



Analytics Suite

P-Card Module

Prepared for: City Auditor's Office, City of Tulsa

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June 21, 2019

Project Overview

Why this project was completed:

An estimated 500 City of Tulsa employees—all with unique roles and responsibilities—have Purchasing Cards. With the adoption of MUNIS, the City now has a wealth of data on P-Cards at its fingertips. Rather than leave that information dormant, this project employs analytics for rigorous, automated vigilance of the Purchasing Card Program and to offer data-based insight for improvements.

What this project accomplishes:

- Detects risks associated with P-Cards, and how frequently and to what extent they occur.
- Increases overall transparency regarding P-Card procedures, participants, and transactions.
- Identifies opportunities to improve performance of the P-Card Program, specifically employee training.

Scope

Develop data analytics and interactive Tableau dashboards for oversight of the City of Tulsa Purchasing Card Program.

Objectives

- Identify risks associated with P-Cards, including inefficiency, noncompliance, and misuse.
- Test effectiveness of current P-Card controls and inform additional measures to safeguard City assets.
- Empower City stakeholders with data to monitor P-Card processes, investigate issues, and initiate solutions.

Methodology

- Researched internal literature about P-Cards and gained access to MUNIS data tables.
- Interviewed Purchasing Division staff regarding internal procedures and priorities.
- Developed workflow for approving P-Card transactions and assigned risks to each step.

Results

Two KPIs requested by the P-Card Administrator show:

• how many issued P-Cards have been inactive and for how long

• how many commodity codes are never used and how much spend is attributed to each actively used commodity code. *See Page 6 for more.*

50 analytics monitor risks associated with P-Card Program and its participants including:

- Wide-ranging misuse of a P-Card by the Cardholder (even-dollar, weekend, duplicate, or split transactions; purchase returns for cash; negligence of City policies and contracts)
- Inaccurate and incomplete coding and recording of transactions in MUNIS by the Cardholder.

- Inadequate review by the Card Coordinator, Direct Supervisor or Accountant due to inefficiency, high volume of transactions, and lack of experience or training.
- Noncompliance among P-Card participants (employee edits transaction in MUNIS after approval; employee approves his/her own transaction; employee exceeds P-Card limit without purchase order).

Sample Findings

*Note: These results reflect **July 2018 to February 2019** MUNIS data (the most recently available at the time of the project). The finished Tableau dashboard will operate with current data, and users will be able to select the date range according to their needs and interests.*

What risks stood out most in the analysis?

Under the initial “Cardholder Transaction” step, our analytics flagged several occurrences of:

- Multiple purchases made to a single vendor.
- Cardholders purchasing items from only one vendor.
- Possible split purchases by Cardholders in the same department to the same vendor.

The combination of these identified risks could indicate that Cardholders need training on when a purchase order is needed.

Additionally, our analytic that flags food-related transactions showed a high count of pet food purchases. These were made using multiple vendors and without a purchase order. This indicates an opportunity for the City to negotiate a contract with a pet-food vendor.

Which transactions indicate misuse of P-Cards?

Transaction No. 23616 was the second highest risk transaction shown in our “Risk Scores By Transaction” visualization, which was limited to transactions worth at least \$1,000 in amount. Transaction No. 23616 was flagged by 17 analytics. It was canceled by an accountant and the item was returned. We assume this transaction was against City of Tulsa P-Card policy.

Where are inefficiencies in the process?

According to City of Tulsa policy, the transaction made with a P-Card needs to be submitted and approved within three business days of the import. Our analytic that tests this policy indicated that a high number of transactions were not completed within this timeframe.

Background

Purchasing Cards, or P-Cards, are credit cards that allow employees and departments across the City of Tulsa to purchase small-dollar goods and services.

The Purchasing Card Program is the City's preferred payment method for several reasons: P-Cards lessen the need for petty cash funds, direct pay requests, and papers checks—and generate thousands of dollars in rebates for the City. Cardholders can purchase what they need securely; vendors receive payments for such purchases more quickly; and all transactions are recorded electronically. Additionally, each Cardholder must submit an application and receive approval before being issued a P-Card, which unlike cash or checks, has set dollar amount limitations and commodity restrictions.

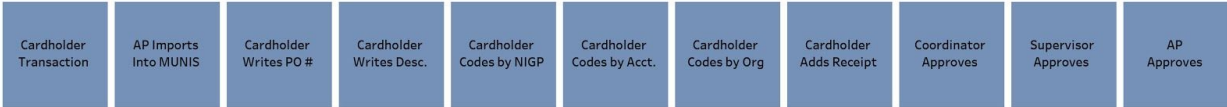
While P-Cards offer a greater level of control than other payment methods, there still lies inherent risk in permitting money to be spent across an organization. For this reason, each transaction made with a P-Card undergoes an approval process, wherein the transaction must be properly coded by the Cardholder and reviewed by his/her Card Coordinator, Direct Supervisor, and Accounts Payable. The time allotted for this process has been reduced from 30 days to three.

