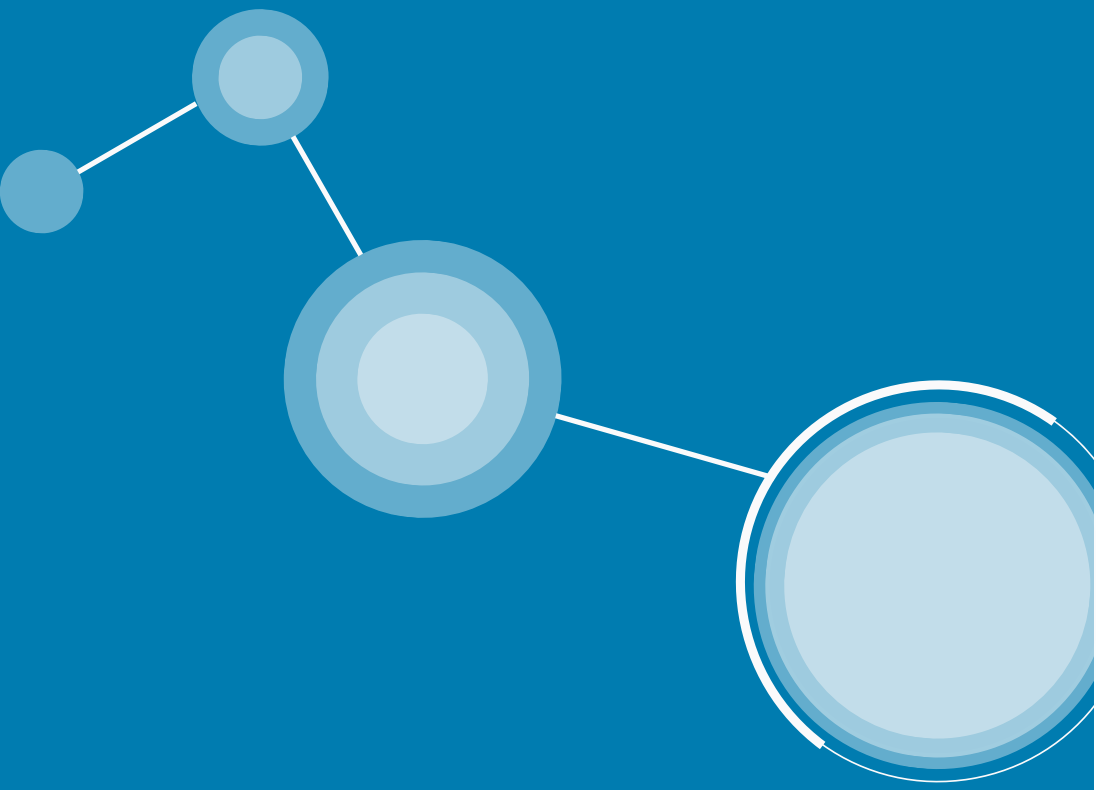
Leading the digital value revolution

BLOCKCHAIN BEYOND: WHAT IT REALLY MEANS FOR TECHNOLOGY AND BUSINESS

NTT DATA

Trusted Global Innovator



SUMMARY

Some talk about Blockchain and its potential, new technologies and the transformations leveraged by innovation. But what does it really mean?

NTT DATA's foresight technologies, including Blockchain, are based on observation, studies, measurements and prototyping or implementations, which gives us the ability to turn possibilities into reality and to understand the level of maturity of technologies capable of transforming processes, systems and businesses.

We are presenting our capabilities and real use cases implemented by our dedicated Blockchain team around the world. NTT DATA is exploring all of the Blockchain arena, working with a multi-platform approach. These are facts which go beyond the hype and give an "objective vision" of what we can do and what we are not yet able to do with these new technologies, how they are impacting on social changes and how you can come to understand Blockchain features and achieve something tangible and concretely implementable.

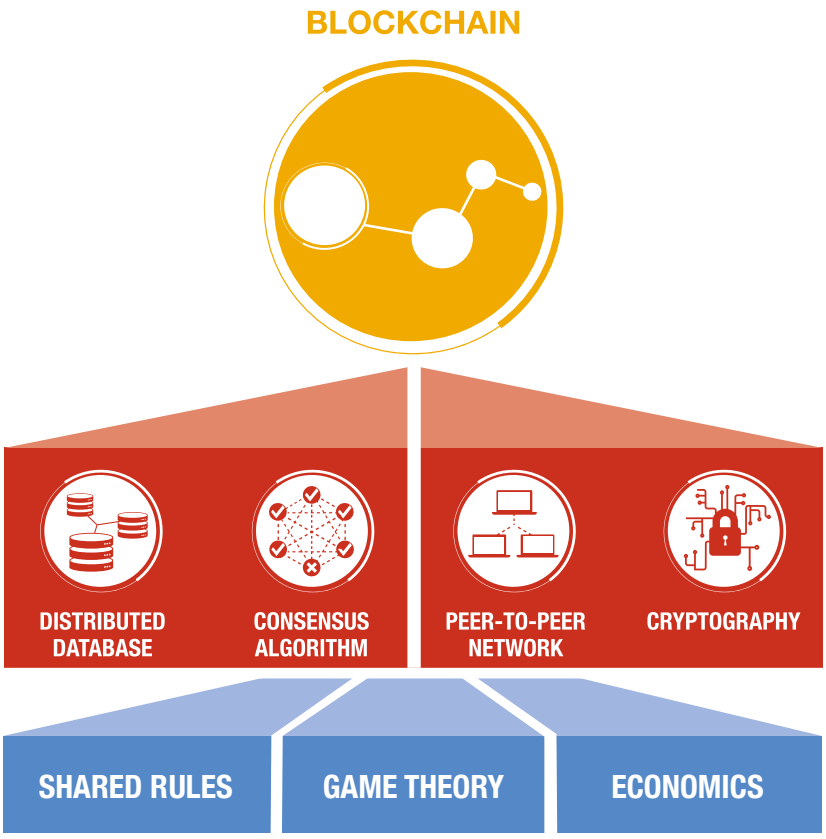
1 Possibilities of Blockchain

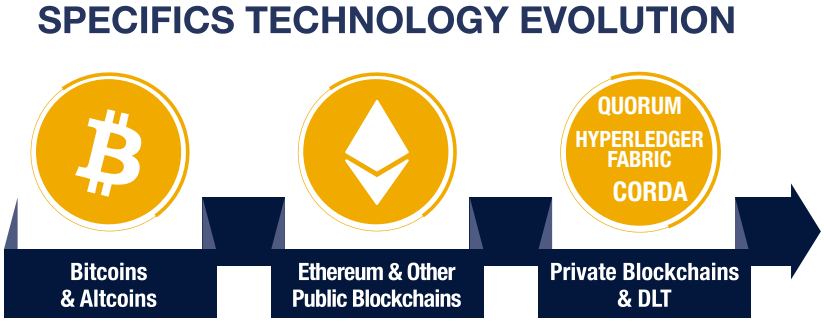
WHAT IS BLOCKCHAIN?

