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

5 CONSIDER YOUR END GOAL: TYPES OF DASHBOARDS

OPERATIONAL

Immediate action

- Current performance
- Real time

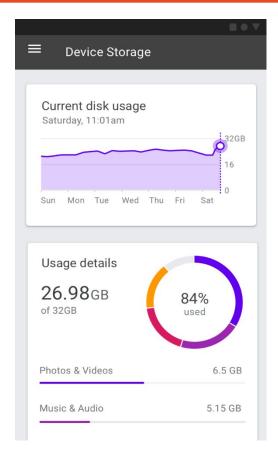
ANALYTICAL

Drive decision making

- Explore data
- Discover trends
- Establish targets

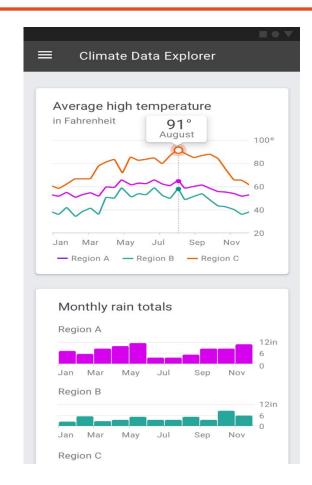
6 OPERATIONAL DASHBOARD: EXAMPLES





7 ANALYTICAL DASHBOARD: EXAMPLES





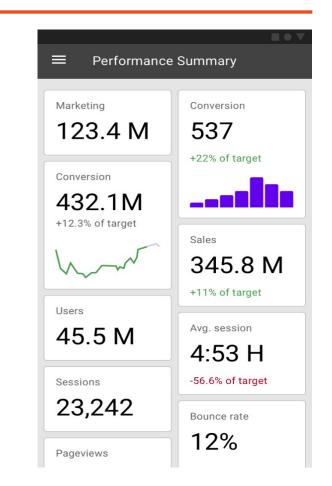
Source: https://www.datapine.com/blog/strategic-operational-analytical-tactical-dashboards/; <a href="https://www.data

