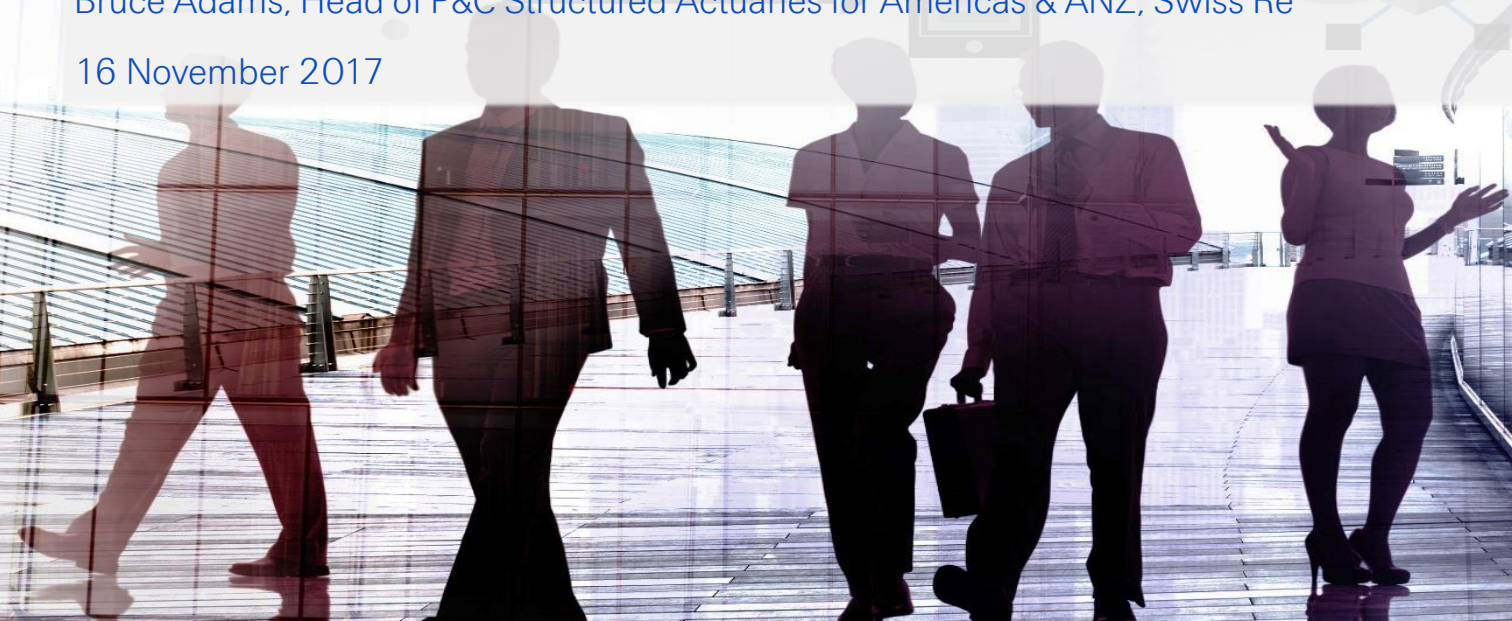


# B3i – Blockchain in Re/Insurance CNSF's XXVII International Seminar

Bruce Adams, Head of P&C Structured Actuaries for Americas & ANZ, Swiss Re

16 November 2017



# The Tech & Internet Transformation



# The Tech & Internet Transformation



# Blockchain Introduction

## Intro – What is BLOCKCHAIN?

- The underlying record keeping invented for use with the digital currency BITCOIN.
- “A blockchain is an electronic ledger of distributed records, transactions, or events that are cryptographically hashed, authenticated, and maintained by a network of participants using group consensus protocol.”
- A blockchain is “a distributed database that maintains a continuously growing list of transaction records with various protections against tampering and revision.”
- A **blockchain** is a distributed database that maintains a continuously growing list of ordered records called *blocks*. Each block contains a timestamp and a link to a previous block. By design, blockchains are inherently resistant to modification of the data — once recorded, the data in a block cannot be altered retroactively. from Wikipedia

