Project Design Phase – Part 2

Requirement Analysis (Functional, Operational, Technical) / Flow Charts

Team ID	NM2023TMID04427
Project Name	Project – Tracking Public Infrastructure And Toll Payments Using Blockchain

Requirements

As an asset, land has intrinsic value dependent on its location and corresponding demand and limited supply. It is, in fact, one of the critical factors of production. Access to land has wide ranging economic, social, cultural, livelihood and industrial implications10 .

During the course of the pilot, NITI Aayog found that administration has to sometimes go back to several years of documents, including manual records, to find any ownership claims on a piece of property. Such a process is inefficient and causes time delays as departments, at times, work in silos, and the data across departments is not updated efficiently. Not only that, there is always a realistic chance that the records are lost due to fire or natural calamities. Some departments also have a policy of weeding out old documents from time to time. Hence, discrepancies and disputes pertaining to land records and ownership compromise a large corpus of matters pending before various judicial and administrative forums.

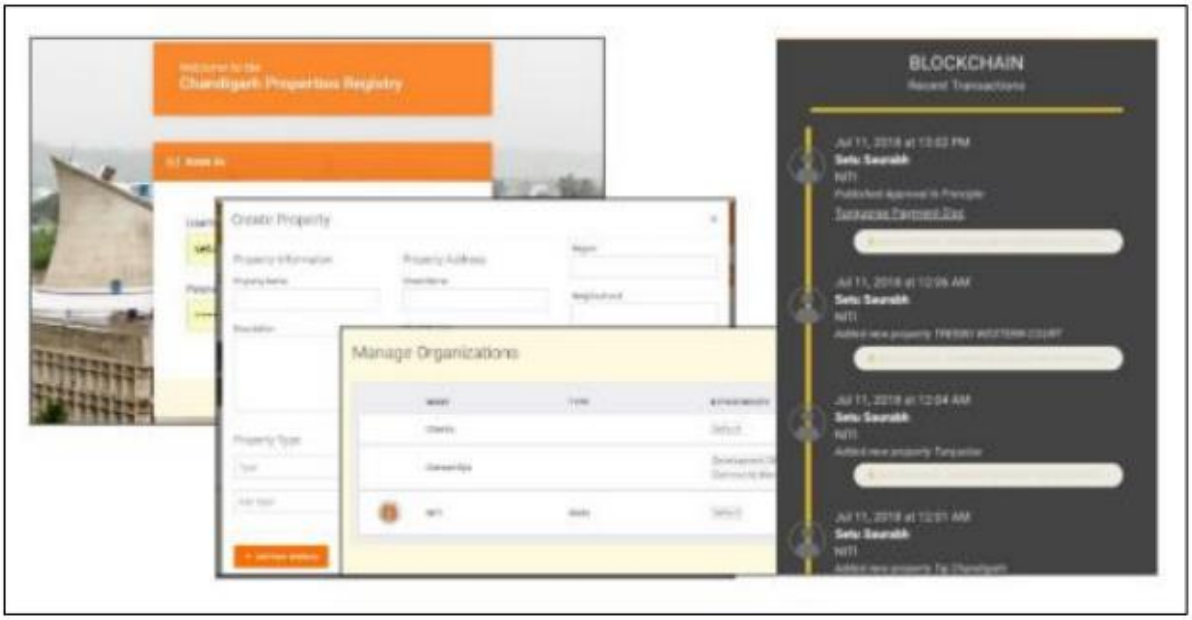
a. Establishing ownership over land: Ownership to land can come through inheritance, gift, purchase, and relinquishment. In India, property ownership is primarily documented through a registered sale deed in case of a purchase of a land property. Other documents which establish ownership include property tax receipts, survey documents, etc.

b. Poor maintenance of land records: Government authorities such as Registrars, Patwaris and Revenue Offices maintain records of property ownership and transfer, especially those of land. Official land surveys conducted by the State have been extremely irregular, for instance, last land survey in Telangana (erstwhile Andhra Pradesh) was done during Nizam's regime in 1932-36. Prior to transfer of a property, the purchaser often has to seem through a pile of

