

2018 NASCIO Recognition Award Nomination

**Commonwealth of Pennsylvania Treasury Department
Bureau of Information Technology Solutions**

Title: Treasury Transparency Project
Category: Data Management, Analytics & Visualization
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Project initiation and completion dates:

Initiation: 01/17/2017

Completion: 07/31/2017

2. Executive Summary

For the past several years, the Commonwealth has struggled to meet its budget obligations and has borrowed from the state Treasury Department to meet its day-to-day cash flow needs. In 2015-16, the Commonwealth endured a nine-month budget impasse that affected many Commonwealth citizens directly and indirectly.

Even though voluminous reports were available to decision makers, they still lacked clear visibility into cash flow and expenditure information at the appropriation level and its year-to-year variance. No data was available for Commonwealth citizens to understand the constraints under which the lawmakers and Executive branch were expected to perform.

Pennsylvania Treasury processes about 22.5 million payments totaling \$100 billion annually for all three branches of government, all statewide-elected offices, three major pension systems (State Employees, School Employees, and Municipal Retirement Systems), the Pennsylvania Higher Education Assistance Agency (quasi-governmental agency) and the Pennsylvania Liquor Control Board (PLCB) – an independent government agency – and many more. Treasury also invests and manages more than 200 funds on behalf of the Commonwealth. This data is processed through the Treasury's ERP system (NASCIO 2015 finalist), which gives Treasury unique, comprehensive access to all public financial data of the Commonwealth.

In 2017, Treasurer Torsella embarked on a bold effort to change the status quo by instructing the department to publish all public information available at Treasury in an easy-to-use format to help decision makers and citizens of the Commonwealth engage in strategic discussions about the financial health of the Commonwealth. Treasurer Torsella tasked the team with creating a transparency portal in six months that would be innovative, useful for strategic decision-making, user friendly and, like any other IT project, within a shoestring budget.

Since the [Transparency web site](#) went live, members of the General Assembly and financial staff across the Commonwealth are able to get near-real-time information. Various Committee members of the General Assembly have used this information during the budget discussions to identify funds to remedy the budget deficits. Treasury has also used the data to smooth cash flow to the General Fund to reduce the need for additional loans to meet daily expenses.

The Treasury Transparency portal received national and global recognition for its digital transformation and innovative use of data analytics for Treasury's open government initiatives.

3. Business Problem and Solution Description

The Pennsylvania Treasury has had to lend larger and larger amounts over increasingly frequent periods to the Commonwealth simply to fund operating expenses. In fiscal year 2015-2016, Treasury provided a line of credit of \$2.5 billion, the largest in Commonwealth history, to prevent the General Fund from falling into negative territory. As the major credit rating agencies have noted, such reliance on short-term borrowing to fund operations is unhealthy and evidence of a structural deficit.

Successfully addressing the state's challenges will require the commitment and input of citizens, stakeholders and leaders across the political spectrum, and Treasurer Torsella was confident that the new Transparency web site would provide all the necessary data for the budget writers to make informed decisions.

In 2016-17, with the Commonwealth of Pennsylvania again being in the midst of a budget crisis that included a projected deficit of \$700 million for the current budget year and \$2.5 - \$3 billion for the next fiscal year (as per the Independent Fiscal Office Report), this Transparency portal project effort became critical and assumed a larger-than-life importance within the department.

Since the cost and time were major constraints, the tech team was tasked to be creative and was encouraged to use open source solutions. Treasury decided to use the MySQL Community version as the backend and Google Analytics for web presentation. Following the Design Thinking and Agile methodologies, with a four-week sprint, Treasury released its first version on February 1, 2017 and became the first state (to the best of our knowledge) to publish the General Fund balance every day and expenditures vs. revenue in real time.

Having received rich accolades from members of the General Assembly and other state decision makers, Treasury expanded the scope and initiated another sprint for 60 days with very ambitious objectives. To provide an enhanced user experience, the web site needed more graph types. After quick research, Treasury's Graphics team chose Highcharts, an inexpensive and versatile tool.

