B3i – Blockchain Insurance Industry Initiative
Deutsche Bank, InsurTech Conference

Paul Meeusen, Head Distributed Ledger Technology, Swiss Re
London, 25 September 2017
Swiss Re is a leading and highly diversified global reinsurer

**Net premiums earned**

by region (in USD bn, 2016)

<table>
<thead>
<tr>
<th>Region</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas (incl. MEA)</td>
<td>15.1</td>
</tr>
<tr>
<td>Europe</td>
<td>10.9</td>
</tr>
<tr>
<td>Asia (incl. MEA)</td>
<td>7.2</td>
</tr>
</tbody>
</table>

45% 33% 22%

- Of which
  - HGMs incl. PI²: ~5%  ~4%  ~16%  ~25%

**Economic Net Worth**

by business segment (in %, 2016)

- Corporate Solutions: 9%
- Life Capital: 12%
- L&H Re: 34%
- P&C Re: 45%

Swiss Re benefits from geographic as well as business mix diversification and has the ability to reallocate capital to achieve profitable growth.

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1 USD 33.2bn as at 31 December 2016; includes fee income from policyholders; does not reflect the exposure to HGMs through Principal Investments (PI)

2 Based on additional pro rata net premiums from Principal Investments (PI) including FWD Group (14.9%), New China Life (4.9%) and SulAmérica (14.9%)

3 Share of Swiss Re Group’s Economic Net Worth deployed across Business Units (excl. Group Items), 31 December 2016
Blockchain Introduction
## Standardisation and Innovation

**Malcolm McLean**

![Malcolm McLean at railing, Port Newark, 1957](https://commons.wikimedia.org/w/index.php?curid=27640875)

<table>
<thead>
<tr>
<th></th>
<th>Shipping</th>
<th>Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The Problem</strong></td>
<td>High goods conversion costs</td>
<td>High frictional costs</td>
</tr>
<tr>
<td><strong>The Challenger</strong></td>
<td>Trucking entrepreneur</td>
<td>Blockchain Insurance Industry initiative (B3i)</td>
</tr>
<tr>
<td><strong>A Standard</strong></td>
<td>The Container</td>
<td>Data Language on Distributed Ledger</td>
</tr>
<tr>
<td><strong>Customer benefit</strong></td>
<td>Global trade</td>
<td>Affordability of protection</td>
</tr>
<tr>
<td><strong>Mission</strong></td>
<td>Easier transport and trade of goods</td>
<td>Easier handling and trading of risks</td>
</tr>
</tbody>
</table>
Blockchain in a nut shell

Basic introduction (1)

**Distributed Ledger**

(2)

keeping score of who owes what to whom

Cedent A is reinsured with Reinsurers B and C

**Cryptography**

unique combination of technology, consensus finding and security

B and C should not see certain things of each other

**Smart Contracts**

decentralise and automate authorization and authentication

Legal (contract) logic is put into computational logic

OLD WORLD

each hold and repeat data in own ledger

privacy, security and regulatory concerns

labour intensive and manual processes

NEW WORLD

shared, immutable data on a distributed ledger

public/private keys and consensus algorithms

“self executing” contracts

(1) More info: [www.blockchain-documentary.com](http://www.blockchain-documentary.com)

(2) DLT: Distributed Ledger Technology; B3i uses Hyperledger
Blockchain and Smart Contracts

**Blockchain**

- **Who did**
- **What**
- **When?**

**Audit logs operated across multiple organizations**

**Data Assurance**

**Smart Contracts**

- **Who did**
- **What**
- **How?**

**Business logic operated and verified across multiple organizations**

**Process Assurance**
What has changed?

**Web 1.0 / Web 2.0**

- **Data is copied digitally**
  - Texts
  - Images
  - Videos
  - Music

**Blockchain**

- **Ownership is transferred digitally**
  - **Intangible assets:**
    - Currency
    - Shares
    - Patents
    - Certificates
    - Personal data
  - **Tangible assets:**
    - Real estate
    - Goods
  - **Obligations:**
    - Contracts
    - Pledges

Transfer of ownership: essential to financial services.
Business Implications to Re/insurance
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

Reporting

Reconciliation

$\rightarrow$

$\rightarrow$

Shared ledger

Data Input

Automatic Validation

Reporting

Automatic Validation

Automatic Validation

Automatic Validation

Reporting

Shared ledger

$\rightarrow$

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Specifics of a Shared ledger
Establishes single version of the truth

Traditional ledger

Shared ledger

Typical front to back timelines
weeks to months

Typical front to back timelines
Seconds
Vision
Blockchain could facilitate the emergence of peer-to-peer marketplaces

1. Insureds
2. Demand
3. Capital
4. Settlement

Insurance
Risk
Placement

Risk-intelligence”
& pricing

Investors

Smart Contract

Smart Contract

$ $

$ $

$ $

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Blockchain Insurance Industry Initiative (B3i)
A true industry collaboration

- **Vision:**
  manage and trade risks better

- **Initiative launch:**
  Swiss Re hosted the foundational meeting in October 2016

- **Membership:**
  currently 15 members, with several new joiners upcoming

- **Current Focus:**
  P&C Property Cat XL prototype

- **Outlook:**
  - Pipeline of use cases including commercial and primary insurance
  - Incorporation of permanent organisation

www.b3i.tech
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 – conservative estimate of -0.5%
- Improved liquidity
- Risk Reduction

Wider Industry Benefits

What
• distributed technology
• smart automation
• lower frictional costs
• reduced risk

Why
• more affordable insurance
• closer to risk pools
• new generation of customers

Traditional Insurance Platform
- Cost
  - Costs (expenses, capital)
  - Expected loss
- Speed
  - 2 - 8 weeks
- Scalability
- Trust

Distributed Ledger Insurance Platform
- Cost
  - Costs (expenses, capital)
  - Expected loss
- Speed
  - 4 - 24 hours

Cost of alternative funding > Cost of reinsurance = f (price adequacy, frictional costs)

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Outlook
“Masterplan” – how we see use cases develop in re/insurance

<table>
<thead>
<tr>
<th>Materiality</th>
<th>Reinsurance</th>
<th>Commercial Insurance (wholesale – B2B)</th>
<th>Primary Insurance (retail – B2C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>High (global)</td>
<td>Medium (international)</td>
<td>Low (local)</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Medium</td>
<td>High (sensitive, regulated)</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>Medium</td>
<td>High (per jurisdiction)</td>
<td></td>
</tr>
</tbody>
</table>

- Gradual expansion of blockchain applications across industry value chain
- Reinsurance good starting basis with less diversity and ability to reach scale quickly
- Commercial insurance expected as next transition stage, then primary
Thank you

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www.b3i.tech
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