



SOLUTIONS FOR BLOCKCHAIN-DRIVEN TRANSFORMATION IN CONSUMER BANKING

Abstract

Blockchain has the power to transform the banking industry by providing innovative services to customers at lower cost, greater speed and higher security. Its use cases go beyond mere simplification of transaction processing and influence areas such as payments, loyalty programs, customer on-boarding, etc. This paper outlines the various lines of business and business processes in the banking and financial industry that can be improved by blockchain. It also examines ready-to-adopt Infosys blockchain-based solutions along with real-world examples that are helping banking organizations achieve greater value.

Introduction

The emergence of blockchain as a disruptive technology above and beyond Bitcoin is having a deep impact on the banking industry. Its distributed ledger system accelerates transactions while ensuring a safe and immutable audit trail. It also provides a secure option to store and share digital assets without third-party intermediaries. These unique features of blockchain offer numerous opportunities to transform other areas in banking as well.



Blockchain in consumer banking

The consumer banking industry has several time-consuming, repetitive and costly processes across the banking lifecycle. With its unique features, blockchain lends itself well as a transformative tool for this landscape. Here are some key processes that are best-suited to blockchain-driven transformation:

- **Customer onboarding and identity management:** Customer on-boarding is a common and complex transaction that mandates know your customer (KYC) and anti-money laundering (AML) checks across several departments. Besides being an effort-intensive process that often results in record duplication, customer on-boarding must be secure to protect sensitive data. As banks become increasingly digital, Fintech and

non-financial industry players that offer blockchain-as-a-service and on-board multiple participants to streamline customer on-boarding will position themselves at the fore besides saving significant cost and effort

- **Payments:** Currently, executing cross-border payments across correspondent banks requires a central counterparty that facilitates transfers using SWIFT. This results in higher transaction and administrative costs, manual intervention for certain processes and the need for third-party entities. Blockchain technology can be used to simplify and accelerate payment transactions for faster and more accurate settlements as well as cost savings. However, enabling this, particularly for international payments requires banks to either collaborate in order to establish the backbone network to support global

payments or join an existing network (such as Ripple). Such a network can then potentially replace current established systems like SWIFT to provide instant transactions, thereby reducing the transaction time from several days to near real-time.

- **Loyalty/reward offerings:** Blockchain's transparency, immutability and security can enhance traditional loyalty and reward offerings by eliminating the liability for reward points and the overhead costs for managing these programs. Through blockchain, reward points can be instantly updated and made available for easy redemption by customers
- **Clearing and settlement:** Blockchain technologies help reduce operational costs and enable real-time transactions between financial institutions. The key benefits include reduction in the latency

for settlements and operational risks in addition to increased transparency and security

- **Smart contract management:** One of the key advantages of blockchain is its ability to store smart contracts, which are also known as self-executing contracts. These smart contracts contain the rules and restrictions related to an agreement just like traditional contracts. More importantly, they automatically enforce the in-built guidelines when an event is triggered such as reaching the expiration date or dealing with a certain strike price. Smart contracts can help retail banks easily manage mortgages and loans at lower operational costs, thus reducing

expenses for banks and fees for clients

- **Loans, credits and mortgages:** Blockchain-based smart contracts can revolutionize the management of loans, credits and mortgages by creating shared copies of agreements with a fully auditable trail. This reduces the complexity of releasing funds through instantaneous payment settlement and transfer of titles. In the context of mortgages, blockchain can improve the entire lifecycle from origination to settlement and optimize fulfilment and servicing processes through higher speed and traceability
- **Fraud prevention :** A blockchain-based network can reduce fraud by increasing

the visibility and transparency of transactions. Transactions recorded on the blockchain network are immutable, i.e., they cannot be changed or deleted. While subsequent transactions can change the state of the asset, the original transaction record remains accessible. Blockchains can also be permissioned to restrict participation in the network whereby members of the network must be invited and validated before they can contribute to any of the transactions. Access control and identity management are critical factors in a permissioned network that ensure that outsiders cannot access the network while insiders cannot add records without consensus.