The concept of Blockchain was born when Satoshi Nakamoto created Bitcoin in 2008-2009, designing a new system that could allow the creation and transfer of electronic cash without trusting any central authority.
Blockchain is today identified as the underlying technology, which is a combination of a distributed and append-only database, consensus algorithms, cryptography and peer-to-peer networks.

This kind of systems relies also on game theory, economics and shared rules enforced by the majority of the nodes.
Blockchain features were enhanced in 2014 with the Ethereum Blockchain and the so-called “Smart Contracts” which introduced business logic coded in software executed and validated by the network in a decentralized and unstoppable way.

In 2015, Blockchain became a popular idea in enterprise sectors. Many Blockchain projects and platforms were been designed to create networks for authorized members (permissioned) without the need for a cryptocurrency. Some of them evolved into alternative types of ledgers working differently from the initial Blockchain.

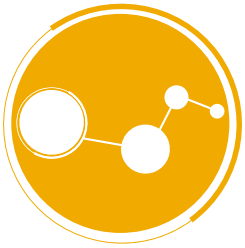




DISTRIBUTED LEDGER TECHNOLOGY (DLT) is the term that identifies the general concept of Blockchain and every other similar new technology. Enterprises usually use this term to indicate permissioned (private) ledgers.

HOW DIFFERENT FROM CONVENTIONAL SYSTEM

Nowadays, Blockchain enables a new way of designing in order to implement systems.
This technology has many and important strengths useful for many purposes, but it is not suitable for everything, if compared to conventional systems. It is important to consider a trade-off because of the main difference: centralized against distributed architecture.
Traditional systems, based on a single centralized node, are usually more efficient than distributed systems where nodes have to communicate and reach a consensus on some information.



BLOCKCHAIN

PROS

DATA
Replicable, immutable, traceable

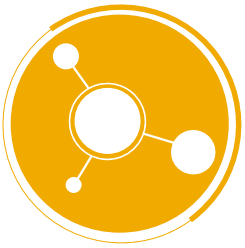
TRUSTABILITY
Mitigation of trust on third parties

AVAILABILITY
Mitigation of SPOF (single point of failure)

STANDARD
Common and known ecosystems and standardization

CONS

- Performance
- Maturity
- Governance
- Scalability



CONVENTIONAL

PROS

PERFORMANCE
Higher performance

GOVERNANCE
Allows efficient system governance

IMPLEMENTATION
Easy implementation and maintenance

SCALABILITY
Scalable platform

CONS

- Isolated silos
- SPOF
- No data immutability
- Requires trust in 3rd parties

WHAT CAN BE ENABLED BY BLOCKCHAIN?

TECHNICAL FEATURES

DISTRIBUTED DATABASE

Storage databases are located in multiple computers distributed over a network.

CONSENSUS ALGORITHM

A process used to achieve agreement on a single data value in a distributed process. In public Blockchains PoW (Proof of Work) is the most widely used.

CRYPTOGRAPHY

Techniques that use mathematical theory and computer science to guarantee integrity, non-repudiation, authentication and confidentiality.

PEER-TO-PEER NETWORK

Network of computers where the nodes are connected without any intermediary.

BEHAVIORAL FEATURES

TRACEABILITY

The Blockchain technology assures data transparency and the log of changes of all data stored in the Blockchain.

IMMUTABILITY

With Blockchain data immutability is obtained thanks to cryptography, consensus algorithms and the number of peers in the network.

DECENTRALIZATION

The decentralized system with a common shared ledger remodels the paradigm based on centralized systems.

DISINTERMEDIATION & TRUST MITIGATION

Blockchain provides the possibility of mitigating trust and reducing the need to rely on third parties, disintermediating many stakeholders.

FUNCTIONAL FEATURES

VALUE & ASSET TRANSFER

The exchange of cryptocurrencies and digital assets (tokens, securities, letters of credit, etc.) without the need for central authorities.

SHARING INFO & WORKFLOWS

Data sharing between parties that don't fully trust each other, according to the rules in Smart Contracts. The information can be shared with all stakeholders or with a subset of them.

TIME-STAMPING & NOTARIZATION

Usage of the Blockchain as an immutable and independent ledger to ensure the existence, integrity and ownership of digital information.

SMART CONTRACTS

Automation of the execution of business logic with the implementation of rules in the software codification.

2 Our Understanding

BEYOND THE HYPE

After understanding technical features, it is necessary to have an «objective vision» of what we can do and we are not yet able to do with these new technologies, how they are impacting on social changes and how you can come to understand Blockchain features and achieve something tangible and concretely implementable.

COSTS

- Blockchain solutions “often” have no reduction in platform system cost even if the conventional system is “replaced”.
- All transactions within public Blockchains and their smart contracts have to consider a fee cost and the high volatility of the cryptocurrency price.

BUSINESS

- Blockchain use cases make sense if the main benefits are the must-have features of the solution and the benefits are higher than the risks/costs/complexity.
  The first question before considering a use case is “Do I really need a Blockchain?”
- Blockchain-based business models still have many unpredictable variables, like volatility, go-live costs and regulatory implications that have to be considered and analyzed during the development of the solution.
- There will not be a Blockchain platform that governs everything; the challenge is to choose the most fitting platform based on business requirements.

GOVERNANCE

- Permissioned Blockchains and DLT have complex governance for infrastructure, application and business layers in comparison with conventional systems.

MATURITY

- Performance, scalability and interoperability are features still “under development” for all Blockchain platforms.
- Enterprise Blockchain solutions are still in evolution. After a Proof of Concept (PoC) phase, it is necessary to closely follow platform evolution and maturity, adapting and sometimes changing the solution to the new features/architecture of the platforms.
- The Blockchain revolution will not happen overnight, and will require cooperation among market participants, regulators and technology experts.

REGULATION

- Most public Blockchains have their own rules/conventions and are typically managed by a distributed and open community not controlled by single actors.
- Blockchain solutions have to follow a regulation-by-design approach.
- Intermediaries and trusted incumbents have to rethink their roles considering the possibility of disintermediation offered by a Blockchain network that could take or replace their role.

