Spunta Case Study

Fast and Transparent Interbank Reconciliation Powered by Distributed Ledger Technology

The Italian banking industry and leading technology providers pioneer the use of blockchain, with a live application transforming interbank reconciliation

> Corda was perfect for the Spunta process for many technical reasons... And we have a great partnership with R3
>
> Silvia Attanasio,
> Head of Innovation,
> Italian Banking Association

ABI Lab's Spunta at a glance

Platform: Corda Enterprise, R3

Business Network Operator: SIA

Business Network Governor: ABI Lab

Application Designer: NTT data

Early Adopters: 18 Italian banks/banking groups

About Spunta

Spunta Banca DLT is a private permissioned distributed ledger technology-based project for interbank reconciliation, promoted by ABI, the Italian Banking Association, and coordinated and implemented by ABI Lab, the banking research and innovation center. In March 2020 the DLT-based system was implemented across the Italian banking sector and in October 2020, 100 banks went live and switched off the legacy process. 91% of the nation's banks now use the Spunta Banca DLT. Powered by R3's Corda Enterprise, the new application streamlines and automates the reconciliation of transactions, improving governance of the overall "spunta" process, and moving from lengthy error prone settlements, to real-time management of the reconciliation process. In one of the world's most successful consortiums, ABI Lab; SIA, which provides the network infrastructure through its SIAchain network; NTT DATA, handling technical elements such as design and end-to-end support; and 18 Italian banks/banking groups, all participated in the development testing phases, delivering industry wide transformation through R3's Corda Enterprise DLT[1] platform.

The industry problem

The reconciliation process for interbank transactions in Italy—formerly governed by the "spunta" process—has been notoriously complex. With multiple parties involved, the task of identifying and addressing inconsistencies has historically been hampered by a lack of standardization, the use of piecemeal and fragmented communication methods, and no "single version of the truth". As a result, resolving mismatches in transactions has been a labor-intensive and time-consuming process. These issues made the "spunta" process an ideal candidate for automation through blockchain technology.

The solution

Every day over 600 users wake up, access their bank's node via the application and start transacting. The solution enables banks to pinpoint mismatches in interbank transactions quickly by sharing common data in a secure way; performing checks and exchanges directly within the application; and using standardized processes and communications for correcting issues. The solution's smart contract technology also provides banks with automated feedback on their transactions. The results include lower operational risk and faster, more transparent processes–all delivered through a highly user-friendly interface.

The outcome

Within the first 6 months, Spunta Banca DLT has processed 204 million transactions—achieving an automatic match rate of 97.6%. Powered by Corda Enterprise, the 100 banks currently on the network have used Spunta DLT as the only reconciliation method between them since October 2020. The next step will be to run the application at full capacity 24/7, with an estimated total volume of 8.4 billion transactions or more per year.

> **Everybody is on the same page, sharing the same roadmap. We're focusing on scalability. We designed the network to scale very fast to the production phase.**
>
> **Mattia Ozzello, Product Manager, SIA**

1 Distributed Ledger Technology (DLT) and blockchain are used interchangeably

The pain point

A legacy of complex and fragmented interbank reconciliation processes

Historically, the reconciliation process for interbank transactions in Italy—known as "spunta" in Italian—has been notoriously complex. The aim of the process is to ensure that the banks at each end of a transaction are in complete agreement about every aspect of it. However, if the banks don't agree, then resolving the mismatch has traditionally been a labor-intensive and time-consuming process.

For decades, these shortcomings have meant that the need to reconcile transactions with other banks has been a significant headache for financial institutions in Italy—and in many other countries across Europe, where banks face similar problems. This is because, with multiple parties involved in reconciliation, the task of identifying and addressing inconsistencies has been hampered by a lack of standardization, the use of piecemeal and fragmented communication methods like phone, email and even fax, and the non-availability of a "single version of the truth" that both sides can rely on.

R3 identified that the legacy characteristics of "spunta"—slow, inefficient processes hampered by a lack of transparency and consensus—made interbank reconciliation an ideal candidate for streamlining and automation through its Corda Enterprise blockchain solution. Silvia Attanasio, Head of Innovation of the Italian Banking Association (ABI), agrees that interbank reconciliation presented an ideal use case for blockchain because of the challenges within it.

