

Dashboard Design Principles

Business Intelligence – Spring 2021

Guidelines

Consider your audience –

Put yourself in the shoes of the audience: how will DB be accessed?
Present in a clear, approachable way, fancy not necessary, there should be no need for user to perform more calculations

What data will the user be looking for? What information would help him/her to better understand the current situation?

If you have two relative values, add a ratio to show either an evolution or a proportion, to make it clearer

Add the possibility for the user to compare your number with a previous period.

Sales KPI Dashboard

▼ Last Month

NUMBER OF SALES
115

🎯 ▼ 4% 📅 ▲ 5%

REVENUE
\$150,009

🎯 ▼ 9% 📅 ▼ 4%

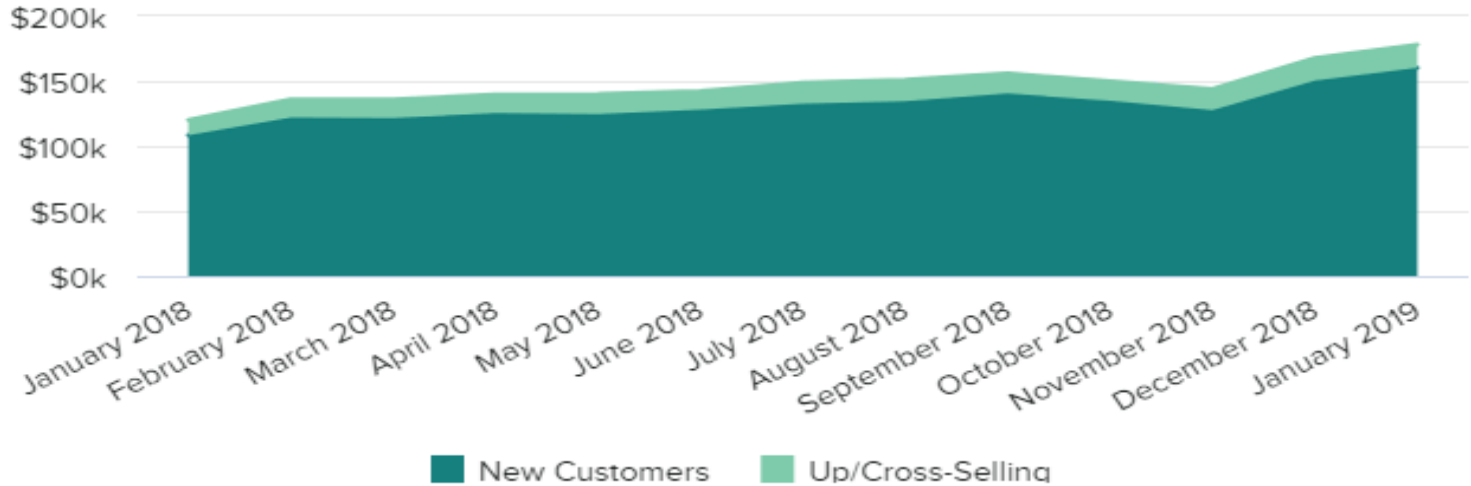
PROFIT
\$39,709

🎯 ▼ 1% 📅 ▼ 11%

COST
\$110,300

🎯 ▼ 12% 📅 ▼ 1%

SALES REVENUE



COST BREAKDOWN

Marketing
\$73,450
Sales
\$36,850



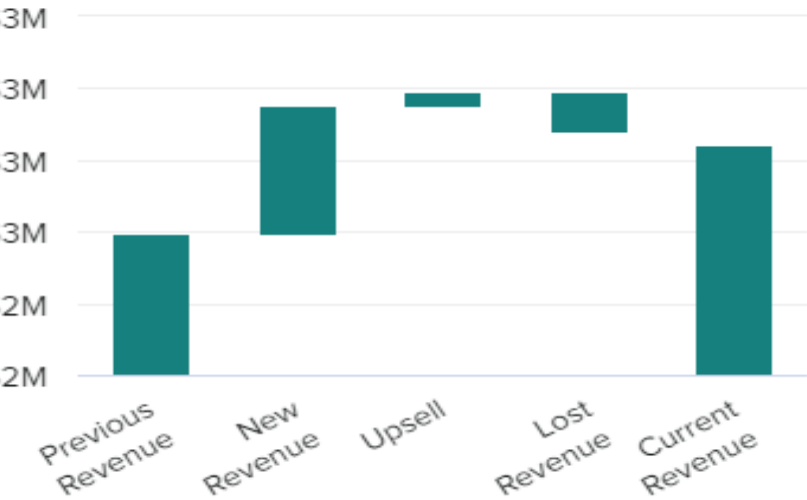
UP/CROSS SELL

Revenue \$16,501
% of Revenue 11%

CHURN

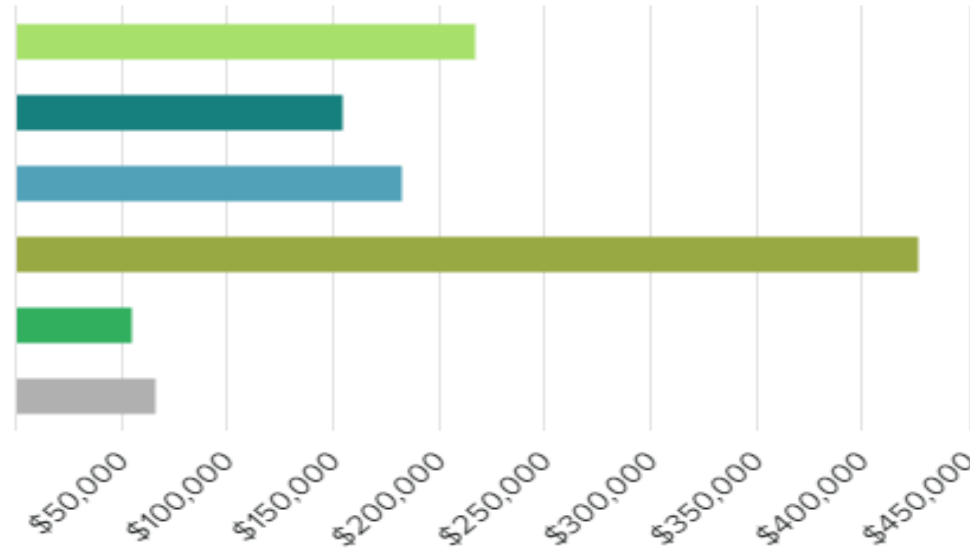
Total 26
Rate 2%
Revenue \$43,812

ACCUMULATED REVENUE



INCREMENTAL SALES

Email
GDN
Instagram
Facebook
Google Ads Search
Twitter



Percentage above or below target



Comparison to previous time period

Guidelines

Don't try to place all the information on the same page - precision and the right audience targeting.

Never create one-size-fits-all dashboards and don't cram all the information into the same page

Think about your audience as a group of individuals who have different needs

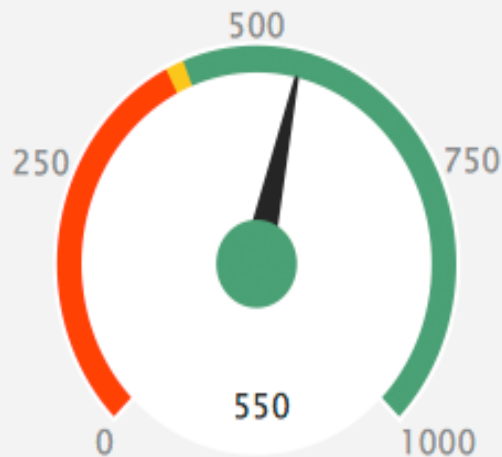
Use tabs to split the information per theme or subject, making it easier for users to find information. Split a marketing dashboard into sections referring to different parts of the website like product pages, blog, terms of use, etc.

instead of using different tabs, filters, selectors, and drill-down lists and making the user endlessly click around, it's better to simply create one dashboard for each job position

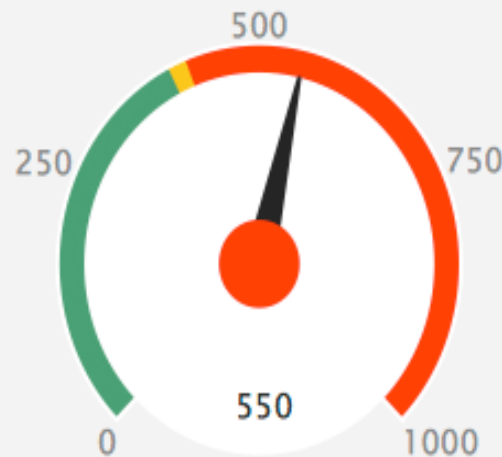
YTD Sales vs Last Yr (\$M)



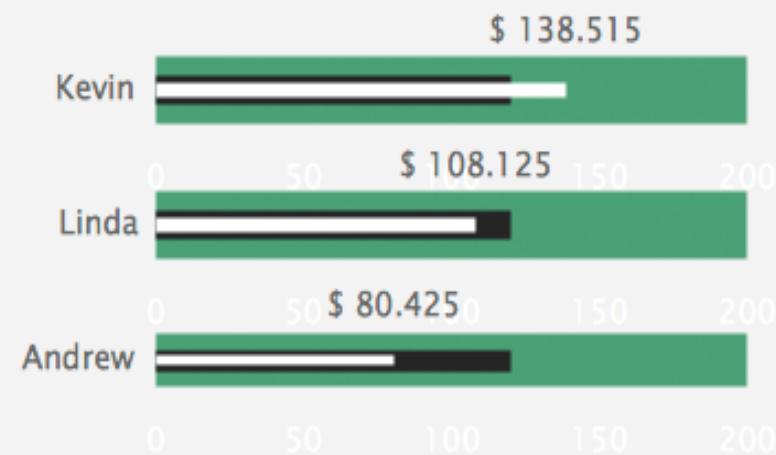
Net Sales vs Last Yr (\$M)



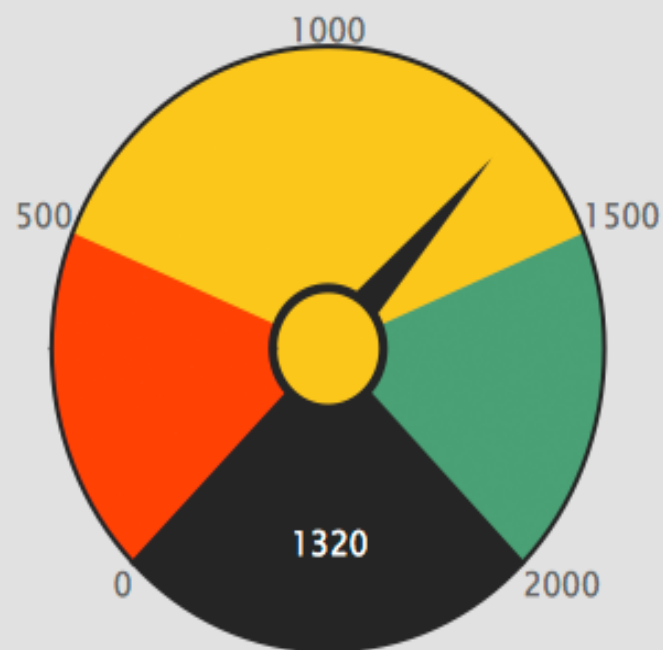
Net Sales vs Last Yr (\$M)