Infosys blockchain solution offerings

Infosys has an entire suite of blockchain-related offerings that help organizations adopt, integrate and implement blockchain networks. Here are some of the solutions that Infosys offers consumer banking organizations:

Finacle blockchain framework: Developed by EdgeVerve Systems, a wholly-owned product subsidiary of Infosys, the Finacle Blockchain Solution is an asset-agnostic and permissioned distributed ledger that allows banks to rapidly deploy blockchain-based services for varied business areas in financial services.

The solution is based on an industry and ledger-agnostic EdgeVerve Blockchain Framework that works with most industry-leading distributed ledger technology (DLT) platforms such as Bitcoin, Hyperledger, Ethereum, Corda, etc.

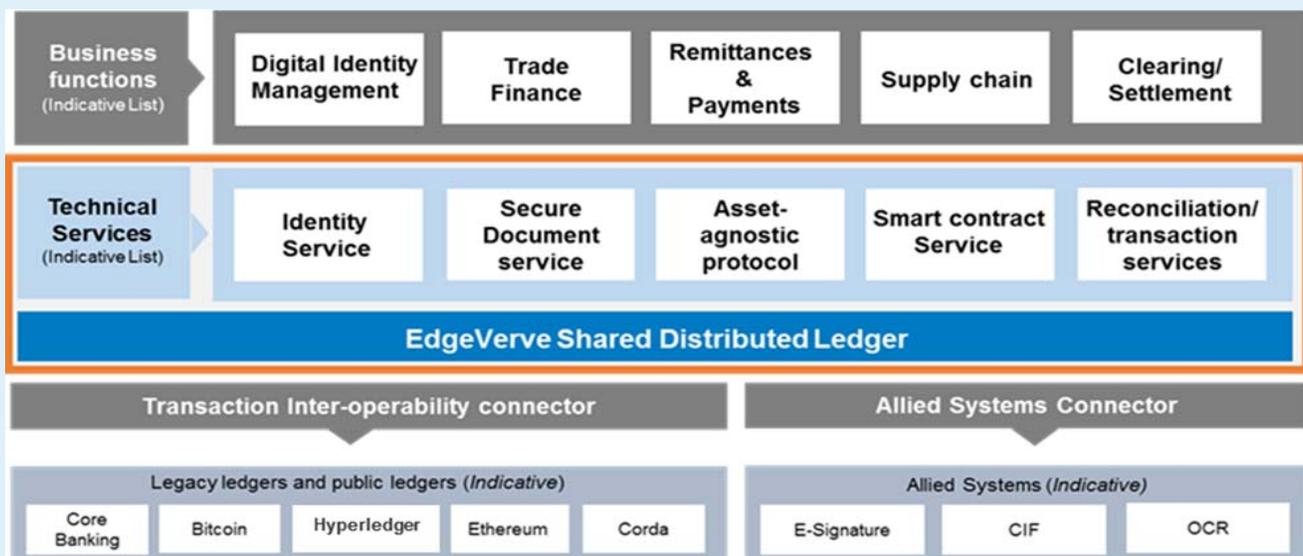


Fig 1: Finacle Blockchain Solution

Besides leveraging this robust framework, the Finacle Blockchain Solution is enriched with:

- Banking-specific services such as payments and trade finance
- Technical services such as identity services, document management, smart contracts, analytics, notification services, and transaction aggregation

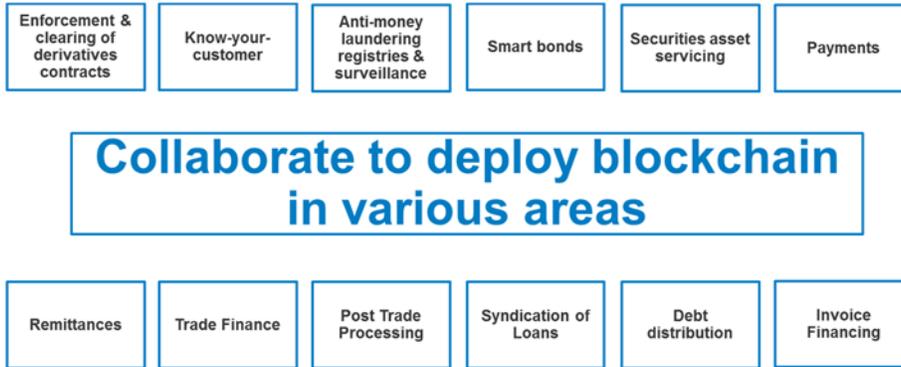


Fig 2: Banking areas best-suited for blockchain transformation

Infosys helps banks leverage the Finacle Blockchain Framework to develop solutions across multiple banking areas as shown in Figure 2. Currently, the solution is available on two networks – TestNet and MainNet. As shown in Figure 3, banks can also adopt blockchain through this solution using proofs-of-concept on TestNet followed by production using MainNet.