This data analytics and visualization project focuses on each step of the P-Card transaction approval process, from the Cardholder's initial charge to the final approval by Accounts Payable.

Exhibit: Tableau Visualizations

The Tableau dashboard developed in this project illustrates the approval process for P-Card transactions in three interactive sheets.

- The **Process Sheet** breaks down the transaction approval process by workflow step.



- The **Analytics Sheet** shows each analytic directly below its related process step. Shading indicates each analytic's weighted risk score (weight times number of flagged occurrences).
- **Filters:** Analytics can be filtered by **Audit Risk** to isolate audit risk analytics, by **Timeliness** to locate bottlenecks, and by **Period** to see how analytics are performing over time.



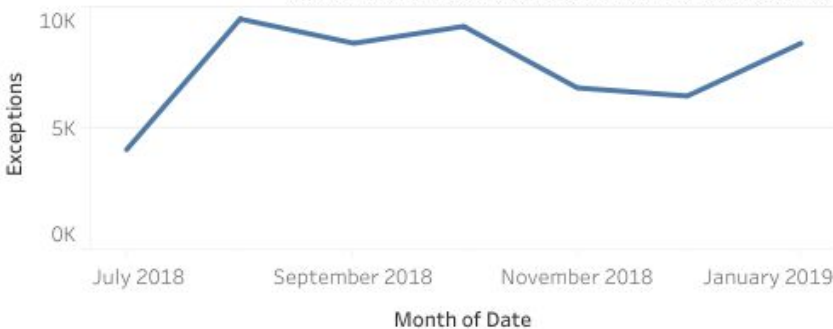
- The **Details Sheet** provides transaction details, which allow the user to understand what conditions triggered the analytic's risk score. Details are hidden until an analytic is selected.

PK Transaction..	Test Num	Transaction Charge Dt	Employee Name	Emp Department	Vendor Name	Transaction Desc	Commodity Desc	Transaction Charge Amt
...
...
...
...

Additional view

When a user hovers over an analytic box in the workflow visualization, a tooltip displays a line graph that shows the monthly total of instances the particular analytic was flagged.

Process step: Cardholder
Weighted parameter name: SplitTransByDept
Analytic Number: 48
Number of exceptions: 53,076
Description: Flags transactions if the Thirty Day Amount total is greater than the PO threshold amount and there is no PO with the P-Card transaction.



Risk scores

A set of stacked bar graphs that show risk scores **by employee, by approver, by clerk, by department, and by transaction.**

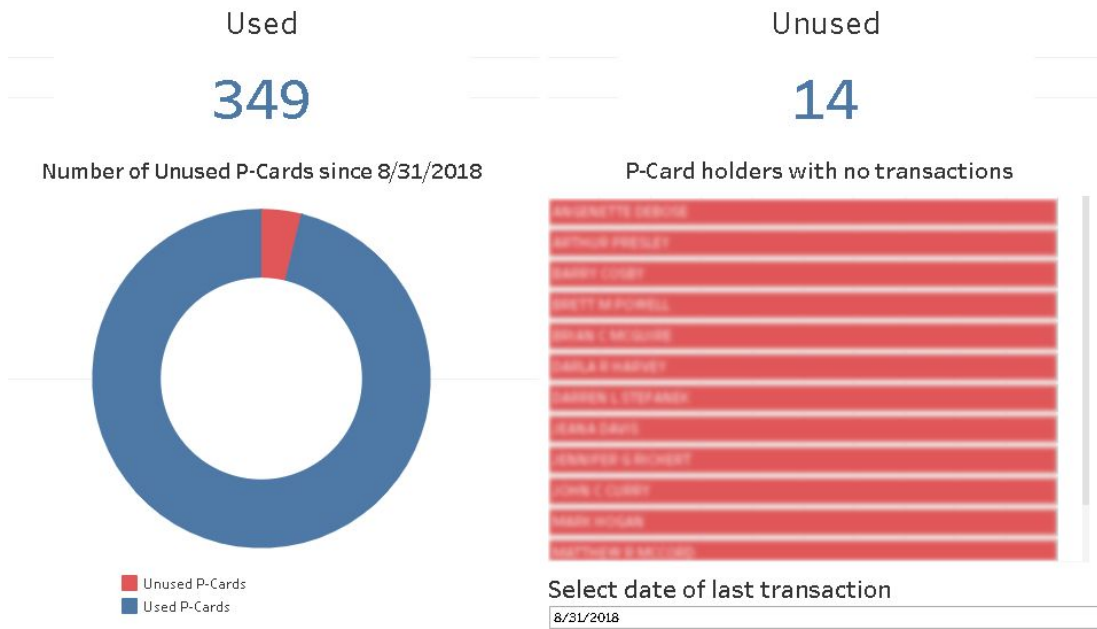
Example: The user can quickly see which departments have the highest risk and which areas of risk are the highest for each department.

