The Potential of Digital Cash Transfers to Strengthen the Link Between Humanitarian Assistance and Social Protection

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Abbreviations & Acronyms:

ACF	Action Contre La Faim
ACTED	Agency for Technical Cooperation and Development
ATM	Automated Teller Machine
AWCC	Afghanistan Wireless Communication Company
CaLP	Cash Learning Partnership
DCA	DanChurch Aid
DFID	Department for International Development
DRC	Danish Refugee Council
FSP	Financial Services Provider
IVR	Interactive Voice Response
KYC	Know Your Customer
mPOS	mobile Point of Sale
NADRA	National Database and Regulation Authority
NFC	Near Field Communication
PIN	Personal Identification Number
POS	Point of Sale
SDG	Sustainable Development Goal
UID	Unique Identification
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNRWA	United Nations Refugee and Works Agency
WFP	World Food Programme

Summary:

Recent years have seen a rise in the use of cash-based assistance but whilst humanitarian contexts lend themselves well to the digitisation of aid, cash assistance remains a very small part of humanitarian aid. This white paper examines how the increased use of digital cash transfer technology which delivers cash to recipients using card-based and mobile phone-based systems, may provide potential opportunities for closer collaboration between humanitarian and development actors working towards achieving collective, sustainable outcomes, as well as enabling a closer link between state provided social protection and humanitarian cash transfers. However, it argues that, in order to preserve the humanitarian imperative 'to do no harm', agencies must take great care to mitigate against the potential negative impacts of the operational challenges of implementing such a policy. The paper first highlights the potential benefits to the actors involved; second, the operational issues; and then discusses in greater depth the ways in which digitisation assists increased synergy between humanitarian assistance and development programmes, also focussing specifically on social protection. In summary it highlights:

Potential benefits of digital cash transfers for recipients, donors and private partners:
* Lower costs for donors, particularly where schemes are run over a longer period of time;
* Improved transparency and reduced opportunities for leakage;
* Lower transaction costs, increased control of finances, potential for greater financial inclusion;
* Improved personal security due to the reduction in reliance on physical cash;
* New markets for commercial partners;
* The development of infrastructure in previously hard to access areas;
* Security updates and emergency notifications from donor agencies to registered users;
* Access to large amounts of data to inform planning of future responses and accurately identify and target beneficiaries in a time of crisis.

Operational issues related to delivering digital cash transfers:
* Infrastructure – damaged/poor network connectivity, insufficient agent network, inadequate liquidity and a hard to access population, particularly post-crisis or in conflict-affected areas;
* Financial literacy and inclusion – lack of technological know-how among users and a failure to date to deliver wider financial inclusion; along with possible exclusion of the most vulnerable who cannot access the technology;
* Data & Privacy Regulations – speed of implementation in a crisis potentially exposes recipients to theft, fraud, transfer of data to third parties and use of data for purposes other than what was intended due to inadequate data regulation; host and donor access to and use of data which may not be in the best interests of the individual;
* Financial Regulations – speed of response encourages organisations to work around 'Know Your Customer' regulations which are designed to safeguard recipients;
* Private Suppliers – financial motivation could lead to marketing which is not in the best interests of the individual;
* Costs – high short-term set up costs do not align with short-term humanitarian funding cycle.

Digital Cash Transfers: Strengthening the Link Between Humanitarian Assistance and Social Protection
With reliable, flexible funding which can expand in times of crisis, digital cash transfer technology could support a two-way relationship between humanitarian and development actors, thereby strengthening the link between humanitarian assistance and social protection activities by:
* Using the same technology and information to deliver social protection in times of stability and relief in times of crisis;
* Delivering longer-term cash transfer schemes in fragile and protracted crisis environments, such as the WFP programme for refugees in Jordan and UNHCR efforts in Afghanistan, may be the only way to deliver social protection to the most vulnerable;

- Implementing social protection-style cash transfer schemes in a humanitarian context so promoting resilience through asset building and enabling individuals to be more resilient to shock;
- Using data gathered on vulnerable populations for a digital cash transfer scheme to inform and integrate disaster risk management into development efforts;
- Improving the cost-effectiveness of short-term humanitarian safety nets by linking them to longer-term social protection programmes.

1   Introduction

This white paper sets out to examine the role of digital cash transfers in the humanitarian context. The aim is to explore whether the developing technology associated with digital cash transfers could be of benefit to efforts to strengthen the link between humanitarian and development and social protection agencies. This so-called 'New Way of Working' aims to achieve "collective outcomes that reduce risk and vulnerability" (UNOCHA., 2017) and promote closer collaboration and coordination between humanitarian, development and social protection agencies. The focus of this paper is on digital cash transfer mechanisms, including mobile-phone based systems. The paper will begin by reviewing the context within which cash aid has become increasingly popular both within the humanitarian and development field. The next part will seek to demonstrate uses of digital cash transfers in the humanitarian context before outlining the benefits and issues associated with the use of this technology, highlighting particular issues that arise within the humanitarian context. The next section of the paper will examine the concept of the 'New Way of Working' and how digital cash transfers might support efforts to strengthen the link between humanitarian and development actors before moving on to look at how humanitarian digital cash transfers might contribute to social protection in particular.

2   The Rise of Cash Assistance

Since the turn of the millennium there has been a gradual shift from in-kind food aid towards cash assistance in both a humanitarian and a social protection context. There are many reasons cited for this: importing food undermines the long term capacity of local farmers; recipients have needs other than food and therefore cash is more suitable due to its fungibility and durability; increased transparency; access by recipients to other financial services; scalability; benefits to the local economy; reduced administration and bureaucracy, particularly if distribution is digitised, thereby reducing costs to donors (Donovan, 2015, p. 3, World Bank Group, 2016, Hosein and Nyst, 2013). However, cash assistance deliveries were fraught with potential for leakage as well as the risk of "cash-in-transit heists" as vehicles delivering cash to remote areas were targeted by criminals (Vincent and Cull, 2011). Furthermore, liquidity problems associated with beneficiary transfers and settlements to retailers provided a significant operational obstacle to the efficient delivery of cash assistance. Consequently, the emergence of technology which enables digital cash transfers has been seen as hugely beneficial both for donors and recipients, for whom this is a more flexible and convenient delivery mechanism. The World Food Programme (WFP) resisted cash payments in Kenya due to high levels of corruption but in 2013 it embarked on an e-payment scheme aimed at building resilience against drought in Eastern and coastal areas. Evidence has showed that in this specific context the e-payments have been 15% cheaper for WFP than in-kind food distribution whilst also stimulating the local economy, reducing leakage and improving transparency. Since 2008 the WFP has changed its strategy from food aid to cash assistance thereby recognising that in certain environments cash payments may prove more beneficial than in-kind food aid (Zimmermann and Bohling, 2013). In Palestine, wider benefits are evident as "cash based transfers have had a multiplier effect of secondary impact on the local economy" (WFP., 2016) delivering increased sales to participating stores, stimulating the local economy, creating jobs and increasing VAT revenue.

