



HYPERLEDGER
BLOCKCHAIN TECHNOLOGIES FOR BUSINESS

Case Study:

ChainYard and IBM reduce new vendor risk & drastically cut onboarding from 60 to 3 days with Hyperledger Fabric

Trust Your Supplier

- Supplier information management system
- Built and run jointly by Chainyard and IBM
- 25 major corporate members from Anheuser-Busch InBev to UPS
- In production since September 2019

Goals

- To streamline the slow process of onboarding B2B suppliers
- To reduce risk by modernizing supplier information management
- To create a new industry standard for corporate digital IDs

Approach

- Find a huge problem that blockchain can solve
- Get buy-in from a champion
- Build a nimble new business
- Assemble a far-reaching consortium
- Roll out the system with an eye to the future
- Scale up to set an industry standard

Results

- Vendor onboarding cycle time cut from 60 days to 3 days
- For buyers: 50% less cost to verify and maintain a supplier's information
- For sellers: much faster time to first sale

Selling to any big company takes a lot more than a handshake.

Before any large enterprise does business with a new supplier, they ask for lots of information: business licenses, certificates, client references, proof of insurance—even the company bank balance.

Then the buyer carefully checks everything the seller provides. Teams from accounting to legal may get involved, as well as third parties like the Better Business Bureau or Dun & Bradstreet.

It all takes time. A recent poll of 100 large enterprises showed they routinely take 45 to 60 days to approve a new supplier. After that, they struggle to keep up when any vendor does a move or reorg, merger or acquisition.

The whole process is slow, costly, and fraught with risks and errors. It creates friction and delay between buyers and sellers.

That's why IBM and Chainyard recently teamed up to modernize the end-to-end process of supplier information management using a blockchain network built with Hyperledger Fabric. Called Trust Your Supplier, the network went live in the fall of 2019.

A huge problem that blockchain can solve

“Onboarding a new vendor is a painstaking activity,” says Gary Storr, General Manager of Trust Your Supplier. “And with today’s focus on privacy and compliance, it’s gotten even worse.”

“This is a pain point across all companies and all industries,” agrees IBM Blockchain Managing Director David Post, Storr’s partner in the new network.

Vendor approvals rely on point-to-point interactions, so every supplier must apply to every buyer in turn. Every seller must rekey essentially the same data into a new set of forms for every new buyer. But that creates a huge duplication of effort and endless paper shuffling. Post points out that colleges solved a similar problem almost 50 years ago.



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In the old days, students had to fill in a separate application for every college they were considering. Today they can use the online service Common Application to apply to their choice of 800+ colleges and universities with a single form.

That saves a lot of time, and makes a lot of sense. Today B2B procurement seems stuck where colleges were back in 1975.

Storr and Post and a few colleagues from IBM and Chainyard—a development partner in Research Triangle, NC—started talking about how to bring this corporate function into the 21st century. Everyone agreed it was high time for an update.

“There’s a clearly defined need: Every organization large and small deals with other organizations,” says Post, “and there’s a need for trust between buyers and sellers.”

Since blockchain is explicitly designed to generate trust, this seemed like a natural use case.

Why can’t a seller create one verified company ID stored on a secure blockchain where any buyer can look up all the information they need? That would save both buyers and sellers days of effort and weeks of delays.

“And that would be much more efficient and more conducive to doing business,” says Post.



The Trust Your Supplier Network

Getting buy-in from a champion

To get a reality check, the group proposed the concept to IBM Chief Procurement Officer Bob Murphy. He oversees a vast operation that includes 18,500+ direct suppliers to IBM plus a BPO procurement network for many outside clients.

All told, his operation handles hundreds of billions of dollars in annual spending.

Although IBM is more nimble than many enterprises, it still takes 30 days to onboard a new supplier. The proposed blockchain system could reduce that to 3 or 4 days.

