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# Blockchain for Refugees: Current Uses, Opportunities and Considerations

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**Abstract**

Within the humanitarian field, blockchain technologies are being explored as a means of facilitating the provision of aid to refugee communities. However, these innovation are being designed from the perspectives of the humanitarian organizations and donors. In this extended abstract we provide summary of how blockchain technologies are being used within the humanitarian field and the critiques of the utilization of such a technology. Furthermore, we present preliminary findings of research conducted with Syrian refugees in Lebanon on interactions around purchasing and providing food for their families. From these findings we highlight issues that need to be considered as we progress with blockcahin technologies within humanitarian contexts.

**Author Keywords**

Authors' choice; of terms; separated; by semicolons; include commas, within terms only; required.

**Introduction**

Blockchain has currently been at the center of much debate within the humanitarian field, as its usage is being explored by humanitarian actors and international organizations. In this position paper we

provide an overview of the ways in which blockchain technologies are currently in use within humanitarian responses and the critiques of their use. Additionally, we will provide a case study that contains preliminary data from a study conducted with Syrian refugees residing in Lebanon and discuss the implications of the findings on future blockchain projects implemented in these contexts.

### **Current uses of Blockchain**

In a report by the Digital Humanitarian Network, published in 2016, it was identified that blockchain may play a role in humanitarian response through “providing cost savings and traceability of information flows and by reducing transaction times” as well as being a means in which information and assets are shared among humanitarian actors [6]. Furthermore, they identified that by layering applications such as smart contracts, blockchain can be used in information management, identification, supply chain tracking, cash programming and humanitarian financing [6].

The UN is currently piloting a blockchain based initiative that facilitates identifying those that have lost legal identification and in doing so aids in combatting child trafficking [2]. For refugees that don't have identification papers, MONI in Finland is using blockchain to circumvent the need for a bank account [2]. Bitnation has developed a Blockchain Emergency ID system where family members verify each other's family ties [13].

The World Food Program (WFP) has spearheaded the uses of the Ethereum, in order to address challenges in providing food aid to refugees and others in need [12]. Their project, 'building blocks', aims at making its cash-

based transfer operations faster, cheaper and more secure. The project is currently running in a refugee camp in Jordan where 10,000 Syrian refugees are redeeming their cash assistance on a blockchain based system thus giving WFP a record of every transaction without sensitive data being shared with third parties [12]. This also improves WFP's ability to better inform algorithms that provide aid selection criteria. The International Federation of Red Cross and Red Crescent have initiated a project in the Middle East that would use blockchain to keep record of the services being accessed by refugees in the region [14].

In the case of humanitarian financing, platforms such as Giveth [15] have built on blockchain technologies to decrease the bureaucracy needed to donate money towards humanitarian causes, while allowing for a high level of transparency and accountability. Additionally, the use of blockchain technologies would shorten the time needed to transfer funds from donors and central organizations to local aid actors [16].

### **Critiques of Blockchain in Digital Humanitarianism**

While there has been a lot of interest in the use of Blockchain technologies within the humanitarian sector several scholars within the field of digital humanitarianism have highlighted that digital positivist views may mask the potential harm technologies may have and therefore they call for more critical views of humanitarian technologies [3,5]. Consequently, in this section we will present some of the critiques present in the literature on blockchain in humanitarian contexts.

While blockchain technologies have the potential to bypass corruption within the humanitarian financing



Figure 1 Images showing dialogue cards that represented different resources and individuals within the community

money flow, it has been indicated that they fail to address the real underlying issue which is the cause of corruption in developing countries and countries experiencing conflict [8]. By doing so blockchain technologies may be seen as a technology of avoidance that does not address the political issues that are propagating corruption. In a similar manner, the propagators of blockchain technologies emphasize that the technology does not necessitate any form of trust between the stakeholders engaging together as it will 'enforce contract-based relationships between atomistic individuals in an escape from community'[8]. We need to question whether such relationships are relationships that would benefit refugee communities. There is a disruption in the social fabric within refugee communities [10] and distrust towards host communities, aid organizations and governmental institutions [1,11]. While Blockchain technologies may be more efficient in facilitating transactions, such contexts call for technologies that support the formation of trusting relationships rather than the trustless relationships provided by blockchain technologies.

Furthermore, the humanitarian aid community is currently exploring the use of unconditional cash assistance, in which aid is given in the form of cash that can be spent by beneficiaries in any way that they see fit (rather than being restricted to buying only food products) [9]. If cryptocurrencies are to be used within unconditional cash assistance aid schemes a more thorough remittance system is needed in developing countries and in rural areas where refugees usually reside[8]. Additionally, WFP's piloting of cryptocurrency is currently restricted to a refugee camp where vendors in the camp and nearby vendors are easily identified

however, more consideration is needed when considering the case of delivering aid to urban refugees or those residing in informal tented settlements that are more mobile. Developing such thorough remittance systems would need to overcome the low technology resources available in to refugees and in refugee contexts [4].

