



Designing a Campus Standard for Your Tableau Dashboards

Tom Dobrosielski & Danielle Glazer



UNIVERSITY OF
MARYLAND

Today's agenda

- Why create a template?
- Designing a template
- Building and using the template
- User adoption

Why we have a campus template

Why develop a template?

- Branding
- Consistency
- Accessibility
- Ease of use
 - Report users can easily navigate between reports and understand basic layout and functionality that is common across reports.
 - authors don't need to reinvent the wheel

Introducing... the University of Maryland template!

Header with
report title

Icons indicate data source(s)

REPORT TITLE (ALL CAPS)

SELECT ORGANIZATION:

SELECT TERMS:

SELECT :

Filters:

- College/division
- Terms
- Additional filters

Table/Visual Title - Include parameters to identify data on display

Visualizations and tables go here

<Office/Dept Name> - For assistance call <phone number> or email <email>

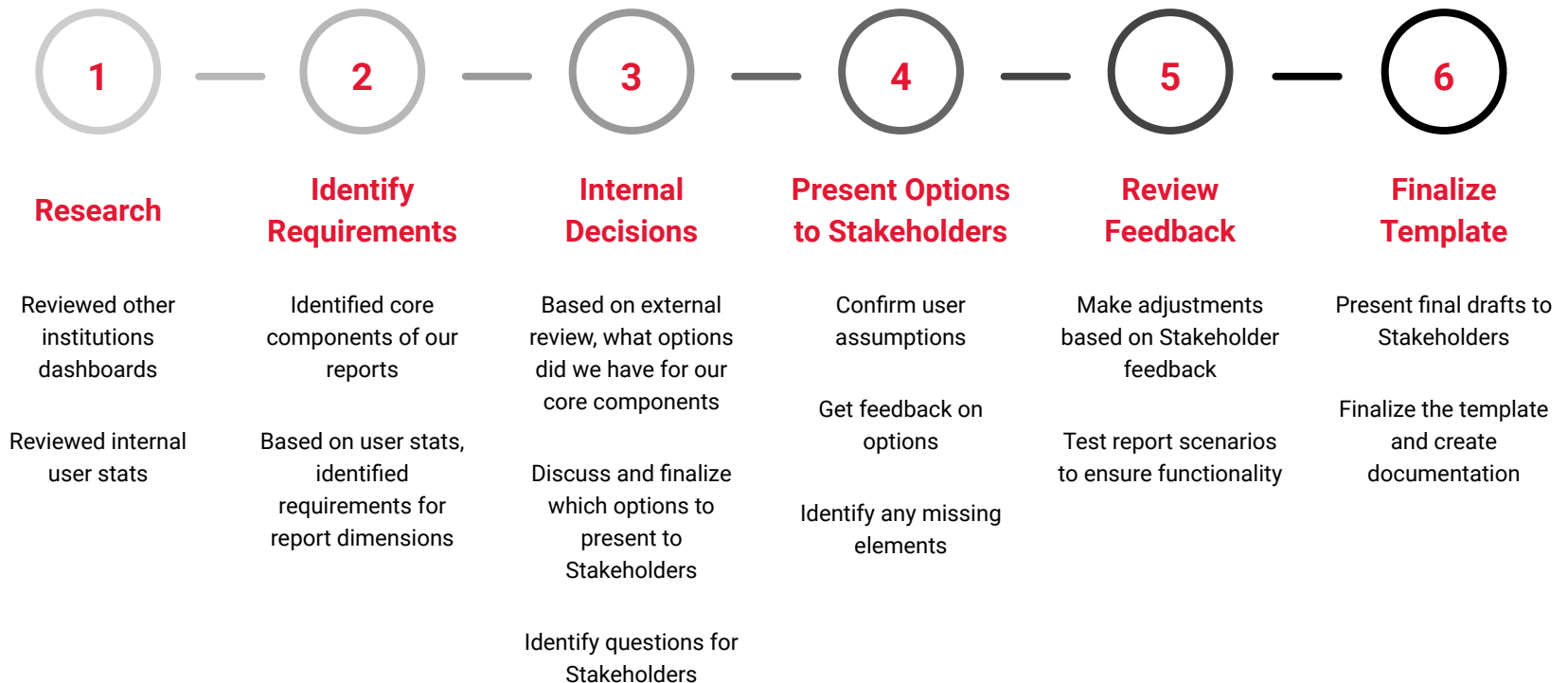
UMD logo

Footer with contact information

UMD logo

Designing a template

Our Design Process - An Overview



Researching Tableau

- IRPA Staff were tasked with reviewing Tableau dashboards developed by other Higher Ed institutions. Identify likes and dislikes.
- IRPA Staff Retreat to discuss – identify likes and dislikes.

Researching Tableau

FROM THE RETREAT



SIMPLE

VISUALS & VARIETY

USER EXPERIENCE

QUICK

REPORT NOTES



POOR COLOR CHOICES

NO USER GUIDANCE

CAN'T DISPLAY BIG DATA SETS

LAG

SMALL/UNREADABLE TEXT

Researching Tableau

AN IRPA REPORT SHOULD...

