



Blockchain – pilot II

SUMMARY OF LEARNINGS

21 August 2018

LESSONS FROM THE PILOT

START NETWORK/ DISBERSE/ TRÓCAIRE IRELAND
TRÓCAIRE RWANDA CARITAS RWANDA

BLOCKCHAIN PILOT II

WHAT HAS TAKEN PLACE SO FAR

The Start Network is a humanitarian network leading for change. Made up of 42 national and international NGOs, the network works as one to address systemic challenges that the world faces in delivering humanitarian assistance to people affected by crisis. As such, the Start Network has three main areas of focus: new financing mechanisms, collective innovation and the localisation of humanitarian aid. With these three areas of focus Start Network decided to explore potential uses of blockchain technology.

What is blockchain and how does it relate to the problems identified?

Blockchain is an incorruptible database of information that can be programmed to track the ownership of assets, financial and non-financial, without the need for a central authority. It allows any two parties to transact directly and removes the need for third-party intermediaries such as banks. The three key benefits this system could bring to the humanitarian sector are transparency, speed and incorruptibility. This is because data is embedded within the network and is open and public to view. Altering any unit of information on the blockchain is impossible because it implements cryptography in a peer-to-peer network that validates each other's information, in other words self-auditing.

In 2015, the Start Network [recognised the parallels](#) between the systemic failure in the financial sector - which had as a result, triggered new developments such as blockchain technology – and the humanitarian system. Since the challenges in the humanitarian sector included inherent inefficiencies such as over-centralisation and lack of transparency and trust, the Start Network decided to explore the use of blockchain technology to potentially address those challenges.



Start Network's theory of change for blockchain work

WHAT WAS THIS PROOF OF CONCEPT AND PILOT ABOUT

Concept

With the aim of practically testing the technology, the Start Network, referred to hereafter as Start, began its blockchain journey in the space of humanitarian financing. In 2017, Start partnered with [Disberse](#), a for-profit social enterprise that is building a new blockchain-based financial infrastructure for humanitarian aid.

Start and Disberse agreed to work together on a proof of concept and pilot, using Disberse infrastructure, to familiarise organisations, donors and individuals in the humanitarian sector with the technology. Disberse received its Financial Conduct Authority (FCA) authorisation as an electronic money institution. The FCA is a financial regulatory body in the UK. This made Disberse one of the few UK blockchain companies to combine blockchain development and e-money management.

Dorcas Aid International was the first Start Network INGO that agreed to test the technology. The main purpose of the proof of concept was to test the functionality of the Disberse platform, and to get feedback from Dorcas Aid Headquarters and its Field office as users. The proof of concept took place on the 2nd of February 2018. You can find a short review from this first proof of concept here:

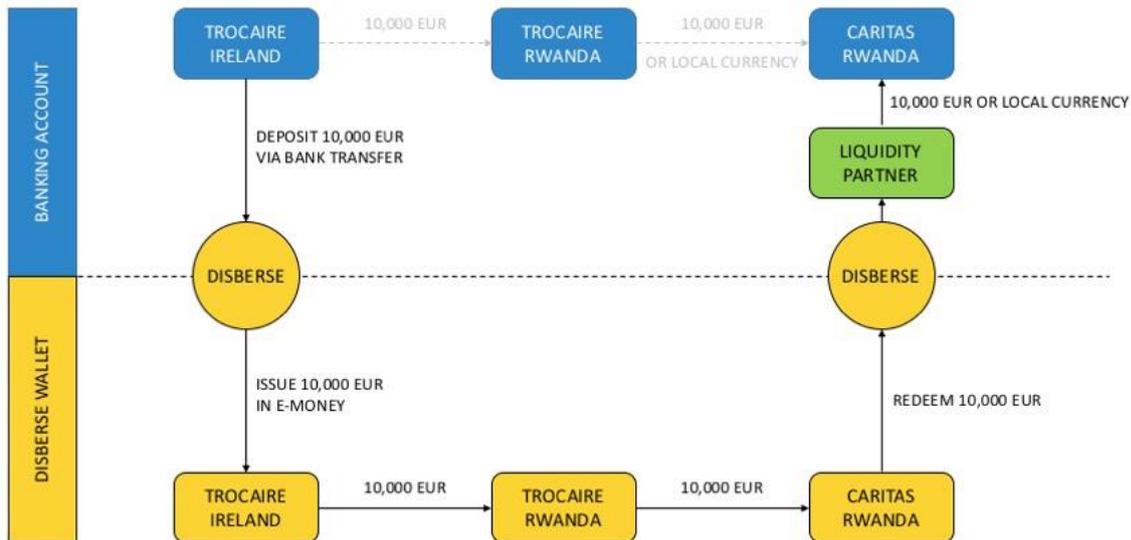
<https://startnetwork.org/news-and-blogs/first-successful-test-blockchain-international-distribution-aid-funding>

