Better-working insurance: moving blockchain from concept to reality
Imagine a different kind of insurance industry,
one where all parties in the insurance value chain have the same risk data at the same time. The data is linked automatically to digital contracts which can trigger automated processes. Everyone trusts the accuracy of the data and can share it easily. World-class encryption provides the necessary security, and there’s a clear, immutable audit trail to underpin end-to-end underwriting and claims governance.

There would be a platform for more collaboration and greater transparency. With many activities automated and some eliminated entirely, administrative costs would fall. All players in the value chain could focus on higher-value activities and delivering better client service. The industry would become more efficient. Innovation and profitable growth could flourish, despite difficult commercial circumstances.
Blockchain: from potential benefits to actual value

At EY and Guardtime, we believe that blockchain and distributed ledger technologies – when combined with other disruptive technologies – have the potential to transform the industry and we have defined the kind of architecture an insurance blockchain service would need. Following a 20-week proof-of-concept project, which proved these potential benefits can be achieved in the real world, we are building a working blockchain platform that connects every major stakeholder in the insurance value chain.

Initially, the platform is focused on marine insurance. Because marine insurance is a complex international ecosystem, with multiple parties, multiple jurisdictions, high transaction volumes and significant levels of reconciliation, it is well-suited to a blockchain-enabled solution. Moving forward, the platform can support other insurance markets.

The platform demonstrates how blockchain can give organizations real-time client, risk, exposure and claims data.

We are building our platform in association with:

- **Maersk**
  The world’s largest shipping company

- **ACORD**
  A global, nonprofit association working to improve data quality and information exchange for the insurance industry

- **Microsoft**
  Provider of the proven Azure global cloud platform and enterprise services including Azure App Services, API Management, Azure Active Directory and Data Factory

- **MS Amlin**
  A leading specialty insurer operating in 25 locations across the globe

- **Willis Towers Watson**
  A global advisory, broking and solutions company with more than 40,000 employees

- **XL Catlin**
  Re/insurance companies providing property, casualty, professional and specialty products, globally
EY and Guardtime are building the blockchain-enabled platform in association with insurance and technology leaders.

“Our solution is the first to deliver blockchain's transparency, security and standardization to marine insurance and is ready for commercial use.”

Shaun Crawford
EY Global Insurance Leader

“This first-of-a-kind effort has the potential to dramatically reduce time, cost and risk across the entire insurance value chain.”

Bill Pieroni
President and CEO of ACORD

“Microsoft believes blockchain is a transformational technology with the ability to significantly reduce the friction of doing business, especially streamlining business processes shared across multiple organizations.”

Mark Russinovich
Chief Technology Officer, Microsoft Azure

“Redesigning the insurance process is critical for the evolution of our industry. This initiative has the potential to streamline and simplify insurance transaction efficiency using new technologies, an essential development for the insurance industry.”

Simon Gaffney
Chief Data Officer, Willis Towers Watson

“The KSI blockchain stack is a proven technology for securing the physical, software and information supply chains that businesses rely on.”

Mike Gault
CEO of Guardtime

“This successful proof of concept is groundbreaking.”

Martin Henley
CIO of XL Catlin

“It is a priority for us to leverage technology to streamline and automate our interaction with the insurance market. Insurance transactions are currently far too tedious and frictional. The distance between risk and capital is simply too far.”

Lars Henneberg
VP, Head of Risk & Insurance of A.P. Moller-Maersk

“We started with an intuitive belief that blockchain technology could transform the marine insurance market. We are excited that we are already in a position to test a practical platform.”

Dr. Paul Taffinder
Director of Strategy & Innovation, MS Amlin
How does blockchain make insurance work better?

By securely capturing and sharing current data among chosen participants, blockchain enables:

- Real-time decision-making becomes a reality as error-free data moves quickly from risk to capital
- Process fulfillment, enabled by smart contracts, is faster, more accurate, more consistent and cheaper
- The ecosystem uses a consistent, central dataset to assess losses quickly
- Automation of invoicing initiates settlement between all contracting parties and their financial systems
- Participants can innovate new services and products without traditional cost challenges
- Auditability of controls around contracts better supports and enables the multinational model

Blockchain can be applied to any commercial or specialty line of business with high-value assets.
What’s possible with blockchain

Blockchain-enabled platforms can successfully connect all players in the shipping value chain and advance critical capabilities.