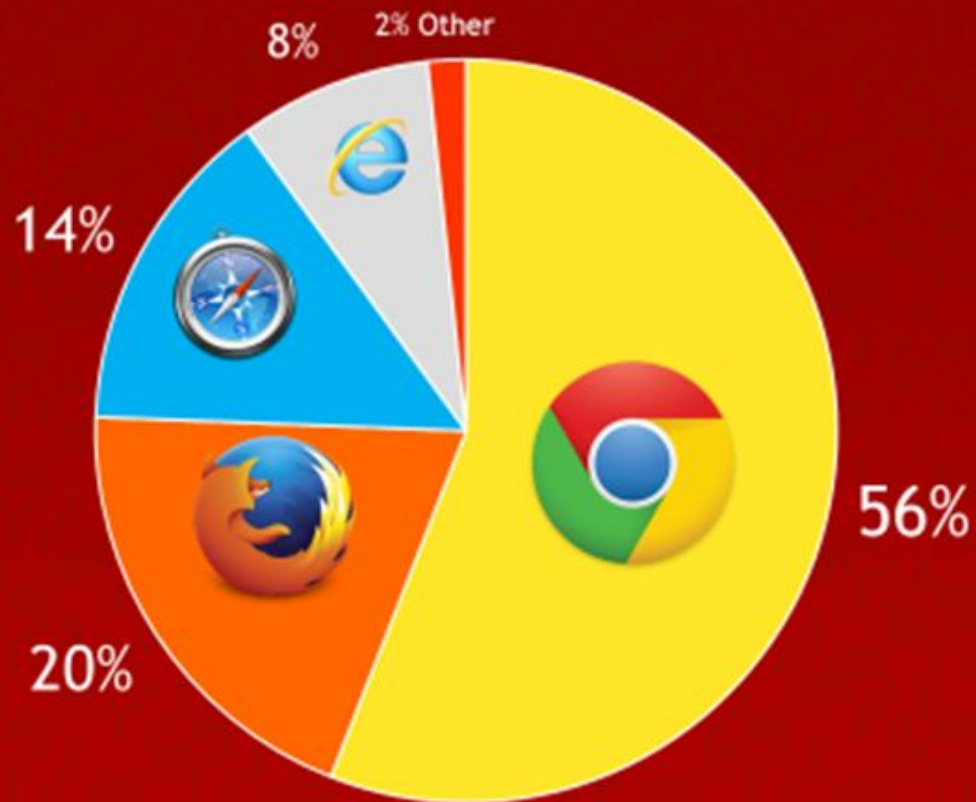


- HAVE SIMPLE/CLEAN LAYOUT
- INTUITIVE FUNCTIONALITY
- ATTRACTIVE COLORS
- ABILITY TO DISPLAY LARGE DATA SETS
- LOAD QUICKLY

Researching Our Users

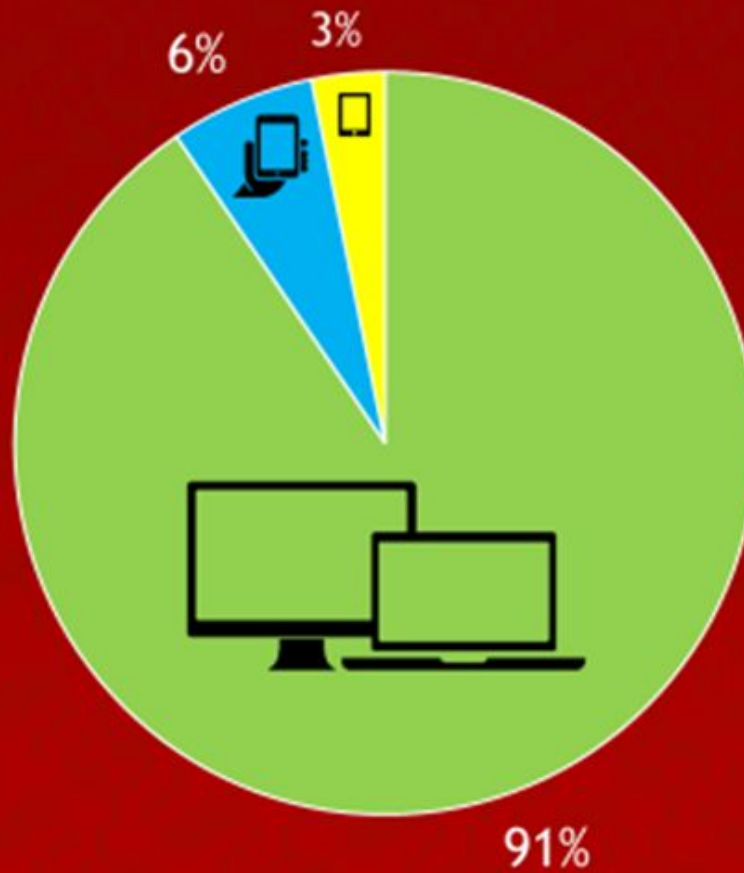
- IRPA were replacing a suite of existing reports that were hosted on our departmental website.
- Because we had Google Analytics tracers on our site, we had some data on our existing users.
- Looked at:
 - Browser
 - Device Type (Desktop, Laptop, Tablet, Mobile)
 - Screen Resolution

