



Mobile money enabled cash aid delivery: Essential considerations for humanitarian practitioners

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Acronyms

AML	Anti-Money Laundering	NFC	Near Field Communication
CFT	Combating the Financing of Terrorism	NGO	Non-Governmental Organisation
CVA	Cash and Voucher Assistance	PAYG	Pay-as-you-go
FDP	Forcibly Displaced Persons	POS	Point of Sale
KYC	Know Your Customer	PWSN	Person with Specific Needs
MFS	Mobile Financial Services	TSP	Technology Service Provider
MMP	Mobile Money Provider	UNHCR	United Nations High Commissioner for Refugees
MNO	Mobile Network Operator	USSD	Unstructured Supplementary Service Data
M4H	Mobile for Humanitarian Innovation		



Executive summary

Mobile money is one of the most prolific financial systems in developing countries and is, where available, the most viable option for a cash and voucher assistance (CVA) distribution mechanism. Mobile money has evolved into the leading payment platform for the digital economy in many emerging markets with 866 million registered accounts across 90 countries by the end of 2018.¹ Its hallmark large agent networks, low price points, and easy to open accounts are all valuable features for a CVA programme.

It is clear that digital products will be increasingly utilised in the future delivery of CVA, as humanitarian organisations want the speed, cost, security, and accountability benefits that going digital offers. However, in some humanitarian crises, the beneficiaries of CVA programming may not yet use digital services and garnering the benefits of digital finance systems will require understanding of and building trust in a new financial mechanism.

This report offers guidance for humanitarian practitioners considering mobile money enabled CVA programmes. It provides a foundational understanding of the design of mobile money systems for CVA, the benefits they offer relative to other common CVA delivery mechanisms, and essential considerations for selecting mobile money as a CVA distribution method.

The decision to go digital does not come without cost. Investment in tailored customer service, infrastructure, hardware, and time are all key to ensuring successful deployment of mobile money enabled CVA. Moreover, for mobile money to function effectively in humanitarian contexts, it must meet several enabling conditions. Beyond basic connectivity requirements such as mobile coverage and handsets, a reliable mobile money agent network, equipped with both the ability to manage liquidity through conveniently located cash access points, and operate within a reasonable distance of beneficiaries, is essential. It is also critical to comply with the regulatory requirements for SIM cards, mobile money, and agent registration and understand how they may affect implementation and sustainability of a CVA programme.

The humanitarian context in which the CVA programme will be deployed and the mobile money ecosystem within that context, will affect the decision to use mobile money or another distribution mechanism.

This report presents four stages in the mobile money ecosystem investment journey for humanitarian organisations to consider.

1. broad connectivity (i.e. ensuring there is mobile coverage in the area of operation);
2. available financial infrastructure (assessing the financial infrastructure that may be required);
3. an aware and registered beneficiary population and;
4. regular users (once users are trained on digital and financial literacy skills, ensuring they can use mobile money enabled products regularly, beyond CVA programming, if appropriate).

To effectively utilise mobile money in CVA programming, humanitarian organisations should understand that bulk payment services - which mobile money providers offer for CVA - may not always be applicable to humanitarian situations.

Therefore, humanitarian organisations should explore the capacity of potential providers to build customised solutions, ensuring they fully understand the humanitarian organisations' requirements, such as providing additional front-line customer service to beneficiaries.

It is equally important for humanitarian organisations to understand how the mobile money business model works, including the activities that earn providers revenue versus those that create losses. This will enable humanitarian organisations to ascertain where to play a central role and where they could help to create potential revenue sources for providers (e.g. expanding their use of digital payment services through the provider).

Mobile money CVA programming is not an off-the-shelf product that humanitarian organisations can purchase, but rather a customised product that will reach its full potential and capacity via long-term partnerships with providers.

These partnerships will form the foundation for future innovations in mobile money enabled CVA, tailored to humanitarian needs, providing dignity and choice to beneficiaries. The [GSMA Mobile for Humanitarian Innovation \(M4H\) programme](#) is committed to supporting these partnerships through its work and commitment to accelerate the delivery and impact of digital humanitarian assistance.

1. GSMA (2019). State of the Industry Report on Mobile Money 2018.

Introduction

This report provides humanitarian organisations with a foundational understanding of the design of mobile money systems, the benefits they can provide relative to other common cash and voucher assistance (CVA) delivery mechanisms, and essential considerations when selecting mobile money as a CVA distribution method.



Mobile money - State of the Industry

A mobile money service involves transferring money and making payments using a mobile phone.² A mobile money account enables customers to send person-to-person (P2P) payments, conduct airtime top-ups - adding credit to a mobile phone - and pay bills, subject to service availability which varies by country.

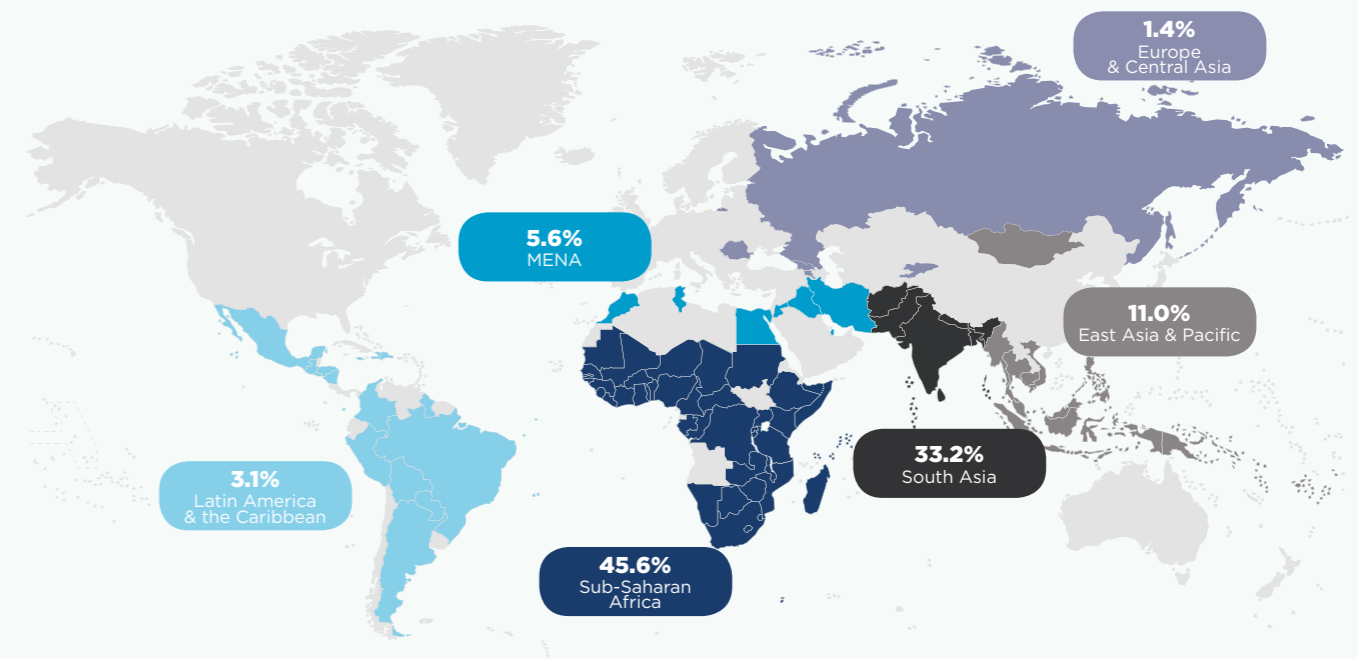
Mobile money has been revolutionary over the last decade, giving hundreds of millions of people

across low- and middle-income countries access to basic payment services. The GSMA 2018 State of the Industry Report³ reveals there are 272 live mobile money services operating in 90 countries processing a total of over \$1.3 billion per day. Across these countries, there are 866 million registered accounts, and 6.6 million registered agents where customers can make transactions. While most large operations are in Africa, Asia is now the fastest growing region.

Figure 1

Source: GSMA

Global spread of registered mobile money customers (December 2018)⁴



Unlike banking services, mobile money was designed primarily for developing countries which is where it has flourished. In developing countries, mobile money systems often reach far beyond other

financial systems to provide payment services to rural and low-income people across vast distances where most forcibly displaced persons (FDP) are located.

2. GSMA (2019), [State of the Industry Report on Mobile Money 2018 Appendix](#)
3. GSMA (2019), [State of the Industry Report on Mobile Money 2018](#)
4. Ibid.

Mobile money as a delivery mechanism for CVA

Given mobile money's potential to reach more people and be more easily accessible than banking services in developing countries, it should be seriously considered as a CVA delivery mechanism for FDPs in low-income and lower-middle-income countries, as well as selective higher-middle-income countries (e.g. Colombia, Jordan).⁵ Mobile money can be a powerful method for CVA delivery due to its wide-reaching agent networks, and the potential for tiered Know Your Customer (KYC) requirements⁶ which is of particular use when eligible identification among FDPs is scarce.

While mobile money may have the most advantages relative to other financial services in developing countries, humanitarian organisations often find that to deliver CVA programming, mobile money providers may need to modify their operations to withstand the challenges of operating in humanitarian crisis zones, and offer innovative products and services tailored to the beneficiaries humanitarians serve, in order to make the venture sustainable. **Both these tasks require a shared understanding of the requirements of the CVA programme and need to combine resources to achieve these goals.**

Building strategic partnerships

Humanitarian organisations should seek a financial service provider partner to work with them to build an innovative, tailored payment service. With many mobile money systems, the foundations of a robust payments system are in place, but some remodelling may be required for new use cases such as CVA.

This requires a paradigm shift for a sector that has traditionally focused primarily on immediate emergency response. However, with the protracted nature of modern crises, this is an area into which humanitarian organisations can pivot, building shared infrastructure to effectively deliver assistance over the lifespan of the crisis and into the recovery

period that follows. This will also leave a legacy of mobile money enabled CVA distribution systems in countries worldwide, ready to address future crises if and when required.

Strategic partnerships between the mobile, financial and humanitarian sectors will be the foundation for this new paradigm. The humanitarian sector has designed and built global supply chains to ship, store and deliver in-kind aid to crises around the world. Therefore, building sustainable and customised payment systems can be an achievable goal if coordination, collaboration, and joint effort amongst key stakeholders is prioritised.

