



# DISTRIBUTED LEDGER TECHNOLOGY @ INSURANCE

Using Distributed Ledger Technology to build new insurance  
markets & transparency

*Capgemini introduces a leading edge underwriting solution based on  
Distributed Ledger Technology for a group of General Insurance companies*

# EXECUTIVE SUMMARY

*Distributed Ledger Technology:  
From Finding Use Cases to Core  
Insurance Applications*

## Technical aspects

Distributed Ledger Technology (DLT), a collective term for technologies that are commonly referred to with the term “Blockchain technology”, allows multiple parties to jointly view and append one shared, consistent record of information, maintained over by a group of computers in so-called “nodes”.

Permissioned ledger systems have multiple defined participants who require permission to participate. Each participant maintains a ledger that is integrated into the closed partner ecosystem (private).

It uses “smart contracts” stored in nodes that cannot be deleted or edited, just appended. Removing the need to share copies of information across parties and process steps results in fewer errors, improving the quality of data used.

## Financial Services

From Basel III to other regulations such as “know your customer” (KYC) and anti-money laundering (AML), the DLT technology has evolved as highly suitable to comply with the expanding set of global financial regulations.

For Financial Services firms, integrity of their data has emerged as a key concern. DLT applications allow to see up to date, consistent and secure details of the agreed contract information, making the process far more efficient than it would have been using traditional methods, e.g. redundantly maintaining information in various applications at every party involved.

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Pressure on operational expenses, ever rising regulatory compliance as well as the need to maintain both legacy IT and the innovation space have led insurers to look into the capabilities of Distributed Ledger Technology. Initially considered to cover niche processes only, it now unfolds its potential to enhance, even challenge parts of ERP systems one day.

Read more to learn how Capgemini Italy and Capgemini Benelux successfully launched a leading edge Distributed Ledger Technology solution in commercial property for a group of General Insurance companies in Italy. ”

## Insurance

Excitement has been built in the insurance world over the technology, and a multitude of use cases are identified conceptually. However, there seems to be reluctance in the industry, with many insurers experimenting, but few first movers. Hype without impact?

What are the technology's capabilities beyond smaller use case applications in niche processes? Will it jeopardize the years of efforts into process specific applications and the entire ERP stack? Many insurers know the burden of relying on outdated technologies at the core of their financial infrastructure. Will DLT technology seamlessly integrate, will it coexist, or challenge existing systems?

The business case is clear: with high frictional burden of complex multilateral processes being reduced, the technology can effectively be more cost-effective, reduce the scope for disputes and thus be perfectly compliant in a highly regulated insurance world (see figure 1).

### DLT in insurance, today and tomorrow

So far, only few DLT based use cases have evolved into real-life solutions at insurers, with the majority of them covering only single process steps (e.g. automated underwriting), revealing insights for decision making support (e.g. fraud detection) or covering a small niche of an insurer's product portfolio (e.g. flight delay insurance). The potential for insurers can be best unlocked where a defined group of participants operates on a joint, identical core data set. Efficiency gains are evident by coordinating these shared processes, reducing complexity and redundancy at the same time (see figure 1). This is clearly proven in the launch of the underwriting & risk assessment solution presented in this paper.

As a next step, a back-end integration of insurance IT could make even better use of the enormous potential for optimization. There are indications the technology is also capable to minimize operational inefficiencies in the complex accounting & settlement process, e.g. by using advanced clearing and netting techniques between involved parties. The future will see a convergence from isolated DLT applications and existing core IT systems. It's time to be well prepared, to identify and capture the massive opportunities DLT technology has to offer for insurance companies.

Figure 1: Key value drivers for insurance companies to adopt the DLT technology



# THE DLT UNDERWRITING SOLUTION REALIZED BY CAPGEMINI

## Initial situation

Complex underwriting and risk assessment processes involve several back-and-forth interactions between a defined set of parties (client, broker, insurers, risk assessment firm).

