DASHBOARD DESIGN

PRESENTATION AND VISUALIZATION – MIREIA RIBERA

DATA SCIENCE MASTER DEGREE

2 DEFINITION (a)

A dashboard is

a visual display
of the most important information
needed to achieve one or more objectives that has been

consolidated on a single screen

so it can be monitored at a glance

Few, 2013

3   DEFINITION (b)

A dashboard in business

is a tool to manage

the most important business information

from a single point of access.

It helps managers and employees to keep track of company's KPIs. (Key performance indicators)

It also utilizes business intelligence to help companies make data-driven decisions.

Klipfolio.com

4 DESIGN GUIDELINES

- Consider your end goal

- Consider your audience

- Be selective

- Choose relevant KPIs

- Provide context

- Simplicity over detail

- Display a focal point

- Be consistent

- Layout and white space
  - One single screen

- Include interaction

+ Visualization best practices

Adapted from: https://uxplanet.org/10-rules-for-better-dashboard-design-ef68189d734c

5 CONSIDER YOUR END GOAL:
TYPES OF DASHBOARDS

OPERATIONAL

Immediate action

- Current performance

- Real time

ANALYTICAL

Drive decision making

- Explore data

- Discover trends

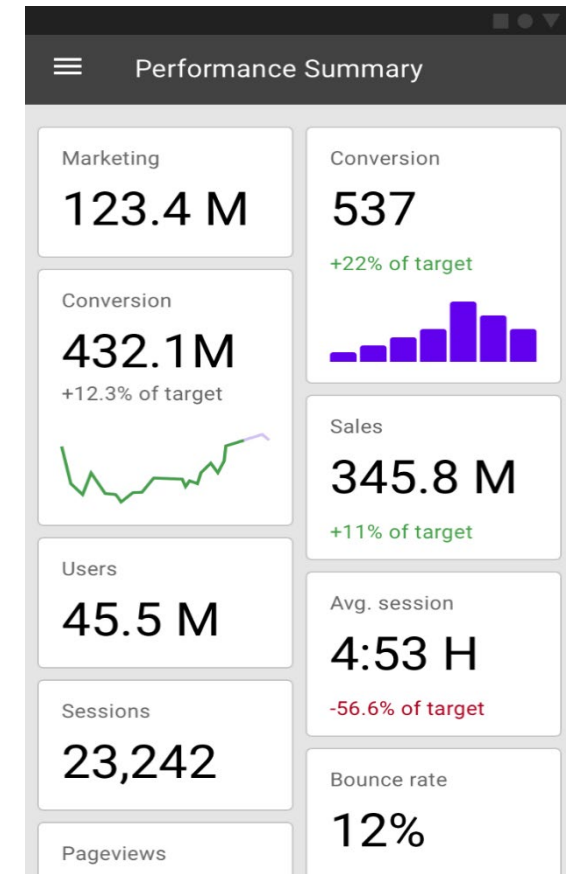- Establish targets

6 OPERATIONAL DASHBOARD: EXAMPLES
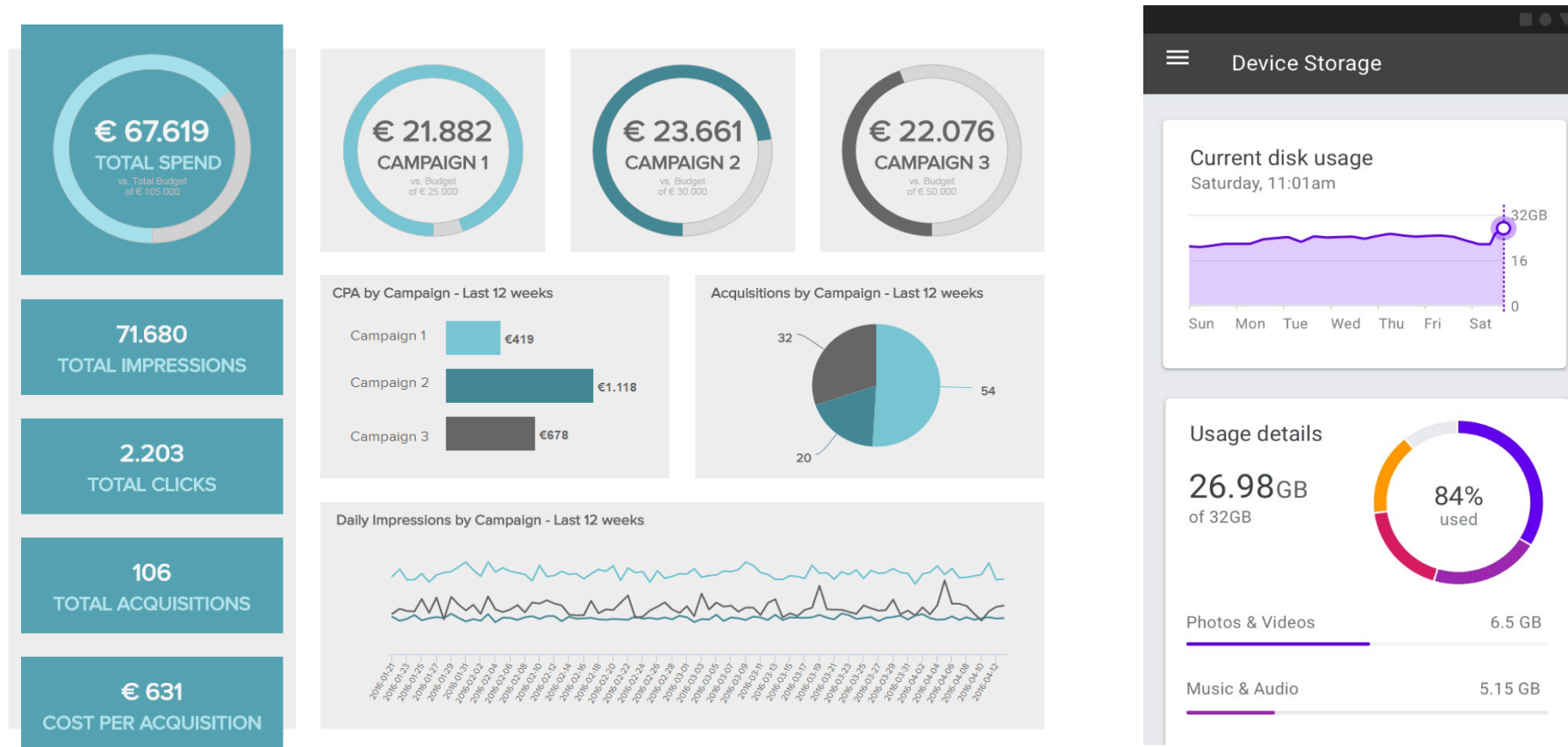
7 ANALYTICAL DASHBOARD: EXAMPLES

Source: https://www.datapine.com/blog/strategic-operational-analytical-tactical-dashboards/; https://material.io/design/communication/data-visualization.html#dashboards

8 PRESENTATION DASHBOARD

- A curated snapshot on a topic of interest

Source: Dashboard
design competition by
Stephen Few
The data
The author's solution
The competition
winner's version

Source: https://material.io/design/communication/data-visualization.html#dashboards
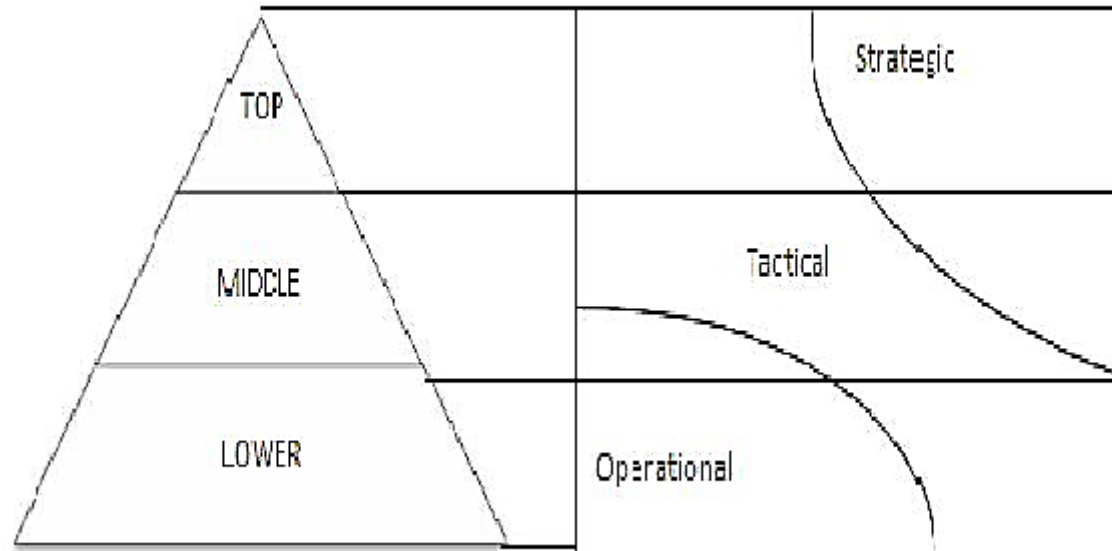
9 CONSIDER YOUR AUDIENCE

