INSIGHT

SMART CONTRACTS
5 THINGS TO KNOW

Increasingly, it seems we are living in an age where everything is becoming 'smart'; from smartphones to smart televisions and smart cities.

Now, even contracts are undergoing the transition, and companies are starting to explore potential uses and benefits that smart contracts may be able to offer their business. However, for those unfamiliar with the concept of smart contracts, we've answered some key questions below related to this emerging technology.

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1 WHAT EXACTLY IS A ‘SMART CONTRACT’?

Smart contracts are really just pieces of computer code, in which the terms of an agreement are embedded. The code is built on the premise of ‘if’ and ‘else’ conditions, meaning that an action is only executed if and when certain criteria are met. This way, all parties using the contract can be assured that fulfilment of the contract’s terms are being monitored and controlled digitally.

2 HOW DOES IT WORK WITH BLOCKCHAIN?

Smart contracts are scripts which reside on a blockchain platform, a decentralised digital system or ledger, over which no single person has unilateral control. It can be thought of as a network of computers across which the same database is replicated, and which updates and encrypts in real-time through application of mathematical formulae. The best-known type of blockchain platform for managing smart contracts is called “Ethereum”, touted for its unlimited processing capability.

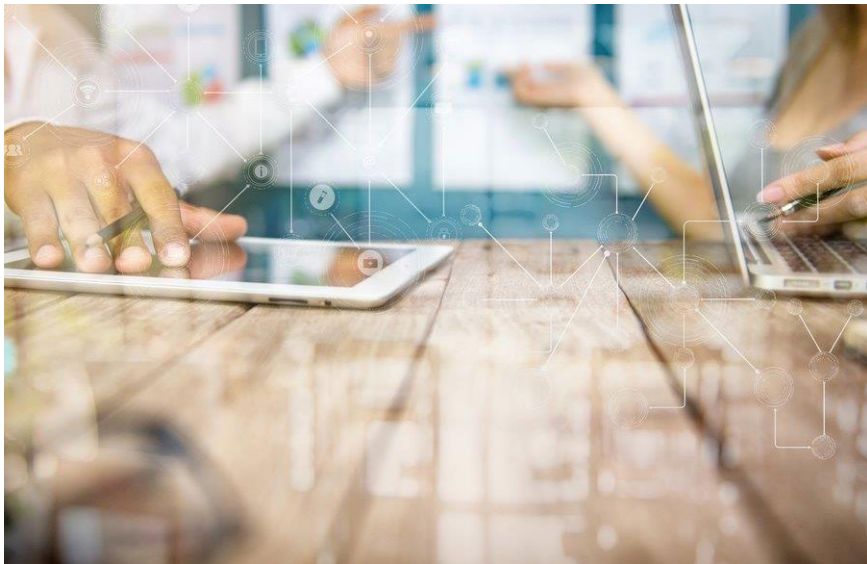
THE INSURANCE INDUSTRY IS AN AREA WHICH COULD BENEFIT FROM THIS TECHNOLOGY, SINCE INSURANCE IS BASED ON THE PREMISE OF A CONTRACT BETWEEN A POLICYHOLDER AND AN INSURER.

3 WHAT MIGHT YOU USE SMART CONTRACTS FOR?

There are many proposed use cases for smart contracts. Perhaps, the allocation of funds to a vendor following a property sale, using a rule-based code. Or, the tracking of ownership rights in order to apportion royalty payments.

The insurance industry is an area which could benefit from this technology, since insurance is based on the premise of a contract between a policyholder and an insurer.

In exchange for the customer making payments, providing specific information and meeting certain terms, the insurer agrees that it will cover a potential claim. In the event of a claim arising, a smart contract could verify the conditions between the insured and insurer and automatically arrange for payment of the claim. There are other possible use cases for insurance; for example in the areas of supply chain management and fraud detection.



4 WHAT ARE THE KEY BENEFITS?

The blockchain technology hosting the smart contract means that information is encrypted and duplicated across the ledger, and that transactions are traceable and backed up. This provides an irrefutable audit trail, and reassurance of security and transparency of the agreement. All members of the blockchain network have an identical copy of the data, without need for reconciliation.

Another benefit is increased speed of transactions through automation. Since the smart contract self-executes, this could realise a time reduction in insurance documents being issued, or claims being paid to customers. In turn, this may drive up customer satisfaction levels..

The fact the contract is based on code means there is no chance of misinterpretation or ambiguity, and the same input should always result in the same output. Essentially, if "X" occurs then "Y" happens.

INFORMATION IS ENCRYPTED AND DUPLICATED

In 2016, Allianz Risk Transfer (ART) announced a successful pilot using blockchain smart contract technology for transacting a natural catastrophe swap. Such "cat" swaps or bonds are financial instruments which transfer a specific set of natural disaster risks, such as hurricanes or typhoons, from an insurer to other insurers or an investor. ART says that the pilot, in conjunction with Nephilia Capital Ltd, demonstrated that transactional processing and settlement between insurers and investors could be significantly accelerated and simplified.

5 ARE THERE ANY ASSOCIATED RISKS?

Smart contract technology is certainly promising, yet remains in its infancy. Therefore many people are either unfamiliar with the concept or sceptical of its potential. There's also the associated cost of migrating existing systems onto blockchain platforms, plus the technical know-how to perform this task.

Other concerns centre on the potential for cyber attacks. There have been reported incidents of smart contract hacking where the terms of contracts have been amended by hackers. Any expansion of the smart contract footprint would almost certainly seem a proportional rise in cyber incidents.

Currently there's no legal framework specifically designed for smart contracts and blockchain. It will therefore likely become necessary to adapt the underlying technology in order to comply with existing contract law.

Finally, there's the current limitation of the technology. At present there's no known blockchain which can interact with financial systems, although it's likely not far off being developed.

In summary, smart contracts are being cited by experts as a key disruptor in the future of many industries, especially financial institutions. The growing adoption of the internet of things means there is ever more data to inform the protocols of smart contracts. There may come a time when paper insurance policies are entirely obsolete and only exist as a form of digital code hosted on a computer network.

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