Following the proof of concept, Trócaire volunteered to take part in a larger pilot, with the purpose of testing a longer chain with more partners. It should be noted that this method using a 'longer chain' of fund transfer is not used by Trócaire in its regular business operations. In the design stage, Trócaire Rwanda agreed to invite Caritas Rwanda as the local partner to also participate in this pilot. In addition, the pilot aimed to measure the direct implications of the blockchain platform by sending two parallel finance transfers, one via the regular banking system and one using the Disberse platform.

Technology and Process

All parties preferred to pilot the technology and system with a relatively small amount, and it was agreed that Trócaire Ireland would simultaneously transfer €10,000, via Trócaire Rwanda, to Caritas Rwanda using the Disberse platform, and €10,000 via their regular banking channel. These transactions are visualised in the Pilot Flowchart, below.

PILOT FLOWCHART: Trócaire



The steps followed were:

- Siobhan Cassidy, *Trócaire Ireland's Finance Systems Manager*, transferred €10,000 from Trócaire Ireland's bank account to a Disberse segregated account.
- Siobhan then created a wallet on the Disberse platform, and Disberse subsequently issued €10,000 in electronic money (e-money) into the Trócaire Ireland wallet.
- Wallets were created for Trócaire Rwanda (controlled by Dony Mazingaizo, *Trócaire Rwanda's Country Director*) and Caritas Rwanda (controlled by Pauline Kayitare Mpinganzima, *Caritas Rwanda's Finance & Administration Director*).
- Siobhan was then able to transfer e-money (representing €10,000) from Trócaire Ireland's wallet directly to Trócaire Rwanda's wallet; Dony then transferred e-money (representing €10,000) from Trócaire Rwanda's wallet to Caritas Rwanda's wallet.
- Pauline was then able to immediately redeem the €10,000 on the platform, and Disberse authorised their FX partner to release the funds to Caritas Rwanda's bank account.

The entire test was carried out through participants' web browsers, with Disberse accounts secured by two-factor authentication. Each wallet was identified as a node on the Ethereum blockchain, and all the transactions were recorded on the Ethereum test net. It is important to note that the money distributed on the platform is not itself cryptocurrency, but e-money issued by Disberse against the fiat currency (currency that a government has declared to be legal tender) deposit by the client (in this case Trócaire Ireland). This ensures the stability of the funds since existing cryptocurrencies can be extremely volatile.

WHAT DID WE LEARN FROM THIS PILOT?

The Start Team set up reflection interviews with all participants: Caritas Rwanda, Trócaire Rwanda and Trócaire Ireland. The main purpose of the session was for Caritas Rwanda and Trócaire colleagues to provide specific feedback on their experience of using the Disberse platform and of generally using blockchain technology.

Motives for participation

The humanitarian team at Trócaire Ireland first came across the potential of blockchain applications to improve aid delivery at a conference. They brought this back to the organisation as something that could be of interest given Trócaire's mission and priorities. The humanitarian team suggested that Trócaire could first test the technology in the financial domain and subsequently began discussions with the organisation's finance team.

This was the first time that the Finance Systems Manager in Trócaire HQ had heard of the technology. Some further research was carried out to understand what options were available. This quickly led to interest in the idea of cashless payment.

The Country Director of Trócaire Rwanda is an accountant by profession and came across blockchain on various occasions but always in a theoretical context. One recent engagement was through a meeting he attended hosted by the ACCA Accountancy for Business Global Forum, of which he is a member, and there reflected the recent publication by ACCA on how blockchain will have implications for accountancy¹. When Trócaire HQ contacted him, he was immediately interested to test how blockchain could also create value for the humanitarian sector rather than in the more obvious application of health, insurance and banking.

