Blockchain Implementation Case Study

Problem Statement

Implement a new crypto currency token to reward users, enable crypto currency based payment and an escrow payment system into a room sharing service. To make the service more trustable and undisputed, users activities are also logged on Blockchain.

Solution

- **New Crypto token**
  - To reward users on registration, booking & sharing room
  - Users can use the token to book the room & to make other payments
  - Users can buy additional tokens using other crypto currencies
  - Users can sell the token and convert it into other crypto currencies
- **Escrow payment system**
  - For this room sharing app, as there are multiple-parties are involved, an escrow system on blockchain is needed for un-disputed implementation of room sharing service.
- **Activity register on Blockchain**
  - Immutable timestamped data records are stored on Blockchain. Data includes room sharing activities e.g. invite sent to partner, invite accepted by partner, trip & shared room details, agreement to share a room etc.
  - Payment terms between room partners
  - Chat conversations of room partners
  - Immutability is given more weightage than decentralized control
- **Others**
  - Users can also use other crpto tokens like ETHER to make payments within the app
  - Users can use other crypto tokens like ETHER to buy and sell this token
  - User can manage his currencies using any standard Ethereum wallet
  - Developed as an independent re-usable module
  - Blockchain node accessible from AWS

Technical Details

- Using Ethereum blockchain platform
- Implemented ERC20 based token & Solidity based SmartContract
- Solidity based SmartContract for Escrow payment system
- Used BigchainDB to store activity registers on Blockchain