Researching Our Users



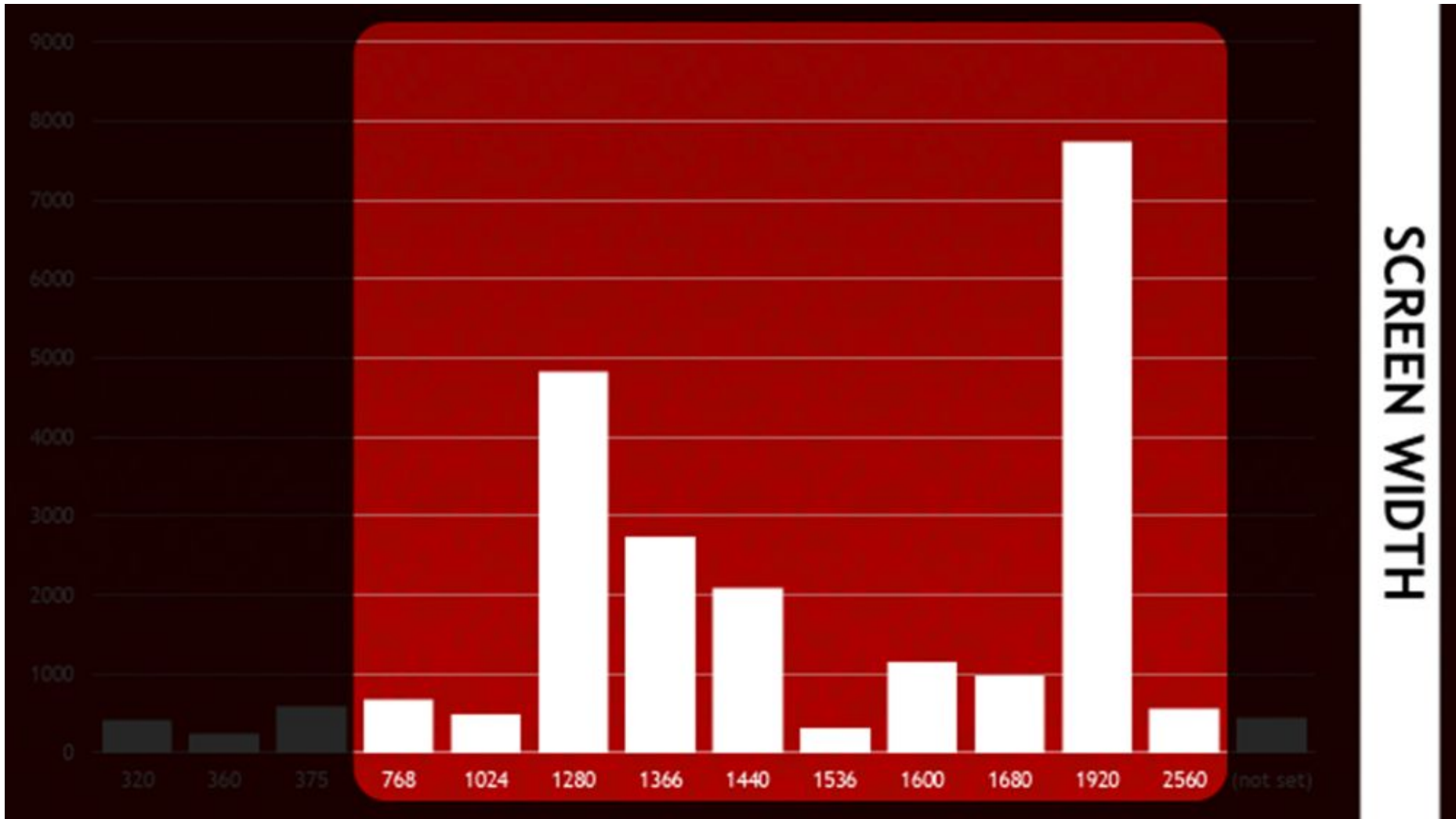
BROWSER

Researching Our Users

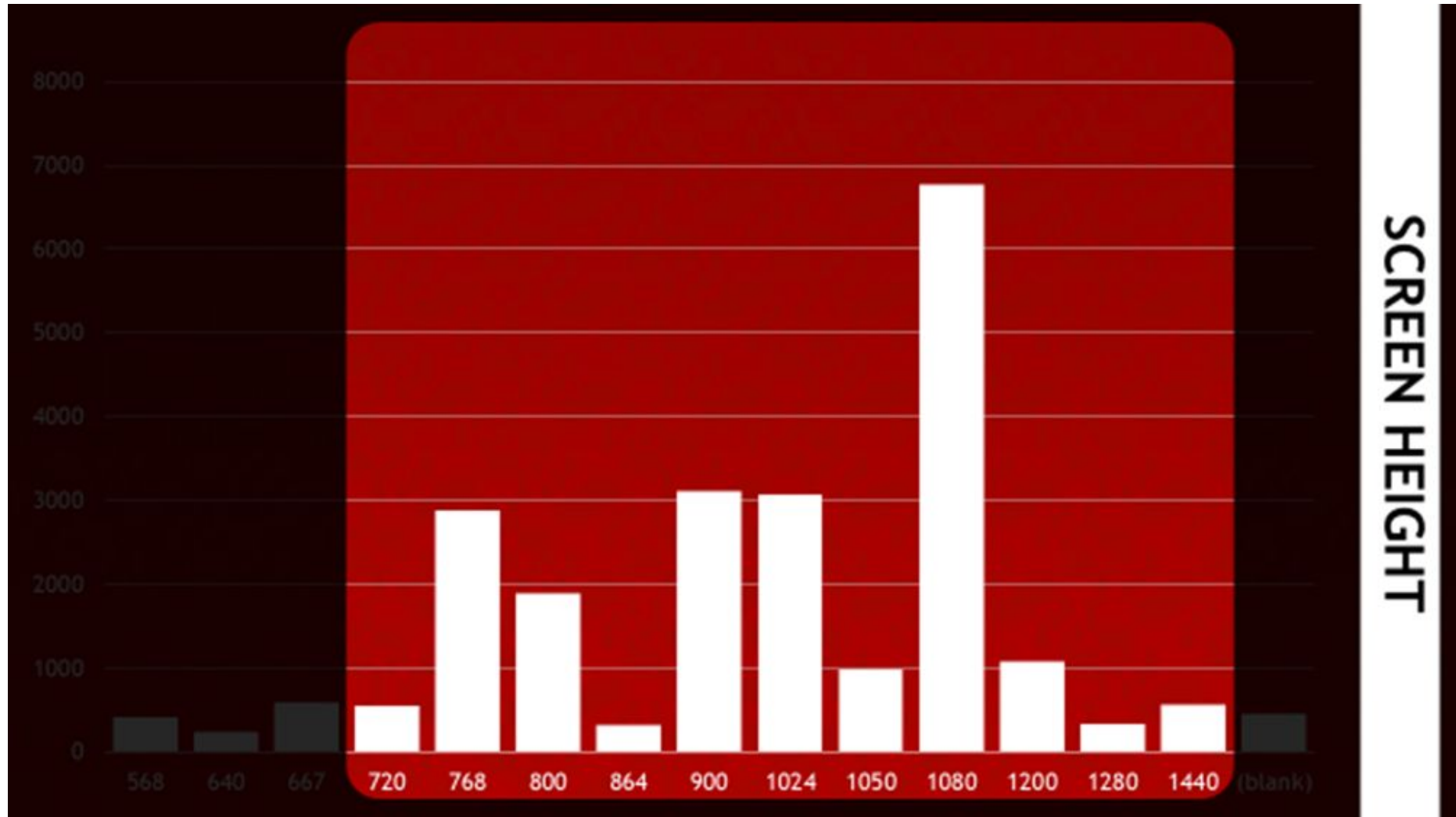


SCREEN

Researching Our Users



Researching Our Users



Identify Report Requirements: Tech Specs

- Design for Tablet - captures 94% of audience
- Report Width: 720 – 1024 (range)
- Report Height: 700
- Testing: Chrome, Firefox, Safari, IE

Identify Report Requirements: Report Components

- Because we were replacing a set of existing reports, we wanted to make the transition easy for our users.
- No loss in functionality
 - Longitudinal data going back to 1992.
 - Ability to view/query the data at different organizational levels - (university, division, college, department, major)
- Improve pain points
 - Leverage visualizations
 - Better documentation and definitions for reports and report elements.