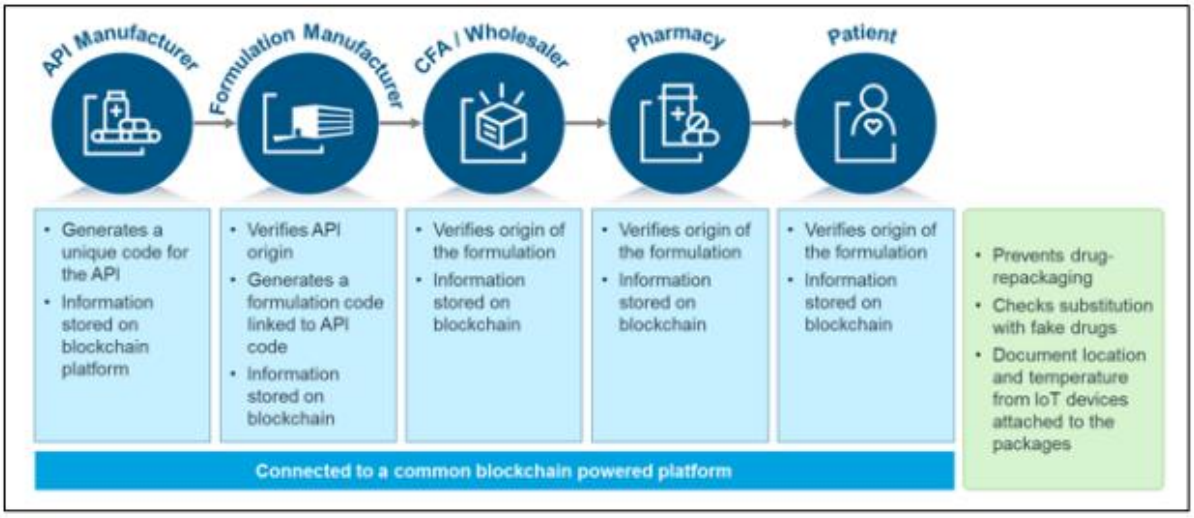
documents, which are mostly manual and are sometimes in a dilapidated or illegible condition, to verify the nature of title to the property that the seller has

c. High amount of litigation: Discrepancies and disputes pertaining to land records and ownership comprise a large corpus of matters pending before various judicial and administrative forums. Land related disputes, such as those related to validity of land titles and records, account for two-thirds of all pending court cases in the country11; and which take on average about 20 years to be resolved.12

d. Asynchronicity of information: Registers held by different agencies (e.g. Estate Office and Sub-registrar office) are updated at different times in the land transfer process – leading to a lack of clarity in ownerships status and cumbersome tasks for the citizen.



- Mirror principle: the land records register reflects (mirrors) accurately the details of all registered land assets
- Curtain principle: the recorded facts about the asset are sufficient; do not require an ownership trail of documents
- Indemnity principle: the state provides for compensation in case of error made by the state



It was found that blockchain technology has the potential to improve transparency, efficiency and reliability of transactions in a heavily regulated pharmaceutical industry. Using blockchain, manufacturers and other supply chain participants can gain real-time data access and greater visibility throughout the supply chain, starting from the point of manufacture (raw material/API suppliers' product codes) to the point of sale (pharmacy stores dispensing prescription/OTC medicines to patients). Most importantly, however, consumers will have the ability to verify the provenance of the drugs at the point of purchase. Major benefits are highlighted below:

- End-to-end traceability of pharmaceutical drugs: Provide streamlined visibility of the movement of drugs or medicines at each stage/stakeholder in the value chain. This improved traceability facilitates the optimization of drug flow and an efficient inventory management system, leading to considerable improvement in planning of stocks.

- Transparency to enhance accountability: The shipping of drugs throughout the supply chain can be traced at each point of ownership. Also, it is possible to trace the actors or stakeholders involved in the chain of shipment. If any problem arises during the supply of drugs or medicines, blockchain can enable to identify the last stakeholder by which the product passed through. Blockchains also allow the identification of exact locations of medicines at each point of transaction and allow for 'batch reminders' to be sent out efficiently to ensure safety of patient's health.