OPERATIONAL

Lower levels of business

ANALYTICAL

Managers or experts

10   BE SELECTIVE

Don't

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013

11 BE SELECTIVE

Do

Source: https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

12   RELEVANT KPIs

Don't   **Do**

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
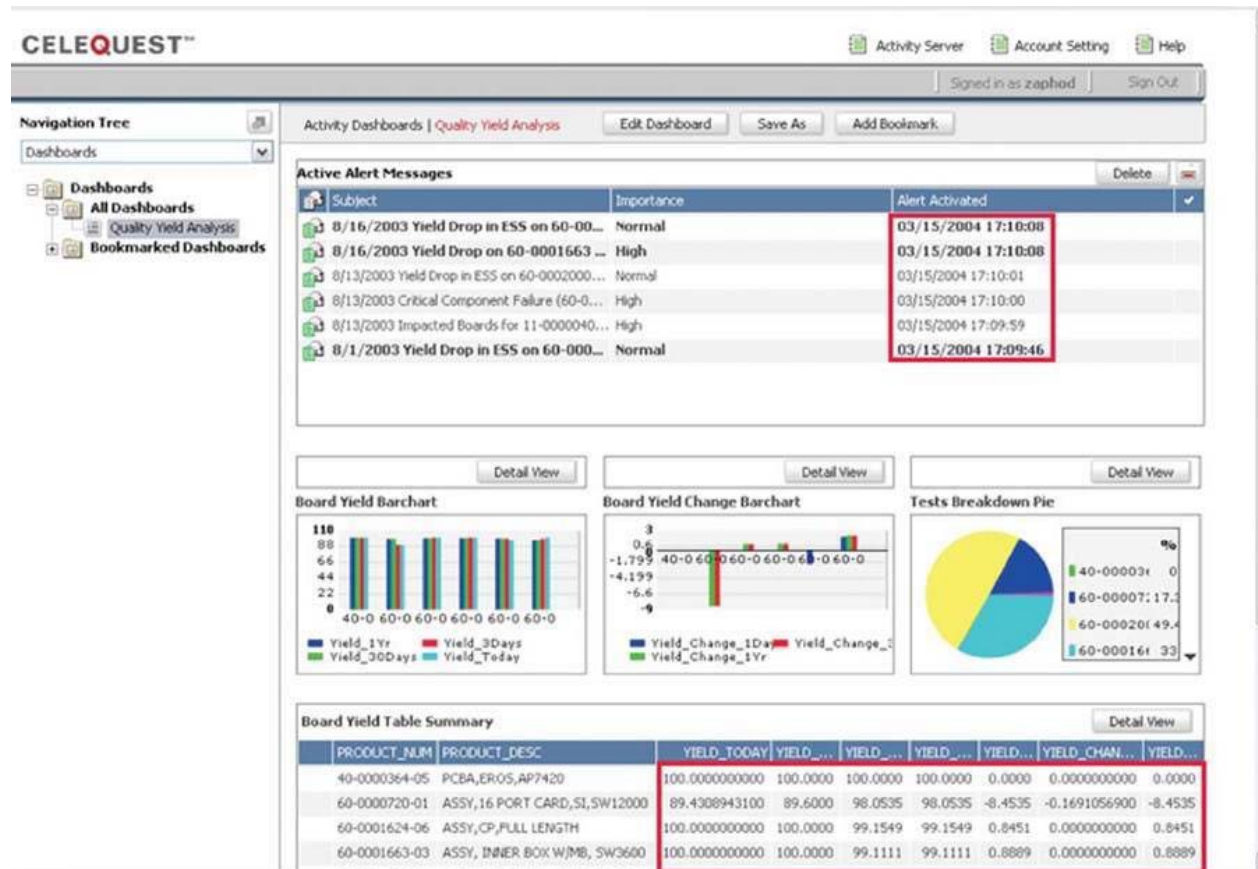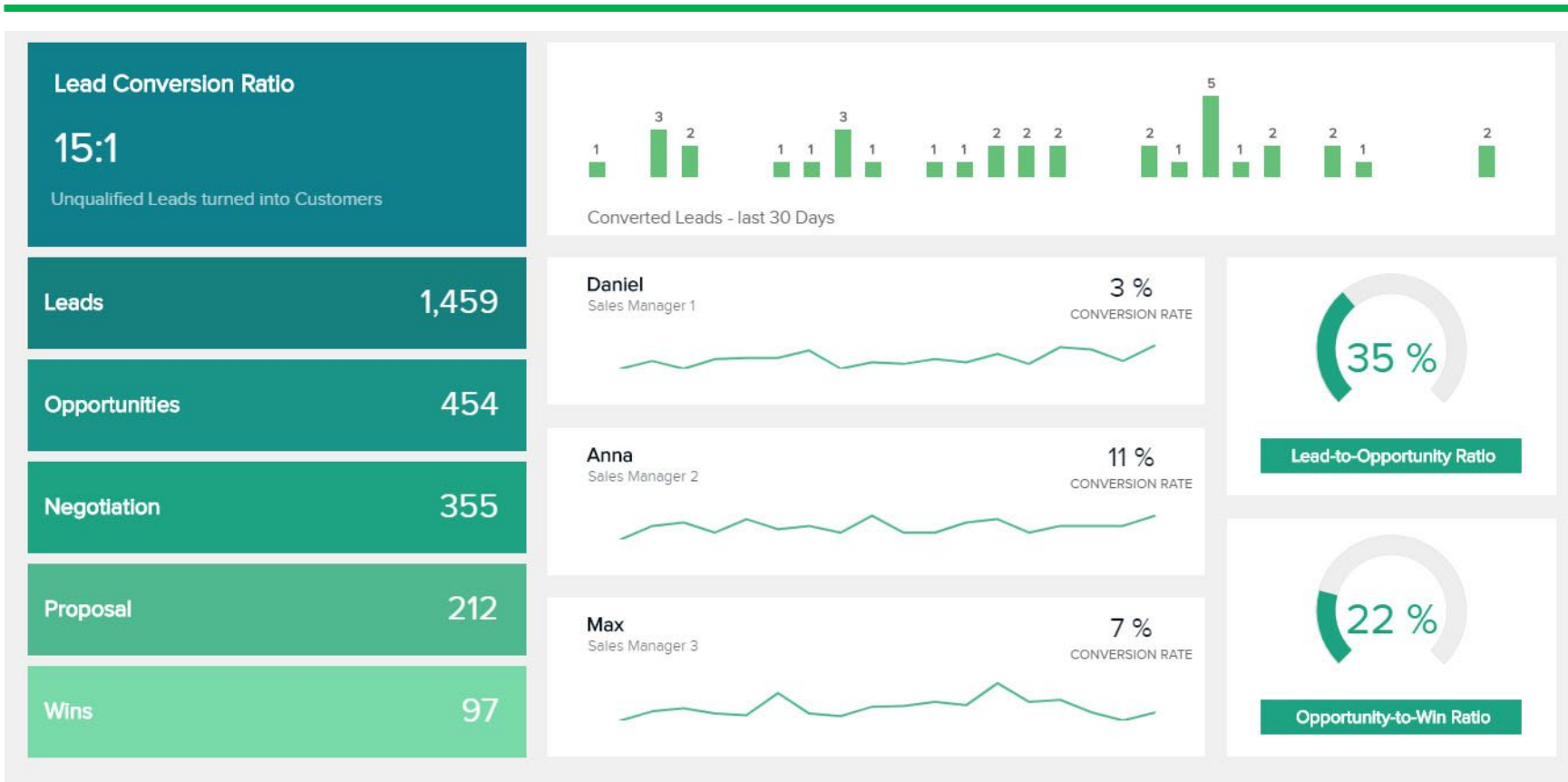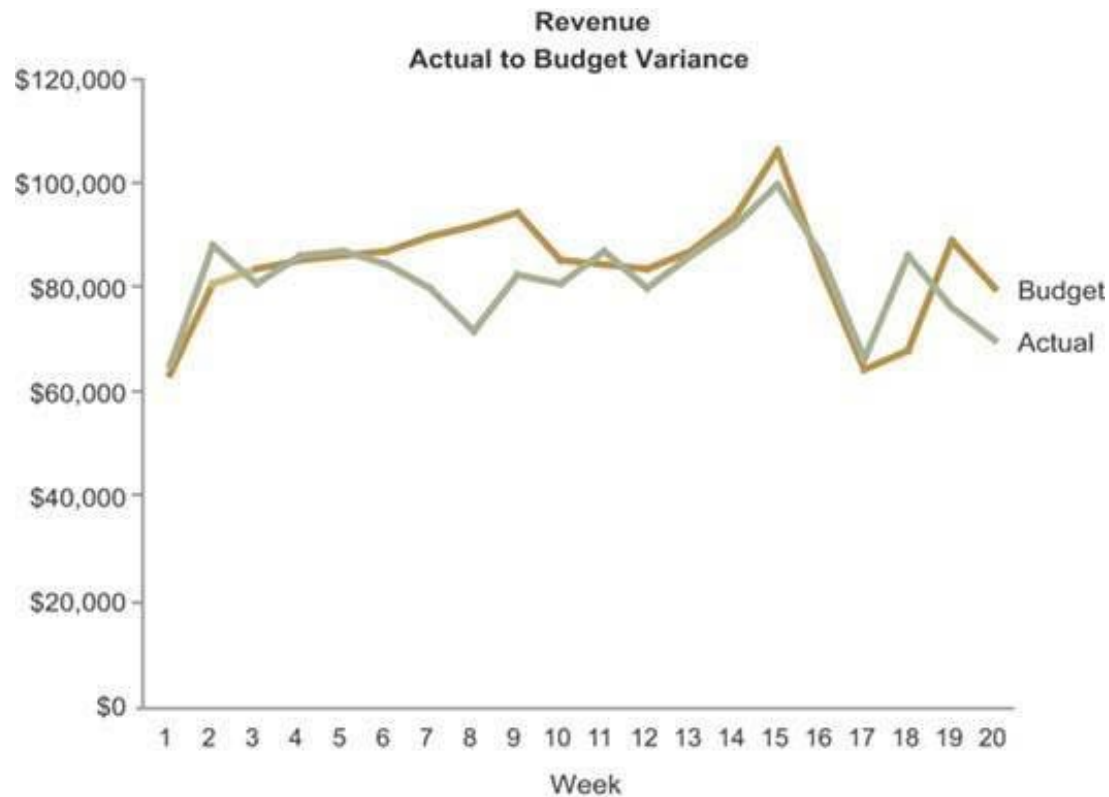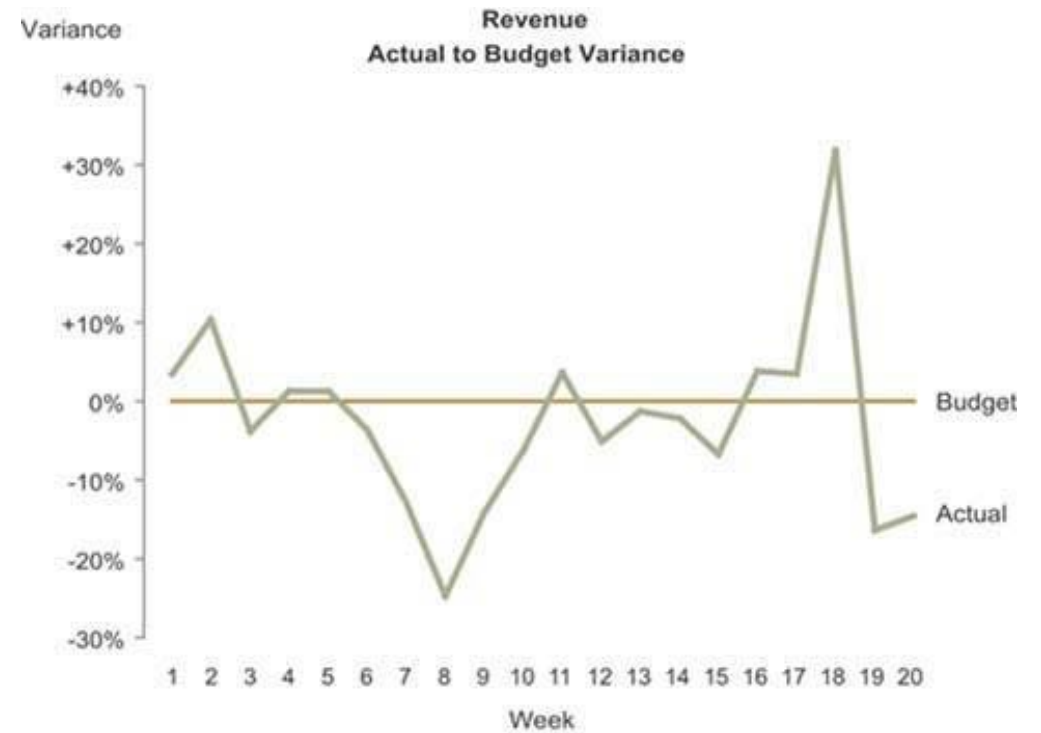
13   CONTEXT

