Case Study: RTI Blockchain & Ledger Leopard make tracking returnable transport items as easy as online banking with Hyperledger Besu

RTI Blockchain
- Startup founded in 2018 in the Netherlands

Goals
- Simplify tracking of Returnable Transport Items (RTI)
- Develop a solution that’s as easy and intuitive as online banking
- Build trust with—and among—all links on the supply chain

Approach
1. Challenge standard operating practices
2. Partner with industry pros
3. Choose the right tools
4. Develop a solution that’s intuitive and easy to use
5. Get feedback from users and iterate

Results
- Launched RTI Dashboard, which streamlines RTI tracking for users
- First customers link/invite other customers without our intervention
- 100% up and running within 30 minutes (plug and play)
- Users in the Netherlands, Belgium, Germany, and the Nordic region
A complicated and expensive problem

Most of the products we use and consume every day are transported on Returnable Transport Items (RTI). Durable and reusable, RTIs like crates, pallets and containers, allow producers to move goods efficiently and sustainably.

Today, there are about five billion pallets circling the globe. In the Netherlands, it is estimated that there are over a trillion RTIs transported every year.

As you may imagine, tracking RTIs is often a logistical nightmare.

Every link in the supply chain sets up logistical processes to track their RTIs on their journeys. But these systems and processes are often different. Ultimately, tracking RTIs is expensive, time consuming, and doubles the administrative burden for all parties.

Waking up from a logistical nightmare

For the past five generations, the Netherlands-based Vishandel Klooster has been supplying markets with smoked fish.

Like many producers, Vishandel Klooster uses RTIs to deliver their products to retailers across the Netherlands.

When Milou Klooster joined the family business after completing her studies in International Business and Management, she soon discovered how much time, money, and energy her team was wasting on tracking RTIs. When she searched for a solution to this problem, she found there wasn’t any.

So Klooster decided to fix it herself.

She resigned from the company and partnered with consultant Yves du Bois to develop a digital approach to the problem. Working with blockchain-as-a-service company Ledger Leopard, they developed the RTI Dashboard—a simple and reliable way to manage load carrier administration.

Using blockchain technology, the RTI Dashboard gives poolers, suppliers, shippers, and receivers real time insights on their RTI data and enables them to share information privately and transparently. Every link in the supply chain is connected, and the interface is as intuitive as mobile banking.
Approach

Challenging standard operating practices

Klooster discovered that not only was there a massive amount of time, money, and effort involved in tracking RTIs, but there was also an inherent lack of trust festering among the links in the supply chain.

“It would be so much better if everybody was working from the same system,” says Klooster. “I realized someone had to stand up and change this drastically.”

Partnering with industry pros

Klooster had the idea to streamline RTI tracking. She understood how the supply chain worked from the producer’s perspective. And she needed a partner with a broader perspective on RTI logistics.

Enter Yves du Bois.

A self-employed consultant specialising in logistics, du Bois had expertise in financial administrative processes and the software companies use, especially for load carrier management. With 15 years of experience in this area, du Bois successfully completed multiple international optimization projects, and was always active on the cutting edge where business meets IT.

Together Klooster and du Bois founded RTI Blockchain. They got to work developing their first product—a reliable app that connects all members of the supply chain together in one dashboard and provides a real time overview of the status of their RTIs.

As they developed their dashboard, they were in constant contact with the supply chain. They spoke with producers, retailers, suppliers, and poolers to understand their pain points in the load carrier management process.

Once they had a clear picture of what they wanted to build, Klooster and du Bois brainstormed what format their solution should take.

“One of the reasons we chose blockchain was that the different parties didn’t trust each other,” says du Bois. “We needed the transparency and security you can only get with blockchain.”
Choosing the right tools

Klooster and du Bois hired Ledger Leopard to develop their dashboard. Based in Amsterdam, Ledger Leopard specializes in blockchain-as-a-service for a variety of industries.

Ledger Leopard Chief Technology Officer (CTO) Jeroen van Megchelen and his team met with Klooster and du Bois to determine their goals. RTI Blockchain explained what they needed, and Ledger Leopard took care of the back-end development as well as front-end design for web and mobile.

“We wanted to develop a solution similar to mobile banking apps,” says van Megchelen. “The most important thing is that it needed to be fast.”

First, the Ledger Leopard team considered Ethereum Liberty because it allows for private transactions. Then they considered Hyperledger Fabric. They also considered a combination of Ethereum and Hyperledger.