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



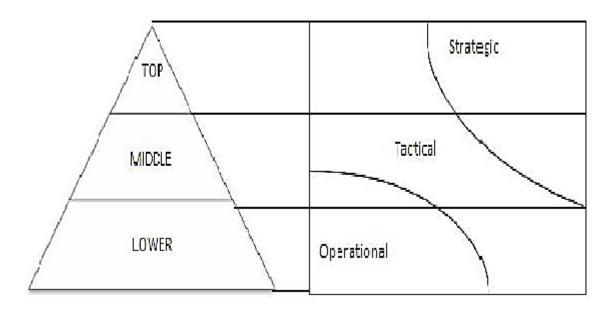
9 CONSIDER YOUR AUDIENCE

OPERATIONAL

Lower levels of business

ANALYTICAL

Managers or experts



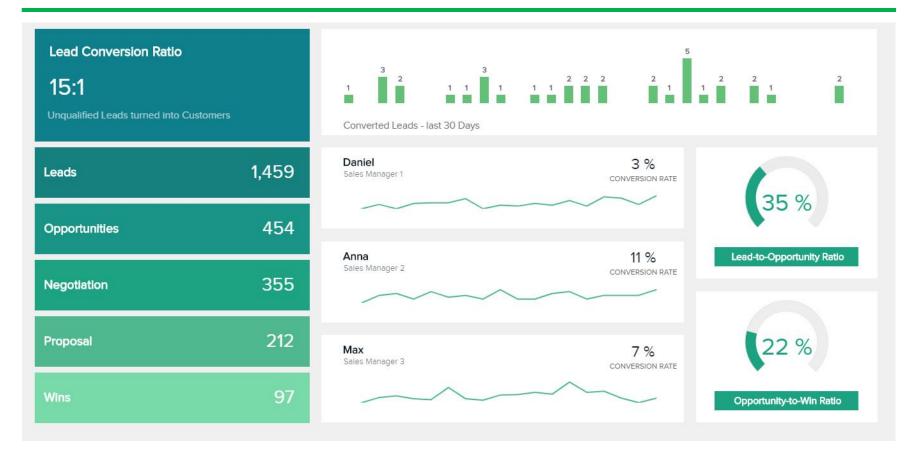
10 BE SELECTIVE

Don't CELEQUEST" Activity Server Account Setting Help Signed in as zephod Sign Out **Navigation Tree** Activity Dashboards | Quality Yield Analysis Edit Dashboard Save As Add Bookmark Dashboards **Active Alert Messages** Delete **□** □ Dashboards Alert Activated All Dashboards @ 8/16/2003 Yield Drop in ESS on 60-00... Normal 03/15/2004 17:10:08 Quality Yield Analysis 8/16/2003 Yield Drop on 60-0001663 ... High 03/15/2004 17:10:08 8/13/2003 Yield Drop in ESS on 60-0002000... Normal 03/15/2004 17:10:01 03/15/2004 17:10:00 8/13/2003 Critical Component Failure (60-0... High 03/15/2004 17:09:59 6/13/2003 Impacted Boards for 11-0000040... High 03/15/2004 17:09:46 8/1/2003 Yield Drop in ESS on 60-000... Normal Detail View **Board Yield Barchart** Board Yield Change Barchart Tests Breakdown Pie -1.799 40-060 060-060-060-060-0 #40-00003t -4.199 +6.6 60-00007:17. 60-00020(49.4 ■ Yield_1Yr ■ Yield_3Days ■ Yield_30Days ■ Yield_Today ■ Yield_Change_1Da Yield_Change_ W Yield_Change_1Yr **Board Yield Table Summary** 40-0000364-05 PCBA,EROS,AP7420 60-0000720-01 ASSY,16 PORT CARD,SI,SW12000 60-0001624-06 ASSY, CP, FULL LENGTH 100.000000000 100.000 99.1549 99.1549 0.8451 0.000000000 0.8451 60-0001663-03 ASSY, INNER BOX W/MB, SW3600 100.0000000000 100.0000 99.1111 99.1111 0.8889 0.0000000000 0.8889

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

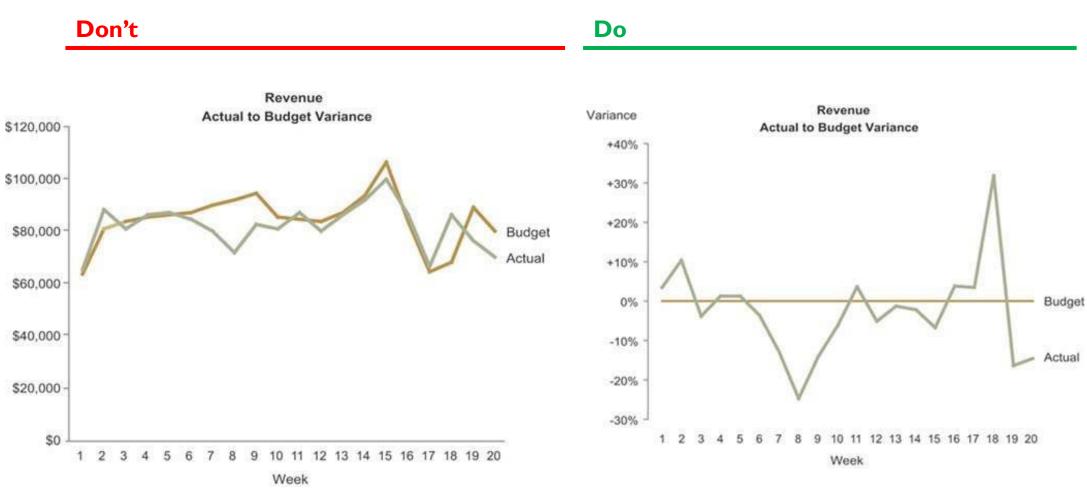
II BE SELECTIVE

Do



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

12 RELEVANT KPIs

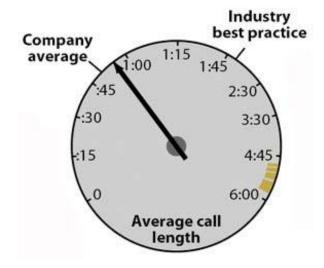


Source:Stephen Few Information dashboard design 2nd ed. California: Analytics Press, 2013