"From the very beginning, it was very important to have a real business need that we could address with distributed ledger technology (DLT)," she says. "The spunta process in Italy is reliant on a special kind of correspondence account—and so long as the ownership of the accounts rests with one bank, the other party can't see anything. So, the first need was for more transparency. The second was better efficiency in the matching rules and matching activities. And the third was better handling of the movements that needed further investigation."

Delivering the solution

The secret of a successful consortium led DLT

The development and piloting of a blockchain-based solution to transform "spunta" was driven by a pioneering collaboration between R3 and several leading participants in the Italian banking ecosystem. ABI Lab, acted as leader of the initiative, guiding and coordinating the activities of all the other parties.

"The project activities, coordinated by ABI Lab, involved a community of over 150 representatives from the pilot banks, and more than 80 people from the development team, SIA, NTT DATA and R3," explains Romano Stasi, ABI Lab Managing Director.

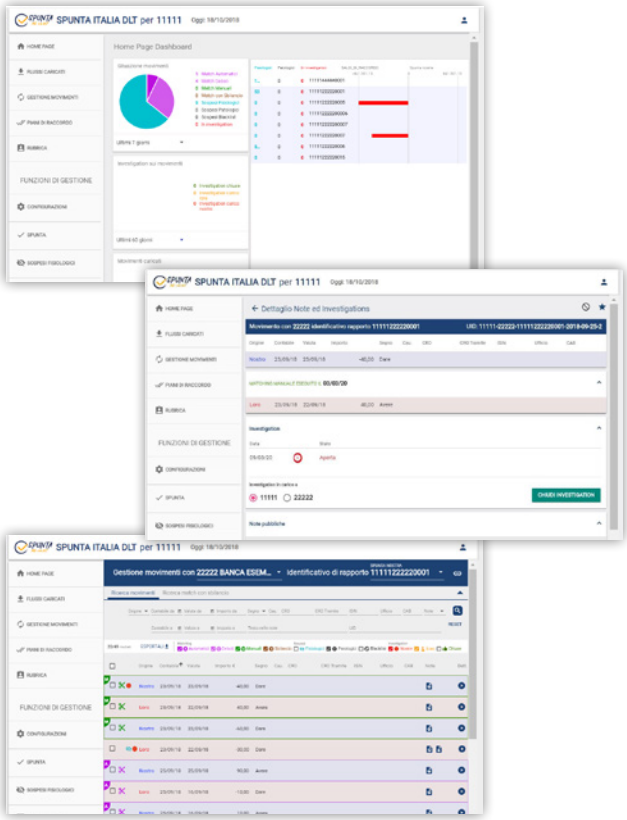
SIA—which runs the primary payment mechanism in Europe, supporting 40% of transactions in the Single Euro Payments Area (SEPA)—provided the network infrastructure through its secure and protected network, SIAchain. Meanwhile, NTT DATA carried out the technology advisory work as well as the design (CorDapp and UX), development and deployment of the solution, alongside providing end-to-end support. Also involved in the initial development of Spunta—and the successful proof-of-concept that followed—was a grouping of 18 Italian banks, including leading players such as Intesa Sanpaolo and Banca Mediolanum.

> **"Every morning more than 600 operators from 100 banks open their laptops and have access to the nodes to start instantly transacting.**
>
> **Romano Stasi, Managing Director, ABI Lab**

Corda Enterprise emerged as the obvious platform choice, reflecting the fact that it has been designed from the ground up to meet the exacting standards of the financial services industry, and had close compatibility with the technical competences already in place in the banks.

"Corda was perfect for the Spunta process for many technical reasons," explains ABI's Silvia Attanasio. "We needed to be able to set up and change bilateral channels very easily. Also, information sharing on the Corda platform, based on the need-to-know principle, was fit for purpose for Spunta. It was very useful for us to have the ability to archive information because we cannot have all the history of the Spunta on the ledgers. And this helped us to build some functionalities that made the Spunta application compliant with the GDPR requirements, because we have some personal data in the process."

Fig. 1: Spunta Banca DLT application in production



She continues: "Another thing that was really useful is that Corda Enterprise is from R3, and we have a great partnership with R3. It was possible to speak with the solution engineering team at any time. We had a great contribution from the people at R3, and this collaboration [between all the parties] was really a key part of our success. Distributed technology implies distributed governance, and Spunta isn't the ABI Lab's project, it's the banks' project. This means that we voted a lot and decided a lot altogether. This is not easy, but it has been very important for the success of the project."