“Bob was excited to hear the concept, because he experiences all those pain points every day,” says Gary Storr, a VP with Chainyard at the time. “But he wanted a proof of concept to see how it might work.”

So at the start of 2018, five developers worked part-time to create a PoC. There was no debate about which framework to choose, since Chainyard and IBM are both deeply familiar with Hyperledger Fabric. In fact, Chainyard created some of the code that IBM donated to the Linux Foundation to seed Hyperledger.

Murphy liked what he saw in the PoC and gave the system his blessing. He was an effective champion, highly placed within IBM and in touch with the entire procurement space. And he was all-in on the new network.

“Trust Your Supplier is a cross-industry blockchain platform that is compellingly different from any other platform in existence today,” he says. “This platform will make life simpler for both suppliers and buyers, and create massive savings for chief procurement officers.”



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— Bob Murphy, Chief Procurement Officer, *IBM*

Building a nimble new business

Despite the exciting potential of the new concept, IBM had its hands full running several other blockchain networks such as Food Trust, TradeLens, and World Wire. In the short term, the company couldn't start another.



So the team brainstormed a different approach.

What if they combined the best of an agile startup with the track record of an established enterprise? What if they blended Chainyard's expertise in blockchain development with IBM's global reach and client list?

A small team from each company joined forces to start a new business with a big To Do list. That list included building an application, creating a network, pulling together a consortium of major enterprises, and finding the talent to administer, support, and grow the network.

And they had to do it all quickly at minimal cost.

The new business was christened Trust Your Supplier, with Chainyard's Storr and IBM's Post to oversee it.

One challenging part of the system was designing the elements of the corporate digital identity. There is no existing industry standard the team could simply adopt.

"That's the secret sauce!" says Storr. "There's nothing else like this in the marketplace. No one captures supplier firmographic information like we do. We don't do any web-scraping to aggregate data, we get that from the suppliers directly, so they own their own profile."

And all this is built on the blockchain, which provides immutable and highly secure records.

"We've only been working on this for about 18 months, and we've made more progress in that time than any other network I can think of," says Post. "That's because we've paired the benefits of a small startup with the advantages of a big brand. The winning model for a blockchain network is small and nimble paired with large and trusted."



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Assembling a far-reaching consortium

The network needed to attract a good number of big companies with many thousands of suppliers each. So Storr and Post began to approach major enterprises with a global footprint.



Everyone acknowledged the problem. No one said it was a crazy idea. And slowly a consortium took shape, with the most interested companies joining the founding board of governors.

“We’re up to around 25 corporate members, all of them multi-billion dollar, top of the foodchain enterprises,” says Post. “If you look at the blockchain network space, Trust Your Supplier is one of the biggest—if not the biggest—in terms of logos attached to the network.”

Among these well-known members are Anheuser-Busch InBev, Cisco, GSK, JetBlue, Lenovo, Nokia, UPS, and Vodafone. These members cover many major industries including aerospace, consumer packaged goods, electronics, logistics, pharma, tech, and telecom.

All told, the members’ suppliers number in the hundreds of thousands. And they’re all committed to modernizing their procurement with the new system.

Trust Your Supplier creates a unique “digital passport” for each supplier’s identity on the Hyperledger Fabric blockchain. This ID can be shared with any permissioned buyer on the network to save time validating and onboarding a new supplier.

Several third-party verifiers are on the network, including Dun & Bradstreet for business data, EcoVadis for sustainability, and RapidRatings for financial risk. These third parties can provide further audit or verification services to create an even more comprehensive picture of any vendor.

Trust Your Supplier proposes a compelling value proposition: Buyers and sellers can save time and money and keep their supply chains humming by accessing a single repository with verified accurate data.

Rolling out the system with an eye to the future

Since Trust Your Supplier is for company identities, the system design is unique.

Each supplier record includes non-personally identifiable information (PII) about the company’s management, finances, and contacts, all encrypted with the keys stored off-chain. A unique decentralized identifier (DID) is assigned to each supplier. Verifiable credentials are stored on the chain, with pointers to actual records.