# Blockchain in a nut shell

## What is blockchain?

- **Back end database** - that permanently records transactions in a replicated shared ledger
- **Value exchange network** - for moving and validating transactions/assets between peers without the assistance of intermediaries
- **Transparent, updated in real-time, immediately available and selectively auditable** by all relevant stakeholders

## Implications

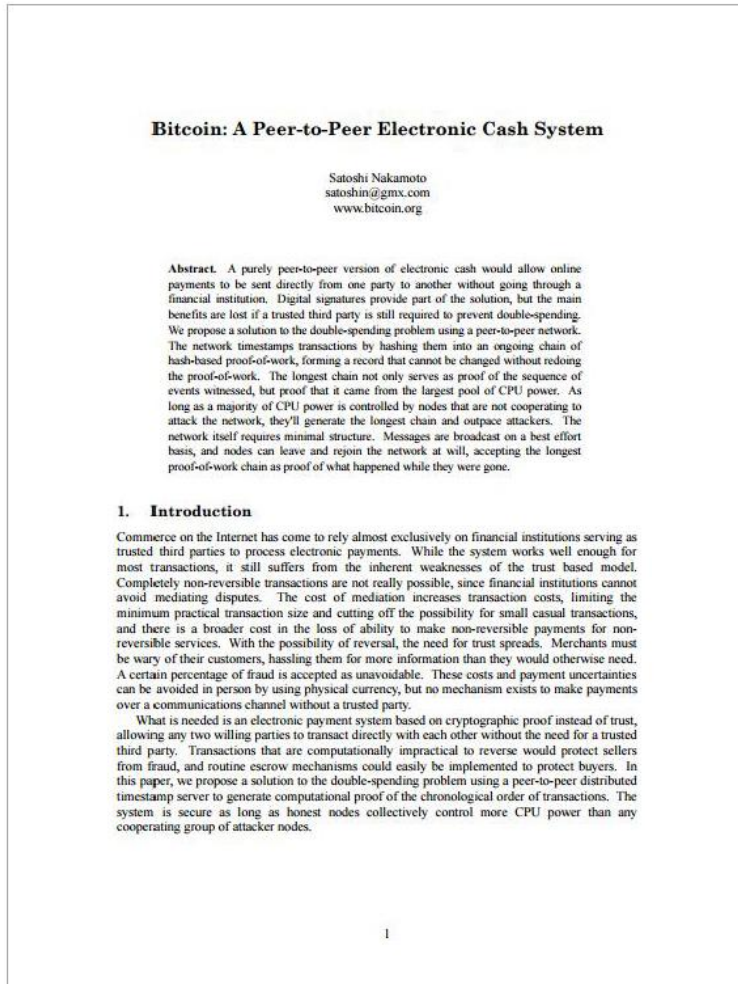
- Application of blockchain has multiplicity of effects: **Consensus, provenance, immutability, finality and resilience**
- **Trust layer over internet** - establishes trust, accountability and transparency within market participants
- Enterprise applications using blockchain range from back-office functions to parametric products to new business models
- Well known cross-border, large scale application to-date of blockchain technology is bitcoin

# Why Blockchain?

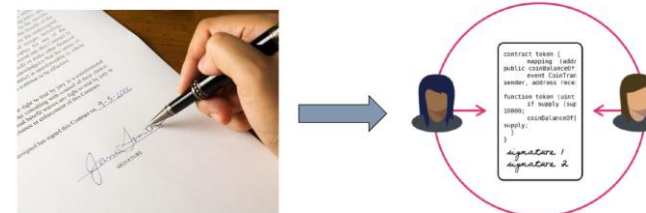
## - It's Transforming the Financial Industry

- U.S. Payment, Clearing, & Settlement (PCS) system processes \$12 Trillion per DAY, or \$3 quadrillion per year. Much of that takes 3 days.
- Process is in need of massive upgrade. 1 bp of \$3 quadrillion = \$300 billion
- Reasons cited by the US Federal Reserve Paper (2016):
  - Reduced Complexity (especially in multiparty, cross-border transactions)
  - Improved end-to-end processing speed and availability of assets and funds
  - Decreased need for reconciliation across multiple recordkeeping infrastructures
  - Increased transparency and immutability in transaction recordkeeping
  - Improved network resiliency through distributed data management
  - Reduced operational and financial risks.