Zeroing in on the Corda platform's technical advantages, a key aspect of its design is its ability to segregate data on the distributed ledger and control who sees what information. The resulting capability to maintain privacy and confidentiality for the most sensitive data was vital for the Spunta application.

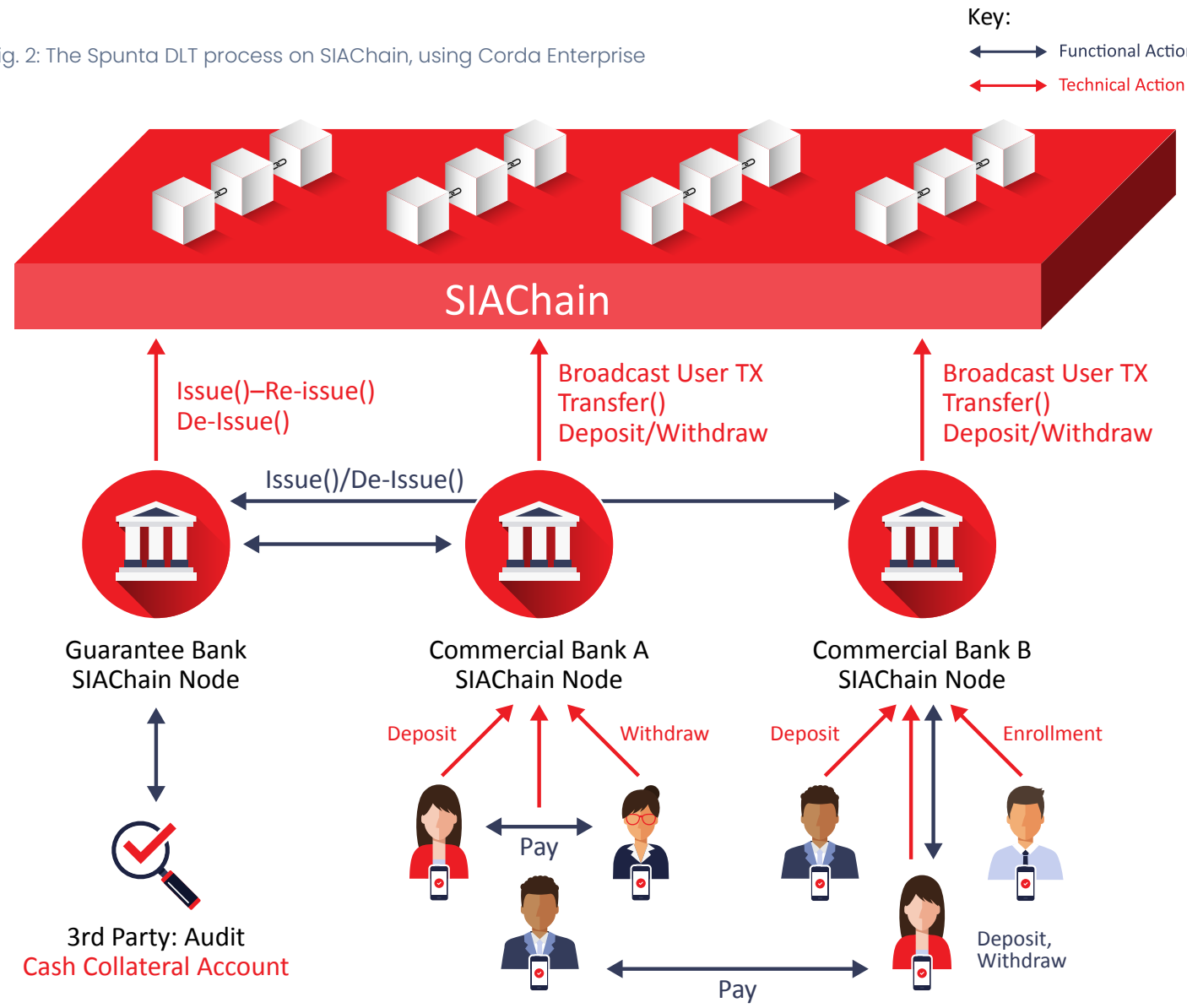
Following an initial Proof of Concept in 2018, where 2 million movements were uploaded to a 14-node infrastructure corresponding to the 14 banks, final pre-production testing was carried out in 2019 representing the movement of a whole year's worth of data on a 32-node infrastructure.

