BLOCKCHAIN IN INSURANCE

FUTURE OF INSURANCE - THE GAMECHANGER

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Future of Insurance - The Gamechanger

Executive Summary

Blockchain is an emerging trend that is disrupting various industries, including the insurance industry, and the use cases are still emerging. There is, therefore, an urgent need for all the industry participants to work on a partnership model to proactively pursue new applications of this technology.

In the insurance industry, policies are often processed on paper contracts, which means that the claims and payments are error-prone, and often require human supervision. With rapid digitization, it is now crucial to understand and leverage the varied benefits of blockchain ledgers and tackle the limitations effectively.

What is Blockchain?

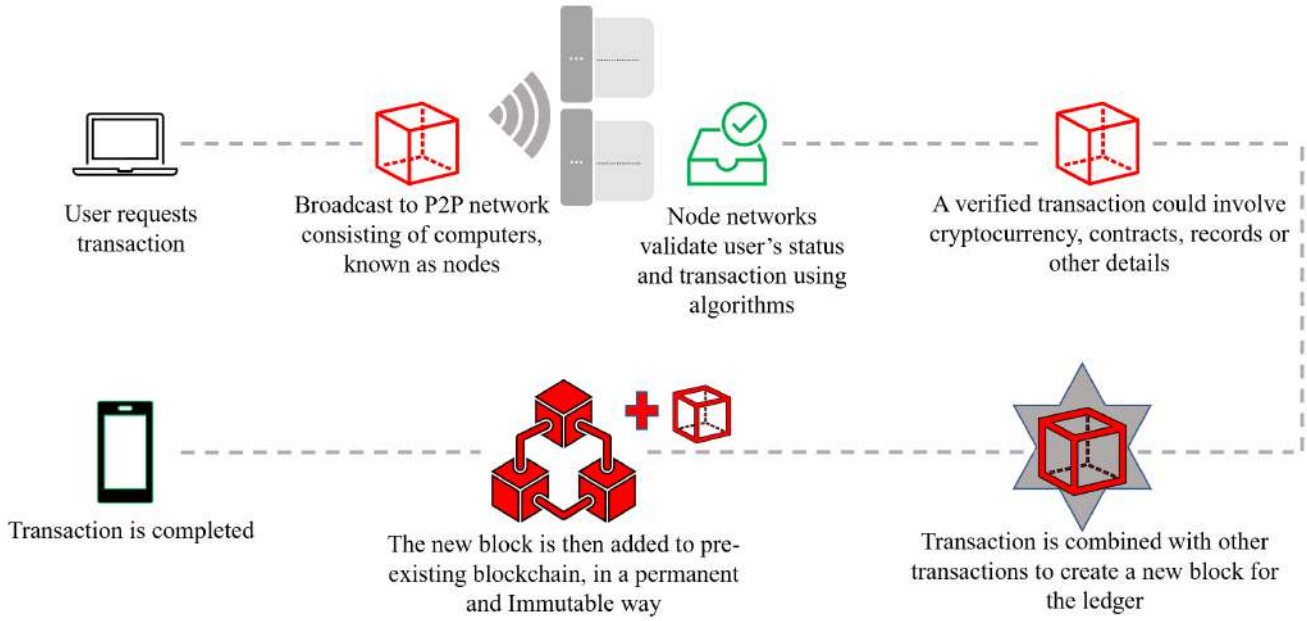
Blockchain is essentially a distributed ledger that features an immutable and permanent transactional record within a digital system. The technology is decentralized in nature, which means that each record is stored in blocks that are chained together chronologically or in sequence. Participants under a blockchain network could approve transactions without the need for a governing authority, thus eliminating intermediaries and other redundancies in the system.

There are two most common types of blockchain in the industry currently, depending on the level of permission or access:

Open or public blockchain networks – These are permission-less and allow anyone to freely access the open network system. They are typically used by the governments or the non-profit organizations

Closed or private blockchain networks – These require permissions, where only invited users can participate, see, and use the information. This is particularly of interest to insurance companies because only the selected information could be shared based on access requirements

Blockchain Process Flow



Blockchain meets the Insurance Industry

Blockchain is a distributed and decentralized public ledger technology that allows for secure data sharing between parties in real time. While the technology has transformed numerous industries in the past decade, the global insurance industry has not yet embraced the numerous benefits blockchain has to offer. Blockchain has the potential to automate the insurance markets and allow the insurance companies to streamline their processes and reduce costs. It can bring about significant efficiency gains, increased transparency and can prevent fraud through increased financial security. Blockchain could also enable insurers to grow, by improving customer engagement, making product offerings more cost-efficient for emerging markets, and accelerating growth in mature markets, thereby unlocking $3.1 trillion in new business value by 2030, according to Gartner.