Despite this shift towards cash transfers, in-kind assistance still constitutes 94% of all humanitarian aid, according to recent estimates (World Bank Group, 2016). However, the number of deployments of cash transfer programmes in humanitarian and social protection contexts is steadily rising: between 2010 and 2013 the number of African countries with unconditional cash transfer programmes doubled to 40; in 2008 cash transfer programmes featured in 27 countries globally but this has risen to 64 countries in 2014 (World Bank Group, 2016). This rise in cash transfer programmes, and in particular the digitisation of the process, has led to a new set of opportunities, issues and concerns. The deployment of technological solutions, many of which would not be permitted in the developed world, even with safeguards, are often brought in with little regard for their impact on human rights in the developing world (Hosein and Nyst, 2013). Recent shifts towards the use of biometric data to identify and record beneficiaries has further set alarm bells ringing

(Hosein and Nyst, 2013, Jacobsen, 2015). However, this is not a new phenomenon: the use of biometric data in the form of finger prints was introduced in 1925 in South Africa to gather information on non-whites. This system was later extended to enable social protection payments to pensioners in Kwa-Zulu Natal and now reaches 15 million beneficiaries (Hosein and Nyst, 2013). Prior to this, photographs were used to record individuals' biometric data in much the same way.

3   Examples of Digital Cash Transfer Schemes within the Humanitarian Context

This section provides an overview in tabular format of the delivery mechanisms currently used to deliver digitally based cash transfers. These include cards; two systems operating over mobile phones - mobile vouchers and mobile money; and finally, the increasing use of new biometric technologies for identification purposes. The choice of delivery mechanism in any situation may be governed by the purpose of the assistance; the requirements and needs of both the donor and recipient; and the capacity of the technological landscape to deliver appropriate services. This section attempts to understand the digital delivery mechanisms available and highlight any potential benefits and disadvantages they hold for both beneficiaries and donors.

A. Card-Based Systems (O'Brien et al., 2013)
Magnetic Stripe Typically, these cards link to a bank account. Beneficiaries can use the card to make payments and withdrawals. As the funds are held in a bank account, transactions can only be processed if there is a live network between the merchant and financial institution which can be a significant problem where network connectivity is unreliable or damaged.
Smart Card Smart cards can, but do not have to, link to a bank account, as the funds are stored digitally on a chip embedded in the card. The chip also stores relevant beneficiary information, including biometric information where relevant, in order to authenticate the identity of the holder. As all the information regarding identity and funds is stored on the chip there is no requirement for a live connection at the point of transaction. For beneficiaries to receive further funds the card must have a live connection to the central database. These cards are often more appropriate in rural environments where the infrastructure is less well-developed. Both magnetic stripe and smart cards require a Point of Sale (POS) device, usually connected to a network such as Visa who can process transactions. Withdrawals can often also be made via ATM. The cards have the advantage of being linked to financial institutions and there is, therefore, the potential for access to other financial services.
Closed and Open-Loop Systems Cards can be linked to closed-loop systems, also known as "limited-purpose instruments", or open-loop systems - "mainstream financial accounts" (Bold et al., 2012, pp. 3, 4). Closed-loop systems restrict the capacity of the account thereby only allowing beneficiaries to access their funds via designated agents or ATMs and restricting additional deposits/savings. There are advantages of these accounts for donors: lighter regulation requirements due to the limited risk of money laundering or other illegal activity, which is a particular advantage where speed of delivery is critical; increased transparency as accounts are easier to monitor; and unused funds can be withdrawn by the donor after a specified time frame. In contrast, open-loop systems allow much more flexibility for beneficiaries but reduce transparency for donors as they are unable to verify exactly how their funds have been spent. In addition, there is a considerable amount of Know Your Customer (KYC) regulation and identification requirements associated with these accounts, therefore they are not as practical in a crisis situation where speed of response is critical. It is worth noting that there are many hybrid accounts on the continuum between closed and open-loop systems. Closed-loop systems can be added to, increasing functionality, without necessarily needing to implement full KYC regulations. .

Scheme	What	How
Lebanon One Unified Inter-	One common card for all	Recipients receive cash transfers to

Agency System for E-cards (LOUISE) (Keith, 2017, Johnson)	cash based assistance to refugees in Lebanon, including cash for food and education, winter assistance allowance and multi-purpose cash. One Financial Services Provider (FSP) (Banque Libano-Francaise) manages the scheme. Targets 180,000 refugee households. Partners: WFP, UNHCR, The Lebanon Cash Consortium (LCC) and UNICEF.	their cards and are able to make purchases at stores with POS and withdraw cash at ATMs. The common platform currently issues, activates/ deactivates and distributes cards. It has a common vulnerability assessment system, information management portal, call centre and monitoring and evaluation approach.
Emergency Social Safety Net (ESSN) Turkey (Cupolo, 2017)	Debit card issued to refugees in Turkey. Partners: WFP, Turkish Red Crescent, European Commission on Humanitarian Aid and Civil Protection (ECHO) and the Turkish government. The scheme targets 1 million - 1.3 million off-camp refugees and persons of concern, from all countries of origin, living in Turkey. As of June 2017 there were 686,000 beneficiaries.	Recipients receive a debit card which is reloaded monthly and enables purchases of goods, withdrawals of cash at ATMs and payment of bills
Watan Card e-payment, Pakistan 2010 (Hosein and Nyst, 2013, O'Brien et al., 2013)	Smart card used to deliver cash grants to 1.5 million victims of the floods in 2010 in a joint UNHCR and government venture.	Potential flood victims were identified and verified using biometric data held on the National Database and Registration Authority (NADRA). They were then issued with a Visa Card - a Watan card - which was pre-loaded with a cash grant. Cash was accessed via POS and ATM. The scheme was delivered in partnership with United Bank Ltd.
World Food Programme SCOPECARD, Iraq 2016 (World Food Programme, 2016c)	The SCOPECARD is a contactless smartcard. In Iraq, 2016, the WFP aimed to reach 1 million displaced Iraqi families and 72,000 Syrian refugees with the card. It is also in use in Syria, Sudan and other countries around the world.	The smartcard is linked to its owner via PIN or biometric information. Beneficiaries receive cash or vouchers onto their card. The card can be used at authorised retailers or project partners. At the point of transaction cards are connected to a mobile Point of Sale (mPOS) device which deducts purchases and automatically adds benefits. The system works offline and an internet connection is only required for synchronization, which can occur whenever convenient for the retailer.

B. Mobile Phone-Based Systems - Mobile Vouchers (O'Brien et al., 2013)

Mobile vouchers are similar to paper vouchers or e-vouchers where recipients are able to make purchases up to the value of the voucher. However, unlike paper or e-vouchers which are often

for one-off use in designated stores, within a specified timeframe, the technology behind mobile vouchers, which are redeemed over the mobile network, allows beneficiaries greater flexibility to both make payments and withdraw cash in multiple transactions. A PIN is usually required for verification of transaction. Agents pay out to the beneficiary and reclaim the money from the mobile phone provider. There is, therefore, limited potential for access to extended financial services as all transactions are through the mobile network provider.