Innovation:

- **Scope:** Developed a solution that is unique, first-in-the-nation and strategic in nature to address the Commonwealth's expenditure, revenue and funds data transparency.
- **Analytics:** Developed and stretched the charts software features to its limits to create an effective and efficient user interface.
- **Design Thinking:** In this project, when the Treasurer tasked the team to develop a unique, unprecedented Transparency solution, the team needed to use tools and

processes it had never used before. The project team adopted a Design Thinking concept to define the problem statement, requirements and execution.

All State transparency sites shared their respective expenditures in a very detailed manner. Even Pennsylvania has a web site outside of Treasury that hosts Commonwealth expenditure data. However, the team questioned the strategic value of that data since it is usually used by media to report on excess and waste – a useful service, but hardly strategic. Additionally, most data is updated only once per month, making it essentially outdated before it is published. Reframing transparency objectives helped to develop innovative data analytics that were unique and first in the nation, and far exceeded the expectation of stakeholders.

The charting library is written in pure JavaScript, offering an easy way of adding interactive charts to our web site or web application. The API supports line, spline, area, area spline, column, bar, pie, scatter, angular gauges, area range, area spline range, column range and polar charting. The technology is based on HTML5 and no plugins are needed, and it is compatible with modern browsers, including mobile and tablet.

We combined MySQL and PHP to retrieve and parse our data. Data is extracted after day-end processes from Treasury's ERP system that hosts all Commonwealth payments and populates the MySQL database. This was then injected into the charting API and fit to work within the framework of our web site, which is based on HTML5 with Bootstrap3/CSS3 styling. The website retains all functionality to work across all browsers, all form factors and platforms, including mobile and tablet.

We then added table plug-in to visualize the same data source in ledger format. The jQuery plugin is highly flexible and allows advanced interaction within HTML tables. As with the charting tool, we enhanced the technology by retrieving and parsing the data directly from the database.

In addition to its elegant presentation, the design maintains compliance with the Americans with Disabilities Act (ADA) and World Wide Web Consortium (W3C) HTML5 certification standards. The site is available in all form factors (PCs, tablets and smart phones).

Like any digital transformation project, the Transparency project was very complex, with many diverse stakeholders. The core project team derived from the Comptroller, IT, Cash Management, and Communications.

During the ERP project, we created a change management structure across the organization and introduced the concept of Organizational Change Management, identified Change Agents from each bureau, and trained them on their roles and responsibilities. Leveraging the existing structure, the Change Agents were briefed on the impact of the change

and the value it would bring to different stakeholders. Hence, we started with explaining important information like why change was necessary, who would be impacted, and when it would be carried out. This helped the team to understand the project and its impacts in a consistent manner.

Using Design Thinking, we followed the five-step methodology in conjunction with Agile processes, and we were able to accomplish significant success in a short time. The entire project was developed in-house with a shoestring budget. The team used open source database and inexpensive software; in-house developers learned new tools in an accelerated time frame to deliver the project on time in order to be useful for the General Assembly's 2017-2018 budget discussions.

