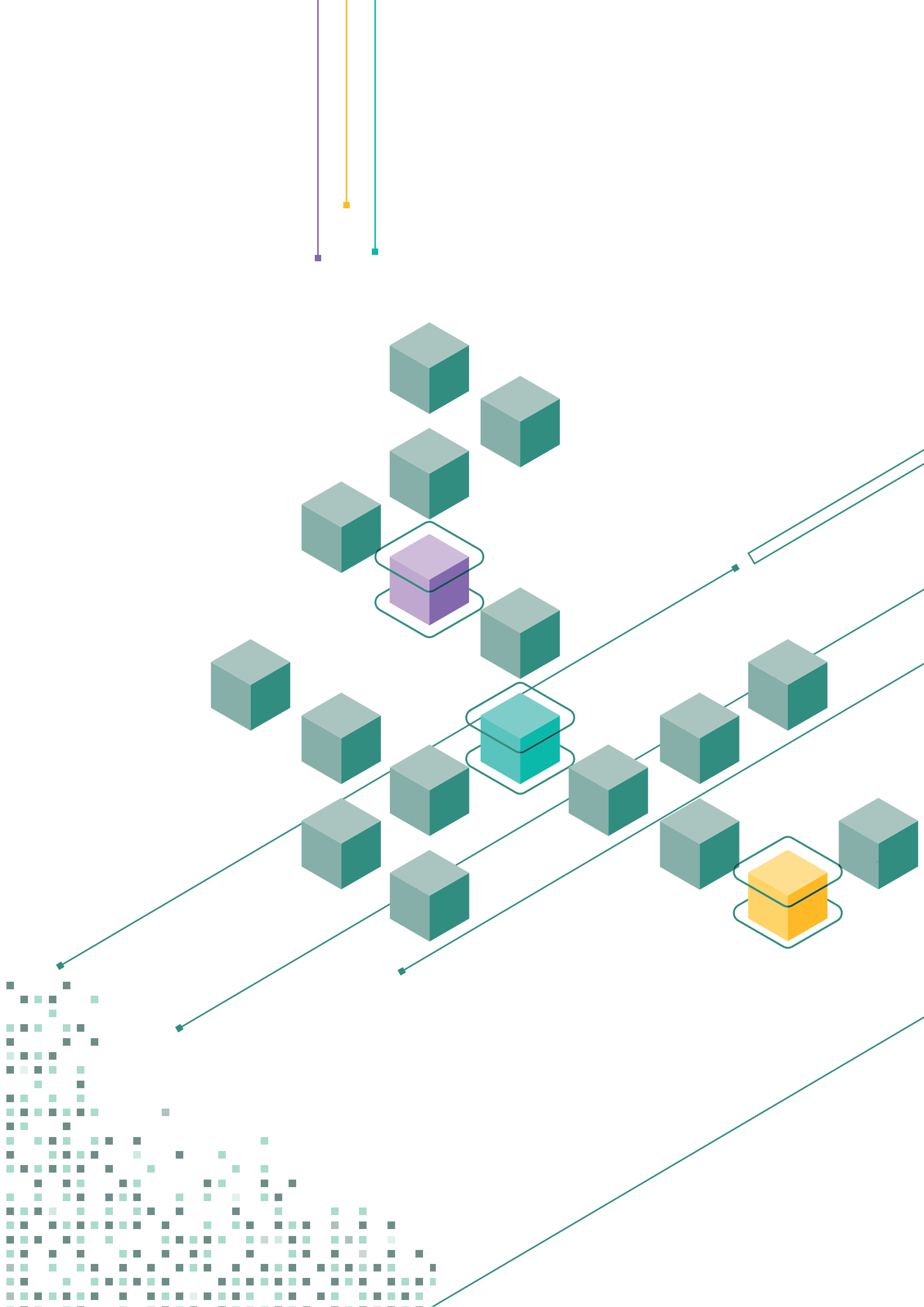


Blockchain
immutable by nature







Net Service has been investing in Blockchain technology since 2013. In 2018 it acquired FlossLab, a company founded in 2007 by the University of Cagliari Software Engineering research group, specialized in Blockchain technologies.



Net Service boasts a cutting-edge Competence Center dedicated to the development, integration and evolution of Blockchain technologies. The results of the research and development activities flow into the Net Service platform, which today offers the following Blockchain services:

 **b.cert**

 **b.supply**

 **b.voting**

A SECURE, DECENTRALIZED AND TRANSPARENT SOLUTION

Blockchain technology allows data to be stored within a distributed network of nodes.

