

BLOCKCHAIN

Dude, where's my ledger?
Blockchain, Use cases, partnerships

Vishal Garg & Dan Lafever



Image: [Creative commons](#)

September 2018



Antitrust Notice

- **The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.**
- **Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.**
- **It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.**



Agenda

Topic	Speaker
What is Blockchain?	Vishal
Why should we care about blockchain?	Dan
What's going on with blockchain technology in Insurance?	Dan

What Is blockchain?



Blockchain is not Bitcoin



Blockchain stems from advances in technology

Databases

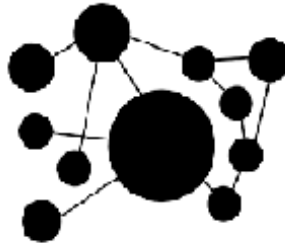


Encryption



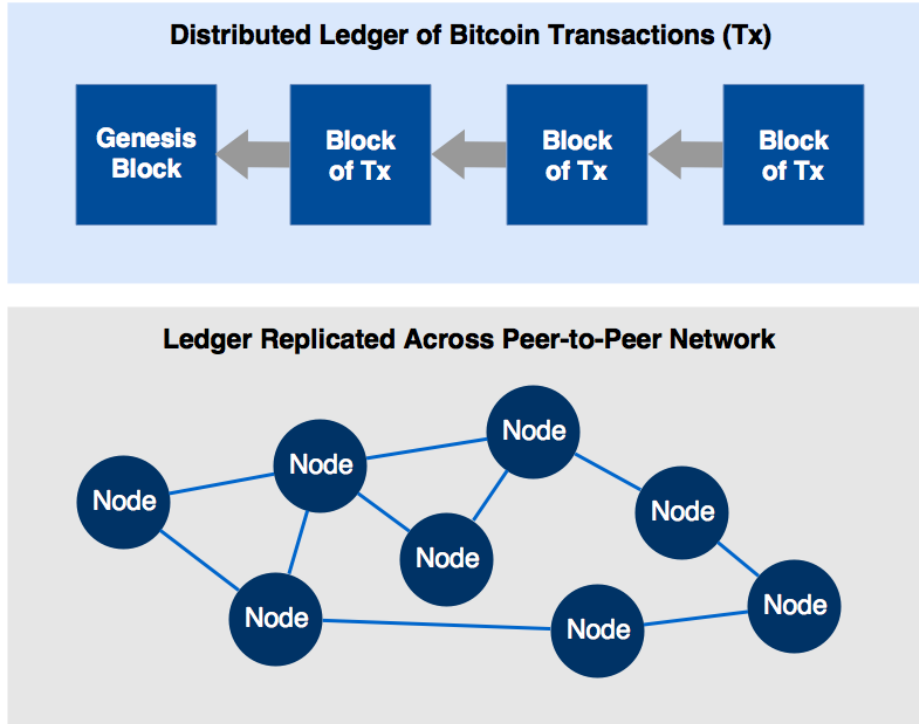
E-commerce

Computing Power



Networks

What is Blockchain?



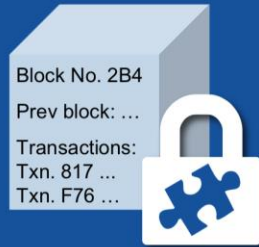
- ❑ is a ledger of transactions, cryptographically joined in a sequential chain of blocks
- ❑ is replicated (distributed) across a number of systems in near real-time over a peer-to-peer network
- ❑ uses cryptography and digital signatures to prove identity, authenticity and enforce read/write access rights
- ❑ has mechanisms to make it hard to change historical records, or at least make it easy to detect when someone is trying to change it
- ❑ not just a passive data record but can optionally add dynamic programmed behavior to transactions (“smart contracts”)

How does Blockchain work?

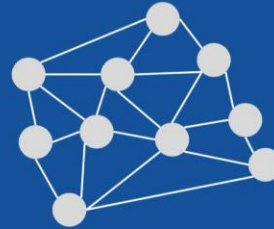
Network member creates a new transaction and proposes it to the network.



Network nodes combine the proposed transaction with other proposed transactions into a block.



Individual nodes compete to solve the cryptographic puzzle. Correct answer distributed to network.



The confirmed block is appended to the blockchain.



Challenges to adopting Blockchain in the enterprise

What is the challenge?	Possible outcome?
Nascent technology, evolving rapidly, without clear market winners	Longevity of technology frameworks limited to 18 – 24 months
Regulation	Regulatory entities lag tech innovation, need industry standards for widespread adoption
Network Participation	Longer timeline to achieve resultant business value
Cost	Currently more expensive compared to traditional centralized cloud-based applications
Governance	Fragmented market with lack of technology interoperability and standardization



Public vs. Enterprise Blockchain

Public	Enterprise
No Permissioning	Permissioned
All Data Visible to Anyone	Confidentiality
All Transactions are Visible	Transaction Privacy
Validation is Rigorous	Consensus Visibility



Why should we care about blockchain?



Why will consumers care?