Ultimately, they chose Hyperledger Besu, an open source Ethereum client for developing enterprise applications that need secure, high-performance transaction processing in a private network.

Hyperledger Besu would enable Ledger Leopard to create an intelligent blockchain solution using smart contacts—and it would be fast.

“The technology stack is inexpensive to use, and it’s overseen by a larger group,” says van Megchelen. “That makes it very efficient.”
Developing a solution that’s intuitive and easy to use

One of the best features of RTI Dashboard is that users don’t need to know anything about blockchain to use it.

From the beginning, Klooster and du Bois were inspired by the simplicity of online banking.

“Everybody uses online banking, and nobody needs to hire consultants to implement it,” says Klooster. “You just download it and use it. We wanted RTI Dashboard to be just as easy and intuitive.”

Registration for all users is free. There is no subscription fee, no maintenance and support fees, no cost whatsoever for users. Senders pay per item they ship over the platform at a rate of 0.0005 euros per item.

Once a company registers in the Dashboard, they can invite their partners to join with a link. Once the partner clicks on the link, they’re invited to explore the platform and how it works, all at no charge.

One of the challenges that RTI Blockchain faced was supply chain integration. Some parties were uncertain about an entire supply chain working together on one platform. Hyperledger Besu has the ability to keep transactions private between involved parties, but some users needed to be convinced.

“To earn our users’ trust, we suggest they start small,” says du Bois. “Take one supplier and use RTI Dashboard for all transactions. Once they see what the system can do for them, they’re more willing to move their entire RTI administration process to the system.”

Getting feedback from users and iterating

Throughout the development process, Klooster and du Bois sought feedback from their customers to make sure RTI Dashboard was meeting their needs.
The opinions and suggestions from customers enabled their team to rework the platform or take on additional development as needed.

Early reception from users has been positive. And they are eager to suggest new features for the dashboard.

For example, the RTI Dashboard has a request button so users can easily request specific load carriers. But users could only make the request on the current date. So the RTI Blockchain team added a function that allows users to make requests for future dates.

They also added a feature that makes it easy to report damage to RTIs. If an item has been broken, a user can send it back to the owner to be repaired. And if damage occurs during transportation, the party responsible can take a photo and upload it to the Dashboard. Moreover there’s also a ‘Shared Inventory’ feature which ensures one can publish their inventory position for an item to someone else, give an alternative pick up/delivery location and reorder the Sales and Balance assets. There are some assets that are being sold that only have effect on inventory and which have an impact on inventory as well as balance.

“We are customizing the platform for our customers,” says du Bois. “Because if the supply chain doesn’t like what we’re doing, they’re not going to use the solution.”

— Yves du Bois, Founder, RTI Blockchain

**Future directions: integrating payments and expanding to new industries**

Moving forward, RTI Blockchain sees the opportunity to integrate payments into the system. By adding a layer where payments are built into the fabric of the system, users could send money whenever they send an RTI to a supply chain partner.

For now, RTI Blockchain is focused on load carrier management. But they see opportunity for other industries to adapt the platform.

“RTI Dashboard is all about tracking items as they move from Point A to Point B,” says du Bois. “I imagine the system would work for rental cars, as well as festival attributes and recycling programs.”


About RTI Blockchain

The RTI Dashboard is a product made by RTI Blockchain, a company that seeks ways to take away all substantial weaknesses throughout the supply chain. With an open approach RTI Blockchain aims for the human touch in a technology driven surrounding. To learn more, visit: https://rtidashboard.eu/en-GB

About Ledger Leopard

Ledger Leopard is a leading and award-winning blockchain company with international reach. We deliver custom-built decentralized applications and pay-per-use API services to healthcare organizations, government agencies, law firms, and businesses in multiple industries. Our long-term and sustainable solution gives you the ability to create unalterable data to securely share with all of your stakeholders, and to give your customers a chance to consent whether their data can be used. To learn more, visit: https://ledgerleopard.com/

About Hyperledger

Hyperledger is an open source effort created to advance cross-industry blockchain technologies. It is a global collaboration including leaders in banking, finance, Internet of Things, manufacturing, supply chains, and technology. The Linux Foundation, the nonprofit organization enabling mass innovation through open source, hosts Hyperledger. The Linux Foundation also enables a worldwide developer community to work together and share ideas, infrastructure, and code. To learn more, visit https://www.hyperledger.org/