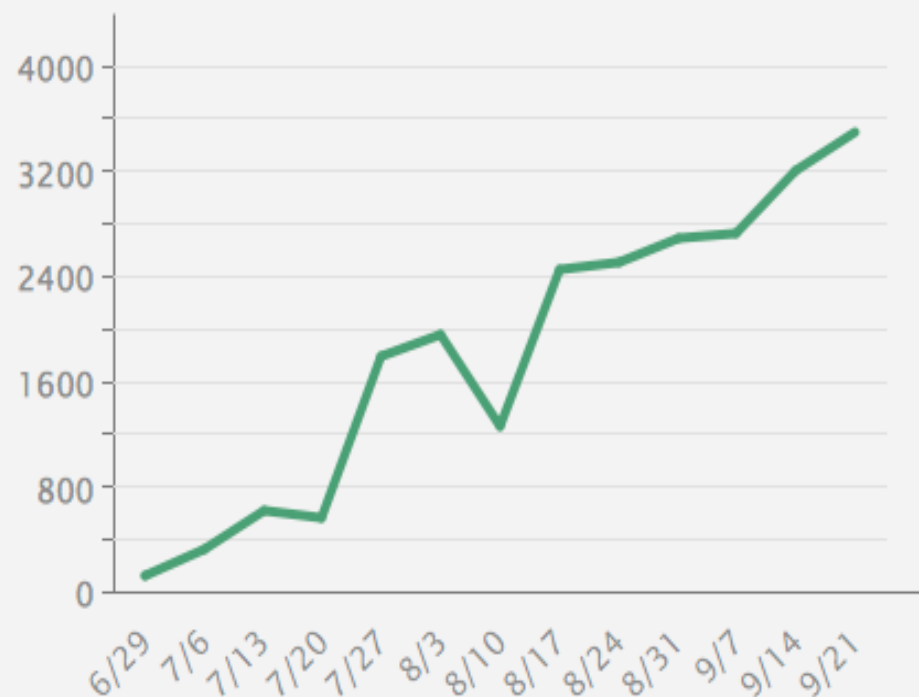
Performance vs Quota



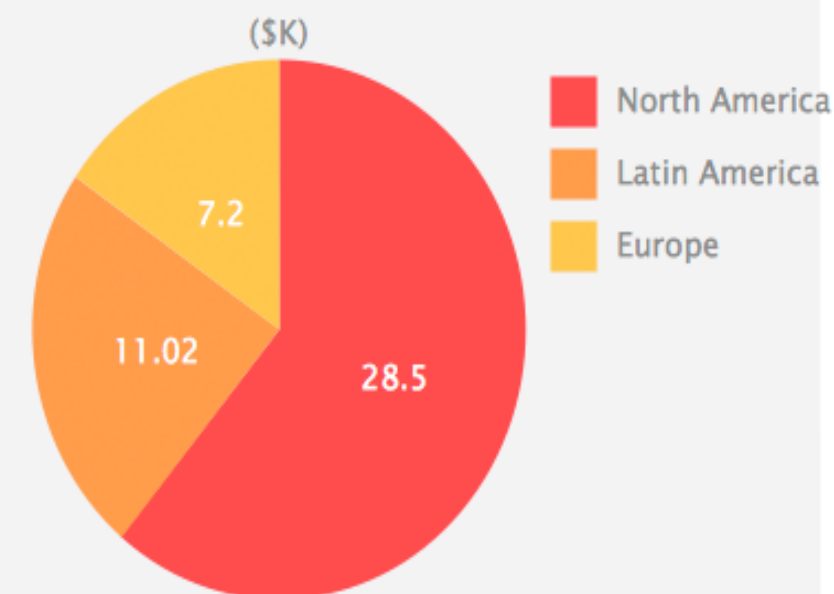
Product Inventory



Weekly Sales



Purchases by Region



VR - VISITS

3,591

▲ 28.85%

Google Analytics

GB HOME

▲ Up

LAST DOWNTIME
34d
19hr 33m

RESPONSE TIME
316ms

Pingdom

TICKETS SOLVED

Gareth Wilson

Solved 2 Tickets

Matthew Cowlin

Solved 2,000,000 Tickets

Edouard Mathon

Solved 2 Tickets

ZenDesk

BLOG VISITS

10,024

▲ 8.34%

Google Analytics

BLOG

▲ Up

TWITTER

2 days ago

@wsfn this is a tweet in here

4 of 6

Twitter

10:59

Monday
8 Oct 2012

The Time (GMT +0100)

BBC - LATEST

08 October, 1:41
Cameron 'wo

08 October, 1:41
Cameron 'wo

08 October, 1:41
Cameron 'wo

08 October, 1:41
Cameron 'wo

EMAIL

1

unread within
the last 1 day

0

unread between
1 and 3 days old

5,531

unread over
3 days old

RAG SOMETHING



100 something is
red

010 something is
amber

050 something is
green

WEATHER

11°

Light Rain



All Widgets

EDIT

Live Visitors

296

74



531

Conversion Rate (30 Days)