In March 2020 the first group of 17 banking groups—corresponding to 32 different banking entities—went live on the Spunta application. In September 2020, the legacy Spunta process was halted, with all banks in Italy mandated to use the new process—which they are now doing. Spunta Banca DLT, powered by Corda Enterprise has made the interbank reconciliation process faster, more efficient and more transparent. As opposed to the old process, transactions are reconciled daily, not monthly.

The Spunta members for the development and proof-of-concept phases:

- **18 Italian banks/banking groups,** including Intesa Sanpaolo and Banca Mediolanum.
- **ABI Lab:** A consortium of 122 banks and 70 ICT providers, focused on research into the use of innovative technologies to manage processes, channels and security in banking.
- **NTT Data:** A leading global IT innovator, delivering technology-enabled services and solutions to clients around the world.
- **SIA:** European leader in the design, creation and management of technology infrastructures and services for financial institutions, central banks, corporates and the public sector.
- **R3:** The leading enterprise blockchain software firm, working with a broad ecosystem of more than 350 participants across multiple industries from both the private and public sectors.

Fig. 2: The Spunta DLT process on SIAChain, using Corda Enterprise



The results achieved

Francisco Spadafora, Blockchain Lead, NTT DATA re-iterates, "The Spunta project was truly a group effort by ABI Lab, NTT DATA, SIA, and of course R3 who was a true partner—supporting us at every critical phase and integrating requested features. As the lead adviser and designer, NTT DATA is proud of the fact that this project will provide one node for every Italian bank and deliver a framework for new applications to be developed and deployed."

Additional Results

- Matching rules are common, shared and executed consistently on the Corda ledger
- Suspended movements can be investigated using common or customized rules to significantly reduce operational inefficiency
- All the participating banks can benefit from real time management of the reconciliation process
- There is standardization of both the process and the communication protocol
- The ledger provides full visibility of counterparty movements at any time
- Interaction between the banks is integrated on the same platform, with communication tracking

Drilling down into the detailed results from the proof-of-concept, ABI's Silvia Attanasio highlights three key benefits that emerged for the banks taking part in the trial. "The first benefit was that the banks gained full visibility of all the information about the accounts, both 'nostro' and 'vostro', via a dashboard," she explains. "Traditionally, getting this information has required as many phone calls as the number of involved parties, and waiting for the answer from each one."

The second benefit was the robust, shared automatic matching enabled by the solution—again displayed on the dashboard, together with any suspended movements. And the third benefit was the communication channel integrated into the application.

In the process of going to production, the consortium has proven the potential of the Corda platform's key features—immutability, security and transparency—enabling the Italian banking sector to simplify processes, increase communication and drive interconnectivity to bring value to every participant in the ecosystem.

Banca Mediolanum's Demetrio Migliorati is proud of what's been achieved. "Mediolanum was brought in to help push the project and co-operate strongly to help it succeed," he comments. "Today the system is up and running, the performance is good, and the volumes are there. We had a plan—a very important plan—to make this a system-wide solution that could be used by all Italian banks. And now the Italian banking industry, which is normally under the radar, is the first entire banking system to use distributed ledger technology in production."

