



Prodapt



Establishing digital trust in intercarrier settlements

Leverage blockchain to automate dispute management and reduce the settlement time by 60%

Credits

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Current state of intercarrier billing settlements

- Service providers in the connectedness industry receive intercarrier invoices worth over **USD 1.2 billion annually**
- **Over 25% of revenue** gets flagged to be audited and **blocked due to disputes**
- Claim settlements have about 80% variations, which leads to significant delays in reconciliation
- The interval between dispute identification and its resolution takes **4-6 months due to manual processes**

Most service providers are challenged with managing disputes and improving trust in intercarrier settlements, which impacts their revenue

Major challenges in the conventional intercarrier settlement process

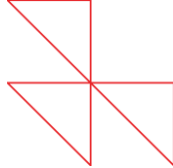
- Multiple siloed teams and manual handoffs increase the interval between invoice auditing and settlement
- Validation and verification of claims are time-consuming and expensive due to third-party intervention
- Dependency on intermediaries for settlements is prone to high-security risks



How does this impact the service provider's operations?

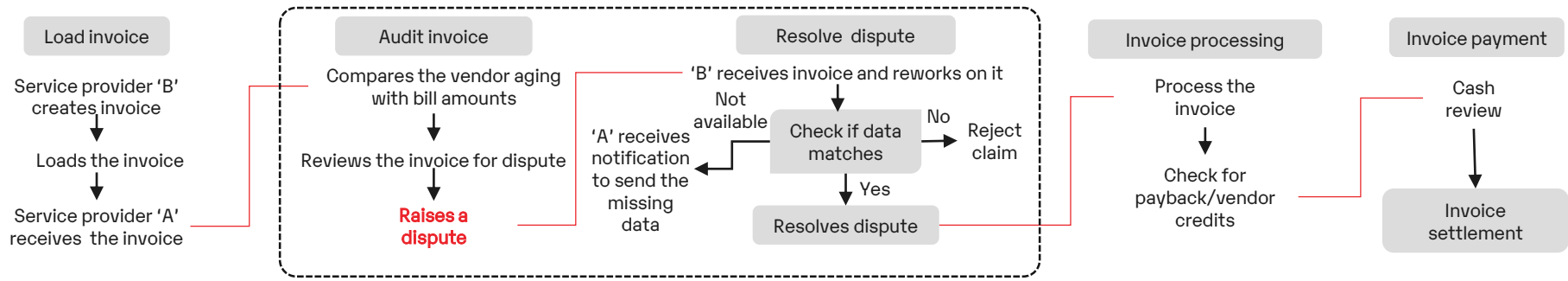
- ⊗ Blocked revenue
- ⊗ Elongated cycle time of more than 400 days for claims with disputes
- ⊗ Increased operational cost by 2x and reduced margins

More than 25% of revenue gets blocked due to disputes in the intercarrier settlements, increasing the costs of managing and resolving disputes. It results in the declination of interconnect margins making a smarter dispute management process critical for addressing the revenue blockages.



Traditional dispute analysis and resolution is inefficient and takes months to years for settlements

Typical dispute management with third parties involves high security risks and blockages of receivables



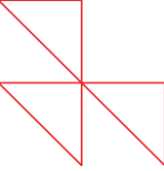
- ❌ Siloed teams and reconciliation processes make the settlement process complex and time-consuming
- ❌ Dependency on intermediaries for settlements increases security risks and operational costs
- ❌ Long chains of conversations between service providers on the missing data, delay dispute verifications and settlements
- ❌ Ineffective tracking of settlements results in ~30% invoice blockages