5. These are World Bank country classifications based on GNI per capita. See an [illustrative world map here](#).
6. GSMA (2019). [State of the Industry Report on Mobile Money 2018, Appendix](#).

1. Deciding to go digital

A. Is digital better than cash?

People understand and trust physical cash; there is no fee for transactions, and cash does not run out of batteries or need to be used in proximity to a mobile tower. However, digital solutions are practical too, and their adoption is rapidly growing, especially in sophisticated ecosystems with customers using cards, mobile phones, or their fingerprints to transact. As mobile phone penetration⁷ and income levels in developing countries grow, these digital systems are being adopted more ubiquitously.

BOX 1

Mobile money driving down the cost of international remittances

There has been a rapid uptake of mobile money as a channel for international remittances due largely to cost savings. The average cost of sending \$200 using a money transfer operator (MTO) was 6.14 per cent in Q3 2017,⁸ whereas the cost of sending \$200 via mobile money, including cash-out fees, was 3.9 per cent in August 2017. In addition to driving down costs, using mobile money as a channel for sending and receiving international remittances also increases convenience and privacy.⁹

Digital finance technologies are useful for solving specific challenges associated with cash. Firstly, they are superior when transacting large values or high volumes, making physical money impractical. Secondly, when value is sent over long distances

(see Box 1) or through insecure locations, digital can be much safer and faster. And lastly, the ability to track and create digital records of transactions increases accountability and transparency, which is particularly important for donor reporting.

7. By the end of 2018, 5.1 billion people around the world subscribed to mobile services, accounting for 67% of the global population. GSMA (2019) [The Mobile Economy, 2019](#)
8. World Bank (2017). [Remittance Prices Worldwide "An analysis of trends in cost of remittance services"](#), Issue 23, September 2017
9. Naghavi, N. and Scharwatt, C. (2018). [Competing with informal channels to accelerate the digitisation of remittances](#). GSMA.

BOX 2

Shifting the cost of CVA versus saving it

A humanitarian organisation seeking the lowest cost provider is looking to maximise the amount of money possible to deliver to beneficiaries. This cost saving is one of the major benefits of using a digital finance system such as mobile money as opposed to delivering aid in cash or in-kind.

However, beyond offering different prices, services have various levels of convenience. For instance, provider A may offer services at half the price of provider B, but only have agents half as close to beneficiaries. In this case, by choosing provider A, costs are not necessarily saved but some costs are shifted to the beneficiaries who now must travel further to retrieve their money.

This concept becomes more complicated with aspects such as product design. A biometric product may be more expensive than a PIN-based one, but saves beneficiaries the frustration they may have resetting a forgotten PIN. It may be challenging to calculate when costs are saved versus shifted, therefore a concerted effort from humanitarian organisations will be required to gather the relevant information and data needed to inform their decisions.

It is clear that digital products will be increasingly used in the future delivery of CVA as humanitarian organisations want the speed, cost, security, and accountability benefits going digital offers. However, in many humanitarian crises, the beneficiaries for CVA may not be using digital services. Therefore, **garnering the benefits of digital finance systems also means additional effort must be made to build trust and understanding of a new financial mechanism.**

Furthermore, **to successfully deploy CVA digitally, hardware (e.g. cards, mobile handsets) may need to be distributed, training may be required for beneficiaries and implementers of the programme on any new systems, and all stakeholders involved must be compliant with national payment systems regulations.**

In summary, to push CVA into the digital future, diligence and investment are needed. While some humanitarian organisations may believe this responsibility lies with the private sector, it is possible that the benefits obtained by the private sector from CVA are not enough to warrant the amount of investment required. Given this, and the overarching desire to have a payment system that can deliver the requirements of a CVA programme, **it would be prudent for humanitarian organisations to be actively involved throughout the development and / or commissioning of the chosen payment system for the near future.** A close partnership with the payments provider will enable both stakeholders to better understand how best to deliver a mutually beneficial goal of seamless CVA delivery for beneficiaries.

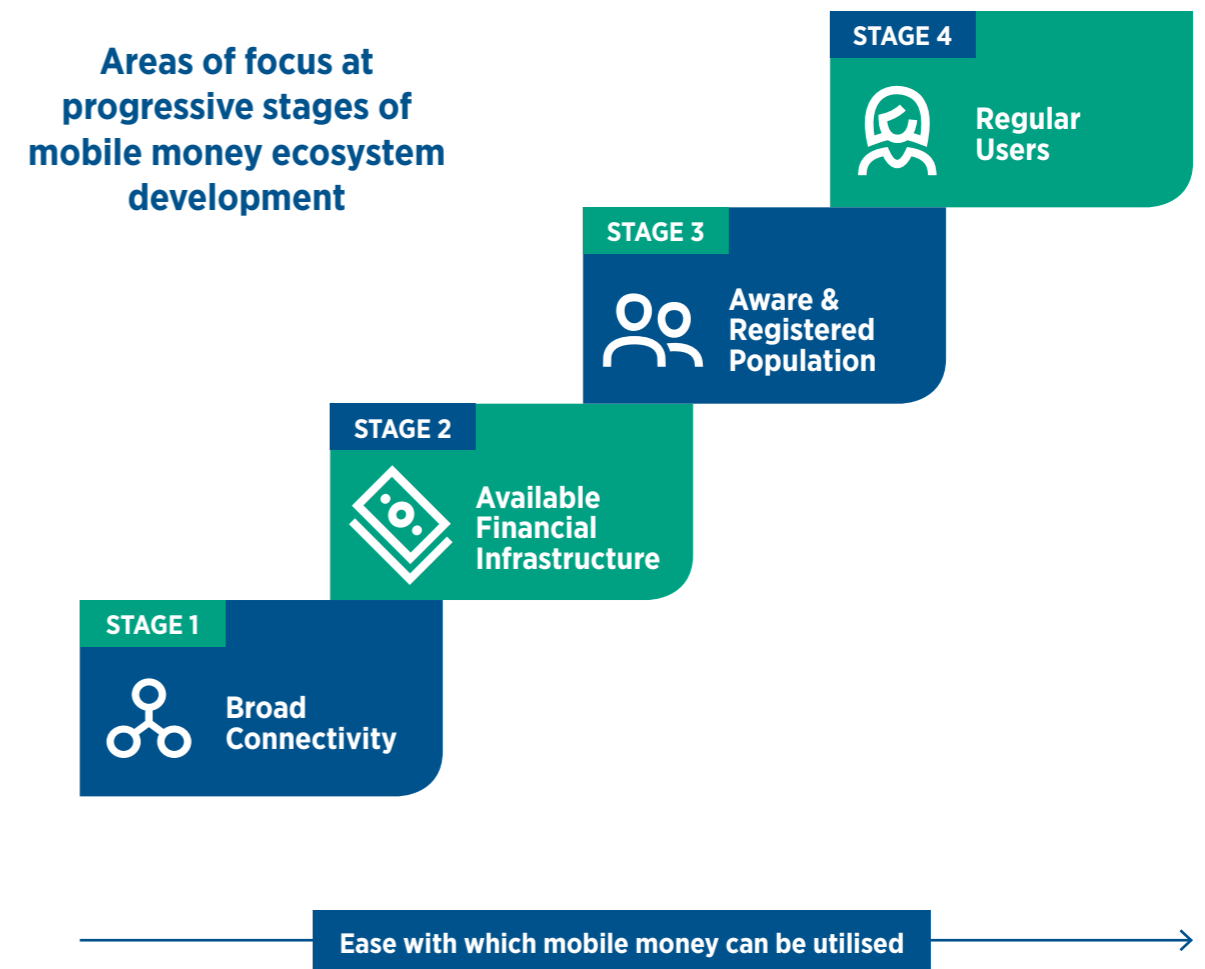
B. The investment consideration journey

The humanitarian context in which the CVA programme will deploy greatly affects the decision to use mobile money or another distribution mechanism. Primarily, it is best to understand a simplified model for how decision-making will shift in different scenarios.

Each step in the decision-making process is dependent on the decision made in the previous stage (see Figure 2).

Figure 2

Key investment decision stages for mobile money





STAGE 1 Broad connectivity

This stage focuses on the extent of mobile coverage in the area of operation. This is a foundational stage, as connectivity is a pre-requisite for mobile money, as well as enabling a broader range of mobile services. In the worst-case scenario, where no coverage exists, significant investment of time and money is necessary to extend it to the area. Fortunately, few refugees are without connectivity. In 2016, the United Nations High Commissioner for Refugees (UNHCR) estimated that 93 per cent of refugees had at least basic mobile connectivity in the area where they lived.¹⁰ However, it is common for the network to be patchy and unpredictable, so it is important to understand the reliability of the connectivity. [GSMA's Coverage Maps](#) offer an accurate and complete picture of the mobile coverage in select countries¹¹ by each generation of mobile technology (2G, 3G and 4G). It delivers granular coverage, demographic and socio-economic data at settlement level, providing coverage insights on key points of interests including refugee camps. Further, the GSMA Mobile

Connectivity Index includes key mobile coverage information including mobile connections and 3G coverage in select countries.¹² This database includes information on the Democratic Republic of Congo and Nigeria, who have the third (4.48 million) and eighth (1.71 million) largest IDP populations across the globe, respectively.¹³

Locations in this stage typically have low population densities, low economic activity, a lack of other infrastructure, and are in remote areas in developing countries. However, a large influx of FDPs can change this dynamic. During this stage, the focus on connectivity encompasses more than CVA delivery, such as the array of benefits that can be garnered from being connected. **In the Nyarugusu settlement in Tanzania, a GSMA study¹⁴ found that refugees used mobile services more than the average Tanzanian,¹⁵ from connecting with family to education programmes, news, and conducting business.¹⁶** Investments at this stage give FDPs access to communication and information which can act as a lifeline.



STAGE 2 Available financial infrastructure

This stage occurs after connectivity has been introduced, but before financial infrastructure has been built. The focus is to ensure the requisite financial infrastructure is in place for a functioning CVA delivery system. Financial infrastructure encompasses both the retail outlets where transactions are made (e.g. mobile money agents, bank branches or ATMs), and the hardware used to interact with them (e.g. mobile handset, or a card). Retail outlets such as agent networks, and sometimes ATMs, can be extended into an area for CVA, and hardware can be distributed to beneficiaries, or made available for beneficiaries in the area to purchase.