Database copies are replicated and stored within these nodes, reducing the probability of data loss and service interruptions: the availability and security of data is not affected by the possible inaccessibility of a single node.

Blockchain means an automatic, decentralized and secure system for obtaining and creating trust within application transactions between parties. All of the network's nodes are based on *Distributed Ledger Technology*, a distributed and shared register, structured like an immutable chain of blocks. This distributed network of nodes checks every transaction by consensus, a process that makes Blockchain technology a trustless, transparent system.

THE ADVANTAGES OF ADOPTING SOFTWARE BASED ON BLOCKCHAIN TECHNOLOGY

- Transparency of registers
- Reliability of sources
- Data traceability and stability
- A Trustless System

PRIVATE OR PUBLIC BLOCKCHAIN?

Anyone can instantiate their own node in a **public Blockchain** and thus join a pre-existing public network. In a **private Blockchain**, also called *consortium*, a defined set of entities agree to create their own 'private' network, on which to certify the Blockchain nodes.

Whether public or private, a Blockchain allows the addition, yet not the alteration or elimination, of data thus safeguarding the information assets.

Companies or organizations, identified by a unique *address*, obtain, via the platform, the temporal certification of information and actions that cannot be refuted even by the subject that initiated or requested the input.

These peculiarities make Blockchain technology applicable in various design areas such as simple **document certification (electronic signature)**, **managing entire process workflows**, **electronic voting** and **supply chain** applications for products or services.

NET SERVICE: SOLID BASES FOR STABLE STRUCTURES

Net Service uses *open source* codes of the main cryptocurrencies as a starting point in order to develop its own *software* based on Blockchain technology:



ethereum



Litecoin



Bitcoin



EOS



HYPERLEDGER



Blockchain data certification



B-Cert enables any organization to obtain a unique certificate of successful registration on public Blockchains (i.e. Bitcoin, Ethereum, LiteCoin) for each type of file or digital registration.

B-Cert works as a notarization system that is useful in guaranteeing the existence and immutability of specific digital content upon registration as well as the ownership of the information, so as to be in a position to demonstrate its integrity at any time and in a transparent manner.

B-Cert protects the content: the system allows to certify a "unique imprint" on Blockchain of the original file or message, thus preventing any form of manipulation or repudiation.

Organizations can thus demonstrate, at any time, the truthfulness and ownership of the information by obtaining validation via B-Cert or directly by interrogating the Blockchain without the mediation of any information system.



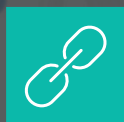
Certify your personalized files or messages on Bitcoin or Ethereum public Blockchains



Check if your file is already certified on Blockchain



Manage your certifications via the control dashboard



Attach your personalized messages to the certification



Share the certificate and the original file



Import the files to be certified from your Google Drive or Dropbox accounts.

Case study

CERTIFICATION OF A PRIVATE COMPANY



Designers import the stages of design progress through BIM standards on B-Cert and share them with customers.

Operators upload a photo from the site through the B-Cert app on their smartphone, certifying the status of the work. The site manager, upon accessing B-Cert, shares the certificate and the link of the site's image with the customer.

The works director uploads the certificate of the proof of the cement compression for specific casting to B-Cert, thus guaranteeing the document's anti-counterfeiting process.

B-Cert certifies all the Company's technical and administrative documents on a daily basis, in a massive manner and completely independently, thus guaranteeing the date and immutability of the files.

Case study

CERTIFICATION OF A UTILITY COMPANY



Operators upload a photo of the meter via the B-Cert app on their smartphone, thus certifying the meter reading status.

B-Cert periodically certifies all files in a massive manner and completely independently, thus guaranteeing the date and immutability of the readings.

The files are uploaded to a long-term digital storage system, for any possible disputes.

The customer then receives the B-Cert warranty certificate on the invoice and can contact an operator to view the corresponding photograph.