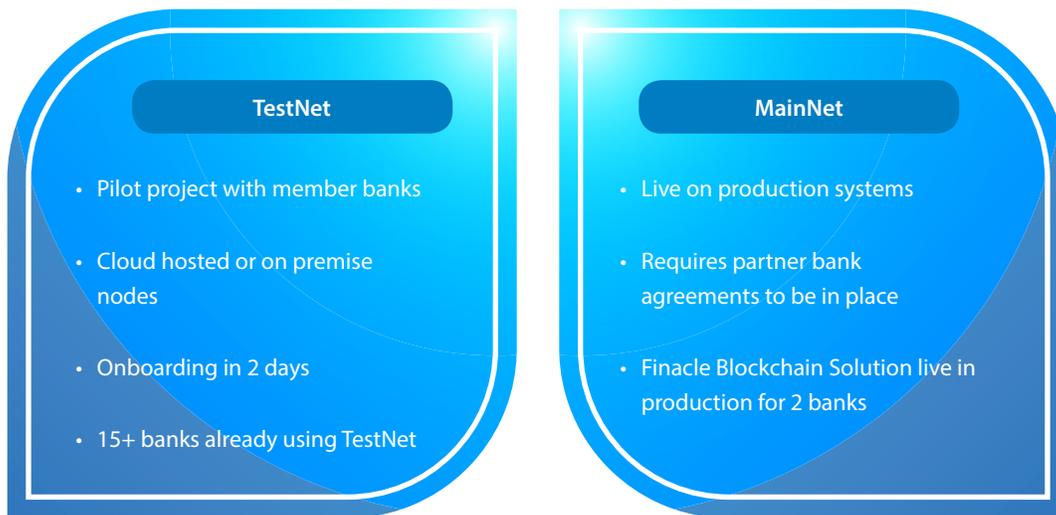
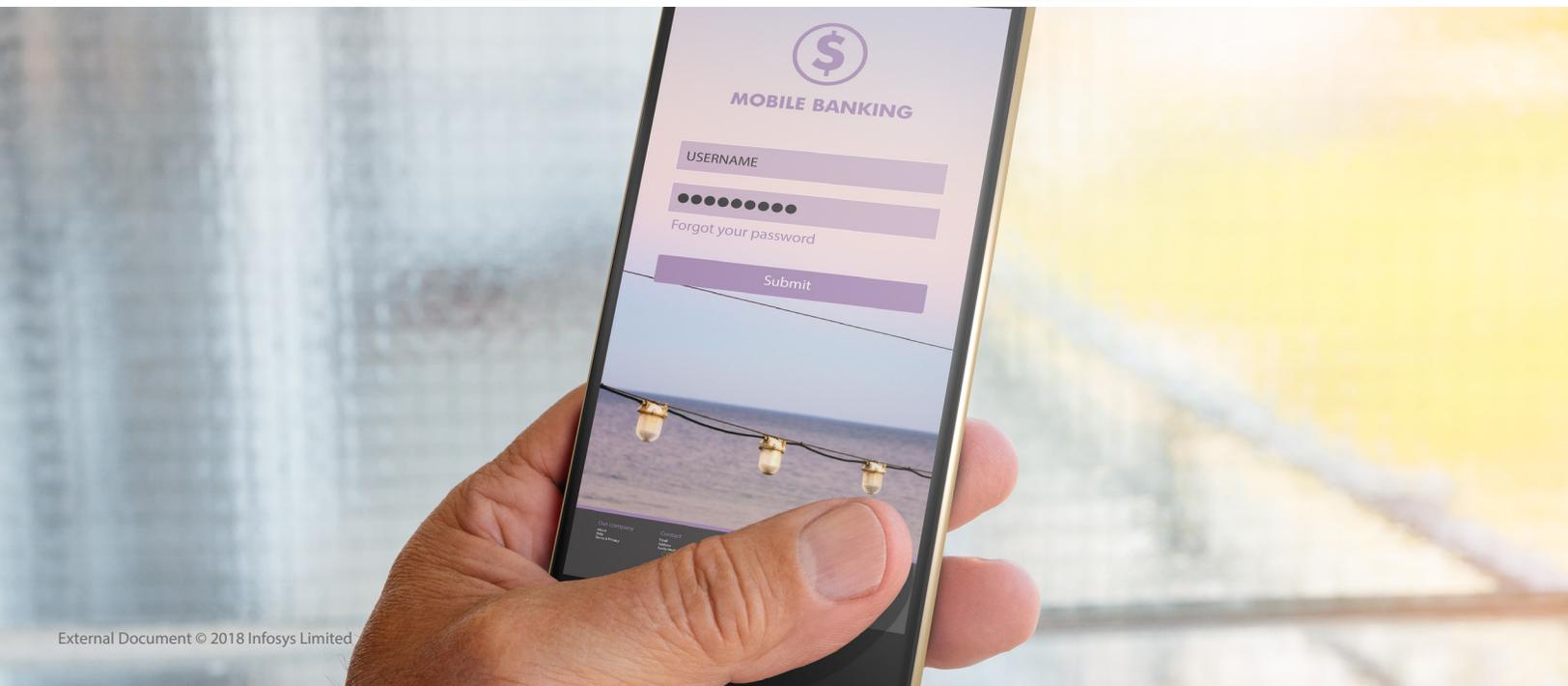


