Blockchain and Payment Systems

Transaction Routing & Switching with Blockchain

A REPORT FROM NEWNET COMMUNICATION TECHNOLOGIES, LLC

NewNet
SECURE PAYMENT TRANSACTIONS

Overview

Blockchain technology has fast caught up as the technology of the future for the payment, banking and financial industry given its benefits of data security, user & access authentication, ease of operations, minimizing cumbersome processes, avoiding multiple paper trails and eliminating repetitive steps for the various processes in the payment activities.

Blockchain comprises a chain of secured records of transactions that are collected or collated into blocks grouped in sequential order. These are further shared to different servers to provide reliable ownership history. Use of digital signatures facilitate to authorize and check transactions, and identify the initiator. A generally accepted mechanism that consists of techniques and procedures, which ensure participants processing transactions agree on which ones are valid is used. This methodology of blockchain in payment systems, has enabled several innovative opportunities within the payment space.

Technology

The solution combines several well-established technologies to verify and add transactions into a" block". This block which is a batch of transactions, is added to a chain comprising a history of transactions which is referred to as a blockchain, following a series of procedures and protocols. The new block is broadcast to the network nodes so that nodes can agree on the new blockchain and update their copies. This process of agreement, or consensus, across nodes involves cryptographically linking the new block to the previous block in the blockchain to help preserve the integrity of the data storage.

Cryptographic tools, such as public key cryptography and public key infrastructure, plays a significant role by identifying and authenticating approved participants, confirming data records and facilitating consensus on record updates. Participants proposing changes, authenticate themselves by providing their cryptographic digital signatures for the proposed change. Validators will use cryptographic tools to verify whether the participant has the proper credentials to do so. Cryptographic tools may also be used to restrict access to data so that only approved parties can see the information.

Payments & Blockchain

Blockchain is steadily advancing into the world of payments behind the scenes to change the transaction environment, as blockchain provides a much more secure environment for the transactions. Blockchain has increasingly driven many more advancements as it penetrates the payment scene and potentially make it a much more accepted payment technology. It's a set of blocks that are constructed into a chain as each transaction occurs. This chain of transactions cannot be reversed, changed or manipulated in any way once it is formed. The fact that the information cannot be altered, and the system is decentralized makes it one of the most attractive technologies to use for payments and financial transactions.

Blockchain can improve the security, speed and cost of each payment that has more companies looking for ways to innovate through the addition of this technology. Payment Authorization and Settlement, Cross-border payments using blockchainare an excellent example of new payment innovations. The blockchain technology is expected to work in conjunction with the end user organizations' tools to offer account-based, blockchain-based and card-based payment options for its customers.

This can be effectively utilized for implementing necessary functionalities such as compliance with anti–money laundering systems or know-your-customer regulations. Further, multiple opportunities exist for streamlining activities such as transaction processing and the reconciliation of messages or data. The financial firm can reduce the redundancy in data repositories, look at identity issues, or list down vulnerabilities of the company to cyber-attack. Blockchain technology helps improve the operational processes in payment systems in a better manner.

Payment Routing & Switching System Implementation

NewNet recognizes the value of blockchain as applied to our payment routing systems of Secure Transaction Cloud (STC), AccessGuard 1000 (AG1K) and Total Control STG systems and aims to leverage this technology for the maximum advancement of our solution capabilities and delivering the best in class features to customers. This technology holds significant opportunities to provide multiple user benefits, including a more secure and transparent way of making and tracking payments within the existing financial system, even when using fiat currencies or with digital currency.

Blockchain technology in NewNet's payment acquiring solutions like STC, AG1K and STG can streamline the transaction authorization process providing a high-speed mechanism with highest security from the encryption of the entries and user access restrictions to the entries. This allows for real time authorization enabling the fastest completion of the process while conducting this in a high security mode. The same Blockchain entries can further be used for the settlement process and ensure the fastest settlement possible in the payment processing with instantaneous completion of the settlement of transactions.

This offers the most innovative way for settlement by enabling real time settlement which could potentially realize the most advanced concept of simultaneous authorization with the processors and settlement with issuers in quick succession. All these will be accomplished with the maximum-security mode wherein the authorization and settlement process can be handled with maximum efficiency with the respective entry in the Blockchain corresponding to the specific transaction. Maximum security, highest efficiency, unmatchable access control, and instantaneous completion with simultaneous authorization and settlement marks the true values and purposes of blockchain technology in payment transactions.

Benefits

Blockchain technology has immense potential to transform financial services and markets is several radical models including the key ones listed below:

√ Reducing complexity

√ Improving end-to-end processing speed and improving availability of funds

√ Decreasing the need for reconciliation across multiple record-keeping infrastructures

√ Increasing transparency and irreversibility in transaction record keeping

√ Improving network resilience through distributed data management

√ Reducing operational and financial risks while increasing security

About NewNet Secure Transactions

NewNet Secure Transactions (NST) offers secure Payment transaction routing, switching, transport solutions. NewNet's payment systems powers over 25% of all global payment card and digital transactions, worldwide. NST's latest solution, Secure Transaction Cloud (STC), offers virtualized secure payment applications for transaction transport in cloud with specific Virtual Network Functions for Security, Transaction protocols, P2PE, Tokenization, Host Interfaces, Load Balancing etc with PCI compliant HSMs. STC supports a wide range of payment types including Internet payments, mobile payments, POS/mPOS based transactions and variety of eCommerce, mCommerce payments and enables multiple payment options including Cryptocurrencies, and newer credit offerings with Buy Now Pay Later etc.

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