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## The Evolving Nature of Technology & Implications for HA/DR and Development in Africa

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RCLF Minute, December 2018

Venmo, Pay Pal, Apple Pay are now common ways to pay for services owing to their efficiency and reliability. This highlights the general concept of 'change' in the way the financial sector is evolving and how communities across the globe are adapting to a new way of doing business. However, a common underlying feature among the mentioned payment systems is that they all have the backing of a financial institution as a guarantor.

It is also inferred across all these new innovations that users must have a bank account meaning that they are connected to the formal banking sector. Further, even recent market innovations such as cryptocurrencies and blockchain technology – users and traders including governments rely on a formal banking system to guarantee the initial transaction, whose value is pegged on guarantees of a banking institution. This reliance on the formal banking system stands forcing governments across the globe commence on policy and laws to regulate cryptocurrencies as part of the process of integrating it into the formal financial system.

In Africa, the trend is the same. Change is evident in the rapid expansion of the telecommunication space, and the high level of accessibility of cell phones has made trade more efficient. Mobile payment platforms have been in use for over ten years. For example, Kenya's M-Pesa ('M' for 'Mobile' and 'Pesa' means money in Swahili), is a pioneer mobile money platform and a model for other countries in the developing world. M-Pesa began in a similar way as cryptocurrency – as a new way to transact money and was also unregulated. The system was also fast, efficient and successful in bringing in millions of previously unbanked customers into the formal financial system. However, unlike Venmo and others, M-Pesa users do not need to have a bank account. They only need a mobile phone which replaces the need of a bank account. To transact, users use brokers/agents who operate like bank tellers to withdraw cash. The M-Pesa agents do not have bank accounts either -- they rely on cash advance from a mobile phone company like Vodafone (equivalent of T-Mobile or AT&T) to maintain liquidity.

The development of mobile pay systems is a significant evolution in the financial sector which also reveals the adaptability of innovation in a relatively abbreviated period. Prior to this, cash was 'king' and credit was conditional on a customer's assets. In parts of Middle East and Africa animals such as goats and camels have been used as assets to access credit from banks.

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However, today, mobile money allows for market place transactions and for peer lending, acting as an alternative to a typical bank account.

This system has many advantages and has been effective in bridging the financial access gap. It is also fast and transparent and can be useful in areas recovering from conflict. However, because the mobile money platform has limited liquidity and cannot handle large cash or credit transactions, an elaborate platform such as blockchain has proved useful in HA/DR settings.

As mentioned earlier in this paper, blockchain and cryptocurrencies have become a subject of much discussion as governments devise ways to regulate the technology. The use of block chain is introducing another layer of change into the financial sector. Though not yet mainstream it is already making it possible for multinationals such as the United Nations to efficiently meet the needs of those impacted by conflict, famine or adverse weather events like tsunamis.

In October, a testimony before the U.S. Senate Committee on Banking, Housing and Urban Affairs by renown economist Nouriel Roubini criticized the cryptocurrency hype. Roubini called cryptocurrencies a “stinking cesspool” and “the mother and father of all scams”. He contends that cryptocurrencies are not viable or sustainable assets.<sup>ii</sup> To counter his argument, Peter Van Valkenburg, a leading proponent of the technology, said that the blockchain technology is not perfect, but that it is the first technology to be accessible to the unbanked.<sup>iii</sup>

One example of how things are changing can be seen in the way the World Food Program (WFP) has adopted blockchain an aid distribution. WFP has deployed a prototype of what it is now calling “Building Blocks” in Jordan’s refugee camps.<sup>iv</sup> The technology can authenticate the user and record transactions in the camp allowing a flawless flow of aid directly to refugees. Further, refugees can shop for basic goods at selected supermarkets and access health services using biometric identifiers.<sup>v</sup> This digital wallet serves a dual purpose: registering vulnerable populations and bringing the unbanked into a formal monetary system.

