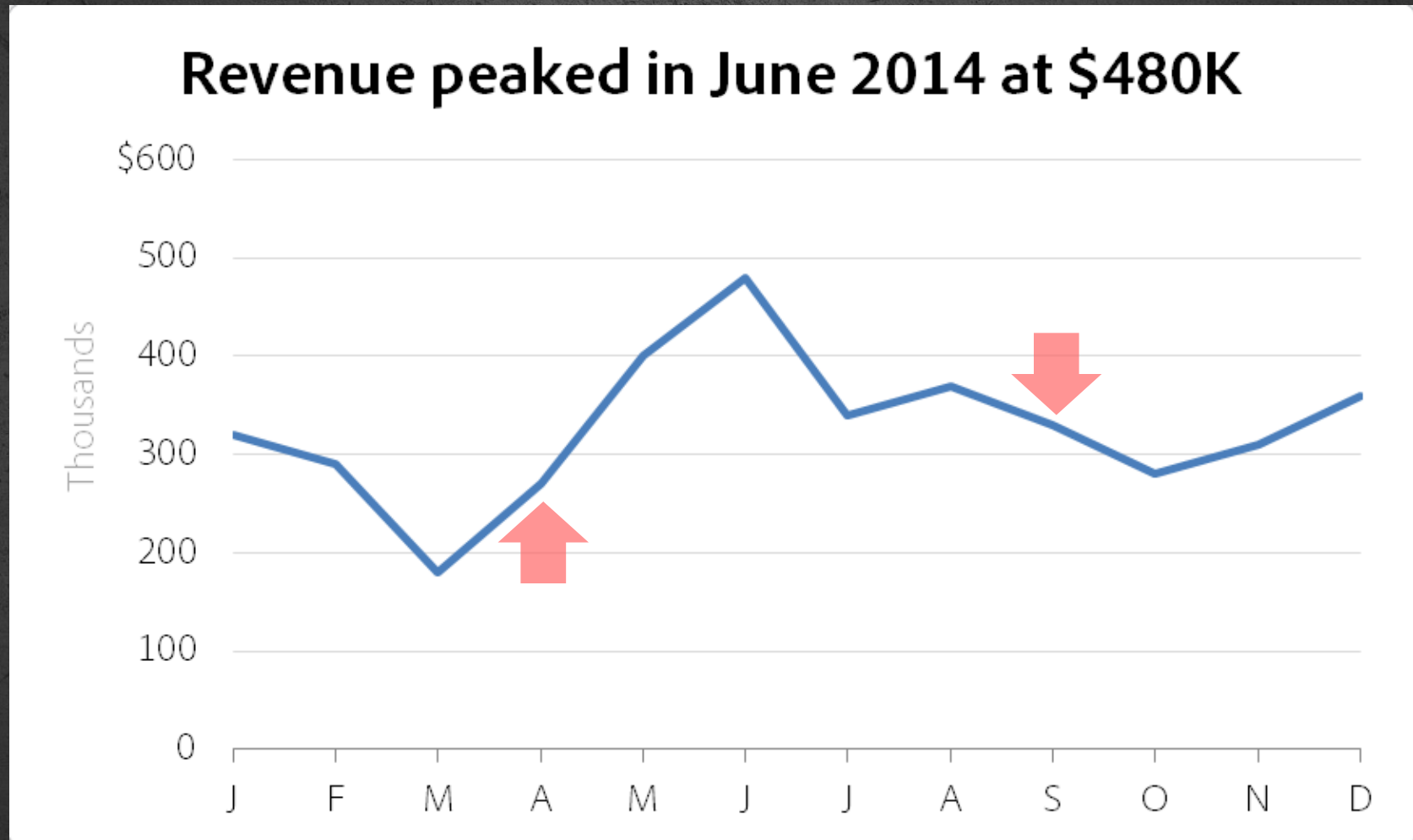
Add a more meaningful title



3. Ditch the Defaults



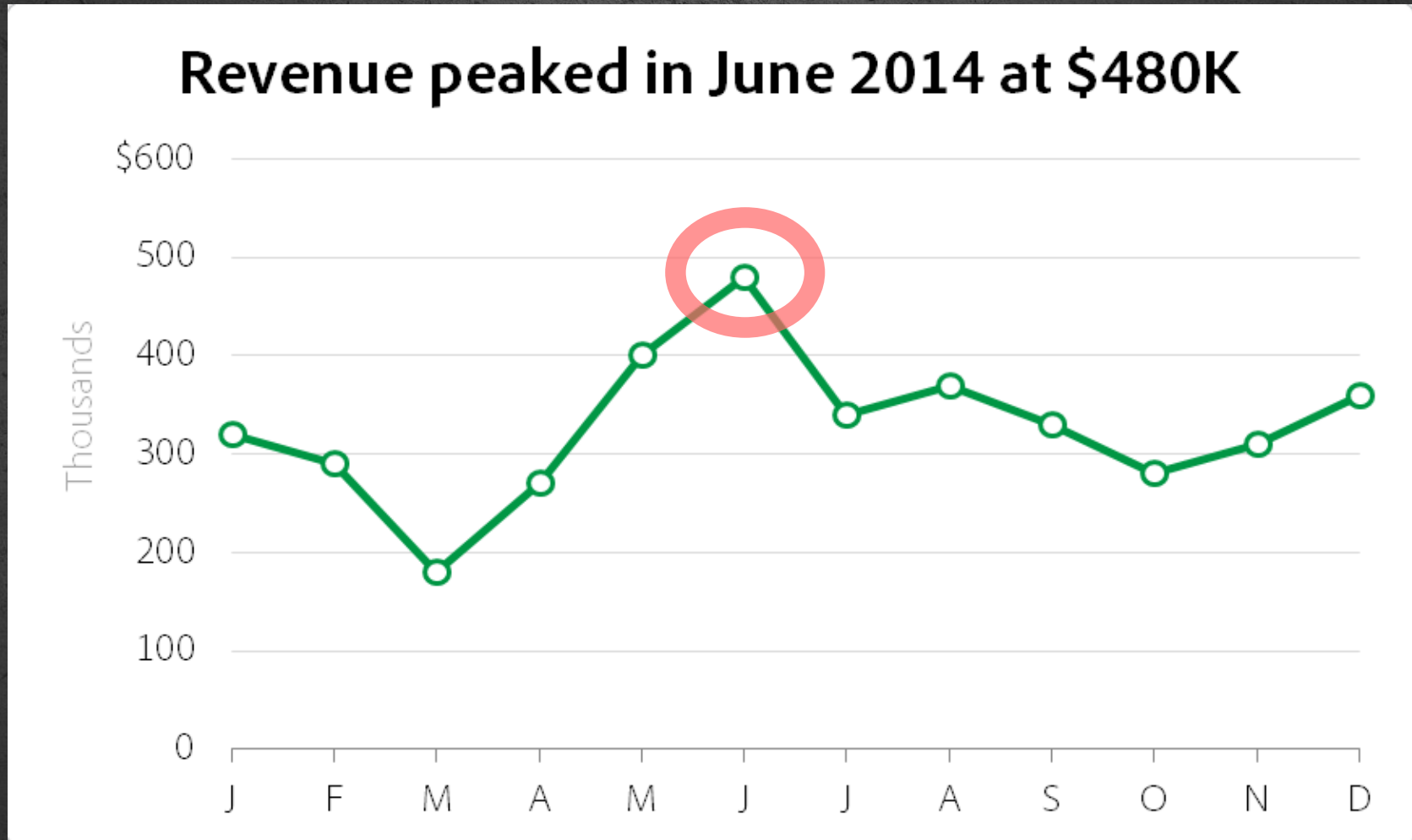