# From Bitcoin To Blockchain



- “Bitcoin”- *solved the double spending problem*
  - Distributed control
  - Anonymity
  - Smartly self-ruled contracts
  - Instant value transfer
- «Blockchain» - *offers multiple applications*  
e.g. insurance
  - Risk assessment : identity management, peer-to-peer networking
  - Value transfer : commitment, IoU, promise to pay, collateral
  - Claims management : authentication, fraud prevention, audit trail
  - Settlement : frictionless, zero latency





# Business Implications for Insurance

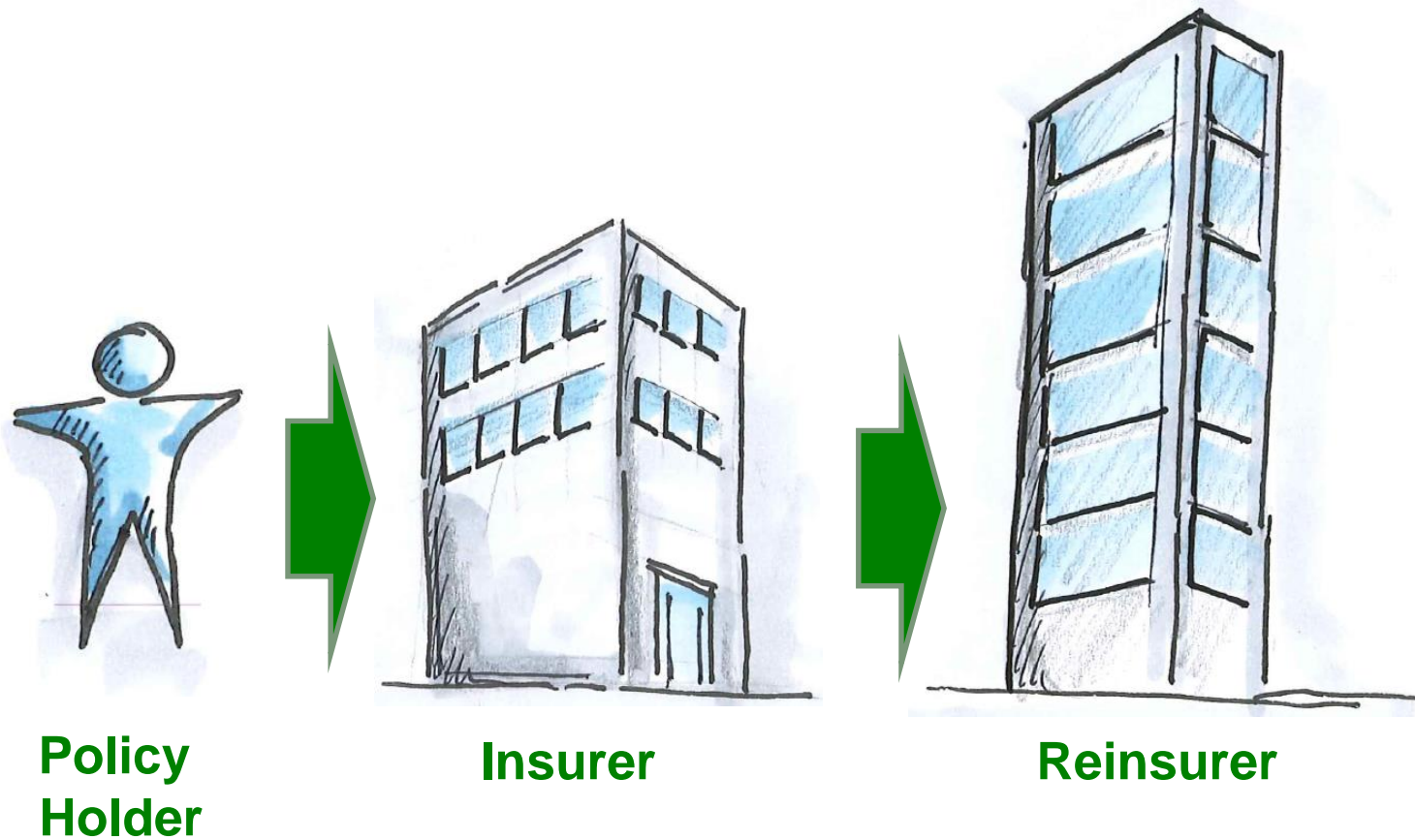
# A Use-Case for Blockchain in Insurance