For Caritas Rwanda's Finance & Administration Director, the pilot was the first time she had come across the concept of blockchain despite previous experience with other electronic solutions like mobile money and banking e-transfers. As she is always excited about exploring new technology, she agreed to participate in the pilot when suggested by her organisation's partner, Trócaire.

Organisational hurdles/Risk management

Discussions first took place between Trócaire's Head of Humanitarian and Director of Corporate Services. Practical application of the pilot was then delegated to the Finance Systems Manager who conducted due diligence on the proposition and Disberse. As there were enough assurances that the funds would be secure, and specific conditions attached to the pilot, e.g. limited amount of funds used, Trócaire were confident that the risks would be managed. The funds used for the pilot did not require the approval of an institutional donor.

For the Country Director of Trócaire Rwanda, the critical risk consideration related to Disberse and understanding how this company functioned. He felt it was easier to convince his team to participate in the

¹ See report available on

https://www.accaglobal.com/content/dam/ACCA_Global/Technical/Future/Divided%20we%20fall%2c%20distributed%20we%20stand%20-%20The%20professional%20accountant%E2%80%99s%20guide%20to%20distributed%20ledgers%20and%20blockchain.pdf

pilot when he understood that the Start Network would be involved as well, and that Trócaire HQ had undertaken their due diligence. Trócaire Rwanda engages regularly with their partners on new technologies and were keen to work with Caritas Rwanda on this pilot as they have always been technologically competent and can bring a very local perspective/case study to test these new ways of working.

Caritas Rwanda's Finance & Administration Director did not experience many obstacles to engage with the pilot. It was very helpful that Trócaire had done the necessary due diligence, and the subsequent introductory sessions with Disberse helped to increase confidence on the platform. Based on her experience of using e-money, especially in the form of mobile money, she was concerned about the security of the transfer because she was the only one to redeem it; in the Caritas Rwanda payment policy, each transfer must be authorized by two people. Disberse assured her that in this pilot, Caritas Rwanda were redeeming funds only. She was provided with credentials to access the platform securely.

Expectations

The Country Director of Trócaire Rwanda was clearer on his expectations when he understood from discussions with Disberse that the pilot would be building on blockchain technology but not involving cryptocurrencies. This meant that they would not have to manage regulatory concerns in this pilot, as this was discussed in a recent event during the launch of the PWC Rwanda report on 2018 Global Economic Crime and Fraud Survey².

One of his expectations was that by participating in this pilot, it would enable Trócaire Rwanda to take a pioneering role both in the Trócaire network and the wider sector. He participates in the innovation sub-group in Trócaire, and they have been aiming to demonstrate practical innovations.

He anticipated another key benefit to be the visibility of the payment pathway. He noted that it is traditionally very difficult for stakeholders in the aid financial flow to see how money moves and visibility is a critical area of potential value. Finally, identified the speed of money transfers was identified as something that the platform could offer value on, as users would be able to show how long the transfers had taken and where the money went. This addresses an expectation gap around payment delays, which affects relationships.

The Finance team in Trócaire HQ mainly anticipated similar benefits, around quicker and transparent payments. The demo that Disberse provided helped them to understand how this would look in reality and addressed any expected challenges.

Caritas Rwanda's Finance & Administration Director was expecting to expand her knowledge of e-payment use by using new technology, in other words blockchain technology, to improve the existing payment methods used by Caritas Rwanda.

Pilot results

Overall the pilot was successful against the potential benefits which it was hoping to demonstrate. The full amount of funding was successfully transferred via Disberse, with complete transparency of the funding chain:

- The transfer via Disberse incurred no additional charges; the parallel transfer through the banking system incurred at least one additional charge of EUR35. It is worth noting that in this pilot Disberse did not charge transaction fees, but the company will consider their future business model to include

² See report available on <https://www.pwc.com/rw/en/assets/pdf/gecs-rwanda-report-2018.pdf>

small fees. It is also important to note that Trócaire would not use this (longer chain transfer method) in its regular business operations.