Change line format and color



3. Ditch the Defaults



Add direct label for key data point

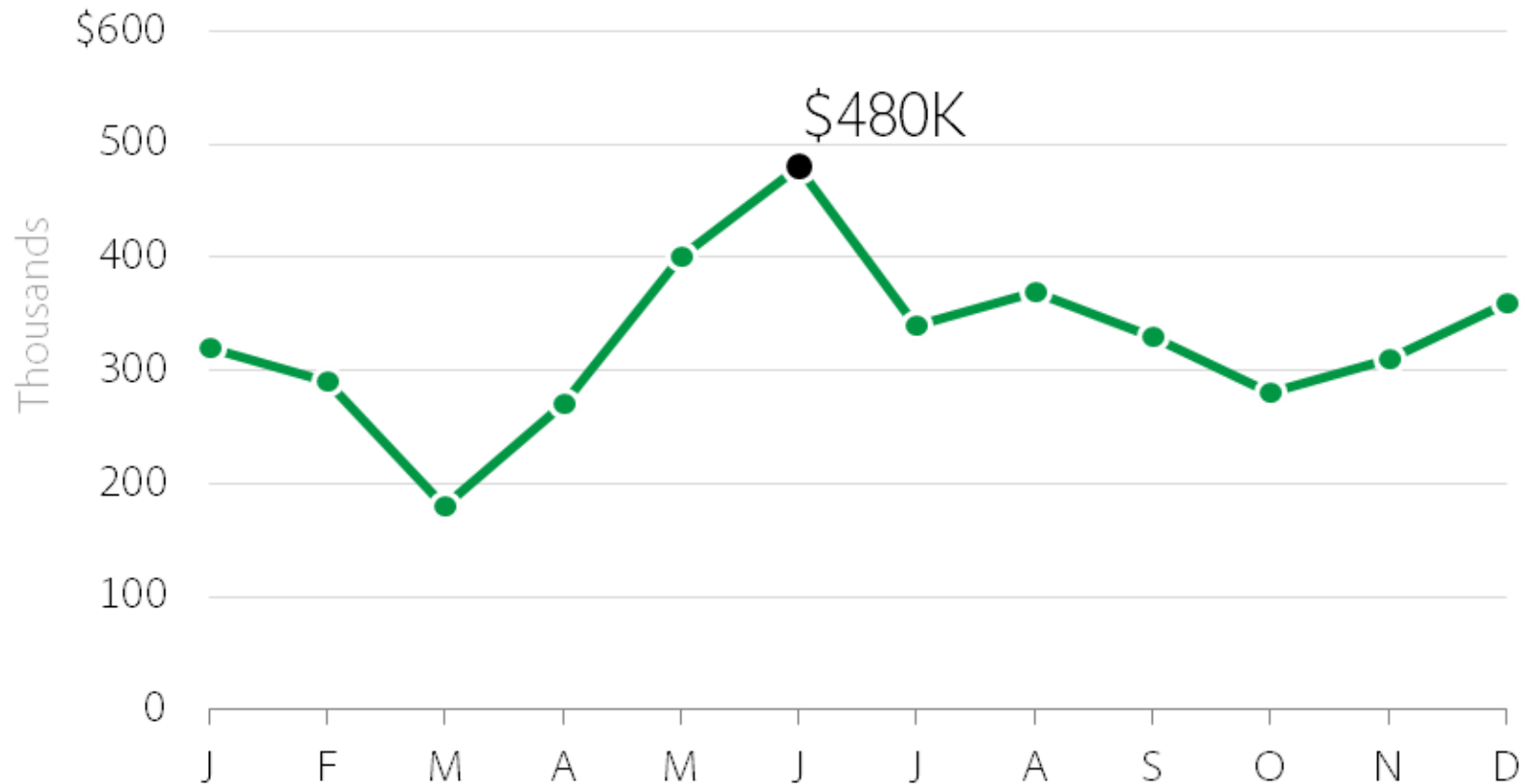


3. Ditch the Defaults



Voila!

