GOVERNANCE
ON THE BLOCKCHAIN

Blockchain for Governance: Case Studies

—

Overview

Blockchain technology is a decentralized, distributed public digital ledger that can be programmed to record not just financial transactions but virtually everything of value. It is a distributed chain of validated transactions secured through cryptographic hashing. Blockchain-based solutions have the potential to make government operations more efficient and improve the delivery of public services, while simultaneously increasing trust in the public sector.

They have the potential to revolutionize the activities of government with potential use cases in government including: Healthcare and Electronic Health Records, Digital Identities, Tax and Internal Revenue Monitoring, Voting, Secure Banking Services, Supply Chain, Energy, Land Titles, Direct Benefit Transfer and Welfare Payments, Engagement with Citizens and Digital Payments.

Case Studies

I) Better Delivery of Government Services: Blockchain is not only a distributed ledger, but also a notarization service — a timestamp of sorts — that validates the exact time an action takes place. This action or event could be the birth or death of a person, the exchange of a property title, the grant of an academic degree or nearly anything else where a timestamp is critical to the proof of action. Following are some of the pointers where Blockchain provides a better alternative to traditional methods:

- Difficulty in obtaining certificates(as per the last census, there are 2.68 crore disabled in the country. Disability certificates have been provided to a little over 1.05 crore persons). Distributed ledger technologies could massively change this with the introduction of a shared ledger secured cryptographically where the citizens have the 100% ownership of their data
- Citizen's interaction with the government entities in India is considered an overhead for both the citizens as well as the government officials. Blockchain-as-an-interface would revolutionize this aspect of communication by deploying a real-time ledger mechanism that gets updated quickly over a network.
- Elimination of the hassle of paperwork with the introduction of Blockchain. The development of a portal running on a Blockchain with Aadhaar-linked facility would create a community sourced common paperless platform. Government initiated digital lockers such as e-Lockers/Maha Digi Lockers' integration with Blockchain will be advantageous

II) Digital Identity - Aadhaar and Blockchain: An important function of government is to maintain trusted information about individuals, organizations, assets, and activities. Most of the records in India exist only in paper form. Blockchain technology could simplify the management of trusted information, making it easier for government agencies to access and use critical public-sector data while maintaining the security of this information. Aadhaar, India's identity system, which stores citizens' biometric data such as fingerprints and iris scans, is stored on a central database as per the reports from the government. Several concerns have been raised around this system by activists and journalists, the most pertinent ones being the possibility of the central database getting hacked, putting the identity information and privacy of over a billion Indians at risk. There has also been concerns around UIDAI's data storage capabilities and its design flaws and breaches into the database. Real-time implemented use-cases around the world:

- Use case of government of Estonia - ID-kaarts, a blockchain-based national identity management system. As per reports, ID-kaarts has been able to reduce bureaucratic red-tape and improve the timeliness and quality of government service delivery to Estonian citizens. Estonia has been using blockchain for its e-Estonia program, which enables online tax payments, digital ID, i-voting, and electronic health records platforms and it reportedly saves Estonia ~2% of GDP a year.
- In USA, The Congressional Blockchain Caucus was set up in 2016, and is working to collect information on blockchain projects that could help individuals securely establish their identity, enable online payments – such as tax payments – and revamp supply chains.
- Smart Contracts running over Blockchain - IT departments in government agencies may be able to create rules and algorithms, for instance, that allow data in a blockchain to be automatically shared with third parties once predefined conditions are met.

III) Land Records: Blockchain can impact the land registry management system in India. Real time use case:

- Andhra Pradesh - AP Govt setting up blockchain-based land registry system that allows people to collateralise property, get loans, and invest against that asset. Tracking property ownership using blockchain allows people to circumvent disputes, frauds, and errors, while also lessening the administrative hassle of registrations and title transfers.
- Telangana's digitization of property documentation system

IV) Blockchain and Digital Payment: Digital/Online payment platforms are prone to fraudulent activities and transactional costs. According to RBI data, from April 2017 to December 2017, 23,865 fraud cases related to credit, debit cards and internet banking were registered. In the fast

growing digital payment market in India, Mobikwik, a digital wallet provider, lost INR 19 Cr due to technical glitches. For digital payments to successfully supplant cash as a medium of transaction, it must adopt new methods and technologies to ensure security – and this is where Blockchain comes in. Transparent, dependable, cryptographically secure and immune to technical glitches, Blockchain can save the past history of transactions in an immutable ledger that can be shared by the user upon his will. It would also facilitate cross border payments.

V) Blockchain and Direct Benefit Transfer: The Indian government has, since independence, subsidised many industries and products, from fuel to gas. However, they do not always reach the poor. It has been reported that Rs. 3.8 Lakh Cr worth subsidies does not reach in the hands of the poor. The main drawbacks where the system suffers are the cash flow issues where the beneficiary first has to purchase the service and then the rebate is remitted to the bank account, the reliance on banks, the lack of transparency and presence of middlemen. Blockchain can revolutionize this system tremendously. Imagine if the beneficiary only needs a phone and Aadhaar number to receive subsidies as well as real-time updates. This would also simplify benefit distribution in rural areas.

Signature
Nischal arvind Singh
Founding partner
NASS AND GUILD
www.ipforstartup.com