13 CONTEXT

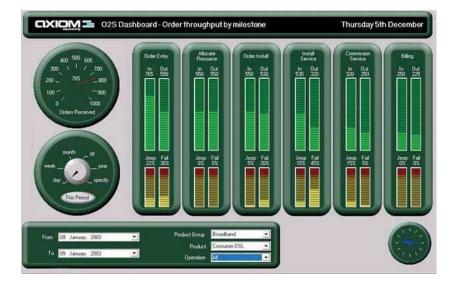
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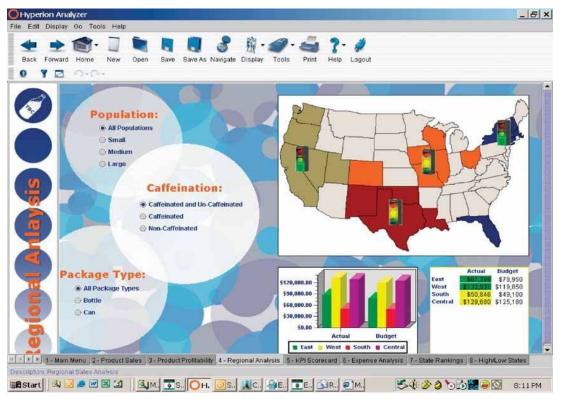


14 SIMPLICITY

Don't



Don't



15 SIMPLICITY

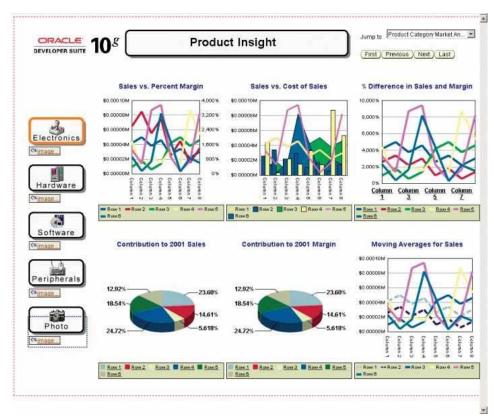
Do



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

16 FOCAL POINT

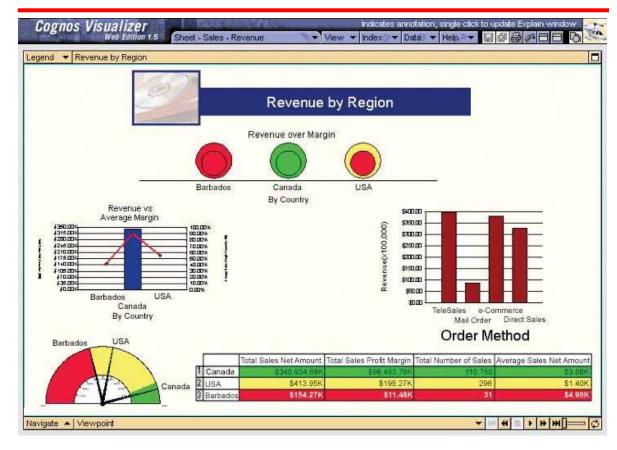
Don't



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 - What issues need my attention? - When did the issue occur? 3 Where did the issue occur? 4 What else is affected?