ENTERPRISE SERVICES

- Desktop application
- Personalized certification systems on private Blockchains
- API Integration
- Custom user certification
- Private storage files readings
- Massive certification system
- File saving on private platforms

MAIN APPLICATION SECTORS

- Utilities
- Industry
- Law
- Consulting
- Arts and Music
- Intellectual Property

SUPPORTED BLOCKCHAIN



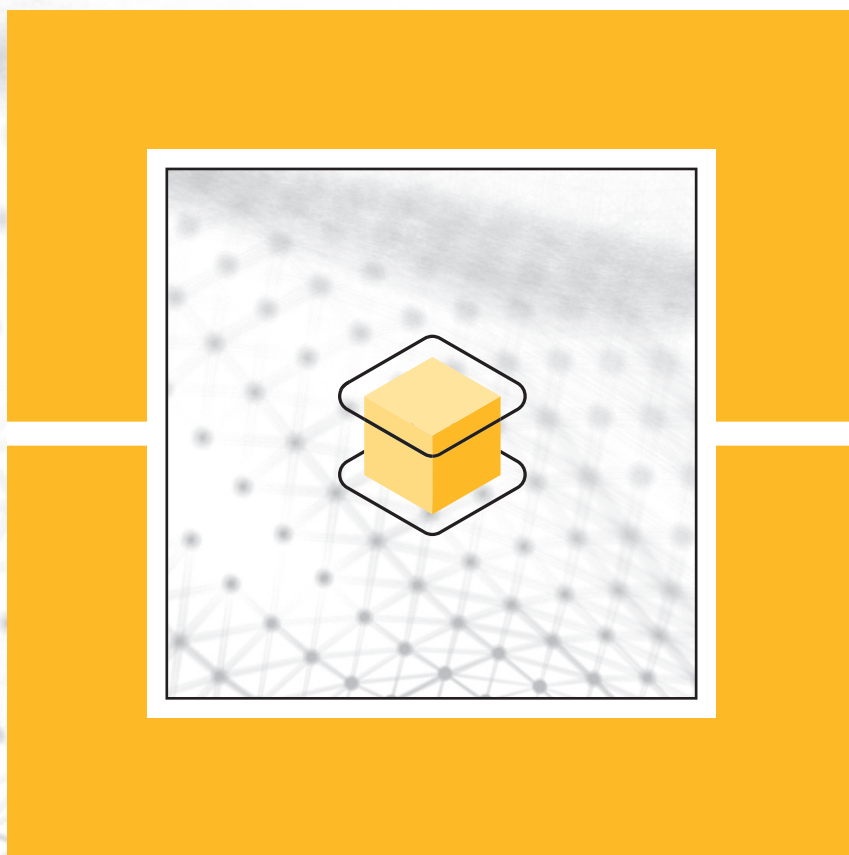
ethereum



Bitcoin



For certifying and tracking
production processes



B-Supply is a certification and tracking solution for production processes based on Blockchain.

B-Supply records, in a permanent, immutable and punctual manner, all the progresses of the production process phase with the help of Smart Contracts.

B-Supply represents valid support for quality control within its production chain and limits the risks of counterfeiting, in order to protect the authenticity of the product and the correctness of the processes.

Certification on Blockchain guarantees that organizations are provided with the maximum transparency in tracing the entire life of the product, including the information collected during the transformation processes (i.e. from raw materials to the finished product).



Design and configure the system based on the supply chain or your production process.



Register, in a permanent and punctual manner, all the development phases of the production chain.



Associate and certify any document relating to the process: transport documents, delivery notes, analysis and compliance documents, etc.



Integrate B-Supply with IOT devices to fully automate registration processes and limit the burden on operators, thus reducing the risk of incorrect manual certifications.

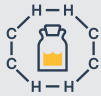
Case study

CERTIFICATION OF THE PRODUCTION CHAIN OF A VINTAGE WINE



The landowners

via the B-Supply app, register their vineyard on their smartphone.



The agronomist and the farmer

record the treatment carried out on the vineyards, with or without additional documents.



The grape harvest and weighing

are also recorded and certified on Blockchain.



The analysis laboratory

records the results and certifies the digital fingerprint on Blockchain through B-Supply.



Inspectors

(i.e. from the Consortium for the Protection of Wine) examine the certified production process and in turn record their approval.



The producers

sell the lots of their wine to retailers and the respective tokens are transferred, guaranteeing the change of ownership and the anti-counterfeiting of the product.



Consumers

via the B-Supply app, read the bottle label to discover the wine's entire history, right back to the vineyards that produced it.