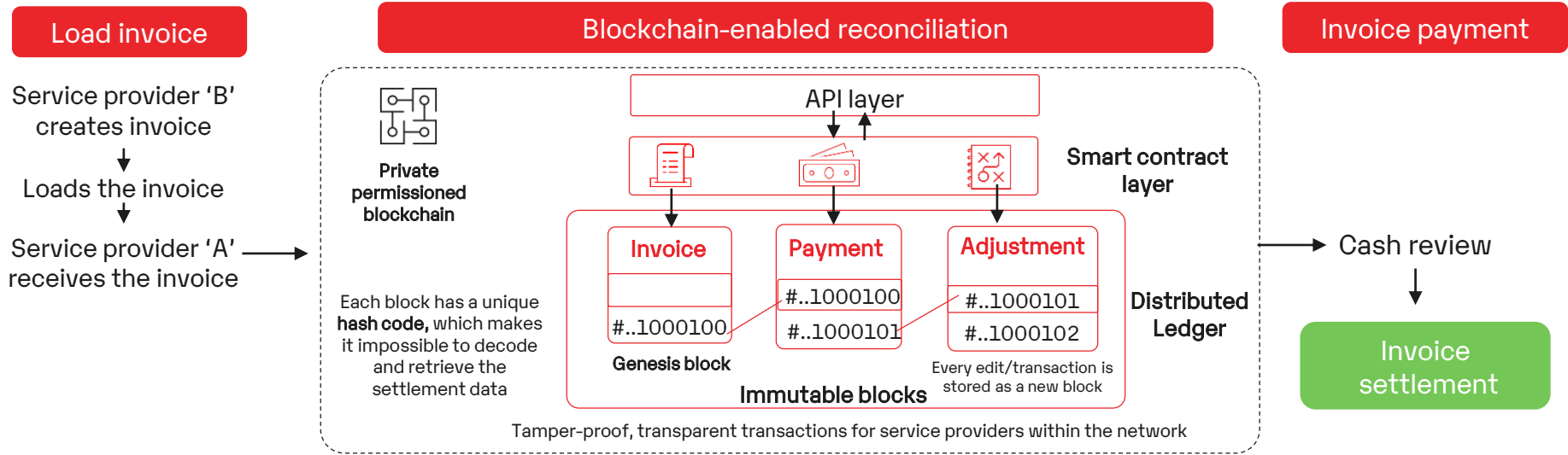
Blockchain: The right choice for dispute management

- **A single source of truth that eliminates siloed processes:** Record all the assets like claims, vendor credits, and paybacks in blockchain distributed ledger. It facilitates real-time access and verification of dispute settlements. It also prevents siloed reconciliation process, making settlements simpler and more reliable
- **End-to-end secure and transparent transactions:** Facilitate **tamper-proof, transparent** transactions from asset uploads, and vendor validations to contract execution, with **cryptographic hashes**. It makes the transactions **immutable**, preventing the reversal of data that enters the blockchain network
- **Smart contracts to automate agreements:** Reduce the reconciliation cost by **eliminating the dependency on costly intermediaries** like clearing houses with smart contracts on the blockchain
- **Secure access to the members of the network:** Ease multi-vendor participation within the blockchain network with the **consensus mechanism**. It enables the execution of multi-vendor contracts with tax mappings and exemptions in Trusted Execution Environments (TEEs)

Move to blockchain-powered dispute management to reduce the settlement time by 60%

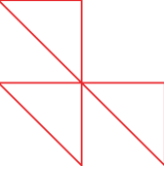


Blockchain-powered dispute management – Automated and trusted settlements in weeks (meeting the SLAs)



“Blockchain-powered dispute management reduces the overall costs by eliminating manual efforts. It further reduces the dependency on intermediaries, with a simple, near real-time, error-free reconciliation and settlement process.”

The four-step approach to implement blockchain in dispute management



1

Build a private blockchain network between service providers

Facilitate seamless and transparent settlements

3

Develop smart contracts for automatic verification of assets

Enable a single source of truth and avoid third-party intervention

2

Automate the bulk upload of assets to the blockchain network

Reduce the time and effort involved in processing each asset

4

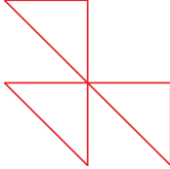
Implement the blockchain utility modules

