

# Chain reaction

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## Could blockchain change the face of property transactions, asks Ragnar Lifthrasir?

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The internet made it possible to transfer information, quickly, cheaply and paperlessly without intermediaries. Similarly, blockchain technology offers the same advantages for transferring value. You use the internet to transfer words and pictures; you use blockchain platforms to transfer money and assets.

Blockchains comprise 2 elements:

1. **distributed ledger:** shared and synchronised data that is spread geographically across multiple sites, countries and/or institutions
2. **cryptocurrency:** a digital token with monetary value.

When people use the term 'the blockchain?', they are most often referring to [Bitcoin](#), although sometimes to [Ethereum](#) and occasionally other smaller cryptocurrencies.

In any case, blockchains can offer the following advantages when making real-estate transactions:

1. disintermediation
2. fraud prevention
3. enabling 'money 2.0'
4. smart contracts.

## Disintermediation

Real-estate transactions can be cumbersome, opaque and expensive because of intermediaries; in the USA, these include brokers, government property databases, title companies such as insurance and property databases, escrow (3rd-party) companies, inspectors and appraisers and notaries public. The line-up will be similarly lengthy in most territories.

Paying multiple parties, waiting for and depending on them causes much frustration with property transactions; Bitcoin, Ethereum and others cut out these intermediaries. Currently, these are necessary because they hold information that others cannot access, or they have skills or licences that are needed in the existing market. Public blockchains in contrast provide a distributed database in which anyone can record information without needing permission to do so and without it being censored, and which anyone can access.

To consider title: US county recorder offices and title insurance companies maintain various databases of property ownership records, including the address, previous and current owners, and various encumbrances such as mortgages. Before the advent of the internet, the

government and title companies were necessary to verify and record property data. How can blockchain replace them?

As Jason Ray, Chief Customer Officer at [Indiggo](#) , explains:

?Blockchain will enable every property, everywhere, to have a corresponding digital address that contains occupancy, finance, legal, building performance and physical attributes that conveys perpetually and maintains all historical transactions.

?The data will be immediately available online and correlatable across all properties. The speed to transact will be shortened from days, weeks, or months to minutes or seconds.?

Currently, the title to a property is a piece of paper. To transfer a property in the USA, you fill in the blanks on a deed, sign it with a pen, drive to a notary who puts their rubber stamp on it and then deliver it to the county recorder's office to be placed in their database. Instead of a paper title, Bitcoin or Ethereum can create a digital title; this is a cryptographically secure token that can be transferred as effortlessly, quickly and cheaply as an email.

Before email, you needed envelopes, stamps, trucks, sorting facilities and postal workers to organise and distribute the mail if you wanted to send a letter. Once people can easily verify property records themselves and transfer a title digitally, brokers, escrow companies, title insurance companies, county recorders and notaries public will go the way of the post office.

## **Fraud prevention**

Real-estate fraud is practised at every level of the market, and is accomplished by forging paper documents such as driving licences, bank statements or deeds. Where does Bitcoin come in?

Don Oparah, the CEO of [Venture Aviator](#) , comments that:

?By offering a 100% incorruptible resource, whereby the sender and recipient of funds is logged, and where ?digital ownership certificates? for properties are saved, the blockchain would effectively make forged ownership documents and false listings a thing of the past.

?The unique digital ownership certificates would be almost impossible to replicate, and would be directly linked to one property in the system, making selling or advertising properties you do not own almost impossible.?

## **?Money 2.0?**

Bitcoin is a digital currency; Ethereum has its ?Ether? token. Unlike the dollar or euro, blockchain currencies are not paper that is later represented by software but are entirely electronic from the outset. The power of software is its programmability; the power of cryptocurrency is you can program it to escrow and distribute itself. With fiat currency ? that is, conventional, non-cryptocurrency ? you need humans and banks.

When someone rents an apartment, the landlord takes a security deposit in case the tenant damages the property. By law, they are supposed to keep those funds in a separate escrow account and not spend it. Once the lease ends, the tenant has to rely on the good faith of the

landlord to have the deposit returned. But if you have ever attended a small claims court, you will know how frequently this system fails.

Bitcoin has a function called multisignature, in which you can use your private key to approve the transfer of digital currency to another person. With this "multisig" option, you can carry out a transaction with 3 private keys, where at least 2 are required for spending.

