

# Global Bank Cuts Settlement Delays by 70 Percent Using Blockchain Tech

## Case Study



## Overview

### Prolonged merchant settlements

A leading American retail bank, operating 1,070+ branches and 3,200+ ATMs, was facing reconciliation challenges within its buy-now-pay-later (BNPL) business line. The bank was looking for innovative solutions to uplift customer satisfaction.

#### **Zensar's brief:**

- Simplify the process of onboarding merchants onto the reconciliation platform.
- Expedite the merchant settlement process, from submission to clearing and settlement of card transactions.
- Reduce the number of reconciliation challenges with cards transaction settlement and the clearing cycle.

#### **Beyond the brief:**

After investigating novel ways to decrease reconciliation issues and total merchant

settlement time for the BNPL business line, we shortlisted blockchain technology. We then meticulously combed through the nuances of blockchain technology and its ability to accelerate merchant reconciliation and enhance the bank's overall competitiveness.



## Challenges

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### Operational inefficiencies

The bank was operating mostly on manual reconciliation methodologies and disparate systems, with several challenges to contend with:

- Multi-party dependency
- Risks due to lack of traceability
- Lack of a standardized approach
- Inefficient and slow processes
- Manual matching challenges



## Solution

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### Swift, simplified, and secure reconciliation processes with data privacy

**Build a business case:** After carefully considering the merits of various emerging technologies, we settled on a solution design that leverages the blockchain enablement framework using Hyperledger Fabric, for these key reasons:

- **Driven by smart contracts:** Self-executing code helps automate business functions and validate executions based on business rules. Moreover, it enables customization of data availability for intended participants.
- **Standardized file definitions:** The technology enables adherence to global standards and is adaptable to custom proprietary formats for reconciliation and settlement.
- **Data privacy and security:** It allows the bank to define roles and customize permissions to indicate authority to participants to validate and approve through a dynamic consent matrix.

**Design a prototype:** After choosing a Hyperledger-driven reconciliation and settlement prototype that supports BNPL and card settlement use cases, we

collaborated with the client's team and third-party service providers to carry out these key steps:

- Redefine the business process flow.
- Automate the reconciliation process.
- Structure the Hyperledger Fabric model.

**Demonstrate functionality:** We were able to successfully demonstrate the potential of a solution built on Hyperledger Fabric to reduce the overall reconciliation time with an automated reconciliation solution with these key initiatives:

- Designed and built a working prototype on the cloud — a blockchain-enabled, security-enabled, data-controlled solution with AWS channels.
- Redefined business flow for the submission, settlement, and clearing processes.
- Encoded business logic in smart contracts.
- Implemented channels with attribute-level and role-based access restrictions, as well as private data collections with Hyperledger configuration and networking.
- Created client-facing web pages to illustrate proof-of-concept (PoC) capabilities.
- Developed four use cases: onboard merchants, view onboarded merchants, submit settlement files, and enable endorsement with a process driven by smart contracts.

**Leverage a cutting-edge tech stack:** We leveraged a cutting-edge tech stack that draws on our advanced AWS competencies:

- Hyperledger Fabric was used for unique identity management and access control.
- AWS was used for reliable, scalable, and cost-efficient cloud computing.
- Kubernetes was used to automate software deployment, scaling, and management.
- Python was used to build software, automate tasks, and analyze data.
- Node.js was used to enable JavaScript to be executed on the server side.

## Solution highlights

- Automated reconciliation process for enhanced operational efficiency
- Blockchain-enabled traceability of all transactions and customizable dashboards

- Data privacy and transparency enabled by an integrated multi-party ecosystem
- Standardized processes that adhere to global standardized message formats and enable regulatory compliance
- Cloud-compatible framework that can be integrated with customized payment systems for automatic disbursement
- Zero-down fraudulent transactions, leveraging a permissioned Hyperledger network



## Impact

### Greater customer satisfaction

According to internal benchmarks, these were the expected results:

- Reduced settlement delays by up to 70 percent
- Deployed ~70 percent reusable framework, extensible for integration with customized payment systems for automatic disbursement
- Mitigated spends on fraudulent transaction management processes

**Business outcomes:** The solution helped accelerate settlements and ensure a secure banking experience, leading to enhanced customer experiences and brand loyalty.

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For more information, please contact: [info@zensar.com](mailto:info@zensar.com) | [www.zensar.com](http://www.zensar.com)