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

20 LAYOUT

Don't

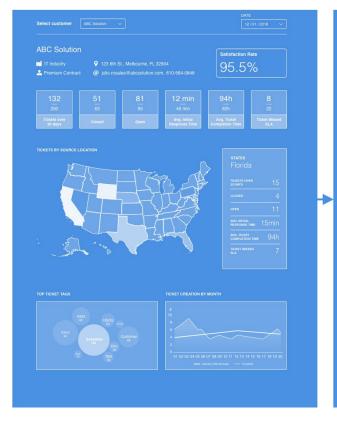


Source:Stephen Few Information dashboard design 2nd ed. California: Analytics Press, 2013

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.

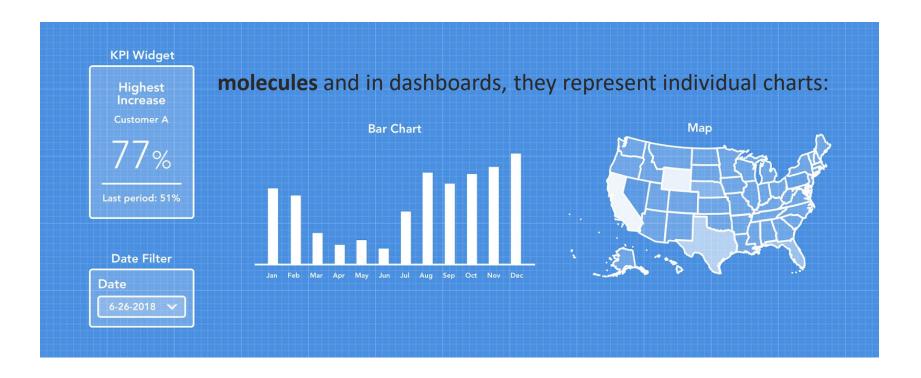




Source Ondrej Langr UX Anatomy of Dashboards [https://medium.com/goo ddata-developers/uxanatomy-of-dashboards-73dbf6515199]

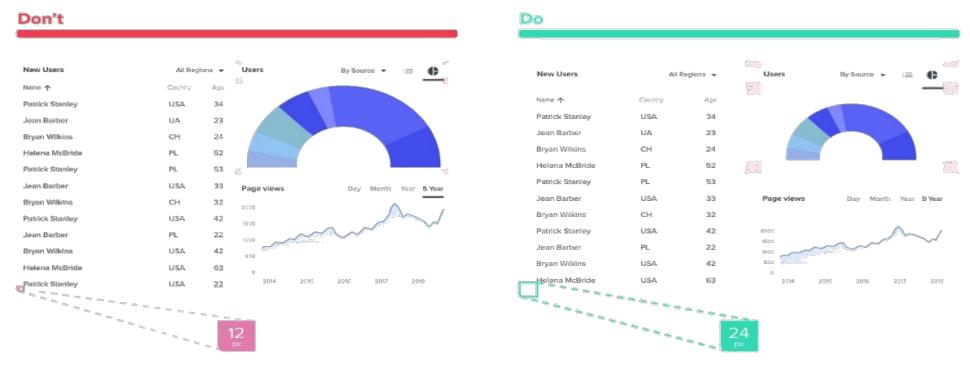
22 HOW TO BUILD A DASHBOARD (II): COMPONENTS

• Each high level component consist on individual charts and KPIs



Source Ondrej Langr UX Anatomy of Dashboards [https://medium.com/goo ddata-developers/uxanatomy-of-dashboards-73dbf6515199]

