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Digital Currency Insights

David McNickel, 09 Jan 2018 -Smart Contracts

2018 looks set to see a significant increase in the number of smart contracts developed and deployed. But for anybody who thought self-executing contracts might be soon be putting lawyers out of work, Brave New Coin's discussion with Yoran Gill, Roy Keidar and Noa Mayer from Israeli law firm Yigal Arnon indicates the opposite is more likely to be true

BNC: What type of contracts can be smart? We assume it's one where if an action occurs (or doesn't occur), then the contract executes a command — pays money, releases something for delivery etc. But in reality, isn't the percentage of contracts that are that straightforward pretty small — and most contracts represent a relationship that is much broader than could be managed by a simple if/then solution? From your perspective, for what type of agreements or industry sectors are smart contracts an appropriate solution?

Yigal Arnon: Smart contracts are basically automated contracts and only as smart as the lawyer who drafted them. Therefore, there isn't necessarily a trade-off between lawyers and smart contracts but rather a challenge around how to apply the benefits of smart contracts to generate a more business-friendly legal environment. We believe smart contracts can and will be applied in any industry and in any market, for any interface (b2b, b2c, b2g, g2c, g2b). The relevant criteria, as we see it, for application of smart (automated) contracts, are whether the following characteristics exist in the type of activity involved:

- Digital or electronic registration of title
- Digital or electronic documentation of process
- Transfer of payment and/or rights

Smart contracts will be able to automatically run complicated processes that involve complex if/then solutions, and even if at various stages some human involvement, assessment or input will be required, we believe that the smart contracts will still have the benefits of efficiency, accuracy and certainty that justify and promote their development. Some examples of complex transactions that can be made easier and faster are:

Real estate transactions and land registration: digital land registration, online submission of set documents, coupled with digital documentation of banking and finance transactions will allow the automated sale of real estate, including change of land title subject to the transfer of payment from the buyer to the seller.

Payment of insurance claims: especially general insurance where the damages can be photographed and reviewed manually or by computerized image recognition.

Providing of licenses: subject to meeting officially monitored and documented processes

Investment and M&A transactions: especially shares and options transfers

BNC: What are the most common questions clients are asking you about smart contracts? That is, what part of the whole concept is leading to the most client confusion or concern? And how are you answering those questions?

Yigal Arnon: Clients ask about the way to manage conflicts between parties to smart contracts and what their securities and guarantees can be once the contract is activated and once the process is unstoppable. Smart contracts can often change the burden of proof in case of a conflict. Since the transaction is finalised automatically and there is no "point of exit" for any of the parties, the transaction is finalised and only then can a party that has claims against its counterparty, raise them. Therefore the guarantees need to be external to the contract, and independent of it, and to take into consideration the various conflict matters that can arise throughout the life and execution of the contract.

BNC: Is it fair to say that where smart contracts will deliver the most benefit is in the area of cutting operational costs? Removing a layer of human approval and the opportunity for error? That another perspective on them is that they're just another step down the business automation path?

Yigal Arnon: Yes, we agree. The main benefits of smart contracts are efficiency i.e speed, costs and accuracy, as well as certainty – these are all critical matters in business and in business relationships.

BNC: What about negligence suits? Do you think the standard indemnification clauses you see in software development contracts are applicable and enough to protect developers working in this smart contract space? Should they seek legal advice?

Yigal Arnon: In principle, indemnification clauses are very important and it is not recommended to give them up, but they are not enough. The 'smart software' can affect the substantive legal rights of users of these programs directly and immediately, without being able to examine the situation in real time and to receive legal advice accompanying the process. Therefore, beyond the usual indemnification provisions, it is recommended that software developers take care to cover their existing exposure to malpractice. Additional protections in the agreements in which they sell the software to third parties, who disclaim such responsibility, as well as appropriate insurances that provide suitable cover for this exposure.

BNC: What about the use of Oracles? For example, in the travel insurance world, some policies are available now where if a flight is delayed more than two hours a smart contract executes and makes a payout to a policyholder who insured against such a delay. We assume the smart contract checks arrival data and if a flight is late it triggers the payout. But what happens if the flight info is not available or has been hacked, or the server is down for a day or so? How do smart contracts address

this? And isn't one of the key things people then need to consider when creating these contracts is what is the credibility of the Oracle/information source, that both parties are going to rely on for the triggering information?

Yigal Arnon: The challenge with smart contracts is that they are based on code. Code has to be programmed for clear yes or no answers. However, reality has more shades than that and sometimes presents complicated scenarios. Indeed, drafting a smart contract will require expertise and creativity in order to set the check and balances as well as safety nets and solutions for failures. Agreeing on the source on which the parties will rely, its credibility, and what to do in cases of failure, will become part of the contract itself.

The online version appears **here**