ENTERPRISE SERVICES

- Support in integrating existing legacy systems
- Create document management systems to support the production process
- Create applications for Clients or Final Customers
- Provide advice and support for the use of Blockchains within their production context
- Integrate management software with existing processes
- Integrate automatic certification on Blockchains with existing IOT devices

MAIN APPLICATION SECTORS

- agrifood
- logistics
- industry
- health
- fashion
- energy

SUPPORTED BLOCKCHAIN



ethereum



ethereum
classic



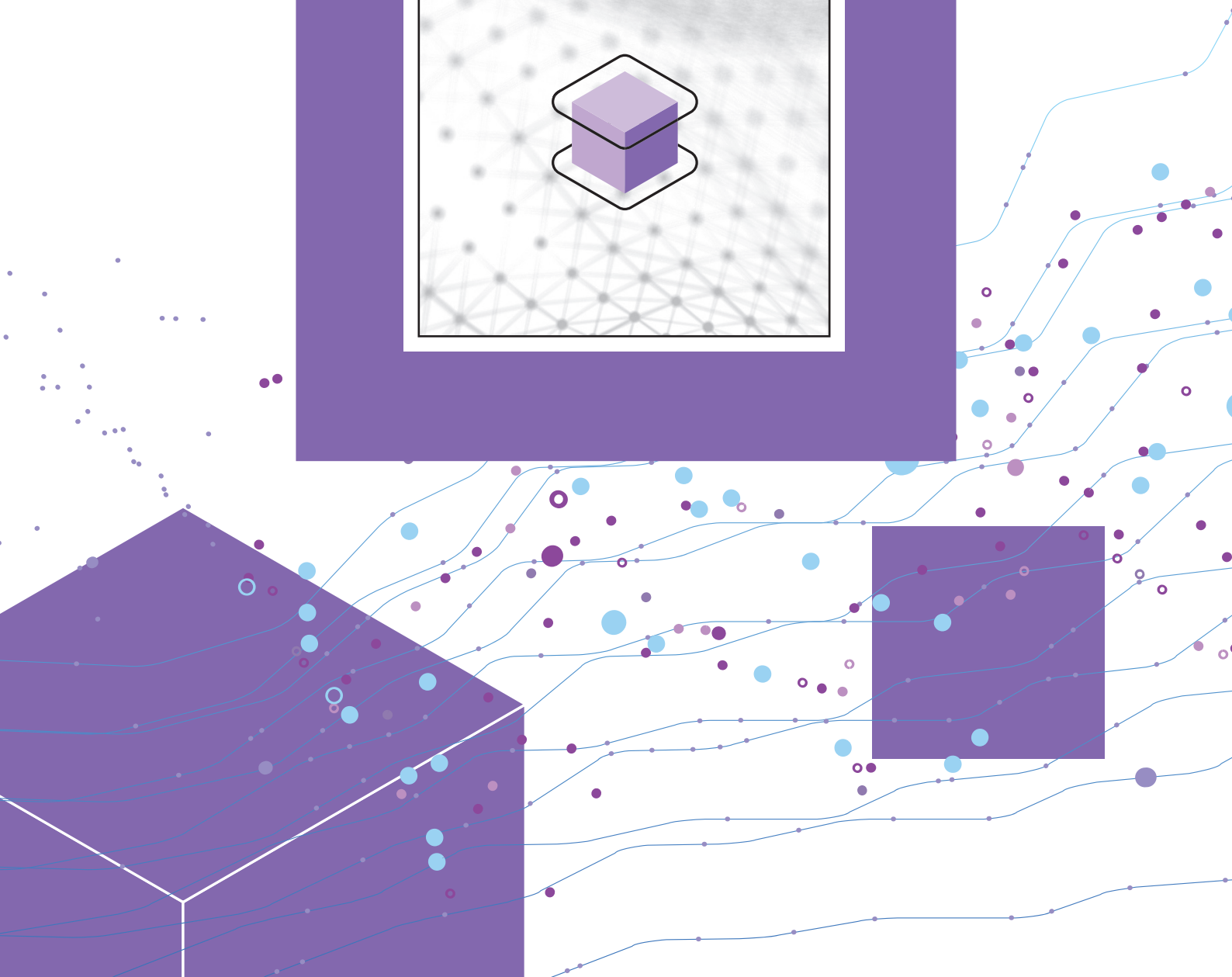
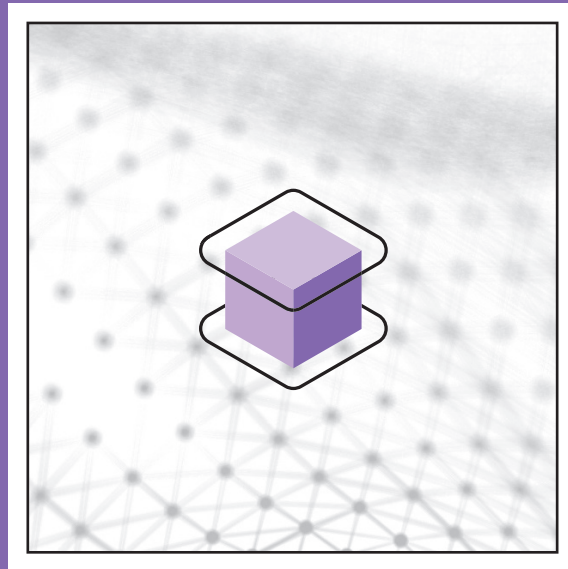
Bitcoin



