Tableau for Corporate Risk Management and our Tableau User Group

Jason Eisman
Sr. Team Manager
Data Risk Management Testing and Monitoring (DRMTM)
Charles Schwab
#data19
Agenda

Introductions

Internal control testing project

Issues dashboard

Tableau usage at Schwab

Schwab Tableau user group

Q&A
Introductions
About Me

Occupation
• Charles Schwab
• Sr. Team Manager, Data Risk Management Testing and Monitoring team (DRMTM)
• Leader, Schwab Tableau and Alteryx user group
• 5+ years Tableau and Alteryx experience

Education
• Knight from the University of Central Florida!

Fun fact
• Favorite word is “automation!”

Contact information
• Jason.Eisman@Schwab.com
• LinkedIn
“Charge On!”
We measure ourselves not only by what we do, but how we do it. Every action and each decision is based on building trust and seeing things through the eyes of our clients.
Schwab Values

We place the highest value on:

• Earning our clients' trust by treating them in an ethical, empathetic, and proactive way
• Constantly improving the client experience through innovation
• Respecting fellow employees and reinforcing the power of teamwork
• Being good stewards of our brand and stockholder value

We accomplish this by:

• Seeing through the client’s eyes
With Continued Growth Comes Greater Responsibility

- Program
- Efficiency
- Awareness
- Risk culture
Internal Control Testing Project
**Value of Tableau**

**Project summary**
- Internal focus to test over 1,000 controls across 53 different business units within the firm
- Six different testing groups working on the project simultaneously

**Return on investment**
- Over 20 times the cost of licensing

**Time savings**
- 8,000 hours saved in a six-month period
**Definitions**

**Control**: Process or action designed to mitigate, detect, or prevent risk events

**Control testing**: A documented review to confirm a RCSA control is designed and operating as intended, where the tester is independent from the individual who performed the control.

**Tester**: An individual performing the control testing.

**Control Issue**: A deficiency or gap that, if remediated, can reduce the impact or frequency of a risk.
Internal Control Testing Lineage

IBM OpenPages
System of record

Excel
Tracking files

Alteryx
Data prep
Calculations

Tableau
Visualizations

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Excel Tracking File

- Individual file by enterprise for each business unit being tested
- Row level data for each control being tested

*Dataset created for this presentation, does not reflect actual Schwab data and is for illustrative purposes only*
Alteryx Data Prep

Total of 24 Excel tracking files (12 used per quarter)
Alteryx used to join all tracking files into one data source
Published directly to SQL and Tableau Server
• Leverages Alteryx “publish to Tableau server” tool
Determine Latest Status

Primary data source shows latest testing status

Leveraged Alteryx to reduce dashboard server load

- Could also be done in Tableau Prep or as a calculated field in Tableau Desktop

```
IF [Reporting Status: ] = "Final Sent" THEN "Reporting Status: " + [Reporting Status: ]
ELSEIF [Closing Meeting Status: ] = "N/A" THEN "Closing Meeting Status: " + [Closing Meeting Status: ]
ELSEIF [Closing Meeting Status: ] = "Complete" THEN "Closing Meeting Status: " + [Closing Meeting Status: ]
ELSEIF [Reporting Status: ] = "Draft attached to meeting invite" THEN "Reporting Status: " + [Reporting Status: ]
ELSEIF [Closing Meeting Status: ] != "Not Scheduled" THEN "Closing Meeting Status: " + [Closing Meeting Status: ]
ELSEIF [Reporting Status: ] != "Not Started" THEN "Reporting Status: " + [Reporting Status: ]
ELSEIF [Evidence Request Status] != "Not Started" THEN "Evidence Request Status: " + [Evidence Request Status]
ELSE "Kickoff Meeting: " + [Kickoff Meeting]
ENDIF
```
Completion Key

Control test progress

Worked with leadership to develop a key of completion by assigning completion percentage based on latest test step

Calculation populated tracking data with overall progress of control test based on manual tracking files
Progress Dashboard Live Demo

2018 RCSA Control Testing Progress

<table>
<thead>
<tr>
<th>Total Controls</th>
<th>Average Completion</th>
<th>Overall Progress by Business Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>579</td>
<td>55.28%</td>
<td></td>
</tr>
</tbody>
</table>

Latest Status

<table>
<thead>
<tr>
<th>Kickoff Meeting Not Scheduled</th>
<th>Kickoff Meeting Scheduled</th>
<th>Kickoff Meeting Complete</th>
<th>Evidence Partially Received</th>
<th>Evidence Received</th>
<th>Testing In Progress</th>
<th>Testing: Complete</th>
<th>Testing: Ready for Review</th>
<th>Issue Comment: Uncertified</th>
<th>Issue Comment: Uncertified</th>
<th>Reporting: In Progress</th>
<th>Reporting: Ready for Review</th>
<th>Reporting: Reviewed</th>
<th>Closing Meeting: Scheduled</th>
<th>Closing Meeting: Complete</th>
<th>Reporting: Final Exit Grant</th>
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<tbody>
<tr>
<td>4</td>
<td>38</td>
<td>40</td>
<td>46</td>
<td>58</td>
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<td>39</td>
<td>39</td>
<td></td>
<td></td>
<td></td>
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</table>