How does Blockchain benefit Insurance?

The core advantage of blockchain is increased transparency through a decentralized ledger. Blockchain also ensures lower transaction fees from possible elimination of intermediaries.

Automates Underwriting
Increases speed and cost efficiency with smart contracts

Automates Claims Settlement
Reduces costs with automated claim and data verification

Saves Transaction Time
Reduces transaction time from days to seconds

Reduces Overhead Costs
Substantial reduction in overhead and intermediaries' costs

Increases Trust
Transparency in processes and bookkeeping

Mitigates Risk
Protects against frauds and cybercrime

Improves Accountability
Improved traceability reduces abuse and misuse

Potential Drawbacks of Implementing Blockchain

Though it has its share of benefits, blockchain in insurance also has certain limitations. As the network of users expands in the forthcoming years, it will become highly susceptible to cyberattacks.

Nascent Legal Framework

Even though the blockchains have been deemed immutable, there are no appropriate jurisdiction or defined legal framework around them

Fraudulent Insurance Transactions

Not recording original events compromises the integrity of data, which raises fraudulent insurance transactions

Cost of Operations

As blockchain gets more popular, it could become expensive for insurance companies to adopt this new technology into everyday processes

Property & Casualty

Property and casualty, which consists of auto, commercial, and home insurances, had $1.32 trillion of total net premiums written in 2019. Processing claims manually leave room for significant human error. Blockchain could make claims processes three times faster and five times cheaper through automated data collection. By using this technology, insurance policies can be issued and payments can be processed automatically with greater efficiency and accuracy, and with reduced errors and delays.

StateFarm United Services Automobile Association (USAA) uses a blockchain-based solution to settle subrogation claims in auto insurance. This Ethereum-based blockchain solution creates a ledger of all transactions between two insurers.

Life

In today's claims process, it can take months for an insured to receive a claim. Blockchain can revolutionize the death claims process, by automating and streamlining the application procedure, and making it client-centric and easier to access. Blockchain also facilitates a dynamic insurer-client relationship by securely storing the electronic records on a smart contract. These contracts automatically trigger the death claims, as soon as the details of an insured's demise are entered into a decentralized ledger database.

Metlife's smart contracts solution, called 'LifeChain', processes life insurance claims in Singapore. Its Ethereum-based blockchain solution can initiate a claim based on an obituary printed in the media.

Health

Blockchain technology facilitates the secure and instantaneous sharing of medical data between healthcare providers and insurers. Medical records are encrypted on smart contracts, which enable seamless integration of information exchange between stakeholders. Blockchain in healthcare insurance enables a significant reduction in regulatory and compliance costs, as the medical data of all patients are synchronized in one place. Alteration in the medical records of a patient triggers an audit trail which mitigates fraudulent activities.

Anthem, the second-largest health insurer in the US, is testing out various blockchain-based applications, including those that would make it easier for patients to access their medical records. For Anthem, this technology will help it process huge transaction volumes, which can be up to 300,000 transactions a week for patient health data. Anthem also plans to have all 40 million members on this blockchain-based data-sharing solution by 2023.

Marine

Blockchain assists marine insurers with opportunities for cost-saving and growing the top line, and through value-added services. It serves as a secure method of exchanging information for contracts in maritime, and minimizes paper use, reduces administration, cuts out duplication, and prevents fraud.

Smart contracts eliminate the scope for fraud through increased transparency between the shipping and insurance companies. All terms and conditions are saved on the contract, which automatically regulates claim filing and settlement. Moreover, the conditions cannot be altered without intimating either party once established on a smart contract.

EY and Guardtime, collaborated with Microsoft's Azure to develop a groundbreaking blockchain-enabled platform, named 'Insurwave', which meets the needs of all the different parties involved in a marine insurance contract. Blockchain and distributed ledger technologies will be used to capture information about shipments, risks and liabilities, and help firms comply with insurance regulations.

Use-Cases and Live Examples

The primary goal of implementing blockchain in insurance is to eliminate gaps in service and reduce inefficiencies. These gaps and inefficiencies are the inherent costs of insurance transactions, namely, higher costs of settlement, prolonged waiting periods, and extensive negotiations. The following are use-cases for blockchain in insurance:

Pricing, Underwriting, and Claims Settlement

Insurers evaluate costs, benefits, and internal and external risks related to underwriting because no insurance company would play the game without thorough due diligence. Traditionally, it takes several months to a year for risk versus reward evaluation, especially for larger clients.

