

Is blockchain the next big thing for insurance companies?

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The financial service industry has been on a quest to automate processes for some time. Many computer processes work without much human interaction, if any at all. However, because there are still many processes performed by hand and keyed in after the fact, there are still errors. In the quest for efficiency, accuracy, and transparency, blockchain may be the next big thing.

What is blockchain technology?

Simply put, blockchain is a secure, transparent, and decentralized way to keep records and share information. Envision a linked chain of blocks, with each block containing information including transaction data, a time stamp and an identifier called a hash. This chain is akin to a list of transactions that would typically be stored in a paper or digital ledger, only each block contains a copy of all the previous transactions, in addition to the newest information.

Smart contracts are programmable. This enables financial service companies to build compliance requirements including Know Your Customer, data privacy and other features into the automated process flow.

Moreover, instead of being controlled by one person (centralized) like a typical ledger, the blockchain is decentralized and maintained by many computers called nodes. Each node contains a copy of all the linked blocks of information. This creates redundancy, transparency and immutability, making the blockchain very difficult to modify without consensus among many parties.

Though the technology is often synonymous with cryptocurrency because it is programmable, the use of “smart contracts” on the blockchain provides greater utility beyond the trading of Bitcoin.

What is a smart contract?

A smart contract is a series of rules that are programmed on a blockchain. If a predetermined condition or event occurs, and that event or condition is verified by the nodes, a smart contract will self-execute steps programmed on the blockchain, without human

interaction. There are several reasons why smart contracts are attractive:

- (1) Smart contracts are programmable. This enables financial service companies to build compliance requirements including Know Your Customer (KYC), data privacy and other features into the automated process flow.
- (2) Smart contracts are faster, more efficient, and more accurate than typical processes. Because they are digital and automated, there is nothing to file or process and there is no time spent reconciling errors or dealing with paperwork that is not in good order.
- (3) Trust and transparency levels are high because there are no humans involved and everyone operates with the same secure information. It is nearly impossible to self-deal or change information for someone’s benefit.
- (4) The security of any transaction is high because the nodes authenticate and record information, which makes them harder to hack. Since the blocks are connected, and each has the sum information of all previous blocks, it is impossible to alter a single entry, unless a new blockchain replaces the existing one.
- (5) Smart contracts are inexpensive because there are no intermediaries running them or the typical problems that go along with humans. Once implemented, they reduce the cost of infrastructure.
- (6) Smart contracts are also scalable in a way that manual processes are not, because they do not require hiring and training.

What use cases are there for smart contracts in the insurance world?

Smart contracts have the potential to recreate the functions of an insurance company, such as by pooling premiums, assessing risk, and distributing claims, all without the need of a centralized entity to manage its operations. At present, there are two main categories of smart contracts for the insurance industry: replacement of existing traditional insurance policies and mitigation of financial risks through use of a blockchain.

Existing traditional insurance policies can be substituted by using “parametric insurance” created on a blockchain with self-executing smart contracts. With parametric insurance, policyholders are paid based on the occurrence of an event, rather than the damage

incurred by the event. A programmed monitor called an oracle detects the occurrence of an event and transmits that information to the smart contract, which then automatically pays out the insured party.

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Lemonade, Inc. is one American insurance company pioneering the use of parametric insurance. The problem they addressed was that farmers in Kenya needed drought insurance, but traditional insurance was prohibitively expensive. Because of this issue, the non-profit arm of Lemonade, the Lemonade Foundation, created a smart contract with an oracle that quantifies drought risk and automates claims based on rain data.

In 2023, 7000 farmers in Kenya who signed up for the insurance were paid out claims due to the occurrence of a drought. No claim adjuster, claims, or processors were needed. Because information like rain data is easily measured for an oracle to transmit, a multitude of use cases exist.

Etherisc is another example. Etherisc specializes in creating parametric insurance protocols. Flight delay, life, health, and natural disaster insurance are among the options a person may purchase. As long as external information about the occurrence

of an event can be readily transmitted to an oracle, all types of insurance products can be transmuted onto a blockchain.

Pooled insurance products that mitigate financial risks on a blockchain may operate in a similar parametric fashion or may qualitatively assess the validity of a claim through a consensus mechanism. In the latter method, individuals pool money together and receive a proportional interest in the insurance pool. When a claim is submitted, members of the pool assess the claim and hold a vote. A majority of votes is required to pay out the claim.

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Nexus Mutual is a leader in this technology. The protocol allows users to create or join insurance pools covering a wide range of economic activity on the Ethereum blockchain. Many of these pools provide protection against exploits, oracle failures, liquidity runs and governance attacks for various protocols. Currently, over \$190,000,000 is collectively pooled on Nexus Mutual and over \$18,000,000 in claims have been paid out since its inception.

Although smart contracts, such as the ones created by Lemonade, Etherisc, and Nexus Mutual are still in their infancy, their ability to reduce operational costs and facilitate efficient, secure, and accurate payouts may offer considerable advantages over traditional insurance products. As individuals look to reduce their premium payments while still offsetting risks in the emerging ecosystem of decentralized finance, insurance smart contracts will continue to grow.

About the authors



Gina Alsdorf is a shareholder at **Carlton Fields** with more than 15 years of experience in the financial services industry. She focuses her practice on the Employee Retirement Income Security Act and its fiduciary provisions, the Internal Revenue Code, the regulation of individual retirement accounts, and other employee benefit plans. She has a keen interest in emerging technologies and their applications in the financial services space. She can be reached at galsdorf@carltonfields.com. **Jason Berkun** (not pictured) is a law clerk at the firm and will be joining its financial regulatory service practice group upon graduation from George Washington University Law School in 2025. He previously interned at the Securities and Exchange Commission and the Blockchain Association. He is primarily interested in the intersection of blockchain and law. He can be reached at jberkun@carltonfields.com. The authors are based in Washington, D.C.

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