FROM DATA TO DASHBOARD: IT TAKES MORE THAN GRAPHS

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Overview

• Our current data reporting status
• Needs for data visualization
• Criteria used in evaluating and selecting a tool
• Learning curve climbed
• Dashboard show in SAS VA
• Lessons learned
Current data reporting status

- FACTS
- Unit Profile
- Fact Book
- Ad hoc request
Current Status

- Tables of data
- Good for power users, but may be overwhelming for "casual users"
- Because they are canned, users don't have much flexibility to get what they need without going over multiple pages to compile the data they need
WE NEED DATA VISUALIZATION
Criteria and references in selecting a tool

- Gartner’s Magic Quadrant Review of BI tools
- Pioneer institution’s experience (Arizona State U, Kennesaw State U, West Kentucky U, University of Minnesota)
- Current staff skillset and expertise
- Comprehensiveness
- Learning curve
- Price
Magic Quadrant 2012

Eliminated Niche Players
Focused on Leaders (Oracle, SAS, and Tableau)
SAS was selected
Road Bumps – Server Administration

• Software installation cost extra
• Steep learning curves to administer the server and register the metadata
• There are so many ways to take that we were not sure which way is a shortest
Developing the first dashboard

• Selecting the first project (Classroom utilization)
  • Scope
    • keep the scope within reach and achievable (low hanging fruit)
  • Strategy
    • Easily available data
    • Areas with broad impact
    • Information needed and yet to develop
Guidelines for dashboard development

The dashboard should:

• Convey a message
• Visual presentation of performance measures
• Quick identification of trends and correlations
• Measure of efficiencies/inefficiencies
• Provide optional detailed numbers besides the graphs
• KPI buy-in by the users
Diversity at UGA

The University of Georgia values diversity and inclusion. This dashboard presents the status of diversity in terms of student enrollment, degrees awarded, completion, and faculty and staff composition. You may visit UGA's Diversity Office or read the Diversity Strategic Plan to know more about UGA's commitment to diversity. Your feedback concerning this dashboard can be sent to the Office of Institutional Research.

Definitions:

Race/Ethnicity: The race/ethnicity groups reported include Non-Resident Alien, Hispanic/Latino, American Indian or Alaska Native, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, White, Multi-Racial, and Unknown. The category of Non-Resident Alien, commonly referred to as International, refers to students or employees who are not a citizen, a naturalized citizen, or a permanent resident of the U.S. The category of Unknown refers to students or employees whose race and ethnicity are not reported.

Minority: Minority is defined by self-reported race/ethnicity classification as African American, Native American, Hispanic, Asian, Pacific Islander, and Two or More Races, while excludes Non-Resident Alien (International) and unknown.

State Residency: Students whose state residency at time of application was Georgia are considered In-State students; otherwise, they are considered Out-of-State students. State residency is not applicable to international students.

Completion Rate: Based on students graduated with a bachelor's degree or matriculated into a professional program at UGA (ex: Pharmacy & Veterinary Medicine).

Tips to Navigate the Dashboard:

- Selecting "clear filter" for a dropdown box results in SELECT ALL for the included items.
Facilities @ UGA

**Time Utilization**: Total minutes the classroom is used divided by the total minutes the classroom was available to be scheduled expressed as a percentage.
Example: time period = 8am-5pm (9 hours * 60 = 540 minutes). 5 days in a week, number of minutes classroom scheduled = 1,350 minutes, then time utilization = (1,350) / (540 * 5) = 50%

**Key Performance Indicator Goals (24 State Standards)**: Time Utilization target is 65%
0% <= Time Utilization < 20% <= Time Utilization < 50% <= Time Utilization < 65% <= Time Utilization <= 100%

**Seat Utilization**: The average percentage of seats occupied in the classroom when the class is in use.
Example: Occupied Seats = Enrollment in class (50), Available Seats = 100, then seat utilization - 50/100 = 50%

**Key Performance Indicator Goals (24 State Standards)**: Seat Utilization target is 66%
0% <= Seat Utilization < 20% <= Seat Utilization < 50% <= Seat Utilization < 66% <= Seat Utilization <= 100%

**Classroom Hours Per week**: Total hours the classroom is scheduled in a week.
Example: time period = 8am-5pm (9 hours * 60), 5 days in a week, number of hours classroom scheduled = 22.5 hours

**Key Performance Indicator Goals (24 State Standards)**: Course Hours Per week target is 35.5 hours
0 <= Classroom Hours Per Week <= 10 <= Classroom Hours Per Week <= 25 <= Classroom Hours Per Week <= 35.5 <= Classroom Hours Per Week <= 45

**Occupancy Rate**: The actual number of hours a given seat is used in a week - (Classroom Hours Per week) x (Seat Utilization)
Example: Classroom Hours Per week = 30 hours, Seat Utilization = 50%, then occupancy rate = 30 * 0.5 = 15