Scheme	What	How
Mobile Voucher scheme in Afghanistan (Better than Cash Alliance, 2016)	WFP programme in partnership with Afghanistan Wireless Communication Company (AWCC) in Afghanistan to reduce food insecurity. A pilot scheme delivered 3 monthly payments to recipients between April and June 2014. A further larger trial was conducted in 2015. This system uses both mobile and biometric technology.	Recipients are registered and fingerprints taken to create a unique ID. This is then stored on a microchip on a Near Field Communication (NFC) tag which is stuck onto their WFP identity card. Recipients are notified of funds received via a SMS to their issued SIM card. Designed as a 'closed-loop system' funds are pre-loaded on the account and linked to the NFC tag. Spending is restricted to food purchases with designated agents. To make a purchase, recipients must present either their mobile phone or NFC tag. Transactions are authorised using both a PIN and fingerprint scan using the AWCC issued POS device. The programme aims to further financial inclusion through the introduction of digital and mobile money to a population where only 10% of people have a bank account.
Mobile voucher scheme in Turkey (Jacobsen and Armstrong, 2016)	Danish Refugee Council (DRC) delivered programme on behalf of DFID 2014-2015 to give monthly cash transfer via e-vouchers to Syrian refugees in Turkey.	Monthly cash transfers delivered to Syrian refugees living outside camps in southern Turkey in the form of e-vouchers for use in supermarkets to meet basic needs of recipients.
'Hello Paisa' ('Hello Money') in Nepal in 2015 (Johnson et al., 2015)	DanChurch Aid (DCA) programme to assist 10,780 victims of the 2015 earthquake. Cash transfer via e-voucher using 'Hello Paisa' technology.	Recipients received SMS notification of funds, a unique identifying code and the amount to be received. Cash could be drawn from any of 'Hello Paisa's' network of agents which included Prabhur Bank and the Civil Bank. At best the DCA was able to deliver to 976 beneficiaries in one day.

C. Mobile Phone-Based Systems: Mobile Money (O'Brien et al., 2013)

Mobile money is a more sophisticated mobile phone-based system which allows recipients to make withdrawals, transfer funds, pay bills, purchase goods and buy phone credit from their own 'mobile wallet' or account. A cash transfer can be made into the account by the donor via the mobile network operator. Usually the donor would have a bulk payment account with the mobile operator and individual accounts for beneficiaries. The donor supplies the mobile operator with a list of beneficiaries, identified by unique identification numbers, and the amount to be transferred. The mobile network operator then makes the transfers accordingly from the bulk account to individual accounts. Beneficiaries receive notification of receipt of funds via SMS. As

the system is run entirely through a mobile phone operator there is generally no access to further financial services beyond payment functions unless the mobile network operator is able to provide them (O'Brien et al., 2013). M-Pesa in Kenya is an example of a well-established mobile money system which is developing its infrastructure to include services such as making and receiving international payments and linking the mobile account to a bank account to make withdrawals and deposits (Safaricom.).

Scheme	What	How
Mobile money cash transfer scheme in Afghanistan (Samuel Hall Consulting, 2014)	DFID sponsored scheme to give monthly mobile cash transfers to beneficiaries in Afghanistan in 2012 in response to drought.	Using M-Paisa technology cash transfers were delivered via the Roshan mobile network. Customers were able to send and receive payments, make person to person payments, disburse and receive salaries, pay bills and receive money from abroad using their mobile phone. The system used a combination of SMS and Interactive Voice Response (IVR) in multiple languages.
Mobile money cash transfer scheme in Cote d'Ivoire, 2011 (O'Brien et al., 2013)	WFP and Action Contre La Faim (ACF) joint venture to distribute 3 monthly cash transfers to post-conflict affected households in Abidjan.	Working in partnership with MTN cash transfers were delivered to 10,800 beneficiaries. Due to the widespread use of mobile phones, the lack of requirement for ID confirmation to register and the lack of general access to bank accounts this technology was the most favourable approach to disbursing funds.
'E-wallet' scheme in Myanmar (World Food Programme, 2017)	WFP pilot programme to deliver monthly cash transfers to displaced families in Myanmar in partnership with 'Wave Money', a local bank and mobile phone company. Programme trial began in February 2017.	Recipients were given a mobile phone and SIM card. Arrival of funds into their 'e-wallet' (private account) is notified via SMS. Withdrawal of funds can be done at the local 'Wave Shop'.

D. Biometric Technology (Bold et al., 2012)

This is an emerging technology which relies on biometric identification such as iris recognition, fingerprinting and facial recognition to authenticate transactions. Biometric identification can avoid the need for cards, phones, SIMs and PINs by acting as a standalone system which is linked to a financial service provider. Access is limited to POS and ATMs with the appropriate technology and limits beneficiary access to wider financial services. It is also often linked to all forms of digital cash transfer systems listed above as an additional security measure as it technically reduces the opportunity for leakage. It therefore does not guarantee access to a bank account or improved financial inclusion.

A significant drawback with this technology is that it is essentially a limited-purpose, closed-loop system as few POS devices or ATMs have the technology for biometric authentication, thereby limiting where and when beneficiaries can access their funds. Such systems can be expensive to deploy due to the costs of distributing the required infrastructure and can make it hard for recipients to transition later to more mainstream financial services which would promote greater financial inclusion.

Scheme	What	How
Iris scan payment system	WFP successfully trialled the	Purchases are made using iris scan

(World Food Programme, 2016b)	card-less EyePay system in 2016 for refugees living in camps in Jordan to purchase goods in authorised stores using their iris scan only.	only - there is no requirement for a card or PIN. The system registers the iris scan, connects to the UNHCR database to confirm identity and then to Jordan Ahil Bank through the Middle East Payment Systems gateway.
Iris scan ATM payments (Schimmel, 2014)	UNHCR assisting 2,692 families in October 2014 with cash assistance based on household size and vulnerability factors. Iris scan technology allows refugees to withdraw funds from ATMs.	No requirement for a card or PIN. Cash is delivered to eligible refugees via the ATM network linked to Cairo Amman Bank.

4   Benefits of Digital Cash Transfers

This section moves on to review the benefits of using the new delivery mechanisms discussed above. Table 2 summarises these and the following sections discuss each column of the table in turn.

Table 2: Summary of Potential Benefits of Digital Cash Transfers

For Recipients	For Donors	For Private Partners
Lower transaction costs;	Lower costs, particularly where schemes are run over a longer period of time;	Access to new markets and new customer base;
Increased control of finances and potential for greater financial inclusion;	Improved transparency and reduced opportunities for leakage;	The development of infrastructure in previously hard to access areas;
Improved personal security due to the reduction in reliance on physical cash;	Access to large amounts of data to inform planning of future responses and accurately identify and target beneficiaries in a time of crisis.	Corporate responsibility.
Receipt of security updates and emergency notifications from donors.	The development of infrastructure in previously hard to access areas.	

