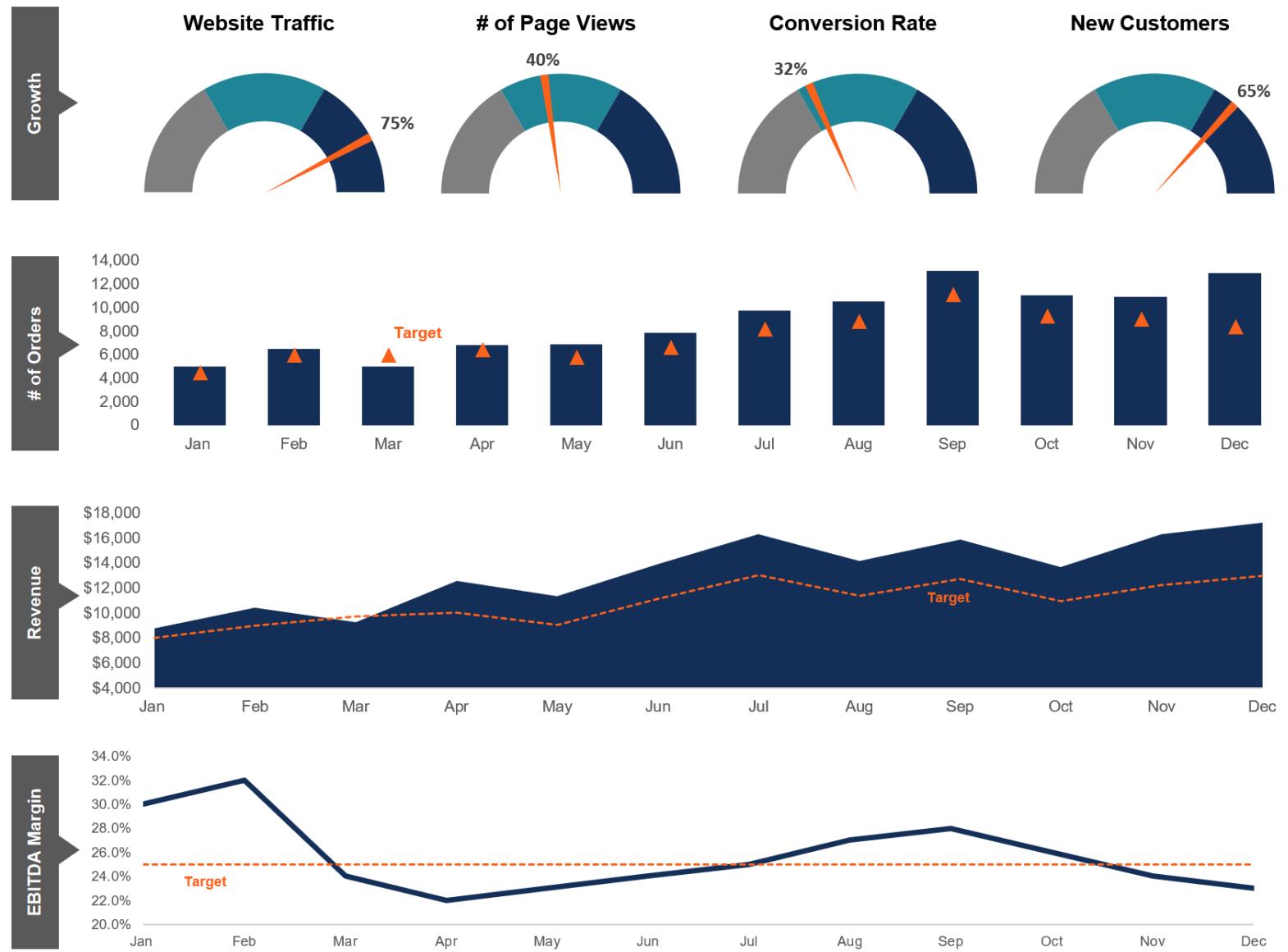
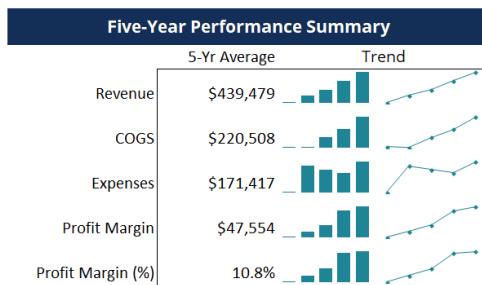
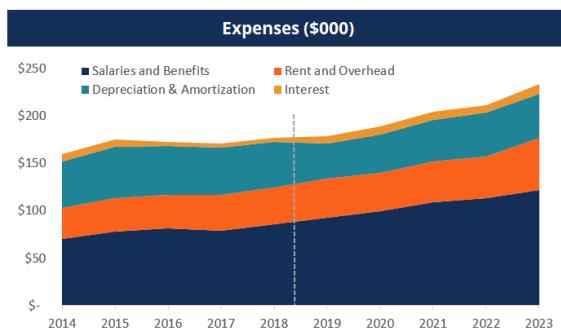
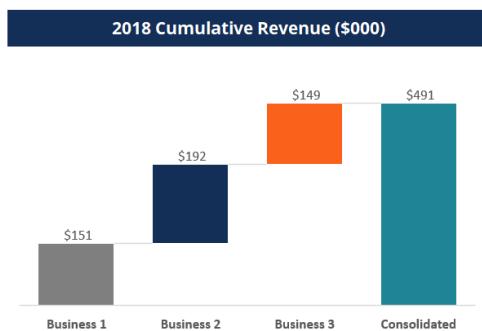
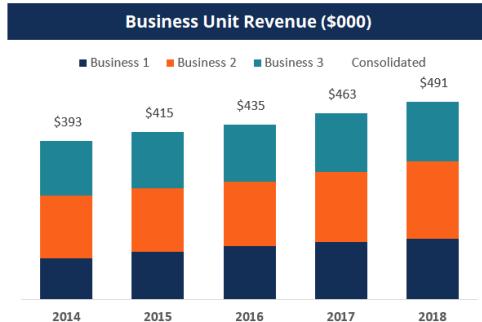




# Dashboards and Data Visualization

## DASHBOARD TEMPLATE





### Income Statement FY 2018

	Actual	Plan	Variance	Var%
Revenue	\$490,923	\$475,000	\$15,923	3.4%
COGS	\$243,130	\$238,000	\$5,130	2.2%
Expenses	\$177,712	\$186,000	(\$8,288)	(4.5%)
Profit Margin	\$70,081	\$73,500	(\$3,419)	(4.7%)
Profit Margin (%)	14.3%	15.5%	(1.2%)	(7.7%)

### P&L Summary 2018

Revenue	\$490,923
COGS	\$243,130
<b>Expenses</b>	
Salaries and Benefits	\$85,735
Rent and Overhead	\$39,236
Depreciation & Amortization	\$48,241
Interest	\$4,500
Total Expenses	\$177,712
<b>Net Operating Profit</b>	<b>\$70,081</b>

### Balance Sheet Summary 2018

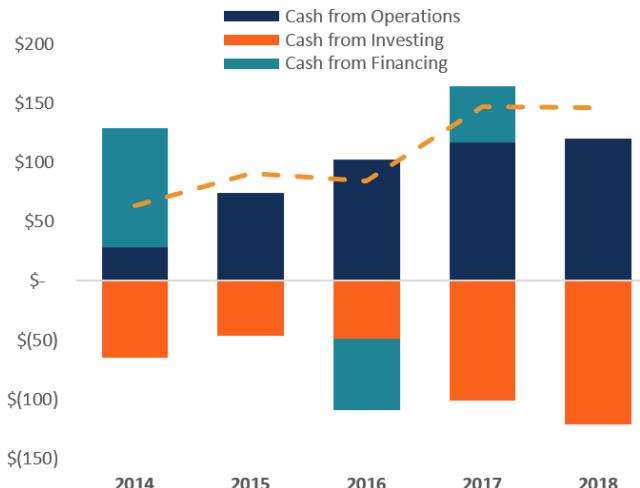
<b>Assets</b>	
Current Assets	\$395,685
Non-current Assets	\$589,610
<b>Total Assets</b>	<b>\$985,295</b>
<b>Liabilities</b>	
Current Liabilities	\$135,374
Long-term Liabilities	\$384,962
<b>Shareholders' Equity</b>	<b>\$464,959</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>\$985,295</b>

## DASHBOARD TEMPLATE

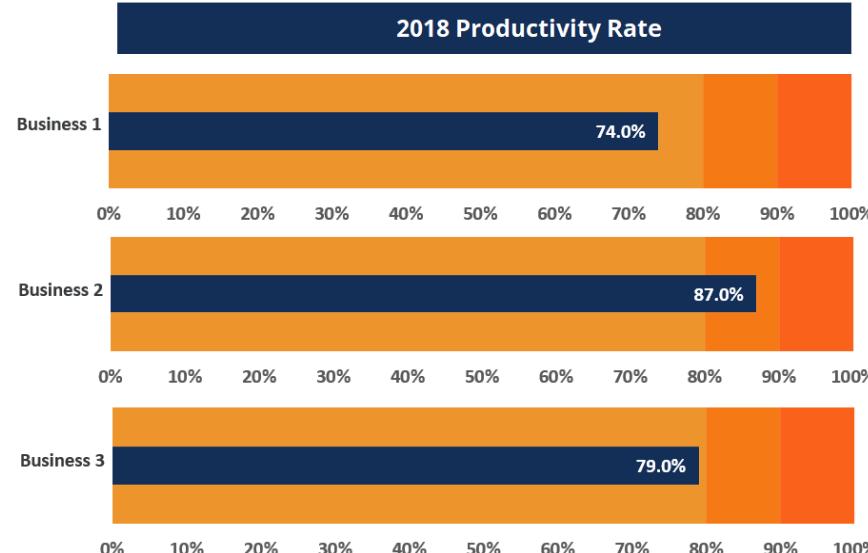
### 2018 Net Earnings Waterfall (\$000s)



### Cash Flow and Cash Balance (\$000s)

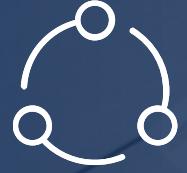


### 2018 Productivity Rate



# Table of Contents

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---

Introduction



---

Context



---

Visuals



---

Focusing  
Attention



---

Design  
Principles



---

3 Dashboards



---

Conclusion

# CFI Instructors

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We stand out from the competition because our teachers are professional educators.



**Tim Vipond**

CEO & Instructor  
Vancouver



**Justin Sanders**

Instructor  
London



**Lisa Dorian**

Director & Instructor  
New York



**Ryan Spendelow**

Instructor  
Hong Kong



**Scott Powell**

Director & Instructor  
Vancouver



# Objectives

# Session objectives

---



Harness the power of visual communication



Understand your audience and the context



Design clear and effective, charts, graphs & images



Focus your audience's attention on the most important points



Apply best practices for design principles



Tell the story you want to tell



Build persuasive presentations



Design insightful dashboards

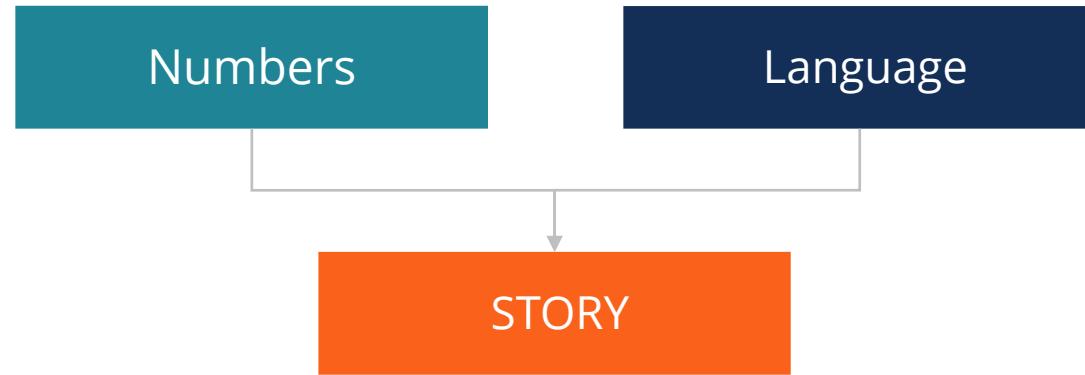


Become a world class financial analyst



# Data Visualization Overview

# What is storytelling with data?



Numbers and language combine  
to create storytelling with data

We typically work on numbers  
and language separately

This course teaches you to combine  
the two for effective business communication



# Why focus on visuals?

---



Majority of the population are “visual learners”



Our brains see words as pictures, not individual letters



Very hard to read financial analysis in numbers and tables



Charts bring the data to life



# The potential impact is huge

---



## Executive Decision Making



Executives need to make decisions quickly



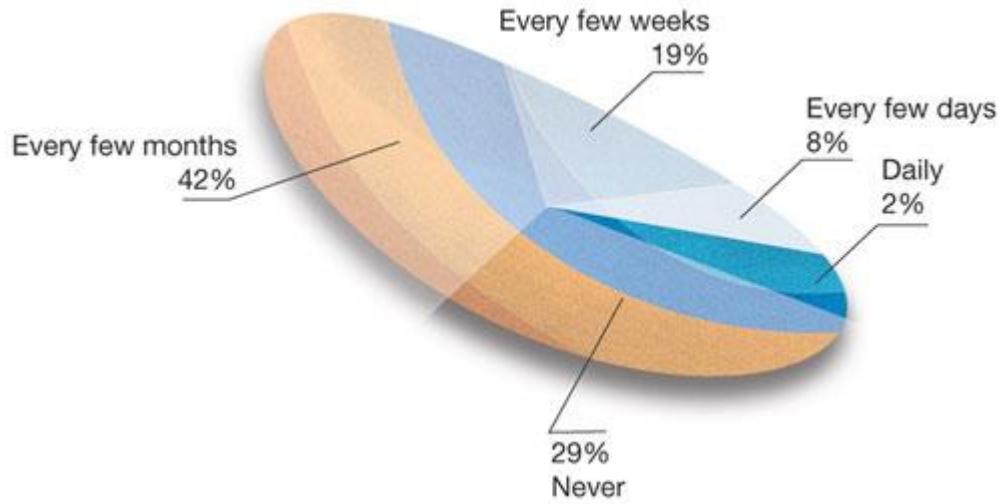
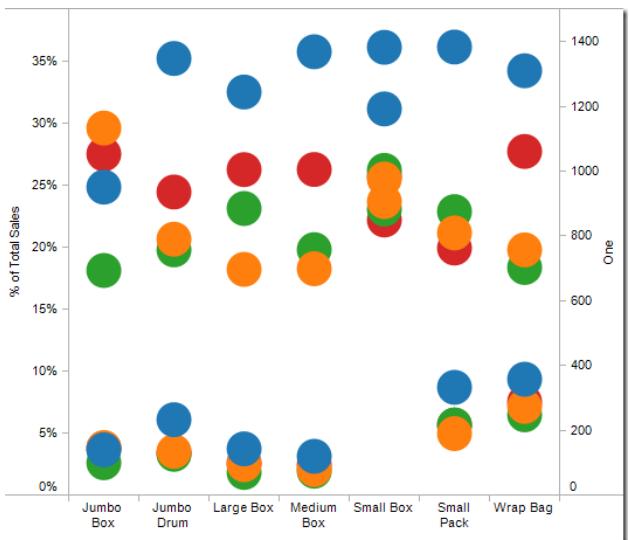
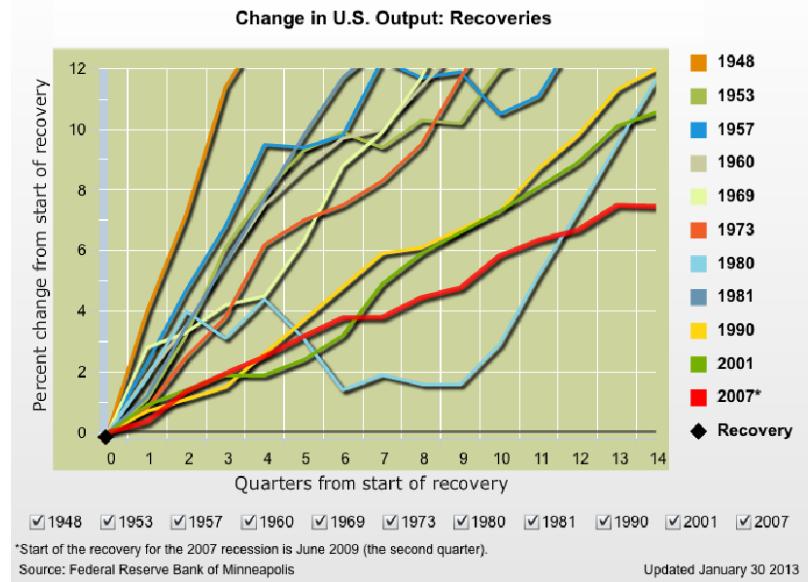
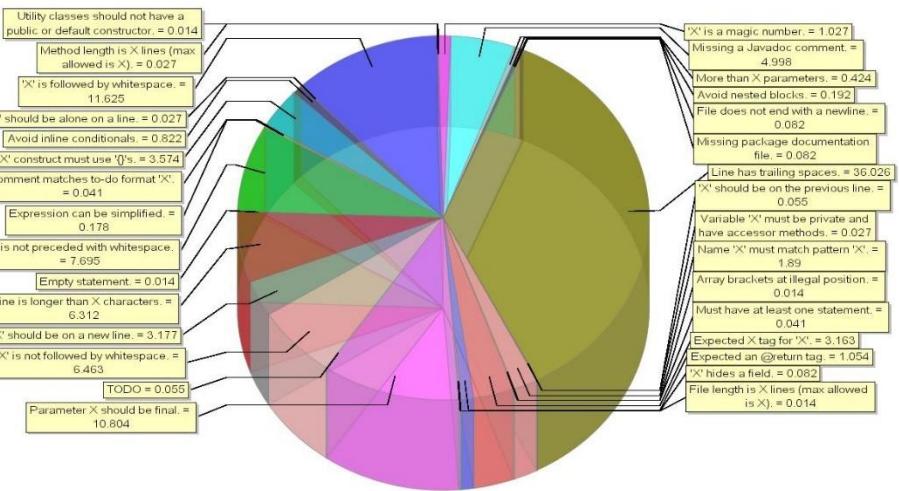
Good analysts distill large amounts of complex information into a simple, concise output