Don't

Do

14   SIMPLICITY

Don't

Don't

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
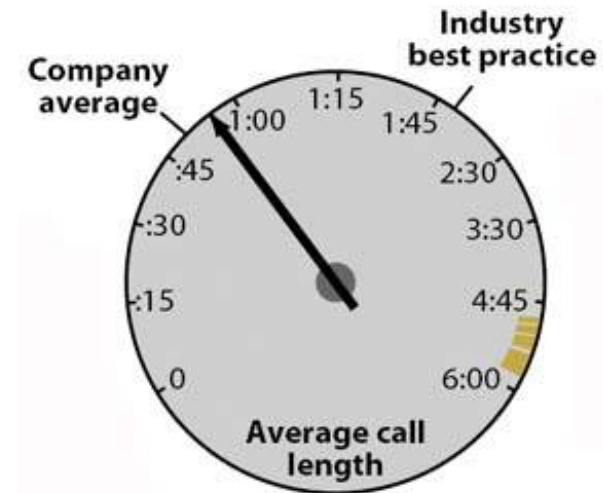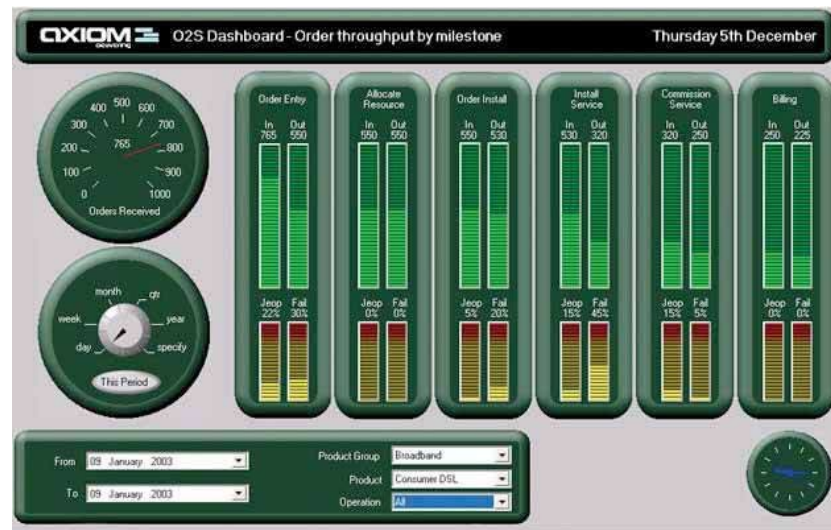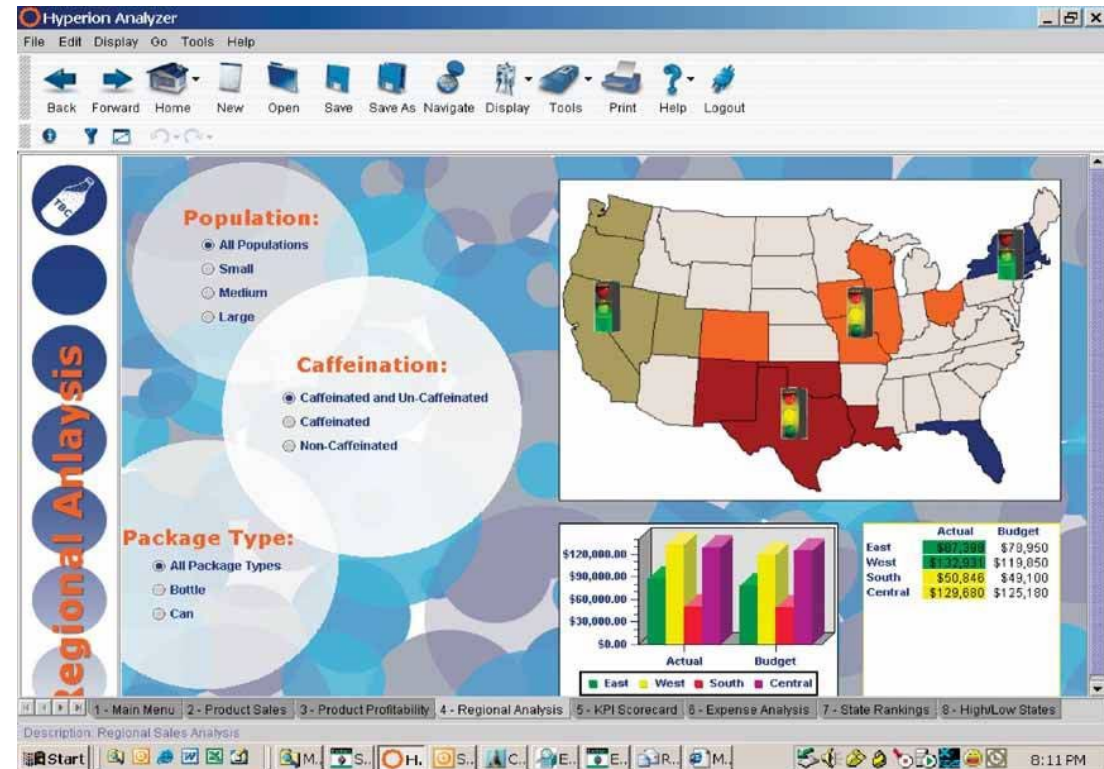
15 SIMPLICITY

