Reflection Paper: Money Flows and Blockchains in Aid

As part of our contract with Dorcas, Disberse agreed to write a reflection paper concerning two key questions at the heart of the 121 Project funded by the Dutch Innovation Fund. This paper is based on our involvement in the 121 Project, but also on four years of experience working on these issues with a range of stakeholders.

1. What are the main challenges of international money flows from donors to beneficiaries?

Disberse was originally founded to address four key challenges in the flow of money from donors to beneficiaries:

1. Speed: it can take weeks for transfers to arrive, even during an emergency, slowing down the response and making it difficult to plan.
2. Efficiency: bank charges, poor exchange rates and currency fluctuations raise costs, reducing the amount that reaches those in need.
3. Transparency: funds cannot be traced from end-to-end, creating potential for mismanagement, and decreasing accountability.
4. Mismanagement: the three problems above increase the likelihood of waste, including potential for fraud and corruption.

An additional challenge is illustrated by the phrase “donor to beneficiary”, which accurately identifies aid as hierarchical; in addition the money flows through an existing financial infrastructure which is centralised. Aid finance as it is currently implemented therefore actively works against the need for and commitment to the localisation, which by definition needs to be less hierarchical and centralised.

These are long-standing challenges for the aid industry, and the need to address them has become especially urgent in the last decade. However the industry has had only limited success in this area for a number of reasons. There are external logistical and regulatory challenges in how aid organisations ensure that liquidity is available when and where needed, but there are also internal institutional challenges: aid organisations have failed to recognise that these challenges are related; despite public commitment, these challenges have not been a real priority; and there is a lack of expertise within aid organisations to address them.

This is a collective action problem rooted in the systemic nature of the challenges. No single aid organisation is in a position to recognise the overall problem, let alone develop a solution for it; and any individual agency solution will not be able to address the problem since it is distributed across the entire network of stakeholders. Collective action through networks - for instance the Dutch Relief Alliance or the Start Network - can make some progress but then faces the daunting regulatory and technical challenges of setting up new platforms and channels that can improve these money flows.

It is also worth noting that the perspective of “donors” (or any aid organisation that controls money flows) is different from that of “beneficiaries” (and in many cases this includes subnational NGOs or other community groups). In particular we know that, in addition to the challenges outlined above, these stakeholders often feel that they are disadvantaged by the modalities (how the funds are distributed, and in what form) and conditionalities (what obligations and capabilities are required to access those funds) of these flows. Any solution to the overall challenge of international money flows must take this into account.

A window of opportunity opened following the 2008 financial crisis, as financial regulators introduced more flexible frameworks in order to encourage innovation in financial technology (fintech), including blockchain. While fintech has had some impact on the aid industry at an operational level - for example, growth in mobile phone penetration and banking regulation reform facilitated the rise in cash distributions via mobile money - the industry has been slow (compared to other sectors) to explore how this might transform the business model of aid, just as information technologies have transformed business models in other industries.

The growth of fintech has created a further challenge around interoperability. While there are now a variety of different platforms and services - from online donations to cash distributions - it is difficult for aid organisations to integrate all of these within their funding chain, and potentially difficult again for them to integrate this with the enterprise software which they use for finance operations. This in turn creates the potential for an increase in the fragmentation of data not just in the aid industry as a whole, but even within a single organisation where data silos arise due to the difficulty of integration.

As noted above, these are all different aspects of a collective action problem rooted in the systemic nature of the problem. Our analysis was that existing financial institutions were not offering or developing the products and services needed to address these challenges; and in some cases were creating additional challenges, for example through bank de-risking. At the same time new institutions - fintech startups, and particularly blockchain companies - did not see the aid industry as a market or did not fully understand the needs of that market.

Our conclusion was that establishing new financial institutions to develop the services could help the aid industry to address these challenges, and that the industry is a large enough market that it could support such institutions. More importantly finance is a leverage point, and the potential for removing structural inefficiencies through disintermediation of the funding chain, using blockchain to improve transparency, and re-aligning incentives to increase decentralisation all have great potential to create wider opportunities for the transformation of the business model of aid.

2. How can blockchain technology contribute to solving these challenges?

The section above sets out the logic for the potential for an institutional approach to address those challenges, while the second part of the equation concerned the technological approach that might establish a new type of financial infrastructure. Some of our early thoughts explored the possibilities of cryptocurrency, described in the early days in the AidCoin paper published in 2015 by Paul Currion, but it was clear from early on that the problems involved in implementing cryptocurrency in an aid context (and potentially most contexts) outweighed any possible benefits.