Enhanced decision making can lead to significant value creation at most companies



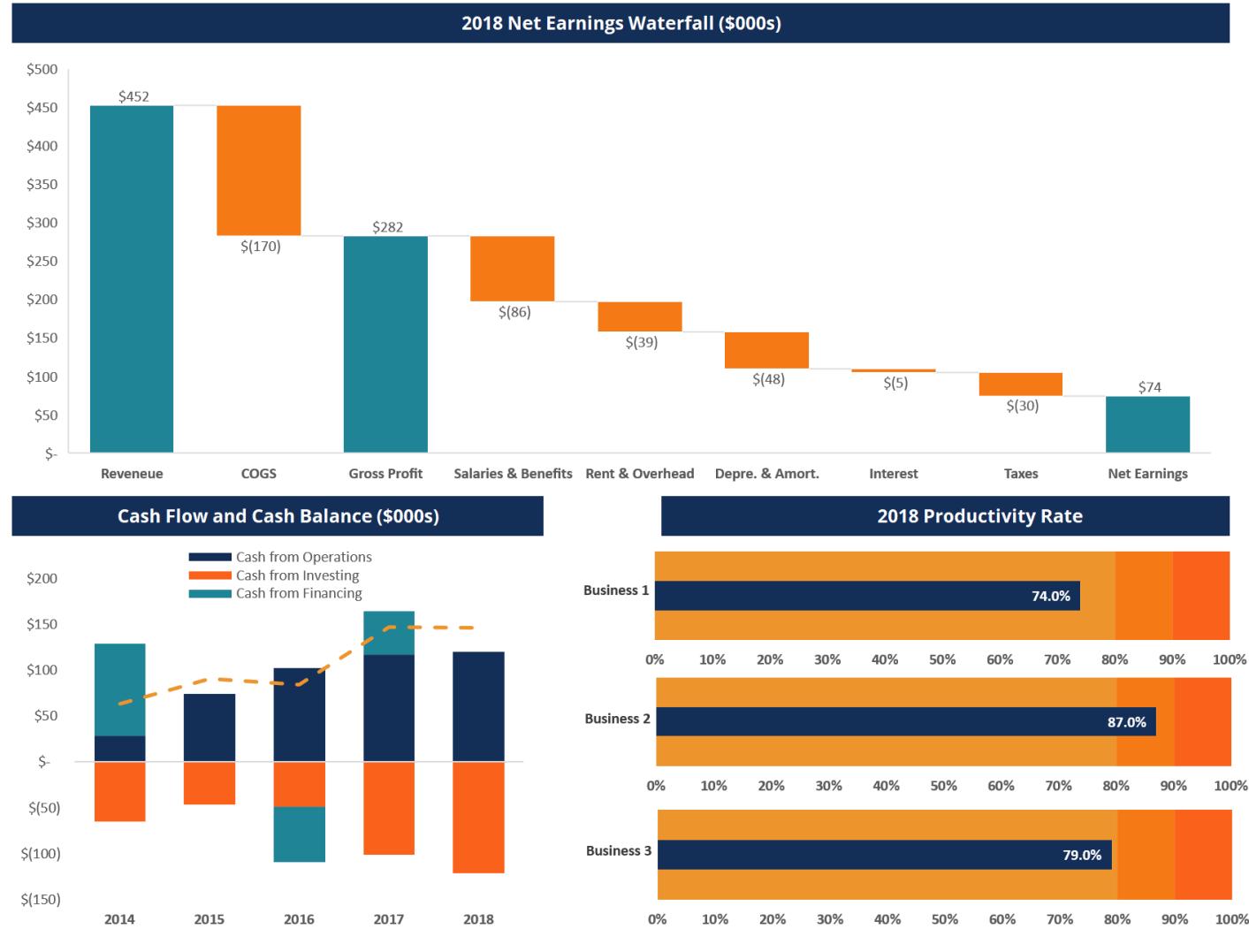
# Bad charts are everywhere



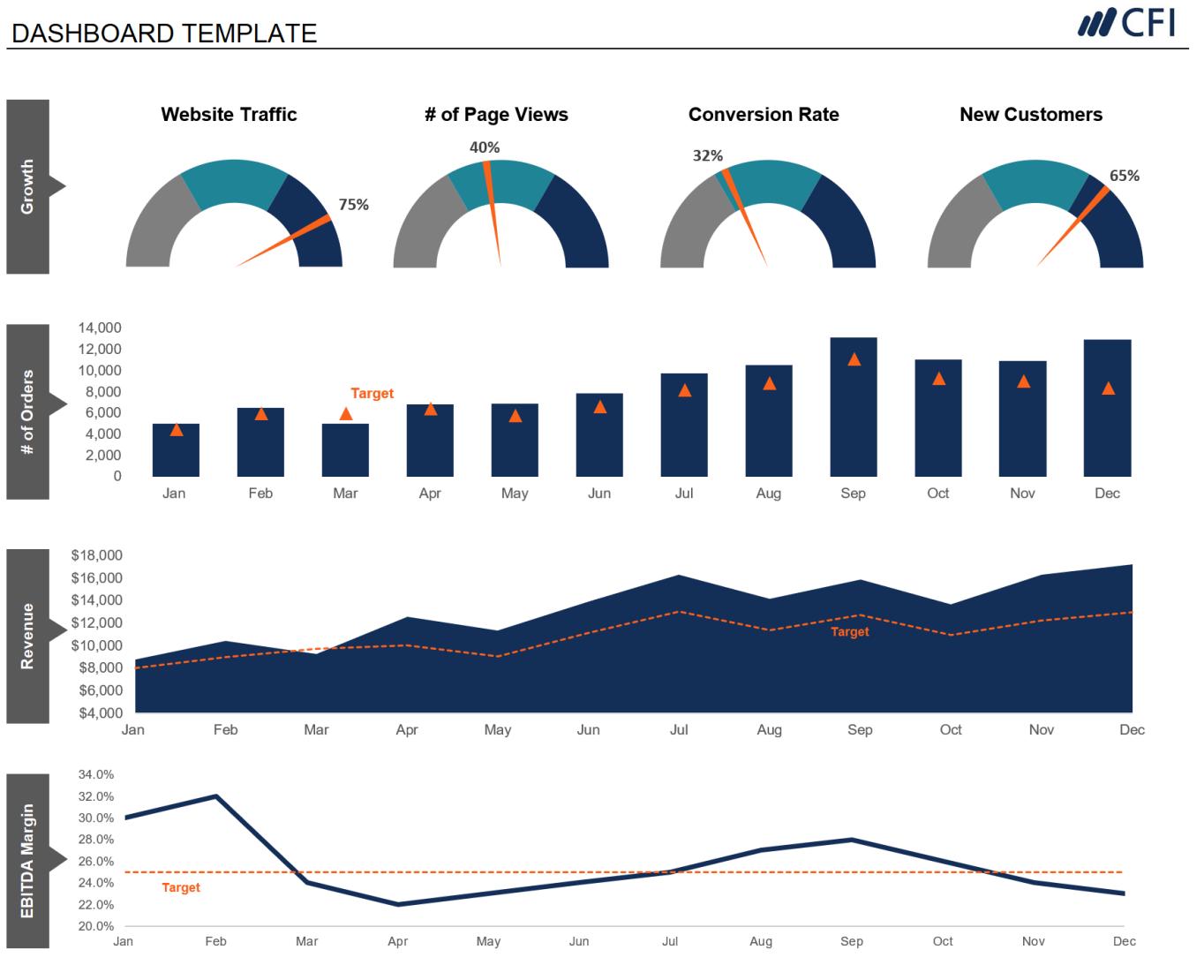
# Great visuals make such a difference

© Corporate Finance Institute

## DASHBOARD TEMPLATE



# Great visuals make such a difference





# Context

# Session objectives

---



Know who your audience is



Know what questions to ask



Identify the “big idea”



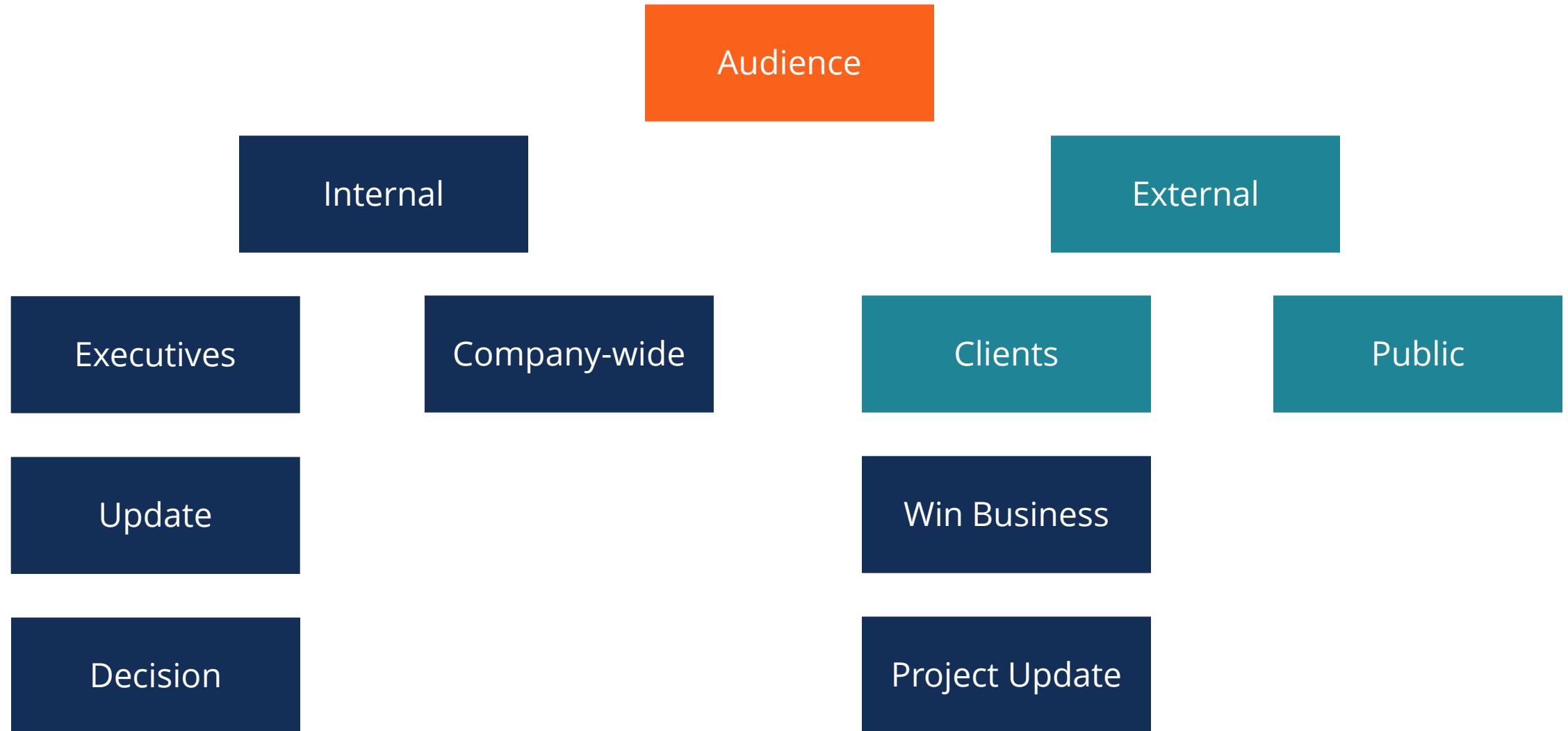
Decide how to get them to take that action



Create a high level storyboard

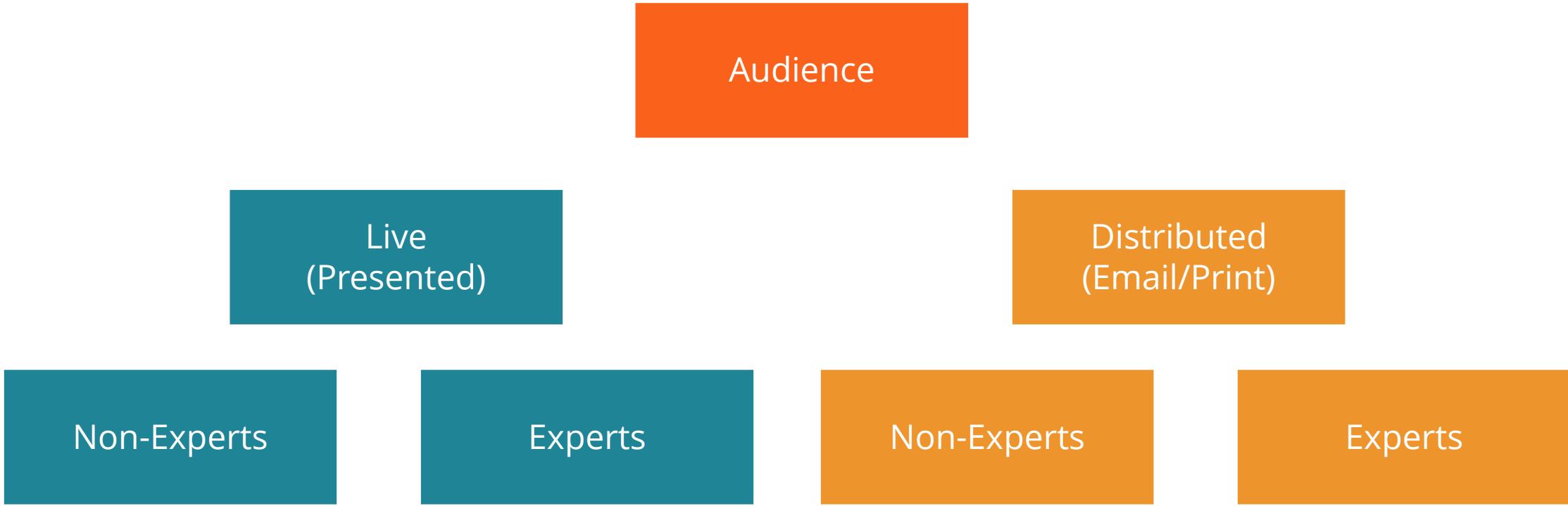
# Know your audience

---

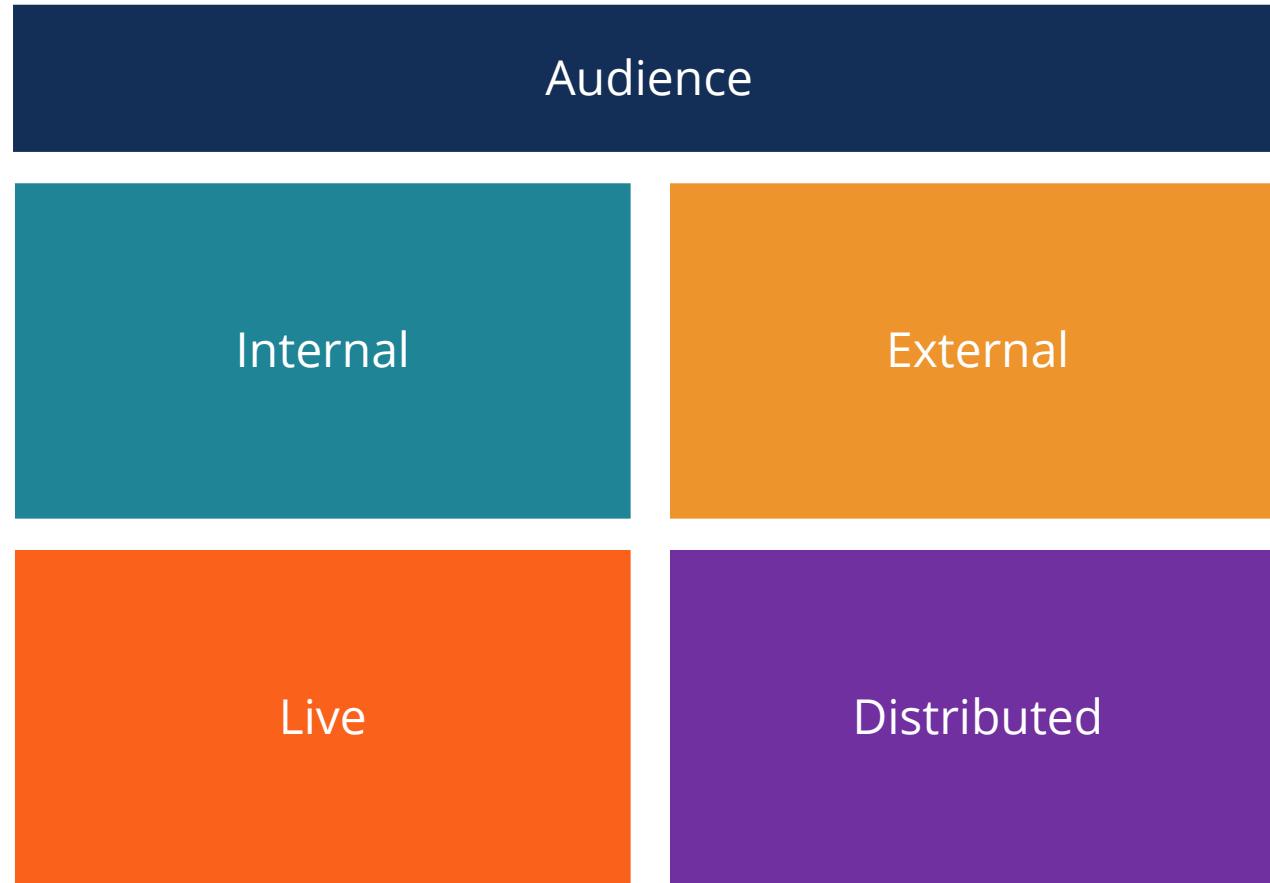


# Know your audience

---



# Know your audience



# Tailor your message

---



## Considerations

Level of detail	Use of jargon / technical information / Acronyms	Tone
Inform, or persuade?	What biases does the audience have?	Quantitative vs qualitative data



# The main idea

---



“

**“Despite significant growth in our company's top line and improving EBITDA margins, we require a significant capital investment next year or we will run out of money.”**

# Storyboarding

---



ISSUE:

Despite growth and better margins, we need to raise money



DEMONSTRATE ISSUE:

Positives: Graphs of revenue, margins,



DEMONSTRATE ISSUE:

Negatives: customer metrics, capital investment, cash burn, etc.