4.1 Benefits to the recipient

For individuals and families in receipt of cash assistance the ability to control their own finances and exercise choice over how they use their resources, even if only in the short term, has the potential to contribute to longer-term personal financial security and wider financial inclusion, promoting resilience against future shocks. Digital cash transfers, by their very nature, grant the recipient this control which could be so advantageous. The most flexible schemes allow recipients to choose when, where and how they spend their funds. They encourage short term savings and the low transaction costs associated with digital cash transfer mechanisms ensure valuable funds are spent where they are most needed. There is, however, limited evidence that these benefits are realised, particularly in a humanitarian context, as beneficiaries tend to receive only sufficient cash to cover their immediate needs (Bailey, 2017). Evidence also indicates that, particularly in short term humanitarian cash transfer schemes, there is insufficient time for beneficiaries to gain confidence in the technology or to have sufficient funds to convert from more traditional, informal financial management systems

(Bailey, 2017). Beneficiaries also stand to benefit from timely, reliable payments once systems are established; improved security due to not having to carry valuable cash or vouchers (Vincent and Cull, 2011); and the empowerment and inclusion of women and other vulnerable groups (Bemo et al., 2017, Husain et al., 2014, World Food Programme, 2017, Cross and Johnston, 2011, Klapper and Singer, 2014, Smith et al., 2011).

Recipients in a humanitarian context stand to benefit further from registration with a digital cash transfer scheme as the data can be used to support them in other ways. For example, in Afghanistan the WFP is registering returnees on their data management system, SCOPE. This data is then available to notify recipients of changes to the security situation via SMS (World Food Programme, 2016a, Sandvik et al., 2014).

4.2 Benefits to the donor

Donors also stand to benefit from the use of digital cash transfers: lower costs due to bulk payment mechanisms and reduced administration requirements; improved transparency and reduced potential for leakage are some of the more direct potential benefits (Bemo et al., 2017, Cross and Johnston, 2011, Klapper and Singer, 2014, Smith et al., 2011, Hosein and Nyst, 2013, Donovan, 2015). Beyond this, donors often have aspiration to deliver wider benefits, such as financial inclusion, to recipients. In his study of social protection payments in northern Kenya, Donovan (2015, p. 734) notes that, whilst cash transfer schemes may be established with a humanitarian or social protection basis, "officials have aspirations for institutionalising cash transfers as rights-based social welfare" as well as wider citizenship aspirations.

There are further potential benefits particular to humanitarian contexts. The use of technology to make digital payments opens up the possibility of linking humanitarian and government platforms with the potential for improved access and targeting of beneficiaries in future humanitarian crises, enabling a speedier and more cost-efficient response. The WFP used the existing delivery system for cash transfers in the Philippines, post super-typhoon Yolana in 2014, to deliver cash to 100,000 households. In 2011 in Brazil the Bolsa Familia (a national cash transfer programme) was used to deliver cash to 162,000 families, following floods and mudslides (World Bank Group, 2016). Furthermore, data collated can be used for future planning of humanitarian responses. Taylor and Schroeder (2015) argue that data gathered by humanitarian agencies is likely to be of a better quality than government data which has the potential to be influenced by politics and censorship. In particular this is relevant in disaster-prone areas where pre-collected data can be used for planning and targeting of the most vulnerable populations.

4.3 Benefits to Private Partners

In order for humanitarian agencies to deliver digital cash transfers they must work closely with private partners who have the required networks and expertise to deliver cash in this way. Whilst many private partners are partly motivated by corporate responsibility they are also, by their very nature, motivated by financial gain. These private partnerships have the potential to deliver increased revenue from transaction fees as well as opening up new markets through the creation of new infrastructure in difficult to access areas and access to new clients for the future (Vincent and Cull, 2011).

5 Risks and Challenges of Operationalising Digital Cash Transfers

Humanitarian contexts, by virtue of conflict and danger on the ground, risk aversion and economic constraints of aid agencies, lend themselves particularly well to the digitisation of aid. Due to the lack of humanitarian aid-workers on the ground recipients of humanitarian aid are forced to become "owners of their own recovery" whilst "digital humanitarianism stands primed to provide a remote, cost-effective, online self-help solution" (Duffield, 2016, p. 154). The sections below outline the many risks and challenges, both operational and strategic, regarding the delivery of digital cash transfers, highlighting issues which affect those involved in humanitarian crises in particular.

5.1 Infrastructure

Infrastructure: Within a crisis or conflict-affected environment inadequate infrastructure could hinder speedy implementation of a digital cash transfer initiative due to:
- ➢ *Disrupted network connectivity due to damage;*
- ➢ *Insufficiently robust agent network with inadequate liquidity;*
- ➢ *Difficulty accessing hard to reach populations.*

A reliable system of delivery of cash transfers is essential if beneficiaries are to learn to trust the technology. If the system works well then it has the greatest potential to deliver benefits that might include wider benefits of financial inclusion. However, there are various operational issues related to infrastructure which hinder effective delivery. Insufficient and/or poor network connectivity potentially denies access to those most in need of assistance (Bemo et al., 2017). Agent networks must be sufficiently 'robust' to manage the administration of cash management and disbursement in order to provide the services required (Bemo et al., 2017). If agents are few and far between then cash deliveries are sizeable and vulnerable to robbery. It is therefore preferable to have a widely distributed network of agents who are able to access sufficient cash to serve their customers without large cash deliveries (Donovan, 2015). Agents must also have sufficient liquidity to ensure they can deliver cash to recipients according to demand. This can be a very significant problem in terms of getting settlements to retailers and paying out to beneficiaries, creating bottlenecks in the distribution system. On the ground this is particularly an issue as many beneficiaries cash out immediately creating long queues on pay-day and placing high cash demands on agents (Jacobsen and Armstrong, 2016, Klapper and Singer, 2014). Whilst the use of agents on the ground in the form of small, informal shopkeepers is a cost-effective and viable solution to distributing the cash there is the possibility of leakage as agents demand fees for services from the recipients or encourage beneficiaries to spend in their stores. Shopkeepers are also in a position of potentially becoming Lipsky's "street-level bureaucrats" (cited in Donovan, 2015), that is to say that in their role as frontline staff they are able to impact and affect the way policies and programmes are implemented on the ground by the use of their discretion when navigating the rules to work with the real-life cases presented to them. Many digital cash transfer schemes involve the capture of biometric data. However, this technology is not 100% reliable and is often difficult to repair in remote areas. Additionally, important security software updates can be difficult to deliver due to poor network connectivity and power is often unreliable making enrolment a problematic enterprise (Donovan, 2015).