1 Cheaper, faster services

Imagine sending any amount of money, anywhere in the world, instantly at a lower cost than traditional banking

2 Power shifts to consumers

Consumers sell their own data to advertisers

Consumers own their own medical records and can quickly/easily give access at any time

3 Competition is encouraged

If you need transportation you use a decentralized application and Uber, Lyft, taxis and public transportation all compete for your business

4 Create trust

Smart contracts can set up collateral that would encourage peer to peer trust where consumers would have opted for a larger business



Why insurance companies will care?

1 Create efficiencies

In order to compete, businesses will need to leverage smart contracts to simplify and automate inefficient business processes.

2 New products

Changes the way we think about assets. New types of insurance will emerge.

3 Quicker settlements

Low complexity claims could be arbitrated via smart contracts and paid via the blockchain with no human touch.

4 Expectations change

Consumers will expect greater transparency, quicker speed, lower costs.

5 Increased Competition

If you can imagine a world with decentralized housing and transportation apps then why not insurance?

Peer to peer insurance via the blockchain



What is going on with blockchain technology in Insurance?



Industry Consortia: B3i



The Blockchain Insurance Industry Initiative

Less admin, more insurance

Welcome to B3i - The Blockchain Insurance Industry Initiative

B3i is dedicated to developing trading platforms across the whole insurance value chain using Blockchain based technologies.

B3i solutions will deliver material efficiency improvements in transacting re/insurance.

As a platform, Blockchain provides the means to do this and ultimately, benefit all participants including end customers.

Our B3i community is open and growing. Contact us to find out how you can get involved and benefit from this innovation.



Industry Consortia: The RiskBlock Alliance



The Institutes RiskBlock™ Alliance is an unprecedented, industry-led consortium collaborating to unlock the potential of blockchain across the insurance industry. RiskBlock will accelerate time to market and adoption through real-world applications and impactful blockchain use cases.

The RiskBlock consortium is currently accepting new members. Join forces with The Institutes and other RiskBlock members to realize the potential of blockchain.

Four Working Groups

Parametric Insurance

Risk Registry

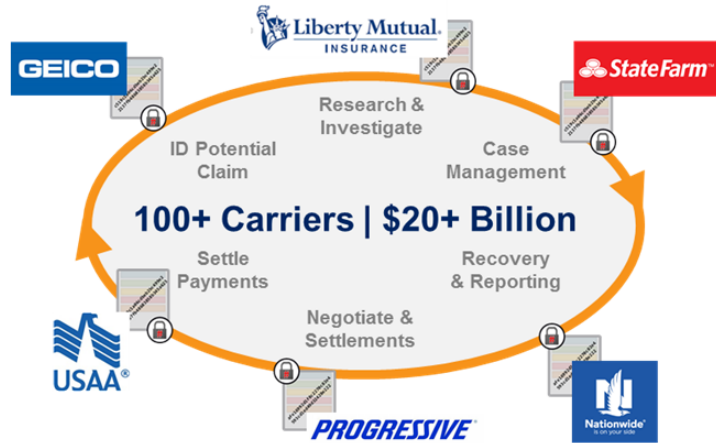
Proof of Insurance

Subrogation



USCM Subrogation use case

USCM Subrogation Disputes:



Opportunity



- Reduce manual processing labor cost
- Secure access to sensitive data
- Accelerate arbitration of case files
- Eliminate bank transaction fees

Blockchain In Action

- **Smart contracts** manage interparty workflow and legal documents
- **eIdentity** registers and validates agencies within clearinghouse
- **Self-governed** community of peers arbitrate cases
- **Data encryption** protects sensitive claims documents
- **Cryptocurrency** accelerates payments and eliminates bank fees

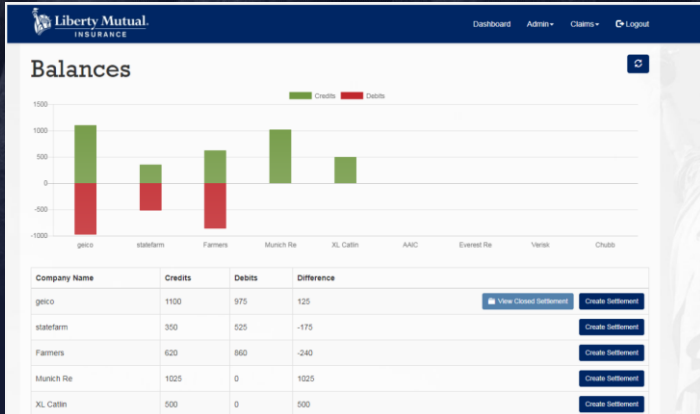
Blockchain Subrogation Use Case Timeline

Subrogation POC built Q4 '16

POC demo-ed to carriers Q1-Q2 '17

RiskBlock Alliance consortium forms Q2-Q3 '17

LM joins RiskBlock & leads subrogation work Q4'17-Q3'18



The Institutes RiskBlock Alliance: Aligned and equipped to make blockchain a reality

Industry-Wide Collaboration

Unprecedented alliance for property-casualty, retirement, and life and annuity markets*

Business Agility

Leverages an open-source framework that provides unlimited applications

The Institutes

Launched by the leading not-for-profit provider of risk management and insurance education and research

Simple Scalability

Employs a foundational approach of "build once, use often"

Lessons learned on our blockchain adoption journey...

1 Invest in internal education

2 Get hands on

3 Two pizza sized teams

4 Speed of adoption

5 Lead to influence change



Questions and Discussion