1. Compliance controls
   - Ownership, asset data and financing activities locked down on a secure and immutable ledger

2. Asset tracking
   - Transparent data about the client’s risks available to intermediaries facilitating global reinsurance deals

3. Visibility of transaction data
   - New data drives automated processes, new funding models, swift claims payments and innovation

4. Automatic syndication
   - New business models

5. Distributed insurance and reinsurance ledger(s)
   - Smart contracts delivered by logic

Connected regulation
Location and performance data
Automated payments
Benefits of the blockchain-enabled platform

Creating value for stakeholders across the entire insurance value chain

- Focuses on new business models to drive better client service and better outcomes for clients
- Improves compliance, controls and data traceability
- Creates new and significant opportunities to strip out pre-sale and post-sale costs and provides financial data to facilitate the billing and collection of premiums
- Improves claims notification and assessment, with less fraud and claims leakage and faster, more accurate payments
Benefits of the blockchain-enabled platform

Creating value for stakeholders across the entire insurance value chain

- **Implements internal capital allocation**
  - Connects the complete value chain, to support enhanced value-added services from broker to insurer to the corporate client and their customers

- **Brings transparency and consistency to reporting, with reduced errors and omissions and better portfolio analytics**

- **Facilitates behavioral change triggers to warn, avoid, prevent and respond far quicker to incidents and actions that could create significant business disruption and loss**
Building the platform: real-world insights

The development of the platform revealed valuable insights about blockchain’s application across the insurance industry.

1. Blockchain can benefit everyone, but the ecosystem must actively commit.

Blockchain can drive transparency of data between multiple parties. This transparency, combined with the use of smart contracts, can eliminate duplication of data and encourage automation across an ecosystem that has multiple participants, high transaction volumes and significant levels of reconciliation.

But the extent to which blockchain can do this depends on how well ledgers operate together and the ability of external systems to feed them with accurate and consistent data.
Blockchain by itself will drive efficiencies, but smart contracts can disrupt.

Smart contracts, which use computer code to validate and execute commercial data and actions, can perform a series of activities, including:

- Improving multi-party consensus
- Automating execution on contracts and declarations
- Reconciliation of claimant, nature of claim, type of coverage and coverage limit

Blockchain can foster innovation, but it will take time and investment.

Beyond increasing the accuracy and transparency of data, blockchain provides a platform for businesses to fundamentally change their models and create growth opportunities in existing and new markets, such as:

- "Pay-as-you-go“ policies
- Products covering new risks, like cyber business interruption and employee benefit risk
- New bundled contracts and peer-to-peer payments
4 Blockchain can help transform insurance, but it must have the right model.

Security and data ownership: the transparency of blockchain makes control over who has access to what data, critical. With permission-based logic, ledger structure and access rules, people can only view the data they are allowed to see.

Co-existence with IT platforms: many insurance industry players lack a modern IT infrastructure. But, whatever they are working with today needs to co-exist with blockchain, so that operational processes and systems can be integrated.

Scalability: the more participants that join the ledger, the greater the mutual benefits. So it’s essential that the infrastructure and supporting applications can be scaled, without any drop in performance. Our platform underlines the need to avoid unnecessary complexity.

Blockchain needs to be scalable and flexible, without any compromise on performance or security.
Blockchain mitigates some risks, but opens the door to new challenges.

Blockchain can mitigate risks across the value chain - including the risk of fraud, compliance failure, errors and omissions, and poor customer service. But it can complicate risks in a number of areas. This is because multiple parties in multiple jurisdictions - from ship and cargo owners to surveyors and port authorities - must align around a single insurance contract.

Blockchain can help the industry respond to the regulatory agenda, but regulators must be involved from the start.

The great strength of blockchain - its ability to create a single version of the truth - could also become a source of systemic risk, if truth becomes falsehood. There must be clear controls around what data organizations are storing and what data participants have permission to use.
Further reading

Blockchain in insurance: applications and pursuing a path to adoption

Blockchain technology as a platform for digitization
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