IDEAS:

Raise equity, raise debt, dramatically cut capital spending



COMPARISON:

Show various outcomes, before and after etc.



RECOMMENDATION:

The optional choice is to raise \$x of equity



## Visuals

# Session objectives

---



Review the various visual options



Match visuals to the situation



Know when to use what type of visual

Text

---

+75%



# Table

---

Exit Multiple	Revenue Growth					
	0%	5.0%	10.0%	15.0%	20.0%	
-	19.22	23.73	29.09	35.43	42.88	
7.0x	20.85	25.92	31.97	39.13	47.56	
8.0x	22.47	28.11	34.85	42.83	52.24	
9.0x	24.10	30.31	37.72	46.53	56.92	
10.0x	25.73	32.50	40.60	50.23	61.60	



# Heatmap

Exit Multiple	Revenue Growth					
	0%	5.0%	10.0%	15.0%	20.0%	
-	19.22	23.73	29.09	35.43	42.88	
7.0x	20.85	25.92	31.97	39.13	47.56	
8.0x	22.47	28.11	34.85	42.83	52.24	
9.0x	24.10	30.31	37.72	46.53	56.92	
10.0x	25.73	32.50	40.60	50.23	61.60	



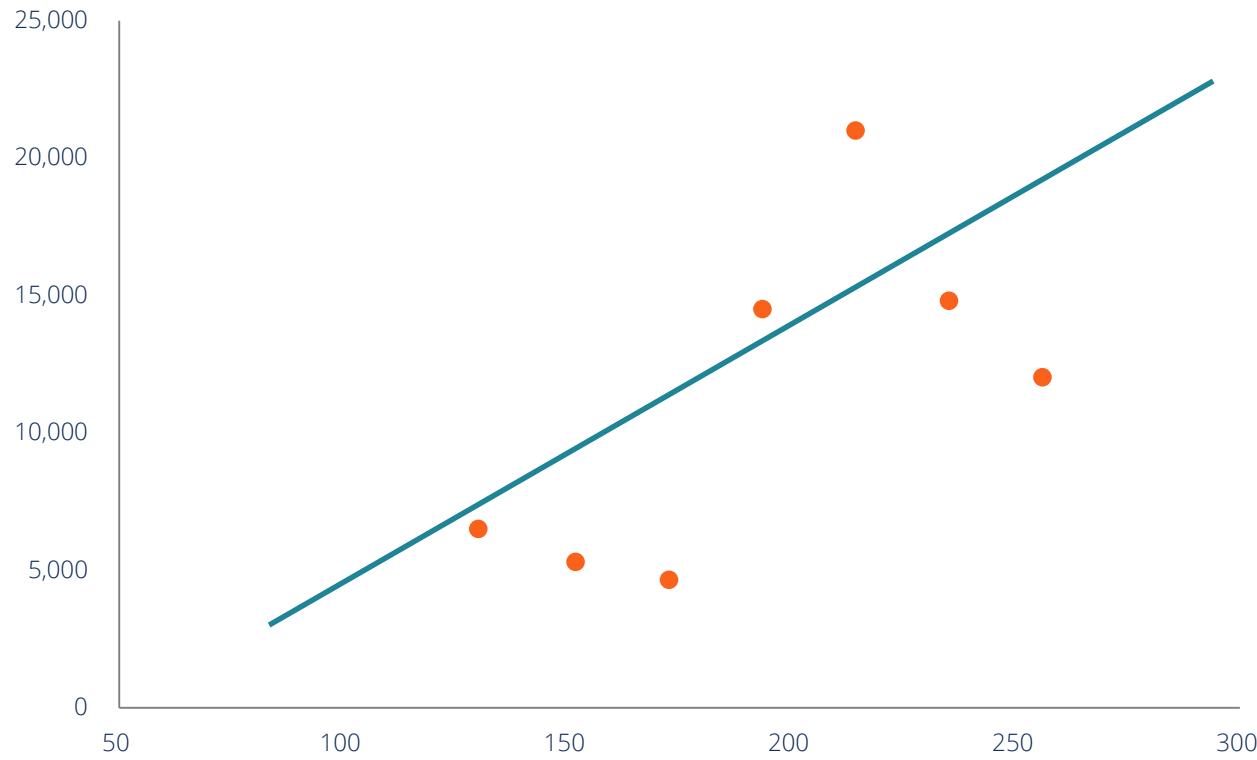
# Line chart

---



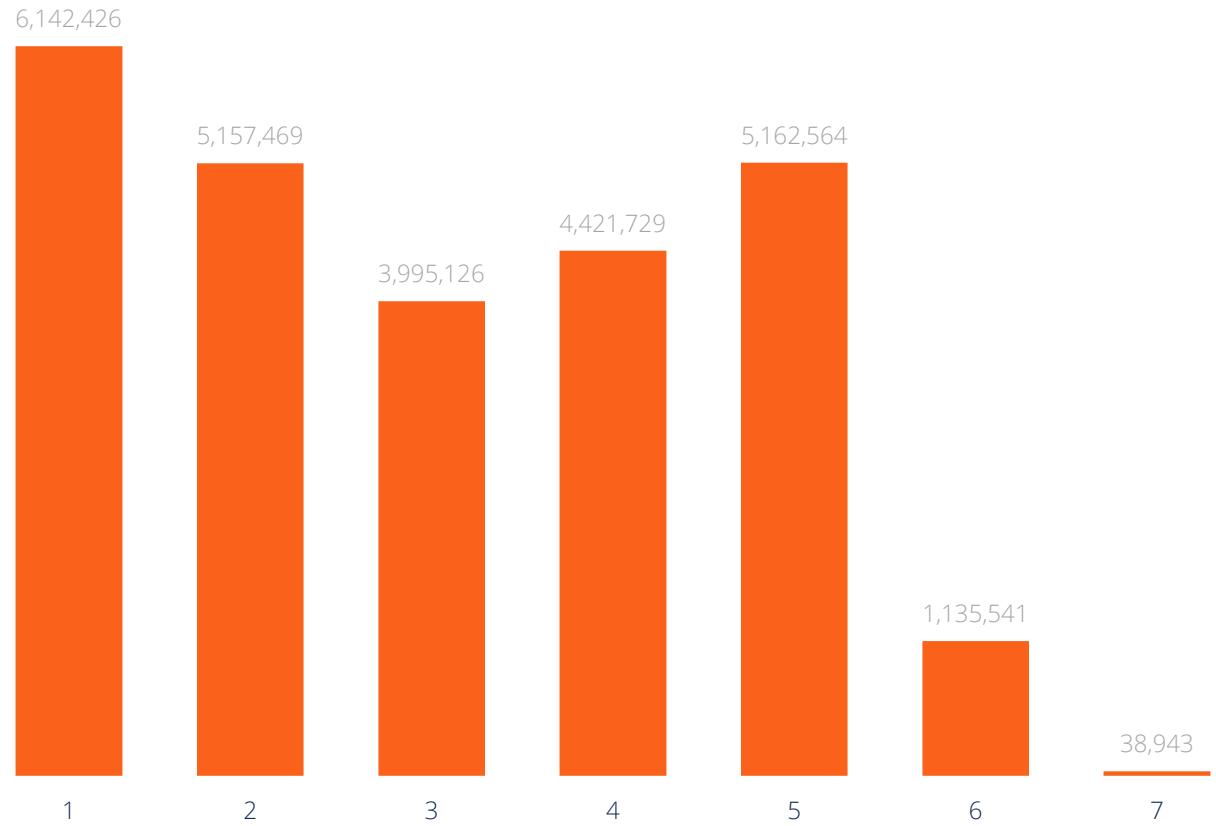
# Scatterplot

---



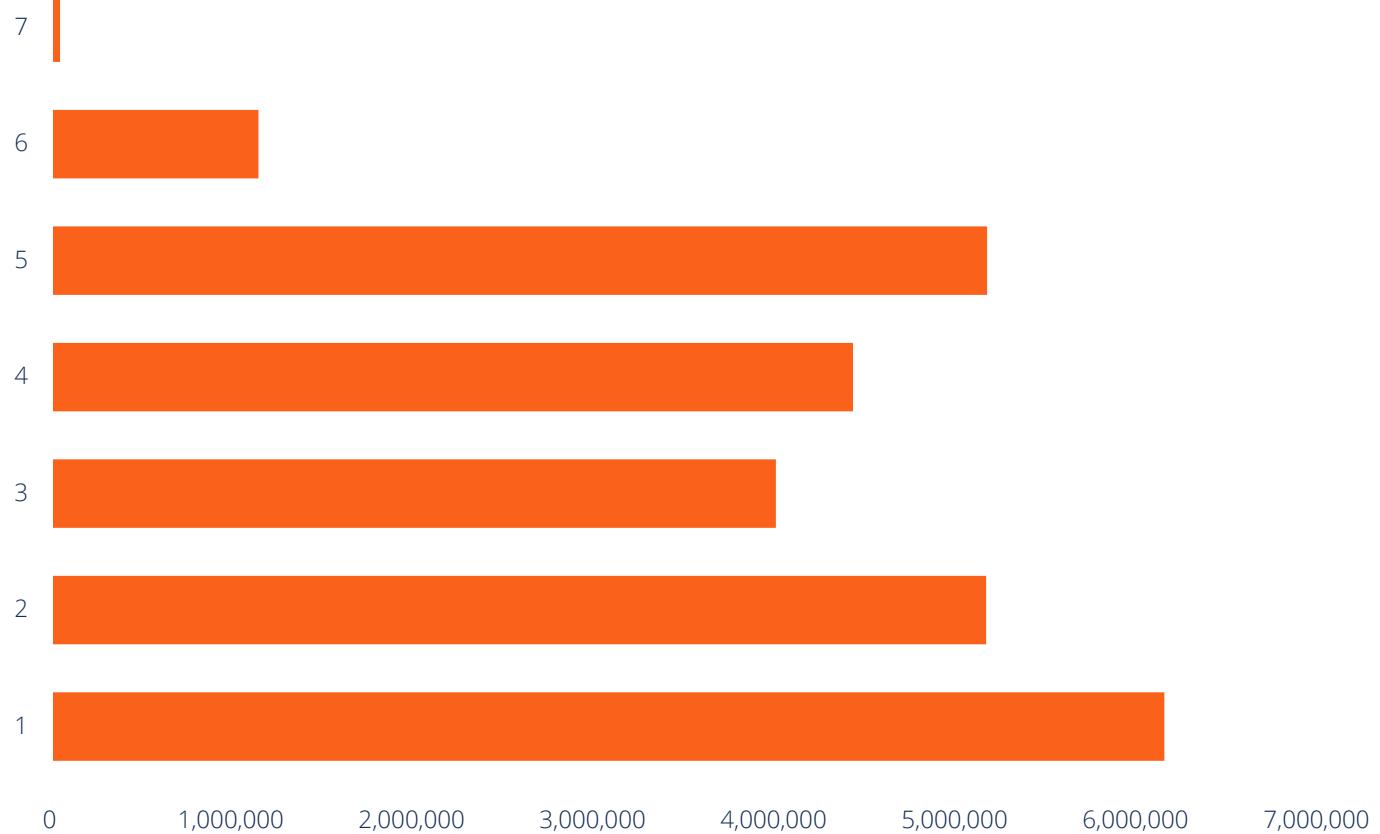
# Column

---



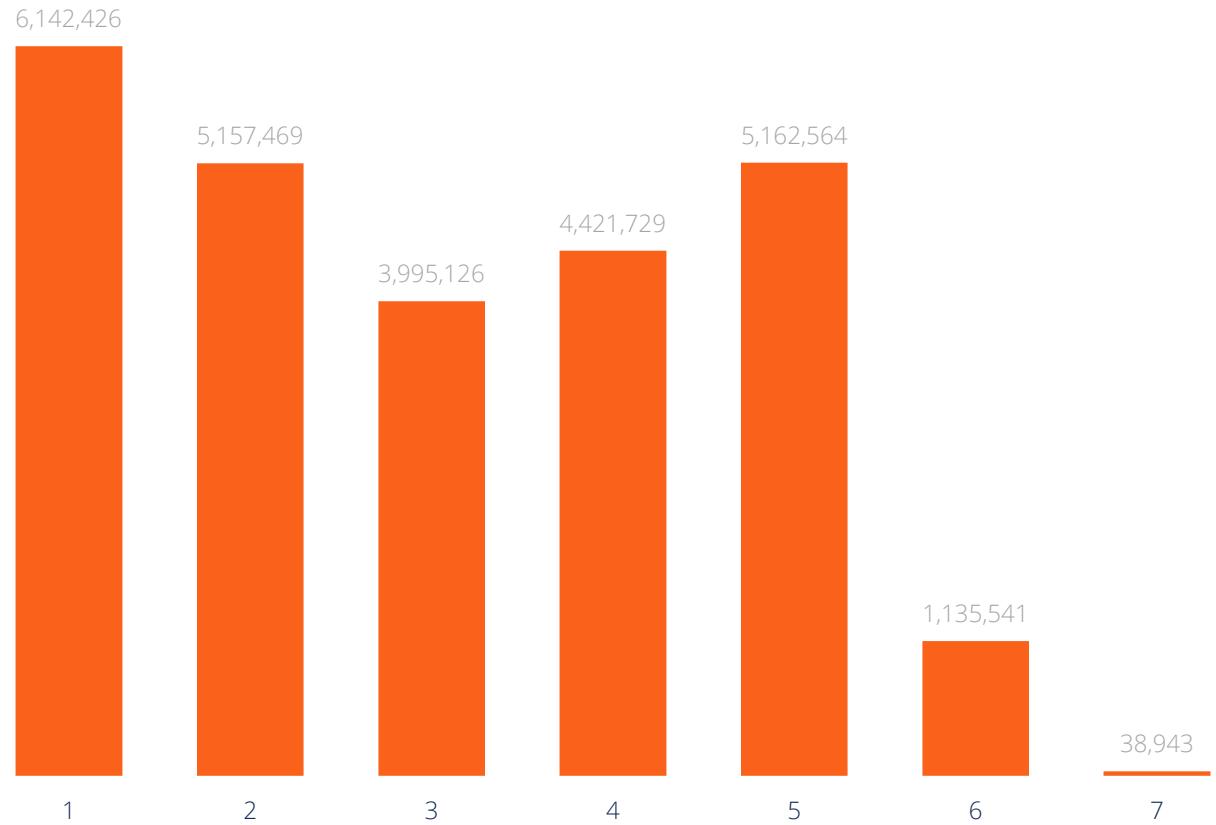
# Bar

---



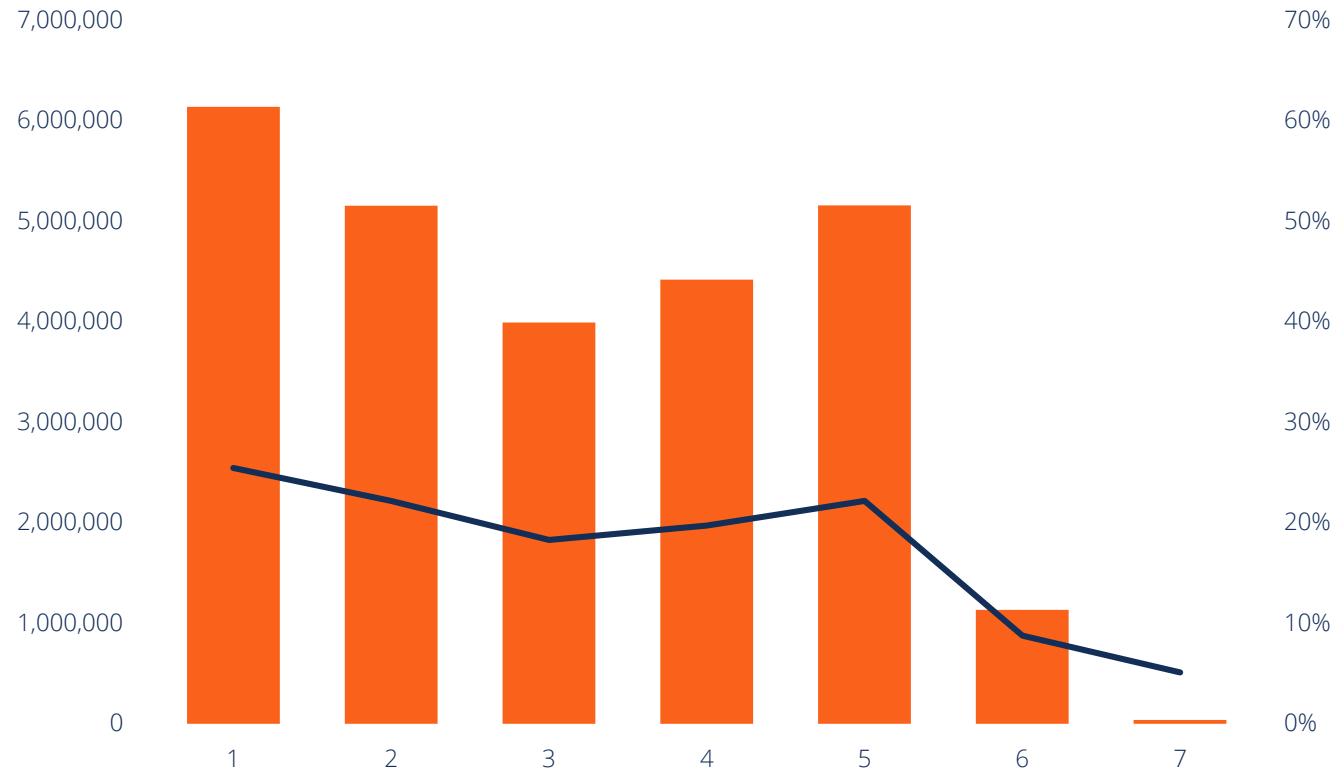
# Column

---



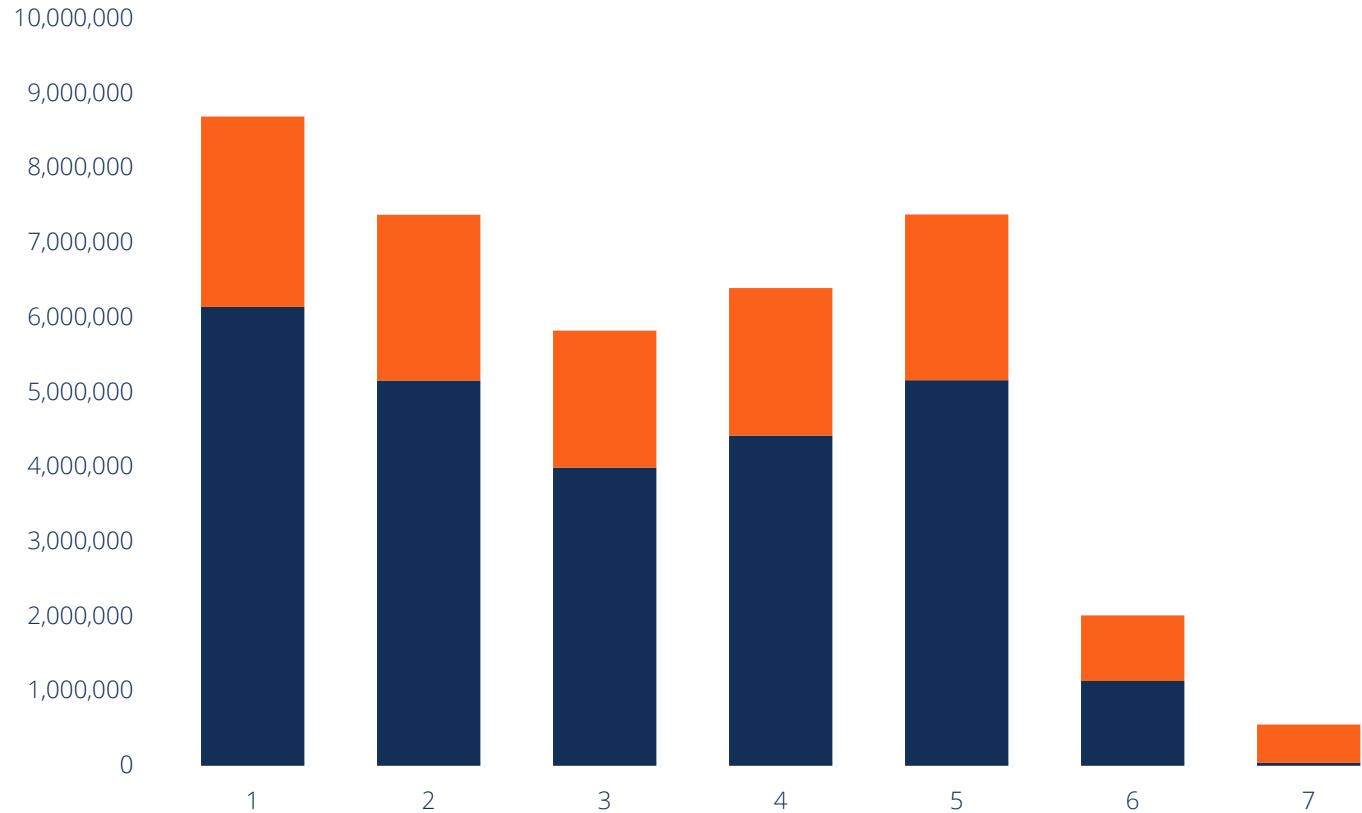
# Column and line

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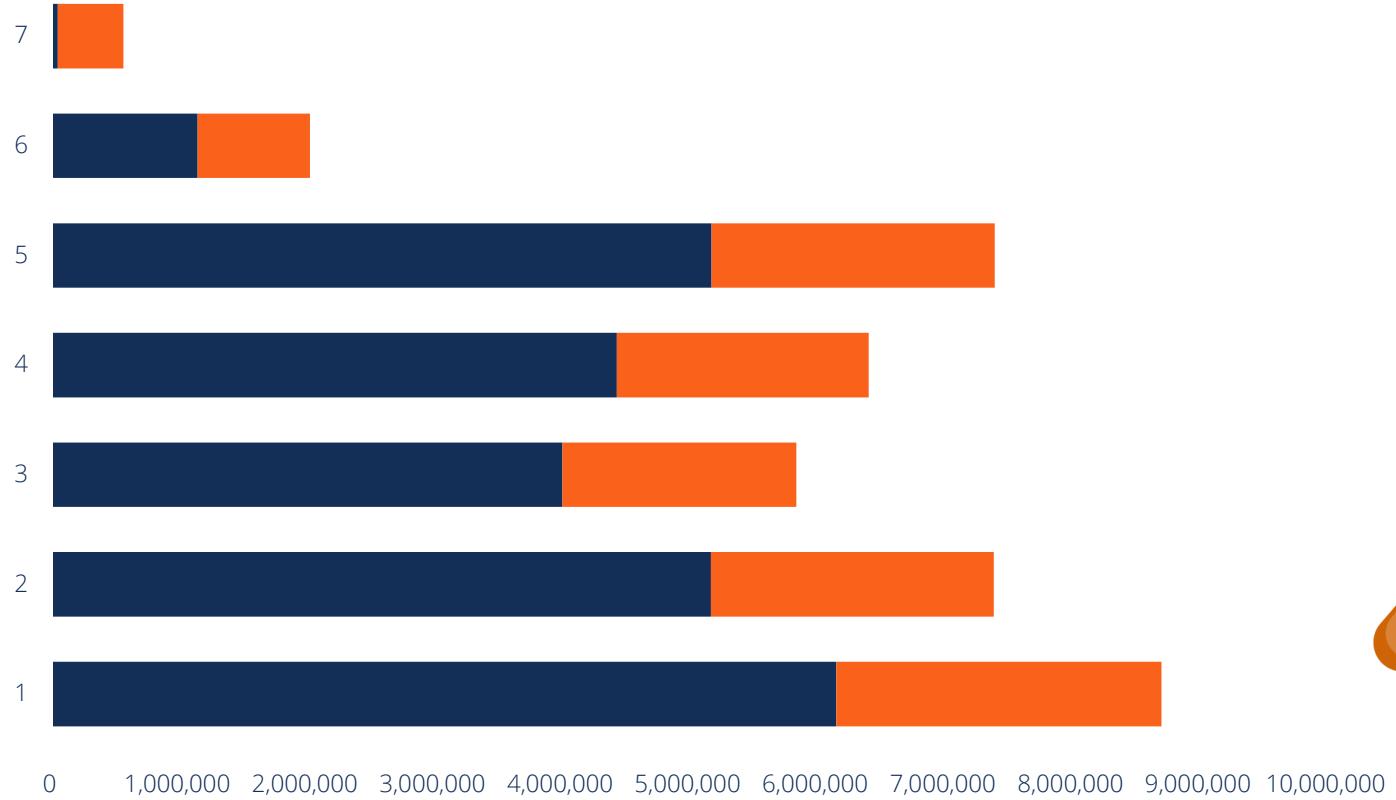
# Stacked column