At this stage, the consideration to invest in financial infrastructure is more focused on CVA distribution than Stage 1 but not exclusively. Choosing to invest in financial infrastructure such as handsets versus cards may bring the benefits of connectivity described in the first stage to the beneficiary, which are significant. This financial infrastructure can be used by all FDPs (beyond those receiving CVA), the host community, and for humanitarian operations to pay field staff, as well as provide access to voice and data services. Investments at this stage help build the economic foundation where FDPs live.



STAGE 3 Aware and registered beneficiary population

Even after financial infrastructure is available, there will still be a number of people who do not use the financial services on offer. Stage 3 involves facilitating and encouraging usage of the financial systems available in the area. This includes educating people on how the systems function, and how financial services can improve their daily lives. While closely related to the prior Stage, Stage 3 differentiates itself by focusing on investing time in product and service design, customer service and applicability in the specific humanitarian context rather than in infrastructure.

While the two aforementioned stages were contextual to different countries and regions of the world, this stage is widespread. More than 75 per cent of adults who live in countries coping

with humanitarian crises remain outside the formal financial system.¹⁷ In this stage, the consideration is which financial service to invest in.

Attributes like cost of service, convenience, trustworthiness and appropriateness for persons with specific needs (PSNs) are important, as is the ability to leverage financial services for other services. For example, a mobile money account can also be used for pay-as-you-go (PAYG) energy solutions,¹⁸ such as solar home systems. Investments in this stage focus on ensuring beneficiaries are fully aware of how to access their funds through the chosen CVA disbursement modality, and the potential beneficial financial products available to them.



STAGE 4 Regular users

This is the optimal stage, when the preparation and investment in Stages 1, 2 and 3 has taken place, and beneficiaries are already registered, and digitally literate. At this stage, mobile money can be an easily implemented solution for distributing CVA, enabling the humanitarian organisation to quickly distribute CVA to beneficiary populations, and for beneficiaries to quickly and efficiently access their funds, which is the goal for all CVA programmes. For mobile money, it means there is mobile coverage in the area, there are mobile money agents for cash-in and cash-out transactions, and all beneficiaries have handsets, along with SIM cards and mobile money accounts registered in the beneficiary's name.

Places that have reached Stage 4, such as Kenya and Somaliland, have done so through providers and humanitarian organisations working together over time through protracted crises to navigate the stages. They now have a perennial tool for CVA distribution, ready to use to serve the myriad needs of the beneficiaries and the surrounding communities.

10. UNHCR (2016). [Connecting Refugees: How Internet and Mobile Connectivity can Improve Refugee Well-Being and Transform Humanitarian Action](#).
11. At the time of writing, coverage maps are live for Ghana, Nigeria, Uganda, Tanzania and Zambia.
12. GSMA (2019). [GSMA Mobile Connectivity Index](#), see: <https://www.mobileconnectivityindex.com>
13. Internal Displacement Monitoring Centre (2019). [2017 internal displacement figures by country](#), see: <http://www.internal-displacement.org/database/displacement-data>
14. GSMA. (2017). [Mobile is a Lifeline: Research from Nyarugusu Refugee Camp, Tanzania](#).
15. Refugee mobile phone users surveyed by GSMA report spending an average of 9,856 TZH (\$4.40) per month on airtime and data – a monthly spend which exceeds the estimated average revenue per subscriber in Tanzania (9,744 TZH, \$4.35).
16. GSMA. (2017). [Mobile is a Lifeline: Research from Nyarugusu Refugee Camp, Tanzania](#).

17. El-Zoghbi, M. et al. (2017). [The Role of Financial Services in Humanitarian Crises](#). CGAP.
18. GSMA (2019) [Mobile-enabled energy for humanitarian contexts: the case for pay-as-you-go solar home systems in Kakuma Refugee Camp](#).



2. Enabling conditions for mobile money

A. Infrastructure and incentives

This section provides an overview of the infrastructure and regulation required for mobile money to function. Mobile money needs both digital and financial infrastructure, as well as a mobile money provider that offers the service. Most of the mobile money pre-requisites highlighted here also apply to other digital finance systems, such as banking.

Basic connectivity infrastructure: mobile towers and handsets

In the scenario where no mobile coverage exists (Stage 1 in [Figure 2](#)), investment in basic infrastructure will be required. In rural areas, the cost of building and operating mobile infrastructure can be twice as expensive compared to urban areas, with revenues up to 10 times smaller.¹⁹ As a result, mobile operators who expand their networks to rural areas often find that they lose money or take a long time to produce a return on investment.²⁰ This is the most challenging scenario and significant investment will be needed for mobile money

to be a viable solution as detailed in Stage 1 in Chapter I ([Figure 2](#)). The likelihood of this scenario is relatively low, as some level of connectivity (at least 2G) is likely to exist even within humanitarian crisis settings.

Even where basic mobile coverage does exist, a common challenge is faced when beneficiaries do not own or have access to a mobile phone, and stakeholders may need to invest in handsets and training of beneficiaries on the use of mobile money (and possibly of a mobile phone).

Mobile money infrastructure: agent networks

Mobile money agents enable cash movement, allowing people to cash-in and out of the system conveniently. A fully functioning mobile money agent network is essential for mobile money to be successful, both within humanitarian crises and non-crisis situations.

The 2018 State of the Mobile Money Industry Report revealed that while cash-in and cash-out transactions still represent the majority of mobile money flows, digital transactions²¹ grew at more than twice the rate of growth for cash-in and cash-outs, driven primarily by bill payments and bulk disbursements.²²

In humanitarian settings, the frequency of digital transactions is likely lower, as the majority of beneficiaries are likely to cash-out their assistance. This means that a reliable agent network is of utmost importance. Therefore, the agent network needs **reliable roads** to move cash, and convenient options for accessing it, or storing it safely, which often means reliable **access to a bank** or another pool of liquidity (such as a large convenience store that handles large volumes of cash).

Identification documentation

Identity is a reoccurring theme in mobile money CVA delivery.²³ Beneficiaries need a **form of identification** accepted by the regulatory authority to register for a SIM card and mobile money ([see Section 2C](#)). A refugee who cannot legally activate

a SIM card or open a mobile money or bank account in his or her own name may become marginalised as access to information, communication, cash assistance, and money transfers is severely limited.²⁴

Building a business case

Finally, even if all the above is already in place, there still needs to be a **business case** to entice a company to launch and manage their product in a humanitarian setting. This is difficult to calculate as it depends on the density of people, the level of economic activity, other financial services available, and the expected usage and pricing of the service to be introduced. The lower the population density and poorer the population, the costlier it will be

for the mobile operator to operate, due to high operating expenses (and charges). **However, while the business case for mobile money enabled CVA is dependent on these variables, there is opportunity for mobile operators to earn revenue, particularly if humanitarian organisations utilise other mobile and financial services that mobile operators can offer.**

19. GSMA (2018). [Mapping the unconnected: GSMA's new tool to help drive investment in expanding mobile infrastructure](#).
20. Ibid.

21. Digital transactions are transactions which enter, leave or circulate the mobile money ecosystem in digital form, rather than through a cash conversion (cash-in or cash-out).
22. GSMA (2019). [State of the Industry Report on Mobile Money 2018](#).
23. UNHCR and GSMA (2019). [Displaced & disconnected](#).
24. GSMA (2018). [Enabling Access to Mobile Services for the Forcibly Displaced](#).

B. Connectivity

Mobile coverage, particularly mobile broadband (3G and 4G) coverage, tends to be widespread in locations with higher population densities and economic activity. Such economics attract investment from companies to build enhanced mobile coverage options. Therefore, these options first become available in cities, and then flow outwards to smaller population areas. GSMA Intelligence²⁵ and the GSMA Mobile Connectivity Index²⁶ provide national-level data on connectivity indicators, and GSMA is working with UNHCR to continue to integrate refugee population figures into GSMA's Coverage Maps²⁷ tool.

Mobile money functions with 2G connectivity, so it works far beyond the reach of internet in developing

countries and only requires a basic handset to work. SMS and unstructured supplementary service data (USSD) operate on basic and feature handsets with 2G connections and can work for mobile points of sale (POS) devices. USSD is used for financial transactions and is the dominant channel used for accessing mobile money services.²⁸ However, without 2G coverage, mobile solutions must use voucher systems which work outside the margins of mobile connectivity. For example, it is possible to conduct voucher transactions with Near Field Communication (NFC), with the merchant that redeems the voucher able to travel to a location with mobile coverage or a Wi-Fi connection to sync the data with the centralised database.



Figure 3

Connectivity types



Mobile data

- Covers 2G, 3G, 4G and beyond.
- Faster connectivity (3G and above) requires investment in extra equipment.
- Can be limited to urban areas with lower availability in rural areas.



WI-FI

- Wi-Fi is becoming more widespread in the developing world.
- Still rare to find in rural areas, but is now a common form of connection in urban areas.



Off-line systems

- Enable transactions to take place without connectivity between two devices that are able to simultaneously update their balances in an equal and opposite amount.
- Transactions include QR codes, near field communication (NFC), radio-frequency identification (RFID) and Bluetooth.
- Payment devices need to come online from time to time so that balance information can be synchronised with a central, online database.

C. SIM and financial sector regulations

In all countries, MNOs and financial companies are subject to national regulation and license conditions, so it is important to understand the most common regulations that may affect a CVA programme. In order to offer mobile money services, a mobile financial service provider will be required to comply with regulations imposed by Central Banks and Financial Services Authorities. Any service that requires the beneficiary to have a SIM card, will be subject to the regulations of Telecommunications Regulators.²⁹

SIM registration and financial regulation

The first major issue is whether the intended beneficiary qualifies for a SIM card, given the identification requirements³⁰ for owning a SIM card in the beneficiary's own name.

The Reserve Bank (also known as the Central Bank or Monetary Authority) administers financial regulation which varies by country, so some specialised knowledge is needed to fully

understand the regulations in the country of operation. Overall, there are rules dictating the institutional qualifications for providing different types of financial services, restrictions on how they can be operated, and reporting requirements on transactions made over the system, which require the financial institution to be able to identify who is making transactions and flag any suspicious activity.