Do

16 FOCAL POINT

Don't

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013

17 BE CONSISTENT

Don't
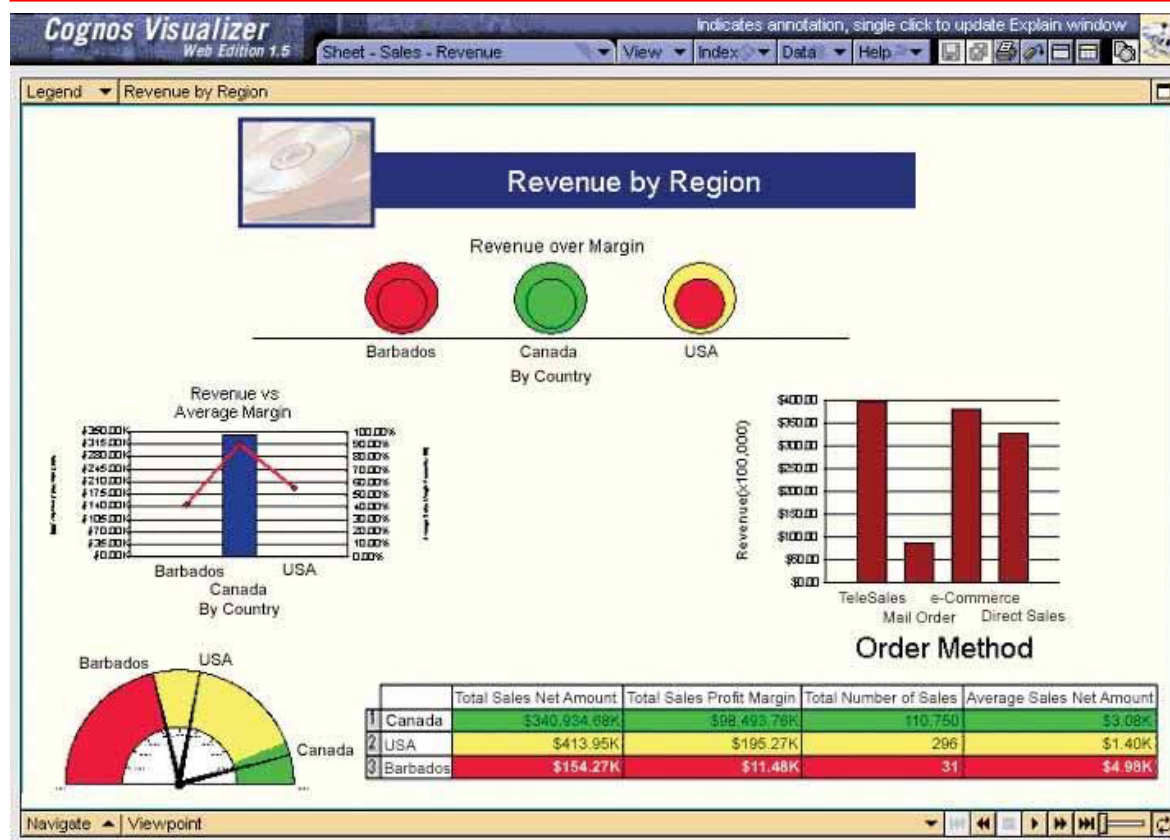
Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
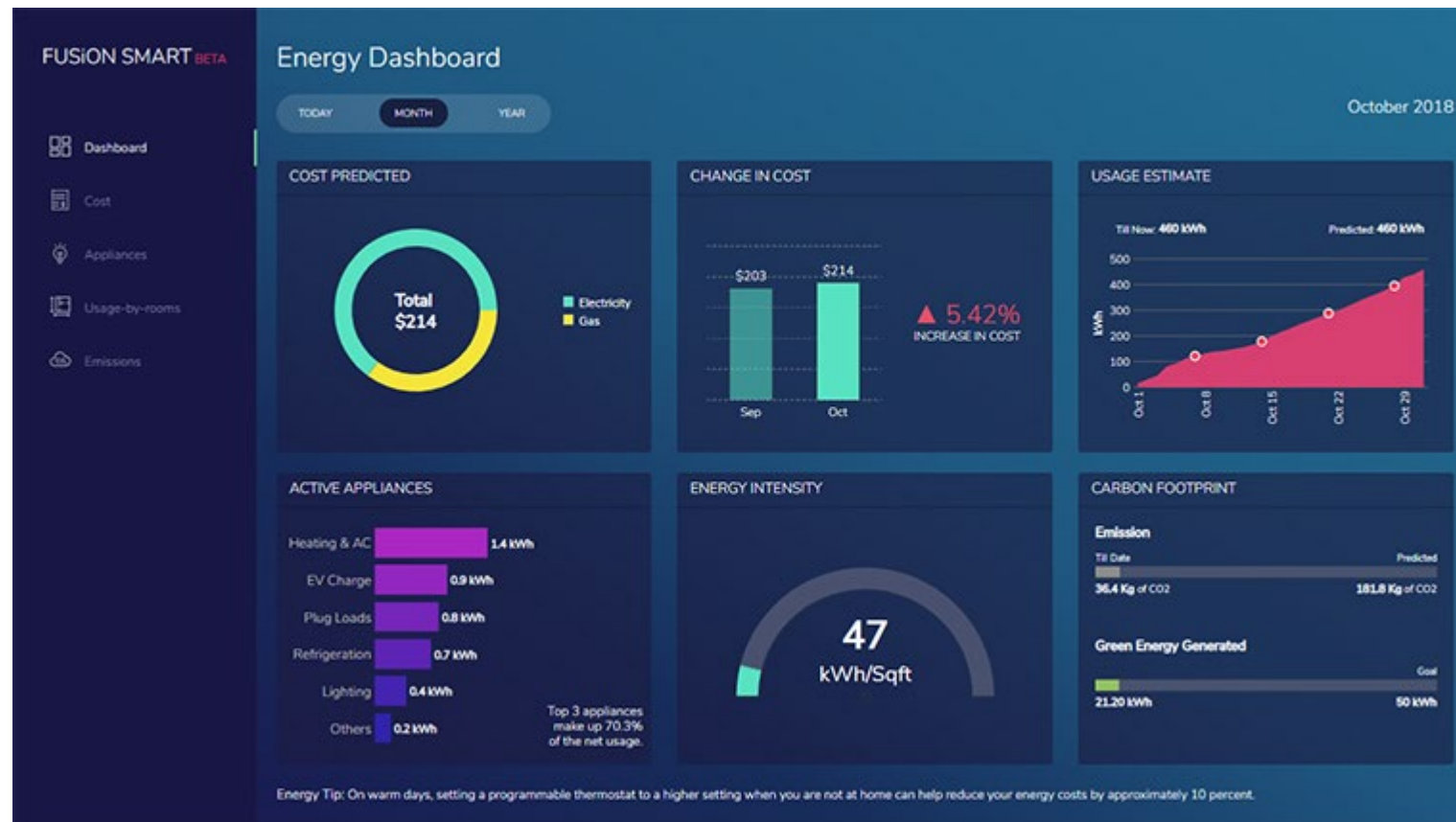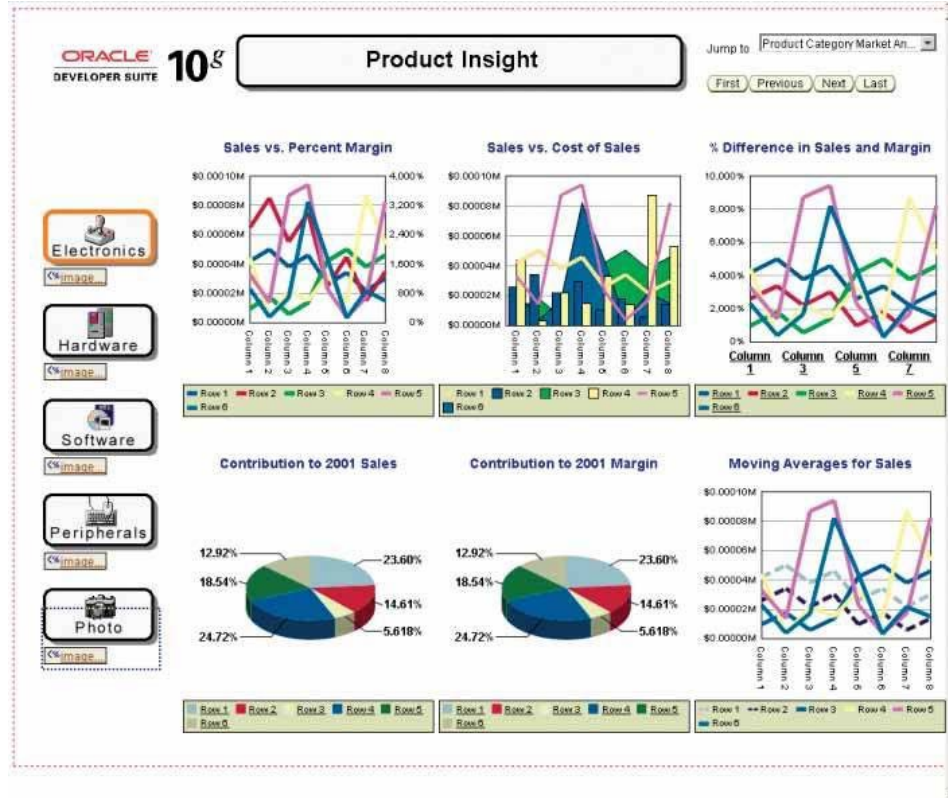
18   BE CONSISTENT

