Innovate Ohio Platform

OBM Duplicate Payment Detection Process

Category: Business Process Innovations

State: Ohio

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Project Initiation and End Dates: January 1, 2019 – June 2020

Executive Summary

In Spring 2019, Ohio's Office of Budget and Management (OBM) began work with the InnovateOhio Platform's data analytics team to develop a process to eliminate redundancies and identify duplicate payments within the state government accounting system.

Duplicate payments are a common issue across industries. For every transaction made, it is estimated that around .05 to 2% are made up of duplicate payments. With a large scale of more than 8 million transactions made every year, subtle duplicate payments escape human review. These accounting errors can lead to substantial financial drain on the state and taxpayers. OBM determined that a review of the accounting process using modern technologies to enable faster insights and earlier detection of duplicate payments was a critical, strategic priority.

The introduction of InnovateOhio Platform's modern data and analytics tools were leveraged to conduct a pilot review with OBM. Together, the team achieved:

- Strategic adjustments to the analytical process, reviewing acquired payment data across all agencies;
- Iterative project management methodologies to quickly resolve issues;
- The adoption of modern analytical tools offered on the InnovateOhio Platform (IOP) to identify duplicate payments.

DUPLICATE PAYMENTS ACCOMPLISHMENTS

- Ohio's Office of Budget and Management and InnovateOhio Platform leveraged modern technology to identify duplicate payments
- Technologies and advanced analytics methods deployed included fuzzy matching, real-time data flow, machine learning
- Initial pilot review identified a total of 56 duplicate payments in the state accounting system, totaling $117,702
- Technology deployed created new processes within the accounting system to better mitigate and identify redundancies
- Since the pilot review, OBM has continued to leverage new efficiencies and has identified $1 million in duplicate payments
- The pilot review led to a substantial business process improvement within the state accounting system

The team reviewed payment data from January to June of 2019 to determine any possible duplicate payments within Ohio's government. The project identified a total of 56 duplicate payments, totaling over $117,702 across 22 different agencies, boards and commissions.

Since the initial pilot review, OBM reported from June 2019 to May 2020 that InnovateOhio Platform's advanced analytics tools identified over $1 million in duplicate payments, for a total of 107 duplicate payments across 27 different agencies, boards and commissions. More than 94% of the identified duplicate payments have been recovered by the state and have led to numerous business process improvements.

Ohio | Department of Administrative Services

IOP | Innovate Ohio Platform

Concept

OBM is the overarching financial agency for the state of Ohio, responsible for various financial activities, including developing and monitoring agency operating and capital budgets, and reviewing, processing, and reporting financial transactions made by state agencies. As transactions become easier and faster to complete on a global scale, financial entities are adopting significant process improvements. OBM chose to partner with the InnovateOhio Platform (IOP) to adopt new technologies and advanced analytical methods to better position their business to respond to an ever-changing financial landscape. This partnership aimed to improve internal business and accounting processes, remove redundancies and ultimately protect Ohioans.

Finding patterns or redundancies in complex data sets can be challenging when using traditional data management methodology. IOP provided OBM with capabilities to remove these traditional challenges and enable OBM to set up new business processes, while also saving time, resources and money.

IOP offers a specialized methodology to search for patterns within large, complex datasets. This agile, prototype-first approach was executed, allowing OBM to see immediate value, generate buy-in, more end-user involvement, more accurate requirements, and faster delivery. The ability to determine value early on allows agencies to make a better decision on where to focus resources, driving an agency from insight to informed action. The prototype-first approach for implementing a duplicate payments solution on the analytics platform adhered to the following steps:

- Identify a use case around potential concerning patterns of activity that are difficult to track without manual, labor intensive, and IT-driven processes (start small, build framework, then expand);
- Identify high-level business/data patterns to identify and track;
- Identify the data sets required to locate patterns in the data and onboard the data onto IOP's secure data platform, adhering to the most stringent security standards;
- Build the initial prototype that populates results for business end users to consume;
- Conduct focus group review sessions to review and fine-tune requirements/logic;
- Iteratively enhance the solution and conduct focus group sessions to finalize requirements;
- Automate data workflows and outputs;
- Conduct SIT/UAT and deploy to production;
- Ongoing support, continuous improvement, and expansion.
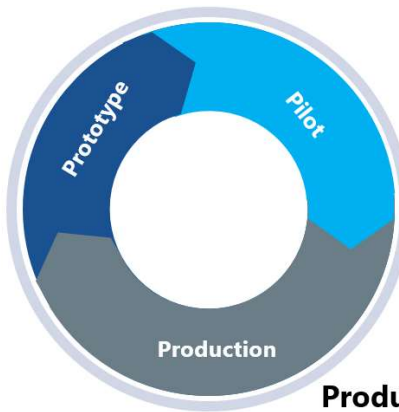
Figure 1: IOP Prototype-First Methodology

By employing a rapid prototype approach, the initial insights allow OBM to drive further investigation into potential opportunities or risks that are difficult to detect manually. The outputs of these solutions often provide new insights that lead to improving existing business processes.

Significance

The initial pilot review quickly populated insights which then progressed to a fully-automated, self-service solution for OBM within a rapid timeframe. Since the pilot review, OBM has been able to fully self-operationalize the solutioning and continue to identify duplicate payments, actively working to recoup losses within the accounting system.

