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‘We need to find the most relevant use cases for the blockchain’

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Back-office professionals at BNP Paribas have been interested in distributed ledger technologies for a few years now and they have carried out experiments regarding depositary activities for unlisted securities and international money transfers. Today, we look back on the first lessons learned.

In April 2016, you announced a partnership with the crowdfunding platform Smartangels to develop a blockchain dedicated to unlisted investments. How has the project progressed?

That project was focused on unlisted securities that were bought by investors via the Smartangels crowdequity platform. The first goal was to use blockchain technology to maintain a ledger of the subscribers and to handle certain corporate actions such as the convening of general meetings. This is the role of a custodian and we can confirm that the platform worked from a technical point of view. Today, we have entered an analytical phase: we know that the platform must be complemented by adding new functionalities and we are currently studying which features are truly necessary to allow the management of unlisted securities. Among other things, certain legal concepts will need to evolve.

You also formed a partnership with the platforms Lendosphère, Enerfip and Lumo. What is the relationship between these two projects?

We launched our project in the crowdequity segment because it had not been explored at the time and there was no regulatory framework. It was not the case for crowdfunding, until the ‘Sapin 2’ law on transparency, anti-money laundering and transparency introduced ‘mini-bonds’ as an instrument and allowed them to be stored on the *blockchain*. We then signed a partnership with these three platforms, and they joined the *blockchain* that had been implemented for Smartangels and modified to suit their needs.

Which technical decisions did you make regarding that *blockchain*?

We used the Nxt protocol, which we installed on a private network. The central nodes were hosted by BNP Paribas and other participants to the project also had one node at their disposal. The idea is that over time and as we keep adding partners, the network will grow and become richer and more stable.

Which specificities of the most well-known *blockchain*, Bitcoin, are you not using?

First, there is no cryptocurrency associated to our *blockchain*. We can write on the chain and look at the history, which consensus procedures make impossible to modify. We do not use a Proof-of-Work protocol like the Bitcoin *blockchain*, but instead a Proof-of-Stake protocol, which requires less computing power and is therefore faster and more efficient in terms of electric consumption.

You also formed a partnership with other French institutions [1] regarding a back-office infrastructure for SMEs. How has the project progressed?

Again, the *blockchain* serves as custodian, although it is a different project. Strategic decisions are not set in stone yet.

Do you have other *blockchain* projects apart from custodian activities?

We implemented a *blockchain* that allowed us to be independent from the corresponding banks and the Swift network in the case of cross border cash transactions between clients of BNP Paribas. That was the Cash Without Borders project, which we executed with several corporate clients, and which was based on the Nxt protocol. These transactions were made using official currencies, without the intervention of a cryptocurrency. We use the *blockchain* to register the transactions, to memorize them, to date them, and to share them within limited timeframes: while it takes 2 days – or even more – to complete a transfer via corresponding banks, we can complete it within 2 hours using the Cash Without Borders system (the step using the *blockchain* only takes a few seconds, and then we use other systems and processes). The clearing, settlement and reporting happen in real time and the main sources of error are eliminated.

Projects like Ripple also tackle the international transfers activity, but they use a form of interbank transactions that your solution does not allow. What are the reasons to prefer your internal solution?

Just like 'Cash Without Borders', the Ripple network allows us to reduce the processing time for transactions. However, it implies a management of the liquidity that is similar to the existing infrastructure based on corresponding banks. Our solution is different because transfers happen between BNP Paribas accounts, whereas Ripple recreates a parallel system, which also requires collateral and the intervention of market makers. In that case, using the *blockchain* provides few benefits, especially since the Swift network recently achieved a reduction of its transaction times through its GPI program. The *blockchain* is not a solution for all issues: we need to find the most relevant use cases for the *blockchain*.

Cash Without Borders is not meant to be used by other partner banks...

It is essentially a project centered on operational efficiency and client satisfaction at this stage. In the future, if other solutions appear, we will study them, just like we did with Ripple. Similarly, if other banks approach us, we will be open to any discussion.

On some projects, BNP Paribas acted on its own and on some other projects, the bank partnered with competing financial institutions. What influenced such decisions?

Since we discovered the topic of *blockchain* in 2011, we have indeed worked in groups, via consortiums such as R3, Digital Asset Holdings, the American Chamber of Commerce... It was necessary to generate real value from this technology...

So, as you became more and more competent, you decided to work on your own?

In fact, there are very few markets where we could work on our own. Crowdequity was such a market because there was no ecosystem already in place at the time.

The *blockchains* you use for your projects are so-called 'private' *blockchains*, since one cannot join them without receiving approval from the members. This is a major difference compared to Bitcoin or Ethereum. Is that a natural choice when it comes to financial services?

Such a decision is inherent to financial services indeed, because finance is a very regulated sector, and an authorized institution must be able to ensure compliance. When the platforms are in place, the regulator may want to have access to them. Some protocols such as Corda, from R3, have already planned a dedicated access. The importance of regulation on data privacy led to the development of a new concept: the concept of *Zero Knowledge Proof* (ZKP). The idea is to query the *blockchain* via close-ended questions, which are more precise and offer better protection of client data. The concept was validated mathematically and is currently being tested on an operational level.

What did you learn from your experiments?

We observed that from a technological point of view, it is a world that is still relatively young and not fully mature yet. Even the protocols that are supposed to be relatively advanced are still in beta version. They will not be stable until the end of 2017 or the beginning of 2018. The organizations developing such protocols have ambitious goals, whether it is IBM, via Fabric and the umbrella brand Hyperledger, R3 via Corda, Microsoft and their *blockchain-as-a-service* solution integrated to their cloud solution Azure... The use cases detected go beyond the simple cryptocurrency transfers that Bitcoin does. We are targeting issues related to security, data privacy, access for the regulator to oversee activities in real time... Therefore, it takes a bit longer than initially envisaged to finalize the platforms.

How optimistic do you feel about the coming years?

The results of the experiment led by the Australian Stock Exchange (ASX) and Digital Asset Holdings will be published at the end of the year. The Australian Stock Exchange will then decide if they choose to continue working on their *blockchain* allowing clearance and settlement-delivery on the stock market. As for BNP Paribas, we plan to pursue our experiments, after having implemented 18 PoC (Proof of Concept) already. When the technologies are stable, we will see more and more initiatives such as the ones we just mentioned. A *blockchain* related project is a long and ambitious endeavor: beyond the technology itself – which often represents only 10% to 20% of the project – we have to work on setting up the consortium, building the business cases... exactly like a conventional project.

Interview by Séverine Leboucher

[1] BNP Paribas Securities Services, Caisse des Dépôts, Euroclear, Euronext, S2iEM, Société Générale and Paris EUROPLACE, joined by Caceis. The partners announced in July the creation of a dedicated structure, LiquidShare.