204 million completed transactions by October 2020

8.4 billion projected yearly transactions

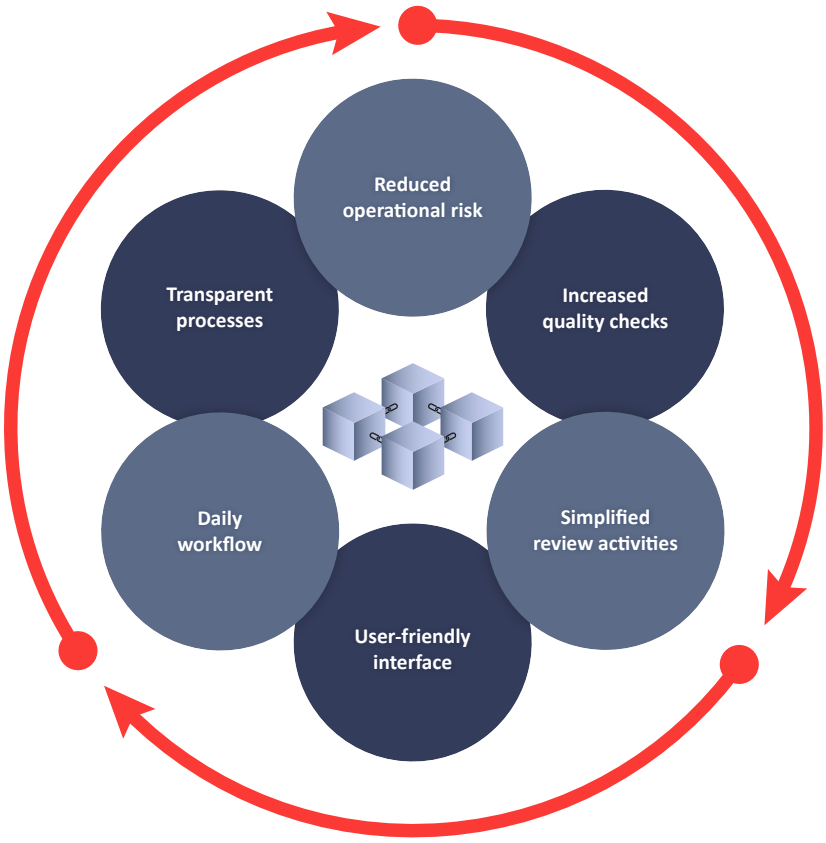
Key success factors

- **Joint analysis** of the requirements **between banks, ABI Lab and NTT Data** with one-to-one meetings and sessions with banks
- **UX Design** done together with bank operators (final users)
- **Collection of feedbacks** during UAT sessins with bank operators
- **Performance test** with simulated data and real data in a geographically distributed infrastructure (to represent the real production environment)
- Close collaboration and almost daily contact between all the actors **NTT Data, SIA, R3, banks, ABI Lab** and **ABI**
- **Flexibility and responsiveness** in dealing with the challenges related to the level of innovation of the whole project

Attention points

- Governance definition
- Use case costs: running + infrastructure
- Integration with internal systems of each bank
- Migration plan
- Testing in a production-like scenario and environment
- Avoid any lock-in
- Legal and contractual model

Fig. 3: Why blockchain for the Spunta process?
By bringing immutability, security and a golden source of truth to multi-party transactions, DLT automates reconciliation, reduces risks and drives transparency across the Spunta process.



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> **Silvia Attanasio,**
> **Chief Innovation Officer, ABI**

Next Steps

Starting in March, the Spunta infrastructure has processed 204 million transactions related to the 55 banks who migrated in the first two waves—March and May 2020. Resulting in an estimated 350 million processed transactions by the end of 2020, with processing occurring only one hour per night. Today, the network has reached 100 banks and represents a total of 91% of Italian banks now exchanging interbank data on Corda.

Mario Costantini, CEO & GM of Neva Finventures, Intesa Sanpaolo explains: "We can really spread the ecosystem in Italy, and use this platform for many different use cases, from syndicated loans to anti-money laundering to know-your-customer and so on. We will all keep working together to really leverage the full potential of this technology."

The next step after this will be to extend the Spunta application to a European level. This will involve ABI Lab and the other partners in Italy working with banks in other European countries to define the requirements created by the characteristics of the 'nostro' and 'vostro' account process. ABI's Silvia Attanasio says this strategy mirrors the consultative, collaborative approach that has proven so successful in Italy. "We are used to working like this," she says. "We work with the banks to agree on the correct basis of the process in order to best develop the application that will help the operators. So, the next step will be to set up a working group of European banks to start this new part of the journey."

Continue the conversation

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About R3

R3 is an enterprise software firm that is pioneering digital industry transformation. We deliver purpose-built blockchain technology for all types of businesses in all industries.

Developed in collaboration with our ecosystem, our enterprise blockchain platform Corda is transforming entire industries by digitalizing the processes and systems that firms rely on to connect and transact with each other. Our blockchain ecosystem is the largest in the world with more than 350 institutions deploying and building on Corda and Corda Enterprise. Our customers and partners have access to a network of leading systems integrators, cloud providers, technology firms, software vendors, corporates and banks.

To ensure our customers derive the greatest value from their investment, we provide services and support to shorten time-to-market, as well as guidance on implementation, integration and building ecosystems based on a blockchain platform. Learn more at **r3.com** and **corda.net**.

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