**Key Performance Indicator Goals (24 State Standards)**: Occupancy Rate target is 23.5
0 <= Occupancy Rate < 5 <= Occupancy Rate < 15 <= Occupancy Rate < 23.5 <= Occupancy Rate <= 45

*Source: Maximum Space Utilization Report by 2010 The Advisory Board Company, Washington, DC*
### Room Utilization Summary - Day-Hour Breakdown (all calculations based on 8am - 5pm M-F time period)

#### Room Capacity

<table>
<thead>
<tr>
<th>Room Count</th>
<th>Smallest</th>
<th>Average</th>
<th>Largest</th>
</tr>
</thead>
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<tr>
<td>348</td>
<td>10</td>
<td>62</td>
<td>409</td>
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</table>

#### Centralized and Department Classroom

<table>
<thead>
<tr>
<th></th>
<th>Room Count</th>
<th>Time Utilization</th>
<th>Seat Utilization</th>
<th>Classroom Hours Per Week</th>
<th>Occupancy Rate</th>
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<tbody>
<tr>
<td>Centralized Assigned</td>
<td>86</td>
<td>85.64%</td>
<td>67.05%</td>
<td>25.04</td>
<td>95.79</td>
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<tr>
<td>Department Assigned</td>
<td>262</td>
<td>43.89%</td>
<td>63.39%</td>
<td>19.75</td>
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### Time Utilization by Clock Hour

#### Time Utilization by Day

**Day Hour Time Utilization Grid**

<table>
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<tr>
<th>DAY</th>
<th>Start Time</th>
<th>8 am</th>
<th>9 am</th>
<th>10 am</th>
<th>11 am</th>
<th>12 pm</th>
<th>1 pm</th>
<th>2 pm</th>
<th>3 pm</th>
<th>4 pm</th>
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<tr>
<td></td>
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<td>Time Utilization</td>
<td>Time Utilization</td>
<td>Time Utilization</td>
<td>Time Utilization</td>
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<td>49.53%</td>
<td>60.34%</td>
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<td>38.68%</td>
<td>75.78%</td>
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<tr>
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<td>64.69%</td>
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<td>53.56%</td>
<td>42.48%</td>
<td>40.58%</td>
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### Fall 2013 - Room Utilization Summary - Day-Hour Breakdown (all calculations based on 8am - 5pm M-F time period)

<table>
<thead>
<tr>
<th>BLDG_NAME</th>
<th>ROOM</th>
<th>Room Capacit y</th>
<th>Avg Enrollm ent</th>
<th>Room Square Foot</th>
<th>Time Utilization</th>
<th>Seat Utilization</th>
<th>Classroom Hours Per Week</th>
<th>Occupancy Rate</th>
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<td>13.56</td>
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<td>58.93%</td>
<td>12.50</td>
<td>7.37</td>
</tr>
</tbody>
</table>
About SAS Visual Analytics

- SAS Visual Analytics
  - The dashboards were developed using SAS VA v.6.4
  - Version 7.1 Released March, 2015 and the dashboards became mobile-device ready
- SAS has a team of customer support and Quick Start Services
- Big user-group support
- Strong analytics function
- Interfacing with its strong data management capabilities
Limitations

• Difficulty with set-up
  • Mobile app and computer screen do not match

• Some simple features unavailable
  • Sorting days of week as Monday, Tuesday… instead of alphabetically (need to create user defined format in SAS)

• Changing or hiding certain labels

• Data needs be available in a single table
  • Cannot use multiple joins
Benefits

• Drag and drop and very easy to use
• Once data is prepared and loaded in the LASR Server – very easy to navigate and create reports
• Limited IT expertise required for development
• Web enabled – easy to share insights with anyone, anywhere
Fringe Benefits

- Quick and easy for ad-hoc reporting with details
- Answer complex questions faster and enhance the productivity of your analytical talent
- Detailed data easily exported in excel format
- From backroom to front display all-in-one suite
Lessons learned

- There’s no ideal tool – only a tool that fits you
- Build your future on your present
- Start from the end and start small
- Prior data preparation is the key — dashboard is for display only (team up your staff to work together)
- Just good SAS programming skills are not sufficient
- Need to expand our knowledge regarding data and charts
- Visualization must deliver a message
- Charts can be misleading
Magic Quadrant 2014

Figure 1. Magic Quadrant for Business Intelligence and Analytics Platforms

Source: Gartner (February 2015)
Summary

• Reviewed where we are (tradition and resources)
• Why we selected the tool we have
• Knowledge and skills gained
• Dashboard show
• Lessons learned
"After careful consideration of all 437 charts, graphs, and metrics, I’ve decided to throw up my hands, hit the liquor store, and get snookered. Who’s with me?!"