# Smart Contracts, simply explained

*Written by Fabien Aepli & Nurith Cohen, 18 July 2017*

"*Smart Contracts*" **are among the most interesting and promising uses of the blockchain technology (see our last article « Blockchain simply explained »). A** *smart contract* **is actually neither a "***contract"* **nor "***smart"***. It is a digital application that enables parties to transact business with each other, without (theoretically) the need of a third party intermediary, and to agree upon a sequence of actions to be automatically executed.**

**This article aims at providing a simple and synthetic understanding of the concept of smart contracts (intentionally, without getting into details of underlying technological issues).** *If you still have not grasped what a smart contract is, here is your chance.*

## What is a smart contract?

A smart contract is not (as such) a legally binding contract, but a computer code based on blockchain technology that automatically executes and enforces predetermined conditions. Smart contracts are not to be confused with *automated contracts*, i.e. legally binding contracts created by a contract automation process. A smart contract is rather a digital mechanism for self-executing and self-enforceable transactions.

Under Swiss law, as soon as the essential terms (which may be incorporated into a code) are accepted, i.e. agreed upon by the parties, and unless a specific form is required, a legally binding contract is entered into.

The use of blockchain technology makes smart contracts reliable: as a transaction executed through smart contract is accessible by the related blockchain's network (see our last article « Blockchain simply explained »), this network is able to verify that the "contract" is properly executed. Furthermore, as smart contracts are immutably inscribed in the related blockchain, the agreed conditions as incorporated into the code cannot (in principle) be amended, and it is not possible to stop or defer the execution of the relevant "contract". If such integrity of the "contract terms" may be an advantage, it may also be one of the downsides of smart contracts, as it removes the flexibility that parties may look for. It also sets aside important legal issues such as default in the consent or capacity to enter into contracts, unusual terms, perpetual commitments and misrepresentations. Smart contracts should therefore not be used for every situation (see below). Complex relationships, involving for example indemnity requirements or assessments, should in particular remain governed by a traditional legal contract (even if smart contracts may be used for the execution of part(s) of such legal contract).

## How does a smart contract basically work?

A smart contract is basically set up as follows: 1) coding phase based on agreed conditions ("*If X occurs then do Y*"); 2) inscription of the code in the blockchain (using encryption technology); 3) self-execution upon occurrence of the condition "X".

If such condition "X" is linked with one or more entries in the blockchain (e.g. payment of a specific amount) or if it is a deadline to be met, the code is programmed to check if the condition is met.

If, however, the condition "X" is "outside" the blockchain (e.g. performance of a service, occurrence of an event), the execution of the "contract" requires the intervention of a third party, a so-called "oracle", who is in charge of entering the required information for execution of the "contract" in the blockchain. Such third party may be designated by the parties themselves or may be a trusted database or a decentralized oracle service existing in the blockchain.

Setting up a smart contract is technically a task of IT specialists. That said, the involvement of legal professionals seems inevitable to set out the agreed terms, but also in light of legal uncertainties around smart contracts (including qualification, treatment of potential errors in the code) and legal issues that cannot be settled through smart contracts (see above examples).

## What are possible uses of a smart contract?

Smart contracts may be used in a number of cases, for instance in financial services (e.g. trade clearing and settlement, insurance claim processing) or for industry purposes (e.g. transfer of payments based on letters of credit). It may also be used

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for providing access to a medical health record or for keeping track of music ownership rights and ensuring that royalties are being paid and allocated as agreed. These are only a few examples.

Smart contract technology seems to be a particularly worthwhile option when frequent transactions occur among a network of parties, otherwise requiring manual or duplicative tasks to be performed for each transaction.

Another interesting application of the blockchain technology coupled with smart contracts is the *Decentralized Autonomous Organization* (DAO). Not familiar with this? Follow us on our Linkedin Page and **stay tuned for the next episode: *Decentralized Autonomous Organization (DAO*) *simply explained***.

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