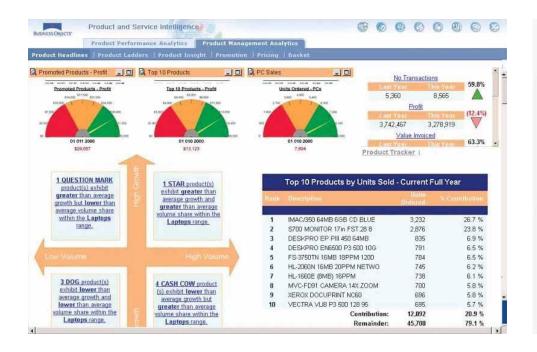
23 WHITE SPACE

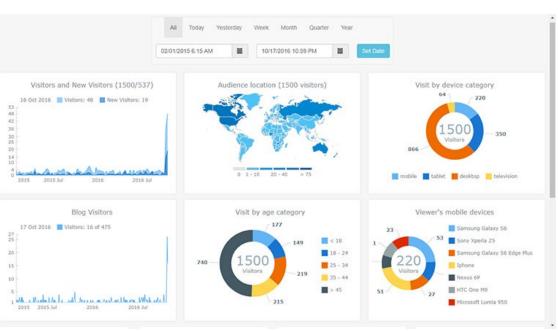


Source: https://material.io/design/communication/data-visualization.html#dashboards

24 ONE SINGLE SCREEN

Don't





25 ONE SINGLE SCREEN

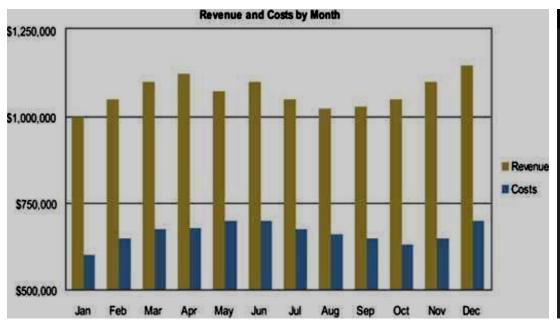
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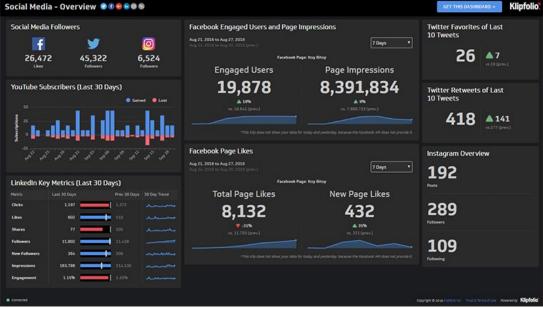




VISUALIZATION BEST PRACTICES: UNTRUTHFUL CHARTS

Don't

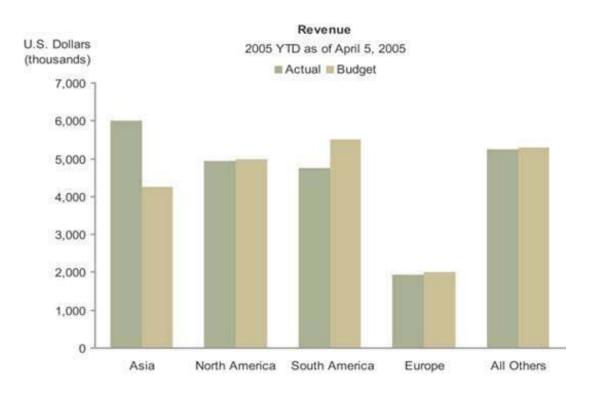




27 VISUALIZATION BEST PRACTICES: TYPE OF CHART

Don't

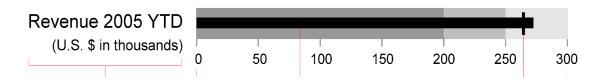
Actual vs. Budget (Revenue) North American European South American Asian Actual Budget