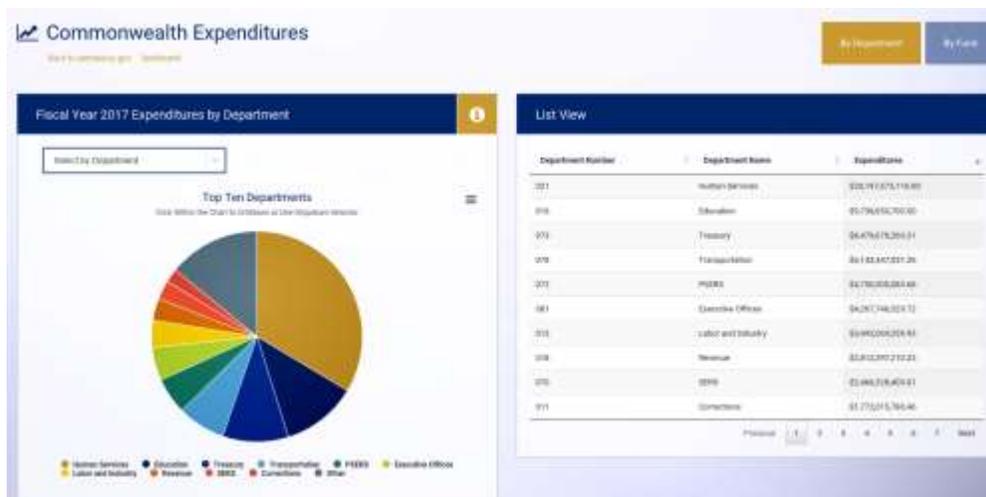
4. Significance

Unlike many other Transparency web sites, Pennsylvania Treasury's web site provides information that is unique and strategic in nature. To the best of our knowledge, no other state, or any other government in the world, shares their cash flow and investment pool data. We believe Pennsylvania Treasury's pioneering effort will set a new standard for Transparency. The sleek design and swift performance have earned the admiration of many users. From a data analytics perspective, the site provides unprecedented access to the Commonwealth's financial data to everyone.

5. Benefits of the Project

The Transparency site is organized in three parts and is designed to meet the needs of all branches of government.

1. In the Commonwealth Expenditure section, users can monitor expenditures by department and by fund. By drilling down into the pie chart, one can compare appropriation-level expenditures for the past three years.



- In the General Fund section, users can monitor the daily cash flow and zoom to any interval all the way to a single day. In addition to showing the daily balance, the graph also depicts the fund balance without Treasury's loan.



- The data on the Commonwealth's daily General Fund balance generated significant interest in how to smooth the ebb and flow of the cash flow.
- In Treasury's Investment Pool section, one can monitor the number of pool shares at cost of nearly 200 funds. Graphs for investment pool balances have already enabled legislators and Administration officials to deliberate on new strategies to reallocate funds to help the General Fund.



Results:

- The three-year comparison on the General Fund cash flow enabled Treasury to identify cash flow deposit timing that could be adjusted. This improved revenue collections to be synced up with disbursements to create a balanced cash flow. **This enhancement will aid in the avoidance of future short-term loans.**

2. The General Assembly identified and used \$300 million from special funds to balance the 2017-18 budget, which helped to avoid raising taxes.

PennLive Article “That includes language giving the governor the authority to transfer \$300 million from various special state accounts into the general fund.”

http://www.pennlive.com/politics/index.ssf/2017/10/pa_house_passes_fiscal_code_in.html

The Commonwealth is facing serious budget shortfalls. Pennsylvanians need to hold their government accountable, and the Transparency portal will serve as a vital tool in keeping them informed about how and where their hard-earned money is being spent.

Because of the Transparency web site, the budget drafting officials are now in possession of a tool that will help them make strategic decisions like never before.

General Assembly discussions:

- One of the House budget groups quoted, “Each revenue source was thoroughly vetted through the new Treasury Transparency Portal, House Appropriations Committee staff, House legal staff and the governor’s own budget documents.”
http://www.bradfordera.com/news/state-house-members-propose-taxpayers-budget/article_93803356-92a0-11e7-94ff-f758942c7d1e.html.”
- House Budget Hearing transcript link:
http://www.legis.state.pa.us/WU01/LI/TR/Transcripts/2017_0009T.pdf Page 28, Line 21; Page 51, Line 3; Page 62, Line 21; Page 63, Line 13
- Independent Fiscal Office Report: <http://www.ifo.state.pa.us/releases.cfm?id=136>

Impact of the Project: This project impacted the entire Commonwealth in a very positive way. Unlike many other Transparency web sites, Pennsylvania Treasury’s web site provides information that is unique and strategic in nature. To the best of our knowledge, no other state shares their cash flow and investment pool data. We believe Pennsylvania Treasury’s pioneering effort will set the standard for Transparency. Successfully addressing the state’s challenges will require the commitment and input of citizens, stakeholders and leaders across the political spectrum, and the revenue solution for the 2017-18 budget has already proved that the transparency site provides all the necessary data for the budget writers to make informed decisions.

NASCIO Priority: Treasury’s project is in line with two of the NASCIO’s top 10 priorities: 4. Digital Government: framework for digital services; portal; improving citizen experience; accessibility. 8. Data Management and Analytics: data governance.