0.11

▼ 21.43%

Account Types

Free - 70%



Rev Growth
-4.1%

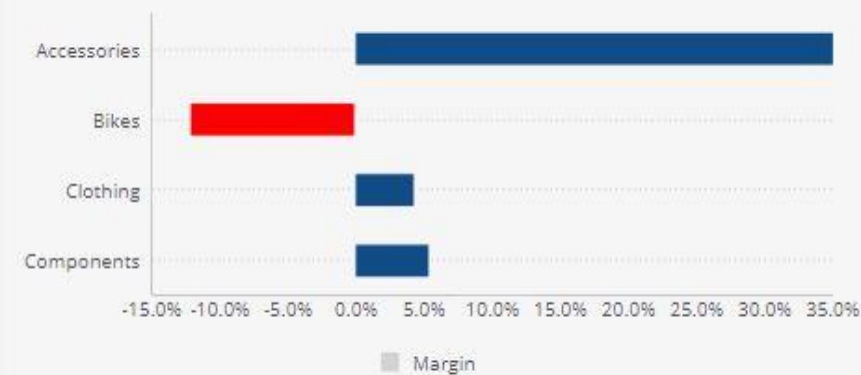
Net Revenue \$4.05M

AOV (\$)
2,837.62

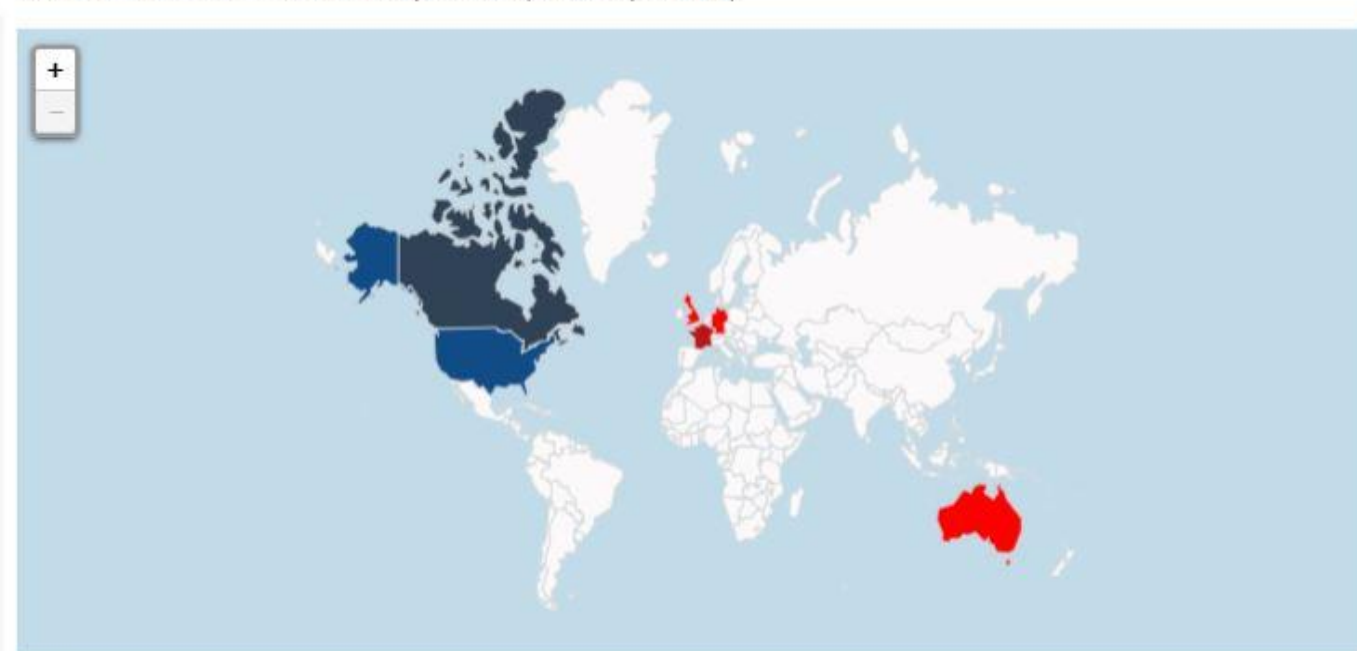
AOV Avg YTD \$5,508

Acq Growth
-22.5%

Returning Customers 86



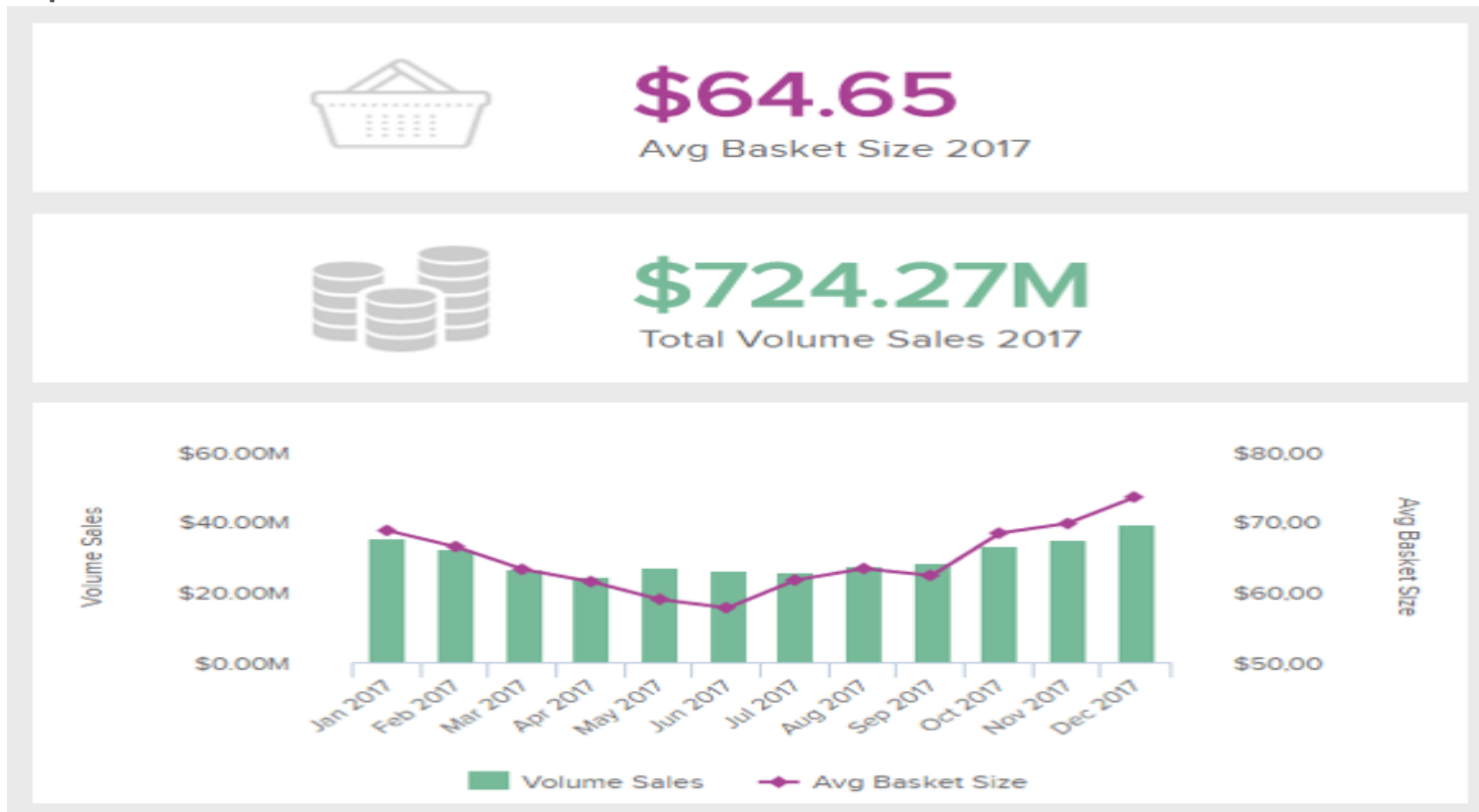
Location Based Sales Analysis



Guidelines

<https://www.datapine.com/kpi-examples-and-templates/>

Choose Relevant KPIs - KPIs will help to shape the direction of your dashboards as these metrics will display visual representations of relevant insights based on specific areas of the business.



Guidelines

Select the right type of dashboard - build responsive dashboards that will fit all types of screens, whether it's a smartphone, a PC, or a tablet,

Strategic: A dashboard focused on monitoring long-term company strategies by analyzing and benchmarking a wide range of critical trend-based information.

Operational: A business intelligence tool that exists to monitor, measure, and manage processes or operations with a shorter or more immediate time scale.

Analytical: These dashboards contain large streams of comprehensive data that allow analysts to drill down and extract insights to help the company to progress at an executive level.

Tactical: These information-rich dashboards are best suited to mid-management and help in formulating growth strategies based on trends, strengths, and weaknesses across departments



Institute of
Business Administration
Karachi

Leadership and Ideas for Tomorrow

Revenue and Customer Overview - Q1 2016

Revenue

€ 557.185 Actual Revenue

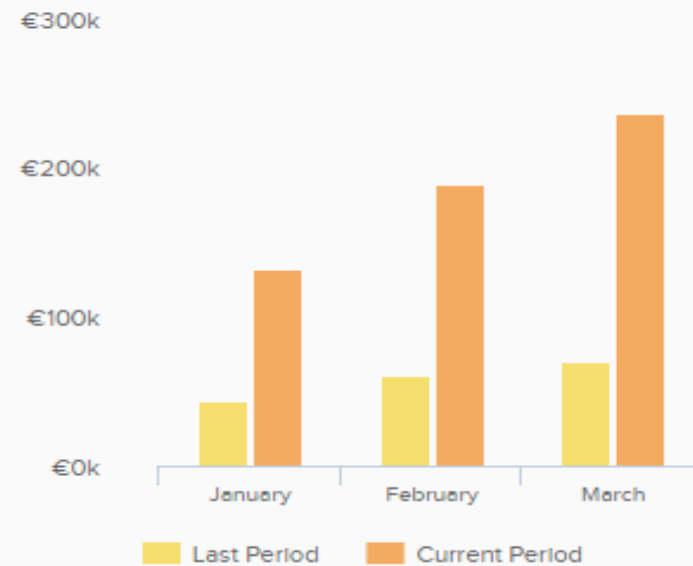
€ 471.360 Target Revenue



118 %

Target Achievement

Compared to previous Year



of New Customers

97

New Customers

110

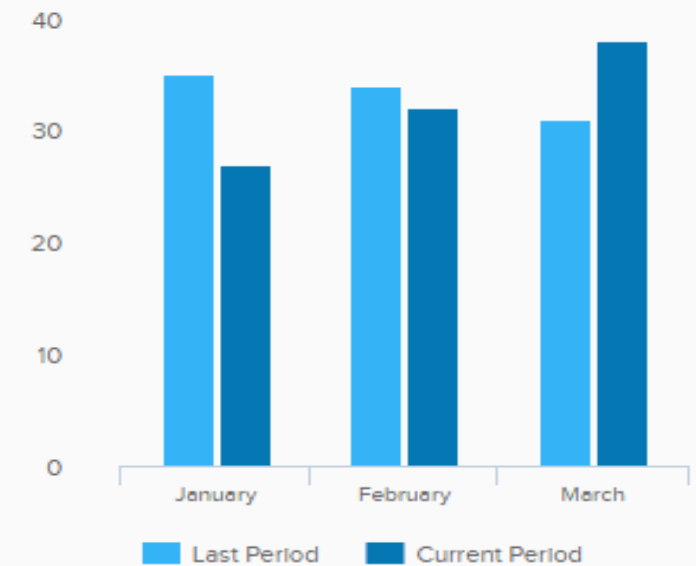
Target



88 %

Target Achievement

Compared to previous Year



Avg. Revenue per Customer

€ 5.672 Actual Revenue

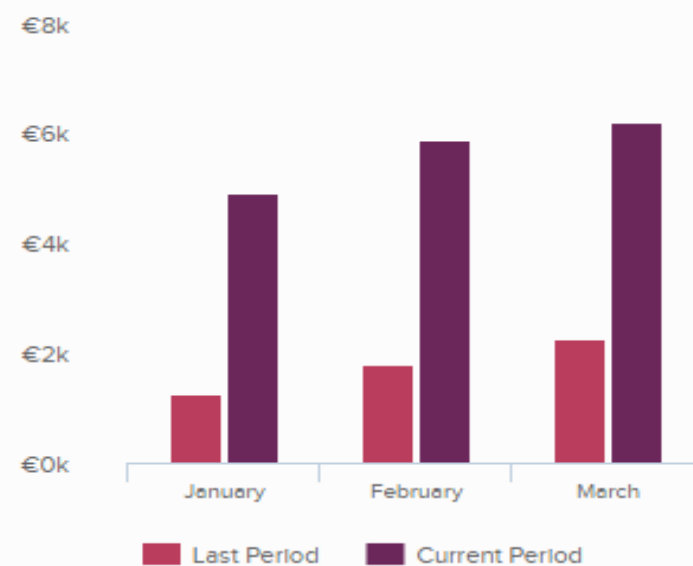
€ 5.600 Target Revenue



104 %

Target Achievement

Compared to previous Year



Customer Acquisition Cost (CAC)

€ 2.144 Actual CAC

€ 2.200 Target CAC



103 %

Target Achievement

CAC vs Customer Lifetime Value (CLV)





Operating Revenue Report

Africa AsiaPac Europe NthAmerica SthAmerica

Region 2014 2015 2016 2017 2018 2019

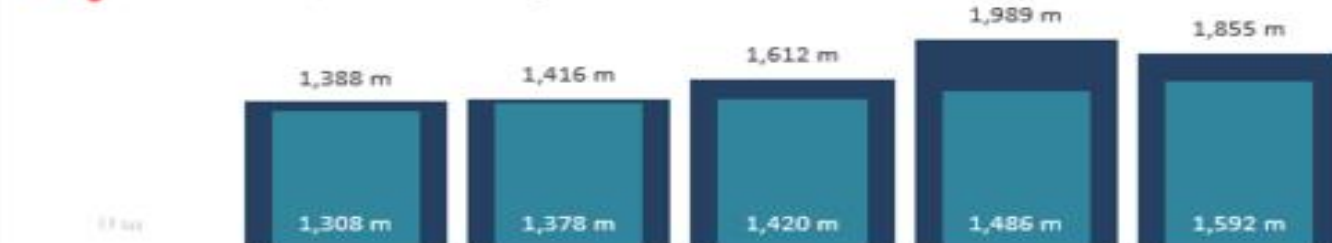
Expense Trend >>

Africa	1,155	1,089	1,011	974	910	875
AsiaPac	1,592	1,486	1,420	1,378	1,308	1,267
Europe	1,569	1,452	1,384	1,311	1,276	1,243
NthAmerica	1,749	1,672	1,590	1,534	1,469	1,417
SthAmerica	740	717	701	648	608	573
Group	6,806	6,417	6,105	5,846	5,570	5,375