BLOCKCHAIN FEATURES VS BUSINESS MODEL

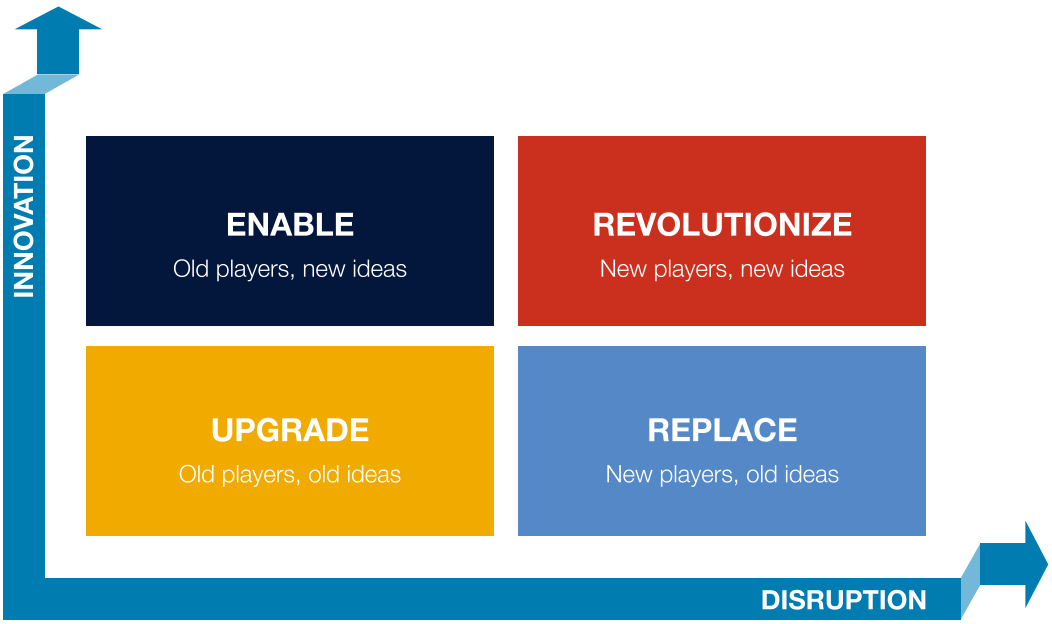
In order to define a service strategy, it is necessary to use a set of methodologies and tools during interviews and collaborative workshops in order to trace the service model and the general guidelines based on the experience of the end users.

Modeling process of a business model, therefore, starts, in this context, from the well-known technical features (distributed database, consensus algorithm, cryptography, peer-to-peer network). In a second stage, the technical features have to be understood as a transformation in a system's behaviour or capability as traceability, immutability, decentralization, disintermediation and trust mitigation. Going deeper into our understanding of the features of Blockchain, we can reach potential functionalities such as: value & asset transfer, shared information and workflows among different stakeholders, time-stamping & notarization, smart contracts.

The next step after acquiring knowledge about the Blockchain features is to start the design process, focusing on collaborative workshops: gauge and translate the needs of clients, design thinking big and with an open mind in order to identify new enabler use cases in a PoC, prototype the idea to make it concrete and model using main drivers, implement the solution and upgrade it based on the needs and direct feedback of Clients.

Business case defines the extension on a large scale of the use case developed in the PoC and its economic sustainability. In order to design a business model is important identify the right value proposition to the target involved user (personas). The keyword is understand the real needs of this target to offer a real added value. Nevertheless a roadmap is developed beyond the business case aimed to support the wide plan. The final Roll-out phase implements the processes envisaged in the roadmap.

OPPORTUNITY



1. Blockchain networks enable new business interactions and new players that replace existing actors or take on new roles, creating new business models.

2. The direct transfer and settlement of value through an internet protocol creates a new asset class, which can be the basis for the Token-based Economy, the Machine Economy and ultimately the Internet of Value.

3. Initial Coin Offerings (ICO) enable new funding methods for startups and projects.

4. The creation and management of consortia with a new cooperative approach can bring together different stakeholders that can create a common infrastructure for business.

5. The reusability of the same common Blockchain network and infrastructure can be the foundation for expanding new business cases, reducing costs and standardizing processes.

6. Data transparency can enhance auditability and increase the reliability of business processes, resulting in an ability to provide a legitimate proof of the existence of information.

SOCIAL CHANGES

Blockchain technology is an enabling factor for defining and creating value in every sense through the network. The value is not only monetary, also social and cultural. The frictionless exchange of digital assets representing any kind of value can potentially unlock new types of interaction between individuals, organizations and machines.

The possible change in business models can have an impact on the social infrastructure as new services could become available.

Ensuring the authenticity of relevant information could give people more transparency and the ability to track, claim and publish proof of the existence of specific data. Blockchain-based digital identities may be fundamental for people who don't have access to some services.

The strength of a Blockchain creating distributed platforms to perform direct transactions facilitates the inclusion of people, lowering the participation barriers.

NTT DATA TECH AND FORESIGHT

At NTT DATA, we continuously investigate advanced technologies and social trends that we believe will influence businesses over the next three to ten years, and we publish these findings on an annual basis for the benefit of our clients.

NTT DATA in 2018 had identified and developed eight technological trends[1] (TT01… TT08), spearheading development of an information society.

The TT07[2] regarding Diverse IT Infrastructure makes special mention related to Blockchain based on the evolution of architectures:

"Architectures have evolved that combine different IT infrastructures and offer them as a single service. This trend can be seen particularly in the case of database technology for global distribution and integration and for Blockchain technology"

"It is revolutionary that the database technology that enabled global distribution and integration has reached the stage where it is offered on cloud platforms. In the past, geographically focused services offered in countries across the world would result in delayed responses and in discrepancies in recorded data due to physical distances. Thanks to the development of robust middleware, global distribution and integration is possible, where each data center provides positive user experiences in specific regions while using the same integrated set of data.

World-scale service platform developers used to build robust IT infrastructure on their own to offer social network services and emails exclusively for customers. Today, the time has come for all companies to migrate to the cloud for business. The promise of open-source development further raises expectations that IT vendors may emerge to offer architectures with an even greater degree of flexibility.

Blockchain, a technology that supports bitcoin, has solved a key issue related to distributed technologies, and is about to broaden its applications. A Blockchain is distributed across the world instead of being centralized, and it ensures validity over a certain period of time, which slows processing speed. As a result, it is not considered appropriate for small payments and other accelerated transactions. To solve this problem, the development of off-chain technology is underway in which high-speed transactions are achieved by adding a high-speed peer-to-peer (P2P) network to the Blockchain.