Leveraging Modern Technologies to Transform a Business Process

Together, IOP and OBM leveraged modern technologies and solutions to enable faster insights and earlier detection of duplicate payments, deployed advanced logic in addition to standard SQL checks, and improve development efficiency. The modern analytical solutions included:

- Leveraging StreamSets to land and consolidate all necessary payment data into a single view on the IOP to analyze;
- Cleanse and prepare complex, large datasets using Alteryx;
- Deploy fuzzy matching, real-time data flow, machine learning and other modern analytics capabilities;
- Engage in prototype development and collaboration with primary stakeholder OBM and its subject matter experts;
- Design end-to-end modern solution architecture to automate and integrate into business processes;

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- Build and deploy end-to-end solution from sourcing, to data transformation, to end user insights.
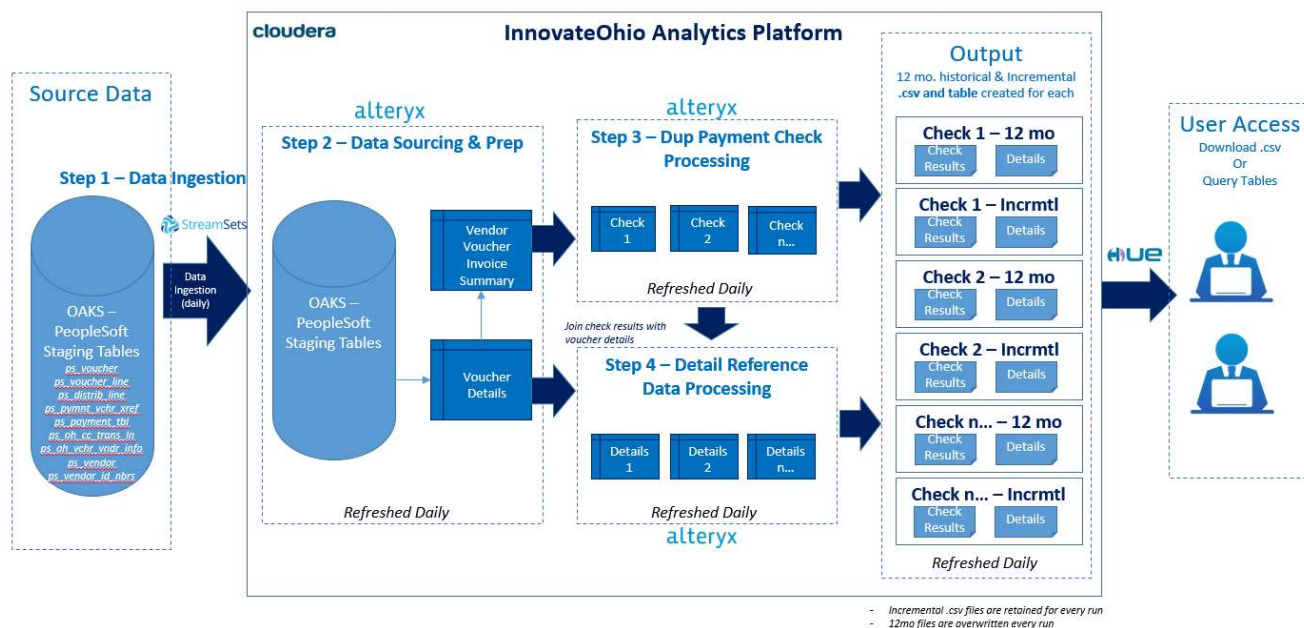

Figure 2: Technologies Deployed to Create new Business Process

Launching A New, More Efficient Accounting System for the State

OBM fully adopted the new technologies and process for identifying duplicate payments within the state accounting system. Additional business process improvements included; identification of common errors and root cause analysis, consistent accounting practices, and process re-engineering. Fully realized, this enabled OBM to drive business with more efficiency, accuracy and less resources.

Impact

Since the successful completion of the Duplicate Payments pilot review, OBM has fully adopted and automated IOP's tools into their accounting system. Adopting these technologies transformed OBM's methods and processes to identify duplicate payments in a timely manner, greatly increasing the likelihood the state's ability to successfully recover the money. This pilot review serves as a use-case for IOP's modern technological solutions as a real cost-savings to Ohio taxpayers.

In addition, the pilot review ushered in the following transformational changes:

- The partnership between OBM and InnovateOhio Platform will **continue to make improvements to the analytical tools and expand to different payment types** in order to improve overall efficiency and accountability. OBM continues to review the state's payment processes for additional enhancement or expansions of this analytics tool.

- Since the initial pilot result of identified duplicate payments totaling $117,702, **OBM has reported over $1 million in identified duplicate payments**.
- **OBM actively works with agencies across the state** to recoup financial losses identified as duplicate payments; of the $1 million identified, $950,027 has been recovered in savings to state taxpayers.
- The benefit to state taxpayers is not limited to the duplicate payments that are identified. **Each confirmed duplicate leads to process reviews that help prevent future errors**. When a process flaw is identified, OBM works to eliminate it completely. **This is a new level of continuous improvement in state budgeting** that did not exist in the past.

For more news on OBM Duplicate Payments, read the recent press release.

Beyond the financial gains and future cost avoidance, this project's agile methods also saved time and resources, allowing OBM employees to focus on serving fellow Ohioans. All considered, the results of this project are of immediate value to the state of Ohio and Ohio taxpayers. It serves as an example of the state's ability to leverage and adopt to modern technology in order to transform current business processes.