Accelerate the settlement process

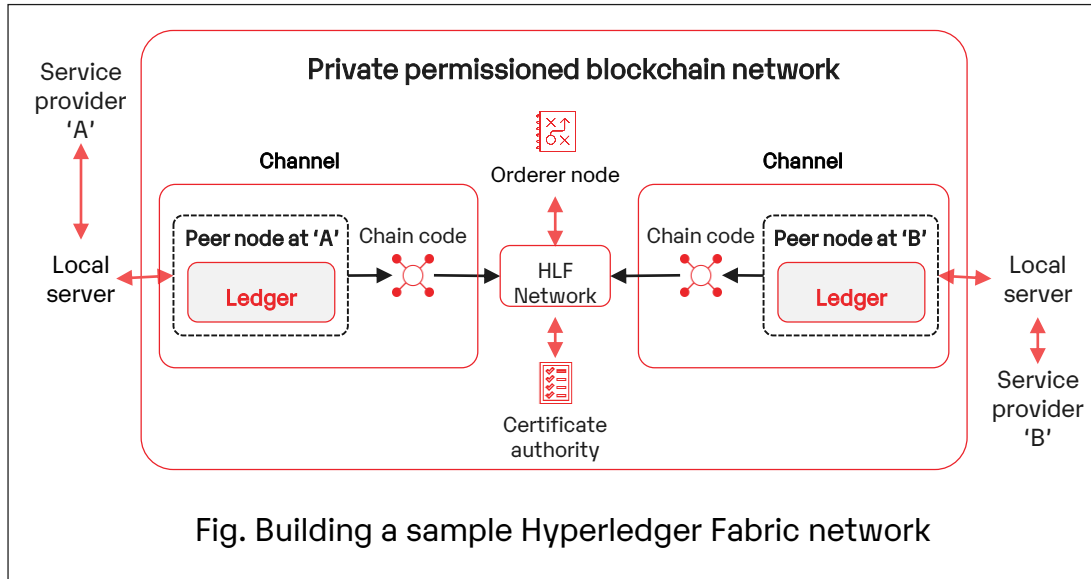
The following slides elaborate on an effective four-step approach to implement blockchain-powered dispute management.



Build a private blockchain network between service providers for seamless and transparent settlements



Service providers are challenged with fragmented processes that delay settlements and block receivables. Developing a blockchain network helps in accelerating settlements by improving transparency and traceability of transactions shared across the network.



Recommendations

- Implement **Hyperledger Fabric (HLF)** network which supports identity management and provides enhanced security for dispute settlements
- Avoid having multiple channels for the same task as it overloads the network and slows down transactions
- Develop **multiple chain codes** to convert the business logic into an executable program that is agreed upon and verified by both the service providers
- Generate a certificate for all participants in the network to ensure a permissioned network with enhanced security

Upgrade to the latest blockchain network to gain maximum benefits

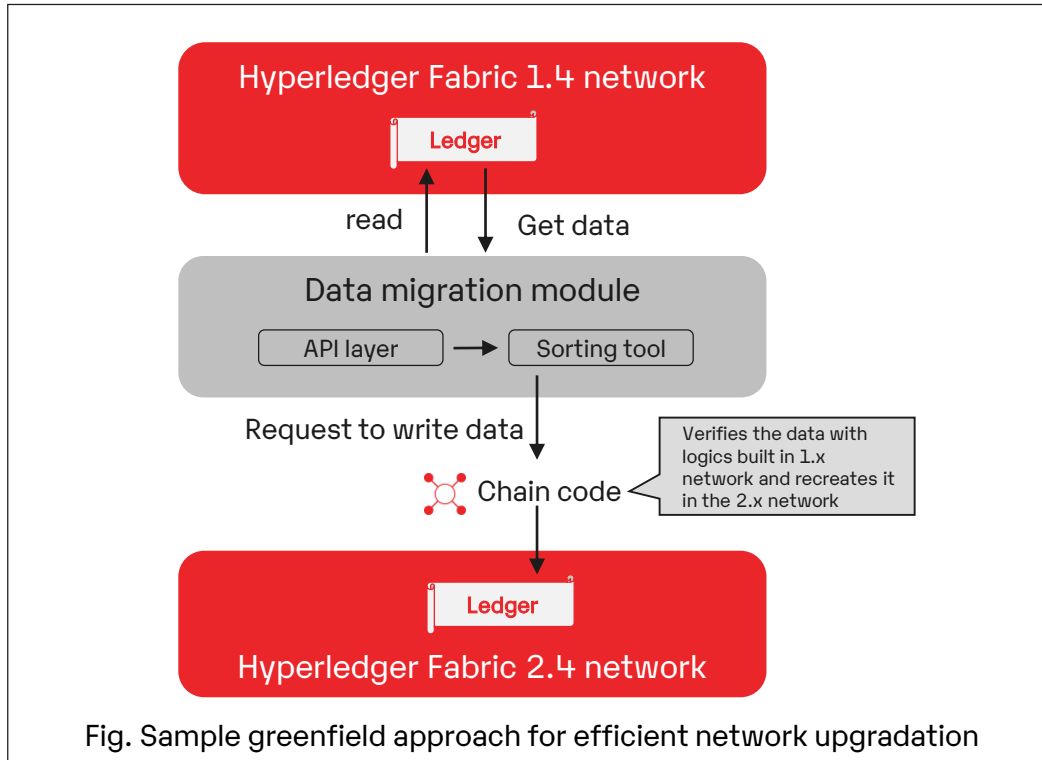
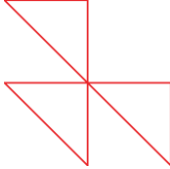