Risk Scores by Department



The **Unused P-Cards (KPI)** monitors P-Card activity across the City. A user can see how many P-Cards have been inactive, by whom and for how long. This KPI, requested by the P-Card Administrator,

could reduce the number of P-Cards, making the P-Card Program easier to manage and also minimizing risk.



The **NIGP Code Usage (KPI)** monitors the usage of commodity (NIGP) codes across all transactions for a particular time period. It also shows how much spend is attributed to each code and if a competitive process needs to be initiated. This KPI, requested by the P-Card Administrator, could help narrow the codes by relevance, resulting in more accurate documentation.

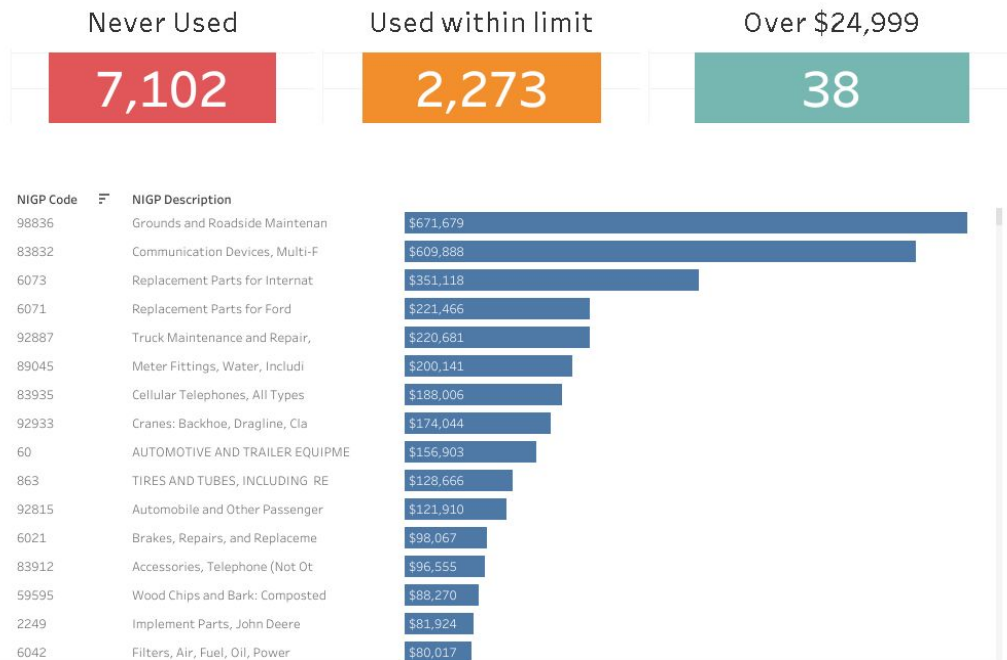
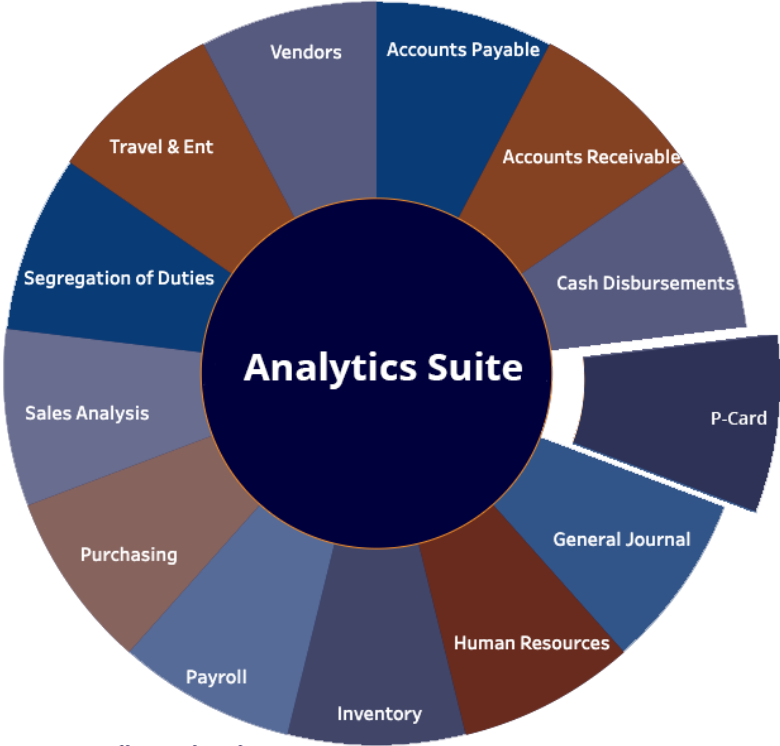


Exhibit: Analytics Suite

P-Card is the second Module in an Analytics Suite being developed by 9b for the City of Tulsa.



Payroll completed
May 2019.