Lastly, the current implementation of blockchain technologies in the humanitarian field have been focused on their use by humanitarian organizations rather than their use by refugees and refugee communities [7], who we consider to be key stakeholders within humanitarianism. Therefore, research is needed regarding how blockchain technologies impact refugees, refugee agency and their relationships within their communities and with humanitarian institutions.

## Case Study

In this section we will present preliminary findings from a study conducted with Syrian refugees in rural Lebanon. Dialogue cards (figure 1) were used with 12 Syrian refugee women in order to explore their interactions around purchasing and provision food for their families. This exploration entailed discussing their interactions in relation to sharing resources, purchasing of food and use of aid.

We shall focus on instances which emerged from the data that would lend themselves well to the implementation of blockchain technologies, while discussing how that would influence refugees as stakeholders within the humanitarian system and their relationships and the strategies they use to cope with living in poverty.

### *Opportunities for Blockchain*

#### MITIGATING CORRUPTION

Participants discussed an incident where a donor from within the Lebanese community assigned a man in the village to distribute aid to the refugee community. Rather than distributing the aid as instructed, the man charged each refugee a certain amount of money as a condition of receiving the aid. Through the telling of this incident the women discussed how they were not able to voice any issue with this as they feared that they would not receive any further aid through this man. This is a prime example of how blockchains can be used to encourage transparency regarding aid distribution. However, what the technology may overlook is the position of power of the man distributing the aid may be in. While one donor may utilize blockchain to mitigate corruption, the man is still quite influential and would find other means to abuse the situation of need refugees are in.

#### ENSURING LABORERS' RIGHTS

Participants attributed their inability to purchase food to the low income they attain through informal labor. They indicated that they are not only paid lower rates for labor but employers do not always fulfill the contract initially agreed upon. Consequently, refugees end up being paid less than the amount agreed upon. Additionally, since there are no formal contracts holding parties accountable a lack of fulfillment of the agreement does not entail any legal prosecution. Again this is an opportunity here where blockchain technologies augmented with smart contracts can be used to ensure the rights of refugees. However, refugees work in the informal economic sector in order to bypass employment policies that restrict them from formal employment. Additionally, several refugees have

not registered their presence in the country with the local authorities. Consequently, we need consider how do we configure smart contracts so that they may not be used as evidence of what the government may consider 'illegal activity'.

#### MAKING AID TRANSPARENT

In regards to aid from organizations, participants expressed frustrations in not understanding the criteria based on which people receive aid. Several indicated that their aid had been discontinued and when they queried the aid organizations they were told "it was by accident" but yet they have not resumed receiving aid. Additionally, they expressed their discontent in how they perceive aid being spent. Indeed, one participant said "I do not understand why they need to hire three people that come together to survey us...one person could do that". There is potential for blockchain technologies to make more visible to aid recipients how aid is being utilized. While this directly responds to refugee demands as stakeholders within the humanitarian systems, such systems that make visible aid criteria and how money is being spent may be viewed as an unwelcome disruption to the humanitarian community.

#### DESIGNING BLOCKCHAINS FOR NEGOTIATION

A lot of the discussions with the women were centred on buying food from local shops on credit (i.e. pay the shop owner for the food in instalments at a later time). This is facilitated by the relationship that they have developed with the shop owners. Even in cases where the shops accepted food vouchers, the relationship between the refugees and the shop owner allowed them to swap out aid intended for food for other items they need such as house cleaning products. We found

that the trusting relationship acts as a mediator for such interactions in which the shop owner understands the situations in which refugees are living in. Therefore, we need to question whether the ability of aid organizations to keep track of transactions, through blockchain technologies, decrease refugees' ability to negotiate transactions that contribute to them coping with poverty and food insecurity. Furthermore, we need to consider how would such data impact criteria based on which refugees receive aid.

In conclusion there are various ways in which blockchain technologies can be implemented to respond to refugee needs however, careful considerations must be given to the configurations of these technologies and how they would shift relationships refugees rely on for coping with poverty and food insecurity.

### Co-Authors' Bios

*Reem Talhouk* is a doctoral trainee in Digital Civics at Open Lab, Newcastle University. She is currently working on 'SunBlock', a project that explores the use of blockchain in supporting peer-to-peer energy exchange within off-grid solar energy systems in Sub-Saharan Africa. Her PhD research focuses on the use of technologies to build refugee community resilience more specifically by improving their access to healthcare and food security.

*Kyle Montague* is a Lecturer at Open Lab, Newcastle University. His research interests include human-computer interaction, accessibility, wearable and mobile interaction, social computing, and healthcare technologies. He is a Co-Investigator on the 'SunBlock' project. The project explores the use of blockchain in supporting peer-to-peer energy exchange within off-grid solar energy systems in Sub-Saharan Africa.

*Andy Garbett* is a postdoctoral researcher at Open Lab, Newcastle University. His research explores how technology can enable communities to commission, design and deploy community information resources through large-scale social computing systems and mobile technologies. He is currently working on several projects including the use of activity tracking technologies within classrooms to promote positive behaviour change and the creation of a low-cost distributed communication network to broadcast SMS messages.

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