25. GSMA (2019). GSMA Intelligence. See: <https://www.gsmainelligence.com/>

26. GSMA (2019). The GSMA Mobile Connectivity Index. See: <https://www.mobileconnectivityindex.com/>

27. GSMA (2019). Mobile Coverage Maps. See: <https://www.mobilecoveragemaps.com/>

28. Baah, B. and Naghavi, N. (2018). *Beyond the basics: How smartphones will drive future opportunities for the mobile money industry*. GSMA

29. There are several name variations on this authority by country. To find the name of the authority in the operating country, please see the [Telecommunication Development Sectors \(ITU-D\) list of national telecommunication agencies](#). ITU-D is a specialised United Nations agency that fosters international cooperation and solidarity in the delivery of technical assistance and in the creation, development and improvement of telecommunication and ICT equipment and networks in developing countries.

30. For policy recommendations on creating identity systems for FDPs that allow for SIM card and mobile money registration, see: GSMA. (2017). [Mobile Services for the Forcibly Displaced: Policy and Regulatory Considerations for Addressing Identity-Related Challenges in Humanitarian Contexts](#).

BOX 3

Key financial regulation

• **Know Your Customer (KYC):**

'Know Your Customer' collectively refers to conducting customer identification, verification, and due diligence. Financial institutions and regulated financial service providers are obligated by regulation to meet KYC requirements when registering customers for SIM cards and mobile money.³¹

• **Tiered-KYC:**

Due to people's lack of access to formal identity documents in some markets, solutions such as tiered-KYC can help providers facilitate customer adoption. Tiered-KYC is an approach that stipulates lower identification requirements for opening accounts that have transaction and/or balance limits. In humanitarian crises, lack of formal identification is exacerbated often by the sudden need for FDPs to leave their homes and the severe circumstances FDPs face on their journey to safety.³² In Iraq, the central bank allows refugees who have registered with UNHCR's Biometric Identity Management System and who possess a registration certificate to open a mobile money account with restricted functionality.³³

• **Anti-Money Laundering (AML) and Combating the Financing of Terrorism (CFT):**

This is a set of rules, typically issued by central banks, that attempt to prevent and detect the use of financial services for money laundering or to finance terrorism. The global standard-setter for AML/CFT rules is the Financial Action Task Force (FATF) which recommends a risk-based approach to due diligence for AML/CFT controls.³⁴ This will likely affect the amount of due diligence a financial organisation carries out on humanitarian organisations to legally allow a humanitarian organisation to use the financial organisation's system to make digital cash distributions. KYC rules are often part of AML and CFT regulations.

• **Payments Regulation:**

In the context of mobile money, this refers to the regulator who has supervisory authority over financial institutions within a particular country, usually the central bank or other financial authority.³⁵ It is likely that mobile money enabled CVA will be governed under a payments act or electronic money (e-money) issuer policy, which will decree which types of companies can be licensed, what they must do to keep customer funds safe, and how they are allowed to recruit and manage agents.

31. GSMA (2019), *State of the Industry Report on Mobile Money 2018 Appendix*.
 32. For documentation of humanitarian experience with KYC regulations in Uganda and the Philippines, see: ELAN. (2017). *ELAN Humanitarian KYC Case Studies*.
 33. Okeleke, K. (2017) *Refugees and Identity: Considerations for Mobile-Enabled Registration*. GSMA
 34. GSMA (2019), *State of the Industry Report on Mobile Money 2018 Appendix*.
 35. Ibid.

3. Products and partnerships




A. Commonly available financial products

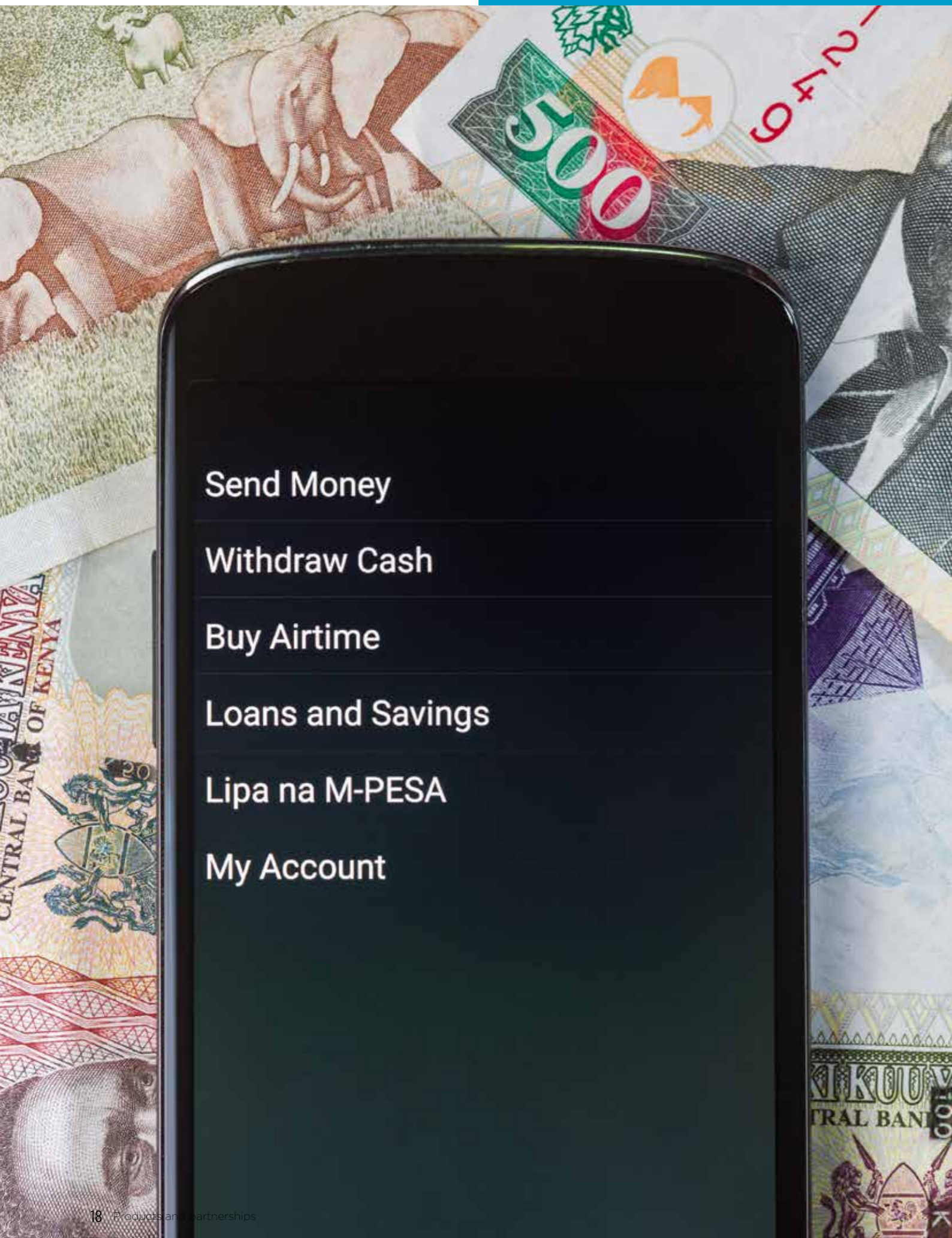
Financial products, the technologies they use, and the institutions that offer them are complex. This section seeks to provide a concise overview of archetypes of financial products commonly used for CVA.

Evaluation of providers, products and devices should be conducted on a country-level due the complexity and often overlapping nature of the different disbursement options available for CVA. Given these variables, it is helpful to understand the attributes of these entities in detail, because while they are transposable to some degree, the characteristics that differentiate them often makes one modality superior to another when responding to different CVA programming scenarios.

Figure 4

Provider and product alignment



	Products	Provider	Channel
	<ul style="list-style-type: none"> • Checking • Savings • Loan 	<ul style="list-style-type: none"> • Banks 	<ul style="list-style-type: none"> • POS machines • Cards • ATMs
	<ul style="list-style-type: none"> • Mobile money (can include checking, savings and loans) 	<ul style="list-style-type: none"> • Mostly MNOs, some banks 	<ul style="list-style-type: none"> • Mobile handsets • Cards
	<ul style="list-style-type: none"> • E-Voucher 	<ul style="list-style-type: none"> • Mostly voucher specialists, some banks and MNOs 	<ul style="list-style-type: none"> • POS machines • Cards • Mobile handsets



Account types: mobile money and banking products

Figure 5

Viability of mobile money and banking products in humanitarian crises

	 Mobile Money	 Banking Products
	<p>Designed to distribute services to the mass market across countries and extend the reach of financial services. Mobile money functions over a 2G (and generations above) mobile signal, and enables beneficiaries to receive cash in their mobile money account and conduct other types of transactions via their account (e.g. bill payments)</p>	<p>Good option for CVA programmes intending to transfer large amounts to beneficiaries, particularly in urban areas, if regulation permits. Beneficiaries would normally be given a card, linked to an account or loaded with cash by the humanitarian organisation, where they can use the card to withdraw value at an ATM.</p>
Most viable:		
High volume / low value transactions	✓	
Low volume / high value transactions		✓
Urban	✓	✓
Rural	✓	

For most large-scale CVA programmes where mobile money exists in the country of operation, it is the most viable option. Mobile money has several advantages in comparison to banking products within the environments in which humanitarian crises tend to occur. Banking distribution infrastructure (i.e. branches and ATMs) usually does not extend beyond cities, and the regulations they are subject to are often arduous requirements for registering low-income people and refugees.