A large amount of various kinds of data, constantly updated, often on a still manually captured basis, form the relevant basis for pricing, risk assessment, coverage terms and contract wordings.

The information flow is captured by every party in isolated underwriting and risk assessment systems, e.g. for technical pricing (incl. Nat. Cat.) to individually determine the risk.

Information is then being fed into policy admin. and finance systems for a bound contract.

## The business case

A European industry consortium of insurers and brokers in the property & casualty (P&C) commercial insurance market was one of the first movers successfully going live with a comprehensive distributed ledger solution for the risk assessment and underwriting process.

Beyond buzz and “lab”: this real-life, innovative solution based on DLT technology allows for optimization of negotiation and quotation times for large corporate insurance contracts and enhances the quality of information in order to improve the services offered to corporate clients.

Capgemini has supported the initiative end-to-end, installing the cooperation framework for several larger insurance companies and two leading global brokers.

## DLT based solution

The newly designed solution allows for an optimization of negotiation and quotation times – with the potential to decrease this by up to 90%:

It enhances the quality of the information distributed via the standardized data model, agreed and shared through the permissioned ledger system.

Highly automated, free of duplicates, transparent, efficient and easy to use distributed ledger marketplace.

Business data stored in smart contracts, processing rules managed in DLT nodes.

## Our partnership with R3

Capgemini’s underwriting and risk assessment solution for the consortium of insurance companies and brokers was built on R3’s Corda peer-to-peer platform technology.

Corda is designed as a specialized distributed ledger platform for applications in the financial industry where only parties participating in a transaction have access to their data.

Corda has the capability to provide common records with transaction status information and full audit trails of activity between trading counterparties, thus securing both transparency, privacy and security at the same time.

Based on our successful partnership with R3, Capgemini has built up substantial capabilities regarding the integration of DLT technology for our Financial Services and insurance clients.



# DLT ON ITS WAY TO BOOST ERP?

## Covered process steps

The risk assessment & underwriting (UW) platform covers the following processes:

- Brokers collect risk information to send for a first evaluation.
- Insurers evaluate and answer with an expression of interest or a rejection.
- Broker completes information and sends it for quotation.
- Insurers send quotation proposal to brokers and start negotiation on the platform, leading to co-insurance agreements between the parties.
- Once bound, an electronic order will be shared, so the policy can be issued by accessing the information written on the ledger.

## What is technically happening?

DLT transactions, reflecting the above mentioned business events, are created (encrypted) and shared between the nodes (decrypted), and written into the distributed ledger after all transaction participants validated them (figure 3).

Through queries, it is possible to read and show the information stored on the ledger in real time. Based on R3 Corda's node module, using a point-to-point architecture with a uniqueness consensus mechanism, frontends can be easily integrated. The Corda node module provides APIs to integrate with frontend web frameworks as well as legacy system integration capabilities.

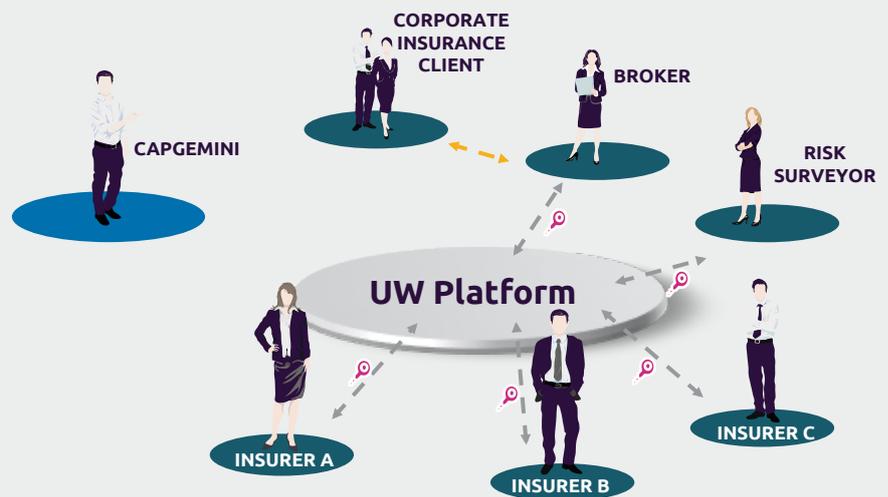
## The project approach

Capgemini enabled an comprehensive end-to-end solution from blueprint to go-live (see figure 2):

Project framework: to align between all participating parties on approach and project execution.