---



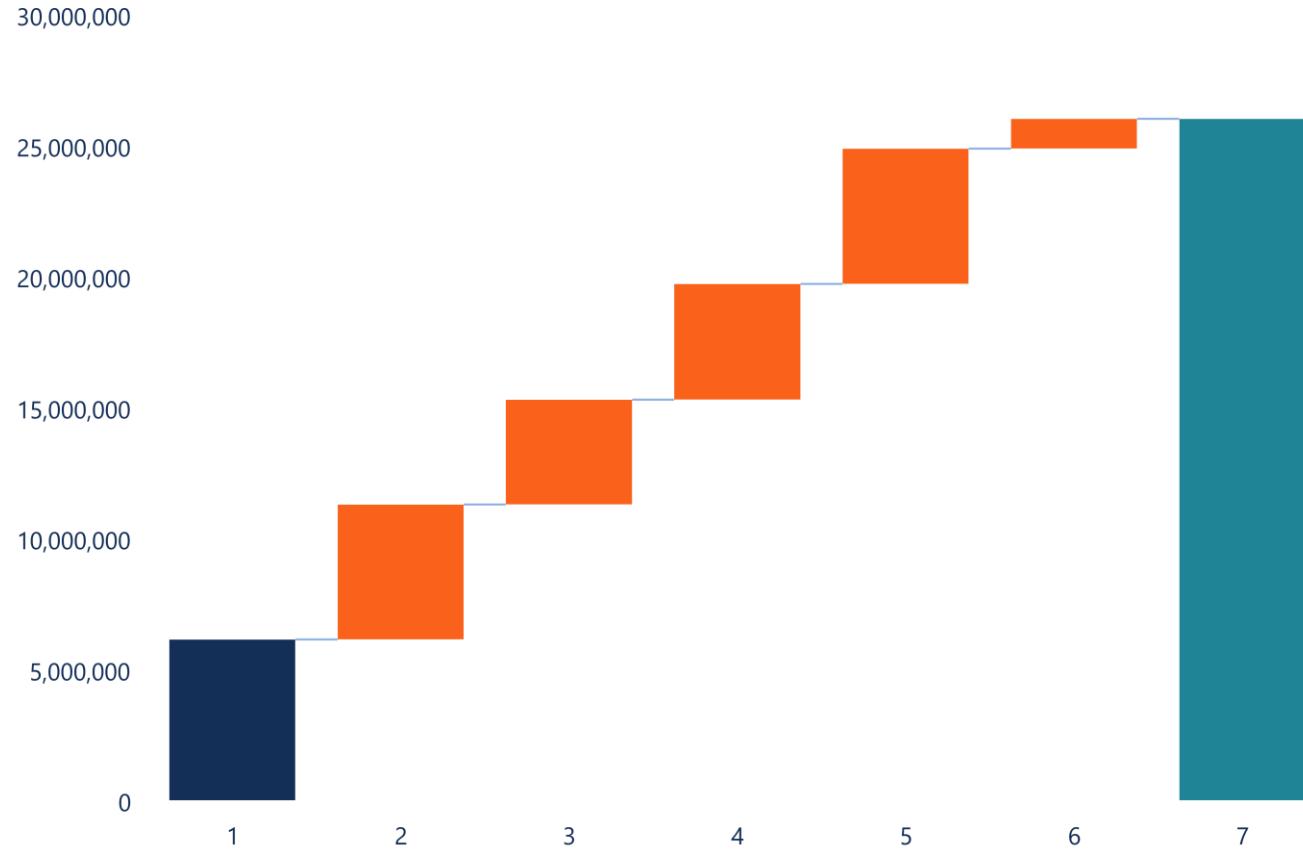
# Stacked bar

---



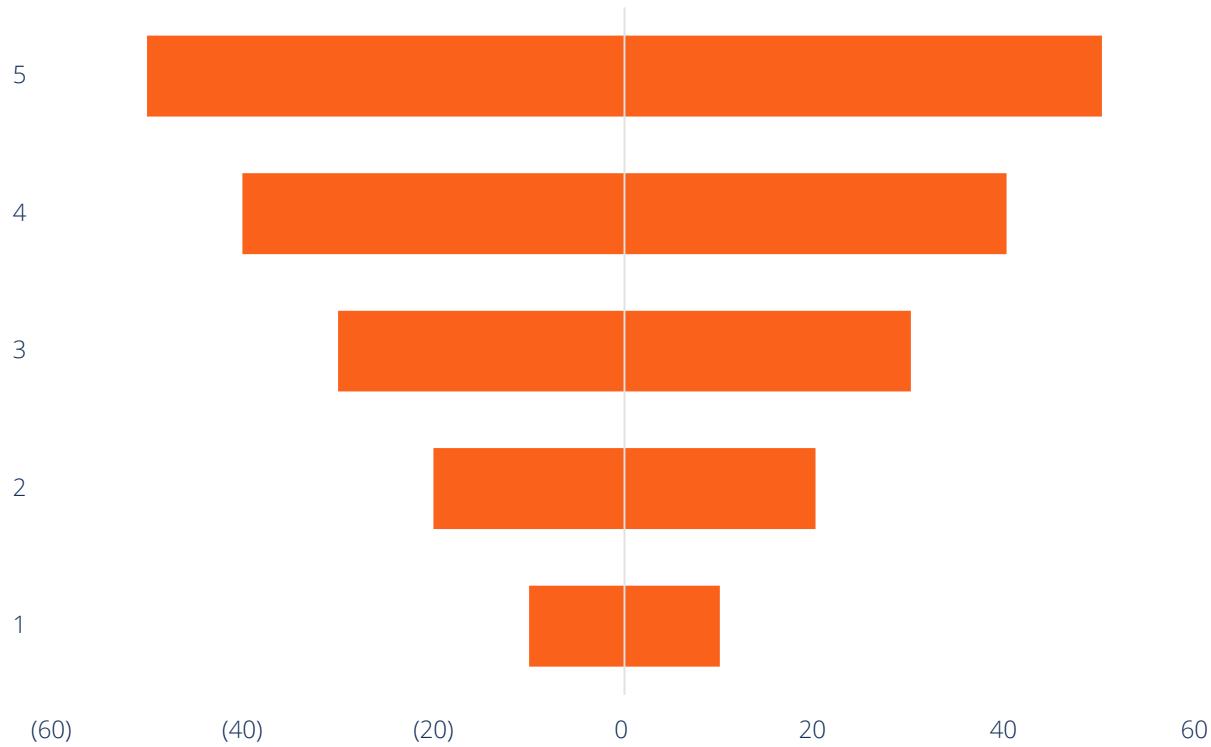
# Waterfall

---



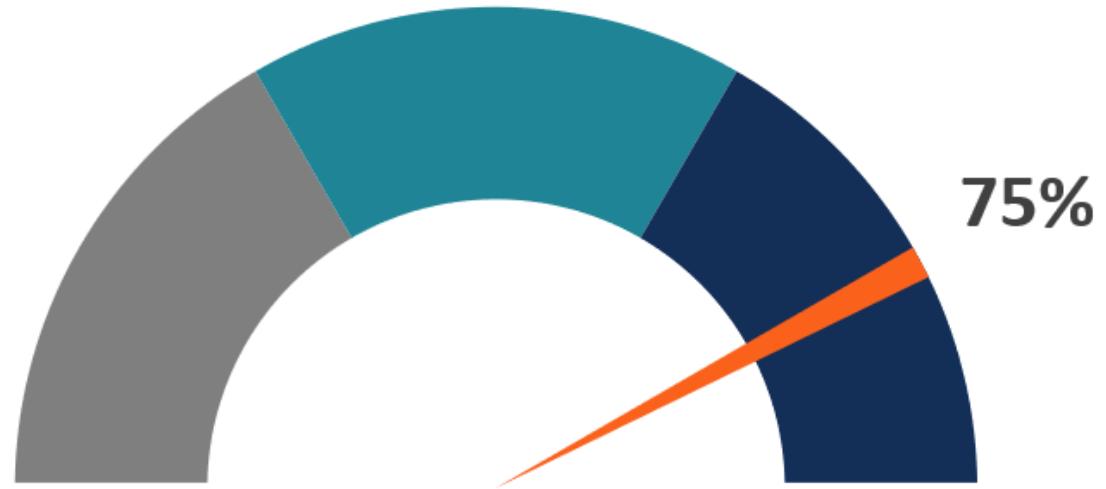
# Tornado

---



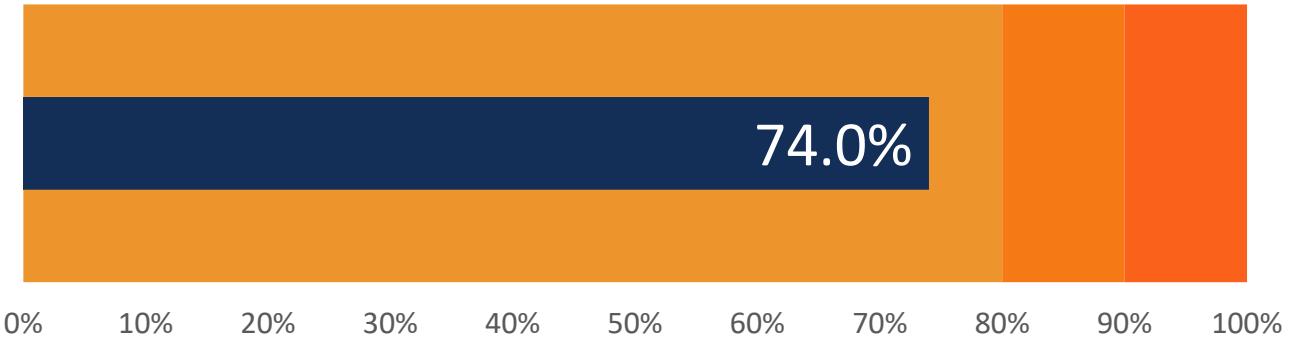
# Gauge

---



# Bullet

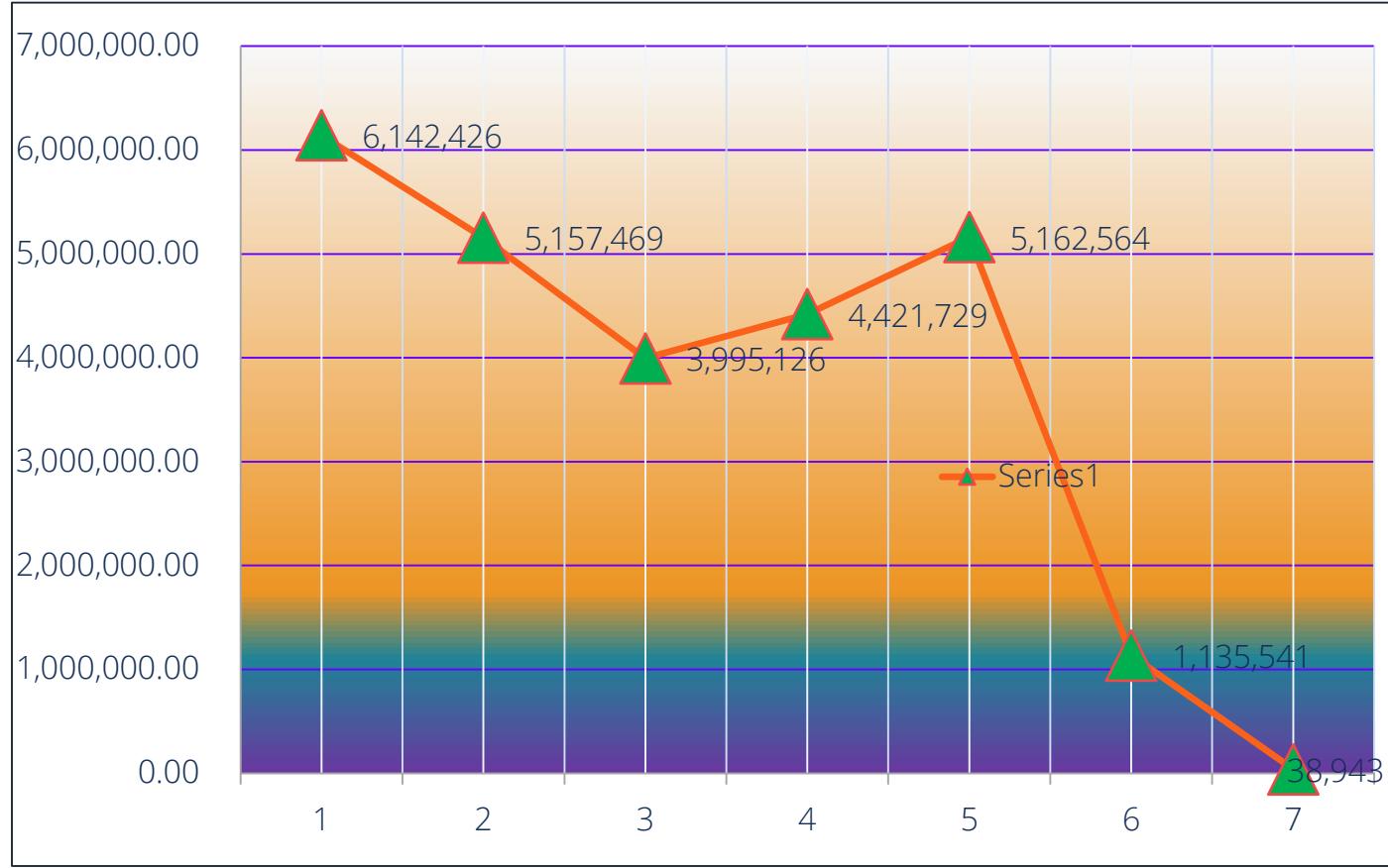
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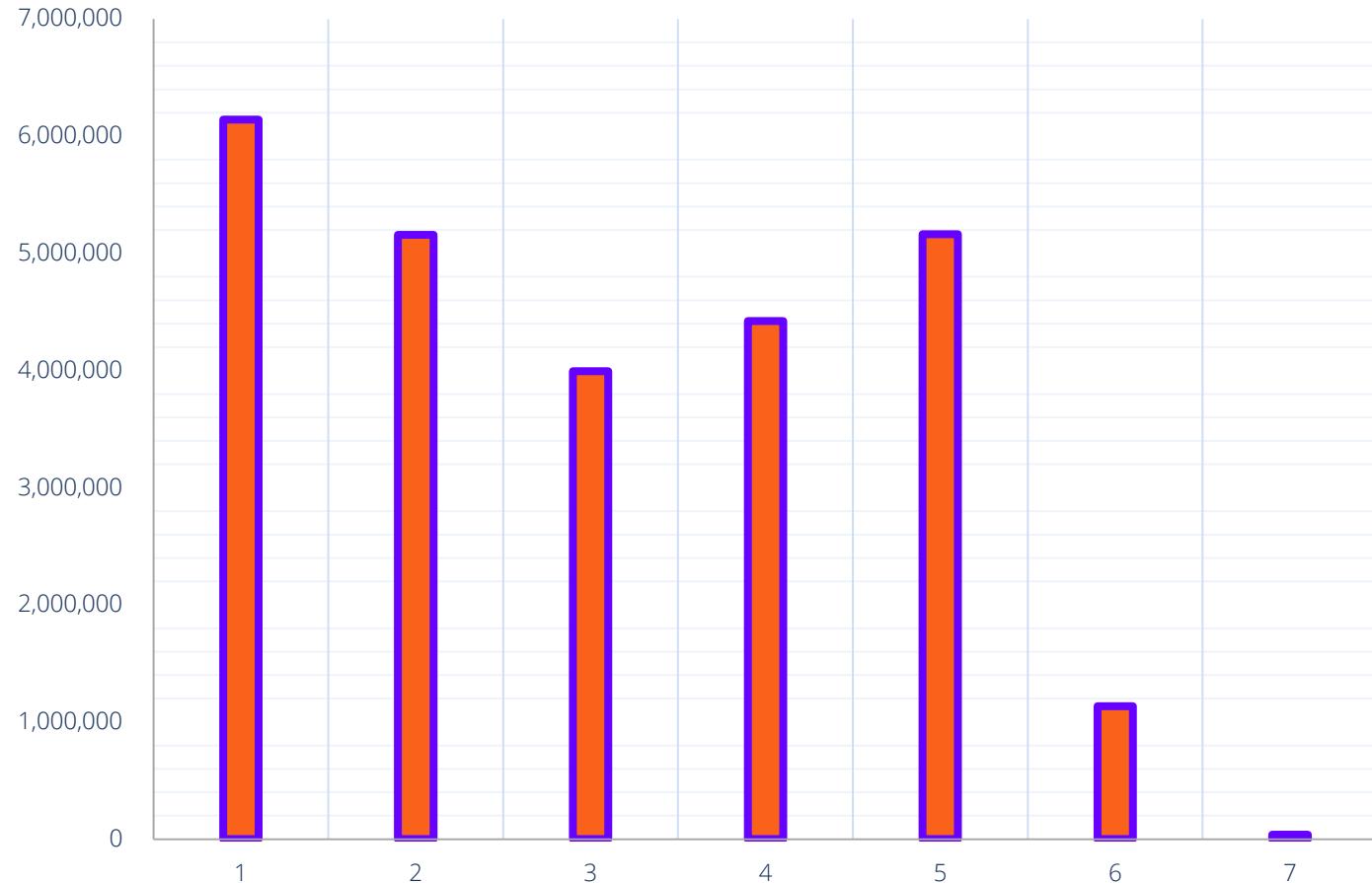
What not to do...

# What not to do...



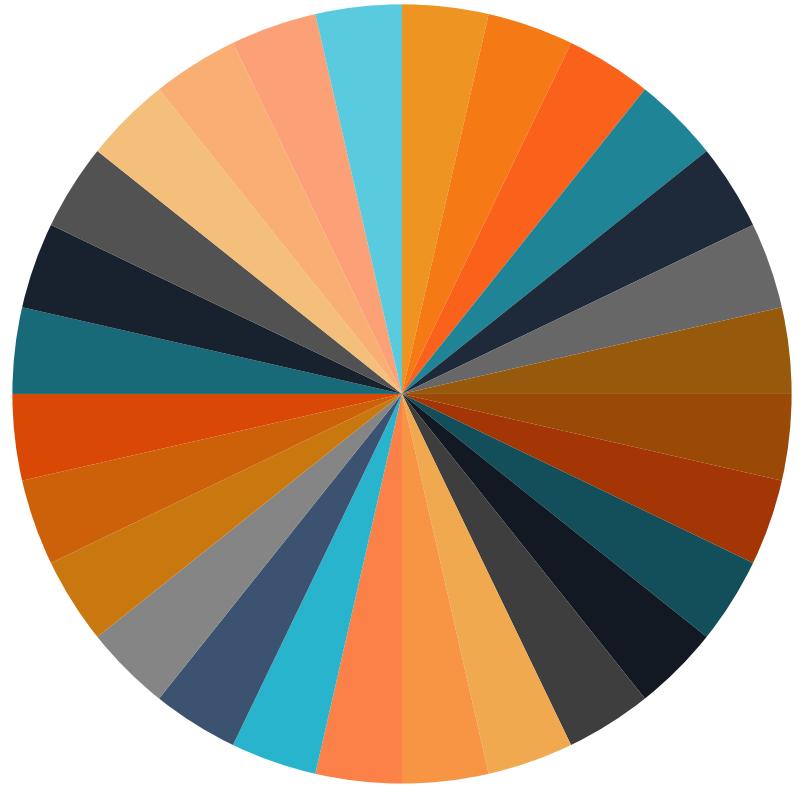
# What not to do...