Do

Source: https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

19 LAYOUT

Do

Do

Source: https://uxplanet.org/10-rules-for-better-dashboard-design-ef68189d734c
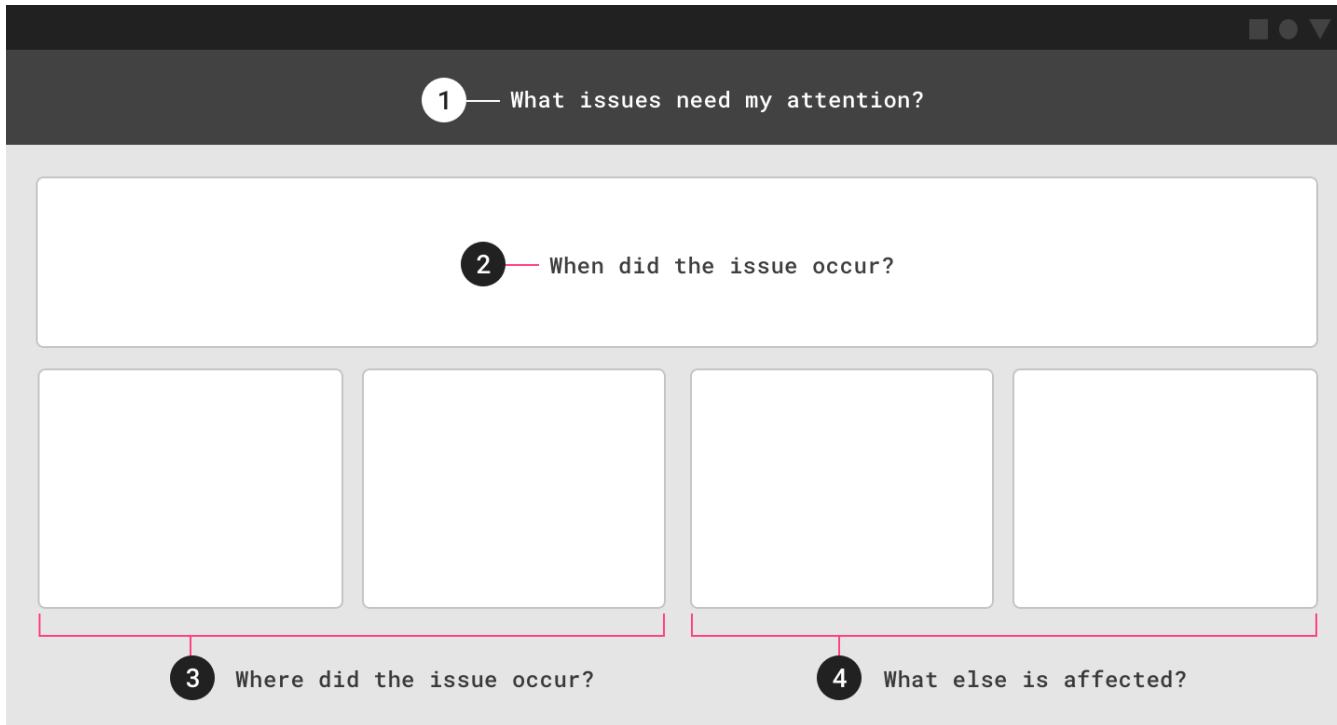
20 LAYOUT

Don't

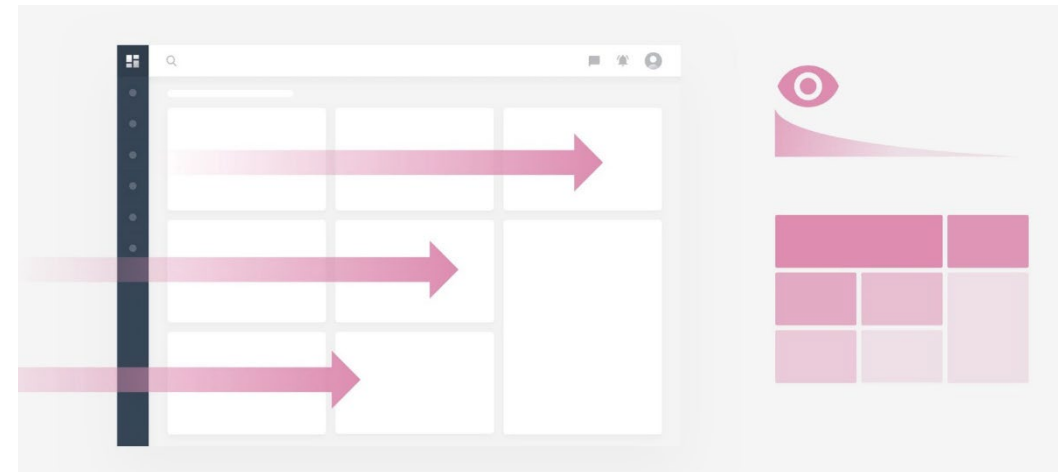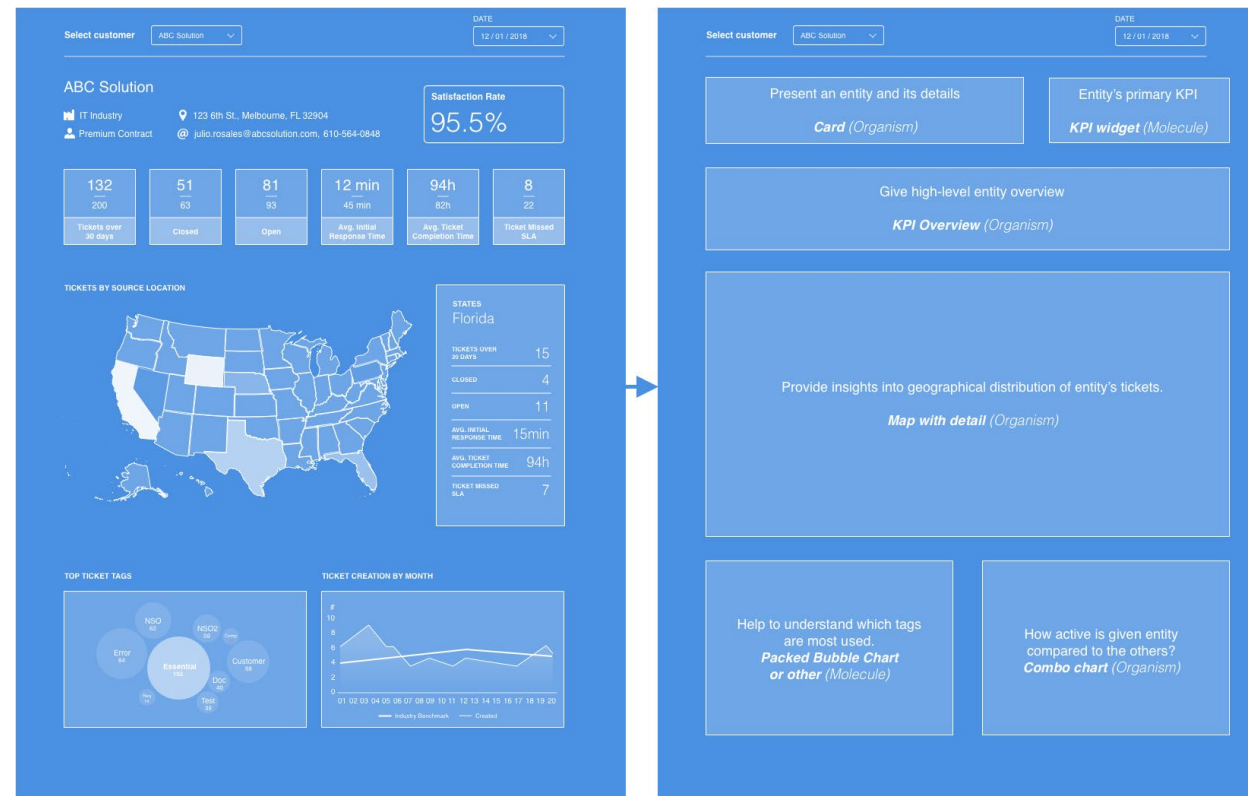Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013

21 HOW TO BUILD A DASHBOARD (I): HIGH LEVEL

- Dashboards are constructed of building blocks, the high level ones covering a use-case or need.