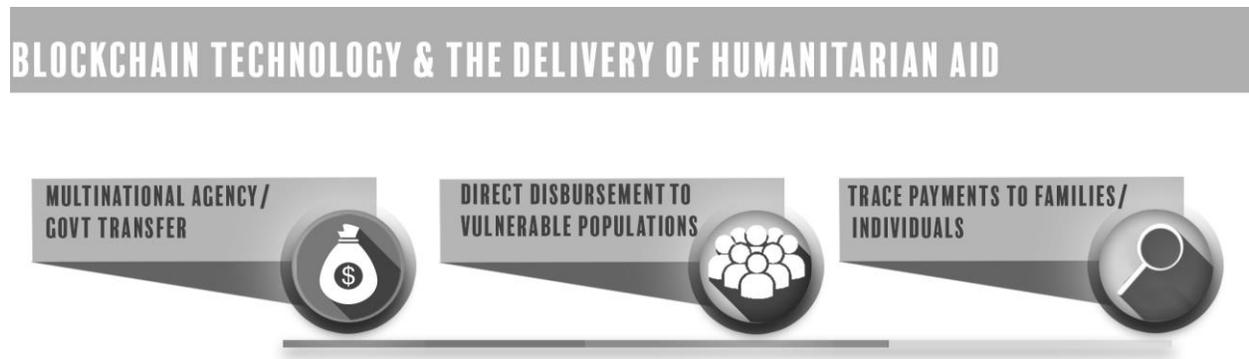


Figure 1: Blockchain & Delivery of Humanitarian Aid Source: CAOCL

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This blockchain system is not fully developed nor is it risk free, but it is a transparent and essential way to track payments and services especially in conflict zones. Its use in humanitarian settings will reduce waste and increase efficiency. Further, it can help curb money laundering and corruption in vulnerable spots such as northern Nigeria, Somalia among others. Somalia and South Sudan, in particular, provide a clean slate in which development and humanitarian actors can adopt emerging technology to re-construct a state and positively change lives.

Block-chain is also transforming the means of doing business in Somalia. Somalia has been unstable since 1992 with no formal governing structures or formal financial system. However, cash found its way into the system through informal *hawala* remittances. *Hawala* is a parallel banking system that exists outside of formal structures.<sup>vi</sup> It relies on trust and the Somali diaspora have relied on *hawala* for decades, building vast networks of money transmitters across the world. It is popular due to its cost effectiveness and low overhead costs and exchange rates however, there was no way to track transactions.<sup>vii</sup> This means that the informal *hawala* system is vulnerable and open to illicit actors including terror groups such as Al-Shabaab.<sup>viii</sup>

