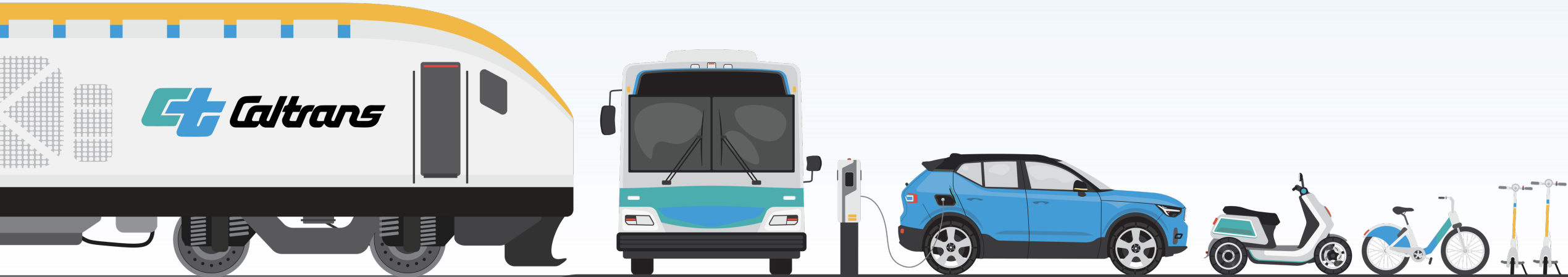




Caltrans Integrated Mobility

Connecting the dots on transportation innovation across California, the U.S., and the world.

December 17, 2024





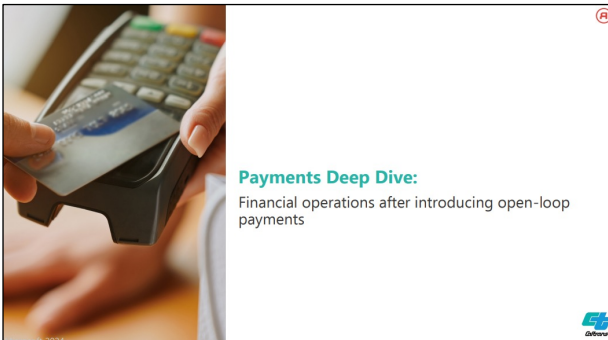
Solving Common Open Loop Challenges: **Dashboards for Financial Operations**



Once agencies go open loop, they must adapt to the challenges that all merchants face when accepting bank cards.

Open-loop payments offer remarkable benefits—convenience, interoperability, and broader accessibility—but they also bring new **risks** and **costs** that agencies must learn to manage effectively through **financial operations (FinOps)**.

FinOps includes a mix of different activities, including managing the flow of funds from card payments, monitoring fees from the financial sector, and mitigating the inherent risks such as unrecoverable debt that come with accepting bank cards.



Check out our [January 2023 Edition](#) to learn more about how financial operations work.

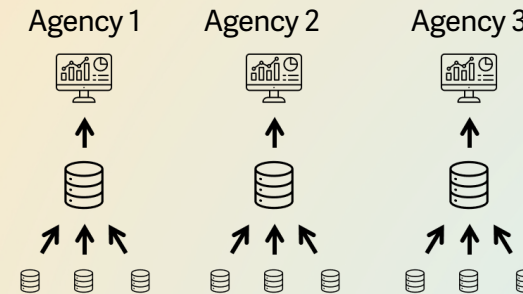


To help agencies address these problems, Cal-ITP has developed centralized, data-driven tools to easily conduct effective FinOps.

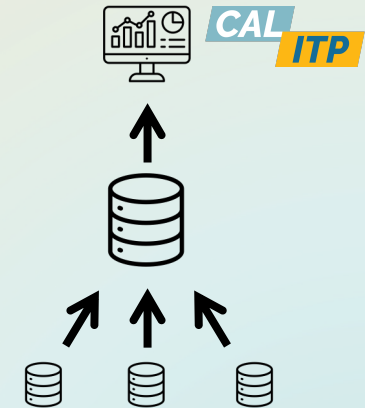
Cal-ITP has built an **off-the shelf** suite of tools that makes it easy for agencies accepting open loop to **analyze their transaction data**. This suite includes multiple tools with a “data warehouse” that can:

- Consolidate **transaction-level data** from transit processors (e.g., trip details) and acquirers (e.g., payment details).
- **Integrate other operational data sources**, such as GTFS feeds and NTD data.
- Easily **visualize data** in existing templates to answer the most common questions.
- **Be re-used** for any interested agencies, reducing redundancy and streamlining operations.

Decentralized:



Centralized:



- ✓ Agencies benefit from the data warehouse without building or maintaining individual systems.
- ✓ Costs depend mainly on new system integrations, not data volume or the number of agencies.

Let's take a closer look at how these tools help agencies address 3 common FinOps challenges →

Challenge #1: Declines, Bad Debt, and Fraud

Once they accept open payments, agencies must manage the risk of “**bad debt**,” or fares that can’t be collected. It’s hardest to avoid bad debt during a customer’s first ride, since they are unknown and their card is unverified, creating what’s known as “**first ride risk**.”