The development of cross-chain atomic swaps[3] is also underway. This technology enables transactions directly between chains, avoiding the need for the presence of a third-party clearinghouse to exchange value between Blockchains. However, bitcoin, which has already circulated huge amounts of cryptocurrency is a barrier to entry. Coordination of interests between companies and technologies might also present an obstacle to the ongoing evolution of this technology."

[1] https://www.nttdata.com/global/en/foresight/trend-listing

[2] https://www.nttdata.com/global/en/foresight/trend-listing/2018/april/diverse-it-infrastructure

[3] Cross-chain atomic swaps are the exchange of one cryptocurrency with another without the need for third-party intermediation.

3 Our Capabilities

STRENGTHS & SKILLS

Thanks to the research conducted and experience acquired by NTT DATA over the last few years, we have reached a better and clearer understanding of the real value of Blockchain, in a broadened perspective ranging from technology to business.

Our deep understanding and advantage in the realm of Blockchain represents a new strength of NTT DATA, intellectual capital at the service of our customers, a concrete step towards a digital value revolution, our foresight into the future:

NTT DATA HAS HANDS-ON EXPERIENCE AND MATURED CAPABILITIES

200+ Blockchain Experts across the globe in 20+ different countries.

4 Innovation labs to foster technology evaluation.

Various relevant use cases implemented cross-industry use cases.

Established Blockchain consortium with members representing a number of varying industries such as insurance, logistics and import & export trade.

Design BCOSE (Blockchain one-stop environment) which quickly enables PoC environment setup and prototype implementation.

Promote the development and implementation for production use, like "Trusted Architecture" which enables to design optimum architecture of Blockchain.

OUR CAPABILITIES

SKILLS

BUSINESS

- Public Sector: Telecom and Utility, Government, Social infrastructure
- Financial Sector: Trade Platform, Banking, Insurance,
- Enterprise Sector: Payment solutions, SCM, AI&IoT, Network Infrastructure, retail processes, Logistics, Healthcare, Life Science, Automotive, Supply chain

TECHNICAL

- Distributor of Hyperledger Quilt
- Infrastructure Technology as containers, middleware, OS, security, cloud platform, Docker, Ansible, AWS, Azure; Linux (RedHat)
- Consensus algorithms
- Programing language such as GO, Java, Solidity, Kotlin, C++, Python
- Bitcoin, Ethereum, Hyperledger Fabric; Corda, Ripple

STRENGTHS

BUSINESS

- Multi-platform approach
- End-to-end strategy analysis up to the final solution
- Infrastructure management and governance
- Definition of the rules for creating a private network
- Business Process Advisory
- Design new processes for any industry
- Finance domain knowledge, specifically Supply Chain Finance, Payment Systems
- Agile Program Management

TECHNICAL

- PoC Development, Blockchain based solution design
- Extensive experience with Hyperledger Fabric 1.x and Corda Enterprise architecture and implementation
- Agile based Blockchain solution delivery
- Blockchain + IOT
- Non-functional testing of Blockchain framework/solutions
- Digital identity and traceability and Blockchain platform

COLLABORATIONS & ALLIANCES

Our collaborations and alliances are focused on the real feasibility of realizing Blockchain, paying attention of project “making sense” for the involved stakeholders.
Strength of Blockchain is to connect existing or new systems, we are protagonists in make it possible.
NTT DATA is constantly following the evolution and emergence of Blockchain and Distributed Ledger Technologies.
NTT DATA contributed to Hyperledger Project; NTT DATA is also an Enterprise Ethereum Alliance member and founders of Alastria and it has partnerships and collaborations with R3, Ripple and Skuchain.
Thus, NTT DATA is contributing to the OSS community and stablish strategic partnership with selected start-up companies. Furthermore, NTT DATA is actively involved in standardization projects, Industry-university collaboration, encouraging the birth and realization of ideas becoming real projects with a tangible added value for the Customers.

OUR APPROACH DESIGN

NTT DATA's approach to Blockchain-based technological innovation is linear and aims to reshape organizations, service management and actual relationships. Our approach starts from a training program related to the business and technical aspects, to provide an understanding of the mechanisms, the concept of Blockchain and how it could be applied. Then we set up a strategy to find specific opportunities, explore feasibility and plan the next stage in order to produce good prototypes subject to continuous improvement and support the creation and implementation of customer ideas based on use case studies. After defining the perimeter, the constraints, we continue with an as-is analysis of the processes or we build new ones with new roles and responsibilities. We create PoCs to evaluate possible cost reductions by promoting efficiency in operations and estimate the costs of system investments in regulatory and legislative compliance. Then we promote development and implementation for production purposes (Go/No Go). After the release for production, we take care of the maintenance of Blockchain software, managing updates and versioning. We evaluate the optimal Blockchain architecture for use in production and we collect feedback, lessons learned and best practices for continuous improvement.

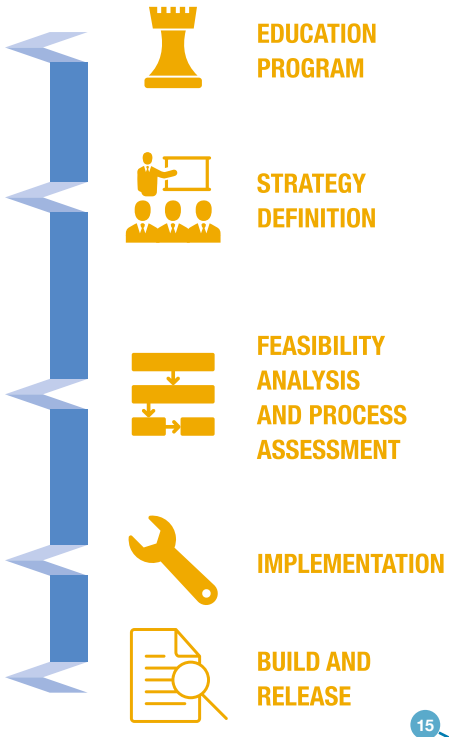
Provide education program for business and technical aspects, to understand the mechanism and idea of Blockchain and how it is being applied.