Revenue Trend >>

Expense vs Revenue YOY

2014 2015 2016 2017 2018 2019



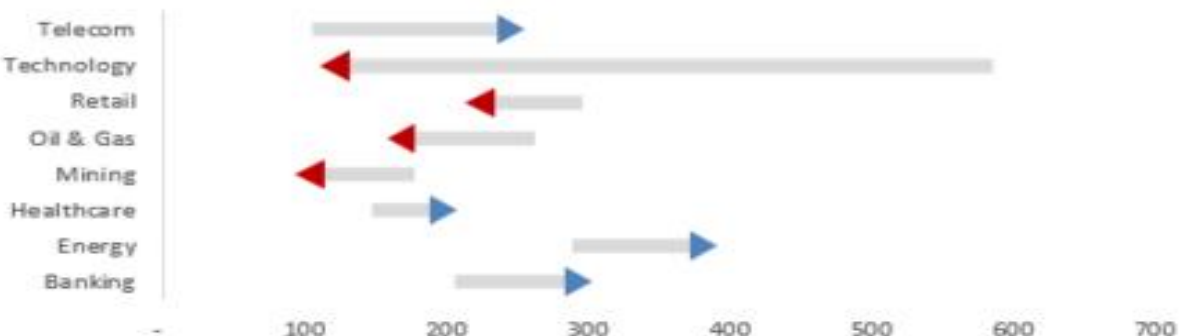
Expenses by Region YOY



Sales v Expenses YOY & Trend



Operational Effectiveness by Department



Sales Volumes Trend CY v PY

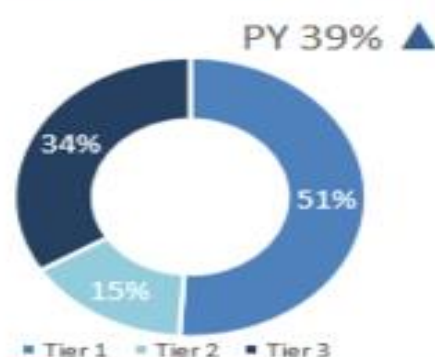


Change in Sales Volumes FY

DOWN UP

Desc	Trend	PY ↓↑	2014-15	2015-16	2016-17	2017-18	2018-19
Cmodies	▲	▼	18.0	9.0	11.0	9.0	20.0
Corporate	▲	▲	12.0	9.0	6.0	22.0	16.0
Equity	▲	▲	12.0	8.0	7.0	12.0	6.0
FOREX	▲	▲	10.0	10.0	19.0	19.0	8.0
Insurance	▲	▼	11.0	16.0	16.0	7.0	21.0
Invtment	▲	▲	15.0	15.0	8.0	14.0	6.0