Litecoin



The innovative integrated
electronic voting system



For improved management of the electoral event

B-Voting (Blockchain-Voting) is the innovative electronic voting system developed by Net Service, integrated with one or more electoral event management procedures (system set-up, distribution of credentials, voting, collection of ballot papers, counting of preferences, publication of results).

B-Voting overcomes the current limits of the so-called *e-voting* systems, releasing the voting organizer from the responsibility of guaranteeing anonymity and non-alterability of the vote and transferring these guarantees to the platform itself.

B-Voting guarantees the essential requirements that must be met by a digital voting system, particularly in the event of an elective vote, such as:



The non-traceability of a voter's vote



The non-alterability of a voter's vote



The verifiability of the vote by the voter



The verifiability of the vote count

Case study

IMPLEMENTATION OF AN ELECTRONIC BALLOT BOX
SO AS TO MANAGE THE ENTIRE VOTING PROCESS
OF AN INSTITUTION'S ADMINISTRATIVE ELECTIONS.



Phase 1 | Preparation

Forwarding OTP: all those that have the right to vote receive a unique (anonymous) key created by a QR-code and proceed to the next registration phase.

Generating Users: an account is created on the Blockchain, called "wallet" to allow the subsequent voting and verification procedures.

Wallet initialization: the Institution's wallet is created and filled with the necessary cryptocurrency (voting fund) which is transferred to all the wallets recorded in the previous phase, in order to allow future voting.



Phase 2 | Voting procedure

Voting launch: the Institute starts the voting procedures by initiating the voting smart contract. Users, after receiving the notification on their wallet, proceed to vote.

Voting expression: the voting exercise provides for the encryption of the chosen list through the Institution's public key and subsequent writing of the encrypted vote on the blockchain.

Collecting the votes: the vote collection is exclusive to the Institution via a smart contract method (API), enabling it to know in real time the number of voters that expressed a vote.

Voting closure: The Institution initiates a private smart contract method to end the collection procedures. This stage provides details of how many voters actually voted.



Phase 3 | Count

Decryption of votes: the encrypted information (individual votes) is decrypted using the private key of the vote (secret) and finally the vote is displayed on the smart contract count.

Count: the counting process (smart contract) provides for the real-time calculation of the outcome of the voting.

Verification: each voter, through the smart contract count, will be able to initiate the methods that will enable them to know the counting process in real time.

Publication of the results: the voting ends upon publication of the results.

THE ADVANTAGES OF THE B-VOTING PLATFORM



Transparency

Based on the Smart Contract paradigm, B-Voting guarantees the publication of all the specifications and rules used to ensure the highest level of transparency in the voting process. It also allows to check the outcome of the voting transaction at any moment.



Flexibility

The platform is configurable, so as to allow customers to set up their own voting model. The system can be released both as a Web Application and as a mobile DApp.



Safety

Using Blockchain in a system like this means securing the immutability of the secret ballot for each voter and the expression of a single vote per voter (Privacy by Design).



Traceability

All transactions are traceable at every stage. It is thus possible, via the platform, to also establish with certainty the transaction's origin.



Disintermediation

Transactions are managed without intermediaries and without a central management authority.



Limited maintenance

Developing B-Vote in Open Source, through Blockchain technology, means savings in management costs. In fact, by nature, systems developed using Blockchain do not require major maintenance.



