

Blockchain in my company

How to start today?



Quorum: Blockchain for companies

These types of applications are intended to change many of the current processes in companies, opening a wide range of new use cases and collaboration models.

Anyone who has read anything about this new blockchain world has heard about Ethereum, the Smart Contracts platform par excellence. Ethereum is a public network that allows the deployment of distributed applications over blockchain technology. However, the public network of Ethereum and other public alternatives, pose some

limitations that make the deployment of corporate applications on them inappropriate.

Quorum is a platform of intelligent contracts on blockchain technology designed specifically for corporate environments. From Minsait, we have been working for some time in the conceptualization and development of use cases on this technology, to evaluate all the advantages that they can bring to public networks. In business environments, the fact that anyone can launch transactions to the network and the limitations of performance and governance, make the use of public networks to be dismissed in these environments.

Quorum is a permissioned network that uses Ethereum's source code, in which the participants choose in advance who can participate in the network, distancing themselves from public networks like Ethereum, where anyone can be part of. Quorum has been specifically designed to eliminate the main limitations of public networks, such as:

	Limitations in public networks	Solution in Quorum
Privacy and transparency	In public networks such as Ethereum, all system participants have access to information about all transactions of all members of the network. This is inconceivable in a corporate environment, where only those involved in a transaction should be able to access the information.	Quorum solves it assuring privacy by defining information access policies for each transaction.
Performance	Public networks are very limited in the number of transactions that can be made per second. This can greatly limit the use cases in corporate and productive environments.	Quorum solves this fact by exceeding a thousand transactions per minute.
Permission and governance	Public networks do not allow any control over network participants.	Quorum solves this by being designed as a permissioned network, facilitating its governance despite its distributed nature.
Customized consensus mechanism	Public networks rely on the use of cryptocurrencies and the mining of blocks, with the associated energy consumption, to reach consensus in the network.	With Quorum, this need is eliminated, not being necessary to use Proof of Work as a consensus algorithm or to force the use of cryptocurrencies or tokens. In addition, other existing variants such as Proof of Stake, Istanbul Byzantine Fault Tolerant, etc. or even one of own creation can be used, being able to adjust the consensus of the network and its specific characteristics to the specific use case.

Thus, with the solvency of these limitations of public networks, Quorum enables the deployment of a wide range of new corporate applications on this technology. Its flexibility and modular design allow the characteristics of the Quorum infrastructure (consensus algorithm, performance, network topology, governance, etc.) to be adjusted to the specific requirements of the use case.

To visualize its power, we can take for example the experience of one of the use cases in which we are currently working: the management of the supply chain. Imagine a set of product suppliers, a logistics company and a retailer reorganizing the processes of sending and receiving merchandise to make it more efficient. All merchandise moments could be recorded using the smart contract infrastructure provided by Quorum.

In addition, the conditions under which these deliveries must be made are defined so if a breach occurs, an economic penalty will be incurred. To complete the business model and make the process as efficient as

possible, a banking entity could be involved so that, in case of non-compliance with the conditions defined by the actors, the penalties would be paid automatically. This proves that Quorum enables the necessary infrastructure for this type of complex use cases.

Furthermore, this use case would be built on a permissioned network, on which only the participants can be part of. The privacy of the transactions allows only the suppliers, the logistics company and the retailer to see the information registered for the deliveries in which they are involved. In this way, they get transaction performance per second that enables their real deployment in production, eliminating all existing limitations in public networks such as Ethereum.

The fact that Quorum is based on Ethereum also makes it possible to increase the trust and integrity of the permissioned network by auditing it through a public network such as Ethereum, thereby benefiting from the trust granted by all the nodes of a public network.