Fig 3: Blockchain networks for the Finacle Blockchain Framework



Customer on-boarding: Blockchain can help banks streamline customer on-boarding by storing customer data securely on the blockchain network, preventing tampering and allowing participants to easily access data when required, thereby preventing duplication. Infosys is working

on creating several consortium-based onboarding use cases with the following key highlights:

- Encrypted updates of customer details can be distributed to all the banks in real-time using an industry-wide repository

- The blockchain ledger will provide historical records of all the documents and compliance activities
- The shared database can eliminate the burden of KYC compliance, achieving significant cost savings

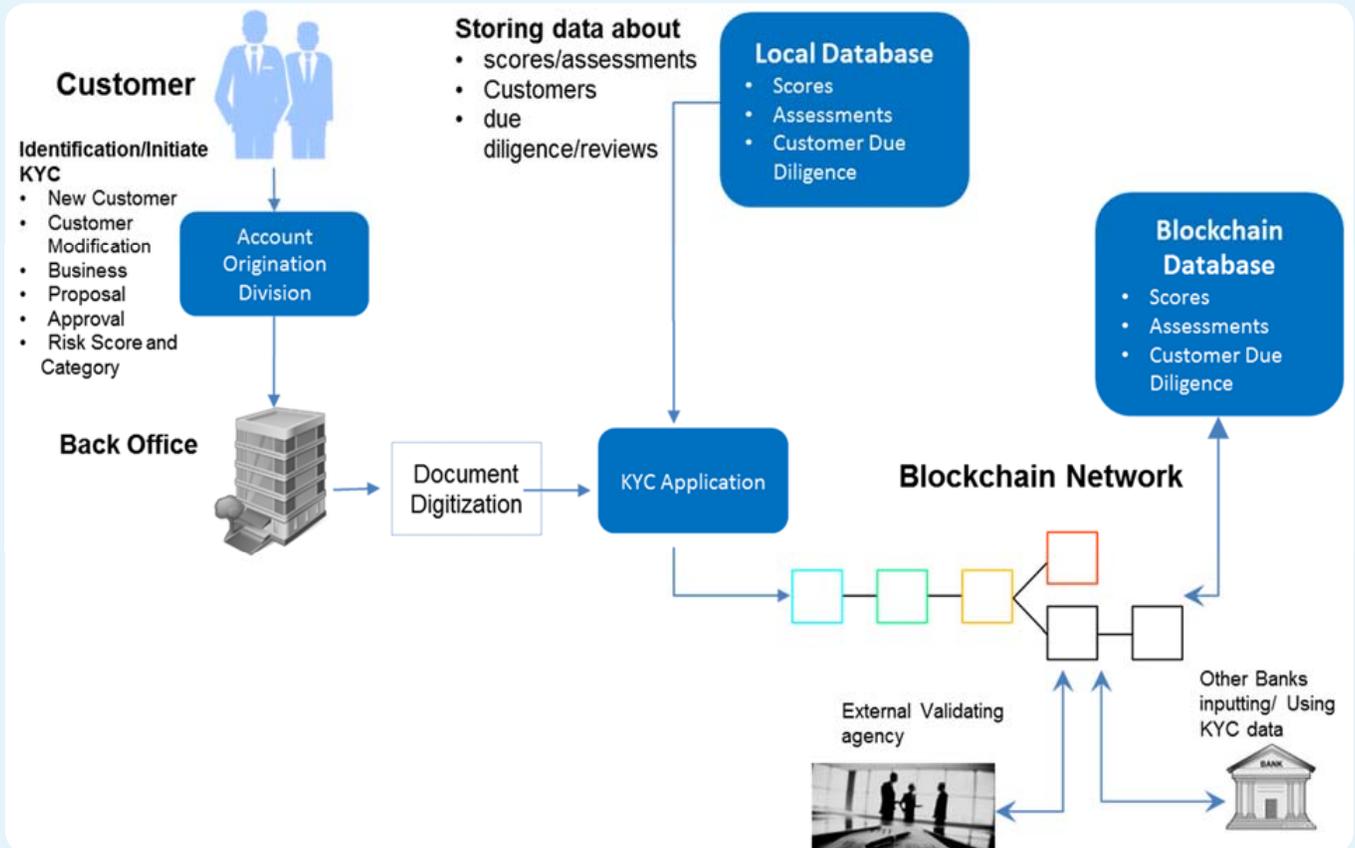
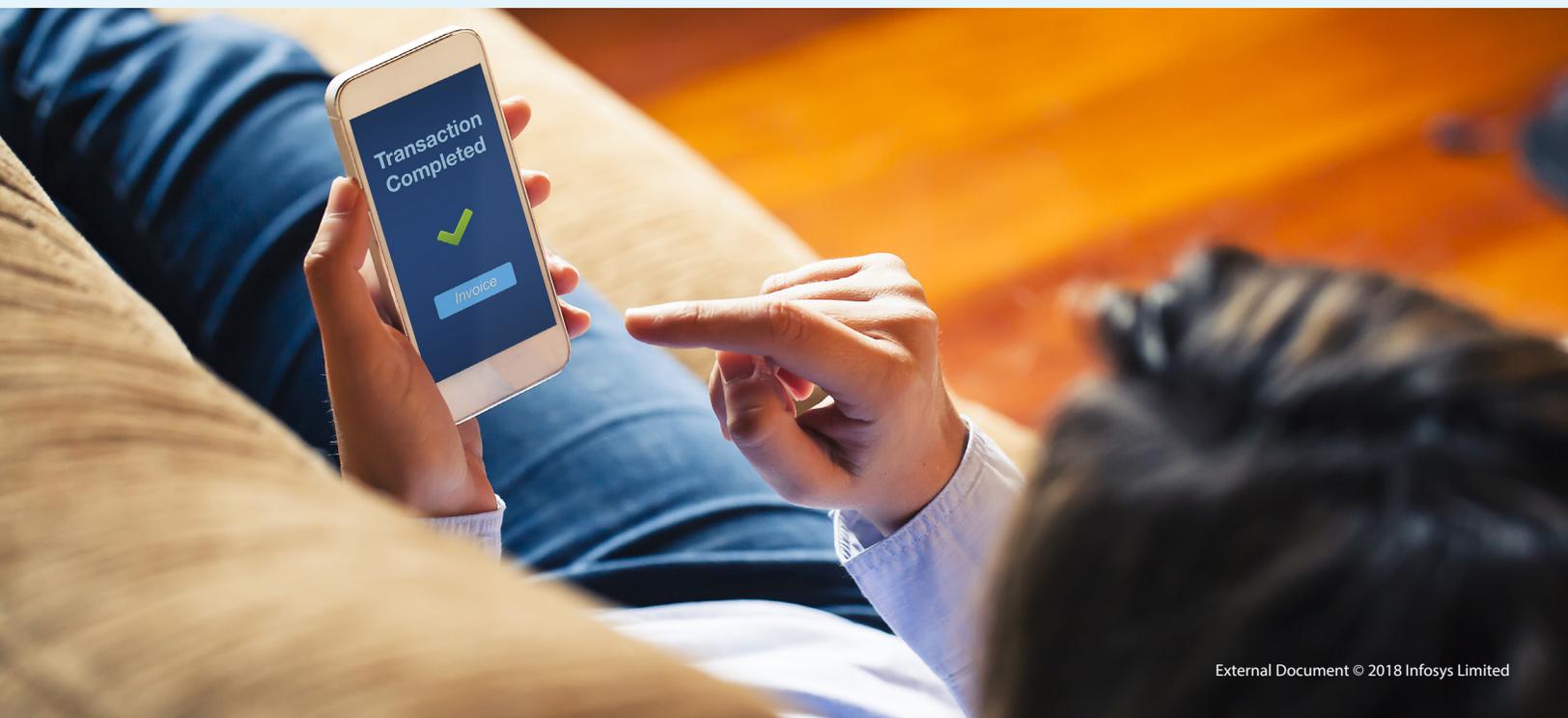


