



Let's Solve

# Blockchain is a strategy

Accelerating the pace of  
technology



A Larsen & Toubro  
Group Company

## About Blockchain

Blockchain ecosystem is like a network of replicated databases, each has the same blocks. Blocks are added after every transaction is recorded, that's how it forms a blockchain. Important members of the system are known as nodes/validators. Each validator validates a transaction, and it is further passed on to other validator. Once majority of the validators give their approval, then it is added to the previous block.

There is no central authority. It a decentralized system, therefore, there is no influence of any member on the database, which makes it more transparent, efficient, and tamper-proof. All transactions are recorded across the network, and shared among members.

There are two types of ledgers:

**Public ledger:** Anyone can write or read data, who is member of the network.

**Private ledger:** It's a Blockchain network, where participants are known to each other, and they are held as a group of companies under one group.

## How Blockchain works and can work for the Insurance Industry

For ages, the Insurance Industry has always grappled with challenges such as –

- Fraudulent Claims
- Identity & Information Authenticity
- Involvement of multiple parties while conducting Insurance business
- High Cost of Intermediation
- Lack of Trust, hence increased cost of operations due to bureaucratic processes, involving validation, verification, reconciliation
- Delays in collection & disbursement

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In the blockchain, all transactions are logged with detailed information like date, time, participants, and the amount. Each trust agent in the network owns a full copy of the blockchain; and, in the case of a private consortium blockchain (more relevant to the Insurance Industry), the transactions are verified using advanced cryptographic algorithms. If anyone attempts to corrupt a transaction, the trust agents are unable to provide consensus and therefore, will refuse to incorporate the transaction in the blockchain. It acts like a Notary at each transaction, and everyone has access to a shared, single source of truth. This is why we can always trust the blockchain. Imagine a healthcare insurance policy that can only be used to pay for healthcare at certified parties. In this case, anyone following the rules is no longer verified in the bureaucratic process afterwards. You simply program these rules into the blockchain.

Using automated smart contracts, we can surpass bureaucracy and reduce the time spent by accountants, controllers and Insurance organizations.

Blockchain, as a tool for disintermediation, is simply too powerful to ignore, which can potentially remove the gatekeepers from a number of processes, and enable automation.

Blockchain's transparency, security, and efficiency makes it a good choice for reshaping inefficient businesses, by enabling new business models based on distributed marketplaces and technology. It is particularly well-suited to address a variety of problems:



# 1 How the Cloud + IoT Combination can drive Customer Success

## 1.1 Digital Identity

Maintaining Digital Identities eliminates fraudulent claims.

Having digital identities maintained on the blockchain helps to identify the appropriate owner, ownership changes, valuation, and traceability, for precious items like Diamonds, Artworks, Gold, Platinum Jewelry, Vintage cars, collectibles, etc.

This can also be applicable to micro-insurance

categories such as Cattle Insurance, where identification, ownership, birth, and death records on blockchain eliminates the claim frauds.

Automatic Re-ordering / Quotes: In the event of a consumable replacement, vendor can be instantly notified or a sales order can be automatically generated based on existing contract terms with the customer, and the part can be delivered instantly, resulting in customer delight.

## 1.2 'Smart Contract' on Blockchain

Define Insurance terms and rules that would be executed automatically when certain conditions are met. A smart contract can be written if triggers are received from (blockchain) reliable data sources. Example, natural catastrophe, purchase transaction, banking transactions, etc. This leads to relevant Insurance smart contract creation. All types of policies could be written electronically on

blockchain. Small scale policies, with certain criteria, can be verified completely without human intervention. It can trigger and settle the claims automatically, once the policy conditions are met with automated payments to the customer, and reduced processing time for the insurers. It ensures efficient claim settlement, and fraud prevention.

## 1.3 Delayed & Cancelled Flights, Baggage Delay Claims

Smart contract that provides direct compensation to thousands of affected passengers of delayed or cancelled flights. The data about flights schedule is available from sources, such as Flightstatus.com, or from the Airline companies. This could potentially

change the travel insurance products, as some of the coverages could be made available during boarding an aircraft. This will help in reducing the claim settlement cost of high frequency and low value claims.