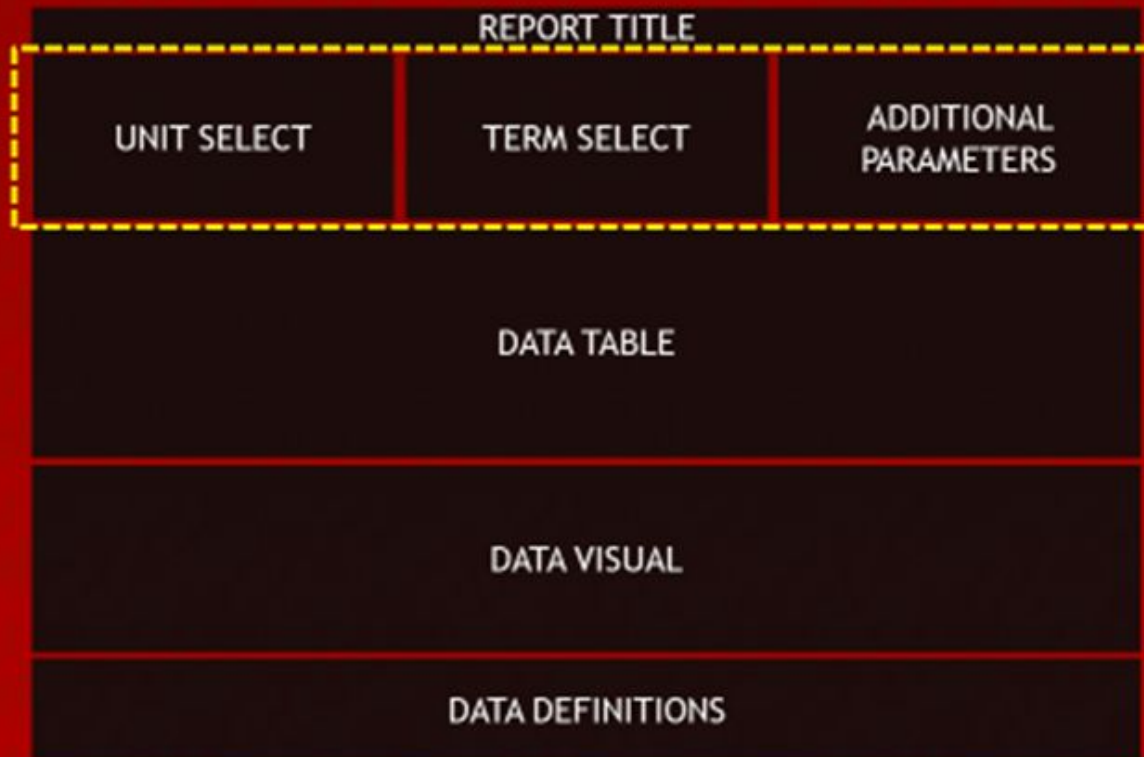
Identify Report Requirements: Report Components

CURRENT PROFILES REPORT

Report: Number of Registered Majors	REPORT TITLE																																																																																																																																																																																																																																																																																																																																																																																																	
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Business Research	12,120	12,120	12,120	12,120	Business Administration - Business Statistics	12,120	12,120	12,120	12,120	Business Administration - Business Calculus	12,120	12,120	12,120	12,120	Business Administration - Business Physics	12,120	12,120	12,120	12,120	Business Administration - Business Chemistry	12,120	12,120	12,120	12,120	Business Administration - Business Biology	12,120	12,120	12,120	12,120	Business Administration - Business Environmental Science	12,120	12,120	12,120	12,120	Business Administration - Business History	12,120	12,120	12,120	12,120	Business Administration - Business Art	12,120	12,120	12,120	12,120	Business Administration - Business Music	12,120	12,120	12,120	12,120	Business Administration - Business Theater	12,120	12,120	12,120	12,120	Business Administration - Business Film	12,120	12,120	12,120	12,120	Business Administration - Business Animation	12,120	12,120	12,120	12,120	Business Administration - Business Video	12,120	12,120	12,120	12,120	Business Administration - 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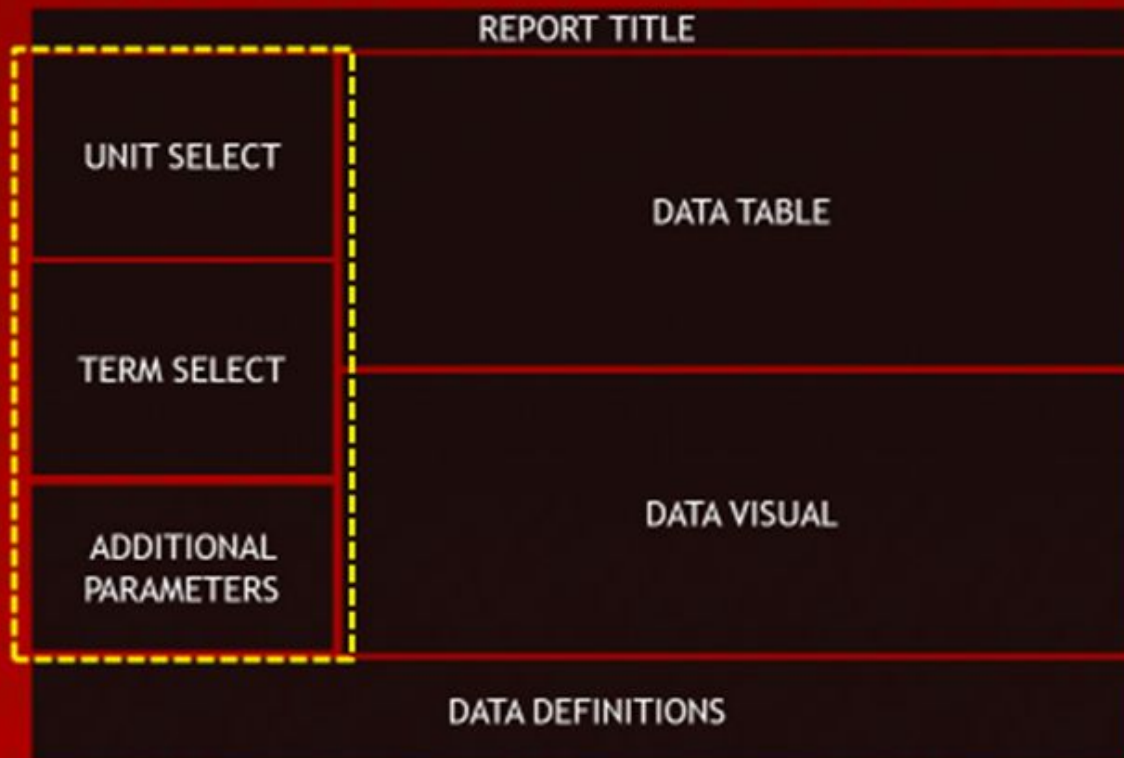
Identify Report Requirements: Options

