Taming the Marketing Data Beast

Tools & Techniques for Data Visualization

Leslie Colvin, Division of Marketing & Communications
What Are We Going to Cover Today?

• What is data visualization?
• Why is it important?
• Where do you start?
• A walkthrough of Google Data Studio & Microsoft Power BI
  • Building sample dashboards
    • Google Analytics
    • Facebook
    • Twitter data
WHAT IS DATA VISUALIZATION?
Data visualization is taking data and interpreting it into simple, easy to understand visuals.
WHY IS IT IMPORTANT?
Visual data helps us to think and communicate
Visually can tell a story better than a thousand words
90% of information that comes to the brain is visual

Source: Visual Teaching Alliance
HOW MUCH DATA IS PRODUCED EVERY DAY?

2.5 EXABYTES ARE PRODUCED EVERY DAY

Which is equivalents to:
• 530,000,000 million songs
• 150,000,000 iPhones
• 5 million laptops
• 250,000 Libraries of Congress
• 90 years of HD Video

Source: Northeastern University
WHERE DO YOU START?
Begin with the end in mind. (Stephen Covey)

#SayQuotable
BAD MARKETING DASHBOARDS ARE LIKE BAD INSTRUCTIONS
6 STEPS TO DASHBOARD SUCCESS

1. Plan – work with stakeholders and your marketing plan
2. Metrics – Create list of KPIs and metrics for your dashboard
3. Data Discovery – assess what information you have available
4. Design – Define what your dashboard users will see
5. Build – Find the right dashboard platform
6. Evaluate – Review and evaluate if KPIs were met
WHAT IS GOOGLE DATA STUDIO?

• FREE software program where you can create unlimited custom dashboards
• Connect to multiple data sources to bring all of your data together in one place
• Similar to custom views in Google Analytics, easier to understand, interactive and more visually appealing
• Easily share and collaborate with anyone who has a Google account
GETTING STARTED

• Step 1 – go to datastudio.google.com, click on the blue plus (+) button at the bottom right-hand corner and accept the terms and conditions
• Step 2 – Create a new data source

Google Analytics  Google Sheets

Connectors

- File Upload
- AdWords
- Attribution 360
- BigQuery
- Cloud SQL
- DCM
- Google Analytics
- Google Sheets
- MySQL
- PostgreSQL
- Search Console
- YouTube Analytics

CREATE NEW DATA SOURCE
• Step 3 – start creating!
• Step 4 – Edit and filter dates
SAMPLE REPORTS
SAMPLE REPORTS

Google Analytics Dashboard

Cumulative Sessions & Pageviews

Pageviews by Country

Daily Sessions & Pageviews

Sessions by demo

Traffic Sources Details
WHAT IS POWER BI?

• Data visualization software from Microsoft
• Ability to directly connect to multiple data sources
• Interactive visuals
• Can share with other Power BI users or download into PowerPoint presentation
• Robust online community
WHAT SAMPLE REPORTS WILL WE BUILD TODAY?

• Google Analytics
  • Review sessions, pageviews, popular stories

• Facebook
  • Build formula for API to review posts, shares

• Twitter
  • Setting up #hashtag monitor to build word cloud
GETTING STARTED WITH POWER BI

- Datasets – this is the data that you import or connect to Power BI
  - Direct connections
    - Facebook
    - Google Analytics
    - Mail Chimp
  - Excel sheets
  - Build your own

- Reports – one or more pages of visualizations

- Dashboard – compilation of reports to share or that have been shared with you
Power BI Desktop

- Get data
- Recent sources

Getting started with Power BI Desktop

- Building reports
- Query view concepts
- Uploading your reports

Create a Phone report

- Show this screen on startup

WHAT'S NEW
Take a look at what's new and improved in Power BI in this month's update.

- Tailor reports for mobile viewers

FORUMS
Visit the Power BI Forum to ask questions or interact with other users in the Power BI community.

Microsoft Data Insights Summit
June 12–13, 2017 | Seattle, WA
From data to insights to action – faster than ever
Register now

UNIVERSITY OF GEORGIA
POWER BI CUSTOM VISUALS

- Visualize any data any way with custom visuals available online
GOOGLE ANALYTICS
FACEBOOK API & POWER BI

- Power BI offers ability to connect directly with any public Facebook page
  - Do not have to be an administrator on the page
  - No user token or access tokens needed