LIVE

Control Level Detail

<table>
<thead>
<tr>
<th>Control ID</th>
<th>Enterprise</th>
<th>Business Unit</th>
<th>Test Group</th>
<th>Tester</th>
<th>Kickoff Meeting</th>
<th>Evidence Status</th>
<th>Evidence Status</th>
<th>Testing Status</th>
<th>Control Issue Communicated to Business Prior to Draft Report</th>
<th>Reporting Status</th>
<th>Closing Meeting Status</th>
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</thead>
<tbody>
<tr>
<td>Cnt_095</td>
<td>Enterprise B</td>
<td>Business Unit PQR</td>
<td>3rd line</td>
<td>Tester C</td>
<td>Completed</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
</tr>
<tr>
<td>Cnt_096</td>
<td>Enterprise B</td>
<td>Business Unit PQR</td>
<td>1st line</td>
<td>Tester D</td>
<td>Completed</td>
<td>Received</td>
<td>Received</td>
<td>Complete</td>
<td>No Issue Noted</td>
<td>Reviewed</td>
<td>Complete</td>
</tr>
<tr>
<td>Cnt_097</td>
<td>Enterprise B</td>
<td>Business Unit PQR</td>
<td>2nd line</td>
<td>Tester E</td>
<td>Completed</td>
<td>Received</td>
<td>Received</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
<td>Not Started</td>
</tr>
</tbody>
</table>

*Dataset created for this presentation, does not reflect actual Schwab data and is for illustrative purposes only*
Communicate Results to Business Partners

**Design assessment:** Test to evaluate whether a control is designed to address the identified risk(s)

**Operating effectiveness:** Test to evaluate whether a control is functioning as designed

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Results Dashboard Live Demo

RCSA Control Testing Results

Final Control Ratings (Design Rating / Operating Effectiveness Rating)

- Highly Effective: 477
- Effective: 33
- Moderately Effective: 17
- Not Effective: 21
- Delete/Could Not Test: 16

Control Design

- Total Controls: 579
- Strong/Pass: 540
- Weak/Pass: 39
- Sufficient/Pass: 20
- Sufficient/Not Tested: 18
- Weak/Not Tested: 10
- Delete/Could Not Test: 16

Operating Effectiveness

- Total Controls: 579

Control Level Detail

<table>
<thead>
<tr>
<th>Control ID</th>
<th>Enterprise</th>
<th>Business Unit</th>
<th>Tester</th>
<th>QA Performer</th>
<th>Inherent Risk Rating</th>
<th>Design Rating</th>
<th>Operating Rating</th>
<th>Final Rating</th>
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<tbody>
<tr>
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<td>Enterprise K</td>
<td>Business Unit UBF</td>
<td>Tester E</td>
<td>Reviewer I</td>
<td>Level 3</td>
<td>Not Tested</td>
<td>Not Tested</td>
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<td>Business Unit UBF</td>
<td>Tester D</td>
<td>Reviewer J</td>
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<td>Tester F</td>
<td>Reviewer A</td>
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<td>Strong</td>
<td>Pass</td>
<td>Highly Effective</td>
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</tbody>
</table>

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Value of Tableau

Before
• Manual Excel file review
• High time to insight
• Manual point in time updates

After
• Executive level summary
• Reduced time to insight
• Workflow tracking across all enterprises
• Daily automated updates
• Insight and analytics for all stakeholders
Value of Tableau

• Maintained client trust through control effectiveness testing and identification of risk
• Innovation in managing and tracking the project led to success
• Raised awareness through simplified communication of testing results
• Partnered with Business Units to raise awareness of their control environment to instill risk management culture
Happy Clients
Issues Dashboard
Issues Dashboard Lineage

IBM OpenPages
System of record

UiPath
Robotic process automation

Excel
Report downloaded from Application

Alteryx
Data Prep Calculations

Tableau
Visualizations
Issues Dashboard Data Prep

UiPath
- Robot downloads reports from IBM OpenPages User Interface
- Places the reports in the proper folder
- Opens the Alteryx gallery via a web browser and runs the workflow

Alteryx
- Blends the downloaded reports
- Performs a due date calculation
- Publishes to Tableau server
# Issues Dashboard Live Demo

## Operational Risk Testing - Issue Tracker

<table>
<thead>
<tr>
<th>Sub-Source Filter</th>
<th>Business Unit Filter</th>
<th>Creator Name Filter</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A2)</td>
<td>(A2)</td>
<td>(A2)</td>
</tr>
</tbody>
</table>

