About 9b

9b is a data analytics and information technology consulting company based in Tulsa, OK, and founded in 2018. We help purpose-driven organizations with any and all aspects of their data. Our wheelhouse includes data analytics, architecture, engineering, programming, science, storytelling, and visualization. 9b is a Certified B Corporation.
Overview

Why we did this project

The Treasury division uses several financial modules in the Munis enterprise resource planning system to manage the City of Tulsa’s liquidity, including Cash Management, General Revenue, and General Ledger. The Treasury division’s processes, however, had not been audited since the implementation of Munis in 2018. In partnership with the City Auditor’s Office, the 9b team automated Munis data to identify various sources of financial risk and inefficiency in Treasury processes on a continuous basis.

How we did this project

Treasury is the 11th module in an audit analytics solution for the City of Tulsa. Similar to previous modules, the 9b team began with Discovery work—researching common Treasury risks and controls, exploring and mapping the City’s Munis environment, and interviewing Treasury staff to document processes and priorities for analysis. After Discovery, 9b had the required framework for writing data analytics.

Project Deliverables

- 25+ data analytics seamlessly integrate with Munis and run continuously to monitor and pinpoint risks, inefficiencies, and training opportunities in Treasury processes. See Page 3.

- Tabular file for visualization in Microsoft Power BI, the City’s new business intelligence platform of choice. See Page 4.

Next Steps

The City is changing its business intelligence platform from Tableau to Microsoft Power BI. 9b will provide support to the Internal Audit team with visualization of Treasury data analytics in Power BI. Meanwhile, 9b will begin Discovery for the Utility Billing module.
Analytics

Data analytics track transactions (also referred to as “batches” in Treasury) in Munis as they move through workflow.

The table below lists a few of the 25+ Treasury data analytics. Each analytic tests transactions. If the transaction meets the criteria, the analytic flags the transaction for action.

A single transaction could collect a flag for each of the data analytics.

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Analytic Name</th>
<th>Analytic Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funds Receipt</td>
<td>Cash Amount Outliers by Cashier</td>
<td>Flags if a cashier has a daily cash amount greater than 2X the daily average.</td>
<td>Review audit history of cashier</td>
</tr>
<tr>
<td>Funds Processing</td>
<td>AR Code Outliers</td>
<td>Flags if a transaction is the only one assigned to an AR code in the system.</td>
<td>Review transaction details</td>
</tr>
<tr>
<td>Funds Adjustment</td>
<td>Batch Adjustments</td>
<td>Flags if the batch type is an adjustment.</td>
<td>Review batch details</td>
</tr>
<tr>
<td>Funds Approval</td>
<td>Batch Quick Approval</td>
<td>Flags if a batch is approved within 45 seconds of the previous batch approval.</td>
<td>Strengthen controls; target training</td>
</tr>
<tr>
<td>GL Posting</td>
<td>Posting Time Outliers</td>
<td>Flags if the length of time to post a batch to the GL is longer than 75% of all other batches</td>
<td>Audit on process efficiency</td>
</tr>
</tbody>
</table>
Dashboards

Below is a wireframe of the Treasury process dashboard, which will be built in Power BI. As in previous modules, the dashboard visualizes the process in three dynamic sections.

- The **Process section** shows a simplified Treasury process (yellow); only steps that capture Munis data can be analyzed. The user can navigate to supplementary dashboards (gray) that show analytic results by transaction, employee, and more.

- The **Analytics section** shows each analytic directly below its related process step. Shading indicates the risk level, which updates when Munis data refreshes.

- The **Details section** shows transaction details, which are hidden until a user clicks an analytic box. Transaction details include the date, employee name, and more.

All dashboards include instructions for ease of use and filters for targeted data analysis.