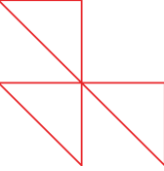
Fig. Sample greenfield approach for efficient network upgradation

Recommendations

Check if you are at the latest release, else migrate to the latest Hyperledger Fabric network

- Implement the **greenfield approach** which fetches the assets from 1.x network and pushes them into 2.x network effectively, using an API layer
- Leverage the **external chaincode launcher** to scale the chaincode as required at an optimized cost
- Develop a separate logic to migrate the transaction history to the upgraded network
- Implement a **sorting tool** to push the assets to the 2.x network in a chronological order

Automate the bulk upload of assets like claims and paybacks to the blockchain network

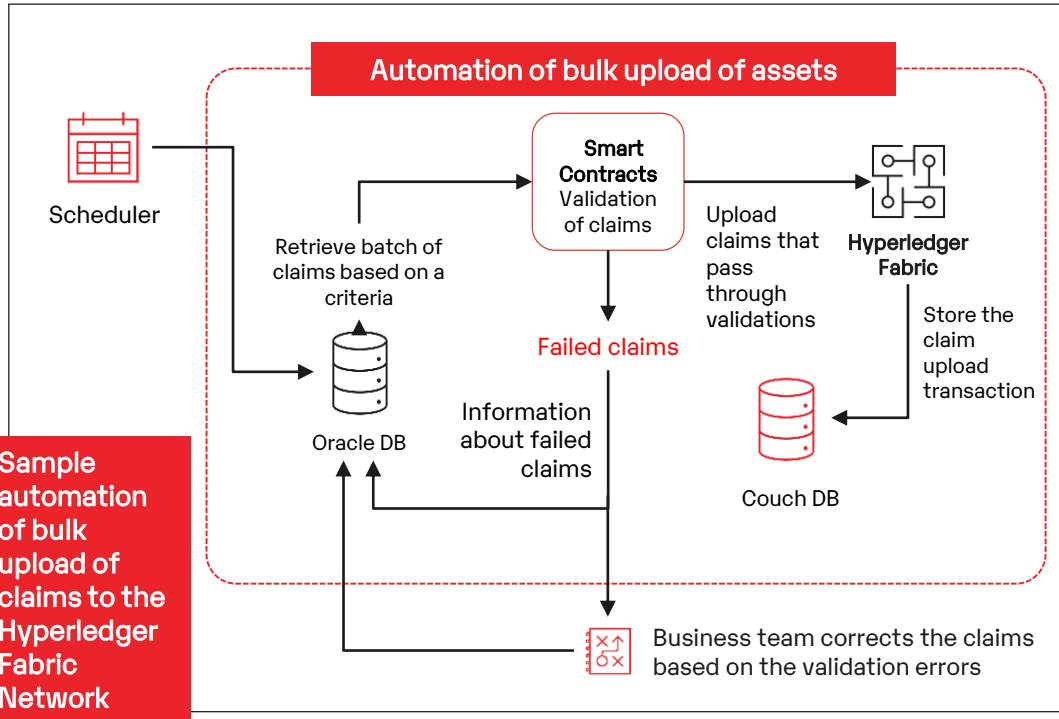
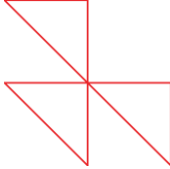


In a typical intercarrier settlement process, service providers need to process 100s of invoices per cycle. Manual processing of these invoices in batches is cumbersome. Hence, service providers should automate the bulk upload of assets to reduce the settlement time.



Automating the bulk upload of assets accelerates dispute settlement by reducing the service provider's time and efforts.

