Blockchain and Property Transactions: A Comparative Analysis

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Blockchain technology is a distributed ledger system that records transactions in an irreversible way, meaning that they cannot be modified or deleted once they are validated by the network.

This paper explores two alternative modes of organizing property transactions in the blockchain. In the first mode, rightholders interact directly with the blockchain; in the second one, they rely on intermediaries.

The organization mode without intermediaries is the one that arguably fulfils the blockchain's disintermediation potential. For property, this would imply that by transacting directly on the blockchain, all rightholders (including owners, mortgage lenders and others) grant their consent not only to those transactions in which they are one of the parties but also to transactions conducted by other parties and involving the same asset, which may diminish their rights (imagine, e.g., a wife who sells a house held in common property without the consent of her husband).

Understandably, this solution would, first, require a simplification of the property rights system by reducing the number and variety of in rem rights (rights over things) and transforming them into in personam rights (rights against persons). This would make the system easier to operate but also weaker, as in personam rights are more dependent on contractual agreements.

However, despite such greater simplicity, this design would impose a high burden on owners, who would be making final decisions about their property rights and bear full responsibility for them. For instance, owners would have to keep their passwords secure, as they are the only way of verifying their identity on the blockchain. Many owners may not be able or willing to use such a system due to lack of technical proficiency or other reasons, which would undermine its universal character.

An alternative design for applying blockchain to property transactions is to rely on intermediaries who write on the blockchain on behalf of owners. In turn, these intermediaries could be private actors such as notaries or solicitors, or impartial public actors such as land registries or courts:

a) Private intermediaries (notaries or licensed conveyancers) would write directly on the blockchain, in a way resembling the experience of the Landonline electronic conveyancing system implemented years ago in New Zealand. Such a system would require that all users are authorized to have access to the electronic register. In line

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with the prevalent arrangements, these intermediaries would be freely chosen by the parties.

With this solution, free choice would allow some degree of competition among intermediaries, encouraging them to provide faster and more efficient transactions and to make the necessary investments to operate through the blockchain system. On the other hand, the interest of third parties would suffer as, by definition, despite holding rights affected by the transaction, they are strangers to it and therefore cannot intervene in the choice of intermediary. In NZ this conflict seems to be causing a stream of fraud cases and judicial rulings slowly downgrading the previous indefeasibility of registry entries. A similar outcome is likely for a blockchain-enabled system, diluting its irreversible character. Containing fraud would also require stricter licensing requirements of professionals, reducing competition and generating monopoly rents.

b) Public intermediaries such as registrars would evaluate the legality of intended transactions and decide accordingly: when intended transactions do not damage existing rights, they enter the registry; when they do damage third-party rights, they are rejected and parties are given the opportunity to revise them. This is the type of solution that has been considered in Sweden and piloted in some other jurisdictions with both recordation (with only a formal review) and registration systems (with a substantive review). This option implies that blockchain does not replace the register but merely takes care of the conveyancing, understood as the purely private part of the transaction.

This solution would provide greater control and supervision by the State over transactions; greater protection of legitimate rights and interests; greater consistency with existing the legal framework; and lower risk of conflicts or litigation. However, it would offer less innovation and radical change; more bureaucracy and state intervention; higher operational and administrative costs; less flexibility and adaptability to market needs.

The paper applies the theoretical model of sequential exchange developed by Arruñada, Zanarone, and Garoupa (2019) to understand these processes. It focuses on three distinct types of likely misconduct, defined by the possibility of: (1) collusion between contractual parties and intermediaries against acquiring third parties; (2) fraud that intermediaries might commit against owners and/or third parties (e.g., mainly mortgage lenders); and (3) registration failure consisting of both registration delay and/or registration mistakes leading to damage to third parties. We illustrate the theoretical analysis with empirical evidence from existing systems and pilot projects applying blockchain solutions.

References

Arruñada, Benito, Giorgio Zanarone, and Nuno Garoupa (2019), "Property Rights in Sequential Exchange," *Journal of Law, Economics, and Organization*, 35(1), 127-53.