Of course, any PII is stored off-chain.

The system uses three channels from Hyperledger Fabric: one for supplier data, one for DID documents and verifiable credentials, and the third for an audit trail of interactions with external partners.

Built with Hyperledger Fabric v1.1, this design makes the system easier to use and simpler to maintain, while providing strong data security and privacy.

Standard blockchain metrics like transactions per second are not relevant.

“Speed’s not a key performance indicator for us,” says Storr. “This is not a transactional system where people are doing work on it all day long.”



A more meaningful metric is the total number of buyers and sellers on the blockchain. So far, many thousands of suppliers from IBM and other founding members have been invited to the network.

With testing complete and the system in full production with 10 nodes, the team expects to be busy from now on generating and loading IDs. But modernizing such a mission-critical function for so many members will take time and attention.

“This is not something you download from the app store and put on your phone,” Storr chuckles. “Large enterprises need integration. And we give them the white-glove treatment.”

For example, his team looks for any requirements beyond what the core application offers today and creates updates or notes on the system roadmap.

How big could the network get?

“We think every organization that buys services, and every organization that sells goods or services can use this tool,” says Storr. “We’re industry-agnostic. This is for big organizations, small organizations, any business anywhere in the world. We don’t have a lot of constraints on where this could play.”



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Scale up to set an industry standard

Onboarding suppliers is just the first pain point the network solves. There’s a lot more in store.

“We’re creating a portable corporate ID: a passport that companies can use in many different contexts,” says Post. “That way, you won’t need one passport for IBM and another passport for Cisco. You can use the same passport for everyone.”

This common-sense approach gives B2B vendors good reason to create a digital ID on the blockchain and good reason for B2B buyers to use them. Post says this will help the network scale up quickly.



“If you look at decentralized identity projects for individuals around the world, the big problem is they can’t aggregate enough lives to set a standard across various use cases,” he says.

“Our difference is that we don’t have to sign up 300 million people. If we get to half a million or a million suppliers, we will establish that standard. And then, there’s all sorts of possibilities: accounts payable automation, supplier discovery, or more effective supplier risk management.”

The blockchain could even interoperate with other blockchains or systems designed specifically for supplier information management.

Storr agrees that the future will bring many more uses for a corporate digital ID that’s standardized and interoperable across systems.

“We see this as the tip of the iceberg. Blockchain is still an emerging technology. We’re at the early stages, and it’s going to continue to evolve and change.”

Who knows? Some day soon, selling to a big company may take next-to-no time, thanks to this visionary project by Chainyard, IBM Blockchain, and Hyperledger.



About Chainyard

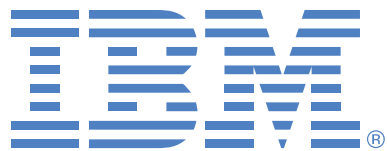
Chainyard, a leader in blockchain consulting, is a dynamic team of blockchain enthusiasts with the expertise, process, and technology required to develop world-class business and software solutions. With a focus on enterprise use cases, Chainyard is helping companies navigate blockchain by working with them to identify value, prioritize opportunities and develop solutions. To learn more, visit www.chainyard.com

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IBM Blockchain

IBM is recognized as the leading enterprise blockchain provider. The company's research, technical and business experts have broken barriers in transaction processing speeds, developed the most advanced cryptography to secure transactions, and are contributing millions of lines of open source code to advance blockchain for businesses.

IBM is the leader in open-source blockchain solutions built for the enterprise. Since 2016, IBM has worked with hundreds of clients across financial services, supply chain, government, retail, digital rights management and healthcare to implement blockchain applications, and operates a number of networks running live and in production. IBM is an early member of Hyperledger, an open source collaborative effort created to advance cross-industry blockchain technologies. To learn more, visit www.ibm.com/blockchain



About Hyperledger

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