Further features

The platform is agnostic and can therefore operate on any type of Blockchain, whether it be public, private or a consortium. The Blockchain technologies currently supported are Ethereum, Hyperledger, EOS.

SUPPORTED BLOCKCHAIN



ethereum



EOS



HYPERLEDGER



NET SERVICE S.p.A.

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Roma

Lecce

Rende

Cagliari

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NET SERVICE INFORMATION TECHNOLOGY LTD

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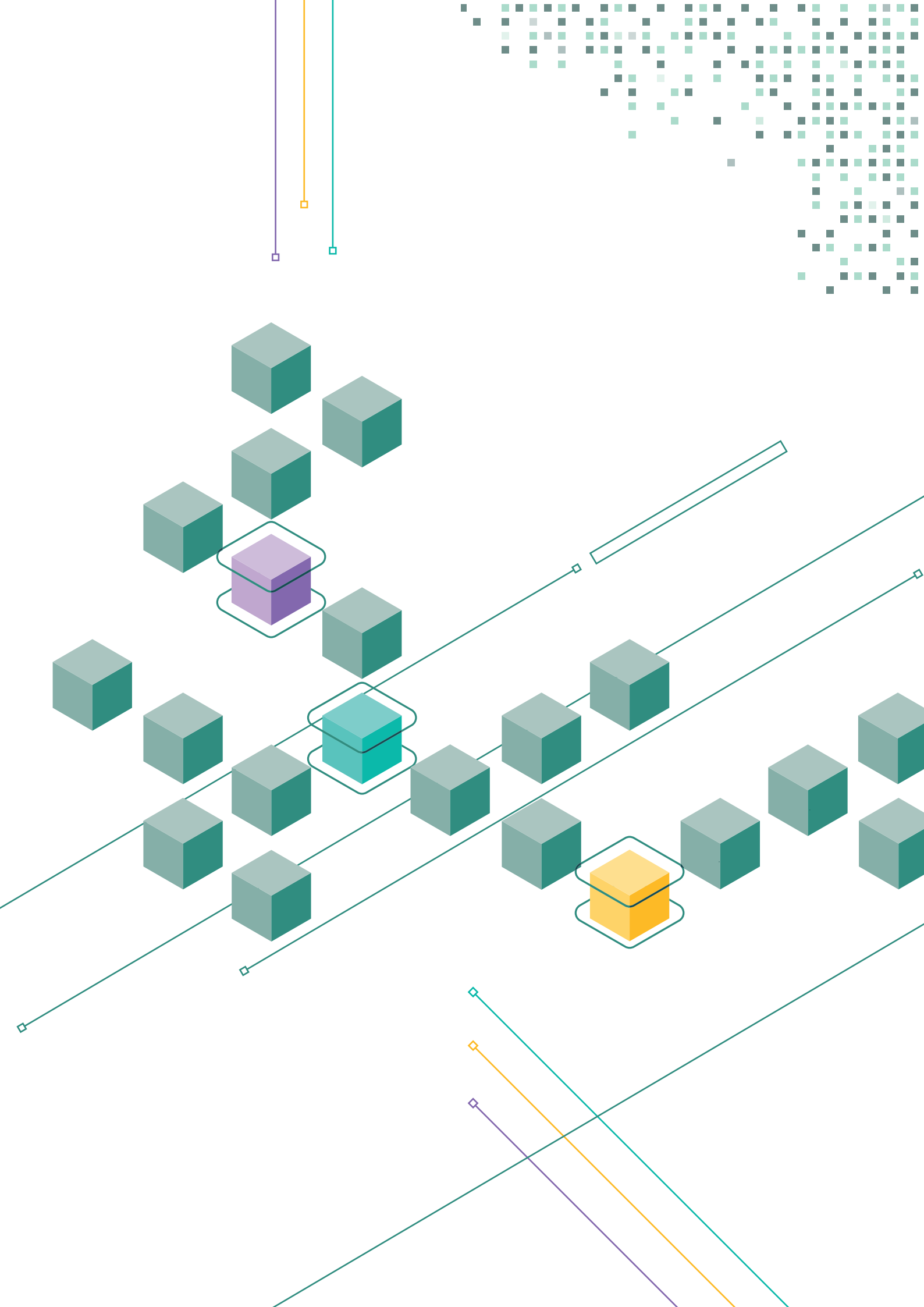
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