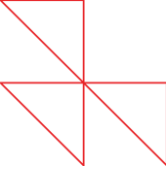
Automate the bulk upload of assets like claims and paybacks to the blockchain network



Recommendations

- Leverage tools like **Spring Boot** to schedule and automate the bulk upload of assets like claims and paybacks to the Hyperledger Fabric network
- Implement **smart contracts** to validate claims before uploading it to the Hyperledger Fabric network
- Store the current state of claims in **CouchDB** as it is compatible with Hyperledger and supports data-rich queries. It provides a user interface and enables quick retrieval of assets
- Leverage **Distributed applications (Dapps)** to **display failed claims** along with the error code. This helps the business team to correct failed claims and re-upload them in the database for further processing

Develop smart contracts for automatic verification of assets



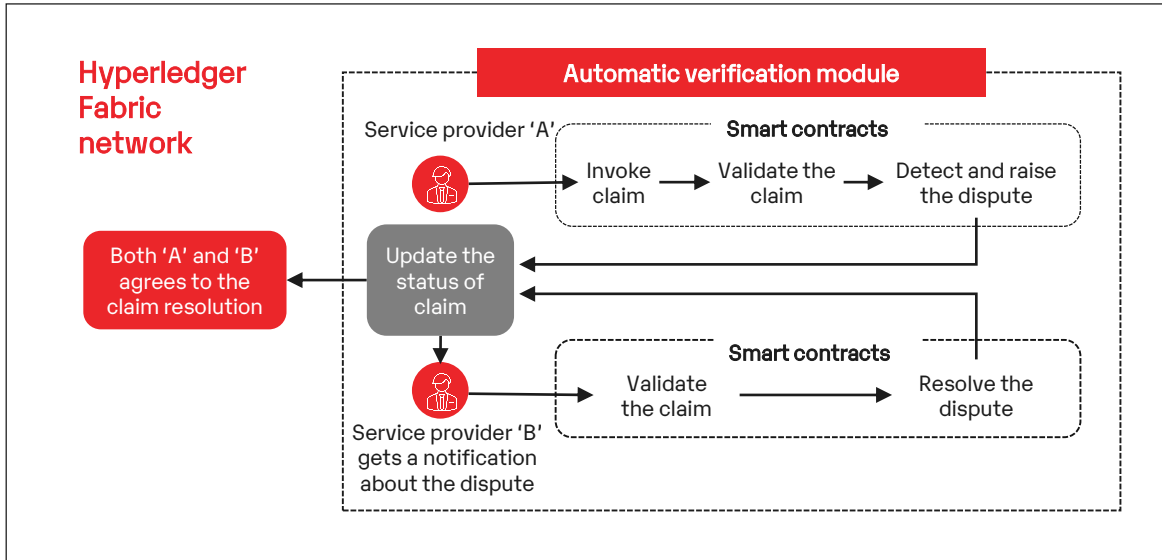
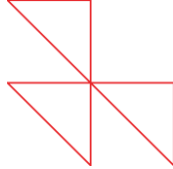
Enable single source of truth and avoid third-party intervention

Due to third-party intervention, validation and verification of assets like claims and paybacks are inefficient, time-consuming, and costly. Building smart contracts helps in handling various business logic agreed upon by the network members.



According to [Gartner](#) "Organizations using Blockchain Smart Contracts will increase overall data quality by 50%".

Develop smart contracts for automatic verification of assets

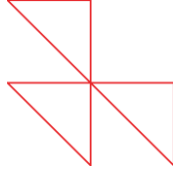


Recommendations

- Leverage “Go” programming language to develop smart contracts as it is compatible with Hyperledger and the underlying libraries
- Perform basic validations like data mismatch, billing date in dispute, claim type, and amount
- Develop smart contracts to consider advanced validations such as the validity of the claim, claim date range, and status acknowledgments
- Integrate the Hyperledger Fabric network with utilities like Hyperledger explorer and Caliper to visualize and analyze the performance of smart contracts

Smart contracts provide a single source of truth and establishes digital trust in partnerships. It allows service providers to carry out transactions without the need for an intermediary, eliminating the fees owed to them.