Bitcoin can be used to create a programmable escrow. Instead of sending the landlord's dollars to a bank account, the tenant and landlord together create a multisignature transaction. Each have a private key, while a 3rd is given to a neutral 3rd-party arbitrator. For the security deposit to be spent, 2 of the 3 people need to use their private key. The funds are locked in crypto-escrow for the duration of the lease.

The tenant will almost always want their deposit back, and so they will approve the transaction with their private key. When the lease ends, if the tenant did not damage the property, the landlord uses their own private key to release that Bitcoin deposit. If they did damage the property, then the landlord will send evidence to the arbitrator, though the tenant has an opportunity to respond. After the arbitrator hears both sides, they will use their private key to send the deposit to the successful party.

The Bitcoin can be sent instantly, 24 hours a day, 7 days a week. There is no need to wait for a letter or an email, or any need to deal with routing and account numbers and banking hours for a wire transfer. By using Bitcoin, real-estate escrows can be carried out more securely, quickly and cheaply.

Bitcoin is also censorship-resistant. China attempts to maintain tight control of its currency, the Renminbi, and each citizen is restricted to transferring the equivalent of \$50,000 outside the country a year. However, in 2016, Chinese families made up the largest group of overseas homebuyers in the USA for the first time, showing the potential for a technology that would enable such transactions to be made easily and safely.

## **Smart contracts**

Blockchain protocols such as Bitcoin and Ethereum have the ability to perform "smart contracts", a concept that began with Nick Szabo, a pioneer of blockchain and cryptocurrency. He gave the example of a vending machine that releases an item after a selection is made and the correct value is deposited.

The goal of a smart contract is to reduce the need for humans to process and verify an agreement. A software protocol automates and self-executes an action when certain conditions are met. The box, below, gives an example of how a smart contract could be used in a property transaction.

## Using a smart contract

Drew Hinkes, a lawyer at [Berger Singerman](#) and a digital currency advocate, observed in 2014 that, at present, a real-estate transaction works in the following way: ?Party A and Party B ? enter into a contract that requires Party A to pay \$200,000 to Party B in exchange for Party B agreeing to convey title to Party B?s condominium unit to Party A on receipt of payment.

?If Party A pays ... but Party B refuses to convey title, Party A is required to hire an attorney to seek specific performance of that contract, or to obtain damages. The determination of the outcome will be made by a 3rd party: a judge, jury or arbitrator.?

But Hinkes explained that, in contrast, ?using a smart contract ? avoids the potential for one party to perform while the other refuses or fails to perform. Using a smart contract, Party A and Party B can agree to the same transaction, but structure it differently. In this scenario, Party A will agree to pay \$200,000 worth of virtual currency to Party B, and Party B will agree to transmit the title to the condominium in a specialised type of coin on the blockchain.?

He continued: ?When Party A transfers the virtual currency to Party B, this action serves as the triggering event for Party B, which then automatically sends the specialised coin, signifying the title to the condominium at issue, to Party A. The transfer is then complete, and Party A?s ownership of the condominium is verifiable through a publicly available record on the blockchain.

?Structuring this transaction as a smart contract ensures that the transfer occurs as soon as funds are received, and results in a publicly available, verifiable record of the transfer. Because the contract [is performed] automatically based on the predetermined rules agreed to by the parties to the contract, there is little risk of fraud, and virtually no need for external measures to enforce performance of the agreement.

?Thus, no specific performance action would ever be necessary to compel the transfer after payment is made because the coin, which represents title to the condominium, is automatically transferred, and the transfer is automatically published to 3rd parties on the blockchain.?

## Summary

Wall Street is already using Bitcoin technology to issue stock and transfer private securities, the International Blockchain Real Estate Association has more than 900 members, and ever-increasing numbers of property professionals are looking to get connected. It is time for the real-estate sector to wake up to the cost savings, efficiencies, fraud reductions and conveniences of the technology.

**Ragnar Lifthrasir is the Founder and President of the [International Blockchain Real Estate Association](#)**

## Further information

- [RICS Futures](#)
- Related competencies include [Leasing/letting](#) , [Property management](#) , [Purchase and sale](#)
- This feature is taken from the RICS *Property journal* (November 2016).