## Auto Liability Subrogation in the USA

- Subrogation for Personal Auto Liability is more than \$10 billion per year
  - Subrogation is reimbursement from 1 insurer to another for a specific accident
- Companies such as Geico, Allstate, USAA, Farmers will owe each other \$100+ million per year
  - Payments are usually made on a claim by claim basis.
  - Auto physical damage losses are typically small (under \$10,000 on average)
  - There are more than 10,000 payments going back and forth between each of these pair of companies
  - Teams at each company keep track of accounts payable and accounts receivable.
- A team at Liberty Mutual proposed an industry solution using blockchain.
  - Data is stored on the blockchain regarding every claim
  - When liability is determined, accounts between pairs of Insurers are updated.
  - Each pair of companies decide how & when to settle their account (by dollar amount, monthly, quarterly, etc)

# Unlocked potential

## *Across the Re/insurance Value Chain*



## Efficiency potential

- Automation and digitisation
- Data standards
- Digital signoffs
- Reduced waiting times
- Reduced reconciliations

## Risk reduction

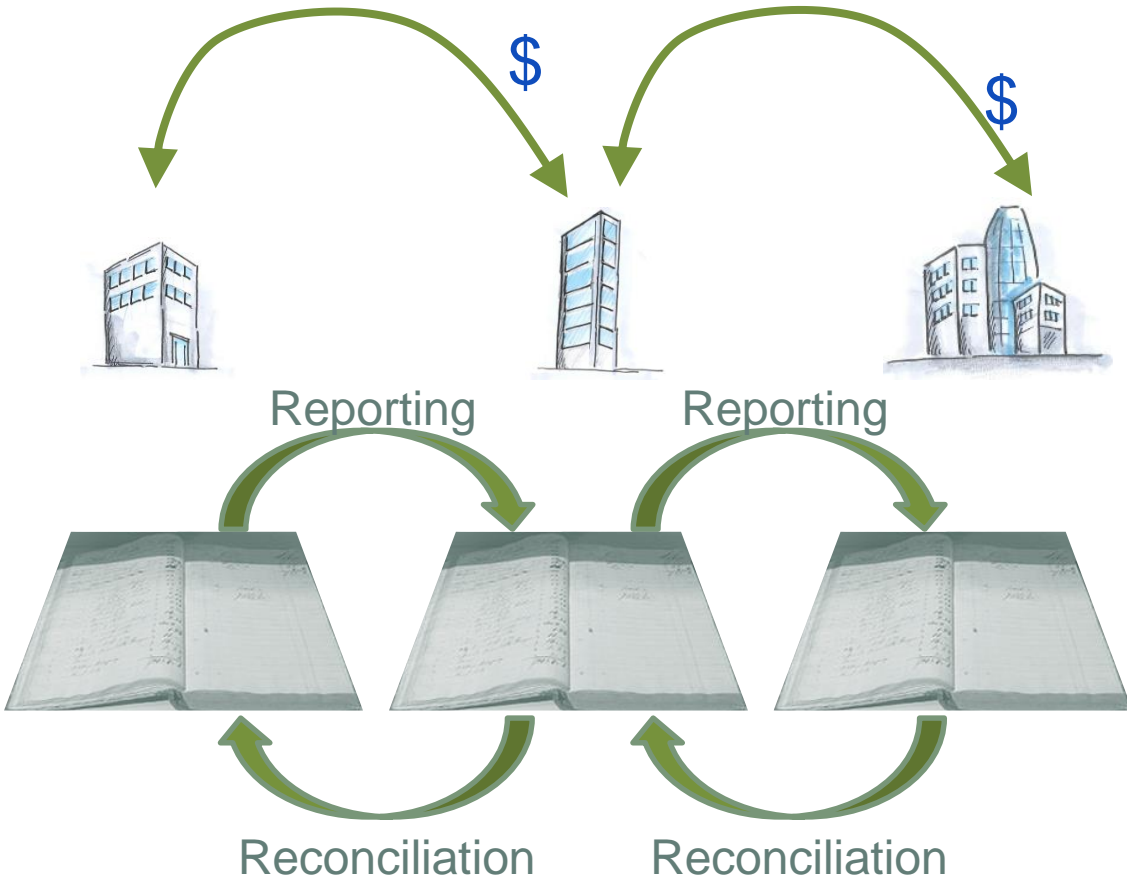
- Credit risk
- Cash flow inefficiencies
- Operational risk