With the use of blockchain, external and internal data can be linked to decrease risk liability and provide semi-automatic pricing in a timely and efficient manner. It ensures pricing accuracy through transparent quantification of risk and provision of digital contracts, that offer real-time visibility into price or term alterations made by any party. APIs in blockchain smart contracts allow for filtering across the history or logs of smart contracts, which underwriters could use to better understand the risk profiles.

Tokio Marine & Nichido confirms the benefits of blockchain in accelerating digital payments across 8 countries at a global level through a partnership with **NTT Data**.

Issue: Customers complained that it took more than 1 month to complete payment of marine cargo insurance claims. Operational tasks, such as preparing and submitting documents for insurance payments, are complex procedures.

Solution: Implementing blockchain allowed to shorten the insurance payment period to 1 week (77% time savings) through e-exchange of documents and contracts.

Microinsurance

As an emerging trend, microinsurance offers security against specific hardships of lower-income population. However, due to the higher distribution costs and lower profit margins in the business, microinsurance has not received much traction in the industry. Blockchain could enable trust and transparency among peers and counterparties living in remote areas of the world. Since blockchain eliminates governmental bureaucracy, it offers scalability and expansion possibilities to the insurance industry, by including smaller firms and low-income individuals, who otherwise face excessive wait times and higher transaction costs.

A partnership among **Aon plc** (insurance provider), **Oxfam** (NGO) and **Etherisc** (InsureTech firm) is bringing crop insurance to 3,000 rice-paddy farmers in Sri Lanka.

Issue: When extreme weather events occur or strike in agricultural-intensive economies, farmers usually find it difficult in claiming the insurance.

Solution: The program utilizes the weather data index as a KPI for smart contracts, which are built using Ethereum blockchain. Thus, if wind speeds exceed 75 miles per hour at a certain location during the growing season, payments are triggered automatically. The goal, in this case, has been to extend the programme to as many as 800,000 Sri Lankan farmers.

Asset Tracking and Management

Insurance requires a review of asset documents and other high-value items, such as mortgages, property, gold, jewelry, and other collectibles. Blockchain helps in archiving and enlisting the ownership of such assets for various parties involved in the value chain, such as insurance companies, claimants, owners, and regulatory units.

Since blockchain can track in real-time the movement and cumulative values of various assets, it can enable improved risk management and coverage capabilities for the insurance industry. The industry could also migrate asset records to DLT, which would allow smart contracts to update reliable asset data. Finally, an immutable digital asset record facilitates automated reporting and auditing, which in turn helps meet the regulatory compliance speedily.

Everledger has created a blockchain network to surface more accurate information regarding ownership and transfer of assets, to provide a trusted set of asset data.

Issue: Insurance agents and parties assume and take risk, sometimes without the bigger picture in place, and paper trails of asset data make the entire process burdensome. This is a major issue in verifying and claiming high-value assets, where authenticity is paramount and significant changes in value occur over time.

Solution: Clients obtained a record-viewer that allowed them to view the asset history, including, the chain of custody, claims about its origin, and its sustainability footprint. Each party could view and raise questions about when and where the asset changed hands, if it was real, and whether there were any implied or hidden risks.

Cybersecurity Stronghold

Given the 21% CAGR (2020-2025) of the cybersecurity insurance market[1], there is an untapped potential to better manage unfunded or underinsured risks. It occurs due to wide usage of legacy systems, which contain PII and sensitive data for millions of policyholders, leaving them vulnerable to hackers. With the growing number of recent cyberattacks on large enterprises, such as Microsoft, Vodafone, Samsung, and insurance firms such as Chubb, orchestration technologies powered by blockchain and AI allow for improved awareness, control, and transfer of risk. By creating a permanent record of every micro-policy, including when it was opened or closed, and by automating the process, the policyholder can be notified of any unauthorized access or policy edits, thus ensuring proactive rather than reactive security.

CloudCover secured the first patent for cybersecurity insurance using blockchain to establish underwriting and set incremental risk premiums for network data insurance.

Issue: Cybersecurity insurance is unsustainable given the increasing cost of cybercrime, the increasing number of filed claims, and as a result, the soaring premiums . Since the risk in insurance is mostly unpredictable, the need for awareness, proactive security, and transfer of risk through insurance is a key concern.