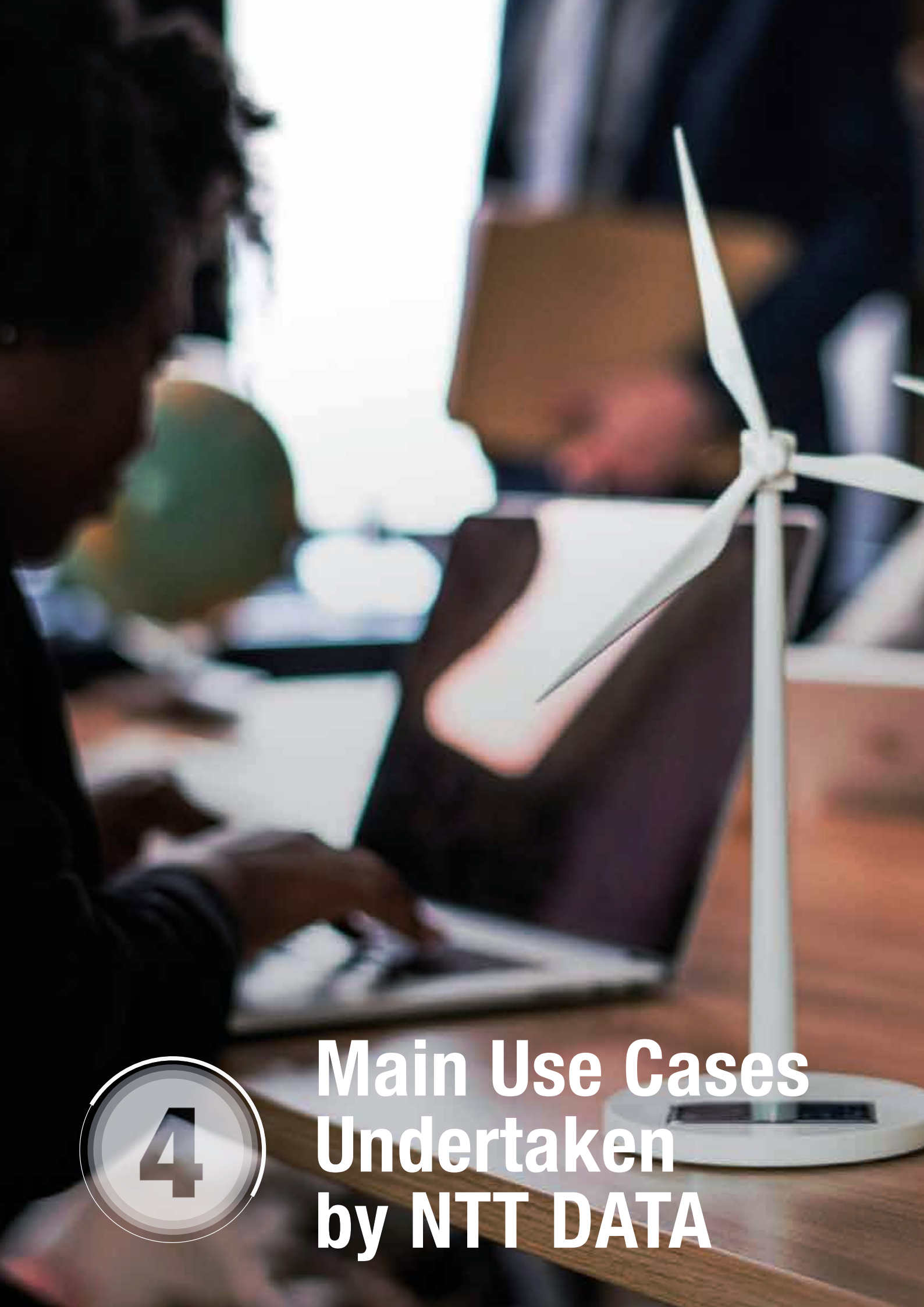
Find specific opportunities for the use of Blockchain with collaborative workshops, where technology can make a difference, emphasizing the distinction between the company and the competition.
Support the creation and realization of customer ideas based on case studies and their ideas about design thinking.

Explore feasibility and availability, with practical hypothesis.
Evaluate cost reduction by promoting efficiency in operations and estimate cost of system investment.
Abide by regulatory and legislative requirements.
Make a Quick Process Assessment.

Implement the solutions identified starting from a prototype and support the updating of governance models for solution extension (BCOSE quickly enables PoC environment setup and prototype implementation).

Promote the development and implementation for use in production (Go/No Go) ("Trusted Architecture" enables an optimal design of Blockchain architecture).





4 Main Use Cases Undertaken by NTT DATA

SUMMARY

TRADE PLATFORM:
Japan Team founded a consortium with 14 Japanese leading companies including banks, trading companies, insurance companies, shipping companies and freight forwarders. In the consortium, participants discussed crossindustrial matters to improve the efficiency in trade procedures and verified its feasibility using the prototype system.

SMART GRIDS AND ELECTRIC POWER SYSTEM TRANSFORMATION:
Japan Team uses Blockchains for energy conservation, power retailing, transmission and distribution plan management and aims to distributed processes by sharing information among related actors, process improvement, new value creation (green power certification, token economy, etc.).

SPUNTA PROJECT:
After conducting a feasibility study on the interbank reconciliation process, Italy Team developed a POC with ABI Lab and more than 15 Banks to demonstrate how a Blockchain/DLT solution can change and improve the process.

4TRACE:
Italy Team developed a Supply chain and Traceability platform GS1 compliant with Blockchain notarization and timestamping.

CONTAINER TRACEABILITY:
The shipping industry is subject to strict regulation due to its importance in procurement and global logistics. Blockchain technology can improve lead times and reduce uncertainty along the supply chain for all parties involved.

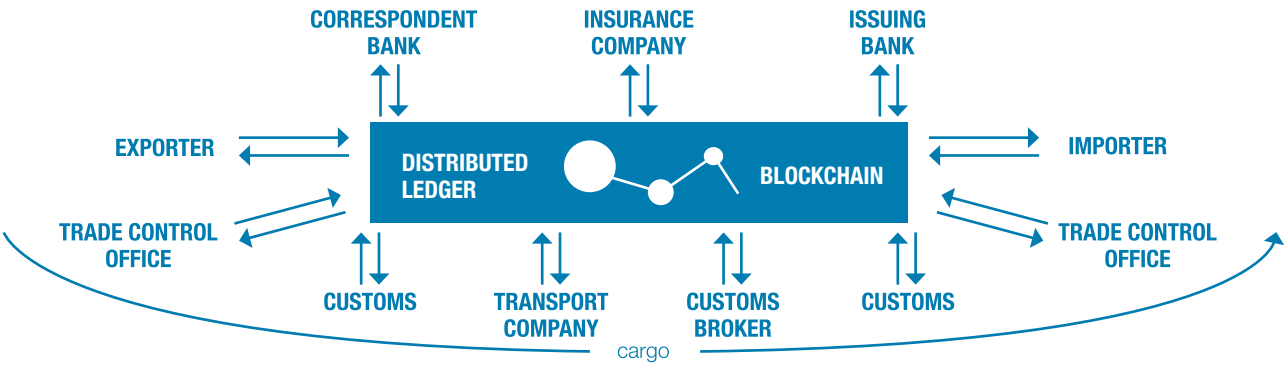
INTERNAL FINANCING:
Development of an intercompany financial contract in Blockchain. Specifically, a credit line between two corporations belonging to the same group. Different departments and roles create a contract in a collaborative way.