More info:

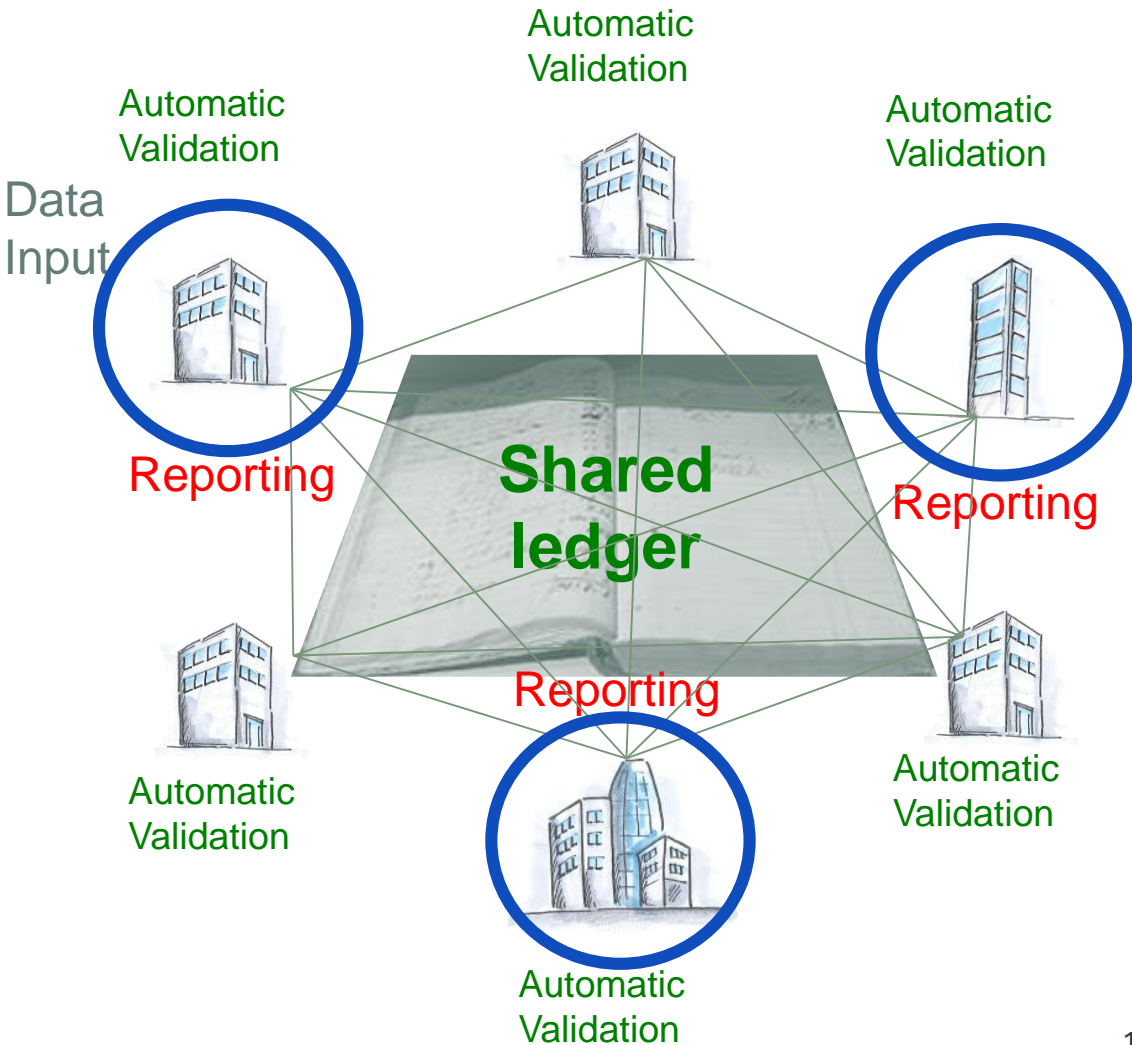
[Blockchain explained in layman insurance terms](#)