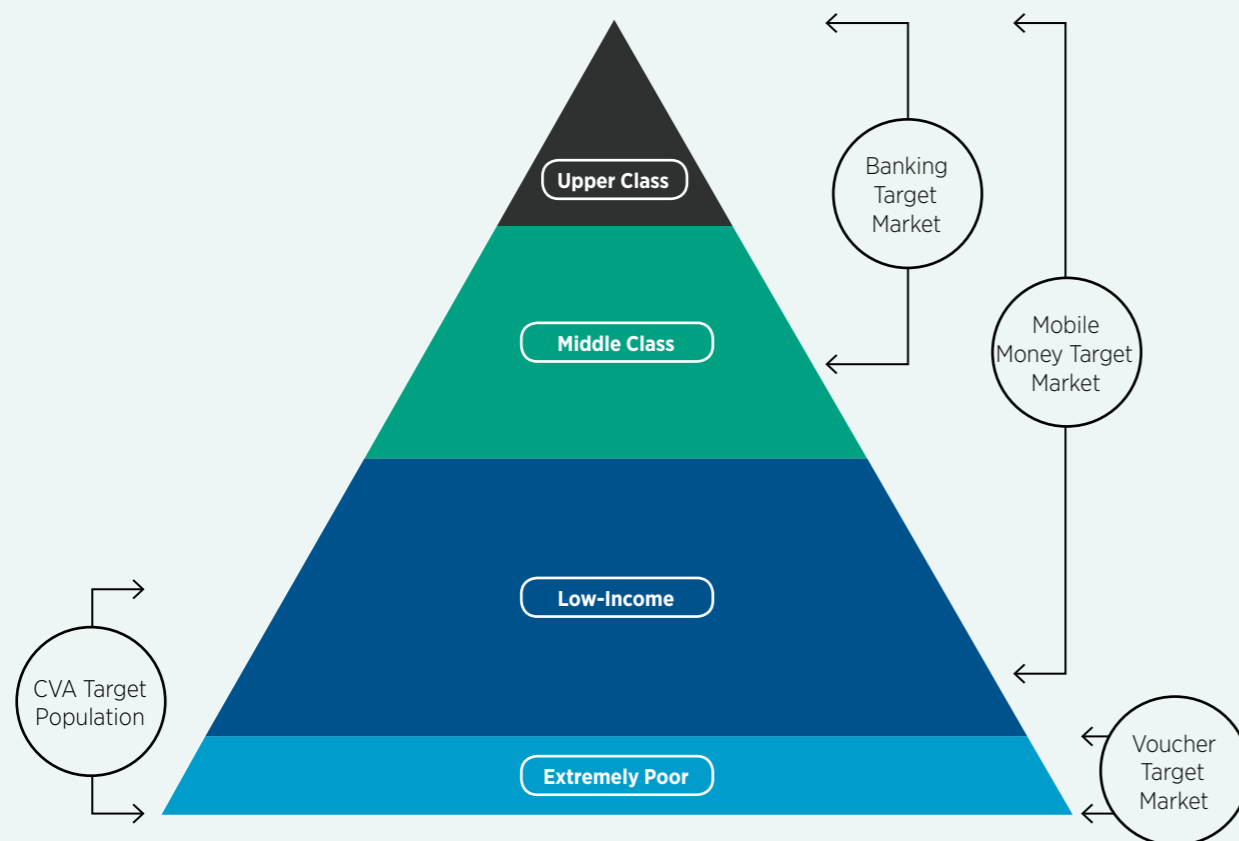
It is also unlikely beneficiaries will use additional banking products such as loans, as typically low-income people are not eligible for loans.³⁶ The cost for mobile money agent networks to allow the distribution and collection of cash is approximately 40 per cent lower than the cost to banks³⁷ (though such savings are context-specific). This suggests that they can more easily expand into small towns across the country and that different financial

product offerings are more appropriate, depending on the targeted population.

Moreover, leveraging mobile money enables broader mobile benefits, such as the two-way communication it allows between humanitarian organisations and beneficiaries, as well as the suite of other services available to the beneficiary once they connect to a mobile network.

Figure 6

Target markets on a population pyramid



BOX 4

Ten benefits of mobile money for humanitarian organisations and crisis affected populations

The benefits that mobile money provides will depend on the specific provider and the alternative options in the country of operation. Frequently cited benefits of using mobile money in different countries around the world are listed below:

- 1 Agent networks offer the best geographic reach, both in terms of density in urban areas, and reach into rural areas;
- 2 Agents are open on weekends and after office hours;
- 3 MNOs have the most experienced staff for mass market sales and distribution campaigns, which can be very helpful when training and registering beneficiaries;
- 4 Generally, the operational cost per account and per transaction to a provider is lower than for other financial systems, facilitating lower prices offered to users;
- 5 Tiered-KYC requirements enable registration of users who may not, for example, have the correct identification to access the full suite of mobile money services available in a country (see Box 3);
- 6 The high penetration of handsets and agents makes it a good system for high volume payments to many people;
- 7 Humanitarian organisations can use mobile phones for two way communication to offer CVA programme updates as well as receive critical feedback on provided services;
- 8 Since mobile money is an account-based service, beneficiaries can access a broad array of mobile money related services like bill pay and airtime top-ups;
- 9 Digital transaction records can be used to create a credit score for clients who are typically thin-file (zero or little established credit history) and give them access to small loans; and
- 10 Mobile phones are portable, so if beneficiaries are moving around, they can still use the system as long as there are agents or other linked systems (like a bank account) to allow them to spend or cash-out the transfer.

36. In many cases bank accounts act as mailboxes to receive funds, which are then withdrawn in full, and no other transactions are made on the account. For more, see: Saunders, D., Gray, et al. (2016). *Lost in the Mail: Why bank account access is not translating into usage*. Cenfri

37. Osafo-Kwaako, P., et al. (2018). *Mobile money in emerging markets: The business case for financial inclusion*. McKinsey & Company.

II Distribution modality: card-based solutions and voucher systems

Vouchers are a specialised product for humanitarian transfers, and a sector of specialist companies has developed to meet the need. However, in some countries, MNOs and banks have also built products for CVA, therefore **voucher systems can be customised for mobile phones via an SMS or delivered into a mobile money account. Alternatively, they could be designed to work**

with cards, and POS machines at merchants. While both mobile money and voucher systems use cards, they are almost always part of a banking offering. Some mobile money services however offer cards linked to customer's mobile money accounts that enable users to withdraw cash from ATMs as well as from mobile money agents.

Card solutions

There are three major cards used in CVA delivery; debit, pre-paid and stored-value (gift) cards (Figure 7).

Figure 7

Card typologies

Three common types of cards

Card Type	Description
Debit	Linked to a bank account that the beneficiary can withdraw from at an ATM or pay for goods / services where possible.
Pre-paid	Not linked to a bank account, but is issued to a specific person, and has value stored on it. The beneficiary can withdraw cash at an ATM or pay for goods / services where possible.
Stored value (gift)	Not linked to a bank account, is anonymous (tradable), and has value stored on it that can be redeemed at participating merchants

Debit cards are associated with a beneficiary bank account, which makes them hard to use in refugee situations (i.e. lack of infrastructure), or when beneficiary identification will be a problem. Furthermore, given it can be time consuming to open bank accounts for beneficiaries, debit cards should only be used if beneficiaries are likely to use bank services beyond receiving the CVA.

Both debit and **pre-paid cards**³⁸ can be used at ATMs. They are issued to a specific person and can be a good way to leverage an existing ATM network for cash disbursements, particularly when FDPs live in urban areas where there is often a greater network of ATMs compared to rural areas.




Stored value cards are useful for quick distribution in situations where there is no time for registration, or when there is a one-off transfer. However, an acceptance network needs to be in place to convert the value on the cards to cash or goods.

It is also helpful to understand some basic card features, as these affect a card's utility in different CVA scenarios as detailed in Figure 8. Debit cards will likely be plastic, while pre-paid and stored value cards can be distributed in paper form and designed for different longevities. Understanding how the card is read by the transactional device and the level of user authentication required / possible is also important.

Figure 8

Card features

Three important card features

Distinction	Description
 Longevity	For quick disbursement of one-time CVA, paper disposable cards with magnetic strips can be used. For longer term programmes, plastic cards can be issued which can have magnetic strips and/or chips.
 Primary factor authentication	This is how the transactional device reads the card and there are a number of ways to do this in a humanitarian context, including: <ul style="list-style-type: none"> • A card with a magnetic strip, the most basic technology, which can store the card holder's identity, but not the value on the card. Therefore, it must be used when there is connectivity to a central processing server. Magnetic strips are practical due to being relatively inexpensive and are the only option for disposable cards; • Smart cards are more secure than cards with only magnetic strips, have a microprocessor chip embedded in them, which can store the value of the card and the beneficiary identity, and therefore used off-line making it a viable option for locations with no or intermittent connectivity, such as in more rural locations. • Contactless communication technologies like NFC and RFID (see the connectivity section), which can be embedded in cards.
 Secondary factor authentication	The secondary factor identification is not always used, and consideration of whether it should be used should be taken into account, especially for disposable cards or small value transactions. Often for small values it is fine to allow transactions without verification, or in instances where it is beneficial to make cards tradable like cash or airtime scratch cards. When it is used it can take different forms: <ul style="list-style-type: none"> • A signature given when the card is used, a seldom practical option in humanitarian settings; • A PIN, probably the most common solution; or • Biometric verification, the most secure method.

38. For more on pre-paid cards in humanitarian context, see: ELAN. (No date.) [Prepaid Card Products for Humanitarian Programs: Actors, Insights and Recommendations](#). ELAN.



Vouchers

Vouchers are most appropriate for restricted transfers,³⁹ when connectivity and / or liquidity management are issues or when FDP identification for KYC requirements is challenging. Additionally, due to the expensive set-up costs required for a

voucher system to work (e.g. setting up an entire voucher acceptance network), the costs of such an endeavour are more easily justifiable by a longer-term programme.

Figure 9

Vouchers

E-voucher Type	Description
Mobile money e-voucher	Arrives as a code in a mobile money account, the beneficiary transfers it to the merchant's phone in exchange for goods/cash.
SMS e-voucher	Arrives as a code via SMS, the merchant enters the code into their mobile phone to verify its value and the beneficiary's identification and distributes goods or cash to the beneficiary.
Card e-voucher	Beneficiary has a card, which they use for payment at an approved merchant, the merchant has a POS machine (sometimes a smartphone) which can communicate with the card, pulling or pushing value to it. Sometimes scratch cards are used (similar to those used for airtime top-ups) and verified with a mobile phone.

The most common use-case for vouchers occurs when a humanitarian organisation needs to limit what can be purchased with the transfer they are sending (restricted transfer), which is typically food or other basic needs. Transfer values are low, but volumes can be high, especially in settlements with a high density of people who all need assistance with their basic needs.

There are tangible benefits of using vouchers:

- Vouchers may not be subject to financial regulations,⁴⁰ and therefore can be a solution when identification problems prevent the use of other financial systems;
- Many voucher systems can work off-line which neither banking nor mobile money products can; and
- Humanitarian organisations often value the data they receive on specific purchases made with the voucher for donor reporting.

39. CaLP (2019). Glossary of terminology for cash and voucher assistance. See: <http://www.cashlearning.org/resources/glossary>. Restriction refers to limits on the use of assistance by recipients. Restrictions apply to the range of goods and services that the assistance can be used to purchase, and the places where it can be used. The degree of restriction may vary - from the requirement to buy specific items, to buying from a general category of goods or services. Vouchers are restricted by default since they are inherently limited in where and how they can be used.