LAYOUT OPTIONS- TOP PARAMETERS



Identify Report Requirements: Options

LAYOUT OPTIONS- SIDE PARAMETERS



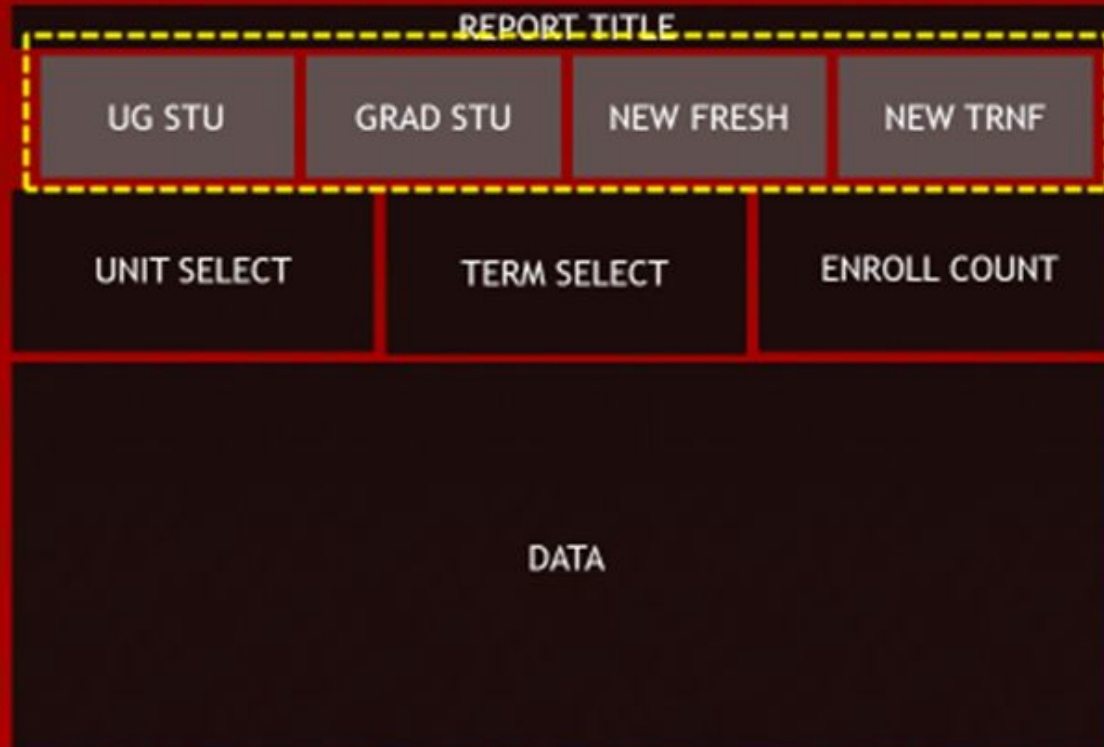
Identify Report Requirements: Options

LAYOUT OPTIONS- TABS



Identify Report Requirements: Options

LAYOUT OPTIONS- STORY



Identify Report Requirements: Options

- Term Selection:
 - Preset Term limit - 10 Year display with no user interaction
 - Single Term Select
 - Multiple Term Select - dropdown checklist
 - Term Range

- IRPA Staff Conclusion:
 - Term Range with Term Type Filter
 - Single Term Select in select reports.

Identify Report Requirements: Options

- Unit Selection:
 - Filter by College
 - No deeper levels
 - Parameters for department and major levels
 - Filter by College, Department, and Major

- IRPA Staff Conclusion:
 - Give users to filter by College, Dept, and Major

Identify Report Requirements: Options

- Other Filters Selection:
 - Lots of filters for maximum cross-sections
 - Limited filters
 - Parameters to give users breakout options without filtering

- IRPA Staff Conclusion:
 - Aim for 10 or less filters
 - Mix filters and parameters as appropriate for a given report

Internal Decisions

- IRPA Staff Meeting to discuss options, make internal decisions and identify report to prototype
- Decide key decisions to present to Stakeholders
 - Visualizations vs tables
 - Don't present any options you're not 100% comfortable with!
- Identify report(s) to prototype
 - Representative of decisions that will need to be made across the reports

Internal Decisions

- IRPA Staff Meeting to discuss options, make internal decisions and identify report to prototype
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 - Visualizations vs tables
 - Don't present any options you're not 100% comfortable with!
- Identify report(s) to prototype
 - Representative of decisions that will need to be made across the reports

Prototyping

- Give yourself time to develop a prototype of a report.
- Experiment with layout options, user filters, multiple visualizations.
- Learning Tableau -
 - Revisit reports you liked from your research phase.
 - Review tutorial videos on different Tableau-specific techniques
 - Ex. Using parameters to pass different fields into a table
 - Experiment with interactivity

Prototyping

- New questions will come up as you develop your prototypes.
- Take notes and plan to present options to your Stakeholders.

Presenting to Stakeholders

- Present prototypes
- Someone to take notes
 - Listen for keywords that will point you in a direction for your visualizations
 - “Compare”
 - “Across time”
- There will be critiques you didn’t plan for
 - Specifics on branding
 - Color choice
 - Data Info
 - Contact information

Review Stakeholder Feedback

- You won't make everyone happy
- Identify changes you want to make
- Make updates to your prototypes to integrate the feedback
- Internal testing
 - Test common report scenarios to be sure your report displays them well.
 - Identify odd cases and how your report handles them - null values, etc.

Share Revised Prototype with Stakeholders

- Share a copy of the revised prototype and ask that users interact with it on their own time.
- Address feedback that was integrated, feedback that is listed as a future enhancement, feedback that wasn't a good choice (not all feedback acted on).