UK TIER 1 RIPPLE XCURRENT SOLUTION:
UK Team has contributed in the implementation of “near real time” payment and settlement of funds through a new and dedicated mobile app.

MULTI-PARTY CONTRACT PROCESS FOR RE-INSURANCE:
USA team had demonstrated a multi-party contracting process for re-insurance using Blockchain with improved transparency, traceability and efficiency.

TRADE PLATFORM

INDUSTRY	**All industries involved in trade**
CLIENT	*14 Japanese Leading Companies*
MAIN GOALS EXPECTED	First, we aim to digitize trade documents in a specific workflow in trade. In the future, we will develop a digital trade platform to improve efficiency in trade procedures by providing a BtoBtoG data sharing platform.
TIMING AND TEAM	August 2017 – Current
BRIEF DESCRIPTION	Japan Team founded a consortium with 14 Japanese leading companies including banks, trading companies, insurance companies, shipping companies and freight forwarders. In the consortium, participants discussed cross-industrial matters to improve the efficiency in trade procedures and verified its feasibility using the prototype system.
POC ENABLERS	Data sharing on Blockchain platform
MAIN RESULTS ACHIEVED	This is the very first consortium in Japan that operates across diverse industries in trade-related business. We extracted issues to create the digital trade platform. We evaluated expected benefits by using the digital trade platform.
BLOCKCHAIN DLT PLATFORM	Confidential



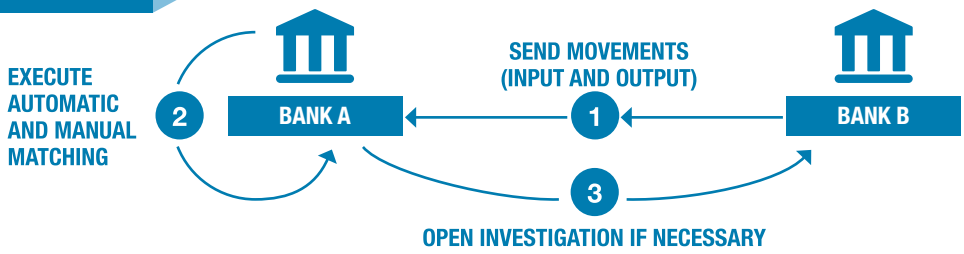
It changes the world, from each system having data individually to every system collaborating by sharing data through the Blockchain. It is expected that it will increase the speed of transactions, maintain consistency and reduce the paper cost of trade-related documents.

SMART GRIDS AND ELECTRIC POWER SYSTEM TRANSFORMATION

INDUSTRY	**Utility**
CLIENT	*Electric Power Companies, Gorvernment Agency, University.*
MAIN GOALS EXPECTED	This year's goal is to build a power trading platform prototype combining virtual storage battery cloud and Blockchain power trading. Our goal next year is to promote field tests for commercialization of this platform. • Transparency, traceability • Data Immutability • Smart Contracts Logic • Notarization and time-stamping
TIMING AND TEAM	April 2017 – Current
BRIEF DESCRIPTION	Japan Team uses Blockchains for energy conservation, power retailing, transmission and distribution plan management, and aims to achieve: • Distributed processes by sharing information among related actors • Process improvement • New value creation (green power certification, token economy, etc.)
POC ENABLERS	Smart Grids, IoT Data Time-stamping, Strong Authentication
MAIN RESULTS ACHIEVED	• Demonstration system creation of Blockchain based P2P power trading • Demonstration system linking IoT device and Blockchain • Feasibility study conducted with power companies • Participated in PoC of University's P2P power trading
BLOCKCHAIN DLT PLATFORM	Ethereum

SPUNTA PROJECT

INDUSTRY	**Finance**
CLIENT	*ABI Lab (Banking Research and Innovation Center founded and promoted by the Italian Banking Association) and more than 15 Italian Banks*
MAIN GOALS EXPECTED	First Project to bring innovation to the finance industry in order to optimize and re-engineer a back office process identified by ABI Lab as the first use case with the Blockchain/DLT solution
TIMING AND TEAM	May 2017 - Current
BRIEF DESCRIPTION	After conducting a feasibility study on the interbank reconciliation process, Italy Team developed a POC with ABI Lab and more than 15 Banks to demonstrate how a Blockchain/DLT solution can change and improve the process, making it distributed, reducing the need for trust in 3rd parties, enabling it to become realtime and making information sharable between the actors involved
POC ENABLERS	Data Reconciliation process, immutability, transparency…
MAIN RESULTS ACHIEVED	• First EMEA project with a regulator, more than 15 banks and a system integrator • First draft of new regulations for the process based on the Blockchain/DLT platform • Building of the infrastructure layer enabling both cloud and on-premises nodes • Usage of a private physical network between the nodes • Establishment of governance rules to manage the business network • Performance tests with 60 days of real data among the all the banks • Pre-production analysis
BLOCKCHAIN DLT PLATFORM	Corda



This process aims to reconciliate material and not digitalized products that are exchanged between the Banks (e.g. Commercial papers, Promissory note, etc.). Between each pair of banks there is a reciprocal Bank account, where input and output movements are written. All banks have at least 1 reciprocal bank account with a counterparty Bank. Movements are mostly matched automatically; manual match is executed if there is a mismatch and an investigation can be opened. Automatic and manual matching, are activities performed by only one of the two Banks. The ownership of this activity is exchanged every 2-3 years.