Solution: The patent would play a key role in the rollout of upcoming insurance offerings, along with a $1 million ‘Ransomware Warranty’ for organizations that sign on with a three-year contract with CloudCover's CC/B1 Platform. The company is able to identify, control, score, and underwrite the risk at a granular level, removing conventional barriers to real-time data insurance.

1.Markets and Markets

Market Outlook & Strategic Developments

Blockchain in insurance market size was valued at USD 0.21 billion in 2020 and is projected to reach USD 25.51 billion by 2028, growing at a CAGR of 82% from 2021 to 2028.[1] The rise in fraudulent insurance claims and the demand for more transparent and secure procedures are fuelling the market growth. Blockchain technology is expected to be leveraged across the insurance sector due to its security and immutability features. Furthermore, lower ownership costs, the growing use of blockchain-as-a-service and the Internet of Things (IoT) have led to positive impacts on market growth.

Asia-Pacific is Expected to be the Fastest Growing Region

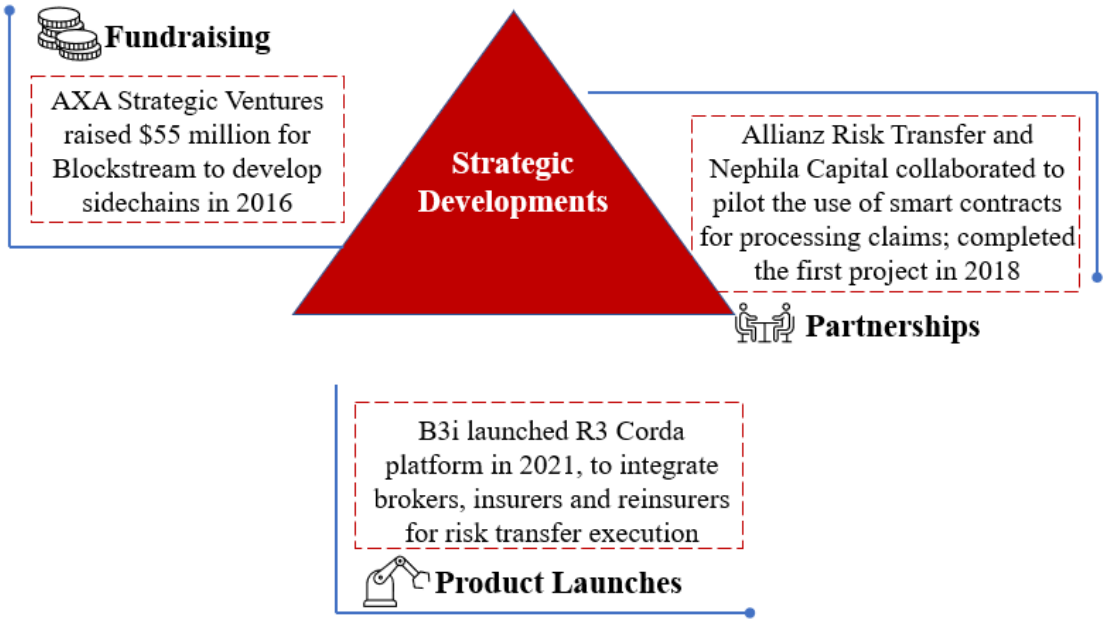
- Blockchain in insurance is still in its nascent stages in the Asia-Pacific region. Budding start-ups and increased involvement of incumbents in the blockchain technology will accelerate market growth for blockchain in insurance. Low cost of capital and unregulated frameworks across the insurance sector in emerging economies, such as China and India, will stimulate market growth.
- With the increasing adoption of IoT in Asian economies, insurers are exploring ways to implement blockchain for streamlining of insurance processes and reducing of frauds. For instance, ICICI Lombard, a leading Indian insurer, is using AI in healthcare insurance-related claims to identify any fraud.

Blockchain Market in Insurance Industry - Growth Rate by Region (2019-2024)

In the insurance industry, the blockchain market is highly concentrated with a handful of players that dominate the market. However, with the advent of advanced blockchain technologies, a new generation of companies in the industry are expanding their business footprint across many emerging economies. Some of the key players include Applied Blockchain, Auxesis Group, Algorythmix, AWS, International Business Machines (IBM) Corporation, Oracle, and Microsoft Corporation. To strengthen their position in the global blockchain insurance market, these companies have collaborated with other companies to launch products and formulate joint ventures in this business.