=Facebook.Graph(https://graph.facebook.com/v2.8/universityofga/posts?limit=100&fields=message,shares,type,created_time&since=2017-01-01)
<table>
<thead>
<tr>
<th>message</th>
<th>type</th>
<th>created_time</th>
<th>id</th>
<th>shares.count</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>One of our favorite campus bridges!</td>
<td>photo</td>
<td>6/9/2017 10:48:00 AM</td>
<td>21657666681_101544181974016..</td>
<td>null</td>
<td>6/9/2017</td>
</tr>
<tr>
<td>UGA Public Service and Outreach partners with Goodwill of North Georgia</td>
<td>link</td>
<td>6/8/2017 11:35:20 AM</td>
<td>21657666681_10154417592216..</td>
<td>1</td>
<td>6/8/2017</td>
</tr>
<tr>
<td>Writing Intensive Program brings local elementary students to UGA campus</td>
<td>link</td>
<td>6/6/2017 10:29:25 AM</td>
<td>21657666681_101544120518616..</td>
<td>1</td>
<td>6/6/2017</td>
</tr>
<tr>
<td>Says Genesis Casas, age 11: “Without stories, there wouldn’t be any history.”</td>
<td>null</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Of the 2016 graduating class, 567 graduates were hired by the honorees.</td>
<td>link</td>
<td>6/5/2017 10:48:00 AM</td>
<td>21657666681_10154409149016..</td>
<td>15</td>
<td>6/5/2017</td>
</tr>
<tr>
<td>“It’s such an honor to partner strategically with the University of Georgia.”</td>
<td>null</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The University of Georgia College of Engineering celebrates its 5th ann...</td>
<td>link</td>
<td>6/1/2017 12:40:00 AM</td>
<td>21657666681_10154394055016..</td>
<td>4</td>
<td>6/1/2017</td>
</tr>
<tr>
<td>Catch the Peabody Awards tonight at 9p on PBS and Fusion.</td>
<td>video</td>
<td>6/2/2017 8:30:20 PM</td>
<td>21657666681_101544032931816..</td>
<td>null</td>
<td>6/2/2017</td>
</tr>
<tr>
<td>Last week our Grady College of Journalism and Mass Communication, Un...</td>
<td>video</td>
<td>6/2/2017 12:19:00 AM</td>
<td>21657666681_101543975614518..</td>
<td>20</td>
<td>6/2/2017</td>
</tr>
<tr>
<td>Committed to access: UGA ranked 10th among the nation’s top public ...</td>
<td>link</td>
<td>6/1/2017 10:45:00 AM</td>
<td>21657666681_10154397159076..</td>
<td>412</td>
<td>6/1/2017</td>
</tr>
<tr>
<td>As a PhD student in UGA College of Family and Consumer Sciences, Ap...</td>
<td>link</td>
<td>5/31/2017 12:45:42 AM</td>
<td>21657666681_101543947832116..</td>
<td>null</td>
<td>5/31/2017</td>
</tr>
<tr>
<td>How campus changes over a season: this photo was taken from the same...</td>
<td>photo</td>
<td>5/30/2017 10:42:00 AM</td>
<td>21657666681_101543747885716..</td>
<td>60</td>
<td>5/30/2017</td>
</tr>
<tr>
<td>“In loyal love we set apart this house, a memorial to those lovers of pe...</td>
<td>video</td>
<td>5/29/2017 10:33:15 AM</td>
<td>21657666681_101543895482216..</td>
<td>152</td>
<td>5/29/2017</td>
</tr>
<tr>
<td>Today we honor those that have bravely served and given their lives for #MemorialDay</td>
<td>null</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UGA has become a higher education leader for student veterans.</td>
<td>link</td>
<td>5/28/2017 11:09:00 AM</td>
<td>21657666681_1015438268966..</td>
<td>15</td>
<td>5/28/2017</td>
</tr>
<tr>
<td>“We wanted to understand what is driving aggressiveness in acute leuk...</td>
<td>link</td>
<td>5/26/2017 10:53:00 AM</td>
<td>21657666681_10154376978716..</td>
<td>59</td>
<td>5/26/2017</td>
</tr>
</tbody>
</table>
TWITTER
SETTING UP A HASHTAG MONITOR
When a new tweet is posted...

Choose an action

Search for "excel"

Connectors

Excel

Triggers (0)  Actions (6)

Excel - Get rows
Excel - Insert row
Excel - Delete row
Excel - Get row
THE RAW DATA
POWER BI – WORD CLOUD VISUAL
SAMPLE REPORTS