Sales Volumes FY Data CY v PY



Risks by Department YOY

Teir 1 Client % CY V PY

Community

Social

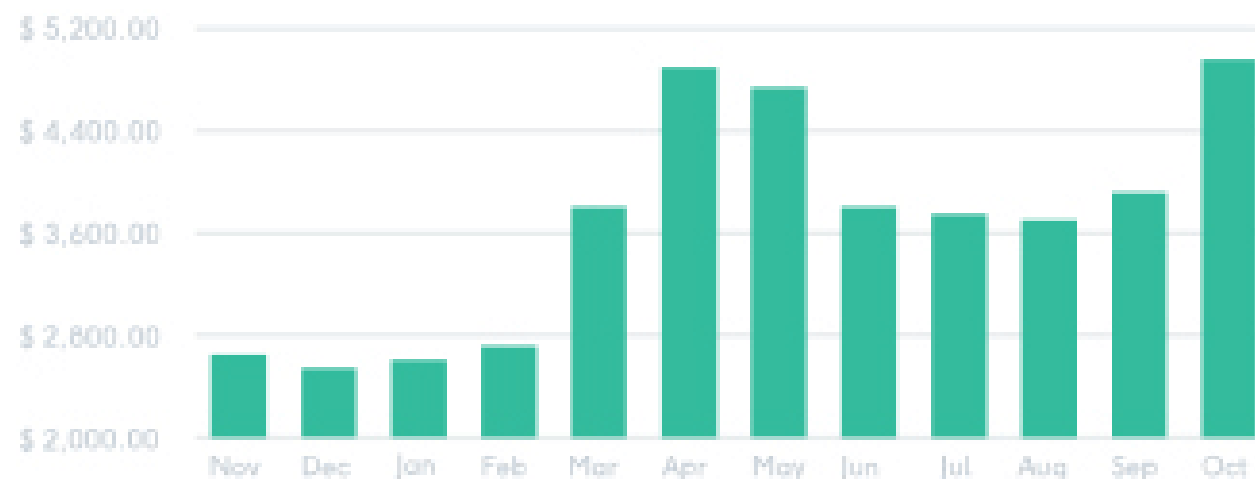
Environment



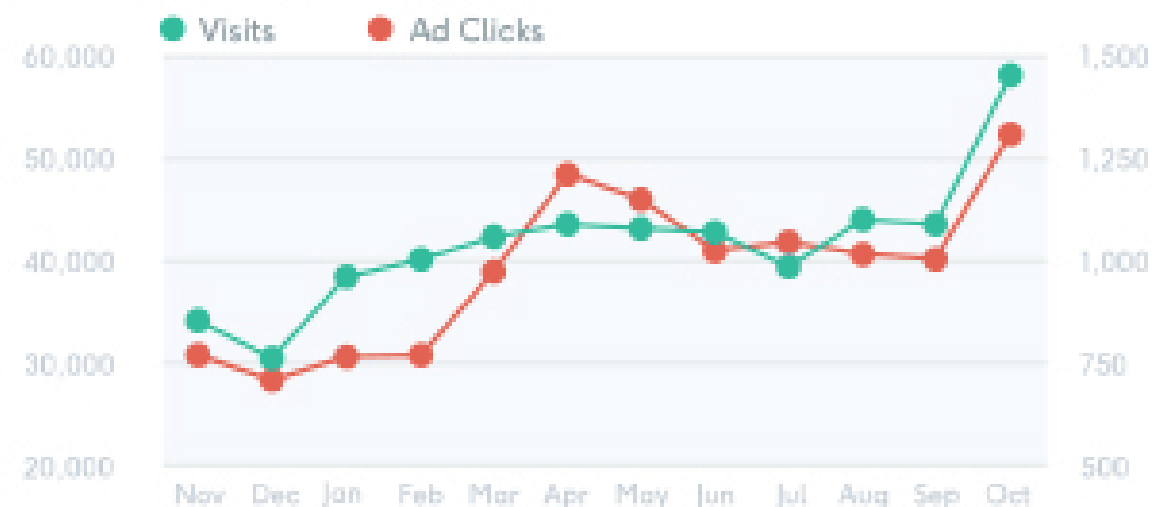
DASHBOARD NAME

WIDGETS

AD COST -TREND WIDGET



VISITS - TREND WIDGET 2 METRICS



COST PER CLICK (CPC) - GAUGE WIDGET



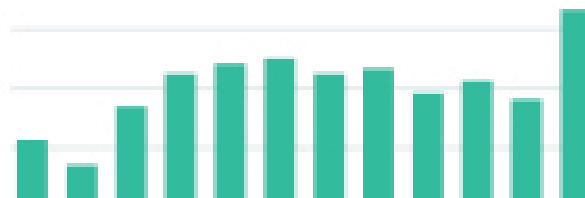
AD IMPRESSIONS - HISTORIC WIDGET

35,567



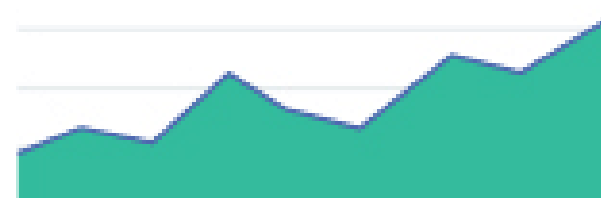
TOTAL PAGEVIEWS

252,292

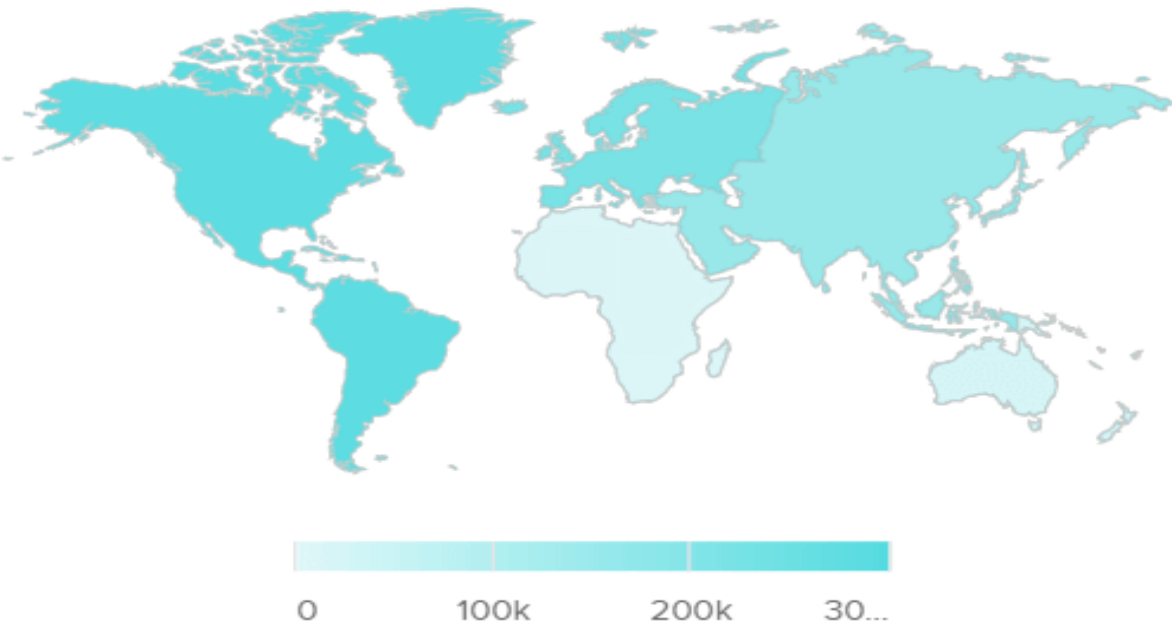


TOTAL VISITS

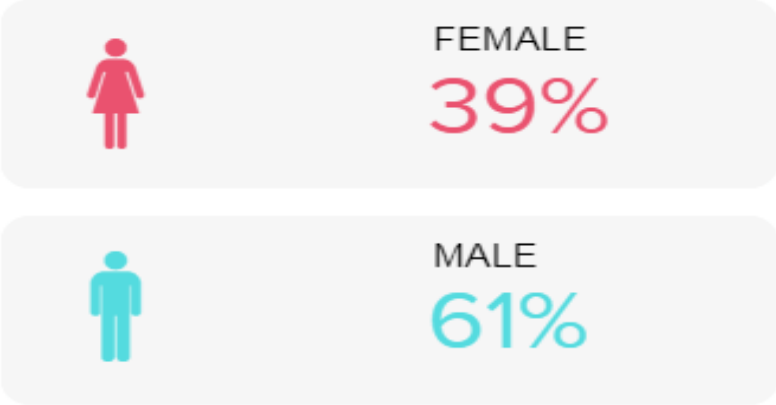
57,841



Sessions by Continent

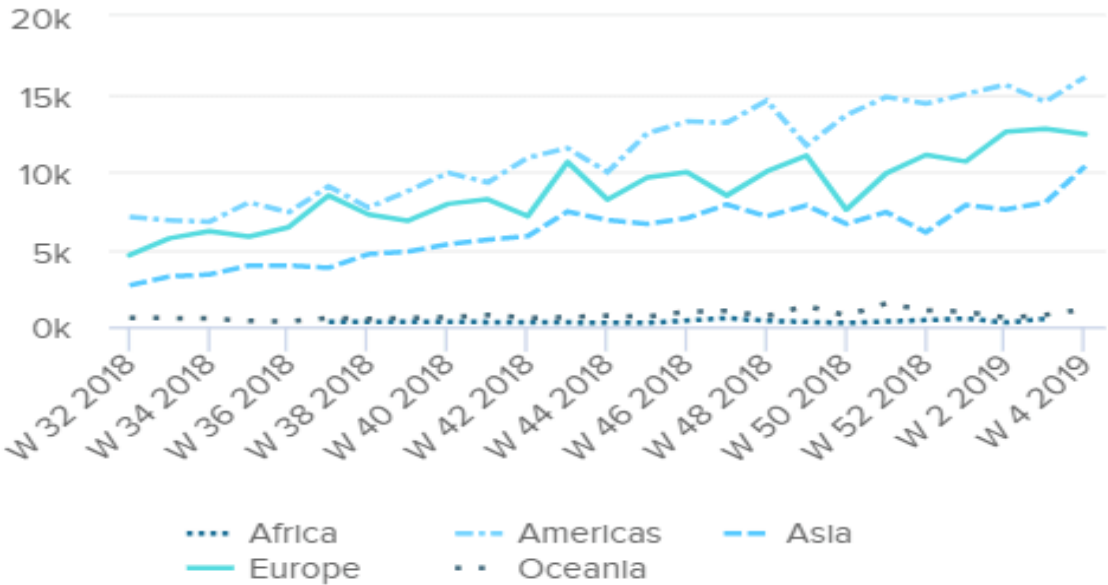


Users by Gender



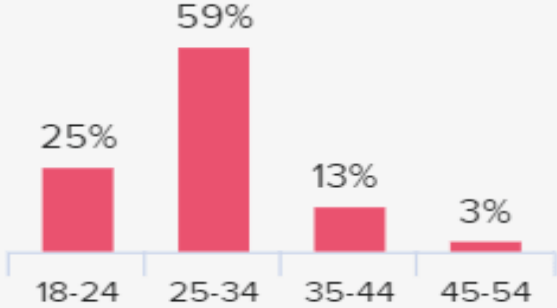
Sessions by Continent

Timeline



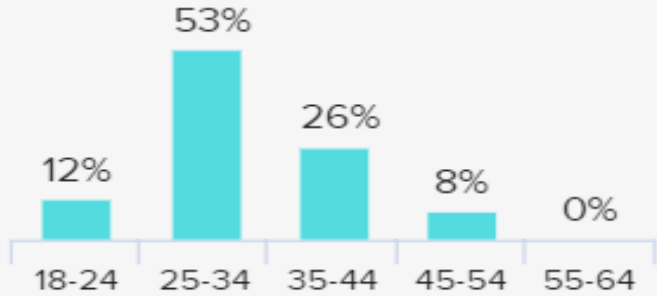
Female

Age Groups



Male

Age Groups



Bounce Rate 63%

Bounce Rate 55 %

Pages/Sessions 1.8

Pages/Sessions 2.3

Planning



Completed

Design



Completed

Development



In Progress

Testing



Waiting

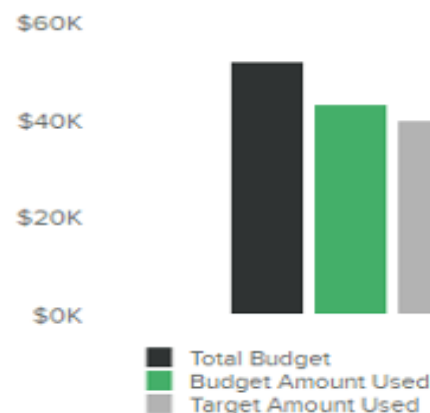
Projected
Launch Date



107 Days

Friday, December 15

Project Budget



Total Budget **\$52,000**

Remaining **\$8,770**



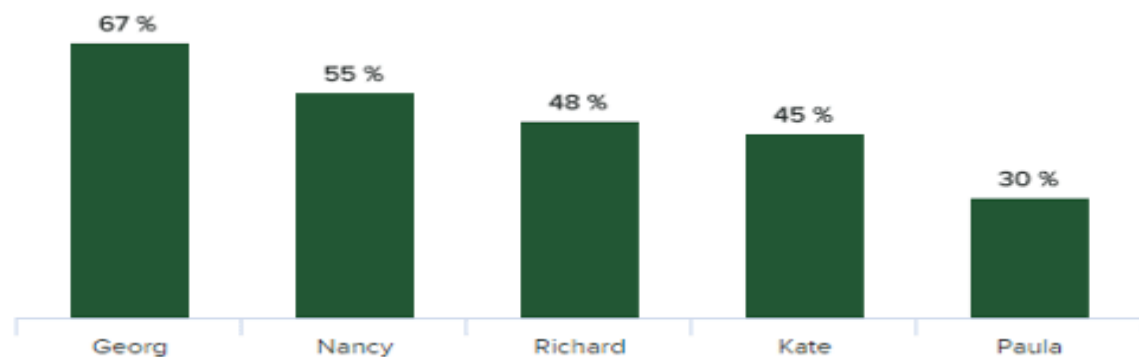
Currently

8.1%
Over Target

Overdue Tasks

Overdue	Task	Deadline	Employee
1 Day	Update facebook profile	2017-08-15	Paula
4 Days	Update testing plan	2017-08-06	Kate
10 Days	Configure desktop	2017-08-01	Nancy
24 Days	Set up new database	2017-07-18	Georg

Workload



Upcoming Deadlines

Employee	Task	Deadline	Workload
Kate	Update twitter profile	2017-08-15	34%
Georg	E-Commerce Dashboard	2017-08-06	56%
Nancy	Set up dev environment	2017-08-01	15%
Paula	Hire Data Scientist	2017-07-18	11%

Guidelines

Provide Context- numbers are good or bad? Numbers are typical or unusual? Without comparison values, numbers on a dashboard are meaningless for the users.

And they won't know whether any action is required. For example, a **management dashboard design will focus on high-level metrics that are easy to compare and, subsequently, offer a visual story.**

Always **try to provide maximum information**, even if some of them seem obvious to you, your audience might find them perplexing.

Name all the axes and add titles to all charts. Remember to provide comparison values.

Use comparisons that are most common, for example, comparison against a set target, against a preceding period or against a projected value.

Net Retention (with 6-Month Range)

Cancel

\$4.6K



Last Month: \$4.8K

Contraction

\$1.2K



\$0 Last Month: \$3.9K

Expansion

\$6.9K



\$0 Last Month: \$4.1K

Net Retention

101.18%



Last Month: 98.10%

Net MRR: \$11,608

Net Retention: \$654

Guidelines

Use the right type of Chart -

What story you want to tell?

Who do you want to tell it to? (in-house, informal/formal, investors)

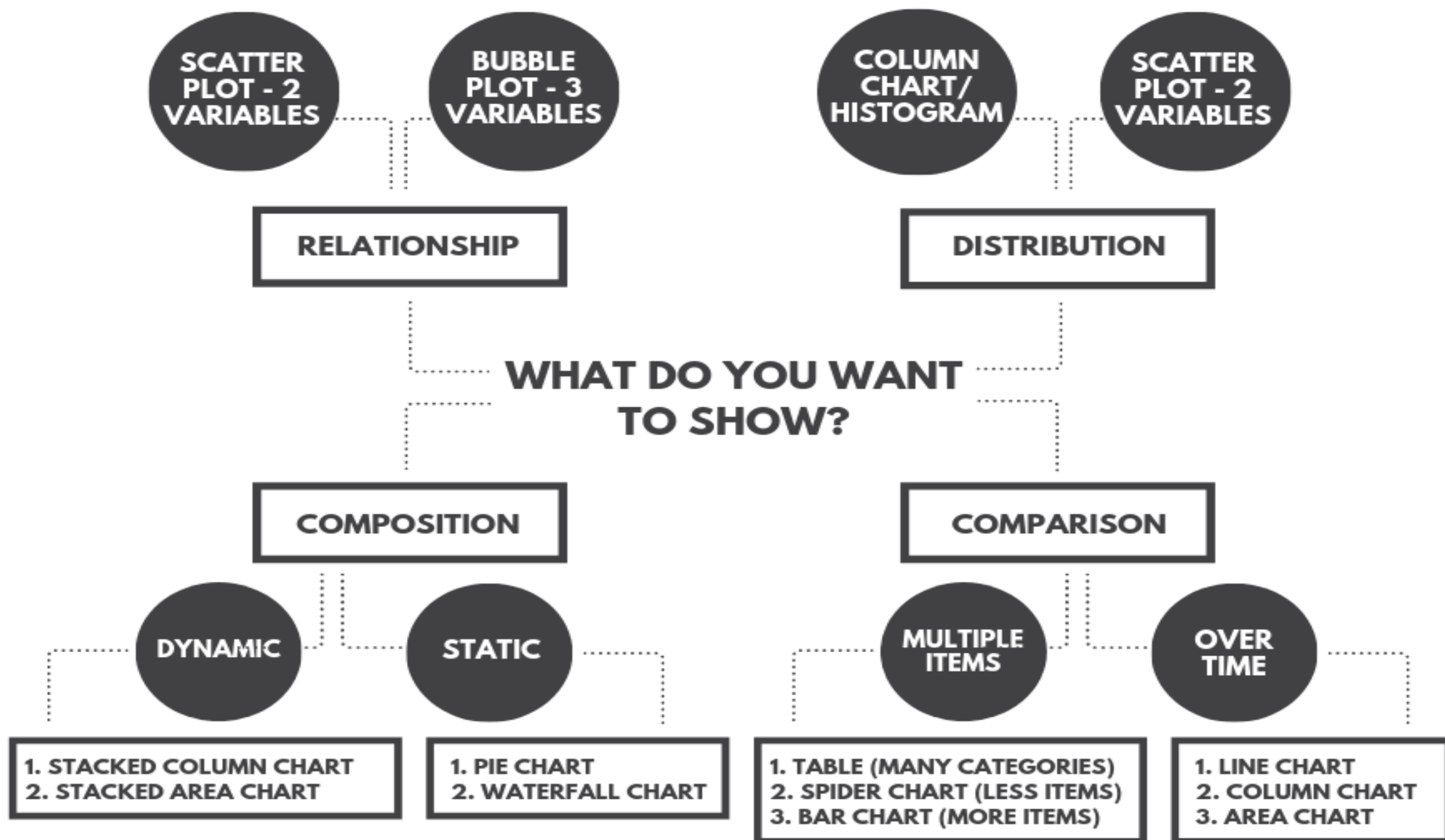
Are you looking to analyze trends? (line, column, area, ribbon)

Do you want to demonstrate the composition of your data? (pie, waterfall, stacked, maps)

Do you want to compare two or more sets of values? (bubble, spider, bar, scatter, column-based vis)

Is time important? (line, dynamic line, bar)

How do you want to demonstrate the KPIs? (experiment with different charts/formats until your goals are met)