40. There will be some variation by country. Some countries have e-value transfer regulations that do place restrictions on vouchers while others do not. It is important to check with the financial regulatory authority. Further, there may be differences given the voucher type (redeemable for cash vs. goods), and if it is delivered via a mobile handset, in which case, generally people need to at least be able to qualify for a SIM card.

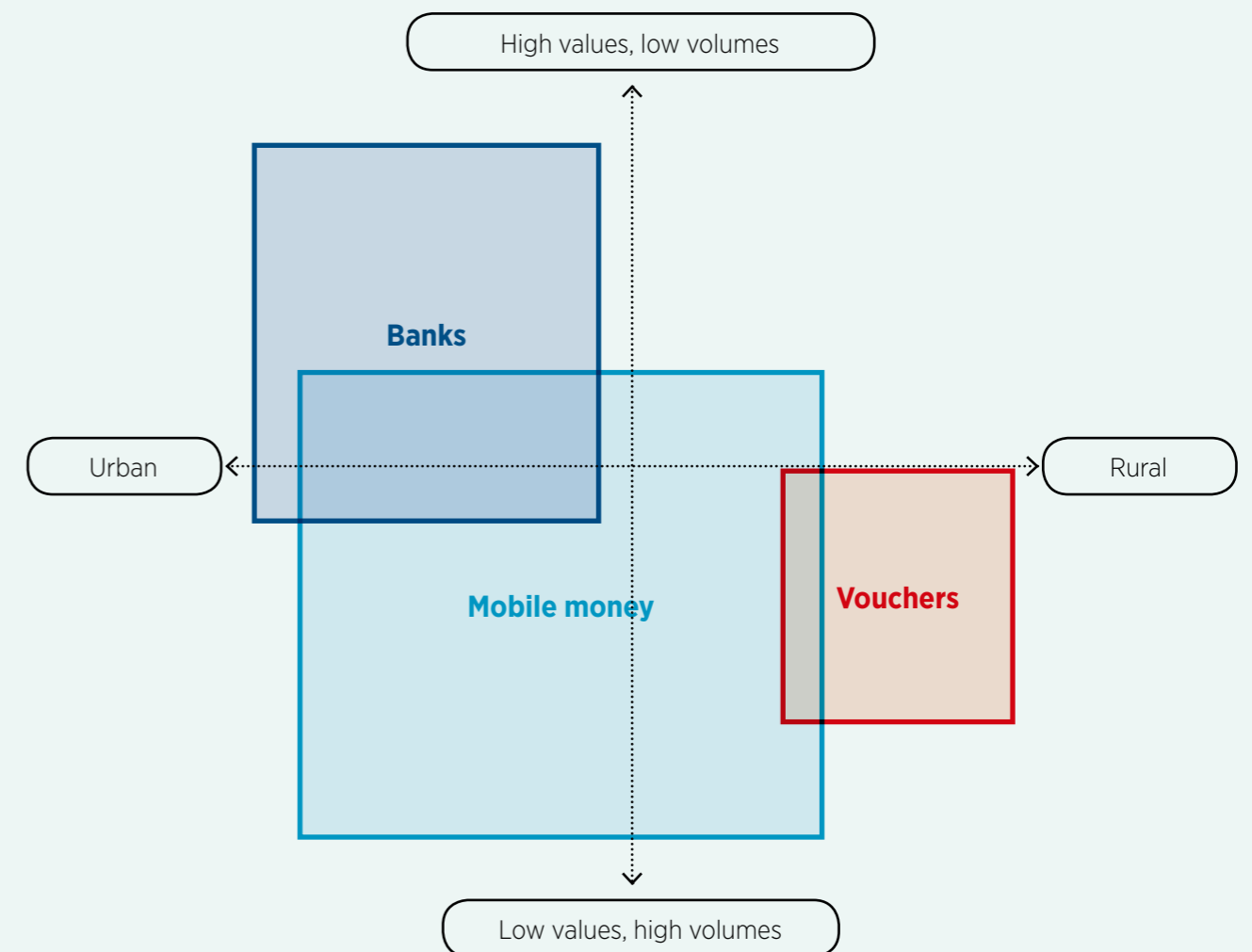
While vouchers may be appropriate, they can limit the ability of the beneficiary to decide what they need most,⁴¹ be time-intensive to set-up, generally are the most expensive system, and in practice only work in a limited number of areas, as beneficiaries need to be readily able to access the selected merchants where vouchers can be used. Additionally, they often necessitate large field teams to monitor transactions, a service that is not generally provided by a service provider, but can be provided via mobile money services. However, in cases where markets are not functioning to deliver needed items, many of these constraints may be unavoidable, for instance in situations where refugees are given vouchers to buy

goods and access services that are supplied by the humanitarian organisation as opposed to existing merchants, as local markets are unable to adequately provide supplies required.

Nevertheless in situations where mobile coverage is unreliable or cannot extend to the CVA location, vouchers can be used if the merchant regularly travels to a place with mobile coverage; potentially a minor issue as merchants have to restock their stores regularly. If exchanging vouchers for goods or services (as opposed to cash), they can eliminate the need for cash management (liquidity management), which can vastly simplify a payment system.

Figure 10

Comparing banks, mobile money and vouchers



41. This refers to vouchers redeemed for pre-selected goods and does not apply to vouchers that are redeemable for cash.



B. Secondary partnerships

Beyond considerations on products, partners, and connectivity, there are secondary partnerships that humanitarian organisations commonly consider to fill some of the gaps between financial service provider (FSP) offerings. These considerations include portal design, interoperability, biometrics, and rural liquidity management.

Technology service providers

The most common secondary partner is a technology service provider (TSP). TSPs are also referred to as aggregators, as they can link financial systems to enable interoperability. For example, if a humanitarian organisation wanted to use mobile money for a CVA programme in an area where beneficiaries were already registered for more than one service, they can hire a TSP to build a portal so that a single transfer to the list of beneficiaries could be received by people using any of the mobile money services available.⁴²

There are many reasons why humanitarian organisations may contract a TSP to build a payment portal. Portals are the interface that organisations use to send or receive transfers and monitor their status and TSPs are often best placed to build sophisticated, user-friendly portals that help with internal procedures for approving payments and / or managing beneficiary lists. These portals have the capability to run various types of analytics that show, for example, the status of payments visible via intuitive dashboards that contain key indicators for donor reporting.

42. It is a popular humanitarian aspiration to allow beneficiaries to choose which financial service they use. While theoretically laudable, it is important to also understand that this erodes the business case for the providers involved (they likely share the revenue but still incur the costs).

Biometrics

Humanitarian organisations are increasingly using biometrics including fingerprint readers and iris scanners to register and verify beneficiaries at payment points. It is uncommon for an FSP to offer biometric services, but third parties can add biometrics to their systems. Using a TSP for biometrics may also shield beneficiary details from the financial system to protect their privacy, which is of utmost importance for vulnerable populations.

The most cited example of using biometrics is the UNHCR managed programme in Jordan with irisGuard.⁴³ They have captured iris scans of over 670,000 FDPs and report having installed iris scanning devices in 230 Cairo Amman Bank ATMs.⁴⁴ However, to increase the number of places FDPs can access funds, UNHCR is in the process of including a provider that will have iris scanning devices at agents to verify beneficiaries and enable the withdrawal of funds.

Specialist organisations

TSPs can also be helpful to support fieldwork using solutions created by organisations such as Optimetriks, which uses crowdsourced data to improve enlisted companies retail distributions across Africa.⁴⁵ When CVA is distributed in extremely remote areas or the requirements of the humanitarian organisation goes beyond a financial organisation's standard operational practices, requirements may be unable to be met. In these cases, humanitarian organisations may use their own staff to conduct beneficiary training, monitor the service quality at agent locations, and offer

support with liquidity management. These can be labour intensive, and liquidity management is especially complicated (see 4C).

It might therefore be prudent to hire a specialist company for support, although this is a relatively new area so there are limited options. MNOs may use similar companies to monitor agents or deliver liquidity in other parts of the country or TSPs may be able to recommend field support teams. Otherwise, microfinance organisations or other NGOs operating in the area can assist with some of the tasks.

43. Irisguard (2018). *IFC and irisguard to support financial inclusion and Syrian refugees in Jordan*, see: <https://www.irisguard.com/node/39>

44. UNHCR (2018). *Jordan fact sheet*, see: <https://data2.unhcr.org/en/documents/download/65999>

45. GSMA (2017). *Meet our portfolio start-ups: Optimetriks, Africa Mobile for Development Blog*, see: <https://www.gsma.com/mobilefordevelopment/country/uganda/meet-portfolio-start-optimetriks-africa/>

4. The fundamentals of mobile money operations



A. The general mechanics

E-money

While different entities can own and manage mobile money systems, a MNO typically manages the mobile money service and in turn must hold customer funds in a trust account. They can then issue e-money to customers, where e-money is the digital representation of the money being held in the trust account. It is important to note that it is virtually impossible for an MNO to offer mobile money without a bank, as the physical cash stored by MNOs usually must be kept in a licenced financial institution such as a commercial bank.⁴⁶

Generally, a customer will register for the mobile money service by filling out an application and showing an accepted form of identification, and this will open an account associated with the customer's phone number. Commonly, value in the mobile money account does not earn interest for the

customer as this value is stored as e-money and not used for investment purposes as with commercial banks. The total value of e-money is mirrored in a singular or multiple bank accounts and in the case that the providers were to fail, users could recover 100 per cent of the value stored in their account.⁴⁷ In many countries, the mobile money account can be linked to a bank account, and in some countries, mobile money usage data is combined with other mobile service use data and analysed to provide a credit score for the customer so that they can access small loans. Partnerships between MNOs and commercial banks offer these small loans, as is the case in Kenya, where M-Pesa and Commercial Bank of Africa (CBA) have partnered to launch the M-Shwari product where customers have access to loans.⁴⁸

Exchanging e-money for cash

A customer can go to an agent nearby and exchange cash for e-money. The agent accepts the customer's cash and transfers them e-money from their phone, generally over a USSD channel, although accessing mobile money via smartphones is growing.⁴⁹ The customer can then send the

money to another person's mobile money (and sometimes bank) account,⁵⁰ use it to pay utility bills, buy airtime, or for a myriad of other transactions where it is offered by the specific mobile payments provider.