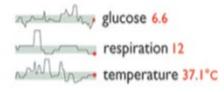
28 VISUALIZATION BEST PRACTICES: TYPE OF CHART



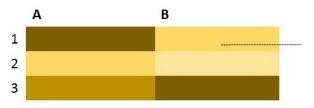
Bullet charts



Sparklines



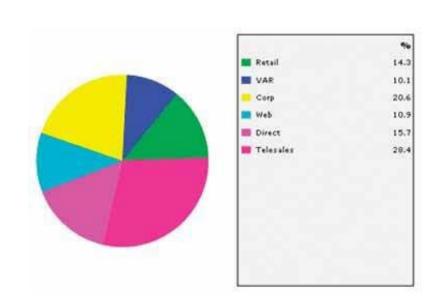
HeatMaps

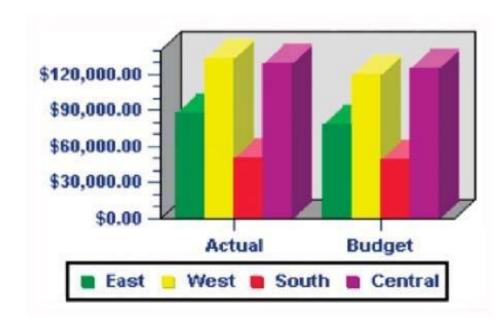


29 VISUALIZATION BEST PRACTICES: ENCODING

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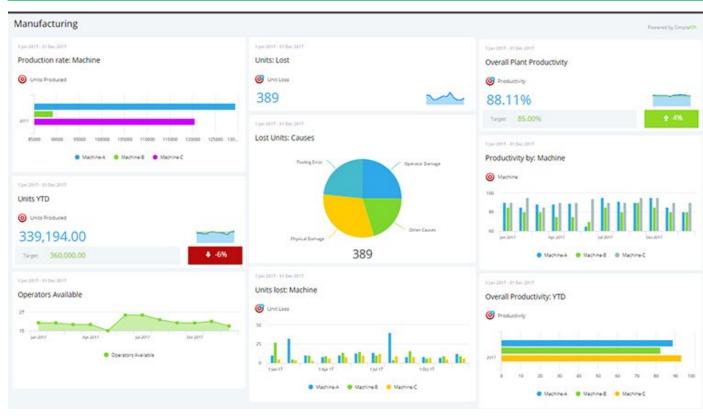
Don't





30 VISUALIZATION BEST PRACTICES: ENCODING

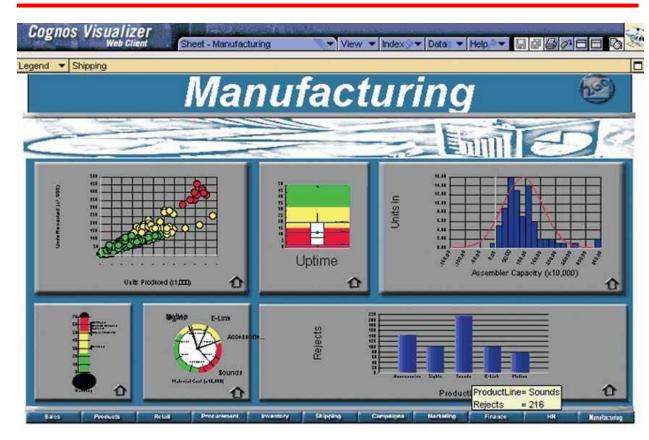




Source: https://www.codewall.co.uk/best-dashboard-examples-for-inspiration/

VISUALIZATION BEST PRACTICES: AESTHETICS

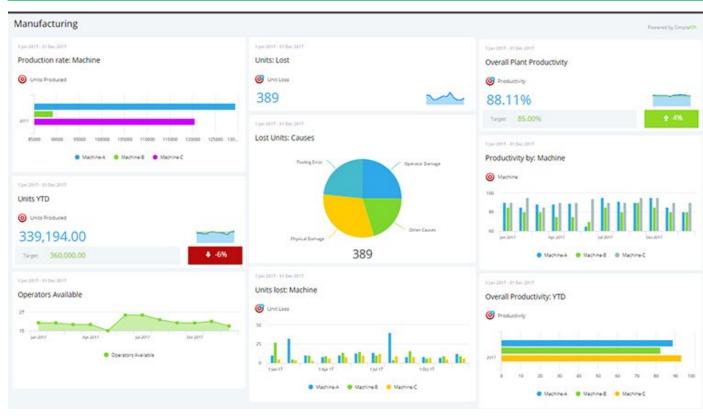
Don't



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

32 VISUALIZATION BEST PRACTICES: AESTHETICS





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?

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