Issues of connectivity and infrastructure are particularly pertinent in a humanitarian context as there is increased likelihood that the infrastructure will have been damaged due to crisis or conflict. In the post-conflict environment of Cote d'Ivoire in 2011 the Agency for Technical Cooperation and Development (ACTED) used mobile wallets to deliver humanitarian aid despite the fact that the mobile network had been interrupted during the fighting. With connectivity restored relatively quickly MTN was an effective partner in delivering the cash transfers via SIM cards (Cross, Johnson 2011). Natural disasters and conflict also have the potential to disrupt agent networks. The earthquake in Nepal in 2015 damaged the ability of many financial services providers to deliver funds thereby limiting the number of operators able to deliver to the most remote areas (Johnson et al., 2015). Liquidity can be a further complication, particularly in a conflict environment. More creative solutions, such as the informal Hawala system, have been used to good effect in conflict-afflicted areas (Thompson, 2015). Furthermore, post-disaster areas may be particularly difficult to access and therefore registering those affected may not be immediately possible unless their data has already been captured (Donovan, 2015).

5.2 Financial Literacy and Inclusion

Financial Literacy and Inclusion: Dependent upon the recipient population there are a number of potential challenges:
  - ➢ *Lack of understanding of technology and forgotten PINs increase potential for leakage and increase the potential for immediate cash out and associated liquidity problems;*
  - ➢ *Difficult to advance financial inclusion aims in a short-term humanitarian intervention designed to provide for immediate life-saving needs;*
  - ➢ *Lack of access to technology risks excluding the most vulnerable.*

Most digital cash transfer schemes are accompanied by a degree of on the ground training to ensure that recipients are able to use the technology made available to them. However, there is evidence that, despite this training, the lack of financial literacy can create problems. Recipients are not always able to effectively use the technology or remember PIN numbers and therefore rely on middlemen to assist with accessing the technology, increasing the risk of leakage (Sandvik et al., 2014, Klapper and Singer, 2014, Zimmermann and Bohling, 2013). That said, Donovan (2015) argues that individuals are able to remember a serious of four random numbers but for operational reasons providers would prefer biometric identification. The concept of the scheme itself is often not well understood by recipients who therefore cash out as soon as the money arrives resulting in queues and insufficient liquidity for the agents. This was evident in a DFID humanitarian cash transfer programme Afghanistan in 2012 where 85% of beneficiaries cashed out in one instalment (Samuel Hall Consulting, 2014) and in WFP's Cash for Assets programme in Kenya (Zimmermann and Bohling, 2013). Cashing out also reduces the likelihood of improving financial inclusion. There is little evidence that many humanitarian cash transfer programmes have financial inclusion as an aim. Smith et al (2011) argue that if financial inclusion is an aim then it must be a clearly stated aim from the outset.
Not all potential beneficiaries have access to the required technology leaving them at risk of becoming invisible and the poorest being excluded (Smith et al., 2011). Following the earthquake in Nepal in 2015 only three-quarters of the 10,780 beneficiaries targeted by DanChurch Aid (DCA) for humanitarian cash transfers had a phone and therefore the remaining quarter had to be 'found' and given a physical voucher (Johnson et al., 2015).

5.3 The Regulatory Environment

Data and Privacy Regulations. Due to the urgency, complexity and number of stakeholders involved in a response to a crisis, organisations tend to work around what data and privacy regulations are in place. Particular issues of concern which may compromise the humanitarian imperative 'to do no harm':
  - ➢ *Inadequate data protection regulation leaves the individual's data vulnerable to theft, fraud and transfer to third parties for purposes other than those intended;*
  - ➢ *Donor access to data which may not be in the best interests of the individual;*
  - ➢ *'Host nation' access to data which may not be in the best interests of the individual;*
  - ➢ *Access to biometric data by a third party could expose identity and expose the individual to further risks.*

Financial Regulations. *In a crisis where speed of response is essential financial 'Know Your Customer' (KYC) regulations are complex to work with and vary from country to country. There is little time to agree these in an emergency environment. Suggestions to overcome this are:*
> ➤ *Establish pre-existing agreements, particularly in disaster-prone environments, to limit KYC regulation in a crisis;*
> ➤ *Link with existing social protection cash transfer systems;*
> ➤ *Make the aid agency the beneficiary rather than the individual;*
> ➤ *Establish an Emergency Digital Data Financial Services Template;*
> ➤ *Use smart cards and e-vouchers as they are governed by less stringent KYC regulations.*

The gathering of large quantities of data, particularly in an under-regulated environment, has the potential to create a number of problems. If security is not maintained and essential software upgrades are not completed then large quantities of sensitive data can be vulnerable to security breaches. Furthermore, the higher the sensitivity of the data the more vulnerable it is to theft or fraud or transfer to third parties (Hosein and Nyst, 2013). There are questions regarding the ownership of information, particularly where data is gathered in partnership with private organisations (Hosein and Nyst, 2013). The question of ownership of data further arises with the use of off-the-shelf software, such as the Hunger Safety Net Programme (HSNP) programme in Kenya which relies on Microsoft SQL server. The involvement of multiple stakeholders also raises issues regarding accountability (Hosein and Nyst, 2013). Whilst consideration may be given to data gathered for a purpose, there is a significant amount of data gathered during the cash transfer process which can be described as 'incidental data', such as information generated by mobile phone records revealing locations, routines and contacts. This type of data is also open to abuse and misuse (Nyst, 2013).

Where there is a lack of regulation beneficiaries are often left vulnerable. The technology used to gather the data for digital cash transfers enables 'data mining' and the extraction of data which gives organisations and governments the ability to identify, monitor and target groups that was not previously possible. There is, therefore, a risk that the data could be used for malign purposes: for example ID cards in Rwanda, which had historically been used to identify ethnic groups and grant different levels of access, were key to the facilitation of genocide in 1994 (Hosein and Nyst, 2013, Nyst, 2013).

The use of blockchain technology which stores data in secure blocks, allowing multiple organisations to hold copies of data, whilst reducing the risk of fraud, theft or manipulation, may provide a key to ensuring a more secure future for both donors and beneficiaries. Following a successful trial of a blockchain-based system to deliver both food and cash assistance in Pakistan in January 2017, the WFP is running a further trial in Jordan in 2017/18, aiming to deliver cash-based assistance to over 10,000 beneficiaries (Alden and Haddad, 2017). The technology allows merchants to securely record transactions using a smartphone linked to a public blockchain, enabling the donor to authenticate, store and reconcile transactions. Furthermore, blockchain is more secure than traditional, centralised systems making it an attractive proposition for the future of delivering digital cash-based assistance. There is a move towards the gathering of biometric data for the registration of beneficiaries of digital cash transfers. Whilst biometric data arguably reduces the possibility of leakage it also raises new concerns: it assumes that beneficiaries are mobile and able to travel to agents to receive payment; it assumes that the fingerprint does not change through age or damage; and it assumes that all individuals are able to give a fingerprint or iris scan etc when this is not necessarily the case (Donovan, 2015).

In developing countries where there is often little or no documentation or formal record keeping then systems which digitally log individuals' details risk "institutionalising inaccuracies" in a way which beneficiaries would never be able to rectify (Hosein and Nyst, 2013).