Process mapping: to capture and understand the quotation workflow between brokers, insurers and clients.

Figure 2: Participating entities of the underwriting solution



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Segmentation: to identify the data model, a common minimum data set and a unique data dictionary.

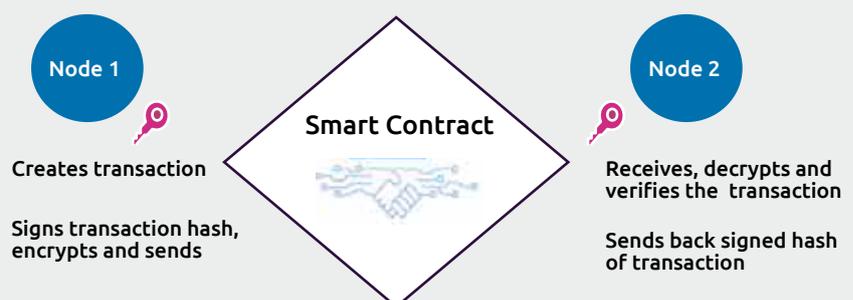
Governance: commercial model, legal aspects and introduction of newly joining parties.

## Tomorrow: replacing ERP?

Heavy investments over years, including specific customizations, have been made by insurers to build and maintain stable and integrated ERP platforms. Running parts of it in the cloud absorbed large portions of the rest of IT budgets.

Now, we observe ERP vendors, not typically known as innovation drivers, starting hectic activities in adopting to DLT integration. Insurance companies should therefore start considering an integrated ERP & DLT IT strategy. Too often, a "bimodal" IT set-up with selected innovation "speedboats" neglects the potential of harmonizing both worlds. Capgemini strategically supports clients in developing this joint vision.

Figure 3: Technical background of the presented solution



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# DLT ON ITS WAY TO BOOST ERP?

Figure 4: Capgemini Invent assets for innovative insurance solutions



## **Consulting**

Conceptually drive innovation ideas using our Applied Innovation Exchange labs to productive use cases



## **Technology**

Leverage our experience in cutting edge technology and how to integrated it for you



## **Domain Expertise**

Talk to insurance experts understanding market drivers and specific Insurance IT constraints



Capgemini Invent, an autonomous practice of the Group, is dedicated to providing best-in-class strategy and transformation consulting to clients, empowering them to respond faster and intuitively to changing market dynamics. As partner to our insurance clients, we provide end-to-end DLT based solutions including use case & process description, conceptual design and development. How could an integration roadmap for prototyping / adopting the DLT technology look like for you? What is the required technical foundation? Embedded into the Capgemini Group, we cover the entire value chain from innovative advice to seamless integration into your existing IT landscape. ”



### **Project Management**

Use Capgemini's PM expertise in setting up Blockchain solutions as multi-party ventures



### **Alliance & Partnerships**

We open our widespread network of technology partners to our insurance



### **Accountability**

Key elements are communication, support and problem solving, sharing and diversity

## About Capgemini Invent

As the digital innovation, consulting and transformation brand of the Capgemini Group, Capgemini Invent helps CxOs envision and build what's next for their organizations. Located in more than 30 offices and 10 creative studios around the world, its 6,000+ strong team combines strategy, technology, data science and creative design with deep industry expertise and insights, to develop new digital solutions and business models of the future.

Capgemini Invent is an integral part of Capgemini, a global leader in consulting, technology services and digital transformation. The Group is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of 200,000 team members in over 40 countries. The Group reported 2017 global revenues of EUR 12.8 billion.

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