---



# What not to do...

---

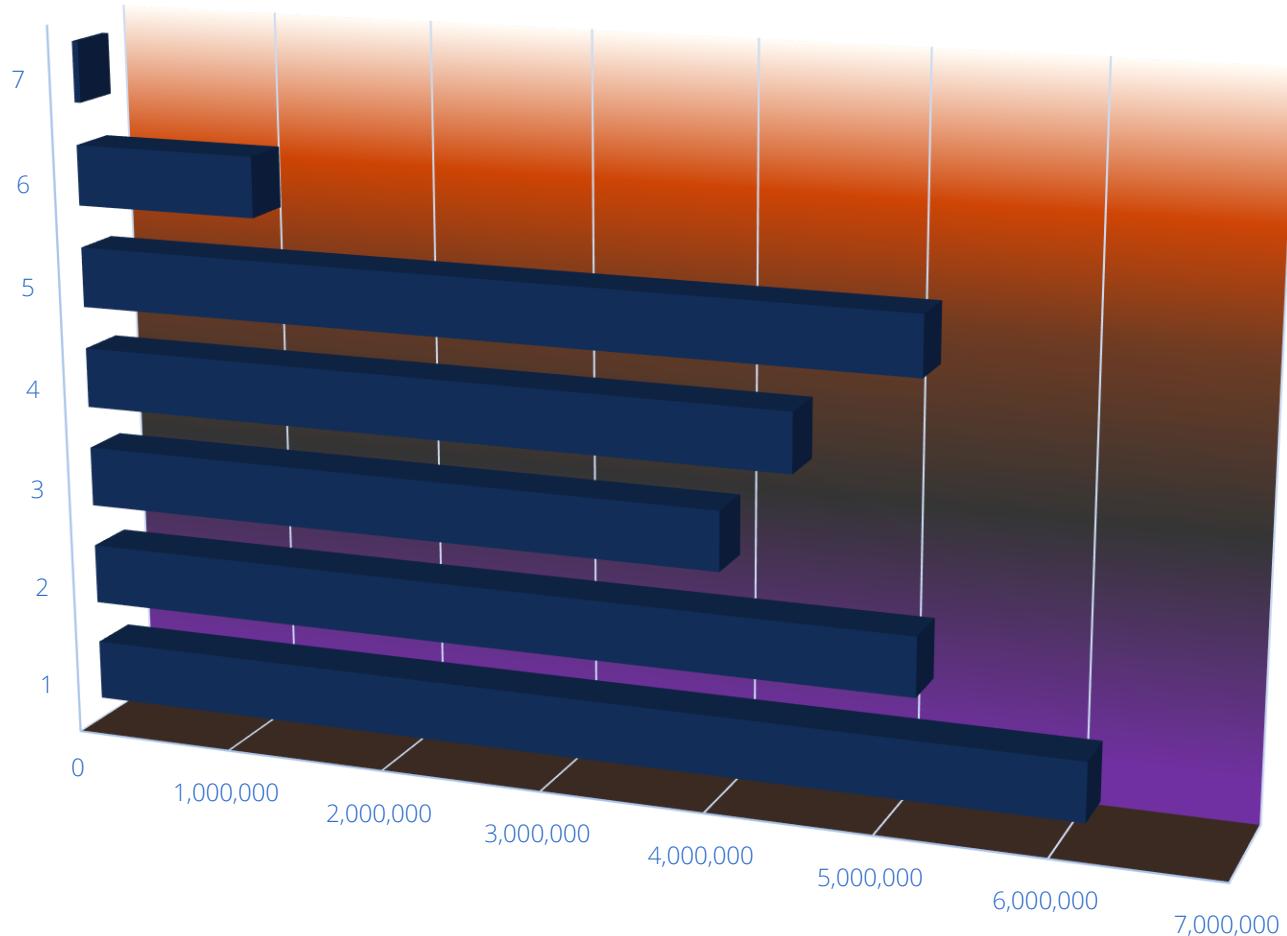


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28



# What not to do...

---



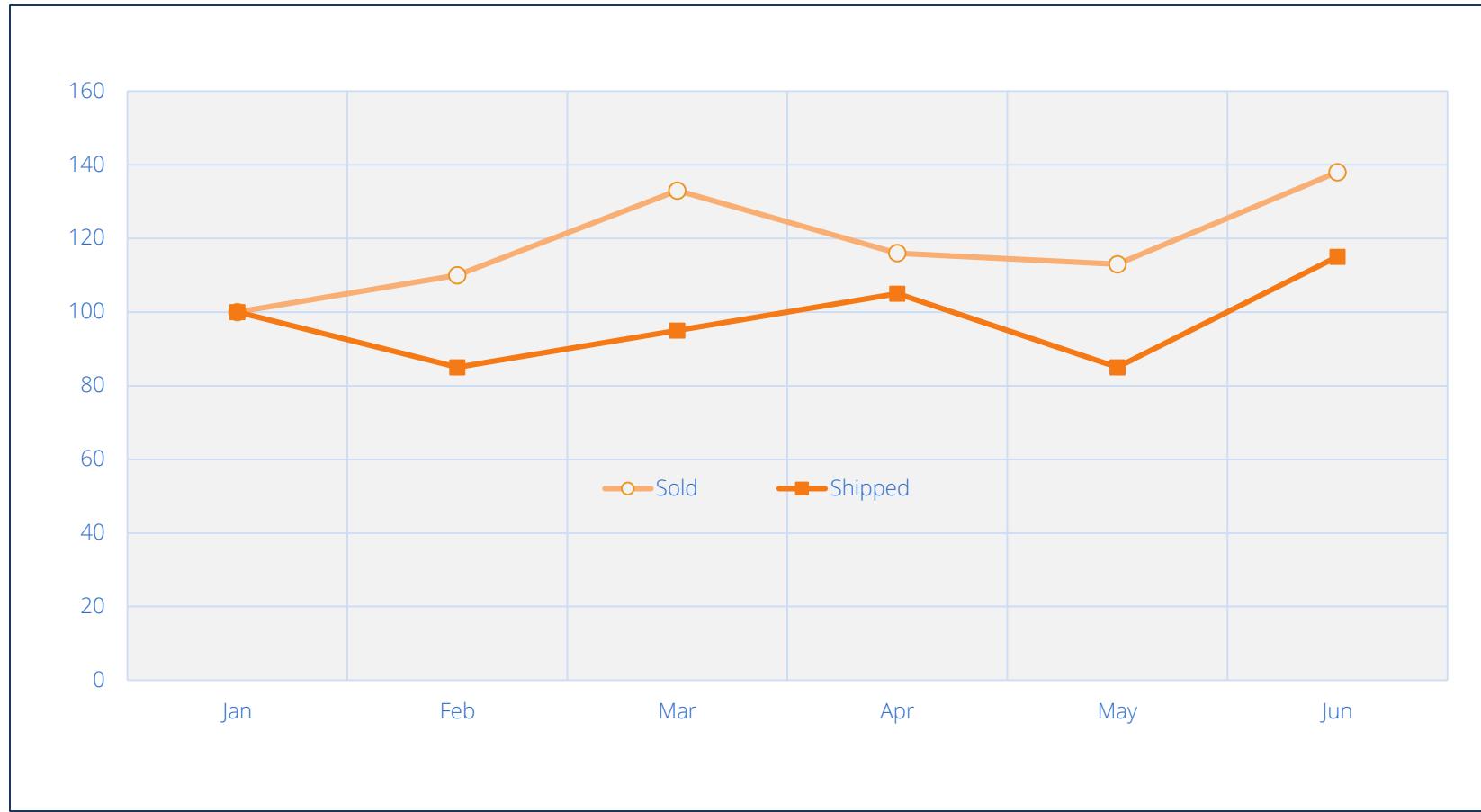


## Visual Exercise

# In Excel, make at least 6 changes to improve this graph

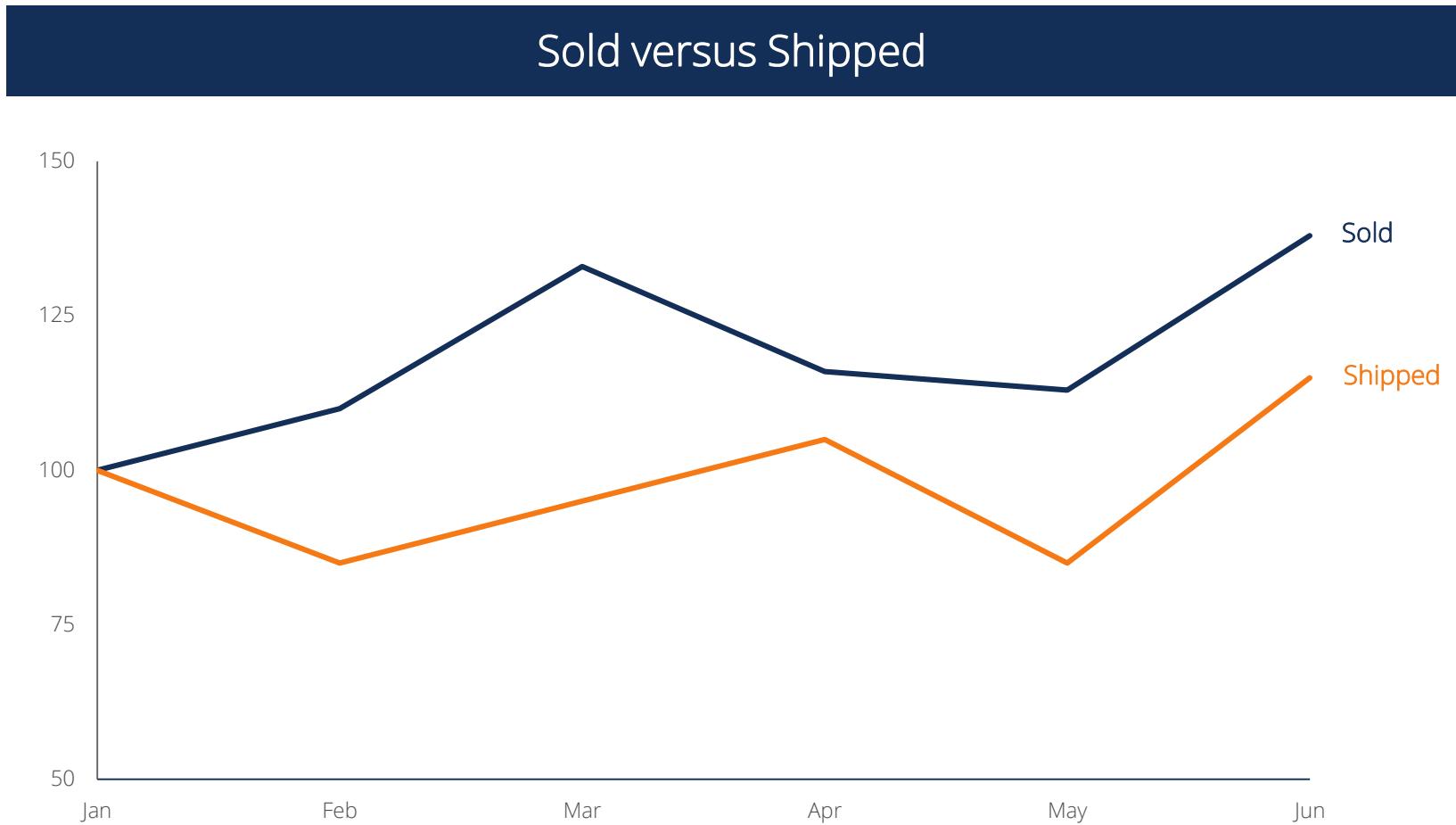
---

Sold versus Shipped



# Solution

---



# Focusing Attention



# Session objectives

---



Understand why pre-attentive attributes matter



Learn what each of the attributes are



Learn how to incorporate them in charts

# Pre-attentive attributes

---



A pre-attentive attribute is processed by the brain BEFORE it enters our consciousness or memory



It's a survival instinct to highlight changes in our environment



Consists of color, form, movement and positioning



Can be easily incorporated into charts

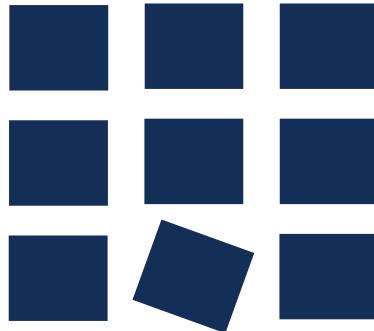


Dramatically improves the effectiveness by focusing attention where we want it

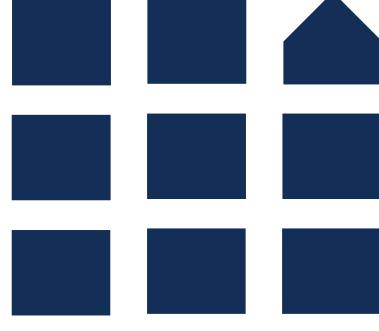


# Examples of pre-attentive attributes

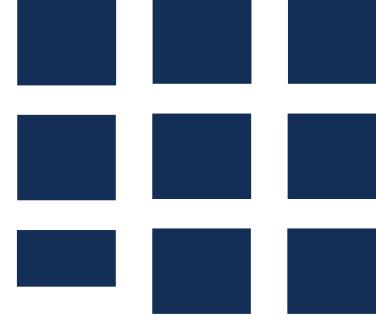
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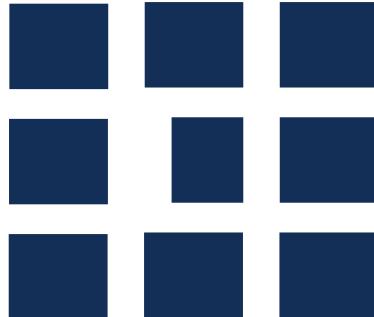
Orientation



Shape



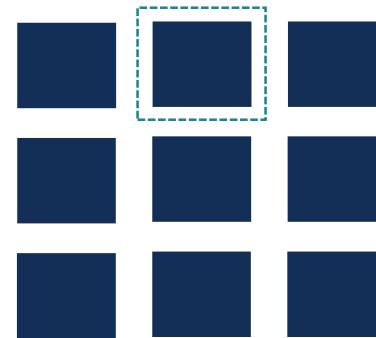
Length



Width



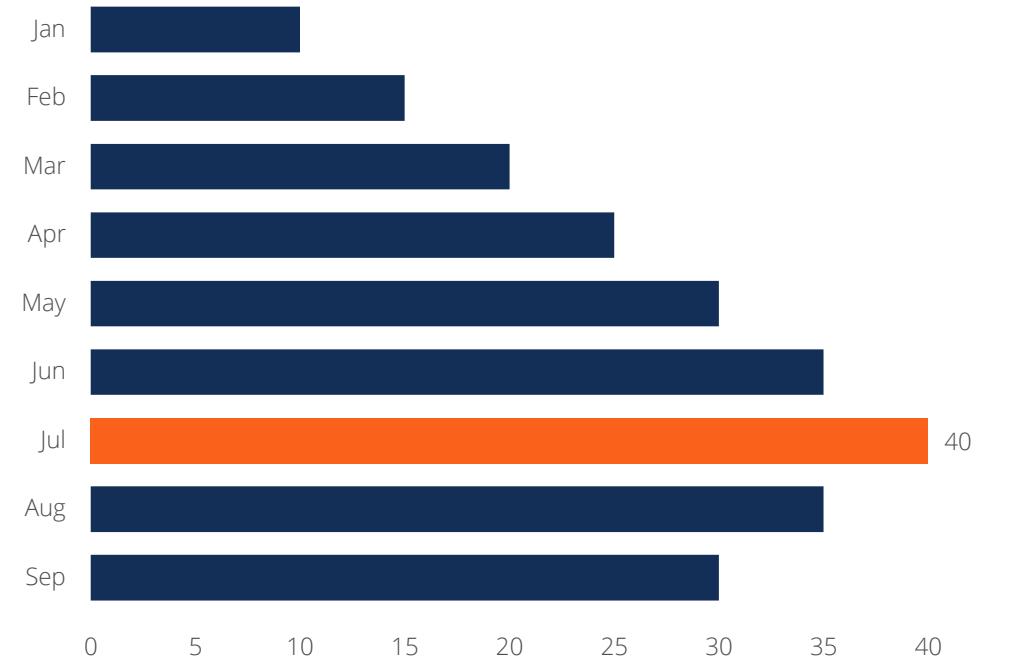
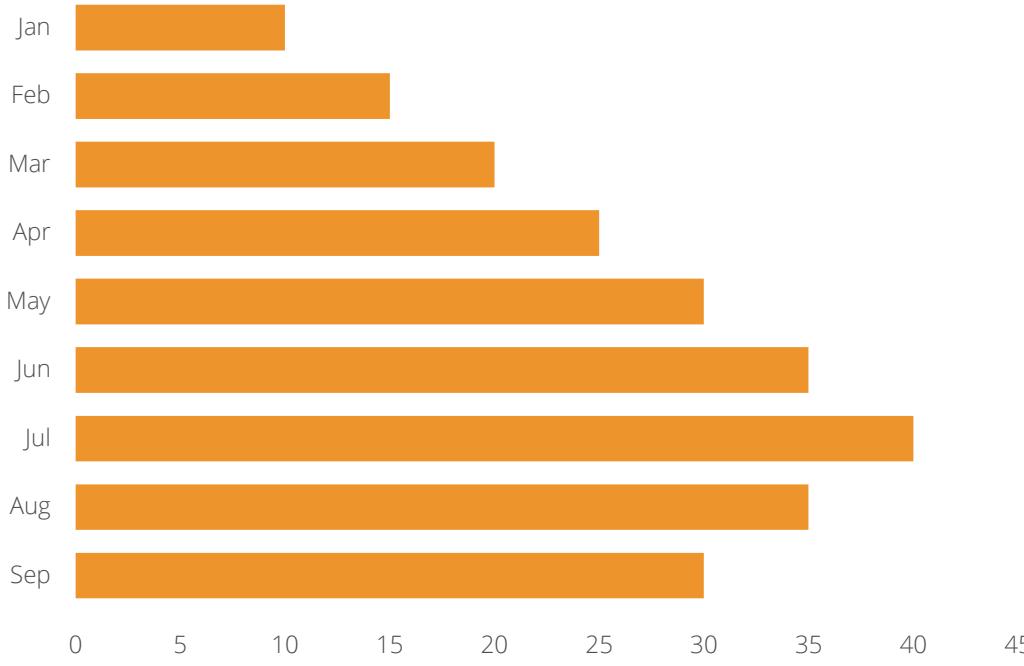
Color



Enclosure

# Incorporating the attributes with charts

---



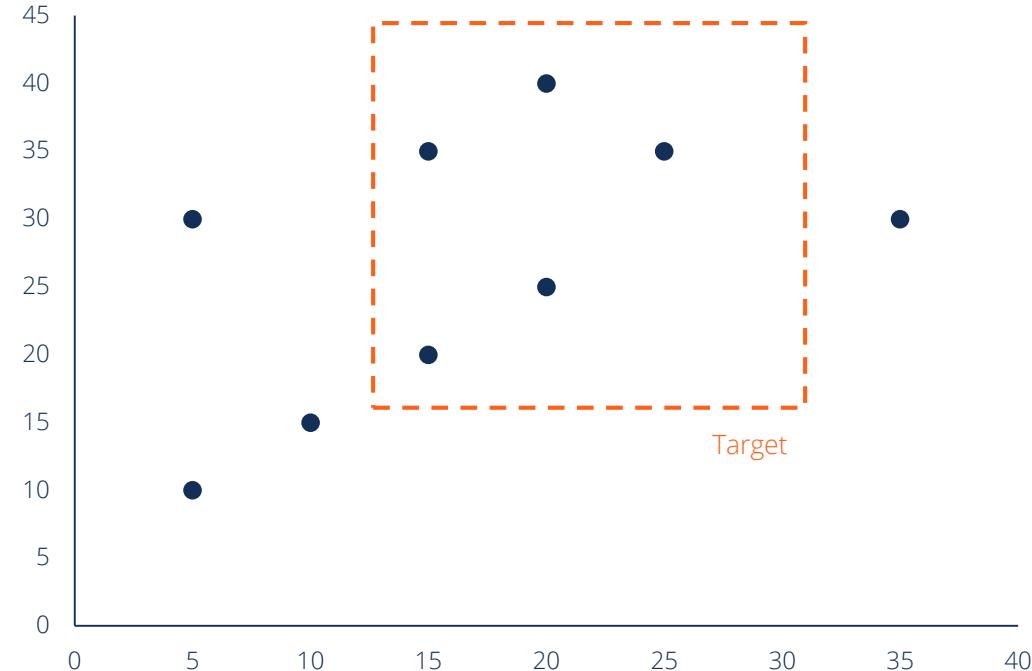
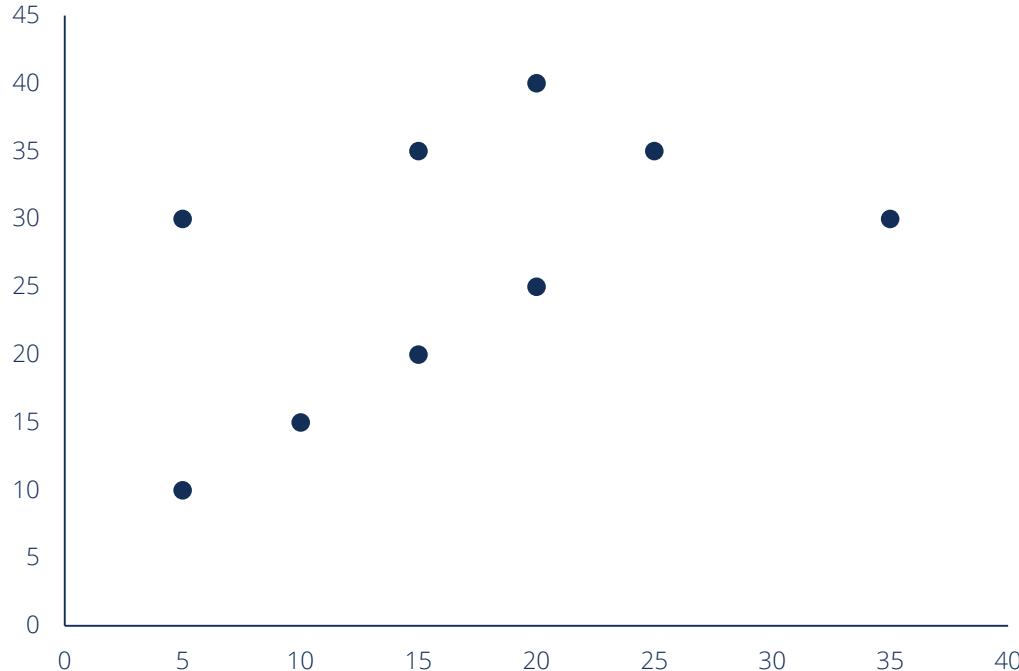
# Incorporating the attributes with charts

