



QZip Blockchain Technology Recharging Solution

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This document outlines the QZip Blockchain Technology Recharging Solution. This solution is an India focused solution. Teledensity in India is over 80% and about 90% to 95% of all connections are prepaid. Some operators, like Tata Sky DTH, provide pre-paid only model.

In-spite of recharge being an essential and commoditized solution; much of the UX (User Experience) is unsatisfactory, leaving a great scope for improvement. The pre-paid business supply chain is complex and mostly opaque. The poor visibility of the transaction results in much of the dissatisfaction of the end customer as well as the front line service provider.

By using Blockchain Technology our solution will create a verifiability and visibility of the transaction progress as well as reduce the support cost. Thus improving the overall UX as well as traction costs.

This solution will enable small value utility prepaid bill top-up/charging from across the Globe, which is not feasible today due to high cross border transaction costs.

Introduction

QZip is in the bootstrapping phase. We aspire to create a social impact at the Bottom of Pyramid, by reducing frictions for low value transactions, leveraging the next generation block chain technologies.

Development Model

We use a hybrid multi-cloud Dev Ops infrastructure. As a startup we follow the Stanford Lean Startup framework. As per the Agile model, we follow the principles of Fail Fast, customer centric solution design with MVP (Minimum Viable Product) with frequent product releases.

QZip development strategy is Micro-services Based leveraging virtualization tools like Docker and Kubernetes. We are also following the development of Ubuntu Juj, and might shift over once version 2.x stabilizes.

We also follow multiple programming language strategy, popularly known as polyglot programming model. Most of our work is open sourced.

Blockchain Technologies

We have considered using the following platforms:

- Blockchain Thunder
- Hyperledger
- Ethereum

As of now, Ethereum is most suitable for our solution in terms of platform readiness and programmability.

We also plan to augment Blockchain with transaction chaining to increase speed and reduce cost.

Regulatory Compliance

The TRAI (Telecommunication Regulatory Authority of India), has jurisdiction upon the Telecoms Operators. While RBI (Reserve Bank of India) has Banking, Payments & Foreign Exchange jurisdictions.

Both TRAI and RBI mandate KYC (Know Your Customer). UIDAI e-KYC is allowed for Indian Residents.

- AML (Anti Money Laundering)
- KYC (Know Your Customer)
- Tax Compliances

For small value transactions, within a certain aggregated limit, do not need the above compliances.

Also, the Indian Rupees mapped crypto-currency will be implemented as per the Closed System Payment Instruments notification of the RBI. Thus no banking/payment systems license nor KYC compliances are required.

Procedural Simplification

For single business entity, amounts exceeding the FEMA (FOREIGN EXCHANGE MANAGEMENT ACT) limits, and requirements of the TDS (Tax Deduction at Source) the KYC (Know Your Customer) due diligence procedures and double taxation avoidance information needs to be collected.

To simplify the regulatory compliances, outlined above, we shall leverage a combination of OpenPG/GnuPG (GPG) and Blockchain ledgers to provide for Foreign Resident Entities as well as we plan to implement the same for domestic partners exceeding the regulatory limits.

The business partners will be needing to provide the required information, signed digitally using OpenPG Public/Private Key pair.

Recharge Solution

QZip Blockchain Technology Recharging Solution will enable small value recharge/top-up of prepaid Indian utility services, from anywhere across the World.

The Recharge Solution is proposed to be a hosted service, construing of an Ethereum Dapp (Distributed Application) supported by a set of Smart Contracts written in Solidity.

This Recharge Dapp Service will listen to the events logs of the Smart contract addresses and execute the recharges using the API provided by the respective utility service providers and update the smart contract as acknowledgement.

Asset Backed Crypto-Currency

To buffer the participants of the crypto-currency volatility risks, an Indian Rupees (INR) asset backed crypto-currency will be created. In compliance with RBI Closed System Payment Instruments cashing out, that is changing back from INR to ETH will not be permitted.

The recharging functions will accept this crypto-currency tokens.

Smart KYC

The Smart Contract will have a function for KYC. The partner will sign the following information with their GPG Key: Ethereum Account Address, Email, Company/Legal Entity Details including Address, statutory registration Ids, Tax information. This information along with the Public Key will be encrypted with the Published GPG Key of the Recharge Service. This opaque binary string will be sent to the Ethereum Blockchain network as the parameter for smart contract creation.

Apart from KYC this GPG Key will also be helpful to create the privacy of the transactional parameters, as the data will be available in the public Blockchain distributed ledger.

Resources

Regulatory

[Telecom Stats](#)

[UPI](#)

[FOREIGN EXCHANGE MANAGEMENT ACT](#)

[Compliance Summary Handbook, \(PDF\)](#)

[Taxation for Foreign Company](#)

[RBI Master circular, DPSS.CO.PD.PPI.No.3/02.14.006/2014-15](#)

"2.4 Closed System Payment Instruments: These are payment instruments issued by a person for facilitating the purchase of goods and services from him/it. These instruments do not permit cash withdrawal or redemption. As these instruments do not facilitate payments and settlement for third party services, issue and operation of such instruments are not classified as payment systems."

KYC

[RBI Circular on Know Your Customer \(KYC\) norms / Anti-Money Laundering \(AML\) standards/Combating of Financing of Terrorism \(CFT\)](#)

[UIDAI e-KYC](#)

[TIN \(Tax Identity Number\) PDF format Individuals not being a Citizen of India/Entities incorporated outside India/ Unincorporated entities formed outside India](#)

[Annex-6 KYC requirements for FDI\(Foreign Direct Investment\) for Non Indian Entities](#)

[KYC Sample form for Non Indian Individuals](#)

Blockchain

[Blockchain Thunder](#)

[Hyperledger](#)

[Ethereum](#)

[DAPP For Beginners](#)

[Solidity in Depth](#)

[ETH Volatility Index](#)

Crypto

[GnuPG is a complete and free implementation of the OpenPGP standard as defined by RFC4880](#)

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