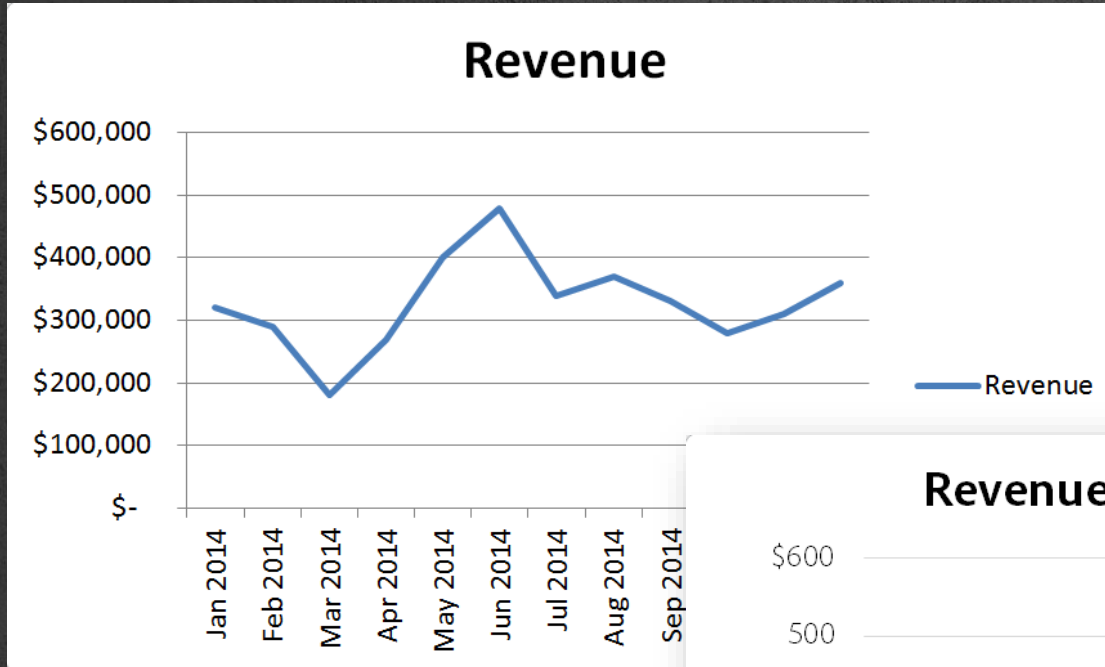
Revenue peaked in June 2014



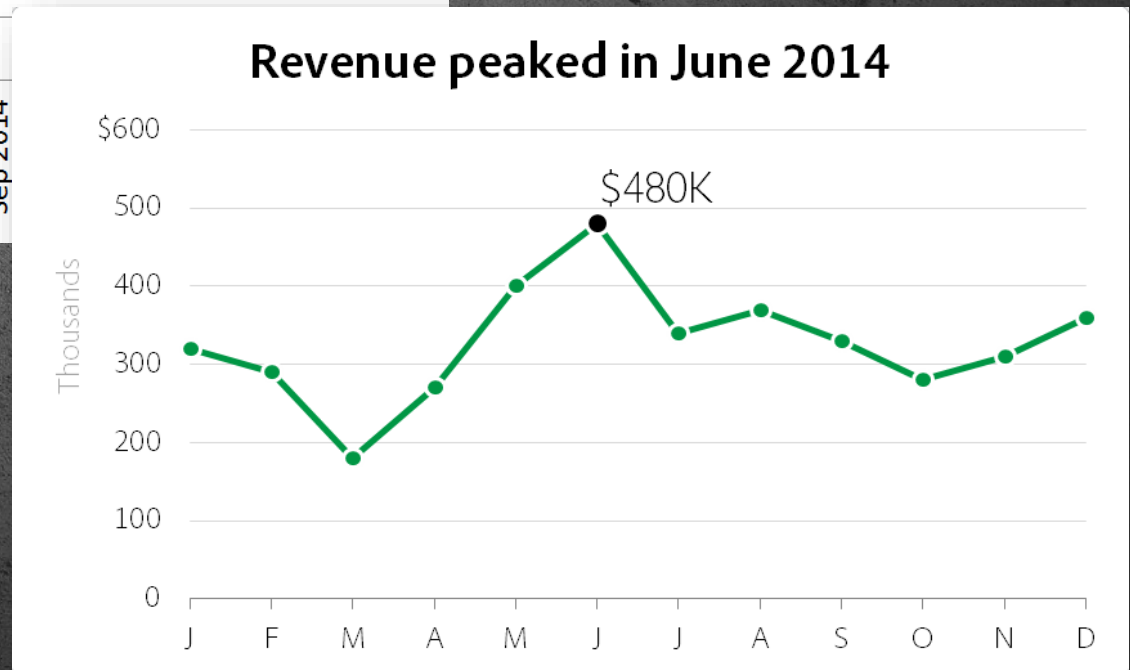
3. Ditch the Defaults



Before



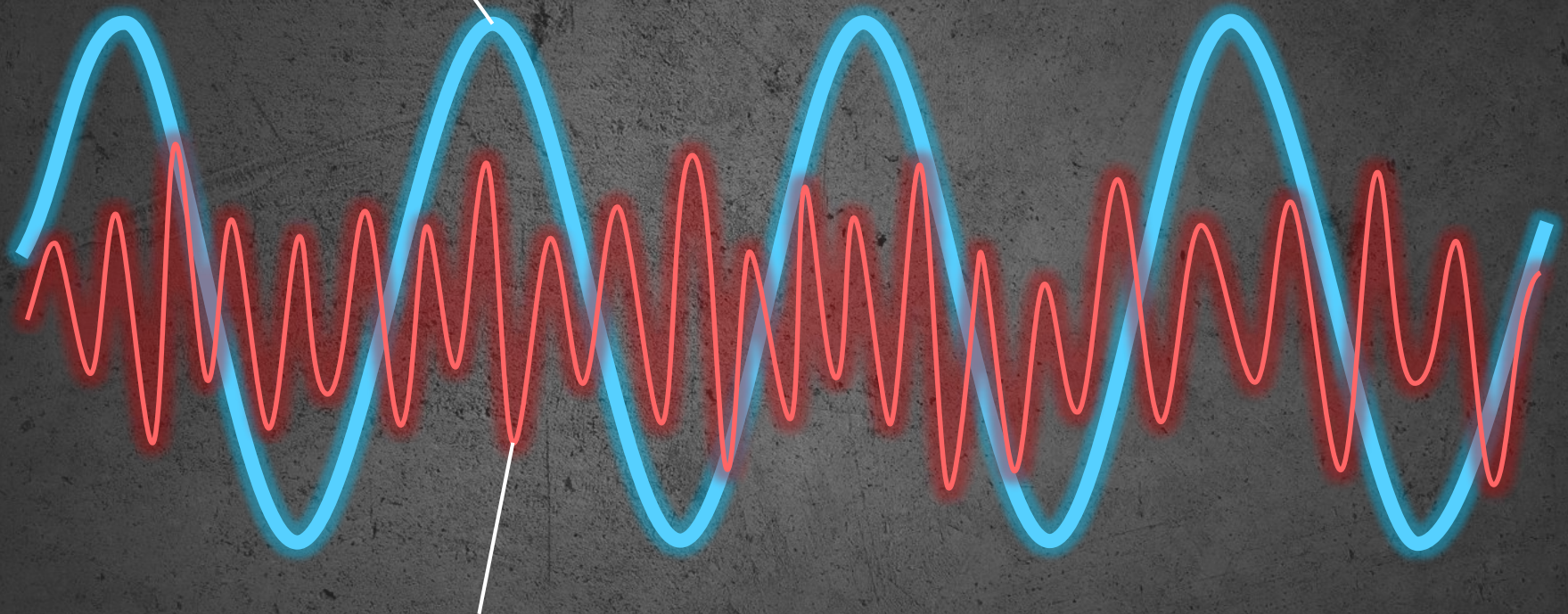
After



4. Remove the Competing Noise



Signal



Noise

3. Remove the Competing Noise