Scaling mobile money

One of the biggest challenges faced by providers is growing mobile money to scale. **It involves not only registering new customers but also maintaining active customers⁵¹ and ensuring mobile money agents are able to balance cash-in and cash-out demands effectively.** Furthermore, a successful marketing campaign must first make people aware of how the service can help them (i.e. develop an

attractive value proposition for customers), with implementation of a training campaign to build user trust in mobile money and teach people how it works. This process can take several years of dedicated work and large expenditures. Adoption of systems often starts from urban areas and then expands outward to harder to serve rural areas over time.

46. Mobile money uses e-money which is stored value held in the accounts of users, agents, and the provider of the mobile money service. To ensure that a customer's money is available when the customer wants to redeem it, regulators typically require that the non-bank mobile money provider maintain liquid assets equal in value to the amount of money issued electronically. These funds are usually pooled in an account known as an escrow account and held by one or more banks in the name of the issuer (or in the name of a trustee appointed by the issuer).

47. GSMA (2019). *State of the Industry Report on Mobile Money 2018 Appendix*.

48. In 2012, Safaricom in partnership with the Commercial bank of Africa (CBA) launched a combined savings and loan product, M-Shwari. The companies developed a credit-scoring analysis based on a client's use of M-PESA and Safaricom airtime and data. By the end of 2014, M-Shwari had disbursed KES 20.6 million in loans to 2.8 million borrowers, with a non-performing loan rate of 2.2% (after 90 days). See: Cook, T. & McKay, C. (2015). *How M-Shwari Works: The Story so Far*. CGAP.

49. Baah, B. and Naghavie, N. (2018). *Beyond the basics: How smartphones will drive future opportunities for the mobile money industry*. GSMA.

50. Some mobile money deployments require the recipient to register for mobile money to receive money into their account, though there are also over-the-counter (OTC) services that enable customers, both registered and unregistered, to access their funds through a mobile money agent.

51. An active mobile money account is a mobile money account which has been used to conduct at least one transaction during a certain period (usually 90 days or 30 days).

B. Focus on bulk payments

Bulk payments are a mobile money product designed for organisations to make large numbers ('bulks') of small value payments.⁵² Common examples include governments making monthly pension or social security payments, wholesale buyers paying farmers for crops, and non-governmental organisations (NGOs) paying rural staff salaries and per diems. This is the product used to deliver the CVA to beneficiaries, and overall it is well-suited to do so.

However, there are important issues to understand about bulk payments:

1 While mobile money can be a key tool for the disbursement of CVA, the global uptake of bulk disbursements has been slow. Bulk disbursements represented just over two per cent of total volume of transactions and less than seven per cent of total value of transactions in December 2018.⁵³ Although bulk disbursements still represent a small proportion of total volume and values, bulk disbursements are growing. For instance, digital transactions in 2018 grew at more than twice the rate of cash-in and cash-outs, driven by bulk disbursements and bill payments, which grew year-on-year by 29 per cent and 41 per cent respectively, indicating that mobile money providers are becoming strong partners with enterprises.⁵⁴

However, despite these gains, for many providers, **bulk disbursements represent a small proportion of their total transaction volume and value and therefore providers may have a small team dedicated to managing them** and a relatively small amount of resources earmarked for their expansion;

2 Bulk payments are not offered by all providers and for those that do, the offering is often generic. **Therefore, if customised services are required, it is important to understand the capacity of the provider to build solutions;**

3 It is important for humanitarian organisations **to articulate their needs upfront to ensure providers fully understand their requirements and sufficient time is allocated to enable providers to implement them accordingly.** Since humanitarian CVA is still relatively new, bulk payment systems are not specifically designed for the sector, and subsequently, some features may need to be redesigned to improve their appropriateness; and

4 Bulk payments work better when recipients are using mobile money beyond cash-outs, so that agents are able to manage their liquidity. This may not be common for humanitarian CVA programmes in remote areas and therefore may **require creative solutions to ensure agents have the means to manage their liquidity⁵⁵ and beneficiaries can access their CVA adequately.**

Overall, bulk payment systems are a good foundational payments platform for CVA distribution. However, it is likely that additional time and investment will be necessary to customise the generic features offered to meet the specific needs of the CVA programme, especially when working with vulnerable populations.

52. For more on the experience development NGOs have had with bulk payment transfers, see: ELAN (2016.) *Mobile Money Transfers for Humanitarian Assistance & Development Programming: A Service Provider Perspective*.

53. Calculated from GSMA Mobile Money Metrics dataset available for download at: GSMA (2019). *Mobile Money Metrics*. See: https://www.gsma.com/mobilemoneymetrics/#global?y=2018?v=vol_total?q=global

54. GSMA (2019). *State of the Industry Report on Mobile Money 2018*.

55. GSMA (2019). *State of the Industry Report on Mobile Money 2018 Appendix*.

C. Agent operations and liquidity management

In December 2018, there were 6.6 million registered agents globally, with 3.7 million active on a 30-day basis.⁵⁶ Mobile money operations build vast agent networks that contribute to the competitive advantage they offer CVA programmes. However, they vary greatly by size, design, and quality by country and provider.

The human touch point of mobile money

In the case of mobile money, an agent outlet is a location where one or several provider-issued tills conduct transactions for customers and in many instances, agents register new customers too. Agents usually earn commissions for performing these services and in some markets, an agent outlet can also operate tills for several providers (non-exclusivity). As they are the human touch point for the mobile money service, they also often provide front-line customer service, such as teaching new users how to initiate transactions on their phone. Typically, agents will conduct other kinds of business in addition to mobile money. Individuals or

businesses that can serve as agents are sometimes limited by regulation, but small-scale traders, microfinance institutions, chain stores, and bank branches serve as agents in some markets.⁵⁷

Given the nature of the mobile money agent network, mobile money providers can expand the number of retail outlets they have without employing a large team to manage them. There are often multiple agents near customers and this proximity and convenience enables relatively low distribution costs, supporting a reasonably well priced service for consumers.

Liquidity systems

Agent liquidity systems are designed on the principle of balance with the need to restock e-money and / or physical cash depending on the nature of the market in which agents are serving. Most agents will need to regularly restock their inventory of e-money and physical cash in order to continue serving their customers.⁵⁸ Agents who primarily perform cash-ins will need to restock their inventory of e-money, while agents who primarily perform cash-outs will need to restock their inventory of cash.⁵⁹

Agents typically need to rebalance by trading for e-float or cash as their liquidity can quickly dissipate. Some services require the agent to go to a bank or another location to make the trade, while others have liquidity runners that will deliver the rebalance.⁶⁰ However, the idea is to limit these rebalances as they add cost to the system.

Bulk payments within a humanitarian context can stress this system significantly because beneficiaries generally only withdraw cash and if the agent is in a rural area, it usually means rebalancing is costly and time consuming.

BOX 5

Innovative liquidity solutions

Several innovative solutions are being adopted to help service quality and liquidity management. For instance, in Uganda, Bangladesh and India, mobile money providers are offering doorstep rebalancing options, where distributor staff follow a fixed route map to deliver the float.⁶¹ In Kenya, Uganda, Fiji, Bangladesh and the Philippines, several models are being adopted to extend credit to agents and Zoon in Zimbabwe is using data analytics to predict demand for agent float.⁶²

D. Understanding the business model

Understanding the business model of a mobile money operation helps build effective partnerships by informing the humanitarian organisation about the challenges, as well as the profitability targets, central to a mobile network operator's operations. Humanitarian organisations can also assist MNOs to identify other benefits that the MNO could garner from participating in a CVA programme. GSMA's 2019 report, *Mobilising CVA programmes*, highlights a number of the potential additional benefits to MNOs beyond that received directly from disbursing the CVA, including revenue accrued from not only humanitarian organisations and beneficiaries' use of mobile money, but also leveraging connectivity and using other mobile services, such as voice and data services.⁶³

56. GSMA Mobile Money Metrics dataset available for download at: GSMA (2019), *Mobile Money Metrics*. See: https://www.gsma.com/mobilemoneymetrics/#global?v=2018?v=vol_total?q=global

57. GSMA (2019), *State of the Industry Report on Mobile Money 2018 Appendix*.

58. Davidson, N. and Leishman, P. (2011). *Building, Incentivising and Managing a Network of Mobile Money Agents: A Handbook for Mobile Network Operators*. GSMA

59. Ibid.

60. Jaqueline, J. and Wasunna, N. (2019). *Distribution 2.0: The future of mobile money agent distribution networks*. GSMA

61. Ibid.

62. In Pakistan, Bangladesh, Myanmar, providers deliver liquidity to agents. Some providers in Kenya and Uganda are now also offering agents these services. However, in some cases the service is only available for top performing agents, or agents within proximity of other agents, so a delivery route can be maintained at a reasonable cost.

63. Baah, B. (2019) *Mobilising cash and voucher assistance programmes: The case for mobile money*. GSMA

There are two high-level concepts in the mobile money business model that humanitarian organisations should be mindful of when engaging with MNOs:

1. **While mobile money operations generally do not generate a large portion of the MNO's revenue, as the industry matures, the proportion is growing.** Just a few years ago, many MNOs valued mobile money for its indirect benefits, such as reduced churn and brand loyalty, whereas today, it is widely viewed as a source of direct revenue.⁶⁴ In 2018, the mobile money industry saw a reported revenue growth of 23.9 per cent year-on-year. At the end of the 2018 financial year, M-Pesa, Vodacom Tanzania's mobile money service, contributed over 30.1 per cent of Vodacom's revenue in Tanzania.⁶⁵ In Zimbabwe, many people relied on mobile money to cope with persistent cash shortages, and revenues as a proportion of total operator revenues grew accordingly in the country, from 13.1 per cent to 18 per cent between Q2 and Q3 2017.⁶⁶ However, it should be noted that **although some MNOs receive healthy revenues from their mobile money operations, there are many that are not at this stage of development, often needing high levels of investment to propel them to the scale needed for such revenues to be made.**

2. **With agents serving as the backbone of mobile money, operational expenditures (OPEX) continue to drive the cost structure of providers,** including agent commissions, marketing, and personnel. In 2016, mobile money providers reported that, on average, 68 per cent of their costs were OPEX.⁶⁷ As the industry shifts to a more digital ecosystem model, providers can reduce the net cost of their distribution networks. The agent network continues to be vital for the growth of mobile money, evolving to take on board the changing landscape of the mobile money industry, with providers leveraging agents to support adjacent service offerings.⁶⁸ Providers do not usually gain any revenue from cash-ins, yet pay an agent fee for carrying out the transaction, and only receive marginal revenue from cash-outs due to sharing this revenue with the agent. They are therefore continually looking for new ways to increase revenue generating activities.