- Unlike retail payments, which are verified immediately, transit uses on “deferred authorization,” allowing travel to proceed without immediate confirmation of available funds.

This ensures validation doesn’t slow down boarding or fare gate throughput, but risks accepting riders’ cards that have insufficient funds.
- Transit payments are sometimes settled up to 28 days after the travel date, so when the agency goes to collect the fares they are due, the card is sometimes declined or otherwise unable to be charged for payment. This creates bad debt that the agency must either try to recover over time or write off as a loss.

How can agencies keep track of the outstanding bad debt, and prioritize mitigation strategies to reduce the first ride risk in the future? →

Tool #1: Declines, Bad Debt, and Fraud Monitoring

Agencies may have a hard time explaining the reasons behind their open loop “bad debt,” or uncollectable fares. Why is it increasing? How do you control it?

Mitigation requires visibility

The outstanding debt monitoring tool aims to explain the key factors behind uncollected fares. It does this by identifying which customers and issuer banks have the highest outstanding debt, detecting fraudulent behavior, and monitoring key causes of bad debt, such as decline codes.

With this information, agencies can develop more **targeted strategies to mitigate bad debt risk**, improving fare collection over time.

Outstanding Debt (\$) per Issuer and over time:

Outstanding Debt by Domestic Issuers

Issuer ^	Country ^	Scheme ^	Outstanding Debt
Dummy Bank #1	UNITED STATES		\$XXXX
Dummy Bank #2	UNITED STATES	VISA	\$XXXX
Dummy Bank #3	UNITED STATES	VISA	\$XXXX
Dummy Bank #4	UNITED STATES	MASTERCARD	\$XXXX

What's this spike in debt?

The most recent day will always have the highest level of debt due to the authorizations that haven't yet taken place.



These tables and charts from the tool extract and aggregate bad debt transactions to help agencies monitor the level of outstanding debt over time. This allows the agency to then contact specific issuers to manage this level directly or identify anomalies.

Challenge #2: Transaction Fees

Transaction fees are one of the **new costs** agencies must absorb once they accept bank card payments. There are **many kinds of fees** that agencies pay financial sector partners, and the amount of fees can **vary over time**.

- Transit transactions are typically low in value but high in volume, with unique processing fee structures that range from 1-2% to even 5-10% of total fares collected.

Interchange, network, and acquirer fees contribute to the total processing cost and can vary based on how agencies handle transactions. Understanding and tracking these fees is essential for managing the overall costs associated with open loop fare collection.

- If transactions aren't processed optimally by the agency, they can pay penalties when procedures are not met or pay "downgraded" rates that are more expensive when transactions don't meet pre-set criteria (such as volume or value thresholds).

How can agencies keep track of the fees they pay to optimize their costs over time, especially when fees charged are often difficult to understand?

Tool #2: Transaction Fee Tracking

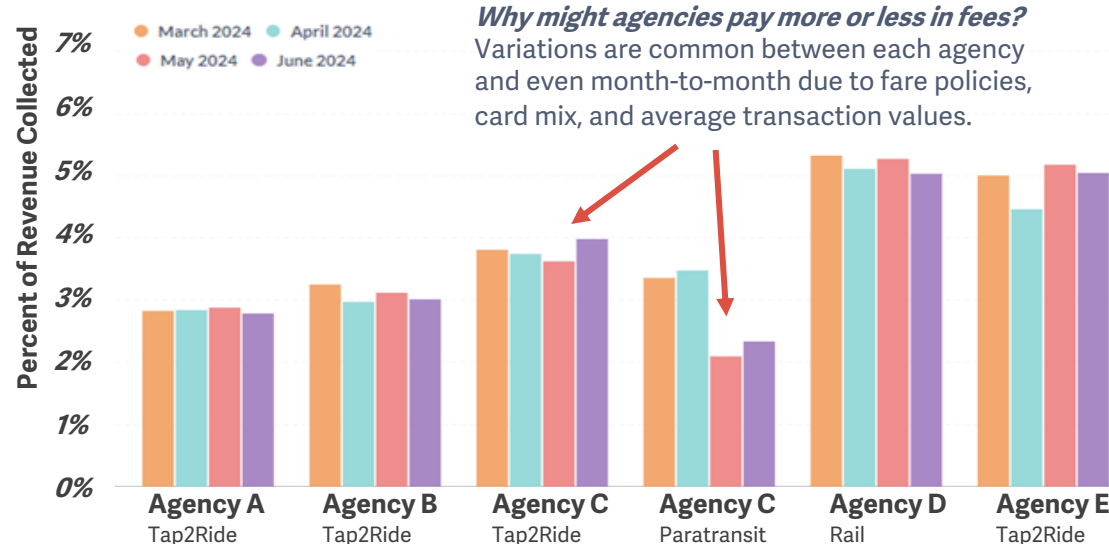
Monitoring fees charged to the agency and optimizing fee processing is critical to keeping the overall cost of fare collection low with open loop.

