

BLOCKCHANGE

BLOCKCHAIN TECHNOLOGIES FOR SOCIAL CHANGE



Photo: WFP/Alexandra Alden

CASE STUDY:

**Connecting Refugees to
Aid through Blockchain-
Enabled ID Management:
World Food Programme's
Building Blocks**

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PROJECT DESCRIPTION

Problem Definition



The World Food Programme's (WFP) core mandate is to eliminate world hunger.¹ Its mandate also includes support in emergency and crisis situations, such as the refugee crisis that emerged from Syria's civil war. Estimates show that over 800 million people in the world are hungry. According to the WFP, it supports over 80 million people worldwide.²

For much of WFP's lifespan, humanitarian assistance traditionally took the form of direct food, clothing, or sanitary product delivery, leading to high costs and considerable logistical distribution challenges.

More recently, financial assistance for refugees transitioned to a system of vouchers or prepaid debit cards. WFP provides support to over 14 million people via these cash-based transfers, roughly 15% of the total population supported by the UN agency.³ This approach allows for beneficiaries to purchase necessities from a store rather than receiving them from WFP directly, thereby lowering transaction costs and improving WFP's ability to leverage and collaborate with local actors. There is growing evidence to show marked improvements in poverty reduction, health, and nutrition resulting from humanitarian cash-based transfers (including but not limited to WFP's efforts).⁴

Cash-based transfer systems are not without their challenges, however. Vouchers or credit cards, for example, represent a single point of failure in the system. Especially taking into account refugees' tendency to travel far and often, the loss of a voucher or credit card can create a harmful information asymmetry, with food distributors unable to authenticate refugees' identities and authorize their access to resources.

Cash-based transfers are also heavily reliant on financial intermediaries such as banks, mobile money companies, carriers, and local agents. This approach reduces the resource and capacity drain on WFP, and benefits local economies, but also can create process inefficiencies – involving initial beneficiary account creation, accounting reporting, and making payments to authorized vendors.

Blockchain Use

Launched in January 2017, the WFP's "Building Blocks" blockchain initiative targets over one hundred thousand refugees living in the Azraq refugee camp in Jordan. WFP beneficiaries receive cash-based transfers to purchase basic goods from authorized local stores. The project's core goal is to increase the efficiency of the overall cash-based transfer scheme, ranging from refugee registration and processing to streamlining the required financial processes and leveraging trusted digital identities to circumvent the need for local financial intermediaries. The initial development and successful deployment of the system took less than five months.

Prior to the launch of Building Blocks, WFP provided intermediaries with a list of beneficiaries and supplied the total cash required to support food purchases. The bank then created all beneficiary accounts, informed beneficiaries and agreed on a payment mechanism (e.g., 'debit' cards or e-vouchers). The beneficiaries could go to an authorized local store to purchase goods they needed. The local vendor identified the beneficiary via iris scans, checked the entitlement and made the final sale. The vendor then received payment from the respective intermediary.⁵

In the Building Blocks program, blockchain technology complements the existing digital platform and approach. The way refugees use the cash remains the same, but back-end data processing is more efficient as beneficiaries' identities can be confirmed, and cash distributed, without reliance on costly verification processes performed by banks and other institutions.

Upon scanning the beneficiaries' irises, the blockchain backend authenticates the individual's identity via a linked relational database with hashed information on beneficiaries and their entitlements. Transactions are then recorded on the blockchain, creating a record of refugee expenditures. Vendors in the network use a blockchain wallet to track transactions and eventually receive payment for their sales directly from WFP.

While often described as a blockchain innovation, Building Blocks in fact relies on a three-pronged technical approach comprising blockchains, digital databases, and biometrics. This synthesis of approaches, while challenging at times from a technical point of view, is at the core of the program's initial success.

Blockchain Value Proposition

Building Blocks' central value proposition is streamlining the financial allocation and expenditure of cash transfers for refugees by bypassing the local financial sector and reducing transaction fees.

For traditional cash-based transfers, WFP funds are distributed from a foreign bank account, meaning that WFP is required to open local bank accounts in order to distribute money to refugees for their use at vendor locations. With the application of blockchain technology, there is no need to create a local bank account, because WFP can directly transfer the funds to the refugees' account, allowing them access via a biometric verification process and an immutable blockchain ledger.⁶ The legacy approach's multiple verification steps cost a substantial amount of money that could instead be put toward other programming needs at WFP.⁷

The project demonstrates that blockchains can indeed be effective in reducing transaction and operational costs in addition to facilitating disintermediation by eliminating third parties that added friction and expense to the legacy cash-based transfer process. According to the WFP innovation lab's chief, Bernhard Kowatsch, this pilot alone has saved the agency \$150,000 a month by eliminating 98% of bank-related fees.⁸ At the conclusion of the initial pilot in May 2017, WFP found that it had reduced cash transactions through local intermediaries from 10,000 upfront payments to banks each month to just 200 monthly settlement transactions to local retailers.

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PROJECT ANALYSIS

Risks and Challenges

While Building Blocks has been a demonstrable success, it is not without its risks and challenges. Some have questioned, for example, whether blockchain is really necessary for the system to function.⁹ Others have expressed concern regarding the dignity of cash transfers based on iris scans conducted in the premises of food retailers.

Although the project has decreased some privacy risks by removing the need to transfer beneficiaries' personal information to financial intermediaries, sensitive, personally identifiable information on some of the most vulnerable people in the world is still being generated and made accessible (albeit to a smaller, predefined community), inevitably introducing some level of risk.

Finally, disintermediation has helped move the identity authentication and authorization process away from financial intermediaries and onto the blockchain, thereby reducing the need for such actors. This has created major cost savings, but there are also risks that this disintermediation could negatively impact the local financial sector, which will lose an important and reliable client (i.e., WFP). WFP says that it is working closely with Central Banks to avoid any unintended negative effects on jobs and economic growth.

Next Steps and Opportunities for Scaling

Building Blocks is building on its early success and scaling up to cover around half a million refugees across camps under WFP's purview. From a technical perspective, WFP has signaled that it will phase out the iris scan process, and experiment with the use of blockchain tokens pegged to entitlements in future implementations. Such trial-and-error with the building blocks of digital identities is inevitable, and efforts to experiment and innovate new solutions will probably be welcomed. Strategically, medium-term plans include efforts to increase collaboration with other UN agencies. In the long run, WFP is plotting out an approach for Building Blocks to act as a platform for providing foundational IDs – i.e., identification that could be used across domains rather than just for WFP cash-based transfers – to refugees and other agency beneficiaries. As with so many of the case studies included here, identity is both foundational to the specific, limited project, but also a building block for possibly much more ambitious initiatives in the future.

ENDNOTES

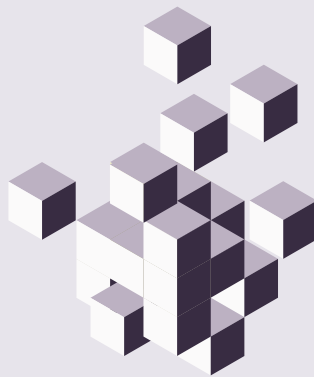
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