## 1.4 Credit Insurance

In the Import & Export business, Credit Risk Insurance is required by banks and financial institutions. They reach out to the Insurers (underwriters) to cover debt instruments (such as letters of credit). Insurers indicate their rate and amount of cover, depending on the line and class of business. This Insurance protects the Exporter's Bank if they have to pay the Exporter in the event of Non-Payment by Importer or Importer's Bank. The Exporter's Bank passes its risk to Insurer via Credit Insurance.

Blockchain managed by a Consortium of Banks and Insurers, has the potential to eliminate the Insurance Intermediation in the Import & Export Business. Here, as the LC is registered on the Block, it will trigger Credit Insurance & Marine Insurance requirements, which will be serviced by the Consortium Insurers.

This could also extend to goods tracking and claims.

## 1.5 Automatic Accident Detection & Prevention

Sensors in home, industrial equipment's, marine transit containers, or public property, can trigger service request for Risk Assessment and Inspection. Further, the claims process can be

automated as verification and validation of repairs can be enabled on the blockchain, totally eliminating the manual processing.

## 1.6 Hail Storm Claims & Fraud

Fraudulent roofers and repairmen, canvass neighborhoods after hailstorms seeking unsuspecting homeowners, who are vulnerable to scams.

Much like a tornado, hail can cause severe damage to one home, while the home next door sustains little to no damage. It is difficult for the Insurance companies to validate these kind of claims as they don't have hailstorm intensity data. To validate these claims, they need to train employees and hire some forensic experts who can help insurance companies identify, whether these claims are fraudulent or genuine. All this adds up to the cost of insurer, and for compensating these losses, they tend to increase Insurance rates. If there is a way to

identify these fraud claims, then decreased number of claims can reduce insurer's costs and they could pass on the benefits to customers in the form of premium discounts and reduced rates.

All this calls for an implementation of IoT. Telematics can be used to catch signals regarding the health of roof and impact on it due to natural forces. Sensor devices can be installed on the rooftops and window panels and these sensors will pass on the information to a database, which will be recorded and checked. When there is a hailstorm, the device will measure the intensity of storm and would pass on these signals to (blockchain). The analytics center drives information from them, and then an appropriate

action could be taken. This will help check whether damage was during the hailstorm, was due to hailstorm or was inflicted after hailstorm activity.

With use of Smart Contracts, the entire claims process could be automated. This all will reduce the fraudulent claims and operational costs.

## 1.7 Auto Glass Repair and Replacement/Auto Damage Repair

'Smart Contract' could prevent customers from taking an expensive damage repair option. It could be coded with required rules and conditions, and put it on network. (Duplicate claim checking will be removed). Insurers can advise their glass suppliers,

Auto Damage Repairer's to use blockchain, and also accept crypto currencies. This will eliminate a lot of paperwork, and reduce the cycle time for claims settlements.

## 1.8 Health Records

In the healthcare sector, a private blockchain could be used to save and manage patient data securely. This eliminates the risk of manipulation or unauthorized access, and allows such information

to be exchanged between various authorized users such as doctors, hospitals and health insurers.

## 1.9 Peer-to-Peer Insurance

Guevara in UK, and friendsurance in Germany, are new online platforms that allow customers to come together and form online social networks to share risk. This is same how it used to be during 17th century at Lloyd's, but this time-it's happening online. People come together and pay their premium into a mutual pool. A portion of premium is used to pay insurer, who provides group insurance and helps the group in case the pool runs out of funds. When there is a claim, it is settled

from the pooled premiums. Money left at the end of the year, after all the claims and costs is carried forward, and a pool member needs to top up to replenish the pool, which generates huge savings for customers. Guevara, which is a UK-based P2P motor insurance network says - it saves its members up to 80% on their premiums. On the other hand, Friendsurance in Germany, says its property insurance members save up to 33% when compared with conventional ways of insurance.

## Concluding Notes

Blockchain is an emerging Technology and is still in evaluation stage with huge potential. It could be the next big thing after the Internet. Use cases

mentioned above are being experimented, and many more will follow before getting Industry-wide acceptance.

## 2 About the Author



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Uday is working with LTI, as a Consultant – Insurance Consulting Practice. Uday has over 19 years of experience in the field of Insurance Technology, Insurance Broking & Manufacturing Engineering. Engaged in various implementation & consulting projects including, Policy Administration, Claims Administration, Underwriting, and Agency Management, Uday is the Product Owner of iCEOn - Insurance Brokers system, AccuRUSI - Underwriting Workbench, two of the strategic solutions developed by L&T.

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