4TRACE

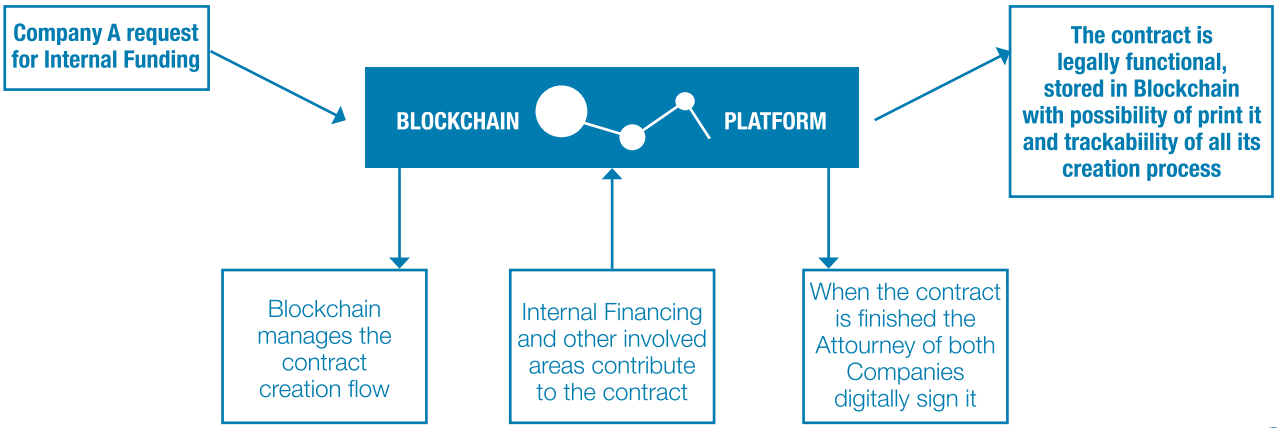
INDUSTRY	**Retail, Healthcare, Transport & Logistics, Foodservice, Technical Industries, Humanitarian logistics**
CLIENT	*Food Company*
MAIN GOALS EXPECTED	Improvement of GS1 and EPCIS platform with: • Non-repudiation of data • Data Immutability • Notarization and time-stamping • Decentralized time-stamping
TIMING AND TEAM	July 2017 – Current
BRIEF DESCRIPTION	Italy Team developed a Supply Chain and Traceability platform GS1 compliant with Blockchain notarization and time-stamping
POC ENABLERS	Supply Chain Traceability
MAIN RESULTS ACHIEVED	• Creation of a platform GS1 and EPCIS compliant • Test 4Trace platform with real data • Create notarization and time-stamping service on Blockchain with Opentimestamp • Scalability and performance tests • Business case and cost model of platform
BLOCKCHAIN DLT PLATFORM	Opentimestamp with Bitcoin

CONTAINER TRACEABILITY

INDUSTRY	**Transport & Logistics**
CLIENT	*Mediterranean Port Authority*
MAIN GOALS EXPECTED	• Setup higher standards of transparency and reliability in the global shipping industry • Reduce the sheer amount of paperwork and intermediaries involved in freight transportation • Ensure real time end-to-end traceability of the cargo, from its port of origin to its final destination
TIMING AND TEAM	Starting on April 2018 – Current
BRIEF DESCRIPTION	The shipping industry is subject to strict regulation due to its importance in procurement and global logistics. Key players are forced to go through extensive bureaucracy in order to transport goods safely. Blockchain technology can improve lead times and reduce uncertainty along the supply chain for all parties involved
POC ENABLERS	Faster, more reliable paper and digital transactions. Global shipping end-to-end traceability
MAIN RESULTS ACHIEVED	• Digitalization of large amounts of paperwork and processes • Improvement of communication between carriers, terminals and freight forwarders. • Problem tracking and incidence resolution between hauliers, freight forwarders, carriers and importers
BLOCKCHAIN DLT PLATFORM	Hyperledger Fabric & Hyperledger Composer

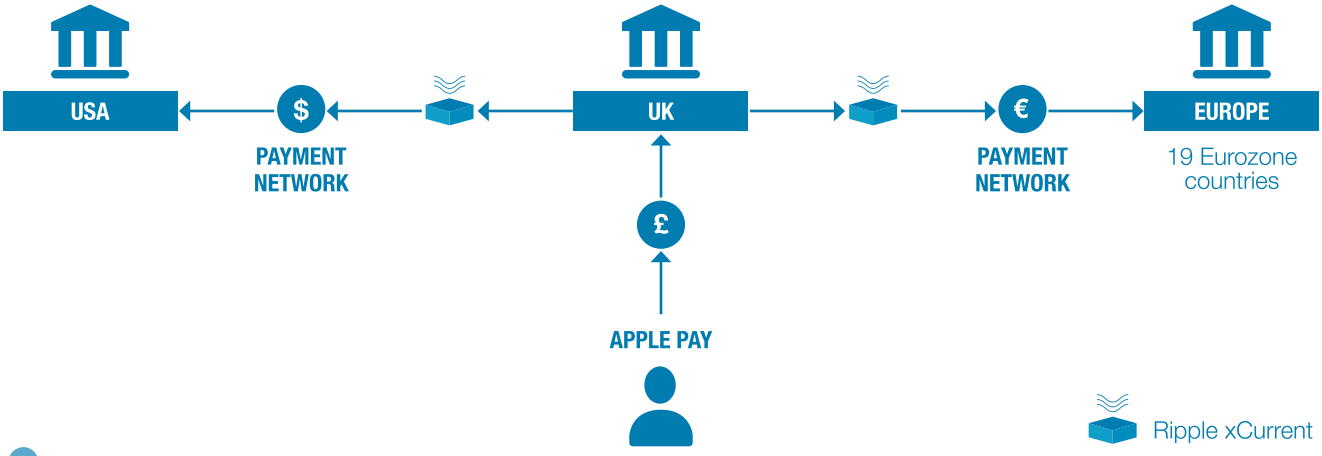
INTERNAL FINANCING

INDUSTRY	**Utilities**
CLIENT	*Confidential*
MAIN GOALS EXPECTED	• Reduction of manual work involved in the current process • Improvement in the eficiency of the internal financing processes • Increase in transparency of the process and the traceability of the stages of validation
TIMING AND TEAM	January 2018 – June 2018
BRIEF DESCRIPTION	Development of an intercompany financial contract in Blockchain. Specifically, a credit line between two corporations belonging to the same group. Different departments and roles create a contract in a collaborative way, each one can only contribute to their fields and one of them acts like the oracle and validator. Implementation of tracking for issuing or changing a contract from the Parties
POC ENABLERS	Faster process, reduction of manual work
MAIN RESULTS ACHIEVED	• Testing the Blockchain technology in order to digitalize the full contract assignation process • Time reduction for credit line approvals • Full traceability in all the process' stages
BLOCKCHAIN DLT PLATFORM	Ethereum Quorum



UK TIER 1 RIPPLE XCURRENT SOLUTION

INDUSTRY	**Banking**
CLIENT	*Global Retail Bank*
MAIN GOALS EXPECTED	• Near real-time settlement of funds • Global reduction of payment processing times • Full disclosure of fees prior to transaction • Reduction of operational costs through automated reconciliation • Minimisation of payment failures
TIMING AND TEAM	2 year project (50% internal PoC / 50% Industrialisation)
BRIEF DESCRIPTION	UK Team banking and technology practices have contributed to the implementation of a “near real-time” payment and settlement-of-funds system that relies on Distributed Ledger Technology to provide cross border payment services to a +14M client base of a global retail bank
POC ENABLERS	Faster, error-free, cost-efficient international transactions
MAIN RESULTS ACHIEVED	• All main goals expected • Seamless customer experience • Full visibility of post-settlement funds prior to transaction
BLOCKCHAIN DLT PLATFORM	Ripple xCurrent