---

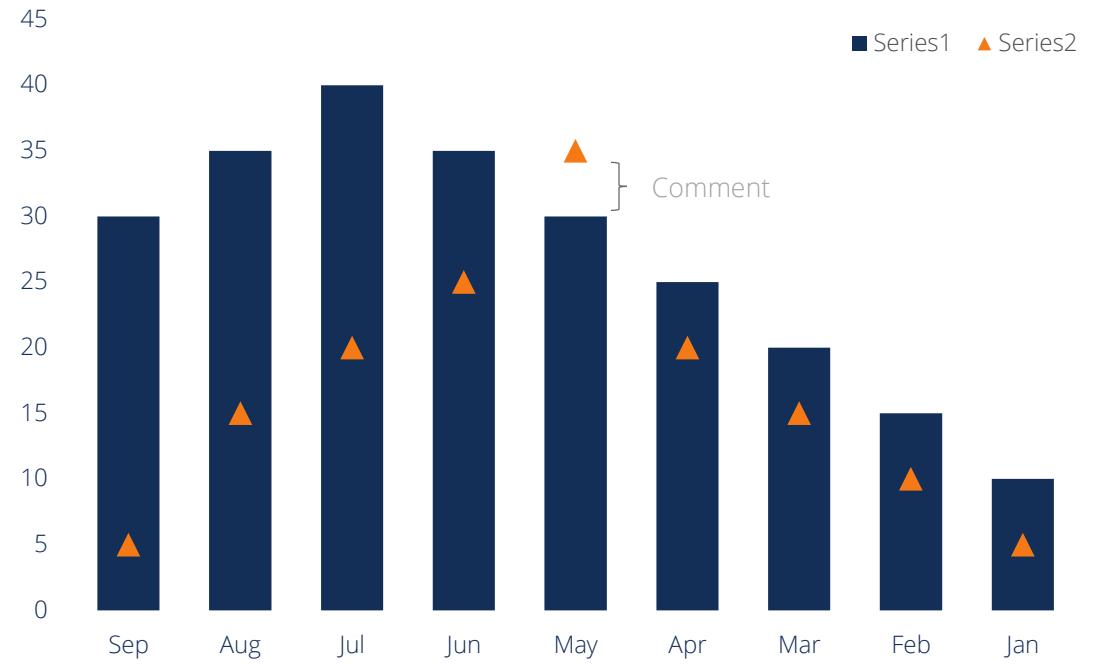
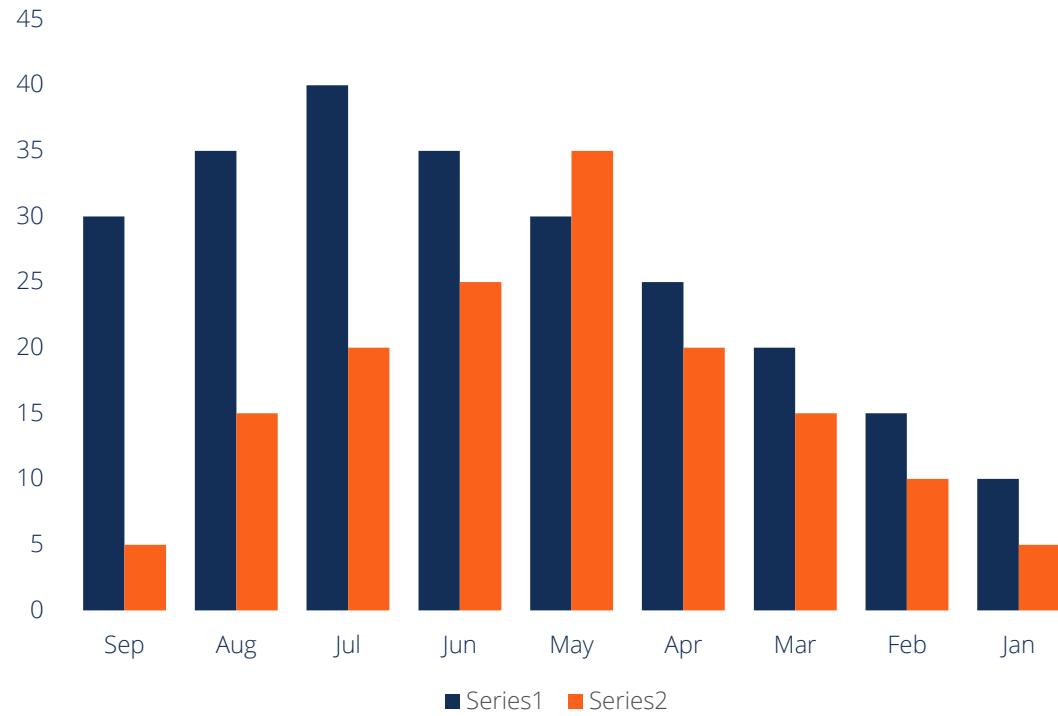
715	173	927	885	533
107	5	606	442	75
145	589	425	22	937
798	778	694	555	137
490	904	336	820	822
183	978	971	658	897
247	93	433	669	419
301	257	642	994	755
114	731	666	142	783
457	168	477	658	342

172	900	528	210	439
268	875	458	110	530
141	246	326	498	615
631	187	995	538	291
678	389	983	265	914
961	437	626	420	982
844	281	26	201	931
948	969	948	547	219
384	448	99	561	604
216	28	392	184	825

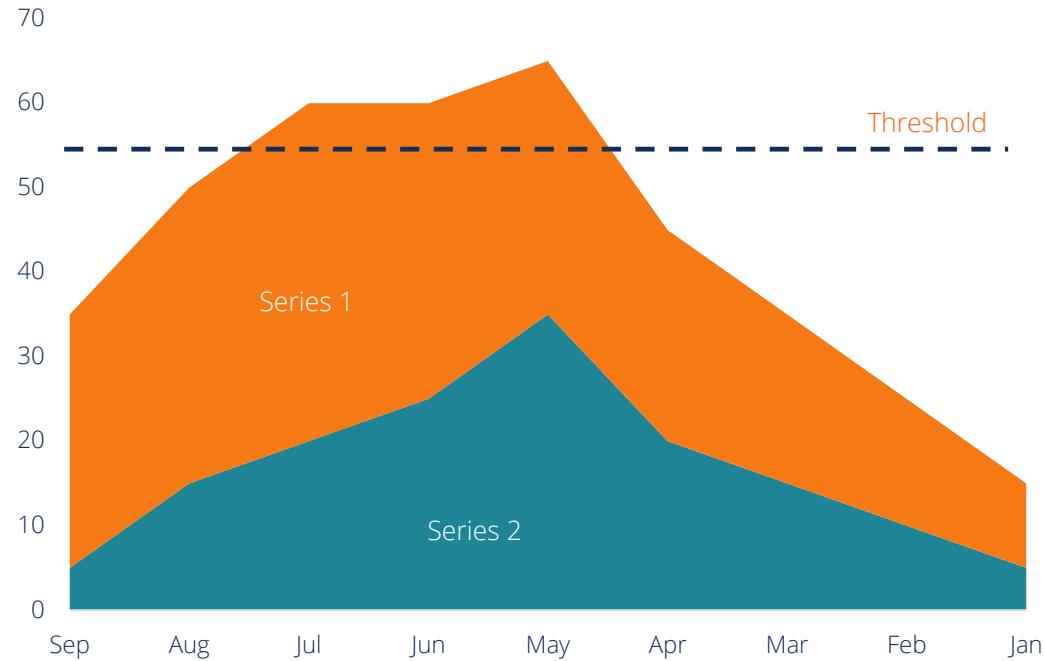
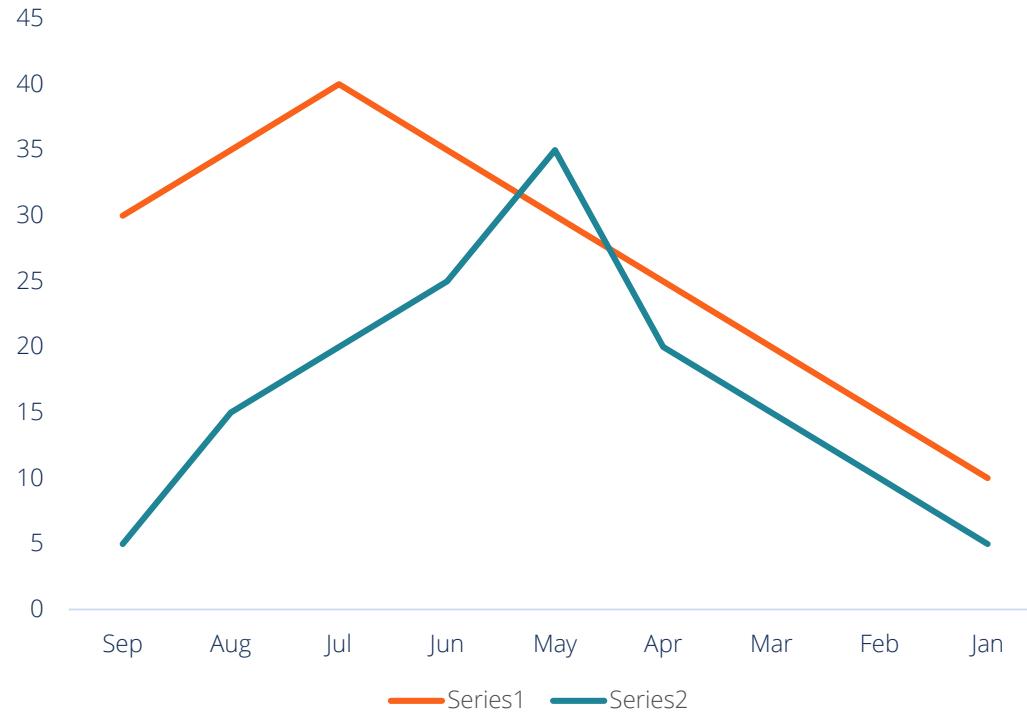
# Incorporating the attributes with charts