Takeaways

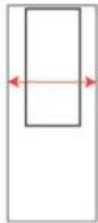
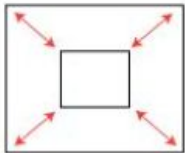
- Research Tableau reporting by others
- Think about what you want to do with your reporting, and that will inform your template
 - Who is your target audience?
 - How will users access your reports?
 - What are the key features you envision for your reports?
 - What level-of-detail will users need in their reports?
- Incorporate stakeholders from your target audience in your development process & plan to iterate

Building a template

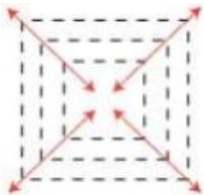
How large should my dashboard be?



Fixed (default): Size stays the same



Range: Scales between minimum and maximum sizes that you specify



Automatic: Automatically resizes to fit window

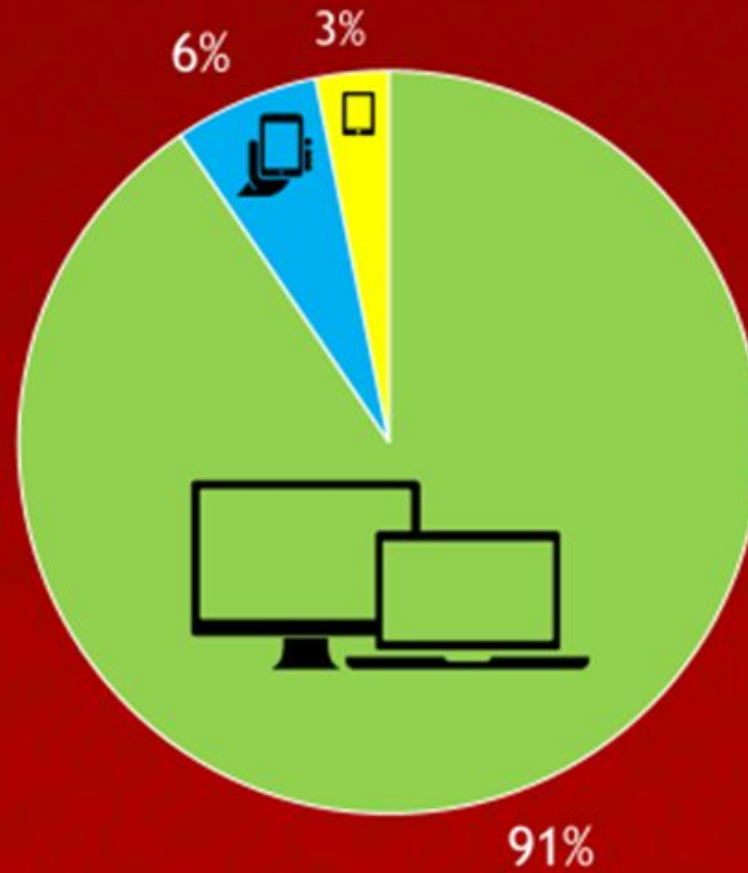
Benefits

- Can specify exact location & position of objects
- May load faster than dashboards with variable sizes

Limitations

- User frustration when there are scrollbars in the dashboard, even though there is space on screen
- Useful when designing for 2 display sizes with similar shapes
- Works well for mobile dashboards with vertical layouts
- May not display properly when dashboard is larger or smaller than window
- Requires testing more scenarios to ensure functionality
- Easy! Tableau takes care of the resizing.
- Least consistent user experience

Researching Our Users



SCREEN

How large should my dashboard be?



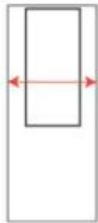
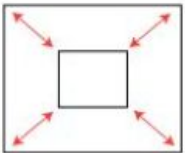
Fixed (default): Size stays the same

Benefits

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Limitations

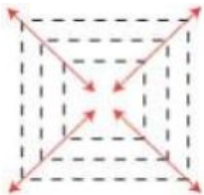
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- Requires testing more scenarios to ensure functionality



Automatic: Automatically resizes to fit window

- Easy! Tableau takes care of the resizing.

- Least consistent user experience



But first... some Tableau terminology!

Tableau terminology: Dashboards



Dashboard

A collection of multiple objects in a single display.

You can use:

- Sheets
- Filters/Parameters
- Static text boxes
- Images
- Web Page embeds
- Containers

From [Tableau: Size and Lay Out Your Dashboard](#)

Tableau terminology: Containers

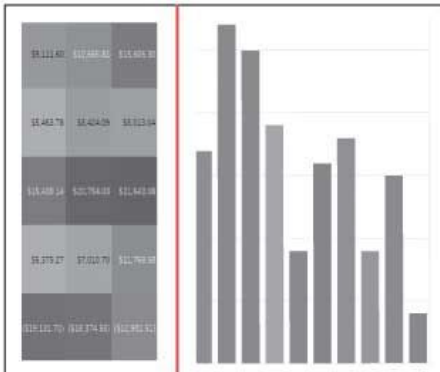


Container

A way to group dashboard items together so you can quickly position them. There are 2 types.

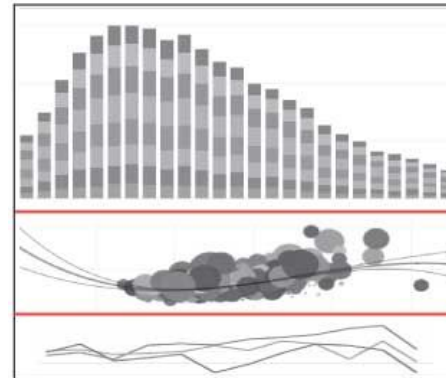
1 Horizontal (side-by-side)

Resizes **widths** of views and objects it contains



2 Vertical (stacked vertically)

Resizes **heights** of views and objects it contains

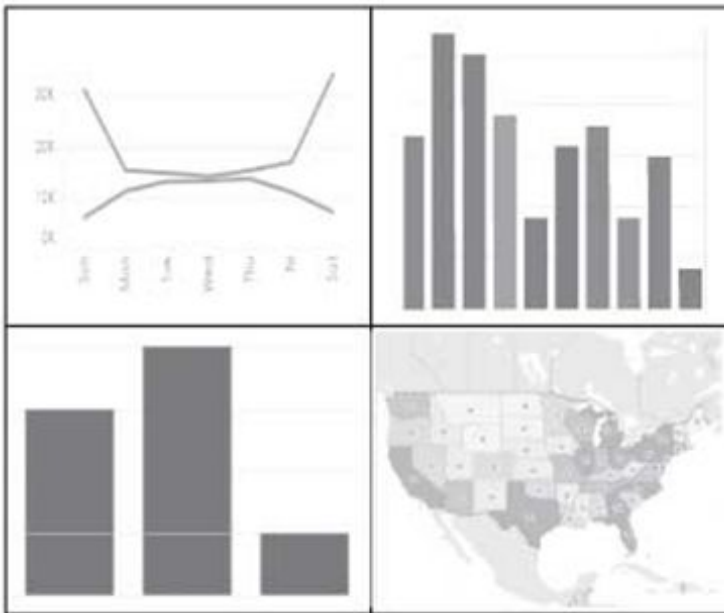


From [Tableau: Size and Lay Out Your Dashboard](#)