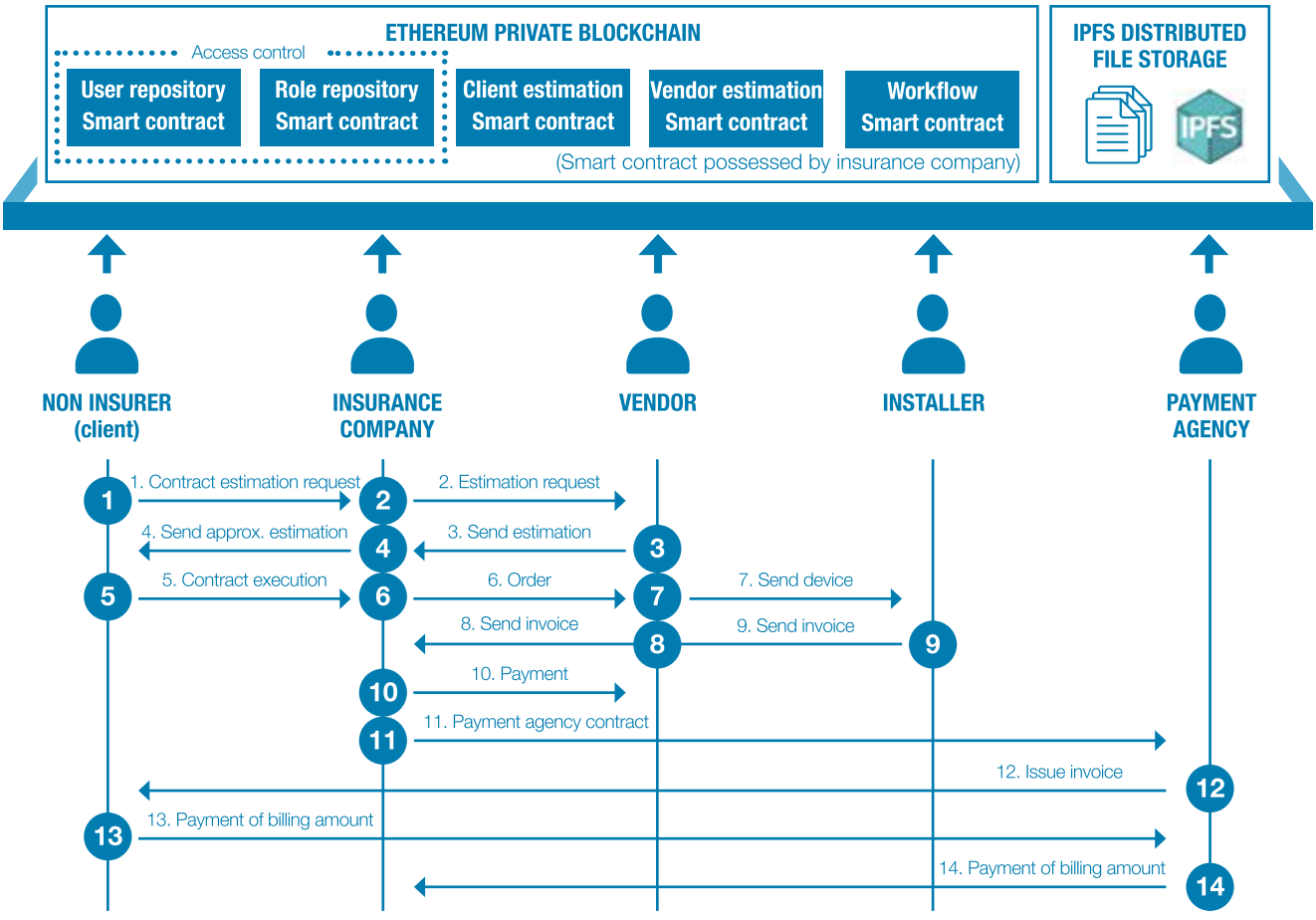
USING BLOCKCHAIN IN THE MULTI-PARTY CONTRACT PROCESS FOR RE-INSURANCE

INDUSTRY	**Insurance**
CLIENT	*Multi-National Re-Insurance Company*
MAIN GOALS EXPECTED	Direct communication between participants can be achieved by digitalizing transactions between the insurance company-insurer and vendors involved in the Telematics service and managing those transactions through the Blockchain. Hence, it is expected that network flows can be automated and multiple participants can enter into partnership efficiently
TIMING AND TEAM	Timing - 12 Weeks; Team - 5 Members
BRIEF DESCRIPTION	The business use case involves multi-party contract management for vehicle insurance using telematics. Telematics insurance decides the insurance premium based on the vehicle usage and operation data (operational status of accelerator/ brake, etc.) obtained from a communication system (device) installed on the vehicle
POC ENABLERS	Transparency of information, tamper resistance, reduction in operating costs and transaction time
MAIN RESULTS ACHIEVED	Multiple entities used dedicated Blockchain networks in demonstration tests and verified a series of business processes such as creating, storing and sending documents such as contracts, estimates, response forms, invoices etc. The documents are shared using IPFS, a distributed file system. For the front end application, Dapp (distributed application) is used, while the API service is used to connect the Blockchain network with the external system. As a result, the contract process, sending and receiving of each document are executed efficiently.
BLOCKCHAIN DLT PLATFORM	Ethereum, IPFS

USING BLOCKCHAIN IN THE MULTI-PARTY CONTRACT PROCESS FOR RE-INSURANCE

INDUSTRY **Insurance**

CLIENT *Multi-National Re-Insurance Company*



AUTHORS

Blockchain Champions Team

Maria Cione - Advisory Services, Consulting
maria.cione@nttdata.com

Tiziana Marra - Advisory Services, Consulting
tiziana.marra@nttdata.com

Federico Melani - Solution Services, Payment Solutions
federico.melani@nttdata.com

Lead of Blockchain Champions Team

Francisco Spadafora - Solution Services, IoT, VR, AI
francisco.spadafora@nttdata.com

CONTACT US

NTT DATA Blockchain Center of Excellence
blockchain-contact@kits.nttdata.co.jp

NTT DATA ITALY
Viale Cassala 14/a
20143 Milan
+39 02831251
it.nttdata.com

NTT DATA
Trusted Global Innovator

NTT DATA

Trusted Global Innovator