# Incorporating the attributes with charts



# Incorporating the attributes with charts

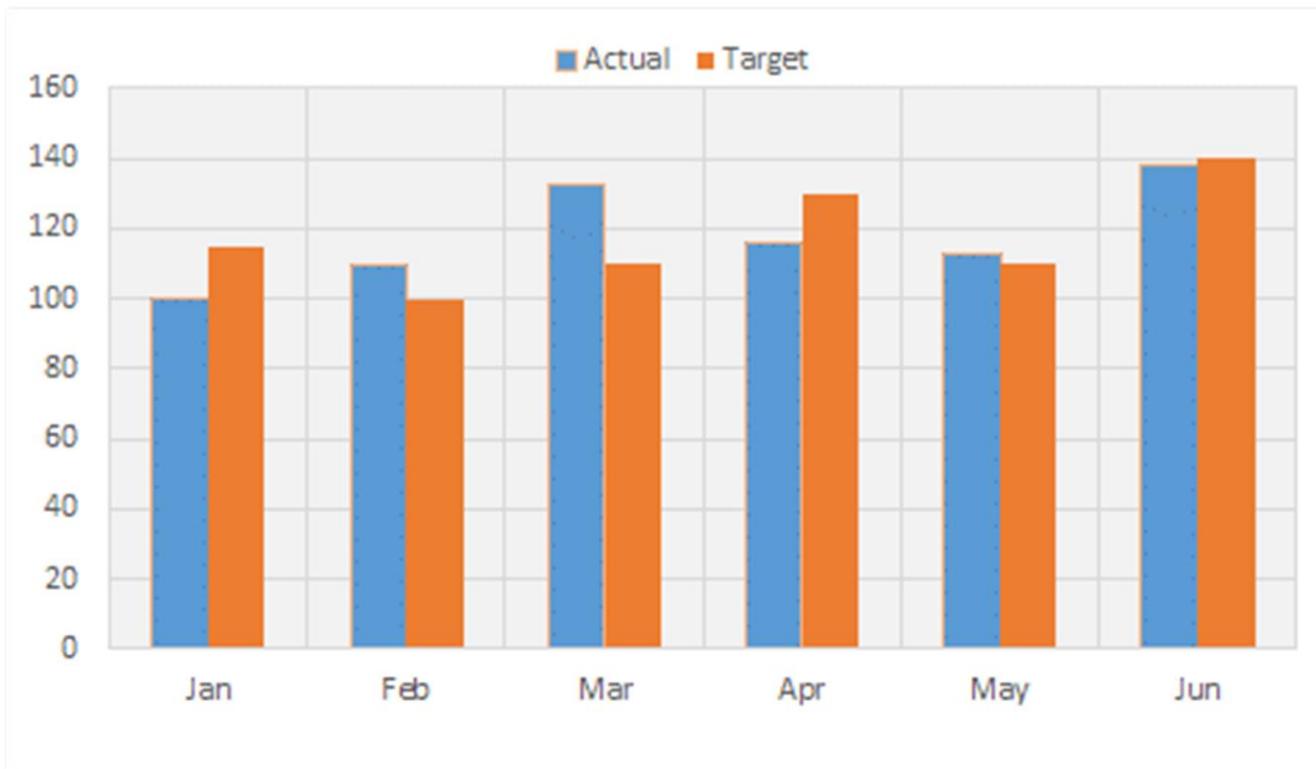




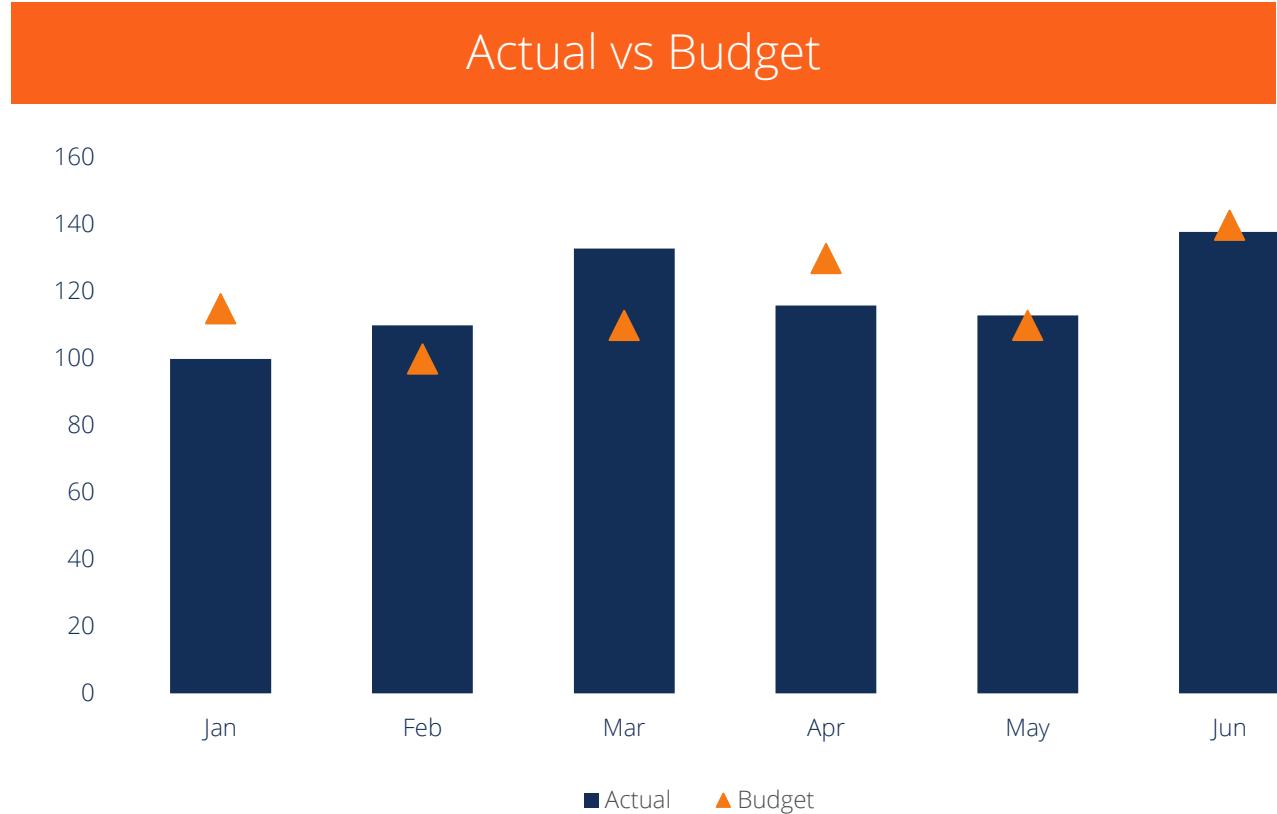
## Focusing Attention Exercise

# In Excel, make at least 6 changes to improve this graph

---



# Solution





# Design Principles

# Session objectives

---



Use guides to make messages intuitive



Make the information accessible to all



The importance of aesthetics

# Guides

---



A guide indicates to someone how something should be used



Use can use guides to clearly illustrate information in charts



Highlight important information



Eliminate distractions

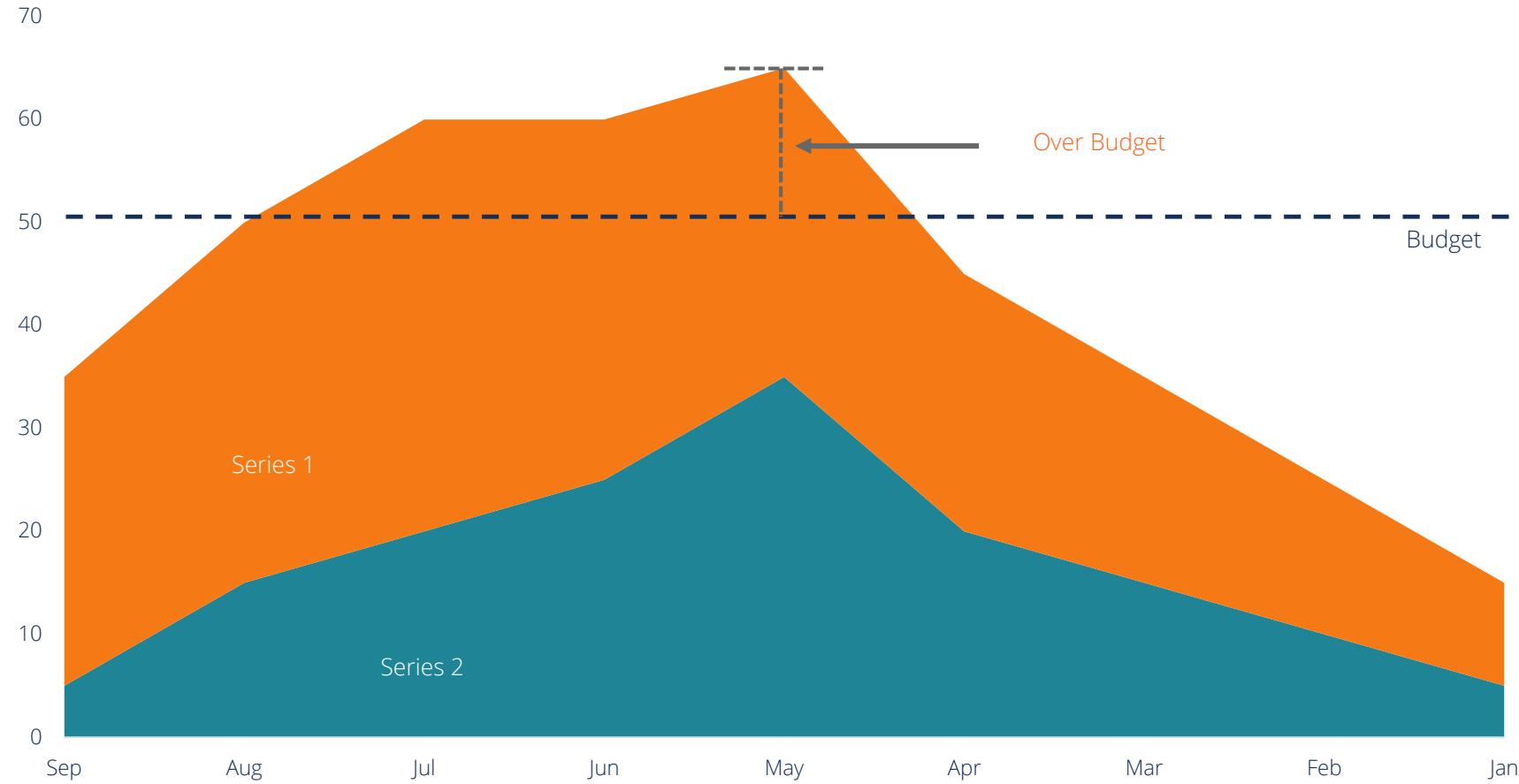


Isolate the key message



# Guides

---



# Accessibility

---



Anyone from any background can understand the information



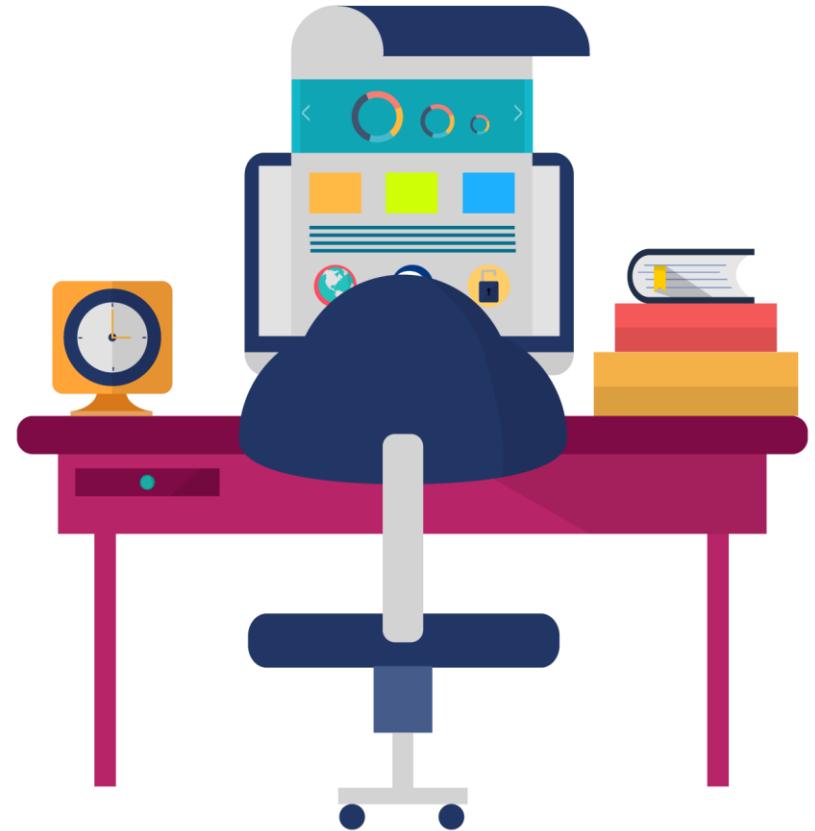
Keep it clean



Use common language

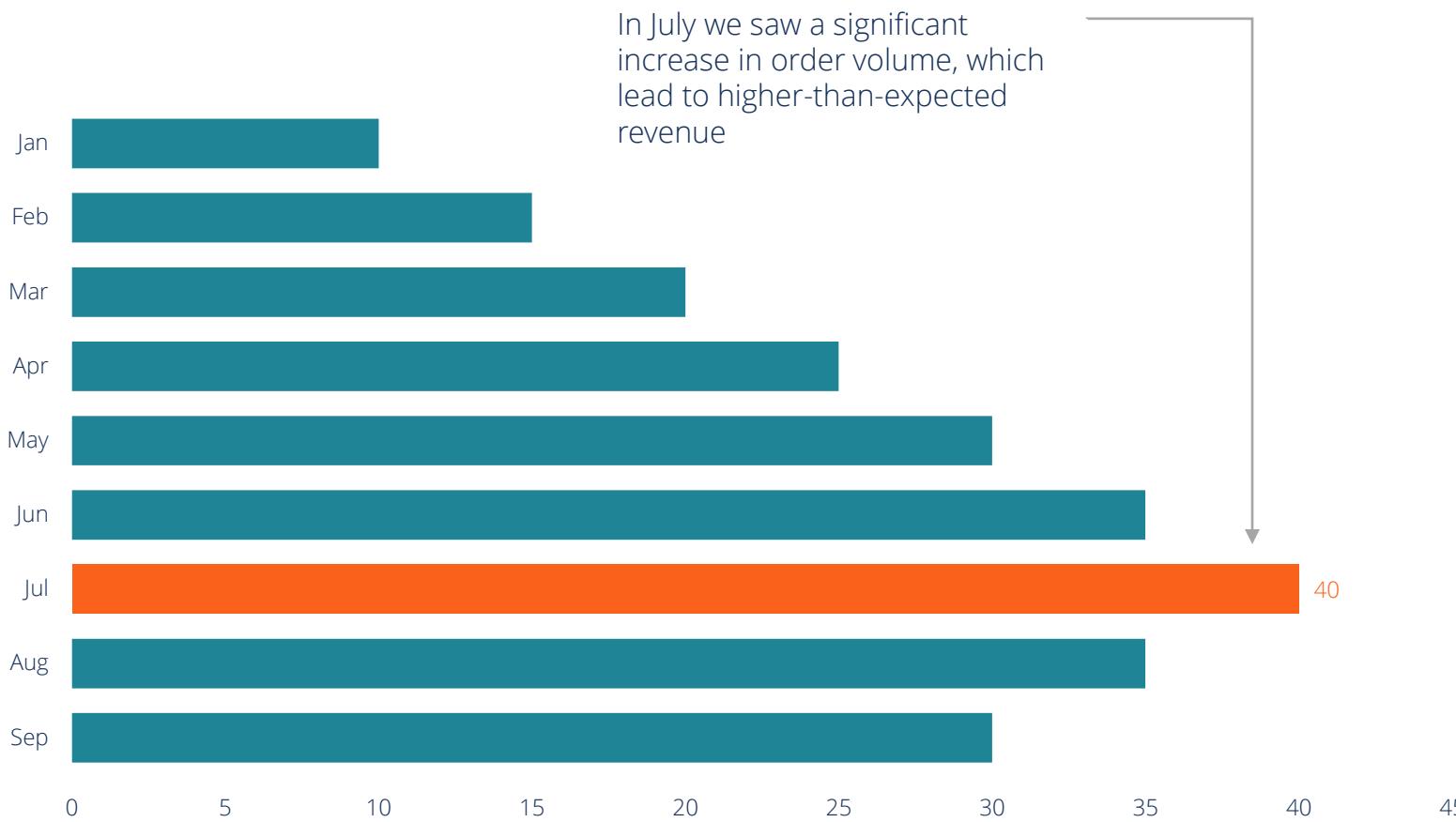


Remove complexity



# Accessibility

---



# Aesthetics

---



Not only are beautiful charts more pleasing to look at,  
they are more likely to be accepted as “true”



Be careful with color



Alignment is critical

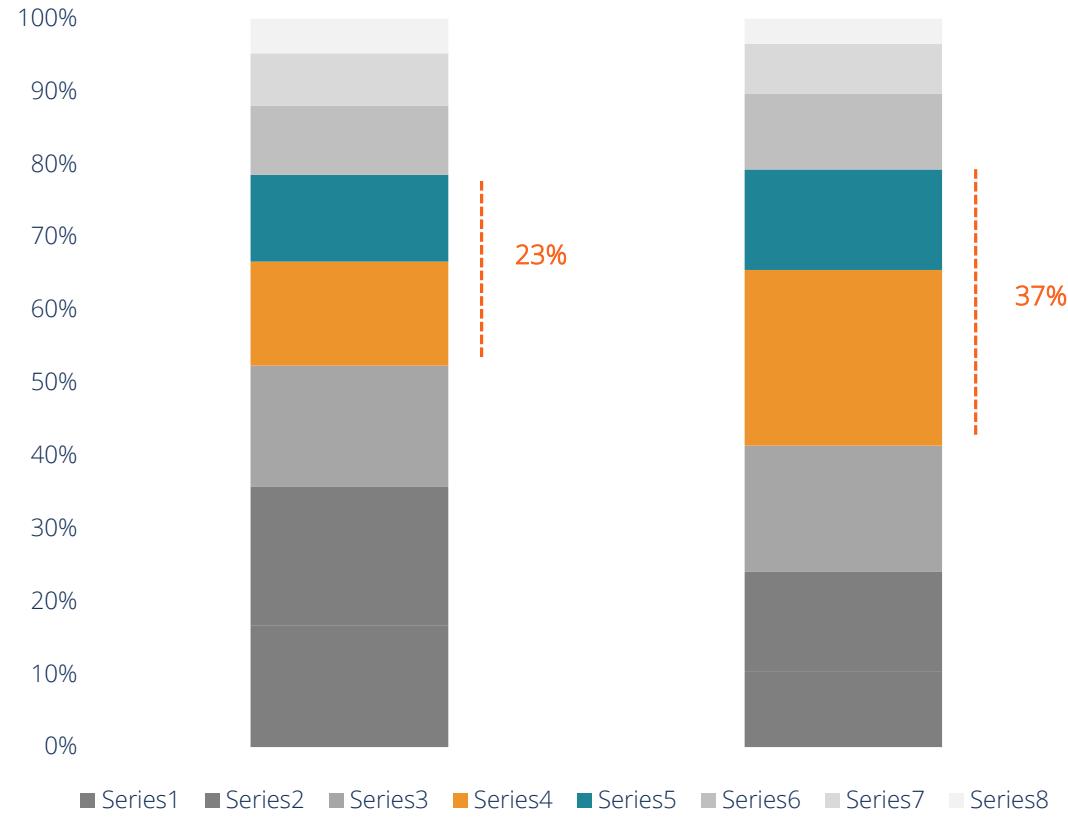


Use white space intelligently



# Aesthetics

---





# Dashboards

# Session objectives

---



Why use dashboards



Executive decision making



How to build a dashboard



3 Step by Step Examples

# Why use dashboards



Quickly digest a large amount of information



Evaluate historical performance



Illustrate a forecasts and scenarios

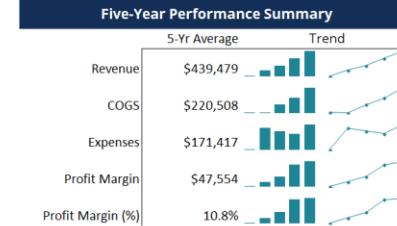
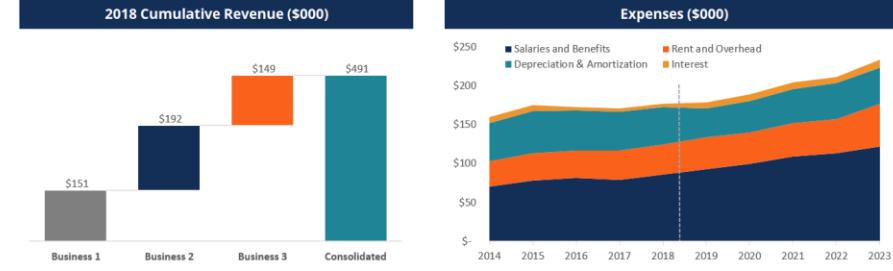
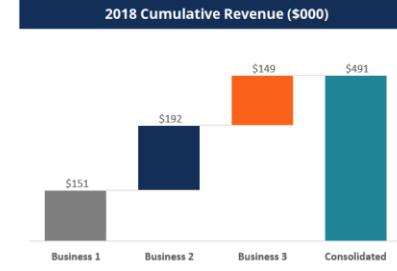
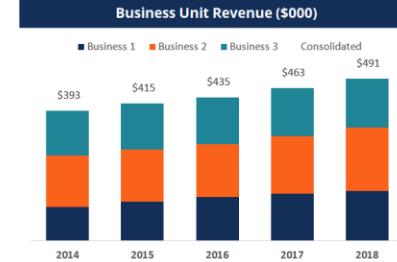


Output the details of a financial model



Regular company updates

© Corporate Finance Institute  
DASHBOARD TEMPLATE



**Income Statement FY 2018**

	Actual	Plan	Variance	Var%
Revenue	\$490,923	\$475,000	\$15,923	3.4%
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**Balance Sheet Summary 2018**