# How to unlock it

## Traditional ledger



## Shared ledger





# Blockchain Insurance Industry Initiative (B3i)

## A true industry collaboration

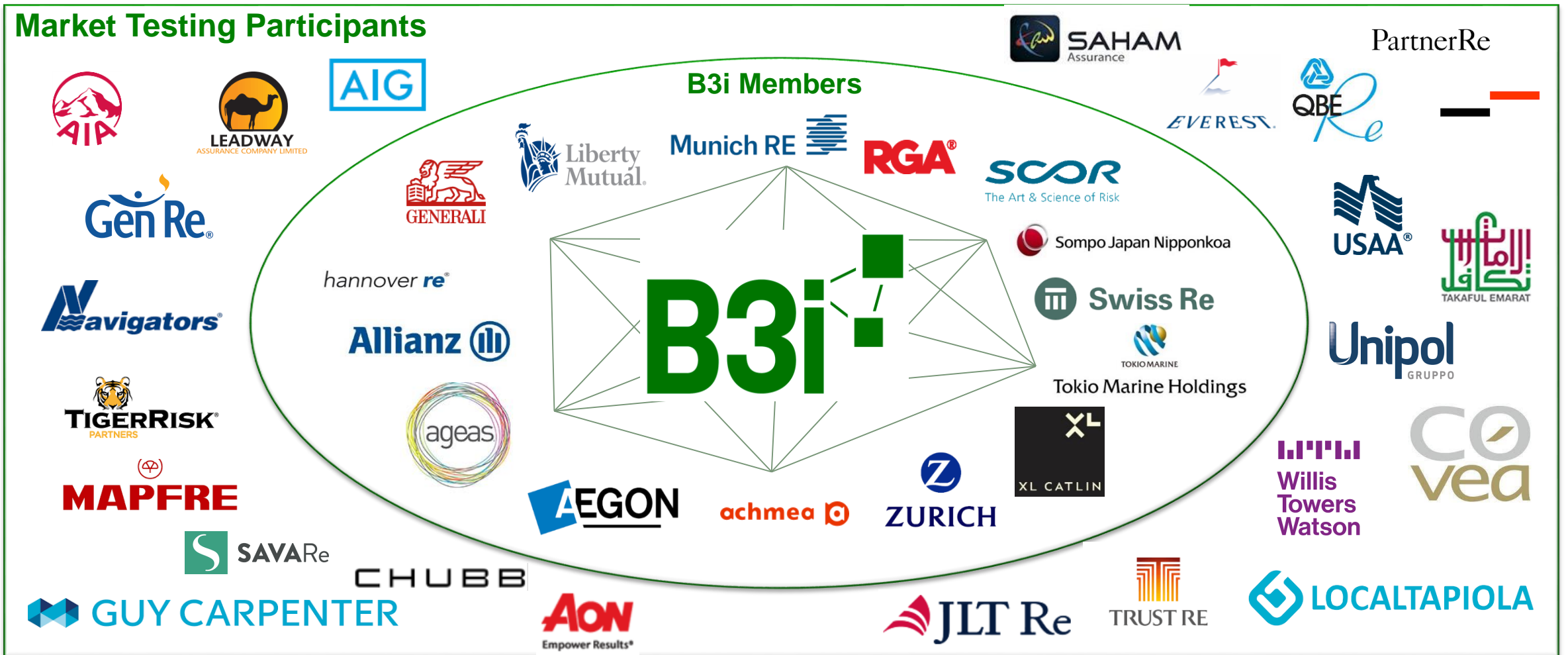


[www.b3i.tech](http://www.b3i.tech)

