



Case Study

Italian banks pioneer the use of Corda Enterprise for interbank reconciliation—opening the way to a full production roll-out





The current reconciliation process for interbank transactions in Italy—known as “spunta” in Italian—is 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. However, if the banks don’t agree, then resolving the mismatch can be labor-intensive and time-consuming, partly due to the lack of a standardized procedure and communication method.

Now, thanks to a pioneering collaboration between R3 and several leading participants in the Italian banking ecosystem, there is a faster, more efficient and more transparent way of reconciling interbank transactions. A group of 17 Italian banks—including leading players such as Intesa Sanpaolo and Banca Mediolanum—has collaborated with R3, the ABI Lab research laboratory, the application developer NTT DATA, and the decentralized network infrastructure provider SIA, to run a successful proof-of-concept for a blockchain-enabled interbank reconciliation system based on R3’s Corda Enterprise.

The trial ran for 10 months and concluded in October 2018, with the participating banks processing a total of 1.9 million transactions. The project confirmed an interbank system underpinned by R3’s Corda Enterprise blockchain platform can help the counterparties on each side quickly identify and address any mismatched transaction, boosting

speed and transparency while reducing cost and effort. With the proof-of-concept successfully completed, the group is now working towards testing the solution in daily operations across the entire Italian banking sector (around 200 banks) in 2019.

Harnessing Technology and Collaboration to Transform Interbank Reconciliation

For decades, the process of reconciling transactions with other banks has been a significant burden for financial institutions in Italy and many other countries. This is because the task of identifying and addressing inconsistencies has been hampered by a lack of standardization, piecemeal and fragmented communication methods, and the non-availability of a “single version of the truth” that both sides can rely on. R3 identified some time ago that these characteristics—slow, inefficient processes hampered by a lack of transparency and consensus—made interbank reconciliation an ideal candidate for streamlining and automation through its Corda blockchain solution.



The “Spunta” proof-of-concept project in Italy was powered by close collaboration and co-innovation between all the participants, with each playing a key role. ABI Lab, the innovation center promoted by the Italian Banking Association, acted as leader of the initiative, guiding and coordinating the activities of all the other parties. 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.

This was integrated with R3’s Corda platform to enable customers to run CorDapps, which are applications designed specifically to solve real-world customer problems across any industry. NTT DATA did the advisory, design (CordApp and UX), development and deployment of the solution and provided end-to-end support. Meanwhile, R3 collaborated with all the partners—including the 17 participating banks—to help address any issues that arose and support the entire process, including co-developing some modifications to Corda Enterprise specifically for the Spunta project

THE SPUNTA MEMBERS FOR THE PROOF-OF-CONCEPT PHASE:

- **17 industry-leading banks**, including Intesa Sanpaolo and Banca Mediolanum.
- **ABI Lab:** A consortium of 150 banks and 60 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 enterprise blockchain software firm, working with a broad ecosystem of more than 200 members and partners across multiple industries from both the private and public sectors.

Choosing the Ideal Use Case

The first step towards the Spunta project was to choose the optimal use case to tackle. Silvia Attanasio, Research Manager with ABI Lab, says interbank reconciliation was ideal because of the challenges with the current process. “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.”

Demetrio Migliorati, Head of Blockchain with Banca Mediolanum, agrees that interbank reconciliation represented an ideal area for testing out DLT. “When we first met the team from ABI Lab and they proposed this use case, it sounded perfect, because it’s a quite simple but very well-known issue for many banks,” he explains. “We could see that better distribution of this information between the different banks would give us tranquility.” Other participating banks add that the successful trial opens up new vistas of

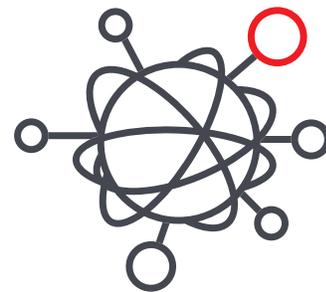
opportunity. Savino Damico, Head of Fintech Ecosystem Management and Monitoring for Intesa Sanpaolo, comments: “This is the beginning of a journey for banks in Italy using blockchain and DLT. As a banker, I think it’s crucial that the banks cooperate with each other to introduce and standardize this kind of technology, as this is the only way to reach the needed critical mass. I’m delighted that the technology providers that are part of this experiment are so engaged and proactive in stimulating and inspiring the banks on this journey.”

Why Corda Enterprise?

Having identified the use case for DLT to address, it was time for the Spunta participants to select the blockchain platform to underpin the application. And here Corda Enterprise emerged as the clear choice, reflecting the fact that it has been designed from the ground up to meet the exacting standards of the financial services industry. “Corda has high compatibility with other competences that are already in place in the bank,” explains ABI Lab’s Silvia Attanasio. “It uses languages they already know. So, it is not so hard for a technical person in the bank to become a Corda expert.” Banca Mediolanum’s Demetrio Migliorati agrees. “Corda was originally designed by banks for banks—so its design is very reflective of the challenges that this community faces.”

A key aspect of Corda's 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 is vital in financial services. Alfredo Tamburrini, NTT DATA's Senior Manager for Financial Institutions, explains: "The reason why we looked at blockchain technology was to find a matching algorithm that could help the use case in a distributed environment. Finding a technology that could assure these things in a way that were segregated was a key point. And of course, Corda Enterprise can do that job very well."