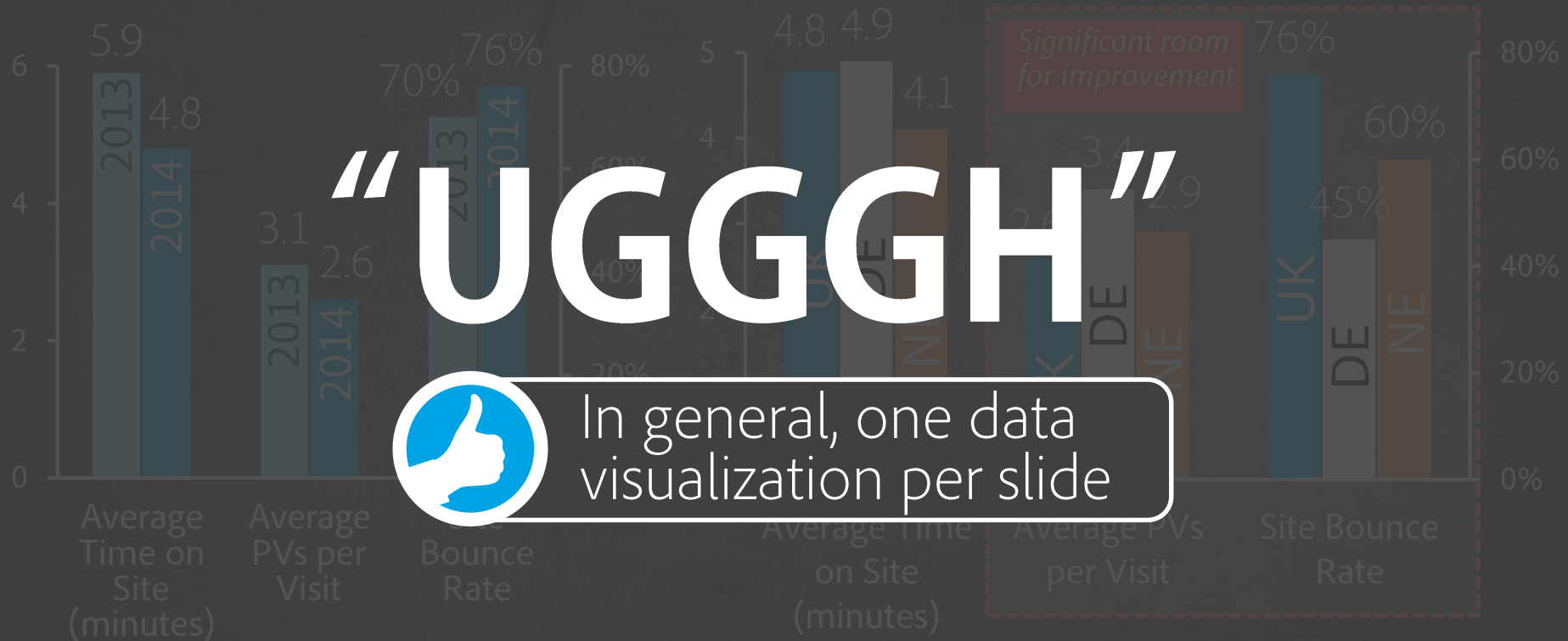
UK SITE'S ENGAGEMENT
PERFORMANCE MARKEDLY
DOWN VS. 2013

OTHER REGIONAL SITES HAVE
OUTPERFORMED UK SITE

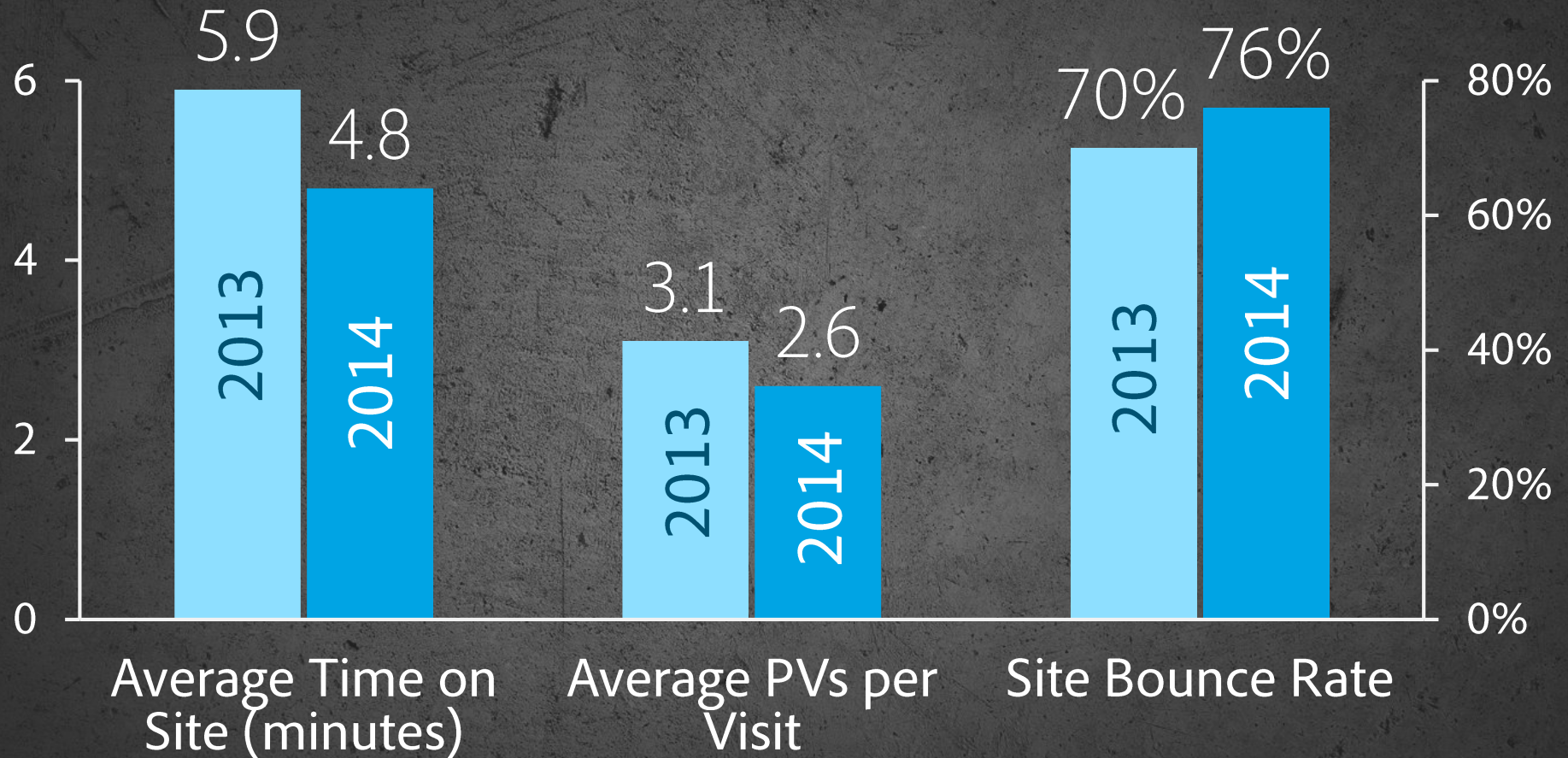
“UGGGH”



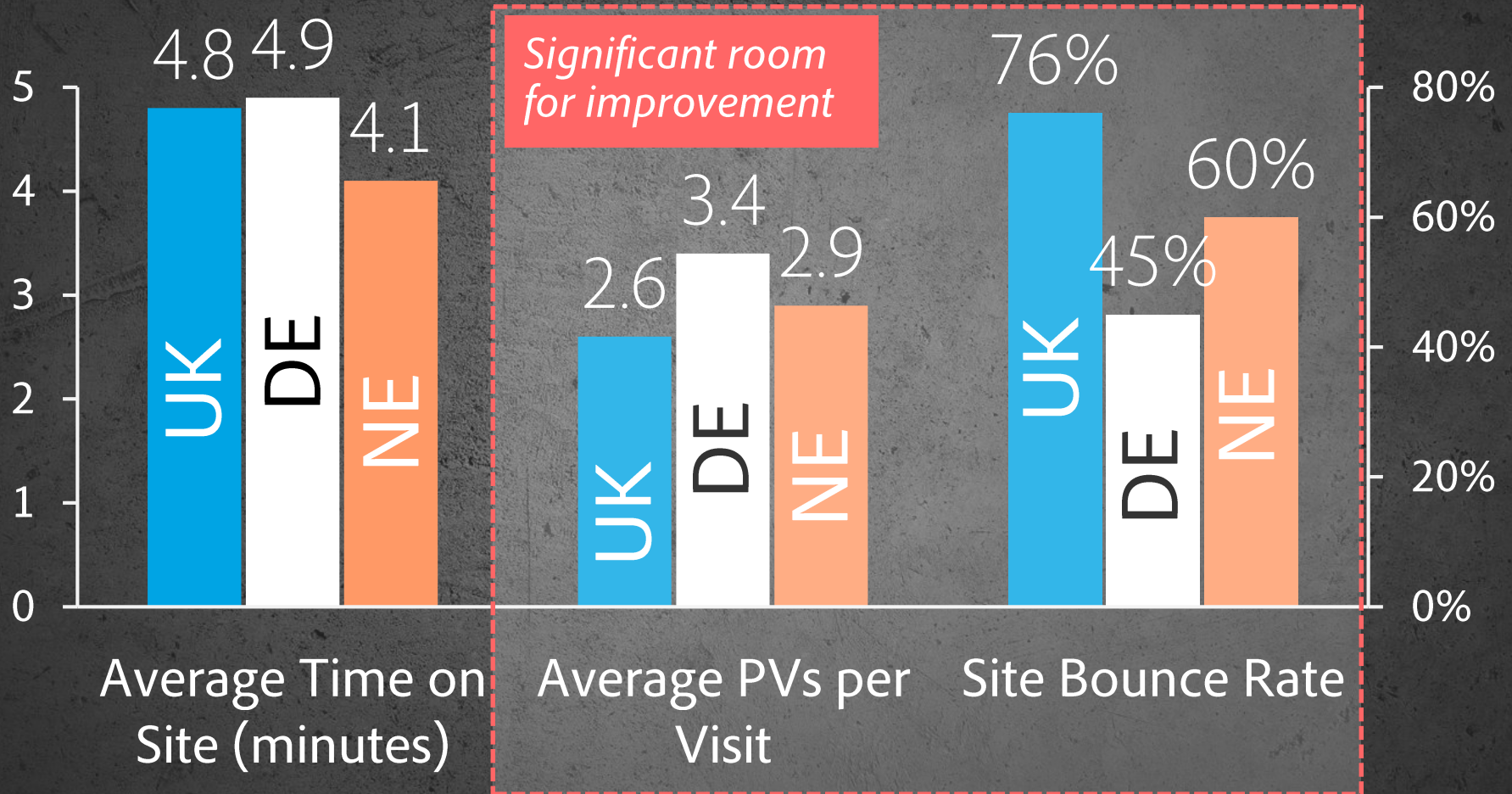
In general, one data
visualization per slide



UK SITE'S ENGAGEMENT PERFORMANCE MARKEDLY DOWN VS. 2013



OTHER REGIONAL SITES HAVE OUTPERFORMED UK SITE



5. Draw the Audience into Your Analysis



Unifying Theory of 2+2

"Make the audience put things together. Don't give them four, give them two plus two."