- **Vision:**  
manage and trade risks better
- **Initiative launch:**  
Swiss Re hosted the foundational meeting in October 2016
- **Membership:**  
15 members at the beginning of 2017, plus 23 new members in October 2017
- **Current Focus:**  
P&C Property Cat XL prototype
- **Outlook:**
  - Pipeline of use cases including commercial and primary insurance
  - Incorporation of permanent organisation

# Rapid Growth

Expanded membership jointly undertaking market testing of prototype



## RiskBlock Alliance (US Blockchain Consortium) Another Insurance Industry Collaboration



- **Sponsored by non-profit entity The Institutes**
- **More than 30 Insurance, Reinsurance and Risk Management Companies in Group**
- **Workshop on July 31 & August 1 – More than 30 Insurance Leaders participated**
- **4 PoCs (Proof of Insurance, Proof of Loss, Parametric Insurance, & Subrogation)**
- **Example of Blockchain PoC: Subrogation in the USA**
  - Current Subrogation process – each subrogation claim has payment made
  - Subrogation claims = approx. \$10 billion with millions of claims
  - Blockchain will aggregate balances owed and settle balances between insurers on predefined basis

# Further Insurance Use Cases Under Consideration

## Commercial Insurance

- Large Commercial Risk insurance
- Nuclear Risks & other Pools
- Multinational Programs
- Parametric Insurance
- Marine insurance

## Coinsurance

- Coinsurance

## Reinsurance (P&C and Life)

- Property Non Proportional
- Auto Non Proportional
- Casualty Non Proportional
- Quota share/Surplus all lines
- L&H Seriatim data

## Financial Markets

- Insurance-Linked Securities

## Universal

- Digital Identity Management (KYC)

- Medical expertise
- Risk Database
- Cat data exchange

- Collateralized transaction

- Net Settlement



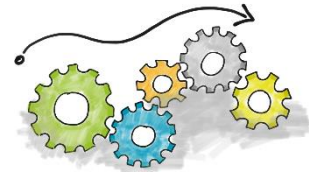
# Benefits & Outlook

# Swiss Re expects a range of benefits



## Working Capital Improvement

Faster and more efficient premium and claims settlement and optimised liquidity management



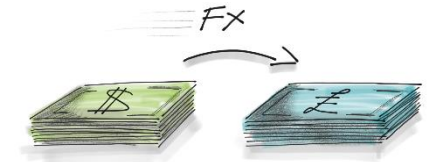
## Operational Efficiency and Risk Reduction

Reduction of contract uncertainty, reconciliations and process inefficiencies



## Quality and Integrity of Data

Normalised and high-quality data in a shared source with central control over integrity and easier auditing



## Foreign Exchange Management

Accelerated FX transactions and consistent valuation



Positive Impacts:

- **Combined Ratio**
- **Improved liquidity**
- **Risk Reduction**



# Legal notice

©2017 Swiss Re. All rights reserved. You are not permitted to create any modifications or derivative works of this presentation or to use it for commercial or other public purposes without the prior written permission of Swiss Re.

The information and opinions contained in the presentation are provided as at the date of the presentation and are subject to change without notice. Although the information used was taken from reliable sources, Swiss Re does not accept any responsibility for the accuracy or comprehensiveness of the details given. All liability for the accuracy and completeness thereof or for any damage or loss resulting from the use of the information contained in this presentation is expressly excluded. Under no circumstances shall Swiss Re or its Group companies be liable for any financial or consequential loss relating to this presentation.