Smart Contracts and their problems in face of complex relationships of DAOs

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Generally, the objective aimed during the conclusion of any contract is the allocation of inherent risks to the legal relationship. In the document, alternatives and solutions to the occurrence of certain facts are determined in light of the initial purpose of the contract. Nonetheless, this allocation of risks is only valid when the instrument is recognized in a legal system, which is able to assess potential contractual infringements ex-post, and impose the applicable legal consequences.

Smart contracts, a concept initially defined by Nick Szabo[1], are transaction protocols embodied into a computer and capable of executing certain actions when specific conditions are fulfilled. Smart contracts operate direct transactions between individuals, so-called peer-to-peer, in which there is no need for intermediaries, also resulting in a public, immutable, transparent, and non-corruptible record. They are self-executing instruments, auditable (public and unchangeable), and do not allow ambiguities. The assurance of their performance increases the trust between the parties, decreasing transaction costs. Through codes embodied in blockchain technology, smart contracts develop clear and tamper-proof rules.

In some cases, however, obscurity has an inherent value. When dealing with extremely complex negotiations, the number of variables related to the intended contract may be countless. Hence, what would be the purpose of including in a contract, for instance, a particular clause, spending time to negotiate its applicability, if the odds on the materialization of its result are extremely low? Intuitively, during the negotiation of contracts, open clauses are designed to encompass, precisely, a wide variety of situations, even those improbable to occur. If there is a dissent, one resorts to ex-post solutions, which are materialized by a legal system.

This is a clear disadvantage of smart contracts, which are codified to govern situations that are possible and determined. DAOs are built on a set of smart contracts and rely on them to enable their members, for instance, to control or guide the assets of the organization. Often, its members agree, in substance, to comply with the “law of code” more than any rule of law. Generally, in DAOs, smart contracts are used to define rules, structure operations, and manage relations. The execution of DAOs, therefore, relies on codes and is not based on legal systems.

Beyond that, DAOs were designed precisely to serve as possible “substitutes” for legal systems that are, many times, bureaucratic and slow. With nowadays technology, such as Bitcoin or Ethereum, which operationalize DAOs, it is infeasible to develop code and specify every possible result deriving from complex negotiations. This infinity of possibilities, if reflected in such technologies, would entail transaction costs so high that, ultimately, their execution would not be viable.

Therefore, if on the one hand, the so-called smart contracts can be extremely worthwhile, on the other hand, when dealing with complex systems, such as the ones necessary to enable the functioning of some DAOs, they can represent disadvantages, occasionally even becoming infeasible.

The truth is that, in practice, smart contracts are still unable to replace contractual instruments. The trend of transferring businesses and legal relationships to DAOs, especially due to its decentralized nature, is unquestionable. Questionable is how intricate transactions will occur in complex environments. These problems, in the future, may be solved by means of artificial intelligence and neural networks trained to solve such imbroglios.

There must be awareness, however, so that regulations, especially those required in complex relations, do not impose burdens entailing excessive bureaucratization. DAOs shall not lose their essence and become a mirror image of nowadays legal systems.

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NOTES:

[1] https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/idea.html

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