1.Verified Market Research, 2022

Key Strategic Developments



Amalgamation of Blockchain with Emerging Technologies

The plethora of data from connected devices, robotics, deep learning, and open-source data ecosystems, coupled with blockchain, would shift risk pools, change customer expectations, and enable new products and distribution channels. IoT and connected devices would allow carriers to deeply understand clients, especially more so with advanced AI algorithms, which would help the industry offer personalized pricing, customizable solutions, and real-time service delivery.

Shift Towards an Increasingly Collaborative Ecosystem

According to a research, 84% of insurance executives point out that insurance ecosystems are crucial for improving their strategy.[1] As a major disruptor, peer-to-peer (P2P) networks are allowing insureds to pool capital and self-administer insurance. This network insurance creates cohorts of individuals who share mutual trust and interests, thus reducing the risk of fraud and other cybersecurity threats. Blockchain-powered P2P networks offer lower barriers to entry due to healthy competition and relationship-based pricing, as the nature and type of partnership in the ecosystem would determine the insurance pricing.

DAOs Paving For Platform Insurance

The shift towards decentralization is helping companies pool together into cohorts of decentralized autonomous organizations (DAOs), which is driving the coordination of shared values beyond the current scope. A DAO is essentially a stakeholder network without a central governing body. ‘DAOstack’ project is an example of a modular, open-source software stack that has a built-in protocol library. The movement towards such a platform is pushing for an early adoption of blockchain in insurance.

1.Insurance Innovation Reporter, 2020

Trailblazers shape Blockchain Insurance

The Need for First Mover Advantage

Caisse des Dépôts, a French bank, also recently entered into an alliance with leading insurance firms such as AXA, Aviva, MAIF, and CNP Assurances in order to develop blockchain use-cases. As outlined earlier, all major firms are realizing the need to become early adopters of the network rather than just be followers of an already existing one. More than simply enhancing brand recognition, early adopters of blockchain in insurance could leverage added synergies, such as substantially lowering combined operating ratios by as much as 10-13 points.

Overcoming Early Adoption Risks

Partnerships with peers and competitors to create an ecosystem are currently facing certain roadblocks, such as reluctance from the companies to forego key operations that they see as differentiators. Moreover, insurance firms need to develop better know-how and technical expertise to adapt with the features of a private blockchain application, which is the most useful one for the insurance industry. Permissions granted to limited insurers, partners, and customers would demand a special type of governance which could turn problematic as the number of stakeholders rise.

As a result, insurance firms could become complacent in the wait-and-watch approach, which could inadvertently turn them into laggards. There is an urgent need for the insurance players to step up in this disruption game because of the following reasons:

- Insurance technology start-ups or insure-tech firms are already harnessing their full potential
- Ride-sharing companies hold big data and could extend blockchain insurance offerings
- Fast-moving incumbents are adopting blockchain to improve existing operations

Setting the Standard Rather than Following it

First-mover insurers, or trailblazers, are ahead of the game by setting the standard for certain unexplored areas that could be potentially tapped into first, such as catastrophe bonds and swaps and index-based live stock insurance programs. A recent survey conducted by DXC Technology elicits that 46% of insurance firms already have plans of joining such an ecosystem soon.[1] For traditional insurance firms to embrace such digital transformation, following are some of the recommendations for them:

- Progressively assess, track and apply blockchain technology in innovation labs
- Evaluate phase-based rollouts of adoption frameworks
- Experiment with blockchain in insurance at hackathons and other events
- Interact closely with the legal team to track any emerging regulatory impacts of blockchain

Conclusion

Blockchain, still at its nascent stage in the insurance industry, is witnessing a growing rate of adoption due to partnerships among the participants and with the collaborative ecosystems (P2P). Live examples of various use cases and sub-industry applications highlight that implementing blockchain in insurance requires a team sport. It is only through a confluence of new technologies, ideas, and talent that insurance firms can tackle resistance to change in a traditional environment and address capability gaps to enhance customer experience.

If there is an industry that should prepare for technological disruption, it is this one. Is blockchain in insurance going to be the missing piece to the puzzle? Would the benefits of such a digital transformation outweigh the costs? While there are innumerous possibilities, it is still to be seen how, where, and when the blockchain transforms the insurance value chain.

1.Insurance Innovation Reporter, 2020

Glossary

- DLT - Distributed Ledger Technology
- API - Application Programming Interface
- P2P - Peer-To-Peer
- P&C - Property and Casualty
- PII - Personally Identifiable Information
- CAGR - Compounded Annual Growth Rate
- AI - Artificial Intelligence

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