Source Ondrej Langr UX Anatomy of Dashboards [https://medium.com/gooddata-developers/ux-anatomy-of-dashboards-73dbf6515199]

22 HOW TO BUILD A DASHBOARD (II): COMPONENTS

- Each high level component consist on individual charts and KPIs
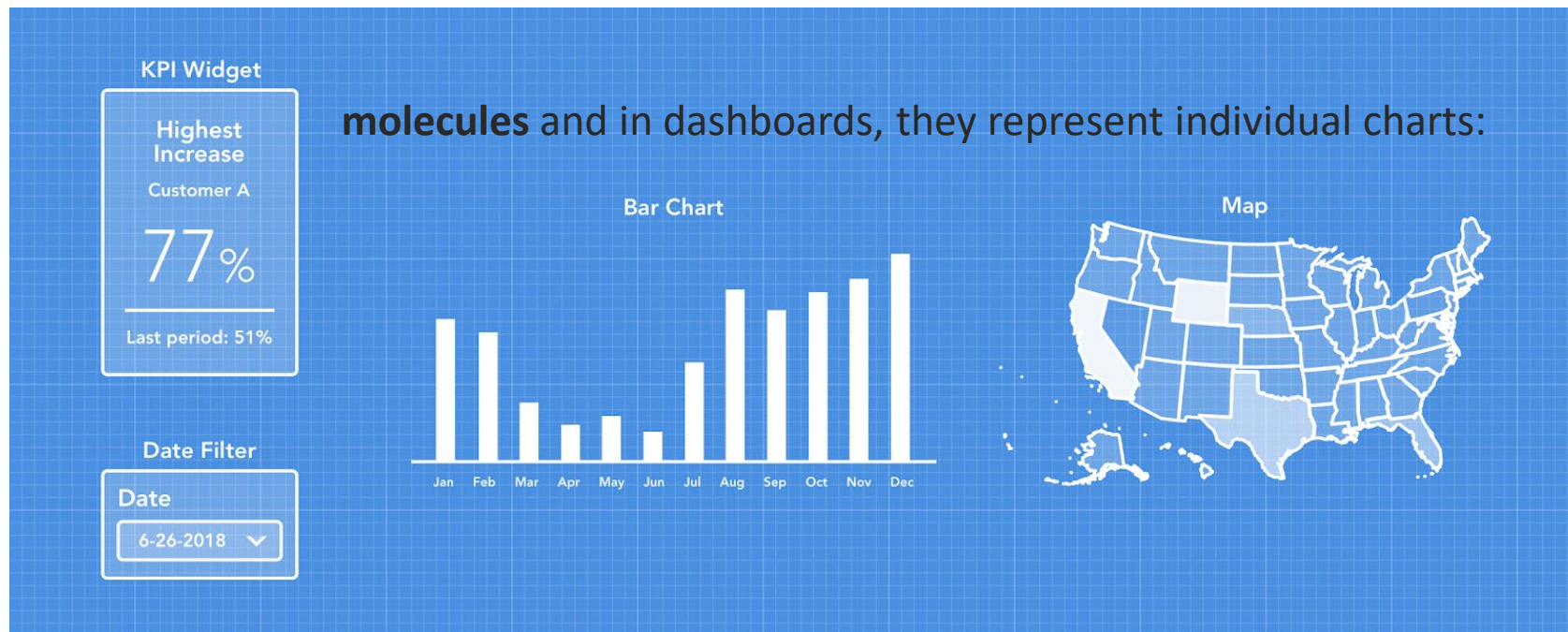
Source Ondrej Langr UX Anatomy of Dashboards [https://medium.com/goo ddata-developers/ux-anatomy-of-dashboards-73dbf6515199]
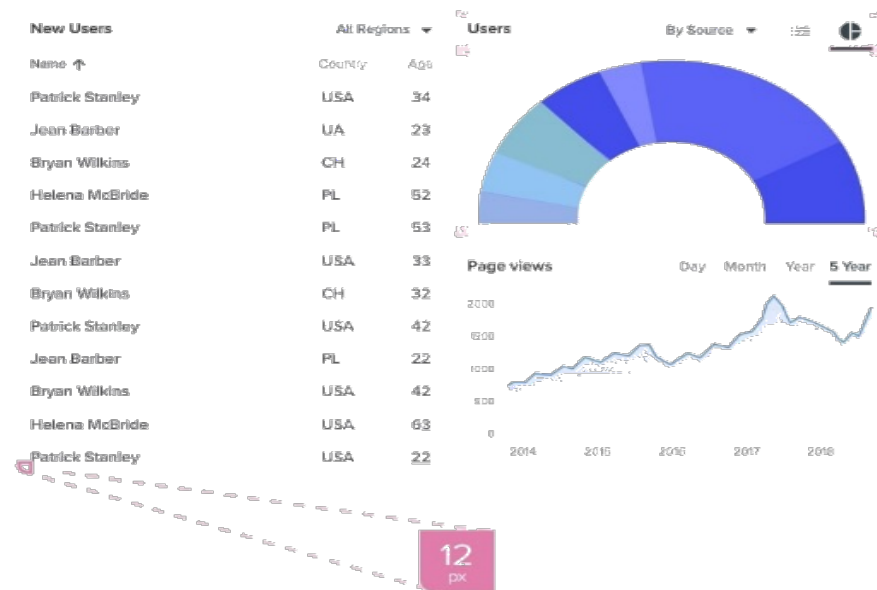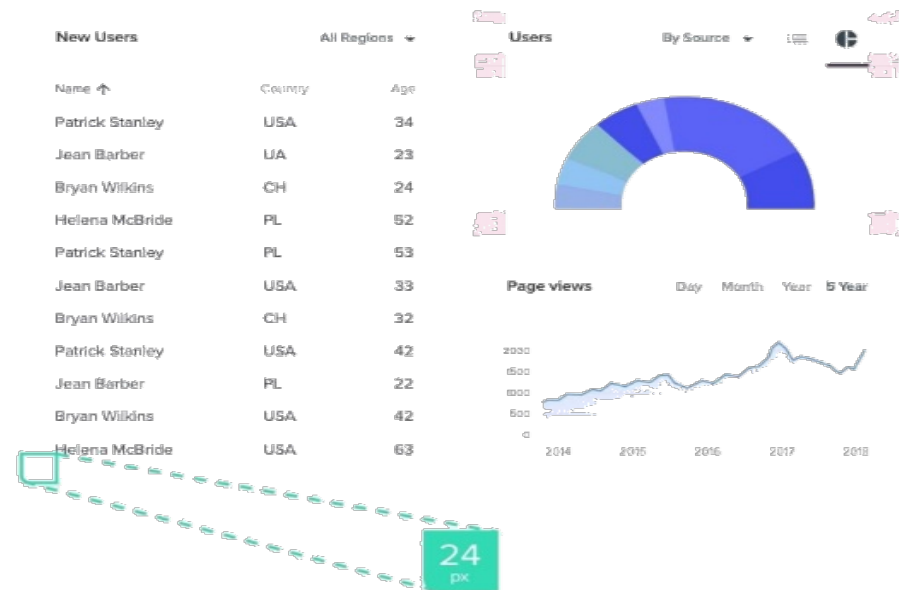
23   WHITE SPACE

Source: https://material.io/design/communication/data-visualization.html#dashboards

24 ONE SINGLE SCREEN

Don't

Do

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013; https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