Andrew Stanton
Pixar Filmmaker

5. Draw the Audience into Your Analysis



Unifying Theory of 2+2

2+2
NOT
4



5. Draw the Audience into Your Analysis



August 2014

Site Section	Page Views	% Total
National	1,652,256	14.3%
World	1,456,370	12.6%
Sports	1,125,366	9.7%
Politics	1,057,848	9.1%
Business	990,677	8.6%
Opinion	902,933	7.8%
Technology	789,050	6.8%
Entertainment	745,367	6.4%
Travel	569,599	4.9%
Health	520,174	4.5%



5. Draw the Audience into Your Analysis



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Travel	569,599	4.9%
Health	520,174	4.5%

How does this
compare to
August 2015?













5. Draw the Audience into Your Analysis



August 2014

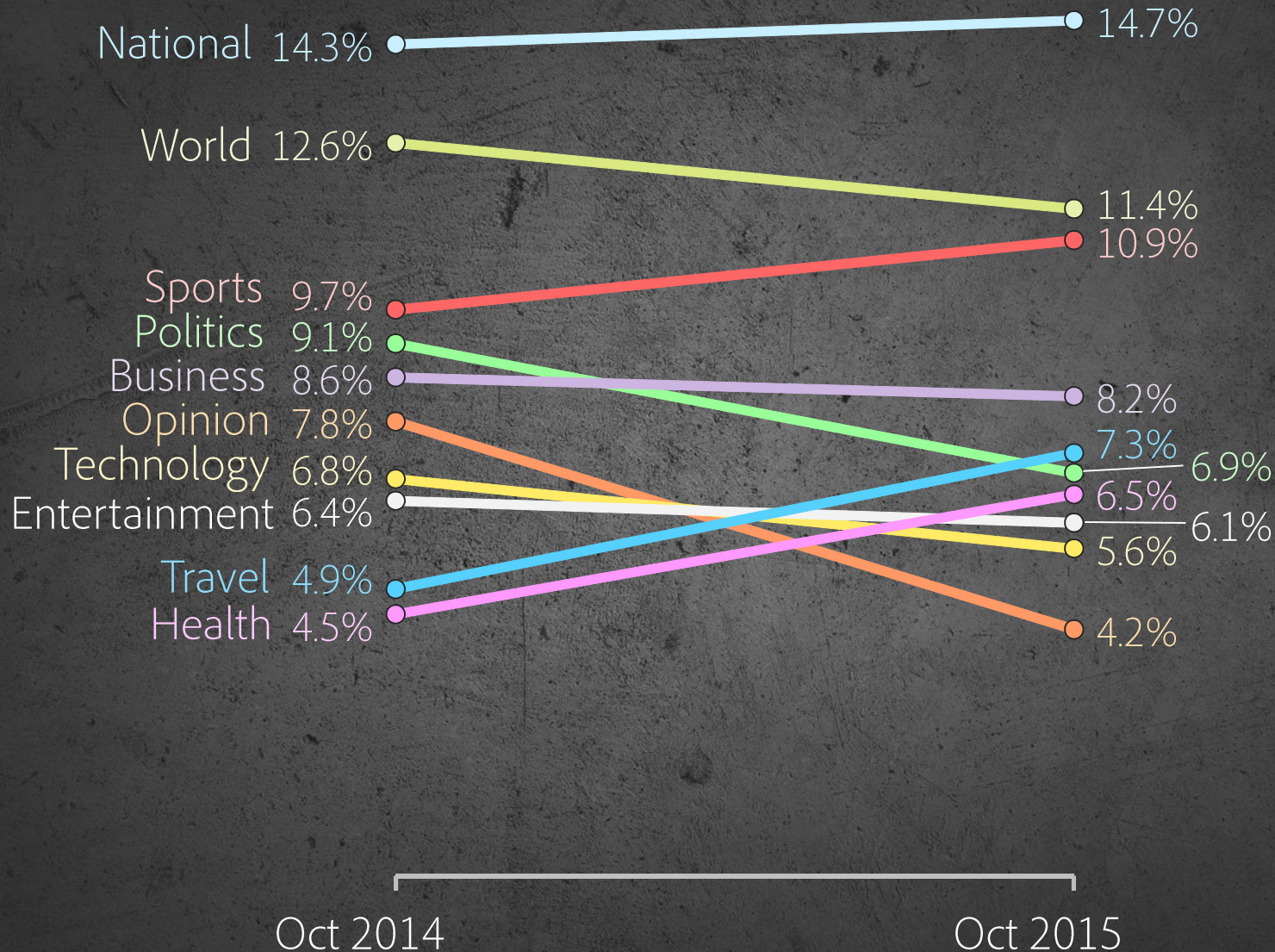
August 2015

Site Section	Page Views	% Total	Page Views	% Change
National	1,652,256	 14.3%	1,999,230	21.0% ▲
World	1,456,370	 12.6%	1,558,316	7.0% ▲
Sports	1,125,366	 9.7%	1,485,483	32.0% ▲
Politics	1,057,848	 9.1%	941,143	-11.0% ▼
Business	990,677	 8.6%	1,121,319	13.2% ▲
Opinion	902,933	 7.8%	575,747	-36.2% ▼
Technology	789,050	 6.8%	764,838	-3.1% ▼
Entertainment	745,367	 6.4%	825,636	10.8% ▲
Travel	569,599	 4.9%	987,654	73.4% ▲
Health	520,174	 4.5%	890,838	71.3% ▲