Jacobsen (2015) highlights concerns with regards to 'function creep' whereby projects exceed their stated purpose, potentially creating unforeseen consequences for those concerned. In India, the Unique Identification (UID) project aimed to create a unique identification for each resident initially purely to identify, authenticate and provide services to beneficiaries. However, this has been extended into many functions: residents need a UID to buy cooking gas; register vehicles; courts now take UIDs of accused and witnesses; proposal to use UIDs for train bookings and many other applications of the UID that were not part of its original remit (Hosein and Nyst, 2013).

Victims of humanitarian crises are by their very nature particularly vulnerable. The humanitarian imperative is to 'do no harm' and therefore data security is paramount. However, the need to respond to humanitarian crises at speed has encouraged organisations to work around inadequate data and privacy regulations in a "case of survival through…improvisation" (Duffield, 2016). Jacobsen (2015) claims that weak regulatory frameworks in the South create an environment in which the South effectively becomes a laboratory for developing smart technology and data mining techniques that could not be done in the North. The gathering of biometric data in the North is usually hotly contested and accompanied by a great deal of regulation. However, in humanitarian contexts such as refugee population management and issuing of cash transfers, biometric data gathering is becoming the norm: the UNHCR has been heavily engaged in biometric registration of refugees since 2010 in an effort to speed up registration and ensure that refugees cannot claim benefits twice (Jacobsen, 2015). Furthermore, the time needed to complete sufficient risk assessments and gain informed consent of participants is too great within a humanitarian crisis context and therefore trade-offs between efficiency and privacy are made (Sandvik et al., 2014).

Whilst sharing data between hosts, donors and aid agencies has the potential to deliver the most effective and efficient response to a humanitarian crisis there are associated risks for vulnerable groups. Biometric data capture of refugee populations is popular with donors and organisations including USAid, World Bank, DFID and EuropeAid who have even earmarked funding for this work (Nyst, 2013). Within the context of the global war on terror and the securitisation of refugees in a post 9/11 world this can have unintended side-effects for refugees with donors able to use their influence to encourage the UNHCR to provide access to biometric data for use by Homeland Security forces or other agencies. Jacobsen (2015) argues that this is part of a move towards globalised databases where information can be accessed and shared but may not be in the best interests of the refugees concerned.

Within a conflict or fragile setting it is vital that humanitarian aid agencies do not become unwitting providers of intelligence to external forces or government forces thereby contravening the humanitarian imperative to 'do no harm'. The UNHCR and other aid agencies usually operate within some form of agreement with the host government and therefore the host government is in a position to put pressure on the aid agency to grant access to information held. Consequently, particularly vulnerable populations such as those in conflict afflicted areas may not be guaranteed any form of protection (Jacobsen, 2015).

When biometric data is collected Jacobsen (2015) argues that a "digital body" is formed and this 'body' has different vulnerabilities to the physical body. This "digital body" is particularly vulnerable to malign forces who are able to capture information from a database, legitimately or otherwise. Data which may seem harmless could have devastating effects, particularly in a conflict or post-conflict environment, if it fell into the wrong hands (Baizan, 2016). Even where information is stored without an encoded identity it would be possible for the identity of an individual to be discovered if cross-matched with biometric information held on a different database.

One final area of difficulty is that of financial regulation. These regulatory frameworks vary from country to country, making mounting humanitarian responses complicated and finding off-the-shelf-solutions difficult. Preplanning for crisis affected areas would enable a quicker and more effective response. Smart cards and e-vouchers may provide a more practical solution in a humanitarian context as the KYC regulations are more relaxed, however, e-vouchers lack offline functionality which could be critical in a post-crisis environment (Smith *et al.*, 2011). WFP's SCOPECARD, which can store

the beneficiaries' biometric details and hold multiple e-vouchers and benefits, provides another alternative. These cards are in use in Syria, Iraq, Sudan and elsewhere. Beneficiaries can use their cards without network connectivity but for new voucher credits the card must have an online connection with the mobile Point-of-Service (mPOS).

5.4 Private Suppliers

Private Suppliers: whilst private suppliers are partly motivated by corporate responsibility there are a range of other issues:
> *Requirement for a financial justification for installing expensive infrastructure into hard to access areas may lead to 'push' message marketing campaign which exposes recipients to services they do not fully understand or need;*
> *Conflict of interest between multinationals, the government and the needs of recipients.*

Aid agencies generally have to rely on private partners to provide the infrastructure required for cash transfers. However, whilst private partners are partly motivated by corporate responsibility they also have to justify their actions to shareholders. Consequently, suppliers may find it hard to justify the cost of delivering infrastructure to remote areas potentially leaving these vulnerable populations excluded (Samuel Hall Consulting, 2014, Sandvik et al., 2014). Private partners perceive much of the value in partnerships with aid agencies in terms of the opportunity to access new markets. This raises ethical concerns, particularly with regards to the marketing of new products to particularly vulnerable and possibly financially illiterate groups. This problem is exacerbated if third parties also gain access to the data thereby subjecting recipients to further marketing initiatives (Sandvik et al., 2014).

With each crisis, the technology has evolved to become more responsive to the needs of aid agencies. Consequently private suppliers such as telecommunications companies, Google, Facebook and software platforms have become increasingly important players in the humanitarian arena (Duffield, 2016). However, by their very nature, large corporations are unlikely to have humanitarian or developmental concerns as their primary motivator and "while many of these private companies are powerful global players, even the largest of them – Apple, Google, Microsoft and Facebook – are under the influence of government regulations and national security politics" (Sandvik et al., 2014). This reveals the potential for these large corporations to be subjected to pressure which would compromise their ability to protect the data of aid agencies. Sandvik further notes that many of these organisations also supply the military sector and there is a potential conflict of interest between humanitarianism and security.

Within the humanitarian context private partnerships could be jeopardised by the high initial set-up costs relative to operational costs. As humanitarian interventions are short private partners may question the wisdom of entering such partnerships. Standard Bank was partnered with Save the Children in Swaziland delivering short term humanitarian aid in response to a drought. It was clear that there was little financial gain from the initial partnership but the Bank saw the perceived benefits in the potential for delivering longer term government social protection cash transfers in the future (Vincent and Cull, 2011).

6   Humanitarianism and Development: The 'New Way of Working'

"Strengthening the links between humanitarian assistance and development cooperation is essential for making international assistance more effective and more efficient" (Steets, 2011, p. 5). Digital cash transfers, whilst still a small part of overall humanitarian assistance, are an increasingly popular mechanism for delivering fast, efficient and effective aid to those in crisis. The digital processes and technology which are needed to enable these payment systems have the potential to become

valuable components of the New Way of Working, strengthening the collaborative efforts of humanitarian, development and government actors to achieve "collective outcomes" that sustainably reduce needs, risks and vulnerabilities whilst increasing resilience (UNOCHA., 2017). This section aims to understand the concept and obstacles to successful implementation of the New Way of Working before examining the potential for humanitarian digital cash transfers to strengthen these efforts.