Fig 4: Customer On-boarding using a blockchain network



Payments: Infosys works with banks to facilitate payment transactions through blockchain. For example, Infosys can help banks develop blockchain-based solutions that reduce the cost per transaction while enabling faster updates through safe, secure and authenticated transaction processing. Figure 5 gives an overview of such a future-state process use case involving blockchain.

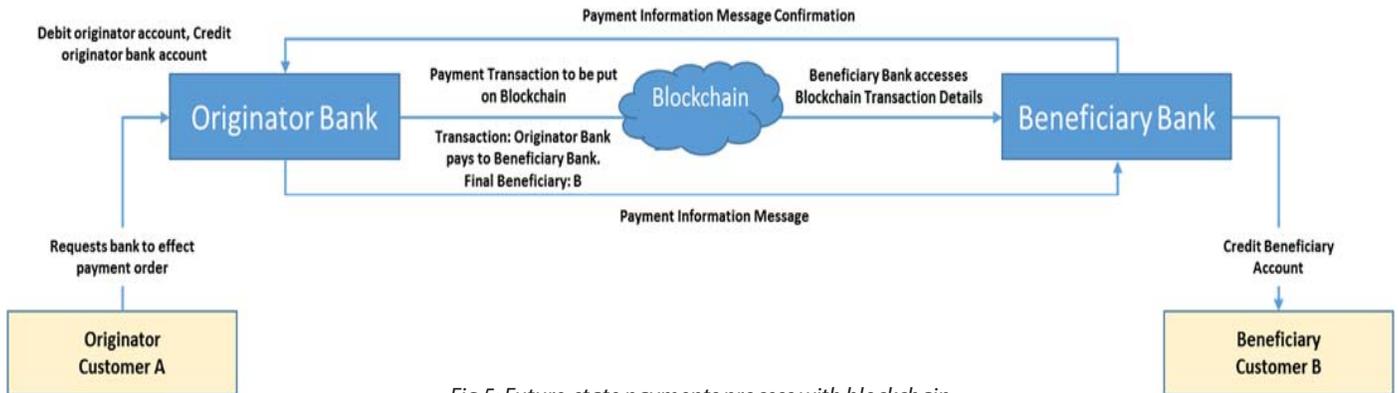


Fig 5: Future-state payments process with blockchain

Loyalty programs: Blockchain-based network solutions can help banks extend their loyalty programs, simplify processes and deliver measurable benefits to customers. This is achieved by allowing banks to join a uniform partner network that offers tailored reward programs to the bank's customers. Further, customers can easily accrue and redeem points flexibly

across a wider partner network. As an example, Infosys is collaborating with a large loyalty network operator to launch and manage their loyalty program. The new program involves different merchant partners with varied transaction types and provisions loyalty programs on demand through blockchain. In doing so, Infosys is helping the client:

- Explore blockchain capabilities
- Reduce cost of managing the loyalty program
- Enable faster provisioning of the loyalty program
- Get real-time insights from customer transactions