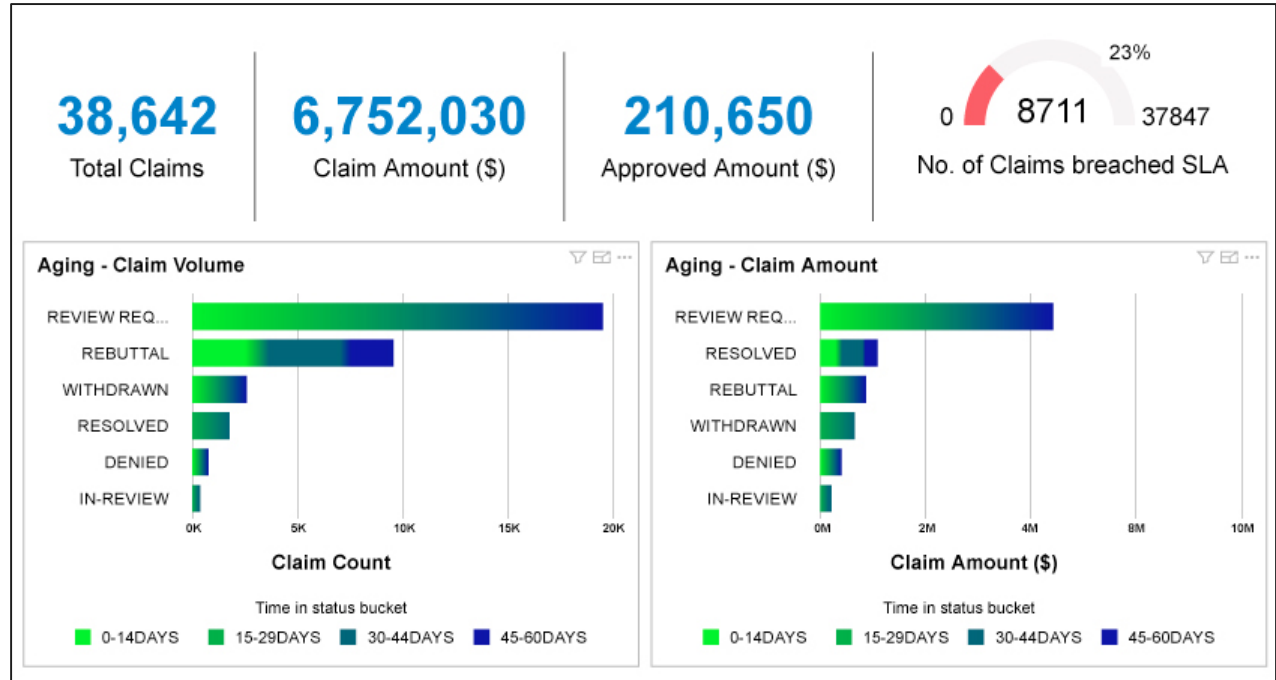
Implement the blockchain utility modules to accelerate settlements



Provides the ability to track all assets like claims and paybacks in a single page

Offers unique graphs to understand the claim status and SLA breaches

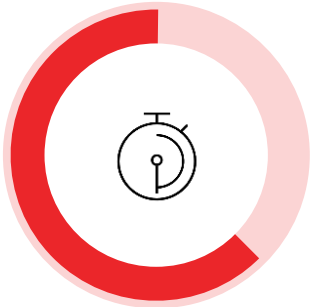
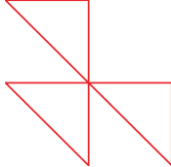
Enables the teams to focus on the aging claims and accelerate settlements



With blockchain utility modules, the business team can have end-to-end visibility of all assets like claims and paybacks. This helps in driving smart decisions and improving the settlement process.

Dashboard provides a complete view of claims for the business teams to focus on and accelerate the blocked claims

Business benefits achieved by a leading service provider in North America after implementing the key levers as discussed in this insight



Reduced the settlement time by 60%



Reduced outstanding balances and Late Payment Charges (LPCs) by 25%



Reduced the current average claim age by 30%



Achieved 95%+ SLA targets with improved settlement process

The background is a solid red color. It features a white dot grid pattern. Overlaid on this are several white geometric shapes: a large square on the left side, a large square on the right side, and a horizontal row of three squares at the bottom. Each of these squares is divided into four quadrants by a diagonal line from the top-left to the bottom-right. The text 'Thank you' is centered in the upper half of the image, and the email address 'insights@prodapt.com' is centered below it.

Thank you

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