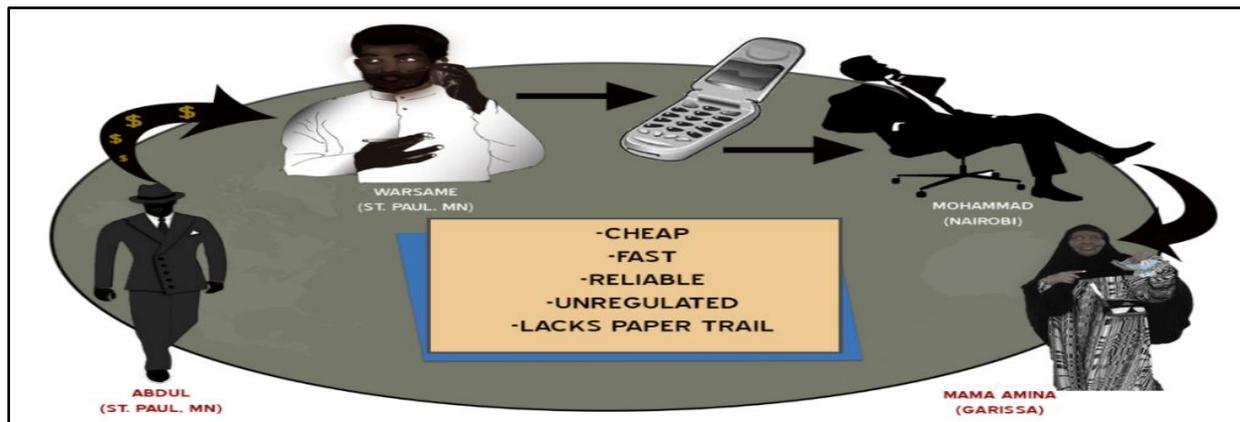


Figure 2: How Hawala Works Source: CAOCL

Although remittances to Somali are also conducted through formal transfer systems such as Western Union and even banks, there is still a shortfall in tracking the millions that flowed into Somalia among other countries that expose the U.S. to risk. To remedy this, the U.S. and the U.K., in 2011, began penalizing banks and money transfer companies that had lax remittance policies as a means of increasing transparency in money transfers to countries such as Somalia.<sup>ix</sup>

The immediate unwanted result was that legitimate remittance-reliant projects supported by Somalis living in the West were halted.<sup>x</sup> The second and third order effects of the penalties

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included a negative impact on households and an increase in the use of the untraceable but reliable *hawala* system. The blockchain technology can change this conundrum by ensuring transparency.

Similarly, South Sudan, the newest country in Africa, has in recent years been one of the highest recipients of aid and development assistance from the U.S. However, millions of dollars have been lost to corruption, leaving the population in dire straits. Leading proponents of blockchain technology see a benefit in setting up a blockchain-like system that can guarantee secure aid and development disbursement to the millions of people that need it. This could be a worthwhile experiment because the government of South Sudan has been accused of facilitating the plunder of aid money through corrupt schemes.

Further, South Sudan's banks only have limited reach and capacity which means that a majority of the population has no access to cash, credit, or services. Because South Sudan is still developing its governance structures, such a system would, in addition, allow it to register its population as part of a long term strategic economic and development plan. This means that the blockchain technology can introduce change in South Sudan's economic sector and facilitate the systemization of a country that is so far behind.

Overall, technological change has had wide ranging effects on the developing world especially in post-conflict zones. Though the blockchain technology is still evolving, there are some noteworthy developments that Marines should be aware of while deployed. Marines should be cognizant of the fact that even remote societies are adapting to global trends. This also means a reduction of risk for those acting in humanitarian settings which is a benefit of digitization. It also means that Marines working alongside other HA/DR actors can monitor and evaluate aid distribution, and consequently improve programs.

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<sup>i</sup> Kerry Foshier, Lauren Mackenzie et. al. "Culture General Guidebook for Military Professionals", Center for Operational Culture Learning, Quantico, VA, 2017 p 26

<sup>ii</sup> Nouriel Roubini "Exploring the Cryptocurrency and Blockchain Ecosystem" Testimony for the Hearing of the US Senate Committee on Banking, Housing and Community Affairs October 11, 2018, Full testimony available at <https://www.banking.senate.gov/imo/media/doc/Roubini%20Testimony%2010-11-18.pdf>

<sup>iii</sup> Amy Castor, "Roubini Faces Off With Coin Center's Van Valkenburg at Senate Hearing" October 12, 2018 at <https://www.tokendaily.co/p/roubini-faces-off-with-coin-center-s-van-valkenburgh-at-senate-hearing>

<sup>iv</sup> The World Food Program 'Building Blocks' Program <https://innovation.wfp.org/project/building-blocks>

<sup>v</sup> Ibid.

<sup>vi</sup> Patrick M. Jost and Harjit Singh Sandhu, "The Hawala Alternative Remittance System and its Role in Money Laundering," *United States Department of the Treasury* (1998), 4. Accessed March 3, 2015, <http://www.treasury.gov/resource-center/terrorist-illicit-finance/documents/fincen-hawala-rpt.pdf>

<sup>vii</sup> Ibid.

<sup>viii</sup> Ibid.

<sup>ix</sup> Approximately \$1.3 billion is sent to Somalia each year from several countries including 215 million from the U.S. See "Hear from Somali immigrants who fear being unable to send money back home" National Public Radio, Washington D.C., July 18, 2015 at <https://www.pbs.org/newshour/world/hear-stories-somali-immigrants-fear-us-law-will-keep-sending-remittances-back-home>

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<sup>x</sup> Ibid.