5. Draw the Audience into Your Analysis



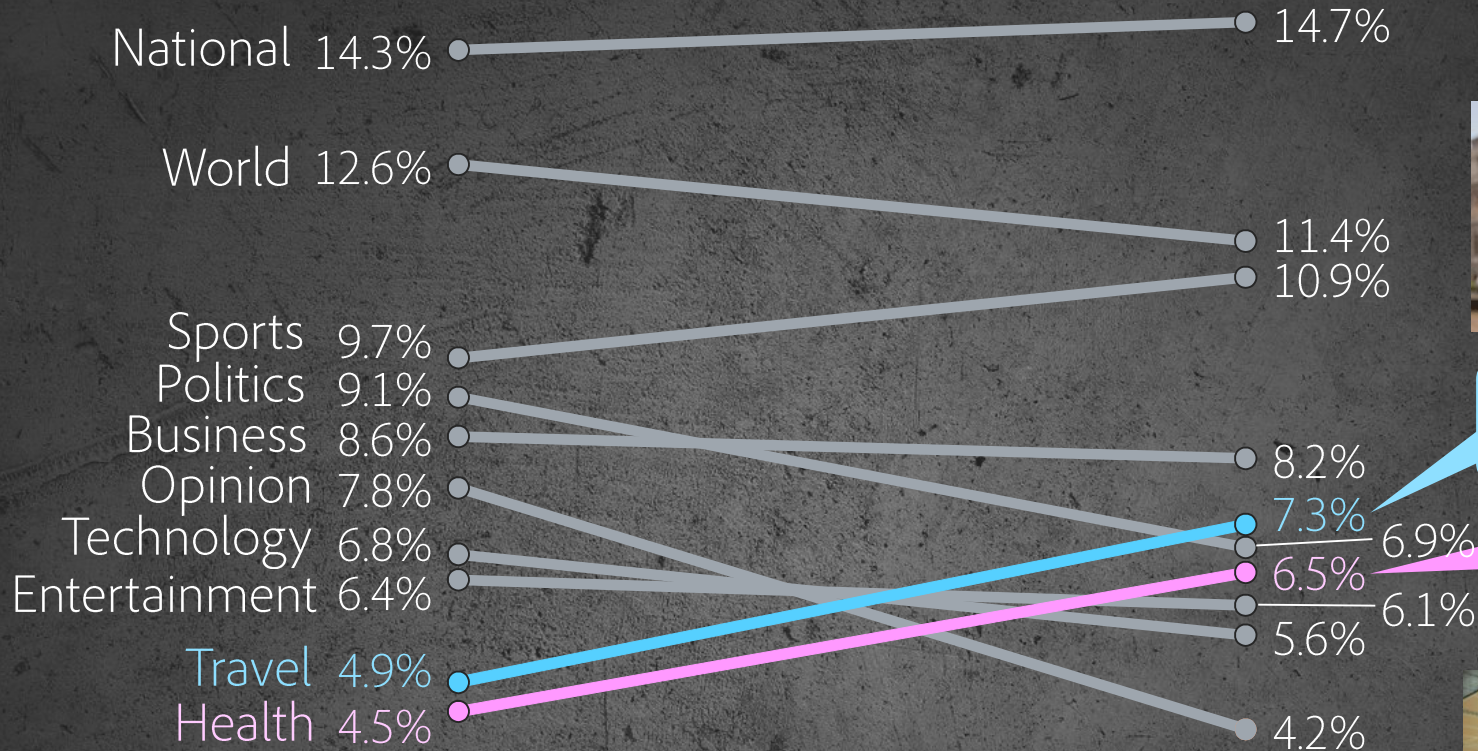
Site Sections by % of Total PVs



5. Draw the Audience into Your Analysis



Site Sections by % of Total PVs



73%↑

71%↑

Lifestyle audience is growing organically in popularity

Oct 2014

Oct 2015



6. Make Your Data Relatable



All the Medalists: **Men's Long Jump**

Bob Beamon's Long Olympic Shadow

Beamon's performance in Mexico City in 1968 would beat the winner in London, Greg Rutherford of Britain, by about two feet.

By KEVIN QUEALY and GRAHAM ROBERTS

NY TIMES

<http://www.nytimes.com/interactive/2012/08/04/sports/olympics/bob-beamons-long-olympic-shadow.html>

Bob Beamon



8.90 meters
(29 feet 2 ½ inches)



6. Make Your Data Relatable



Search keywords	Conv. Rate	Monthly Cost
acme	0%	€1,750
corporation	0%	1,525
company	0%	1,400
organization	0%	1,250
industry	0%	900
association	0%	745
leader	0%	650
marketing	0%	615
firm	0%	590
brand	0%	575