While crypto initiatives have worked hard to overcome some of these problems - such as currency volatility, offline transactions, regulatory constraints, transaction volume, access to liquidity - there comes a point where one must ask whether this points to an obvious conclusion: that cryptocurrency is simply not an appropriate solution for the challenges faced by aid organisations. This became increasingly clear after the bubble in cryptocurrency markets burst in early 2018.

Although we began as a "blockchain startup", the beta version of our platform was a hybrid architecture which combined blockchain as a base layer for data storage and transaction management, with a layer of more conventional service-oriented architecture to ensure service stability and met regulatory requirements, including laws on data protection. We made this design decision based on two underlying questions concerning the use of blockchain.

a. *What is the added value of the technology itself?*

The only justification for an organisation to adopt a new technology is if it can improve existing processes in some way, or if it has the potential to develop new processes. Demonstrating the first of these was the goal of both the DIF-funded and DFID-funded pilots, and is summed up in the question that DFID asked: "Can distributed ledger technology (DLT) enhance transparency, increase the speed at which money flows to the end recipient, and reduce intermediary costs?"

Our alpha pilots demonstrated that we could achieve these objectives in simple funding chains. Our simulation exercise with DFID and OCHA further demonstrated this model would work at scale, where it would not just achieve those objectives but also provide a range of secondary benefits, primarily in terms of analytical tools. While these secondary benefits were novel, they did not rely on blockchain technology but on the data collected during the simulation.

It is important to note that our model relied not just on our technology, but also on our authorisation by the UK Financial Conduct Authority as an electronic money institution. This license allowed us to accept client funds and issue electronic money, something that few other blockchain startups could do. This hybrid approach can mitigate some of the downsides of blockchains themselves (such as their high levels of energy consumption), and open up a range of service design choices that are not possible using blockchain alone.

We also had plans to develop new processes based on blockchain's distributed nature. Decentralisation was not feasible for financial services due to regulatory requirements, but our roadmap envisaged a distributed ledger as a layer on top of our architecture, to provide decentralised governance that would enable clients e.g. to self-manage resource allocation within self-identified networks of aid organisations, particularly at national or sub-national levels. We believed that this would provide the infrastructure necessary for successful localisation.

b. What role does the technology play in mediating trust?

Although setting up new financial infrastructure is necessary for localisation, it is not sufficient. One of the major obstacles to localisation is lack of trust between stakeholders in the delivery chain, which then shapes institutions and processes; localisation therefore needs to be based in trust relationships that can form the basis for new institutional norms within the aid industry. Blockchain advocates claim that the technology can replace such trust relationships, but what it really does is shift the trust burden from individuals and institutions to hardware and software; and this may not be a desirable outcome for aid organisations.

There has been growing concern about loss of trust within the aid industry. There is an obvious concern that the giving public may lose trust in aid in general, and in some cases in specific organisations. However there is also a sense of a legitimacy crisis at the global level, based on specific instances of fraud and corruption, sexual abuse, and institutional racism. These questions about legitimacy extends to partners at national and sub-national levels, including governments and NGOs.

This crisis is clearly related to trust, specifically loss of trust between aid organisations and other stakeholder groups, and blockchain cannot be a substitute for trust relationships with these stakeholders. If implemented appropriately, blockchain-based services could help to build this trust, particularly by improving transparency; but it is worth noting that blockchain is not the only way to improve transparency, which brings us back to the question in section a), above.

People trust institutions, or at least they want to. Our potential clients did not ask for a "Disberse platform" they could use, but a "Disberse institution" they could trust. Our authorisation as a financial institution provided some basis for this, but we needed to show our service was reliable (i.e. trustworthy); and the fact that the service was based on blockchain was not in itself enough to generate trust.

Most of the features touted by blockchain advocates are not unique to, and do not require blockchain; and its unique features of decentralisation do not have obvious use cases in the aid industry. Despite this we maintain that blockchain could add value to aid; decentralised decision-making infrastructure is a prerequisite for localisation, and finance is usually at the foundation of those decisions. However decentralisation can not result from blockchain implementation on its own, only as part of a wider process of building trust between aid stakeholders.