25   ONE SINGLE SCREEN

Don't

Do

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
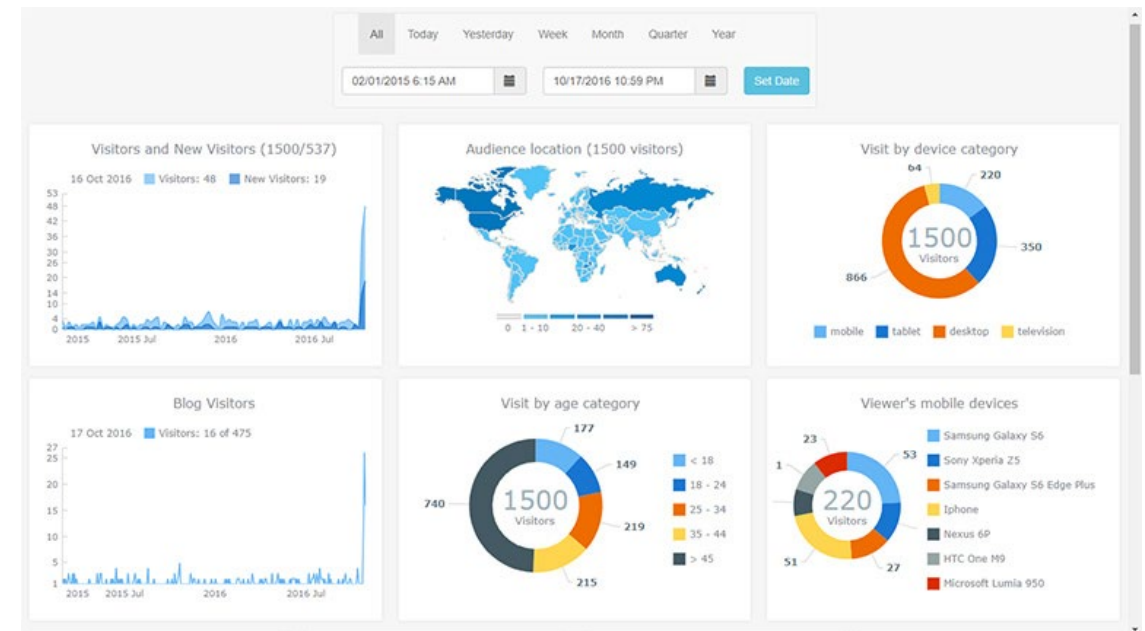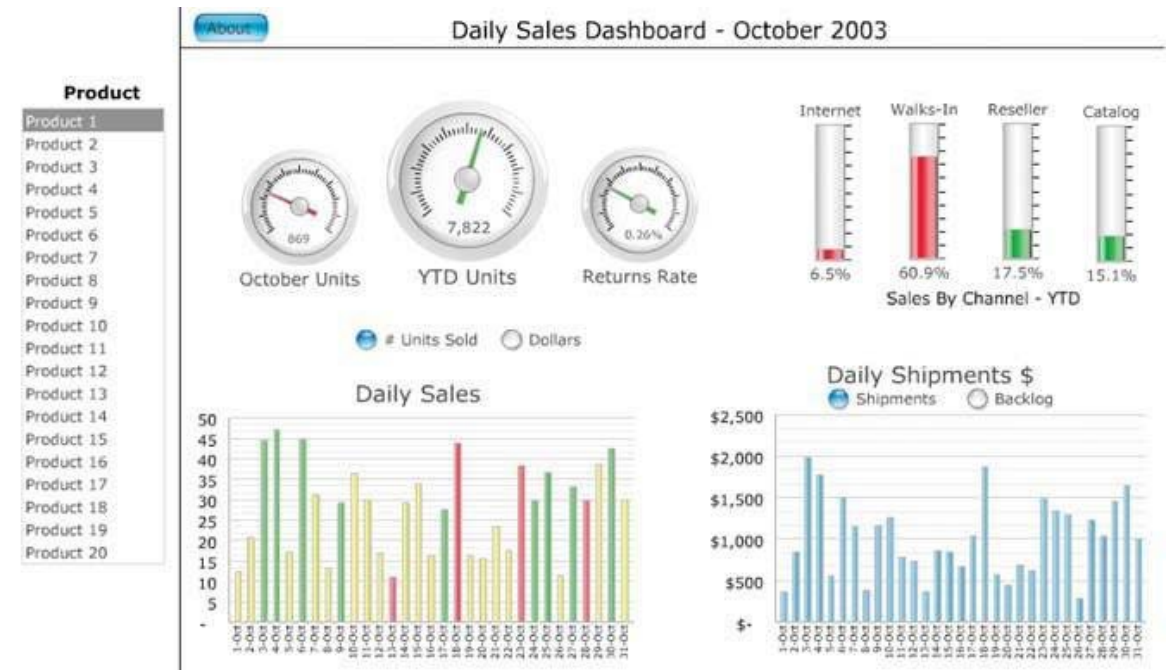
VISUALIZATION BEST PRACTICES: UNTRUTHFUL CHARTS

26

Don't

Do

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
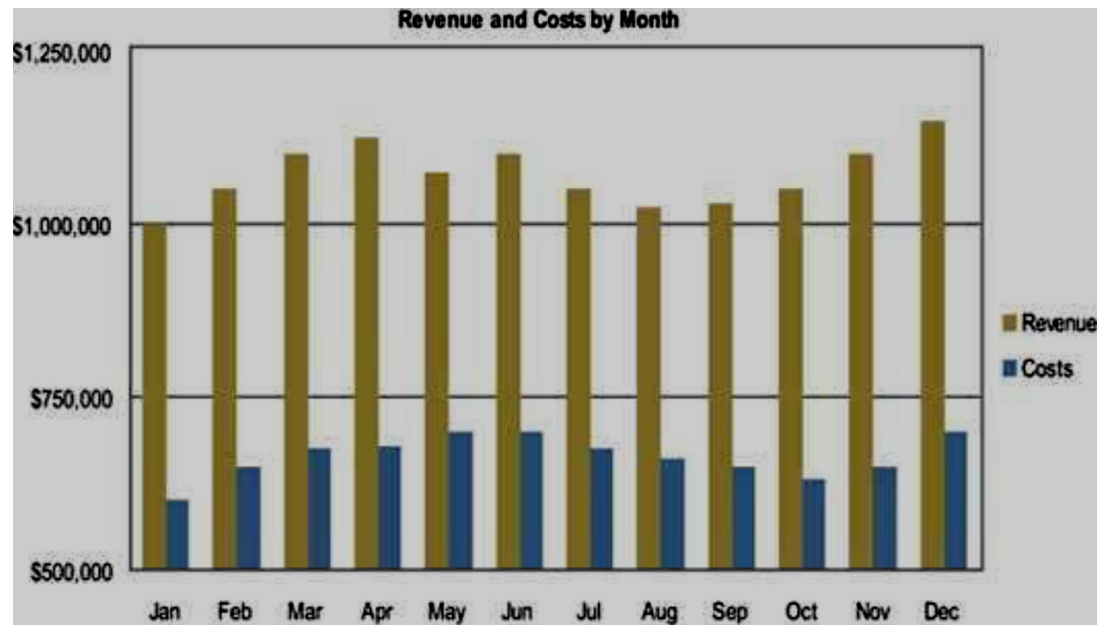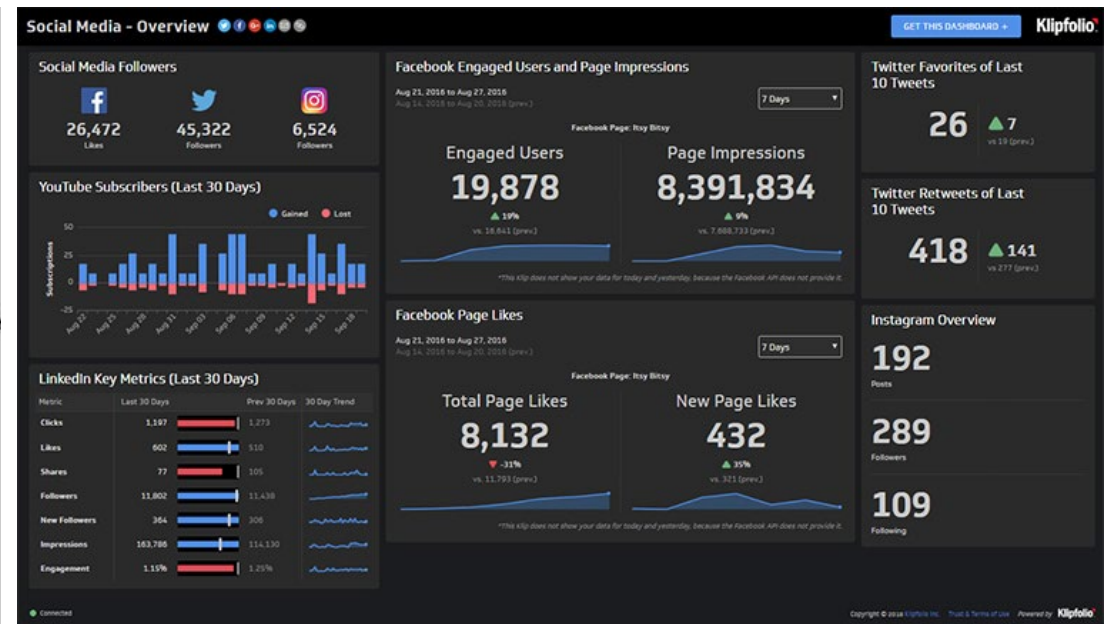
27 VISUALIZATION BEST PRACTICES:
TYPE OF CHART