Guidelines

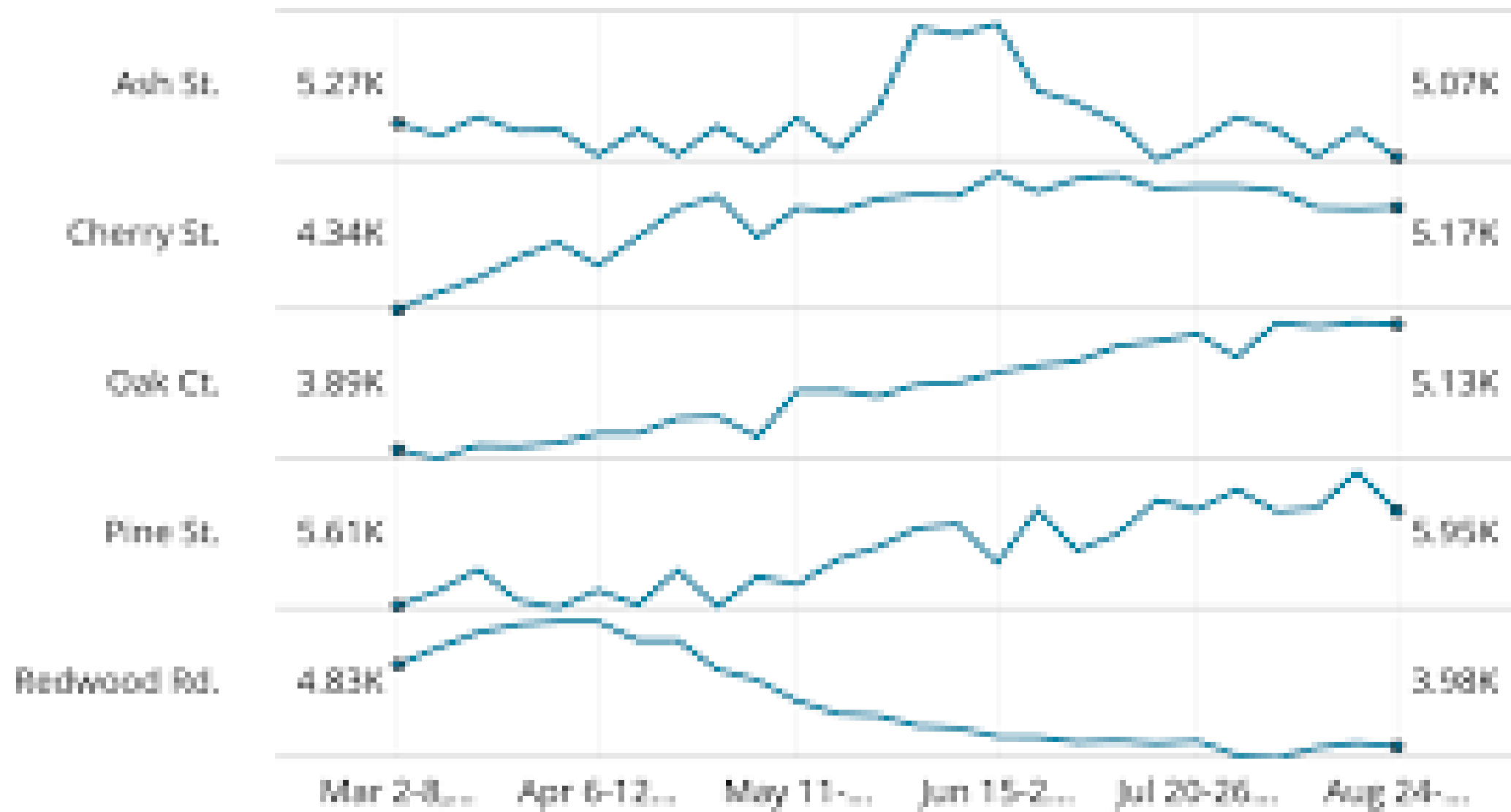
Use the right type of Chart -

Line charts are great when it comes to displaying patterns of change across a continuum. They are compact, clear and precise.

Choose **bar charts** if you want to quickly compare items in the same category, for example, page views by country.

Pie charts aren't the perfect choice. They rank low in precision because users find it difficult to accurately compare the sizes of the pie slices. Although such charts can be instantly scanned and users will notice the biggest slice immediately.

Sparklines usually don't have a scale which means that users will not be able to notice individual values. However, they work well when you have a lot of metrics and you want to show only the trends.



Guidelines

Use the right type of Chart -

It's also not that easy to decipher **scatterplots**. They lack precision and clarity as the relationships between two quantitative measures don't change very frequently. Still, they can be used for an interactive presentation for knowledgeable users.

Most experts agree that **bubble charts** are not fit for dashboards. They require too much mental effort from their users even when it comes to reading simple information in a context. Due to their lack of precision and clarity, they are not very common and users are not familiar with them.

Guidelines

Choose your layout carefully -

Placement of charts on a dashboard. If your dashboard is visually organized, users will easily find the information they need. Poor layout forces users to think more before they grasp the point, and nobody likes to look for data in a jungle of charts and numbers.

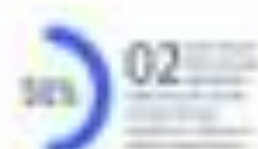
The general rule is that the key information should be displayed first – at the top of the screen, upper left-hand corner. People intuitively look at the upper-left part of a page first

Start with the big picture. The major trend should be visible at a glance. After this revealing first overview, you can proceed with more detailed charts. Remember to group the charts by theme with the comparable metrics placed next to each other. This way, users don't have to change their mental gears while looking at the dashboard by, for example, jumping from sales data to marketing data, and then again to sales data.

Statistic Graph

Period: 1
All categories

Statistic Graph

Period: 1
All categories

Statistic Graph

Period: 1
All categories

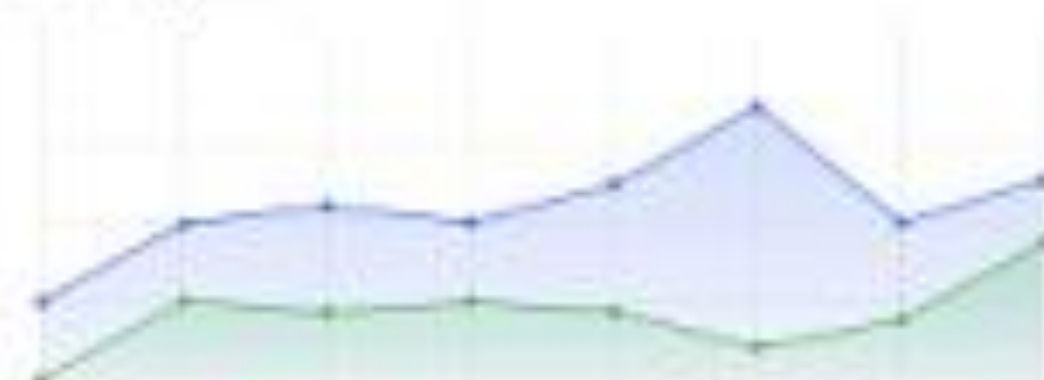
Statistic Graph

Period: 1
All categories

Statistic Graph

Period: 1
All categories

Statistic Graph

All categories
10 daysTotal cost:
21.424\$

● Lower price (data 1)

● Lower price (data 2)

LOREM IPSUM
4.121LOREM IPSUM
1.323LOREM IPSUM
12.624LOREM IPSUM
4.121

Statistic Graph

Period: 1
All categories

Legend

- Category 1
- Category 2
- Category 3
- Category 4



Category	Value	Percentage	Color
Category 1	10.000	47%	Blue
Category 2	5.000	23%	Red
Category 3	4.000	19%	Green
Category 4	2.424	11%	Yellow

Statistic Graph

Period: 1
All categories

Statistic Graph

Period: 1
All categories

+ New Insight

Sharing



Feedback

Help Center



My Dashboard

Created 2 minutes ago

Last 30 days



Facebook

Reach

REACH

31,330,049

Day: +276.7k Week: +245.1k



Google Analytics

Total, new and returning users

USERS

1,159,006

Day: -23.1k Week: +19

NEW USERS

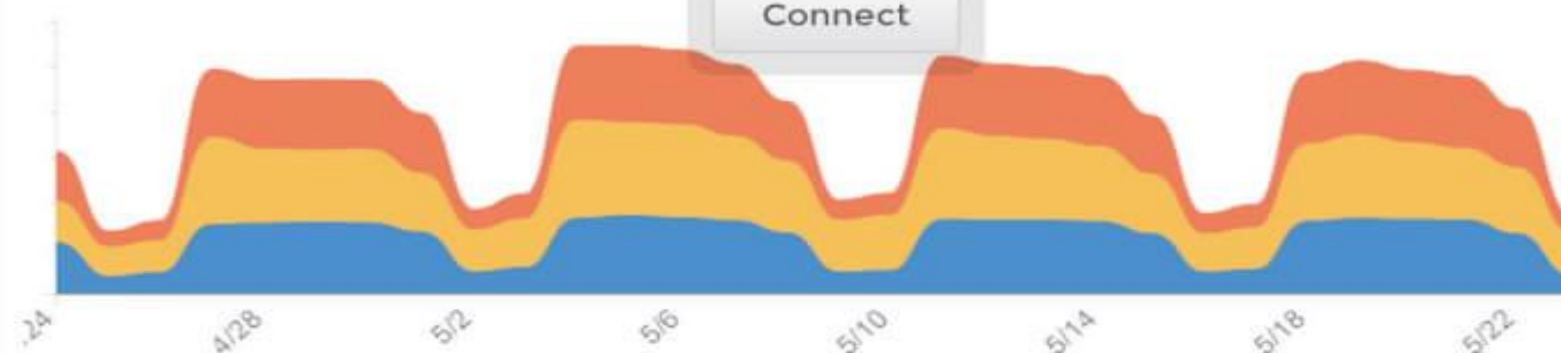
799,923

Day: -14k Week: +658

RETURNING USERS

359,083

Day: -9.1k Week: -639



Google AdWords

Cross-campaign performance

COST

\$0

IMPRESSIONS

0

CLICK RATE

0%

AVERAGE

\$0

Mailchimp

List health

SUBSCRIBERS

271

Day: — Week: — Month: —

Connect

Connect

Guidelines

Prioritize Simplicity -

Nowadays, we can play with a lot of options in the chart creation and it's tempting to use them all at once. However, try to use those frills sparingly. Frames, backgrounds, effects, gridlines... Yes, these options might be useful sometimes, but only when there is a reason for applying them.

Be careful with your labels or legend and pay attention to the font, size, and color. It shouldn't hide your chart, but also be big enough to be readable. Don't waste space on useless decorations, like for example a lot of pictures.

Applying shadows can be quite an effect since it highlights some areas of the dashboard and gives more depth. Since the point is to keep it simple, don't overdo it and use it when you really need it. Designing a dashboard should be a well-thought process but the end-user should see a simple data-story with the main points highlighted and the points should be immediately clear. If this is not respected, more questions will arise about the dashboard itself rather than discussing the points that you're trying to make and the story you're trying to present.



