Building blockchain solutions for real-world telco use cases
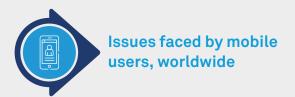
wipro

n 2018, blockchain technology got a lot of attention from enterprises across industries, including telcos. Many big telcos started exploring blockchain use cases and formed consortiums with peers to create PoCs. The TM Forum ran a blockchain catalyst program in collaboration with major telcos. Many of our customers wanted to understand how blockchain could solve real-world issues in areas such as SCM, logistics, digital identity, document authentication, etc. The Telecom National Regulatory Authorities showed immense interest as the technology could be used for the benefit of consumers in, say, controlling UCC (Unsolicited Commercial Communication), number portability, international roaming, etc.

Initially, blockchain was seen as being suitable for removing intermediaries such as clearing houses, number portability service providers, etc., to improve process efficiency and cut costs. However, public permissionless blockchain protocols were evolving and had shortcomings in meeting scalability and inter-operability requirements. Enterprise-permissioned blockchains were more stable and promising.

Issues faced by mobile users, worldwide

In India, mobile users face many issues while porting their numbers to other operators while also constantly receiving spam calls and messages from marketers. Telecom Regulatory Authority of India (TRAI) was looking for blockchain solutions to solve these problems and mandated operators to utilize DLT (Distributed Ledger Technology)/blockchain technologies for this purpose.

Wipro started discussions with Indian operators to resolve these pertinent issues. We, the Communication BU – Innovation CoE, started looking at number portability issues with respect to process, cost and timelines in India, as well as globally. We found that many countries used a centralized database approach by utilizing a third party provider and took up to 30 days for the porting process completion. In some countries, end-users were being charged up to 30 euros for porting.

Devising blockchain-based solutions using design thinking workshops

We, along with the blockchain CoE and central IP teams, conducted design thinking workshops to simplify the porting process, and conceptualized the solution using blockchain technology. Our innovative approach resulted in ideas that could be executed over blockchain, which was not possible in earlier approaches (central DB or distributed). Once the solution design was finalized, we kickstarted the solution development with a young, energetic, digitally skilled team which had blockchain enthusiasts and practitioners. The whole exercise of building the MVP (Minimum Viable Product) was completed in six weeks using the agile methodology.

This end-to-end solution is designed to run in the cloud environment utilizing enterprise permissioned blockchain, API-based interfaces to external systems and open source technologies.

In comparison to the traditional central DB or distributed-DB based solutions, a blockchain based number portability solution has the following benefits:

Simplifies the number porting process

Utilizes distributed ledger technology to remove third party intermediaries

Provides E2E number portability management capability to telcos

Provides real- time visibility to regulatory and operators through dashboards

Enables secured information exchange and commercial transaction capabilities i.e. settlement

By removing intermediaries, there is substantial cost savings for the operators

Faster porting process allows users to switch operators

Real-time transparency (KPI tracking, penalty calculation, cost management etc.) for all parties

Faster inter-operator settlements

The solution is fully demonstrable and suitable for all countries which have any of the global number portability scenarios like those which are donor operator led, receiver operator led, distributed or centralized DB models. The solution is designed to be a common solution for fixed or mobile, and/or IoT numbers portability.

About the authors

Ganesan Arulanandham

Consulting Partner, Head – IP & Innovation COE, Communication BU, Wipro Ltd.

Ganesan has more than 23 years experience in the IT & telco industry space. He has built solutions that have been deployed for clients globally.

Ganesan is an industry thought leader. He holds an MBA in Technology Management and a Bachelor's degree in Electronics and Communication Engineering.

Subrat Saurabh

Principal Consultant, Blockchain & Telco Domain Expert, Communication BU, Wipro Ltd.

Subrat has more than 12 years' experience in IT Solutions delivery, domain, technology, and the telco industry. He has deployed wholesale billing and number portability solutions for global clients and is a certified Scrum Master.

Subrat holds a Bachelor's degree in Telecom Engineering. He is a published author of two books (fiction) and received the award for being amongst the top hundred inspiring authors from India in 2018.

Wipro Limited
Doddakannelli, Sarjapur Road,
Bangalore-560 035, India

Tel: +91 (80) 2844 0011
Fax: +91 (80) 2844 0256
wipro.com

Wipro Limited (NYSE: WIT, BSE: 507685, NSE: WIPRO) is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. A company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship, we have over 175,000 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

For more information, please write to us at **info@wipro.com**