### Total Open Issues
- **8**

### Open Issues
- **5**
  - **Past Due**: 2
  - **Within 1 Week**: 1
  - **Within 2 Weeks**: 1
  - **Greater Than 1 Month**: 1

### Total Submitted Issues
- **10**

### Submitted Issues
- **4**
  - **Past Due**: 1
  - **Within 2 Weeks**: 1
  - **This Month**: 2
  - **Greater Than 1 Month**: 0

**LIVE**

## Open Issues Detail

<table>
<thead>
<tr>
<th>ID</th>
<th>Business Unit</th>
<th>Issue Creator</th>
<th>Action Item ID</th>
<th>Risk Classification</th>
<th>Open Issues Window</th>
<th>Iss. Due Date</th>
<th>Days Unit Due</th>
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<tbody>
<tr>
<td>Issue_129</td>
<td>Business Unit B</td>
<td>Creator B</td>
<td>Action Item_129</td>
<td>Level 3</td>
<td>Past Due</td>
<td>09/20/19</td>
<td>-23</td>
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<tr>
<td>Issue_125</td>
<td>Business Unit A</td>
<td>Creator D</td>
<td>Action Item_125</td>
<td>Level 2</td>
<td>Within 1 Week</td>
<td>10/25/19</td>
<td>4</td>
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<tr>
<td>Issue_126</td>
<td>Business Unit B</td>
<td>Creator B</td>
<td>Action Item_126</td>
<td>Level 3</td>
<td>Within 2 Weeks</td>
<td>10/30/19</td>
<td>9</td>
</tr>
<tr>
<td>Issue_130</td>
<td>Business Unit C</td>
<td>Creator B</td>
<td>Action Item_130</td>
<td>Level 2</td>
<td>Greater Than 1 Month</td>
<td>11/29/19</td>
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<tr>
<td>Issue_131</td>
<td>Business Unit C</td>
<td>Creator B</td>
<td>Action Item_131</td>
<td>Level 2</td>
<td>Greater Than 1 Month</td>
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## Submitted Issues Detail

<table>
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<th>Issue Creator</th>
<th>Action Item ID</th>
<th>Risk Classification</th>
<th>Submitted Issues Window</th>
<th>Iss. Due Date</th>
<th>Days Unit Due</th>
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<td>Issue_136</td>
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<td>Action Item_136</td>
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<tr>
<td>Issue_137</td>
<td>Business Unit D</td>
<td>Creator A</td>
<td>Action Item_137</td>
<td>Level 3</td>
<td>Past Due</td>
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<td>Issue_138</td>
<td>Business Unit C</td>
<td>Creator C</td>
<td>Action Item_138</td>
<td>Level 3</td>
<td>Within 2 Weeks</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Issue_123</td>
<td>Business Unit A</td>
<td>Creator A</td>
<td>Action Item_123</td>
<td>Level 4</td>
<td>Within 2 Weeks</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

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Tableau Usage at Schwab
Tableau Usage at Schwab
Tableau Usage at Schwab

Licensed developers
• More Than 750 total licensed developers
• Up from around 250 in 2015
• Over 17,000 daily server views

Center of excellence resources
• Charles Schwab brand Tableau color palette
• Alteryx publish to Tableau tool
# Tableau Usage at Schwab

## Previous presentations

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Speakers</th>
<th>YouTube Link</th>
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</thead>
<tbody>
<tr>
<td>2018</td>
<td>Building the Tableau Empire at Charles Schwab</td>
<td>Gessica Briggs-Sullivan and Branden Fulton</td>
<td><a href="https://www.youtube.com/watch?v=5WSjQorFGYI">https://www.youtube.com/watch?v=5WSjQorFGYI</a></td>
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<td>2018</td>
<td>Tableau Conference 2018 Opening Keynote</td>
<td>Rene Kim</td>
<td><a href="https://www.youtube.com/watch?v=iM1XBiVLS5c">https://www.youtube.com/watch?v=iM1XBiVLS5c</a></td>
</tr>
</tbody>
</table>
Schwab Tableau User Group
Monthly TUG Meeting Agenda

- The Real World
- Training
- Viz Contests
- Iron Viz Competitions
- Survey/Raffle
- CoE Announcements

A monthly demonstration from TUG users showcasing Real World Tableau implementation

An overview of:
1. The Schwab process that is being reported
2. Where the source data is and how it is setup
3. How the data is blended
4. Showcase the Tableau worksheet(s)/dashboard(s)

Survey to be sent out after the meeting for interested individuals
Monthly Schwab TUG Meetings

- 100–150 monthly attendees
- Follow-up surveys sent out to collect feedback
- Recordings posted to the Schwab Intranet (“Schweb”)
Schwab TUG Leaders
Please complete the session survey in the mobile app

View ‘My Evaluations’ in the menu or find your session under ‘Schedule’
Thank You