Since the 1980s, partly in response to long term famine in areas of Africa, efforts have been made to improve the links between humanitarian relief, rehabilitation and longer-term development. As Audet (2015) notes developing countries require more than immediate humanitarian aid following a disaster: in America post-Hurricane Katrina in 2004, humanitarian assistance was required only in the short term; whereas in Haiti, following a 7.0 magnitude earthquake in January 2010, a much more prolonged approach to humanitarian aid was required for the road to recovery. Similarly, protracted crises require much more than immediate and short-term humanitarian assistance. Due to the increasing numbers of these protracted and complex, recurring crises a longer-term approach to intervention is required. Steets (2011) argues that the current failure of effective links between relief and development activities exacerbates the short-term mentality of humanitarian interventions due to restricted donor funding for short-term immediate responses. She further notes that funding is available for either relief or development activities, leaving a shortfall for 'rehabilitation' efforts, resulting in projects being interrupted, failing to deliver their full potential. Furthermore, the exclusion of development actors in disaster areas also exacerbates their tendency not to invest in risk reduction activities as part of development. Ultimately the lack of cooperation and collaboration means that where synergies exist between humanitarian and development actors they are rarely exploited to the full (Steets, 2011).

Original thinking on linking relief and development saw the process as a linear transition along a 'continuum' whereby efforts of relief, rehabilitation and development would hand neatly one to the other. Crises were viewed as a disruption of the normal development path and as such efforts were made to return to the *status quo* pre-crisis. However, this fails to allow for more complex and protracted crises where there is no 'normal' (Mosel and Levine, 2014) and progression is not linear and sequential. Thinking therefore evolved to the 'contiguum' approach which called for greater simultaneous and complimentary aid activities which could run alongside relief efforts (Koddenbrock, 2009, p. 117). Recent thinking has further evolved to 'resilience' or 'humanitarian sustainability' which combines the notion of humanitarian intervention, a generally short-term effort, with sustainability, a longer-term goal (Audet, 2015). Achieving resilience, "the ability to absorb or resist a stress or shock, and to recover from it" (Levine and Mosel, 2014, p. 3), relies on a two-way process of integrated links and understanding between humanitarian and development actors. In protracted crisis and fragile environments, such as Haiti, humanitarian actors are unable to withdraw in a short time frame due to the ongoing chronic nature of the issues post-crisis. Current funding mechanisms tend to provide short-term funding for humanitarian organisations and longer-term funding for development actors, making the longer-term role of humanitarians in protracted crises difficult to fund. The establishment of funds such as the Transitional Development Assistance (TDA) are attempting to bridge this gap in order to strengthen resilience in such environments.

Historically, donors appeared to understand the potential of stronger links between relief and development but "moving beyond expressions of intent has proven difficult" (Koddenbrock, 2009, p. 117). National aid policies which restrict how funds are used; cultural differences in aid and development organisations; short-term humanitarianism versus long-term development perspectives; the humanitarian focus on the individual contrasted with development focus on systems and institutions, usually delivered through, or in cooperation with, government have tended to hinder efforts to link humanitarian and development efforts more effectively (Koddenbrock, 2009, Audet, 2015, Mosel and Levine, 2014). Furthermore the lack of clarity around the concepts of 'relief, rehabilitation and development', with 'rehabilitation' generally viewed as the 'middle ground' between 'relief' and 'development' (Koddenbrock, 2009), contributes to a "conceptual maze" which further confounds efforts at improving these links (Steets, 2011).

In response to these difficulties humanitarian and development actors and governments at the World Humanitarian Summit in 2016 agreed the 'New Way of Working'. Driven by significant increases in the cost, volume and duration of humanitarian interventions in the last decade, largely due to the protracted nature of many ongoing humanitarian crises (particularly the estimated 65 million people who have been displaced as a result of conflict (UNOCHA., 2017)) and the 2030 Agenda and the Sustainable Development Goals (SDGs), all parties agreed that organisational, institutional and financing challenges must be overcome. The New Way of Working seeks to create a much stronger link between development and humanitarian activities, enabled by joint analysis and planning, appropriate UN leadership and coordination, and more flexible financing which enables the achievements of goals over the short, mid and long-term. Furthermore, it will aim to enable the achievement of "collective outcomes" which will reduce the needs, risks and vulnerabilities of communities in need. The aim is that there will no longer be a 'handover' from humanitarian to development actors but a more integrated approach from the outset. It is widely believed that this approach will be particularly beneficial to protracted displacement of populations whose needs are both humanitarian and developmental.

Digitisation of cash transfers could be a key enabler to this new collaborative approach. The World Bank acknowledges that the use of cash aid in humanitarian contexts has the potential to be scaled up for use in both relief and development efforts in order to reduce the cost and complexity of delivery of cash aid (World Bank Group, 2016). Digital systems are ideally placed for such up-scaling as technology evolves to handle more complex transactions and data mining is able to identify and target specific vulnerable groups. In Senegal, a country beset by recurring droughts, floods and desertification crises, the government is working with humanitarian agencies to alter variables within the National Unique Registry (RNU) to enable more effective targeting of vulnerable individuals during crisis. This use of technology to integrate disaster risk management into development efforts, deliver social protection in times of stability and to deliver relief in times of crisis is an example of how technology can enable a seamless transition between humanitarian and development activities and vice versa, contributing to the collaborative efforts advocated by the New Way of Working. The success of the WFP e-voucher scheme in Afghanistan has resulted in the Afghan government considering ways to use mobile wallets to pay civil servants, reducing administration costs and increasing transparency and administrative efficiency. This is a clear example of how the technology behind humanitarian digital cash transfers is able to transcend the boundaries of humanitarian and developmental aims (Better than Cash Alliance, 2016). Furthermore, protracted crises provide a real opportunity for cash transfers to deliver the New Way of Working, as technology enables the transition from short term cash transfers in the humanitarian context to longer-term cash-based development assistance within the protracted crisis environment where development actors do not traditionally venture. Critical to this are efforts to invest in interoperability which "…makes it easier for humanitarian cash transfer programmes to link with longer-term social safety nets to promote financial inclusion" (Centre for Global Development, 2015).

7   Linking Humanitarian Digital Cash Transfers and Social Protection

"Social protection describes all public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalised; with the overall objective of reducing the economic and social vulnerability of poor, vulnerable and marginalised groups" (Devereux and Sabates-Wheeler, 2004, p. 9). Such activities are generally seen as the domain of the state as part of the citizen-state contract. Development agencies, working with and through government may also be participants in the delivery of social protection. Humanitarian principles of impartiality and neutrality mean that humanitarian actors do not traditionally use or work in support of national systems. The New Way of Working will encourage humanitarian agencies to look more closely at compromising these principles in order to make "highly context-specific, pragmatic decisions to inform the best approach to increase coherence between development and humanitarian efforts"(UNOCHA., 2017). Efforts at improving such coherence are already being made. For example, in Palestine, since 2014, WFP has collaborated not just with other NGOs such as United Nations Refugee and Works Agency (UNRWA) and UNICEF, but also with the Palestinian Authority in order to provide food assistance to those

registered with the Ministry of Social Affairs under its Social Safety Net programme (Kampschoes and D'Angelo, 2015). This section examines more closely the possibility of the technology of digital cash transfers enabling closer links between humanitarian assistance and social protection.