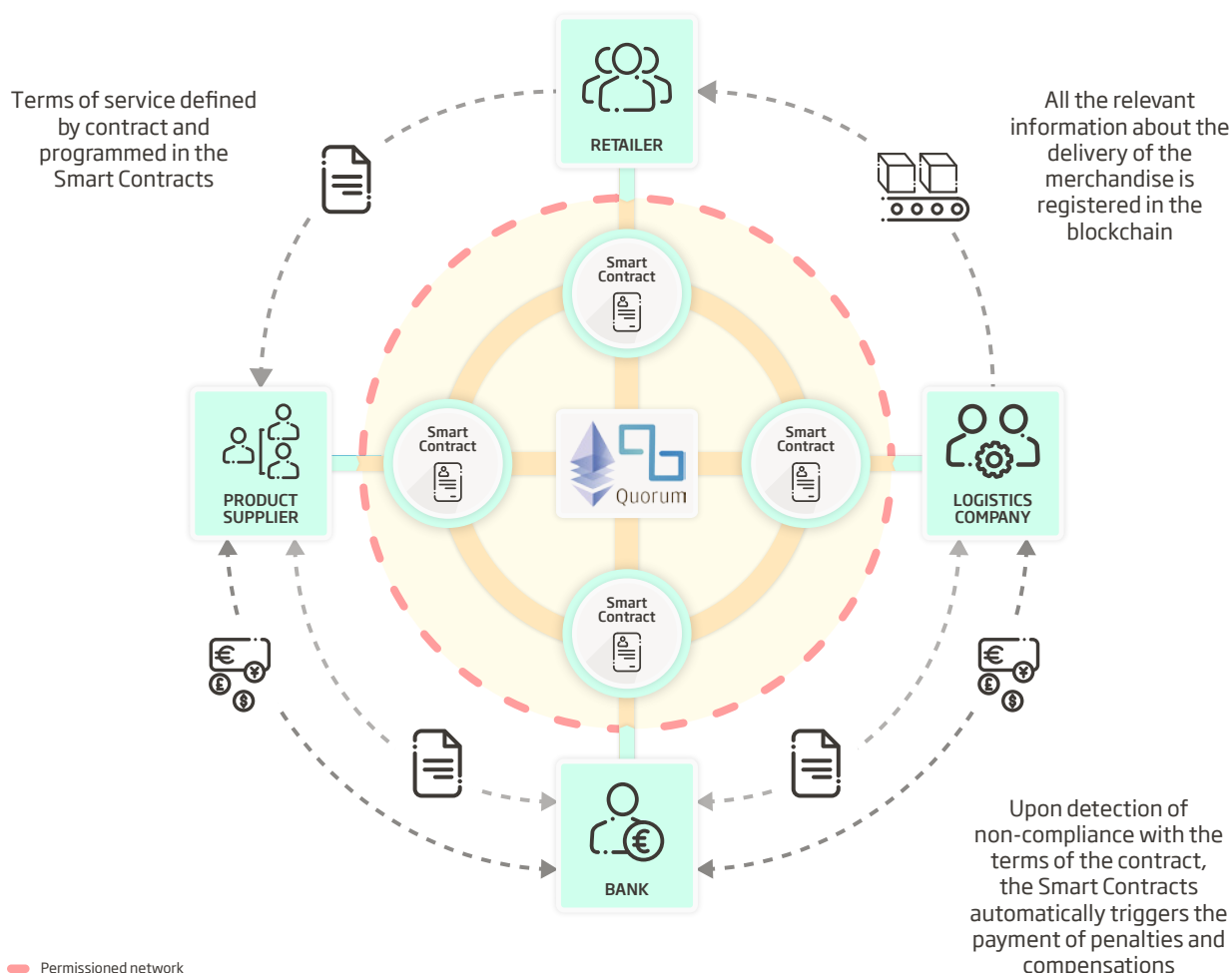


Figure 1. Use case on Quorum technology.

This technology, therefore, enables the grouping of companies organized around a common blockchain infrastructure to work on new use cases and business and collaboration models between companies. In Minsait we work with this vision, in which companies are organized under the same infrastructure to collaborate and develop new value solutions. This is why **we are betting on and developing infrastructure based on blockchain technologies for the corporate environment such as Quorum, or another great known as the IBM Hyperledger.** With this in perspective, we believe that the solution can come through a common infrastructure that anyone can join to develop systems on these technologies and, we are therefore launching an ambitious initiative with some of our partners in this line.

Quorum, therefore, not only represents a breakthrough on blockchain technology from the technical point of view, but is also a clear demonstration of the strong commitment of companies in this technology, the enormous capabilities from a business point of view of this new paradigm, and how its application in corporate environments is closer than what we can a priori think.

A great example of all of this is also the bet on Quorum technology made by Alastria, the Spanish national blockchain consortium, because Alastria's infrastructure is built on this technology.



Authors

Alfonso De La Rocha Gómez-Arevalillo

CTO of Blockchain Practice, Minsait by Indra

Víctor Sánchez Hórreo

Head of Blockchain Practice, Minsait by Indra

Minsait is the Indra business unit that responds to the challenges which digital transformation poses for companies and institutions. Indra is one of the leading global consulting and technology companies and the technology partner for the key businesses of its clients around the world.

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