- There were challenges in comparing time savings (see below) but measured by number of working days it took funds to move from Trócaire Ireland to Caritas Rwanda, the banking system took 6 days, while Disberse took 5 days.
- There was clear tracking of the Disberse financial transfers. The transactions were transparent and accountable to each stakeholder in the transaction chain. Transactions were timestamped and created a viewable trail of transactions.

All three respondents agreed that the demonstrations of the platform were very clear and made the benefits of the pilot visible. The demonstrations were critical in providing clarity not just about how the platform works - for example, in terms of the user interface - but also about the processes in the pilot itself. However, there were two challenges in the follow-up from the demonstration:

1. There should have been more support with organisational planning between the two offices of Ireland and Rwanda. The pilot team left too much time between the initial demo and the pilot itself, and as a result the workflow was not fully at the forefront of all participant's minds. Furthermore, if group planning had been prioritised then this would have ensured that everybody was aligned with the process and with the same level of understanding.
2. As a result of the time between the demo and the pilot, it was not clear to all participants that the aim was to carry out all transactions in a single session, rather than spread out over a few days. Some of the delays may have been because people did not realise the need to act quickly; and if a single transaction session had taken place then this would have meant time savings, clearer understanding, and more effective support.

While the pilot was successful, comparing the parallel transfers had limitations:

1. The parallel transfers through Disberse and the banking system did not happen at the same time; the initial Disberse transaction was authorised by Trócaire two days after the initial bank transaction, and on a Friday. Given how the banking system operates over weekends, this confuses the timeline.
2. The team discovered that there were two public holidays in Rwanda (but not in Ireland) during the pilot period. This affected transfers through both Disberse and the banking system - although it is impossible to know how much, due to the capacity of the banking system itself.

As noted above, these limitations made it difficult to compare the parallel transfers with complete accuracy and need to be accounted for in future.

As with previous pilots, having the Start Network as a mediator was critical for their participation - Trócaire trusted Start, Caritas Rwanda trusted Trócaire, and that trust transferred to working with Disberse – emphasising that trust is critical for pilots. Furthermore, the pilot demonstrated the value of working in a network to test innovative solutions to challenges previously pointed out in the humanitarian system. Trócaire were able to take responsible and low risk decisions that enabled learning for the wider Start Network, its members, and the sector.

Reflections and feedback

Caritas Rwanda's Finance & Administration Director reflects on the outcome of the pilot as mainly positively impacting the relationship between Caritas Rwanda and Trócaire Rwanda. Working together, she has experienced increased communication and capacity building between the two organisations.

For the Finance team in Trócaire HQ the main recommendation would be that now the pilot demonstrated the blockchain platform works from a financial perspective, focus further on addressing specific problems from a humanitarian point of view. We should be looking at how to integrate the functionality, for example the transparency and efficiency, into humanitarian project workflows.

Trócaire Rwanda are mainly interested to advance the discussion on blockchain in the international development domain. If we were able to make sure the technology addresses programmatic concerns, it would then be good to consider what the business model looks like to scale solutions.

WHAT ARE THE NEXT STEPS?

This pilot concludes a series of proof of concepts and pilots, which served to enable the Start Network member NGOs to collectively innovate and better understand what potential blockchain solutions could have for the wider humanitarian sector.

The focus of the recent work has been specifically on financial transfers and Start recognises that this is just one of the dimensions that blockchain explorations could take. The decision to stage the previous pilots against the financial backdrop, has been a pragmatic one as this links with i) problem statements of Start Network members, and ii) financial architecture underpinning Start Network's value offering in the humanitarian sector.

The proof of concept and pilot series has enabled our members to advance this initiative. This is demonstrated by Dorcas Aid including Disberse in a consortium project to develop and test a cash transfer platform in Malawi and Iraq, and DFID taking forward their proof of concept with Start Network members. Broader lessons from operationalising the pilot were shared with the UK's Department for International Development (DFID) which has led DFID to partnering with other Start Network members for their own blockchain proof of concept.

As for the Start Network, the team will integrate the blockchain lessons in the development of the new advanced financing facility, which will seek to finance interventions based on shifts in risk, rather than after events, for partners in the Network.

WITH THANKS

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