

# Use cases of blockchain technology and smart contracts

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**ALTHOUGH** the roots of blockchain technology goes back to the 1990's, the first widely used example of it, the Bitcoin blockchain, sparked the popularity of blockchains in 2009. In short, blockchains are decentralized digital ledgers consisting of "blocks" of information attached to each other by way of cryptographic hashing and are extremely difficult to tamper with. Each "block" contains a hash value itself, as well as the hash value of the previous "block." As the slightest alteration in a block changes the entire hash code of that block and, thus, the subsequent blocks as well, miners can easily detect an anomaly in the blockchain and dispose of false information or transactions.

Although crypto assets are the most popular use case of blockchain technology due to the expectancy of quick-generating profits, blockchain technology has other use cases to offer for everyday life and legal processes.

First and foremost, smart contracts, which are computer programs stored on the blockchain, have entered into the lives of many people thanks to the Ethereum blockchain. The typical example of a simplified smart contract is a vending machine. Vending machines work in a very simple manner: when a person wants to buy a snack and enters a sufficient amount of money, the machine instantly dispenses the requested snack. Smart contracts, in a general sense, work with the same logic. The computer code consisting of

"if, then, else" statements automatically executes the "contract" when the conditions included in the smart contract are met. Examples listed below are all existing use cases of the blockchain technology through smart contracts.

One revolutionary use case is the usage of a blockchain as a registry. Although not yet widely used, the prototypical usage of blockchain technology and smart contracts for real property sale has shown the world the potential of convenience that comes with them. Experimental real property sale in the UK immensely reduced the duration of the process and eliminated the need for traditional intermediaries. Therefore, this is a good indicator of how time and cost efficient the sale of a real property by way of tokenization of said property can be by transferring it on the blockchain. This use case is not only limited to the sale of real property, but can be used for every other asset's proof of ownership.

A second use case of blockchain technology through smart contracts is its usage as a voting system. Whether in general elections or for any other occasions, such as mass voting, if the election results are stored on a blockchain, the results will be immutable and final almost instantly due to the secure nature of the blockchain.

Another use case is for smart contracts that are used as an escrow agent and again provide cost and time efficiency during the process. The conventional escrow

mechanism relies on the safe-keeping of a third party, and this escrow agent may not be objectively trustworthy. Additionally, escrow agents are typically paid generously, but reluctantly, by both parties of the relevant transaction. While the use of a smart contract as a monetary escrow agent simultaneously solves both problems in traditional escrows, it can also introduce a new risk in terms of confidential business information leakages, as the transactions on public blockchains are transparent.

While smart contracts can be used in countless types of transactions, some of which are referred to in this article, users must take into account their drawbacks as well. The main drawback of smart contracts is their unalterable nature. As smart contracts operate with the "code is law" mentality, its users' changes of intent are not considered and the contract is executed once the conditions are met, no matter what. There is also a risk of the contracts being hacked or written with a faulty code that may cause panic to users who are dealing with large amounts of crypto assets. However, these drawbacks can be avoided to some extent by careful usage and through a concrete legislative framework.

All in all, we believe that blockchains and smart contracts have a lot of potential to provide convenience in legal and everyday affairs, but they should be used with great consideration since this area awaits much-needed regulation.

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