



How Scribble Data's Enrich helped drive TerraPay's business operations

Enrich is a robust and customizable feature store that allows for streamlined data insights and agile data preparation for ML engineers



The Problem

TerraPay's vast geographic outreach solicited a robust TerraPay Intelligence Platform with multiple use cases and foundational requirements.

TerraPay is a cross-border B2B payment infrastructure solution provider. Its customers are largely B2C payment solutions providers with whom TerraPay has strategic partnerships and is

licensed to operate in several countries.

To cover the expanse of their operations and protect data from various threats, TerraPay needed a robust and central

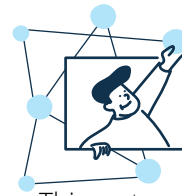
TerraPay Intelligence Platform (TIP) to power the multiple use cases. With Enrich, Scribble Data was able to address their multiple needs and the underlying challenges of the payment industry.

The Architecture

The first step is to understand the comprehensive system architecture of TIP

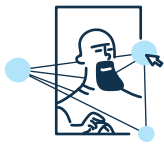
The TIP system operated in line with the transactions flowing through the TerraPay system, but not in their critical path. Its outputs were designed to be extensions to existing systems rather than replacements of existing processes. To better understand the role that Enrich played in TIP's overall functioning, we must first understand its architecture.

The four pillars of TerraPay Intelligence Platform



Ingestion

This system ensured that data can be ingested from various sources with the appropriate checks, balances, and the required destinations loaded



Modeling

This is a subsystem that catered to the needs of a data scientist, required for post-processing data



Serving

This subsystem allowed data in various forms to be surfaced to the end-user using a variety of interfaces



Data

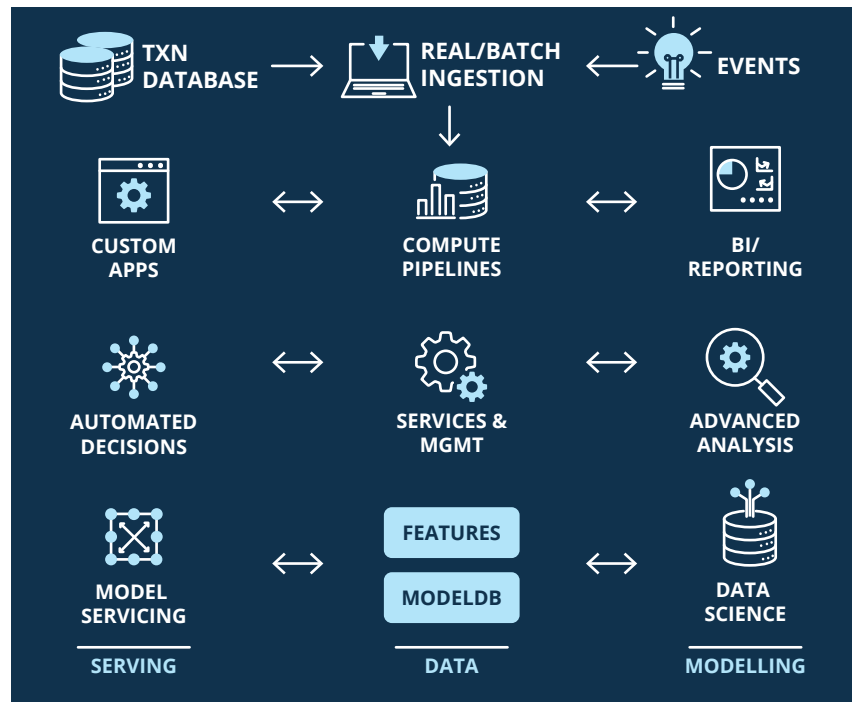
This system consisted of the storage subsystem and a framework for data preparation and training

The Implementation

Where does Enrich fit into the TIP network and how does it function?

The TIP system diagram reveals the compact platform architecture of Enrich, which is encapsulated in the box marked as 'Data', consisting of compute pipelines, services and management protocols, features, and a model database. It creates, documents, enriches, and maintains the data in a structured form with well-defined interfaces at the required granularity of time and detail. It builds and stores models, and manages the resources required for the same.

The Enrich platform architecture within TIP



The Result

Scribble Data's customizable feature store, Enrich, powered operational efficiency through a range of powerful use cases for TerraPay

Forecasting

TerraPay enabled its channel partners to provide a seamless remittance experience to people across several countries. To accomplish this, TerraPay needed to maintain a rolling balance at a number of these destination countries, which could be used to instantly settle the received remittance.

TIP was host to a forecasting solution based on the Enrich feature store. This assisted TerraPay in managing daily liquidity at different destinations in the TerraPay payments process. Forecasts generated from a multitude of models were used by the business team to set daily liquidity pre-allocations.

The Enrich-based forecasting solution allowed for different kinds of statistical modeling and machine learning approaches for forecasting (AR/MA/ARIMA/SARIMAX classes of models). It was used to build more complex time series models based on deep learning architectures, and the flexibility allowed TerraPay to switch between approaches as needed.



Challenges solved by Enrich's forecasting application include:

- Getting an accurate estimation of the total liquidity required per day
- Addressing the decision-making duration based on practical considerations
- Corridor-specific, partner-specific, and region-wise consumer behavior patterns
- Assisting decision makers with efficient visualization

Identity resolution

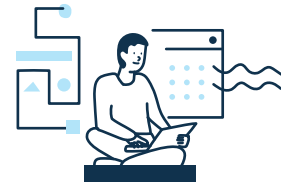
Enrich enabled the identification of clusters of end users for TerraPay, especially in terms of behavior or preferences. This intersected with unlocking new products or offerings, as well as further improvements in the current AML rules.

Over a period of time, Enrich was able to assist in customer journey analytics such as cross-selling and upselling. There was also drastic improvement in user experience, thus allowing TerraPay to keep up with business opportunities that required such intricate customer insights.

Searchable logs

TerraPay's payment protocol implementation was complex, with significant differences in channel partner implementations. This resulted in messy data, and called for the coordination of different processes and technologies. The protocols that TerraPay had with their channel partners made the reconciliation and debugging process fairly challenging.

The company was in need of a system that organized and post-processed information across a variety of logs, and ensured data availability through the right abstractions. Without Enrich, this process would have required giving TerraPay data engineers direct access to raw and sensitive data and servers. TIP allowed them to conceptualize the solution they needed to address the issues associated with log analysis.



Channel partner performance analytics

The Extensible Query Engine in Enrich already powered the TerraPay dashboards. The streamlined mechanism to query data with the right abstractions allowed them to supercharge their dashboards. The ad hoc queries had now reduced, and the trust in the underlying data grew with every passing day.

The Takeaway

Enrich gave TerraPay the right tools to build and develop their data strategy. It also delivered critical use cases such as effective forecasting, dynamic identity resolutions, and insightful data analytics. Today, Enrich enables TerraPay to improve overall operational efficiency, thereby enabling stronger alignment in the organization towards their strategic goals.