Tableau terminology: Tiled and floating objects

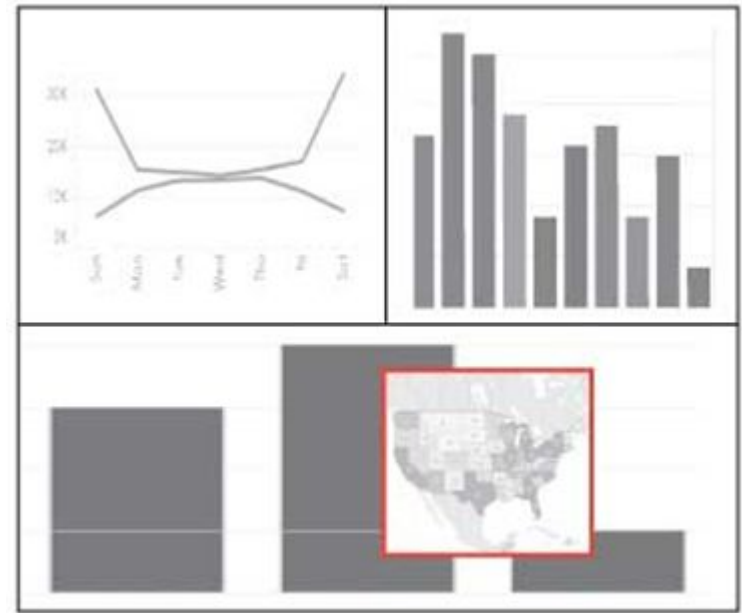
Tiled

Items are in a single layer grid & can't overlap



Floating

Items can be layered on top of other objects



From [Tableau: Size and Lay Out Your Dashboard](#)

Tableau terminology: Padding

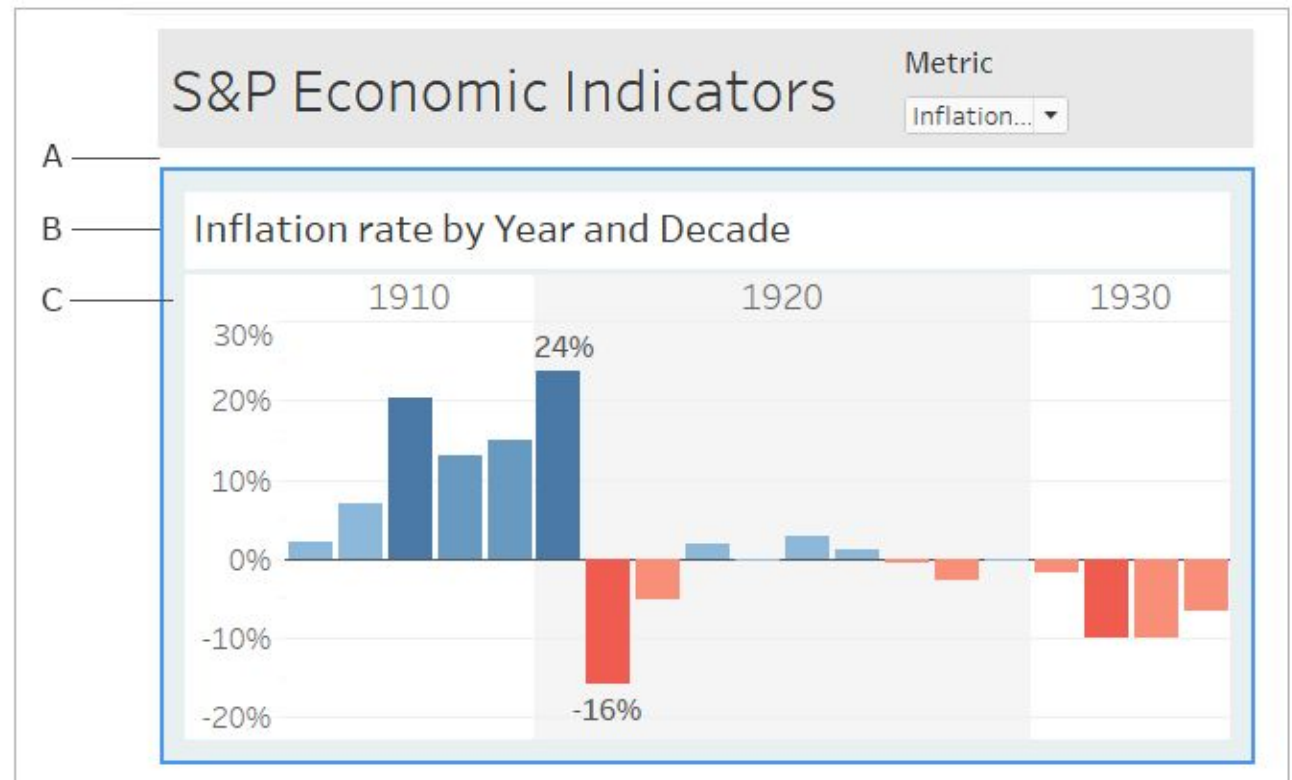
Padding

Lets you space items on a dashboard more precisely.

A - Outer padding

B - Border

C - Inner padding



From [Tableau: Size and Lay Out Your Dashboard](#)

Using the template

Takeaways

- Design for your users!
- This is all about tradeoffs.
 - E.g., a fixed size is the simplest to work with, but may lead to user frustration.
- Use Tableau defaults when possible and document when you don't.

User adoption

Template Access

- The campus template is available for download in a project on Tableau Server.
- Members of the UMD Tableau Community of Practice have access to this project.

