

Land Registry

The land is one of the most controversial subjects in India. It lacks proper system to maintain land records and provide a person with conclusive titles results from infrequent and long drawn legal conflict.

Today land title in India does not guarantee an owner his complete rights. Moreover, property transactions are done on paper and not updated very often, leading to innumerable property disputes.

Land records in India are centralized and maintained in the office of sub-registrar. It is also possible that the record could be altered or tampered, if these records are stored on a distributed ledger then it will be impossible to alter or tampered, hence implementing blockchain in the land registry will be a revolution.

Issues in current system

1. Manual/paper-driven process: The process is not digitized, its a manual process and there are so many possibilities that the records could be altered or tempered.
2. Long process: The process is really slow it could take months to register a land with too much bribery involved.
3. Access of the record: The land property undergoes several mutations over generations that are not always captured on public records. The records are stored in some government office, accessing to them will be a time consuming and cost incentive as it involves frequent visits and bribes.
4. Establishment of ownership: There are so many cases pending in Indian courts to deal with land-related disputes, most of which revolve around establishing ownership.
5. Land encroachment: Unutilized Land and the abandoned house in India are more vulnerable to encroachment. Land particularly of older people without primary support or of NRIs are prone to become soft targets and legal way of eviction is also time-consuming as well as a hectic process.
6. Land double registration: There are cases about the two or more registrations of the same land to the different people that they realized after several years (10-12 years), it generally happened in the 90s.
7. Technical errors: There were instances of technical error due to which the central server connectivity was halted and almost 500-600 land registrations were stopped.
8. E-registration: It has simplified the process for providing evidence of titles and facilitating transactions and also the process online but there is again server error

Current Solutions through E-registration

The government has implemented E-registration process to prevent some of these issues. The main benefit of this process is to improve transparency and make it flawless.

1. It is extremely convenient to register a property using the internet as the registration form can simply be downloaded.
2. E-registration has simplified the process for providing evidence of titles and facilitating transactions and will go a long way in preventing the unlawful disposal of land.
3. The consumer pays a relatively affordable registration amount.
4. There is no need to visit multiple offices to register a property.
5. Details and documents pertaining to land records can be accessed online.
6. Transparency in the registration process increases significantly, hence reducing broker fees and negating the need for bribes to officials.
7. There is software to calculate the stamp duty on the basis of the stored data which can be paid online directly.
8. This is a safe process since hacker has no access to the property papers of the owner and also there are multiple layers of security in the server.

Well, it gives us a solution to some issues but there are issues in E-registration system that needs immediate attention.

Issues in E-registration

1. E-registration is a centralized process (government) and if there is a crash in the system then all data will be lost, so it is not that secure.
2. There is also some technical error in the process due to which people can't process their request hence flooding the helpdesk.
3. This is the extra work government is doing (keeping the data) which is only to ensure the smooth flow of the system.
4. There is a possibility of hacking, hence not that secure system.
5. Records can be manipulated since some of the processes are manual.

Block chain on land registration

The main benefit of blockchain is that it is a decentralized secure system.

Implementation of blockchain will create a single source of truth of ownership and history of the property. The buyer will be assured that the land brought is correct plot

and the seller is unequivocally owner of the land reducing the potential disputes as well as cost and time in the process.

Some main advantages of blockchain in land registration:

1. **Security:** Blockchain could reduce the risk of manual errors while creating more secure processes for transferring ownership of documents and the records can never be manipulated in the blockchain.
2. **Double land registration:** There will be no case of double land registration because buyer will know everything about the land that is all the different registrations of the same land.
3. **Less corruption:** The process will be very fast compared to the current process and there will be fewer cases of bribery since the whole system will be digitized. Most of the corruption happens in the stamp duty and since the process is online, there will be a full history of the stamp duty in the different registrations of the land. Also, we could implement a software that will calculate the stamp fee automatically.
4. **Ownership:** Most of the cases in Indian courts are about ownership of the land because people don't have easy access to documents or they lost it or due to corruption but because of blockchain the owner has all the records of land and can access the information at any time when he wants, this will prevent these cases and no one can alter the records in blockchain.
5. **Transparency:** The major profit of blockchain is transparency, you have the full history of your land, all the registration are proper (without any manipulation) and all the records are official blockchain. Hence it's transparent.
6. **No technical error:** Land registration also gets delayed due to technical errors since the system is centralized and error in central server halts about 500-600 land registration, blockchain will provide a secure decentralized platform hence there will be no risk of technical error.
7. **Decentralization:** This is one of the major advantage of blockchain. The system will be decentralized, it will make government work easy. The only work of government is to ensure the smooth flow of the system.
8. **No land encroachment:** These cases will stop after the implementation of the blockchain, one cannot snatch anything from someone since it is in the blockchain and the owner will have full proof of his house.
9. **Brokers:** Though blockchain cannot remove the broker's system in the land registration, the fees a broker will charge are definitely reduced by blockchain, but a broker is still required (who is a must need in some cases). It will also help the real broker and secure the customers from fake ones.

Advantages of Auxledger over existing blockchain:

1. **Enhanced security:** Auxledger is a more secure platform, ethereum platform was vulnerable to attack but Auxviom provide more security in smart contracts due to the different implementation of LLVM, k-framework and defensive programming.
2. **Transaction cost:** The transaction cost is independent of market dynamics unlike ethereum/bitcoin. Auxledger provides a self-regulating economic model and has a philosophy “no limitations, but pay what you consume” and it doesn’t depend on market dynamics.
3. **Transaction speed:** The transaction per second in Auxledger is about thousands and can even reach about 100,000, which allow it to support large-scale commercial application, unlike Ethereum which has about 30 tps, Bitcoin 7 tps compare to these Auxledger is really good.
4. **Data privacy:** To enhance the data privacy Auxledger use combination of two different models. This will ensure that the data will be encrypted and no one can read your record, data privacy and integrity stays maintained.