€10,000

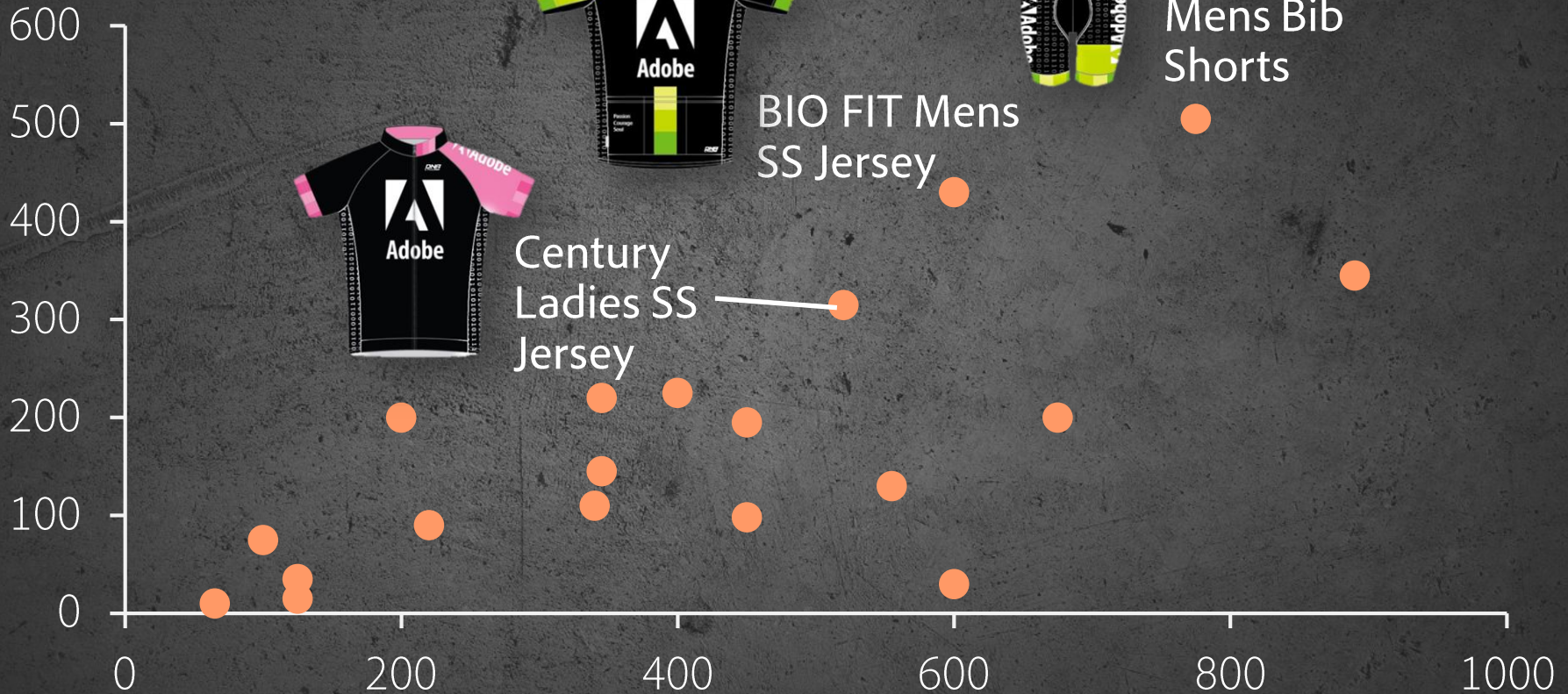
x12 = €120K
Annually



6. Make Your Data Relatable

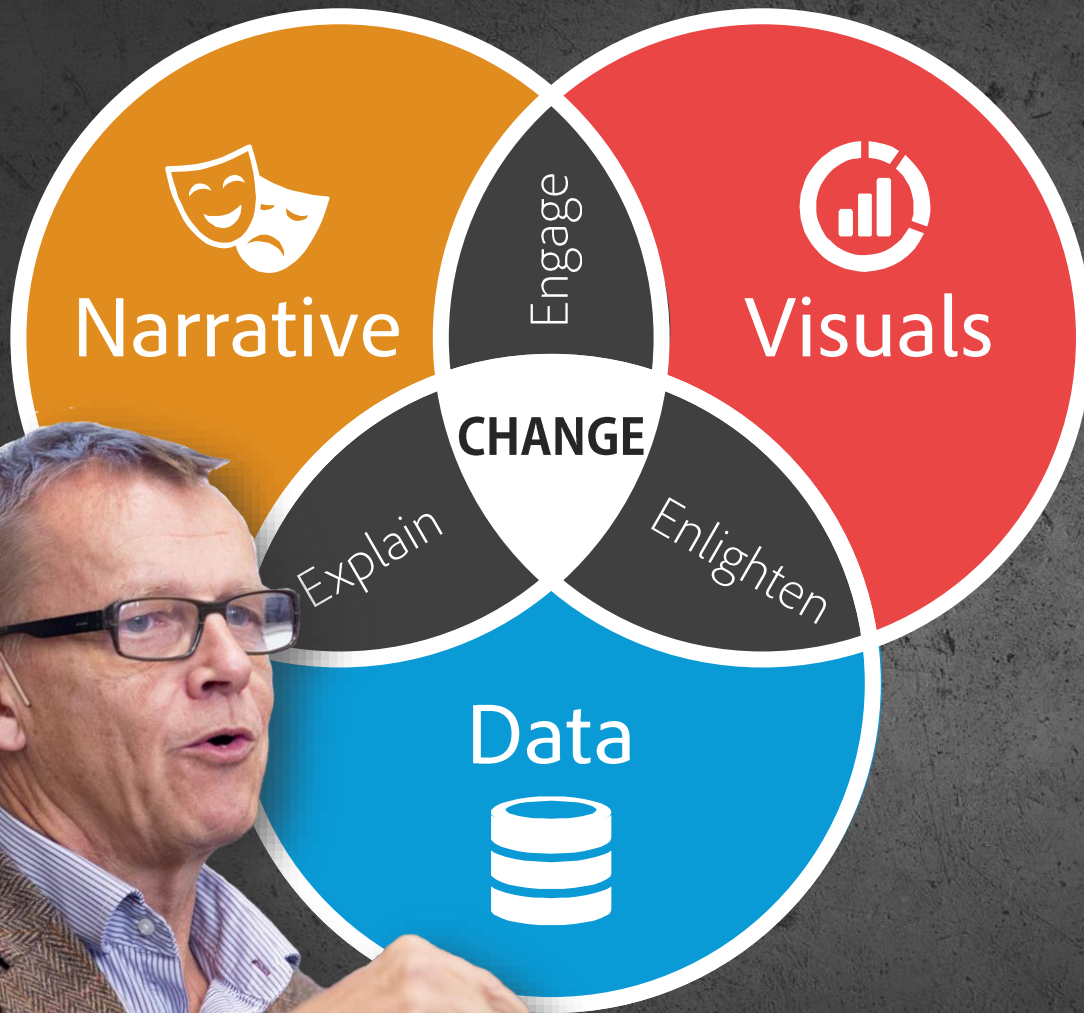


Orders



Product Views

Data Storytellers Unite



**“Those who tell
the stories rule
the world.”**

Hopi Indian Proverb



Good

Adobe Confidential.



Evil

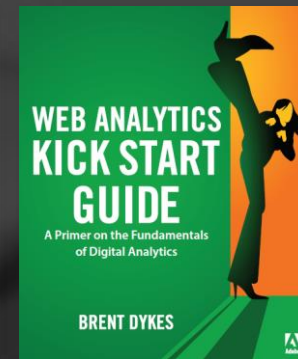
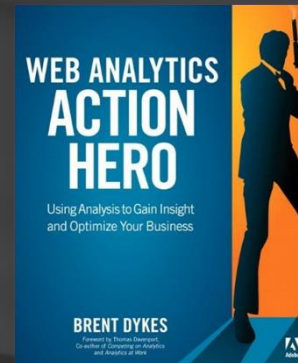


Brent Dykes

 @analyticshero

 /brentdykes

 bdykes@adobe.com



THANK YOU