[Diagram showing Google Analytics data, including graphs and charts for site traffic, average daily new users, sessions, and browser hits.]
<table>
<thead>
<tr>
<th>Date</th>
<th>Retweets</th>
<th>Engagements</th>
<th>Tweet Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friday, May 5, 2017</td>
<td>441</td>
<td>3,158</td>
<td>Congratulate: #UGA17! #UGA17graduation.</td>
</tr>
<tr>
<td>Friday, May 5, 2017</td>
<td>121</td>
<td>3,513</td>
<td>&quot;It's the unscripted, that's what makes life extraordinary.&quot; - Ernie Johnson (ABC, ’78)</td>
</tr>
<tr>
<td>Friday, May 5, 2017</td>
<td>99</td>
<td>2,058</td>
<td>&quot;Think about all the big days who showed up, who didn't? Let's be a class who shows up. Let's be more than others.&quot; - Avery Hudson, #UGA17.</td>
</tr>
<tr>
<td>Thursday, May 4, 2017</td>
<td>91</td>
<td>2,012</td>
<td>Congratulations, #UGA17! The University of Georgia's commencement ceremony begins today! <a href="https://t.co/UGA17conce">https://t.co/UGA17conce</a></td>
</tr>
<tr>
<td>Tuesday, May 2, 2017</td>
<td>18</td>
<td>2,149</td>
<td>Who wants a #UGA17 poster? Get them at the Arch and the Chapel Ball on Friday from 9-11 a.m. <a href="https://t.co/ugaplACFE">https://t.co/ugaplACFE</a></td>
</tr>
<tr>
<td>Tuesday, May 2, 2017</td>
<td>66</td>
<td>2,140</td>
<td>How #UGA campus changes in a season: this photo was taken from the same place every Friday during spring semester. 05/19 - Madi DiPietro <a href="https://t.co/5aVDFjFRB">https://t.co/5aVDFjFRB</a></td>
</tr>
<tr>
<td>Thursday, May 4, 2017</td>
<td>177</td>
<td>2,106</td>
<td>Last day of finals... 1 day until #UGA17. #UGA17graduation. <a href="https://t.co/rO26cu4UAM">https://t.co/rO26cu4UAM</a></td>
</tr>
<tr>
<td>Monday, May 8, 2017</td>
<td>12</td>
<td>1,696</td>
<td>Phase II of UGA’s Business Learning Community nears completion. 2 buildings named for business leaders. <a href="https://t.co/4zE0wW3SG">https://t.co/4zE0wW3SG</a></td>
</tr>
<tr>
<td>Sunday, May 14, 2017</td>
<td>23</td>
<td>1,526</td>
<td>Happy #Mother’sDay! <a href="http://t.co/9N5Au39o">http://t.co/9N5Au39o</a></td>
</tr>
<tr>
<td>Thursday, May 4, 2017</td>
<td>41</td>
<td>1,491</td>
<td>#UGA17: Freshman welcome for #UGA17! Order this T-shirt! <a href="https://t.co/375z747z4w">https://t.co/375z747z4w</a></td>
</tr>
<tr>
<td>Friday, May 5, 2017</td>
<td>8</td>
<td>1,443</td>
<td>That’s a wrap on the #UGA17 Graduate Commencement Ceremony! <a href="https://t.co/fiZwuBjz1">https://t.co/fiZwuBjz1</a></td>
</tr>
<tr>
<td>Saturday, May 27, 2017</td>
<td>15</td>
<td>1,240</td>
<td>Looking sharp, Rutherford Hall. #UGA17. #UGA17housing. <a href="https://t.co/6EYMcXxM">https://t.co/6EYMcXxM</a></td>
</tr>
<tr>
<td>Wednesday, May 3, 2017</td>
<td>4</td>
<td>1,191</td>
<td>#UGA17: 6'52&quot; #UGA17graduation. <a href="https://t.co/5loSa4R6">https://t.co/5loSa4R6</a></td>
</tr>
<tr>
<td>Monday, May 8, 2017</td>
<td>6</td>
<td>1,190</td>
<td>You’ve seen our Science Learning Center, right? <a href="https://t.co/cVilhtOp9qN">https://t.co/cVilhtOp9qN</a> <a href="https://t.co/1QYK3pG6M">https://t.co/1QYK3pG6M</a></td>
</tr>
<tr>
<td>Thursday, May 4, 2017</td>
<td>102</td>
<td>1,088</td>
<td>&quot;No matter where he takes us after this, we will forever be a part of the Bulldog Nation.&quot; Commit to what inspires you. #UGA17. 05/21 <a href="https://t.co/8Q8K2IOE">https://t.co/8Q8K2IOE</a></td>
</tr>
</tbody>
</table>
APPENDIX
Data Design Dos and Don’ts

- Do use 1 color to represent each category
- Do order data sets using logical hierarchy
- Do use callouts to highlight imports or interesting information
- Do visualize data in a way that is easy for readers to compare values
- Do use icons to enhance comprehension and reduce unnecessary labeling

- Don’t use high contrast color combinations such as red/green or blue/yellow
- Don’t use 3D charts, they can skew perception of the visualization
- Don’t add anything unnecessary to distract from the data
- Don’t use more than 6 colors in a single layout
- Don’t use distracting fonts or elements (bold, italics, underlined text, etc.)
Data Studio Resources

- https://datastudiogallery.appspot.com/
Power BI Resources

• Dataset types that can be used with Power BI:

• Microsoft Office Visuals Download

• https://datachant.com/

• https://curbal.com/