Strategies for fee management

Effective fee management involves tracking key metrics like fee percentage of net sales or average transaction costs over time.

The monitoring tool is configured to track these metrics, allowing transit agencies to make **informed decisions** (e.g. changing aggregation practices), **identify anomalies**, and **adjust processing methods**, to ensure costs are kept under control.

Fees paid by merchant, by month:



This chart monitors and compares total fees (including interchange, network fees, and acquirer fees) as a percentage of net sales over time. Each "merchant" represents a different entity accepting payments. Sometimes, one agency may register as multiple merchants to manage transactions for different modes or services separately.

Challenge #3: Reconciliation

Reconciliation is a critical component of tracking and handling payments collected through the open loop system. Each transaction should be **matched to a corresponding tap/ journey** to ensure payments are in order.

- Reconciling transactions requires the agency to matching up different sources of data to make sure every trip is paid for. Transactions are often aggregated, delayed, or impacted by fare capping rules, and when this is coupled with high data volumes, things get tricky.

Reconciling thousands or even millions of payments can overwhelm agencies' finance teams, as the volume of data for this task often exceeds what basic tools like Excel can handle.

- Leveraging automation can significantly streamline this traditionally manual and time-consuming task, but not all agencies have the data analysis capabilities to manage this process at a large enough scale.

How can agencies simplify transaction data enough to navigate it effectively when a problem arises, without sacrificing the flexibility and granularity of detailed data sets?

Tool #3: Transaction-Level Reconciliation

Automated reconciliation is key to operational success, since manually reviewing transaction records to identify discrepancies is impractical.

Empowering finance teams

The monitoring tool **simplifies reconciliation** by automating data alignment between journeys and payments. It highlights discrepancies such as uncollectible amounts, duplicate charges, or refunds, helping finance teams address issues proactively.

The tool can also help agencies troubleshoot better when customers report issues, and by integrating advanced analytics and customizable reporting, the tool enables more precise tracking and faster resolution.

Non-Zero Dollar Journeys:

Filters allow easy sorting of data

Agency

Journey Date

Previous Month

×

Settlement Request Date

Previous Month

×

Settlement Date

Previous Month

×

Payment Date

Previous Month

×

Reconciliation base table - Non-zero Sales

Retrieval Reference Number ^	^ Micropayments in the aggregation	^ Nominal Amount	^ Charge Amount	Transaction Date ^	Settlement Type ^	Requested for Settlement Date ^	Settlement Status ^
7305087055366029504278	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7305068984306786304094	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304966803556835404085	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304762067806245903287	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304713958536447603084	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7305068994976354504023	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304918506686316303051	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304750507736538003292	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7304949101586309504088	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED
7305039211806243204273	1	2	2	November 1, 2024	DEBIT	November 1, 2024	SETTLED

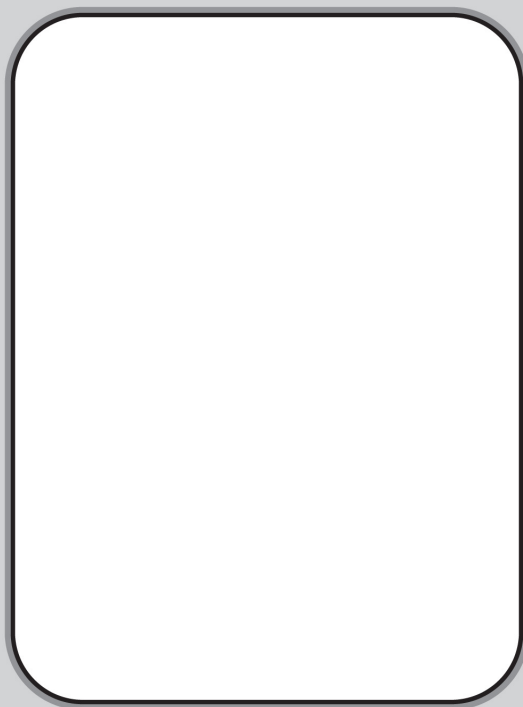
This view captures every non-zero dollar journey (paid trips) along with the corresponding payment details, such as settlement information. Finance teams can leverage filters and granular reporting levels to efficiently navigate even millions of rows of data.

By developing tools for financial operations, Cal-ITP is helping transform transit across California.

- 1 Simplified Operations:** Centralized, data-driven solutions streamline fee tracking and reconciliation, reducing administrative burdens.
- 2 Enhanced Financial Oversight:** Advanced dashboards offer clarity on debt, fees, and revenue flows, empowering informed decision-making.
- 3 Cost Efficiency:** Improved processes lower operational costs, driving sustainable transit management.

With these tools, transit agencies can shift their focus to what matters most: **delivering seamless, accessible, and rider-centered transit experiences.**

EXIT



Questions, feedback, or have a topic you would like to know more about? Please reach out to isaac.sonnenfeldt@rebelgroup.com

New to the Newsletter? [Subscribe here.](#)