Don't

Do

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
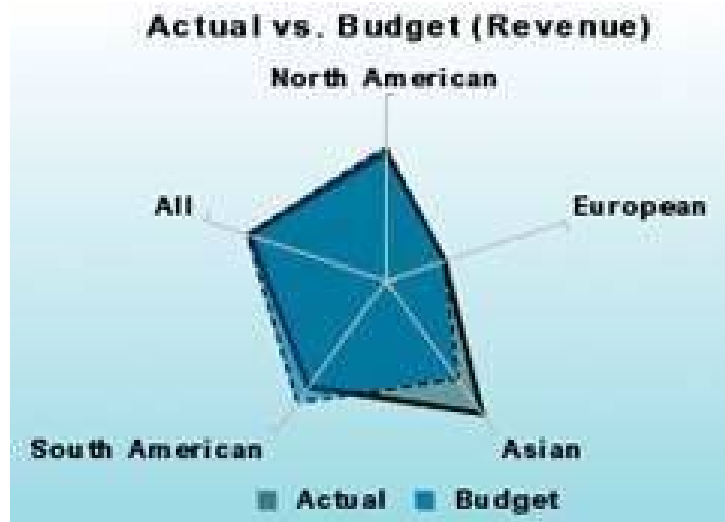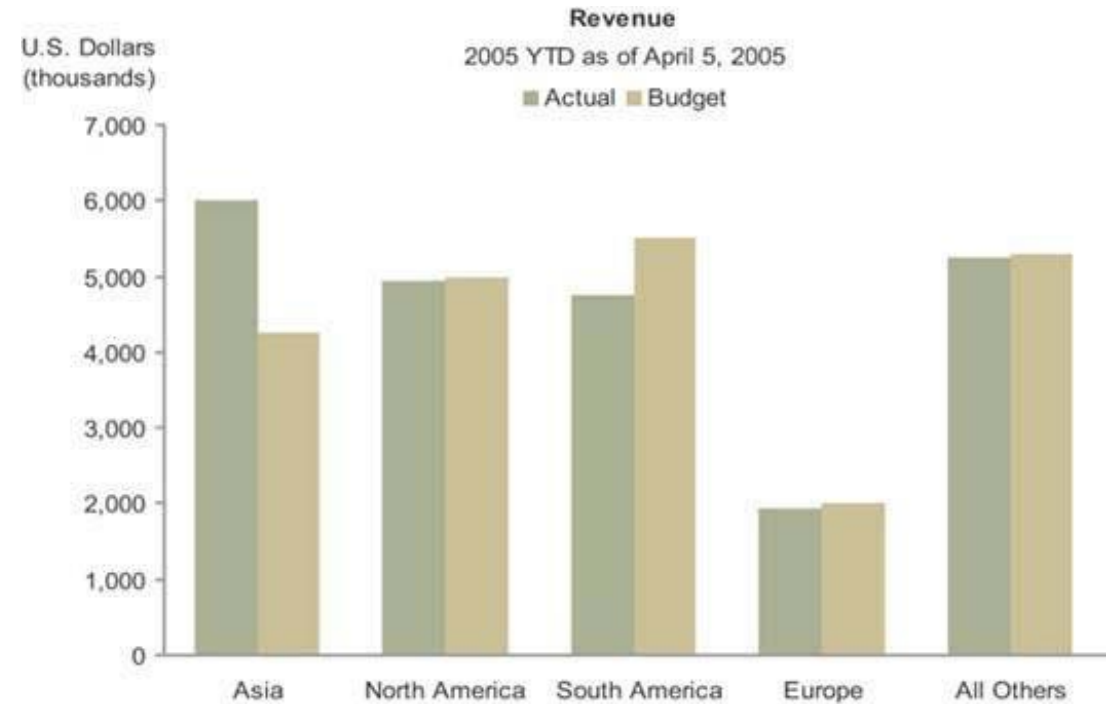
28 VISUALIZATION BEST PRACTICES: TYPE OF CHART

Do

- # Bullet charts

  Revenue 2005 YTD
  (U.S. $ in thousands)

  0   50   100   150   200   250   300

- # Sparklines

  glucose 6.6
  respiration 12
  temperature 37.1°C

- # HeatMaps

  A   B
  1
  2
  3
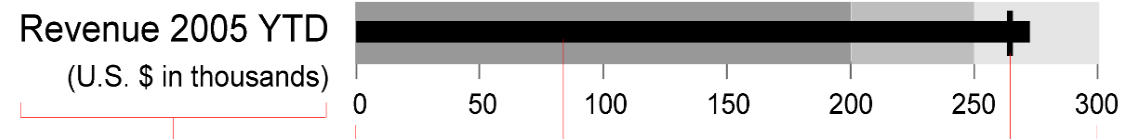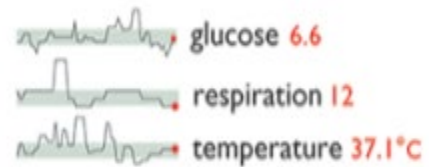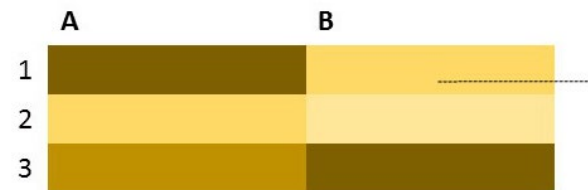
29 VISUALIZATION BEST PRACTICES: ENCODING

Don't

Don't

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013
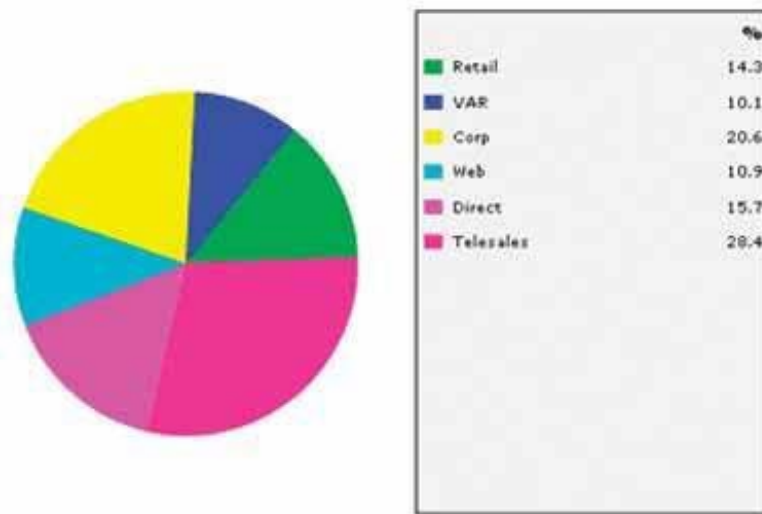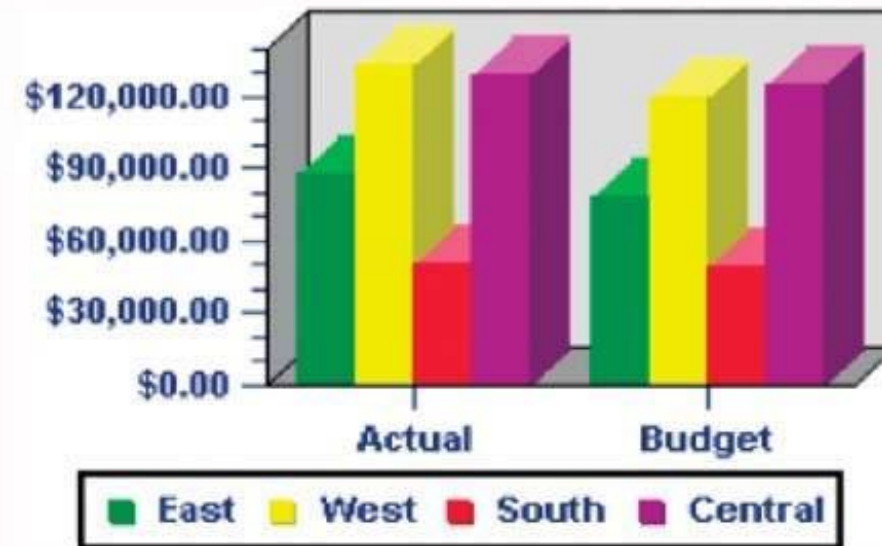
30   VISUALIZATION BEST PRACTICES:
ENCODING

Do

Source: https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

31 VISUALIZATION BEST PRACTICES: AESTHETICS

Don't

Source: Stephen Few *Information dashboard design* 2nd ed. California: Analytics Press, 2013

32 VISUALIZATION BEST PRACTICES: AESTHETICS

Do

Source: https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

33 VALIDATION

Once you have a prototype of your dashboard, go to the users and ask them:

- What: what information in your opinion will this graph represent

- Why: why is it (isn't it) useful? What would you use it for?

- Control: What control would you like to have over this data?

Source Joanna Martin "Designing a dashboard: how to make sure it Will show useful data. Sep 18, 2018

34

QUESTIONS?

Presentation and visualization

SOME CRITICAL THOUGHTS ABOUT DASHBOARDS

- Taylor Brownlow, 2020, apr 9th "Dashboards are dead" the author presents the limitations on trust and customization of Dashboards and defends Notebooks as an alternative