Harvey et al (Harvey et al., 2007) argue that in fragile states, where conflict or ongoing protracted crises have reduced the governments' ability to provide essential public services to its citizens, humanitarian assistance must become the primary method of delivery of social protection to the most vulnerable. Despite concerns over the potential impact of humanitarian involvement to undermine state capacity to deliver social protection to its citizens in the longer term, they recognize potential opportunities for complementary activities from both the welfare system to provide for citizens in humanitarian crises and for humanitarian safety nets to link to longer-term state social protection programmes. The New Way of Working encourages such collaboration. It is also worth noting that high start-up costs associated with cash transfer programmes mean that they are not a cost-efficient means of assistance in an emergency situation, however, if connected to a longer-term social protection programme then the cost effectiveness would potentially be greatly increased (O'Brien et al., 2013).

"Difficult places" are seen as those where there is not just chronic poverty and vulnerability but also where 'normal' development is lacking (Levine and Mosel, 2014, p. 1). These conditions prevent individuals from achieving even the basic levels of resilience. For those living in such conditions social protection can act as a "component" of resilience building in that it can provide a vehicle for individuals to build assets which enable them to be more resilient to shock, one of the key elements of the New Way of Working. Such shock responsiveness programming is by its nature long-term and therefore requires funding that is predictable, reliable and flexible. Flexibility is particularly critical so that social protection programmes in shock-prone environments can change and adapt to increase payments or include different groups of the population in times of crisis (Harvey and Holmes, 2007, Levine and Mosel, 2014). Digital cash transfer schemes could be ideally placed to achieve this flexibility, if the delivery mechanisms and registered population is established, planned and designed with this in mind. This is evident in DFID's Productive Safety Net Programme (PSNP) in Ethiopia where the cash transfer programme expands in time of shock by increasing the period of time over which beneficiaries receive cash payments (DFID Approach Paper, 2011). Harvey et al (2007, p. 18) stress that it is highly unlikely in such fragile contexts that the government will have the capacity to deliver such a social protection scheme, but as this is a key element of 'normal' government capacity, humanitarian actors must establish "shadow projects" to deliver social protection so that they do not risk undermining future government capacity or show support for a government who lacks legitimate authority (Harvey and Holmes, 2007, p. 18). It should also be noted however that one of the potential advantages of a digital cash transfer programme is that much of the infrastructure can be used by government and humanitarian and development actors thereby potentially providing a valuable resource for future state development and longer term social protection.

Koddenbrock (2009) also views conflict and protracted crisis situations as environments where more coordinated humanitarian and development efforts could be most effective. Protracted refugee crises in particular are an area where humanitarian aid can already be seen to have longer-term developmental elements with the issue of monthly social protection-style digital cash transfers, such as WFP schemes in Jordan and UNHCR efforts in Afghanistan. These humanitarian cash transfer schemes deliver monthly payments to refugees giving them a secure monthly income for a year, bringing benefits to human development through positive impact on psychosocial well-being and the ability for older boys to stay in education longer, rather than becoming part of the work force which is the socially accepted norm amongst Syrian families who need additional income. These payments, whilst coming in the form of humanitarian assistance, are undoubtedly straying into the domain of social protection due to the stability and security of regular payments which provides for longer-term economic and social well-being of recipients (Hagen-Zanker et al., 2017). Hagen-Zanker et al (2017) further recommend integrating payment systems with the host nation's social protection systems in order to improve social cohesion and provide a more cost-effective and sustainable long-term solution. In Turkey, the ESSN programme has aligned itself with existing national social

assistance programmes to deliver its humanitarian cash transfers to refugees and therefore has the potential to work more closely with the national system at a later date providing options for upscaling and linking humanitarian assistance more closely with social protection payments. Undoubtedly this raises political and operational issues for the Turkish government. Furthermore, there are concerns that access to aid via government systems could lead to increased resentment amongst local Turkish citizens due to the perception that the refugee population is able to gain unfair access to 'state' funds.

Following the floods of 2010 and 2011 in Pakistan, the government used its National Database and Registration Authority (NADRA) to implement a government digital cash transfer scheme to help those affected by the disaster. This is a clear example of social protection digital systems working to assist within a humanitarian context but furthermore Siddiqi (Siddiqi, 2016) argues that it also promoted citizenship. NADRA has registered almost every citizen in Pakistan and issued them with a unique ID number. Citizens felt that, as this system was used to deliver cash transfers rather than being a payment to help 'victims' of a disaster it was a right associated with their citizen registration. Crises are generally seen as breaking down the state-society contract as the state is unable to deliver in a crisis, however, in this instance, the state response strengthened citizenship and the state-society contract, a key element of development aims. Arguably this was achieved because the technological infrastructure was in place to deliver these benefits to society. It should be noted that there are both opportunities and challenges associated with the use of social protection cash transfer schemes in an emergency context, including ensuring recipients are the most vulnerable, there is sufficient network coverage and an extensive agent network. If such mechanisms are to be used the role of the private sector must be clearly understood, the method of operationalisation of social protection payment schemes in an emergency needs to be clearly defined and the application of whose standards and regulations must be identified (Cash Learning Partnership (CaLP), 2014).

8   Conclusion

This paper has demonstrated that there are clear benefits and challenges regarding the use of digital cash transfers in the humanitarian context. However, it also notes that the technology required to deliver digital cash transfers presents potential opportunities for strengthening links between humanitarian and development agencies in support of the New Way of Working, as well as promoting social protection. Efforts to make systems interoperable so that they can be used in both humanitarian and development contexts, carefully managing the neutrality and impartiality of humanitarian actors, is vital to maximising the potential of these systems working together. Funding for humanitarian crises tends to be short-term and therefore "treating 30 year "crises" as ongoing emergencies [not only] renders the refugees and displaced persons dependent on continuing humanitarian aid and deprives them of the opportunity to establish new livelihoods and resume normal lives" (Martin, 2016, p. 447) but also places strain on humanitarian actors to continue to provide assistance. Social protection-style digital cash transfer schemes in Afghanistan, Palestine and Jordan are clear examples of how humanitarian actors are already moving into the development domain. Equally, responses to events such as the floods in Pakistan show how development of government institutions can contribute to both state building, social protection and humanitarian efforts. The technology of digitisation delivers the potential for greater links between humanitarian assistance and development and social protection, as well as the possibility of increased resilience for those living in fragile contexts, in support of the aims and ambitions of the New Way of Working. However, efforts to develop these links through digital technology must be undertaken with a close eye on the potential for the exposure of already vulnerable populations to greater risks due to under-regulation and poor security.

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