Assets	
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Non-current Assets	\$589,610
<b>Total Assets</b>	<b>\$985,295</b>
Liabilities	
Current Liabilities	\$135,374
Long-term Liabilities	\$384,962
<b>Shareholders' Equity</b>	<b>\$464,959</b>
<b>Total Liabilities &amp; Shareholders' Equity</b>	<b>\$985,295</b>

# Executive decision making

My time is extremely limited

What are the key takeaways?

What should I be worried about?

What should we change?

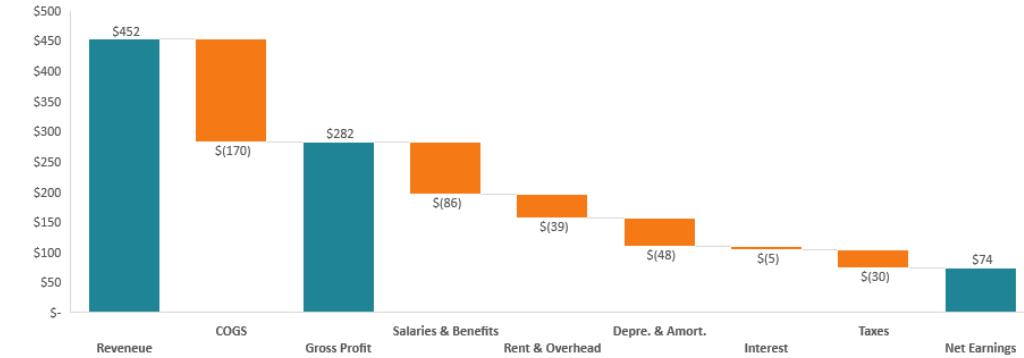
What is going well?

What should we do more of?

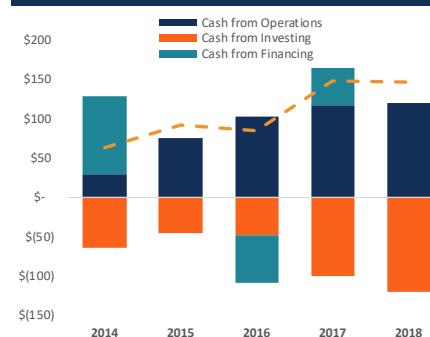
© Corporate Finance Institute  
**DASHBOARD TEMPLATE**



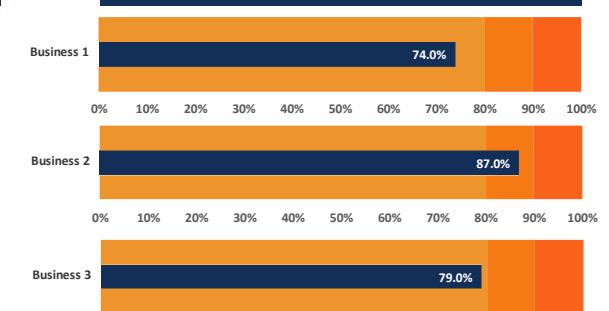
2018 Net Earnings Waterfall (\$000s)



Cash Flow and Cash Balance (\$000s)



2018 Productivity Rate



# How to build a dashboard

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## Planning

What metrics are most important for this business?

What time periods are most relevant?

Who is going to read this?

What decisions will they make from it?

## Designing

Size and orientation

Charts versus tables, versus text

Design principles

Corporate style guide

Multiple iterations... lots of tinkering

# How to build a dashboard

---

SWITCH TO EXCEL RECORDING

LIVE DEMONSTRATION





## Conclusion

# Session objectives

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Harness the power of visual communication



Understand your audience and the context



Design clear and effective, charts, graphs & images



Focus your audience's attention on the most important points



Apply best practices for design principles



Tell the story you want to tell



Build persuasive presentations



Design insightful dashboards



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pertaining to that degree. In testimony whereof we have  
hereunto subscribed our names on

A handwritten signature in black ink.

Chair of the board

A handwritten signature in black ink.

Director



A handwritten signature in black ink.

Director