Directions for Users

- We realize that using the layout containers and appropriate formatting requires some guidance.
- We provide:
 - Tab within the template that has basic guidelines for editing the elements within the template.

Directions for Users

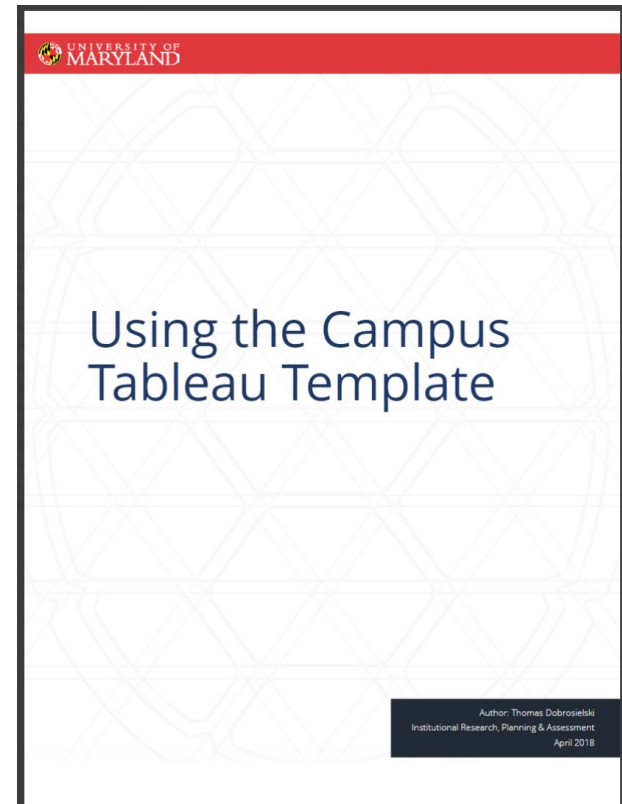
- We realize that using the layout containers and appropriate formatting requires some guidance.
- We provide:
 - Published Style Guide that provides detailed settings and formatting for campus reports.

The screenshot shows a Confluence page titled "UMD Tableau Style Guide" under the "Decision Support" space. The page content includes a red header with the title "UMD TABLEAU STYLE GUIDE", a table of contents with links to Introduction, Dashboard Components, Data Formatting, Table Formatting, Visualizations, Tooltips, Advanced, and Examples, and an "Introduction" section. The introduction text states: "When the university started using Tableau for reports, we identified a core set of standards for report design:" followed by a bulleted list of standards: Simple/clean layout, Intuitive functionality, Attractive and accessible color palette, Functional on desktops, laptops, and tablets, Maryland branding, and Consistent look and feel across all reports. Below this, it explains the purpose of the campus template and provides contact information for design questions.

Below the introduction, there is a section titled "Dashboard Components" which shows a diagram of a report layout. The diagram consists of a red header bar labeled "REPORT TITLE" with a "Data Connection Icon" in the top right corner. Below the header is a dark grey bar labeled "Visualization/Tab Subtitle". At the bottom is a white bar labeled "Selected Filter Display (optional)".

Directions for Users

- We realize that using the layout containers and appropriate formatting requires some guidance.
- We provide:
 - “Using the Campus Template” documents why we use the template, common formatting guidelines, and a step-by-step tutorial on how to place visualizations and filters in the template.




QA Process

- We have developed a QA Process using Google Forms to allow for an independent review of a completed report by a second set of eyes.
- Our original QA process was more limited in scope and focused on IRPA's reports. As time went on we needed to adapt the process to be suitable for a broader set of reports.
- In addition to checks on data accuracy and performance, a large portion of the QA form is dedicated to appropriate use of the template and formatting.

QA Process

Questions Responses **64** Settings

Report Title *



Title accurately reflects the report

Title is uppercase - size & font appear appropriate

Title is appropriate length - approximately 50 characters or less

Correct color scheme is used

Appropriate Data Connection symbols are applied

Title is the same across all tabs/dashboards in the report

Title Bar size (red container height) is appropriate

If any of the above are unchecked, please describe the issue here:

In the "Ranking Methodology" tab, the data connection symbol is missing in the report title.

Accessibility

It is important that reports are accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these.

All non-text content has a textual equivalent that serves the same purpose *

UMD reports will have the "View Data" option turned on for all Viewers of a report. This allows a user to access the underlying data for any visual in a crosstab format that can be read by a screen reader. It can also be beneficial to utilize captions to provide a textual description of a visualization.

Yes

No

Color is not the only means of conveying information or distinguishing a visible element *

Use the color-blind palette when distinguishing color by categories (discrete fields/dimensions). When assigning colors, try to provide enough contrast and assign colors that differ from each other on the light-dark spectrum. Additionally, when you use color in the view, there should also be other types of encoding for marks, such as labels, size, shape, and position. Include color legends when appropriate. If the color-blind palette is not applied, you can verify accessibility using a color-blindness simulator: <https://www.color-blindness.com/coblis-color-blindness-simulator/>

Yes

No

All text and images of text must have sufficient contrast between the text foreground and background *

Be sure that all text (including titles, filters, notes, tooltips, mark labels, etc.) are of a sufficient size and contrast. Avoid tone-on-tone text-background combinations (i.e. Blue mark labels within a blue bar graph, grey text with a grey background, etc.) Color Contrast Accessibility Validator: <https://color.a11y.com/?wc3>

Report Support

Email reflector with internal team to answer questions

- How to access the template (i.e. joining the Community of Practice)?
- Support users when working with the template
 - Provide guidance around new visualization types
 - Provide suggestions when space is limited
- “Can I make this change to the template?”
 - “maybe?”
- QA Testing - assist with finding a QA Tester

Formal/Informal Reporting

Not always necessary to have reports in the template.

Informal reports:

- Canned reports shared internally or narrowly
 - Seek to answer a specific set of questions using defined specifications
 - Produced with regular frequency and/or on demand
 - Shared only with viewers inside your department
 - Or shared with less than 10 viewers inside and outside your department

- Ad hoc analyses

Formal/Informal Reporting

Reports that require **formal report** creation and testing processes:

- Canned reports shared with large or broad audiences
 - Shared with 10 or more viewers inside and outside your department
 - Or shared representatively across campus (i.e. at least one report viewer from each college)

Questions?



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