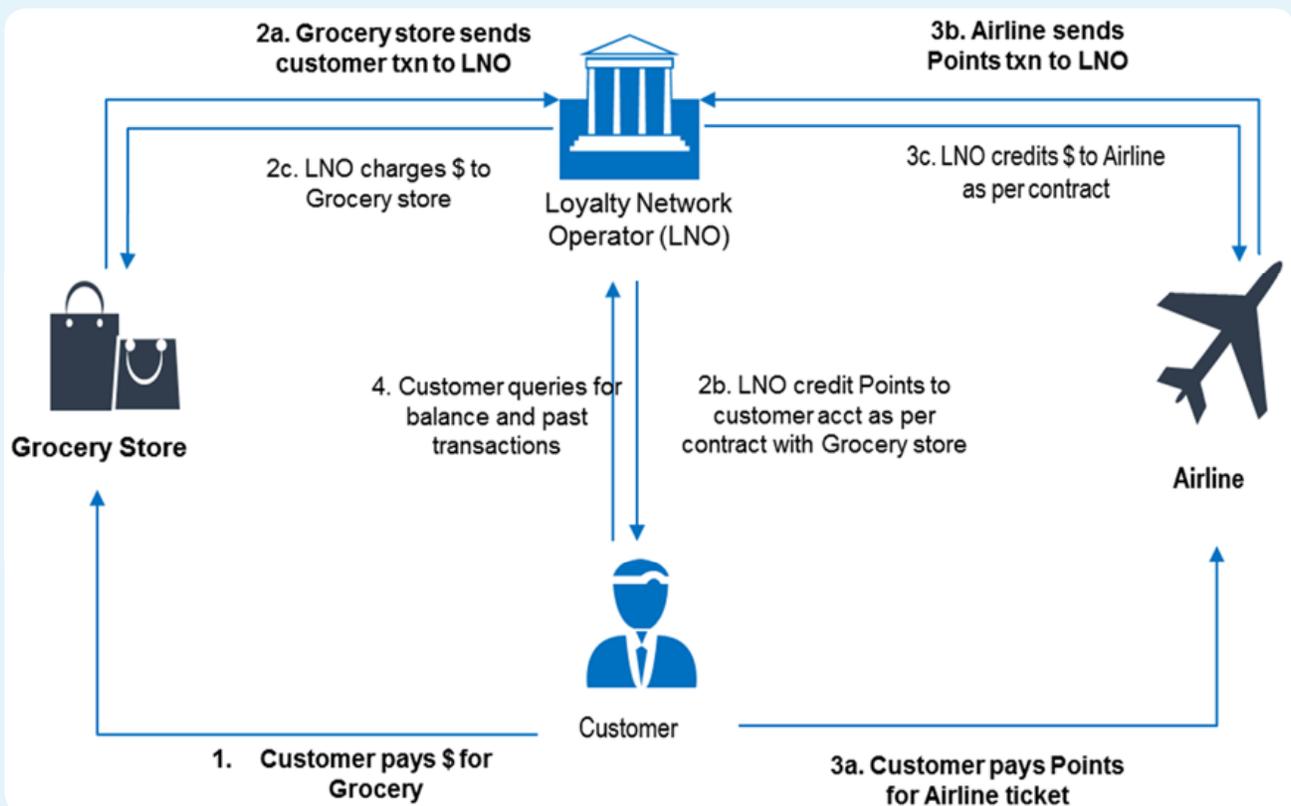


Fig 6: Example of a blockchain-based loyalty program

Conclusion

The banking and financial services industry is seeing significant disruption with the onset of blockchain. Banks looking to adopt digital capabilities and become truly digital service providers cannot ignore the value that blockchain brings. With its immutable, transparent, secure, and distributed ledger system, blockchain has the potential to transform how banks undertake customer onboarding, loyalty programs, payments, loan and credit processing, contract management, and much more. Infosys has developed several blockchain-based offerings that include solutions, platforms and frameworks geared specifically for the banking industry. These solutions are designed to simplify adoption of blockchain across various business processes helping banks lower costs, reduce effort and achieve near real-time processing capabilities. With these advantages, banks will be assured of greater value from their digital transformation initiatives.



About the Author



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Pramod has been with Infosys in account and program management roles for over 11 years now, and is currently a member of the New Offerings Presales team focused on the Financial Services, Insurance, Healthcare and Life Sciences industry verticals. In this role, he is involved in providing overviews and recommendations to customers on Infosys' offerings around Digitization, AI and Automation, as well as plays a solution consulting role in RFXs in this space.

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