A further advantage of Corda Enterprise—one highlighted by several members—is its scalability. Mattia Ozzello, Product Manager for SIA, comments: "For us, the main challenge was in targeting a totally new infrastructure to be built upon the new technologies. This was a big job for SIA to engineer the infrastructure in a way that guarantees the service level that the use case requires. Also, since the technology is targeting several markets or communities at once, our main concern was related to the scalability of the model and technology. This was a very interesting challenge that we are still working hard to address with Corda Enterprise."



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Silvia Attanasio, Research Manager, ABI Lab

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Demetrio Migliorati, Head of Blockchain, Banca Mediolanum



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 in the near future.

Francisco Spadafora, Blockchain Lead, NTT DATA

Looking beyond technology, Francisco Spadafora, Blockchain Lead with NTT DATA, mentions a further benefit of working with R3: the company's ability and readiness to collaborate closely with all parties.

Conducting the Trial – and Assessing the Results

With the use case and technology platform agreed, the group moved ahead to conduct the proof-of-concept itself. To prepare for it, two months of real data covering a total of 1.9 million movements were uploaded to a 17-node infrastructure corresponding to the 17 banks participating in the Spunta project. Over the 10-month trial, the Spunta participants demonstrated successfully that Corda Enterprise made the interbank reconciliation process faster, more efficient and more transparent. These outcomes resulted from its ability to help the banks pinpoint mismatches in interbank transactions quickly through sharing common data in a secure way; perform checks and exchanges directly within the application; and use standardized processes and communications for correcting issues. Also, the system's smart contract technology provided the

participating banks with automated feedback on their transactions, further simplifying and accelerating the end-to-end reconciliation process.

Drilling down into the detailed results, ABI Lab's Silvia Attanasio highlights three key benefits that emerged for the banks taking part in the trial. "The first benefit is that the banks have full visibility of all the information about the accounts, both 'nostro' and 'vostro', via a dashboard," she explains. "Today, getting this information requires as many phone calls as the number of involved parties and waiting for the answer from each one." The second benefit is the robust and shared result of automatic matching—and again you can see all this on the dashboard, together with any suspended movements. And the third benefit is the communication channel integrated into the application."

She continues: "Today, the channels most commonly used are phone calls and emails. If a suspended movement is being investigated, the expert from one bank writes an email to their counterparty, and then simply copies and pastes the text of the email into the notes on the internal system to track the exchange with the other party. With the Spunta application you can create the message, send it to the counterparty, and have tracking on the information if you need to attach something else, such as a document. It also tells you whose turn it is to respond—which is a feature that we've found the users really love."



Next Steps: Scaling Up – and Expanding the Scope

The high level of performance produced by Corda Enterprise during the proof-of-concept opened the way to the next phase of testing. Work is now being done on a more substantive test of the processes in the field, involving the participating banks working on a daily basis with the new application—with the goal of going into live production for spunta transactions in 2019.

How would the participants sum up what the project has delivered? NTT DATA's Francisco Spadafora explains: "What's been achieved is testing of the application, with 1.9 million movements for 17 nodes at an acceptable performance. Next, we'll start testing Corda Enterprise for production. That means testing with about 200 banks and one year of data—so there won't be just 1.9 million transactions, but maybe hundreds of millions of transactions inside the platform. After that we'll be sure whether we can go in production with Corda not just with some banks, but across the entire Italian banking system. That's the next goal for everyone involved in the project."

“Everybody is on the same page, sharing the same roadmap. We're focusing on scalability: having achieved a great performance in the test space, we're now scaling to a more advanced test phase with 200 banks. We designed the network to scale very fast to the production phase. And while there are lots of things to be addressed in the next few months, we believe in the future success of the project. And we're on track for the first transactions to take place in live production in 2019.

Mattia Ozzello, Product Manager, SIA



In my view, it's important now to consolidate this use case and demonstrate that it runs with high volumes. Secondly, we can really spread the ecosystem in Italy, and use this kind of platform for many different use cases, from syndicated loans to anti-money laundering to know-your-customer and so on.

Mario Costantini, General Manager of Innovation Center, Intesa Sanpaolo Innovation Center

An Achievement to be Proud Of

So, what does all this mean for the banks who will ultimately use the Corda-based Spunta application? Mario Costantini, General Manager of Innovation Center, Intesa Sanpaolo explains: "In my view, it's important now to consolidate this use case and demonstrate that it runs with high volumes. Secondly, we can really spread the ecosystem in Italy, and use this kind of 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."

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 likely to be the first entire banking system to use distributive ledger technology in production. I think this is a great achievement—and one that should make the partners in the Spunta project proud of what we've delivered together."

About R3

R3 is an enterprise blockchain software firm working with a broad ecosystem of more than 200 members and partners across multiple industries from both the private and public sectors to develop on Corda, its open-source blockchain platform, and Corda Enterprise, a commercial version of Corda for enterprise usage.

R3's global team of over 180 professionals in 13 countries is supported by over 2,000 technology, financial, and legal experts drawn from its global member base.

The Corda platform is already being used in industries from financial services to healthcare, shipping, insurance and more. It records, manages and executes institutions' financial agreements in perfect synchrony with their peers, creating a world of frictionless commerce.

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