Institute of
Business Administration
Karachi

Leadership and Ideas for Tomorrow

1.029.973

VISITS



94 sec

AVG. SESSION
DURATION



1,8 pages

PER VISIT



58 %

BOUNCE RATE



1.853.672

PAGE VIEWS

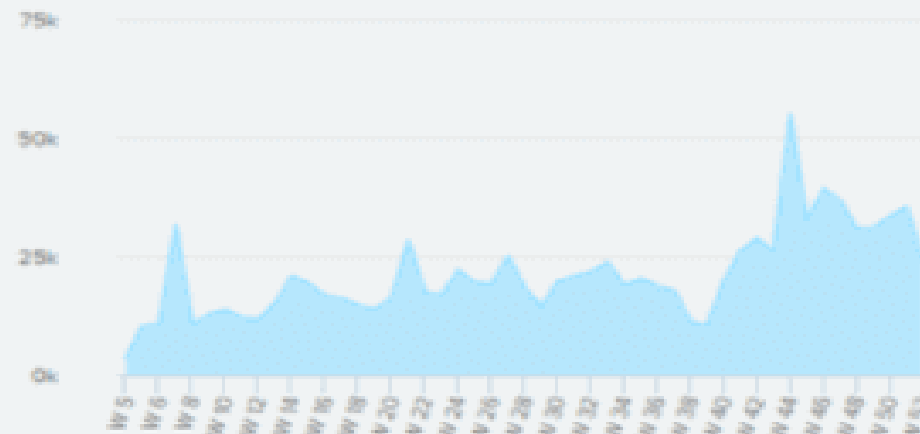


10%

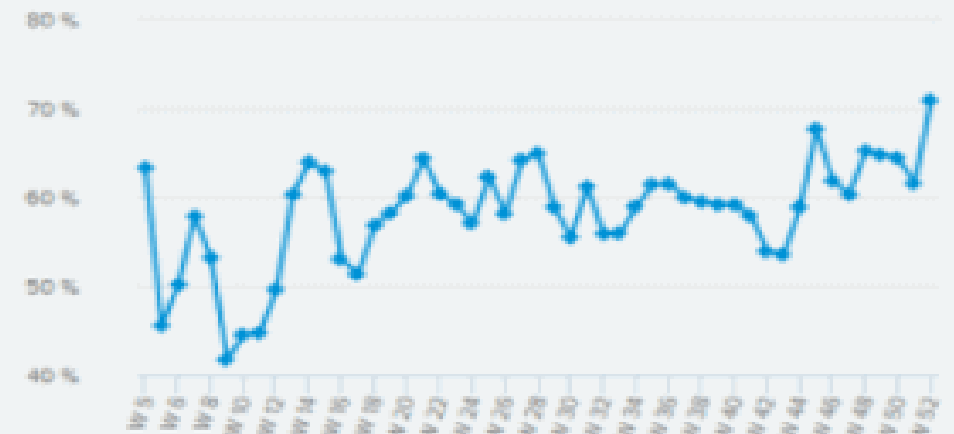
GOAL CONVERSION



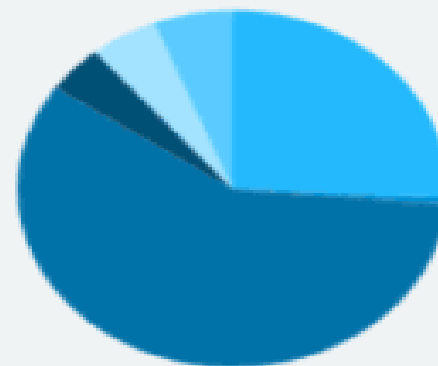
Visits by Week of Year



Bounce Rate by Week of Year

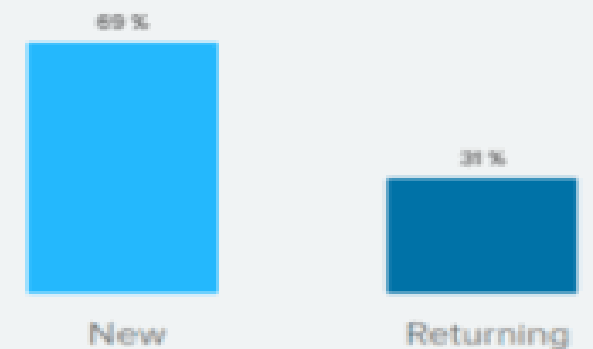


Traffic Sources

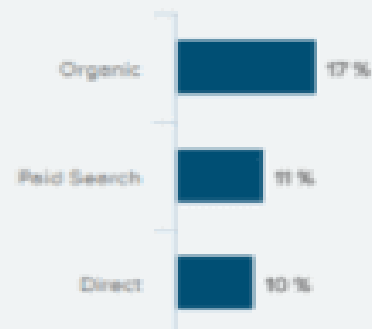


26 %	Direct
5 %	Display
58 %	Organic
10 %	Paid
5 %	Referral
7 %	Social

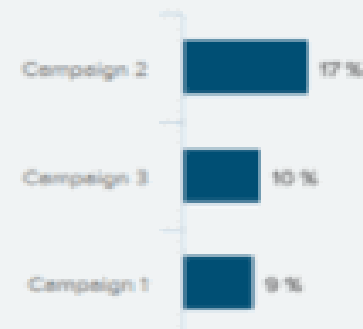
Visitors by User Type



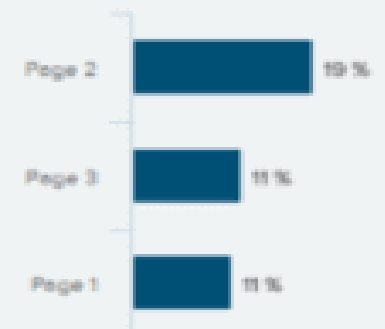
Top 3 Channels by Conversion



Top 3 Campaigns by Conversion



Top 3 Pages by Conversion



All

Today

Yesterday

Week

Month

Quarter

Year

02/01/2015 6:15 AM



10/17/2016 10:59 PM



Set Date

Visitors and New Visitors (1500/537)

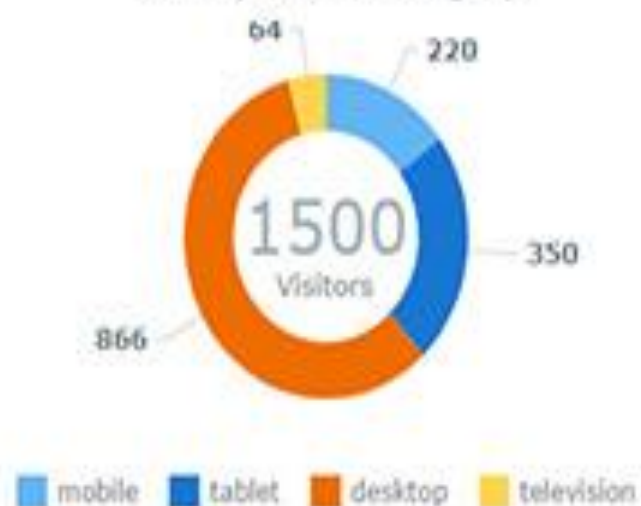
16 Oct 2016 Visitors: 48 New Visitors: 19



Audience location (1500 visitors)



Visit by device category



Blog Visitors

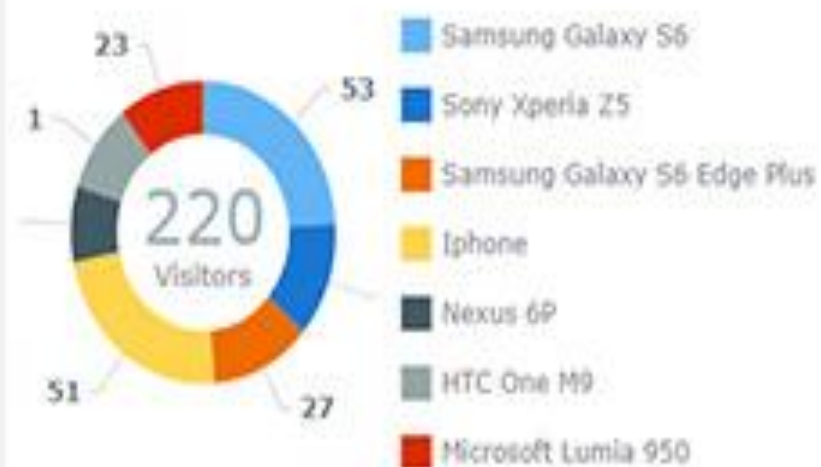
17 Oct 2016 Visitors: 16 of 475



Visit by age category



Viewer's mobile devices



All

Today

Yesterday

Week

Month

Quarter

Year

02/01/2015 6:15 AM



10/17/2016 10:59 PM



Set Date

Visitors and New Visitors (1500/537)

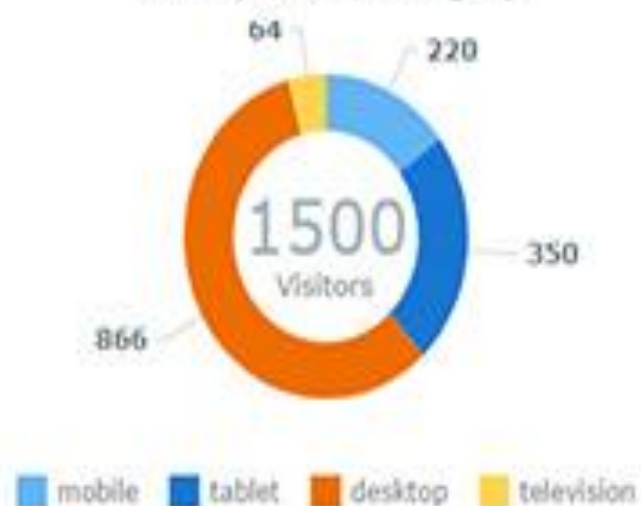
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Audience location (1500 visitors)



Visit by device category



Blog Visitors

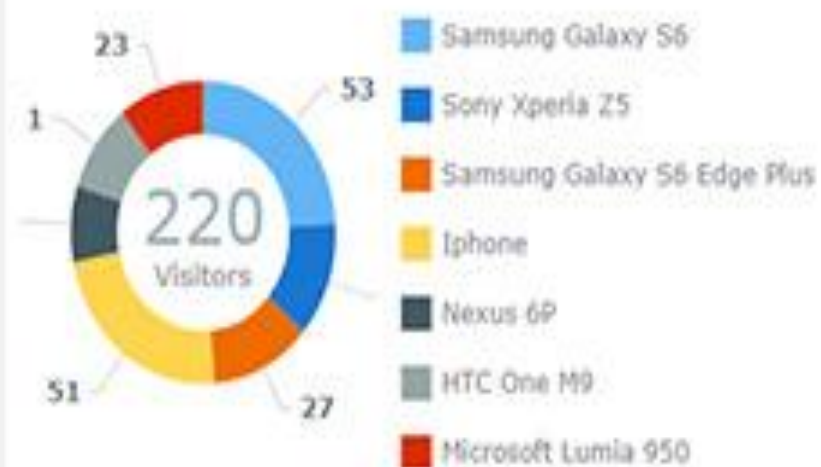
17 Oct 2016 Visitors: 16 of 475



Visit by age category

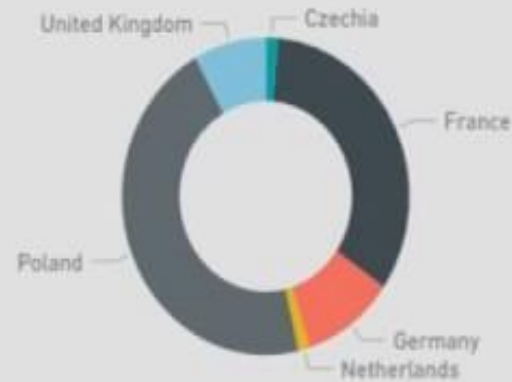


Viewer's mobile devices



My BI REPORT by ANTDATA

Sales per Country [€]



Truck Utilization [PFS]



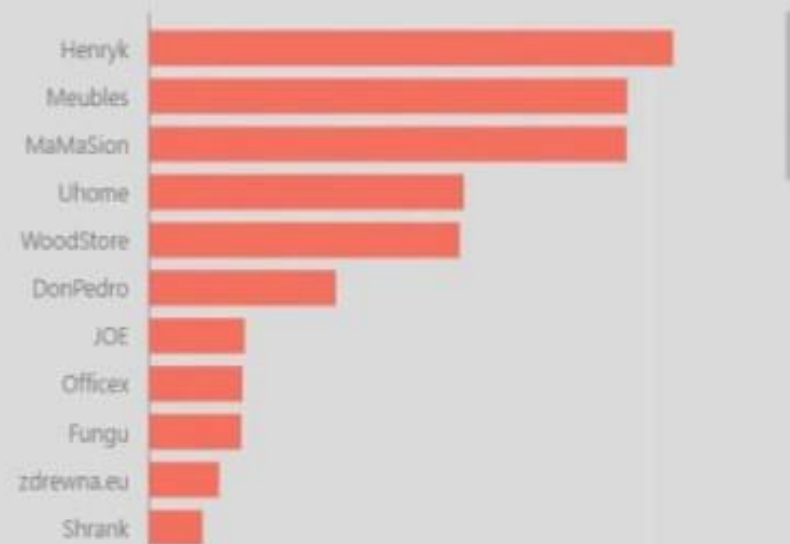
Average PFS logistic cost

21,74 €

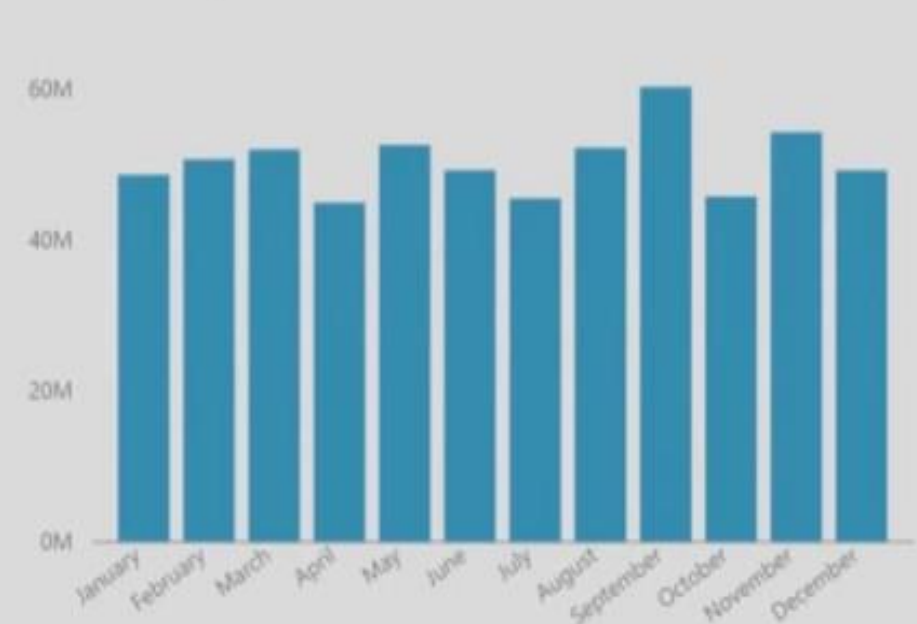
Average PFS value

2 158 €

Customers by Sales Value



Sales Value by Date



Logistic Providers

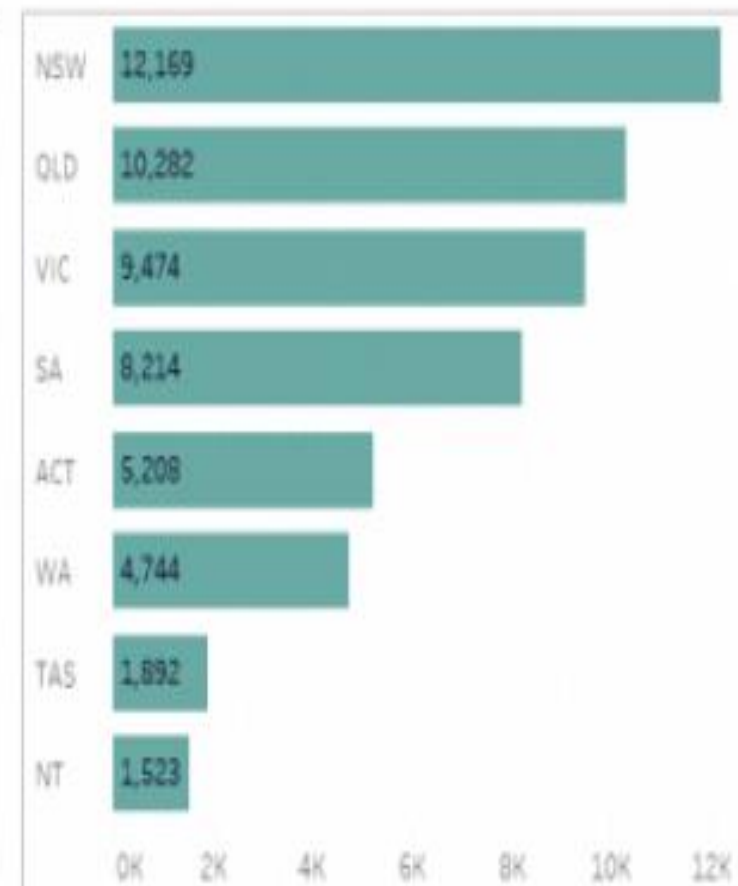




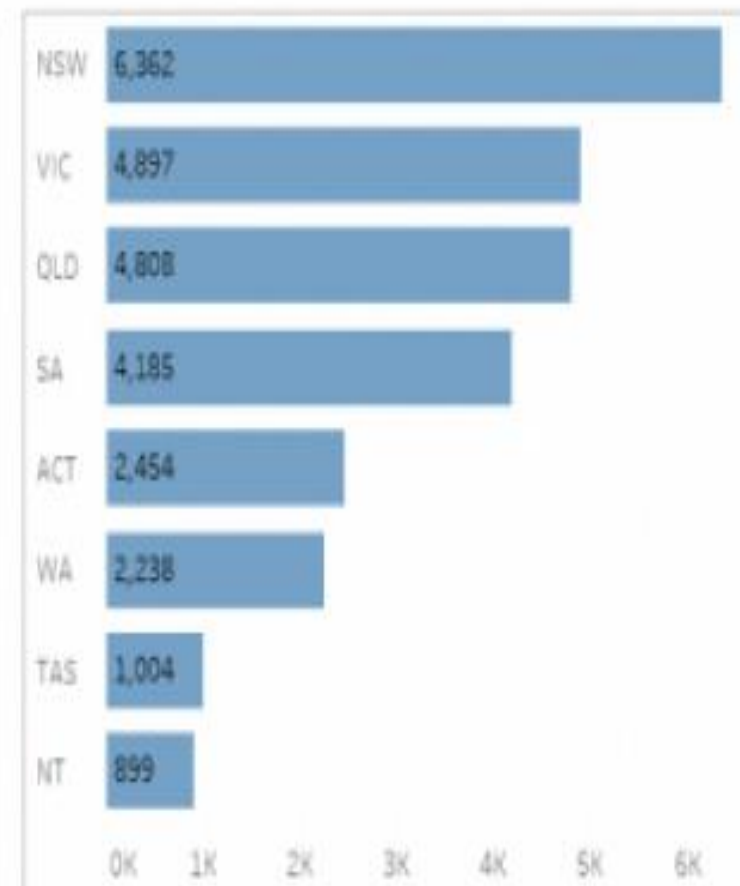
SALES



ORDER QUANTITY



SHIPPING COST



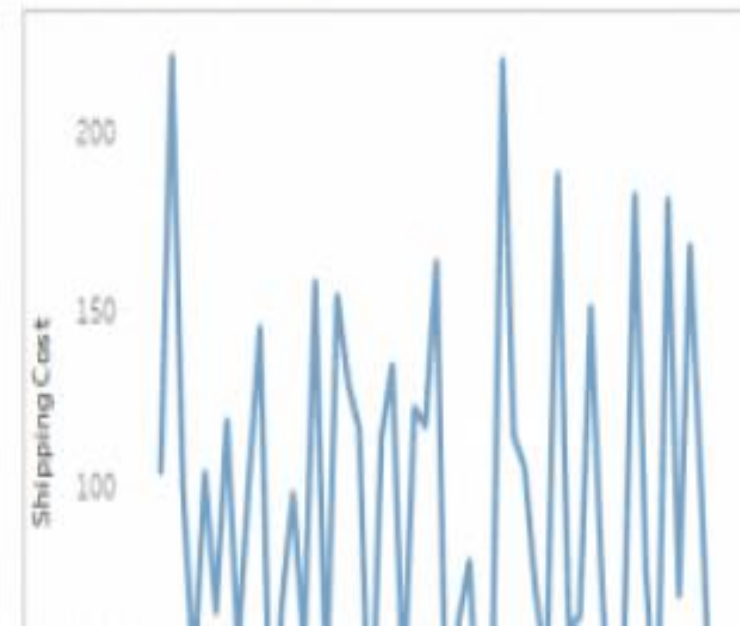
SALES TREND



ORDER QUANTITY TREND



SHIPPING COST TREND



Guidelines

Round Your Numbers -

Be careful with colors: Choose a few and stick to them

(company colors, consistent, not too many different colors, 2-3 colors and play with gradients, highly saturated colors only where needed, same colors for matching items across all charts – minimize the mental effort, more comprehensible)