Bulk payments can be rewarding for the provider, earning a transaction fee from the organisation sending the payment rather than paying the agent a fee for a cash-in transaction to the customer's mobile money account. Humanitarian organisations could also partner with the provider to use bulk disbursements to pay the salaries of ground staff.

The importance of building the digital ecosystem

The challenge with many humanitarian CVA programmes is that customers (beneficiaries) cash-out everything shortly after they receive it. This means from a financial standpoint, mobile money providers may be less able to invest in setting up the needed infrastructure and registering beneficiaries than they would for programmes with clients that transact regularly on their system. To increase potential revenue through the CVA programme, customers need to make digital transactions using their mobile money accounts instead of simply cashing out. For beneficiaries to conduct digital transactions, the infrastructure needs to be in place (e.g. available merchants that accept mobile money) and products and services that beneficiaries' desire (e.g. the ability to pay for PAYG solar devices).⁶⁹

Additionally, demonstrating the other potential revenue opportunities for MNOs beyond using mobile money to disburse CVA can further improve the business case. **By positioning MNOs as the partner organisation providing mobile coverage and extending mobile services, i.e. voice and data services, to beneficiaries and humanitarian organisations alike, MNOs could be motivated to invest in providing or setting up the necessary infrastructure and services.**⁷⁰ Furthermore, registering customers who are not part of the CVA programme (e.g. host community) could also be a new revenue stream for MNOs.

64. GSMA (2018). *State of the Industry Report on Mobile Money 2017*.

65. Vodacom (2018). *Vodacom annual results for the year ended March 2018*.

66. Postal and Telecommunications Regulatory Authority of Zimbabwe (Potraz) (2017). *Abridged Postal & Telecommunications sector performance report – Third Quarter 2017*.

67. GSMA (2018). *State of the Industry Report on Mobile Money 2017*.

68. GSMA (2019). *State of the Industry Report on Mobile Money 2018*.

69. Casswell, J. et al. (2019). *Mobile-enabled energy for humanitarian contexts. The case for pay-as-you-go solar home systems in Kakuma Refugee Camp*.

70. Baah, B., (2019). *Mobilising cash and voucher assistance programmes: The case for mobile money*. GSMA



5. Getting started with mobile money

A. Investing in private sector partnerships

By taking a partnership approach, the foundational systems offered by mobile money can be crafted into strong and effective CVA delivery mechanisms. For many humanitarian organisations, **the first step will be to leverage the information presented in this report to demonstrate to donors that allocating time and funding to facilitate mobile money enabled CVA programming is a worthwhile endeavour.** The second step is to understand how to successfully partner with MNOs and other involved stakeholders.

The initial areas to evaluate involve the policy environment and whether it is enabling or non-enabling, the mobile money infrastructure in place, and the regulations that must be complied with for a mobile money enabled CVA programme to function. These are the most challenging issues which can prevent a launch of services, can be time intensive and require coordinated efforts to ameliorate. Providers who have technical expertise in many of these issues can find solutions.

De-risking provider's costs

In locations without grid electricity, MNOs may be able to deploy solar base stations and recommend partner organisations that sell solar home systems (with phone chargers). In settings with low population density and / or low economic activity, a provider may be able to cluster agents in a space (e.g. congregate agents in a particular location) or time (e.g. only on Sundays) to reduce costs enough to make the system work.

For other components, such as dealing with prohibitive regulation - though MNOs will likely have regular contact with the concerned regulatory authority - having a well-known humanitarian brand join the advocacy agenda can help progress.

If mobile coverage is not sufficient,⁷¹ the MNO can help assess the issue, suggest solutions and estimate costs of improvement. However, it may be that the expansion or upgrading of mobile towers and their maintenance need to be subsidised, at least in the short-term. Overall, the humanitarian

organisation should expect to be an active and trusted partner in this pre-launch phase. In Rwanda, GiveDirectly worked with MNOs to upgrade coverage by demonstrating the wider opportunities presented by cash transfer programmes. In Uganda, UNCDF and other humanitarian organisations worked with Airtel to extend and upgrade coverage in one of their areas of operation.

Humanitarian organisations can also be valued partners by either subsidising operations or helping execute them. Once CVA programme operations start, humanitarian organisations should be cognisant of activities that the provider is engaged with that do not generate revenue (e.g. registering and training beneficiaries), and be aware of activities that may take longer than usual (e.g. increased liquidity management because beneficiaries only withdraw, and agents cannot keep their liquidity balanced). It may be common that humanitarian organisations play a role in registration, and often take the lead on beneficiary training programmes.⁷²

Potential revenue sources

These suggestions focus on limiting providers' costs, but there are also ways to increase the potential revenues earned. The easiest way could be to expand the payment services that will be carried out through the provider. For large humanitarian operations, there are an array of payment needs for each organisation, including paying bills, staff salaries, and field staff. Beyond this, connectivity services such as staff SIM cards and office internet plans can add to the benefits received by the provider.

Incorporating other mobile money based support for FDPs can also be beneficial. Services such as PAYG solar home systems, cook stoves, and irrigation kits are a good example of this.⁷³ Furthermore, understanding that while not all FDPs or host community members in an area are part of the CVA programme, they are potentially a source of revenue that enables the payment system to be sustainable over time, so anything that can be done

to facilitate their registration in the system is likely to help the provider enormously.

Finally, regardless of the programme, but essential for a small CVA programme, extending the partnership to other organisations brings more resources to the deal. **Coordinating proposals from cash working groups and helping link providers to recovery phase actors like government programmes, or development organisations that will continue to operate in the area, can meaningfully expand the size and length of the payments programme and make it much easier to invest. Additionally, as governments' focus on digital transformation strategies grow, and use cases to digitise person-to-government (P2G) and government-to-person (G2P) payments are explored, linking mobile money enabled CVA programmes to the wider digital transformation agenda further strengthens its value proposition.**

B. Evaluating a mobile money service

Ideally, someone with mobile money expertise and / or another bulk payment client of the mobile money provider should give a more in-depth evaluation of the provider's competencies. However, it is also possible to develop a reasonable understanding of a providers' abilities independently. If choosing the latter, there are several resources available.

- ELAN's [Mobile Money Assessment and Contracting Guide](#),⁷⁴ provides a general background on some of the important concepts to incorporate into an evaluation.
- For those that plan to undertake extensive evaluations themselves, the ICRC Cash in Emergencies Toolkit's [Assessing Mobile Money Template](#)⁷⁵ is a useful launchpad.

Agent networks

Another important analysis is the agent network that a provider has in the planned area of work. Agents must make enough revenue to provide reliable services. This is a complicated analysis which is based on the start-up costs incurred by the agent and the commission scheme offered by the provider. However, if there are already agents providing reliable services in the area, ask them how many transactions they are doing a day.

This information enables humanitarian organisations to make assumptions about the number of transactions that are necessary for an agent to keep their business running within the area of operation. During the initial stages of a CVA programme, it may be that beneficiaries cash out the majority, if not all, of their CVA. After several months, this may increase by a few more transactions a month for airtime purchases, for example, but that is all that should be expected in the near term.

It is difficult to define the exact distance or time that an agent needs to operate in relation to beneficiaries for mobile money enabled CVA to be a convenient mechanism, as this will be context-specific and depend on the availability, or lack thereof, of other financial institution CVA collection points (for example, an ATM provided by a commercial bank). However, beneficiaries should not have to travel long distances to access their CVA and their mobile money agent should serve their needs by having liquidity to carry out the beneficiary's transaction. Thus, in their assessments, humanitarian organisations should understand how the provider manages liquidity issues in a situation where a high-level of cash-outs are to be expected, with innovative solutions considered to ease potential challenges (see section 4C: [Agent operations and liquidity management](#)).⁷⁶

Conducting pilots

These analyses are important to gain a better understanding of the partner and the types of operations needed. **However, the best way to experience the current service is to test it, which can be carried out reasonably quickly and inexpensively.** The first option is to enrol staff in the service to experience the enrolment and distribution process, and the level of digital literacy needed to make transactions. It is important to use the service (if possible) in the area where it will be rolled-out to test connectivity, and the specific agents in the area.

Conducting a small pilot with FDPs allows for realistic and comprehensive testing, especially if the provider can use the bulk payments portal they are offering. This will help gauge potential registration issues with FDPs and give a good understanding of the interface, agents, and customer service. A pilot can be completed in a couple of weeks⁷⁷ and will give a practical evaluation of a provider. In the scenario that there is more than one to choose from, it is a good way to compare the operations of those services as well.

71. This will be a common issue. While in North America and Europe, 84-86 per cent of the population will be a mobile subscriber by 2020, in the rest of the world only 48-70 per cent will be mobile subscribers. GSMA. (2018). [The Mobile Economy 2018](#).

72. If beneficiaries have little formal education, very low digital literacy, and/or speak a different language (as common with refugees) often the trainers and training materials providers have are not appropriate, and it is beneficial for the humanitarian organisation to craft a training programme and deliver it alongside MNO staff.

73. There is an array of PAYG products including televisions, radios, lights, phone chargers and refrigerators.

74. Reeve, G. (2016). [Mobile Money Assessment and Contracting Guide](#). ELAN

75. International Red Cross and Red Crescent Movement (2019). [Cash in Emergencies Toolkit](#).

76. For a comprehensive understanding of the different types of successes of mobile money agents, see: Helix Institute of Digital Finance (2016). [Successful agent networks](#).

77. A quick pilot like this will not reveal all the issues that will manifest, and it is not possible if the service is not already available in the area it is planned to be rolled-out in. In the situation where a pilot is not possible in the area of operation, choose the closest emulation of the scenario possible (test it in another area of the country where it is live). Further, it will not reveal issues like SIM cards becoming deactivated after a few months of non-use, or impediments to registering new agents in the area, but it will provide a good sense of what is to be expected.

6. The future of mobile money cash transfers



The humanitarian sector is reactive due to uncertainty about when and how a crisis will occur, and what funding will be available to deal with it. It is clear that cash transfers will play an increasingly important role in humanitarian assistance, and the effectiveness of a digital delivery mechanism will be determined by smart customisation. This is a rare certainty in the sector and requires a response the humanitarian community seldom has the luxury or funding available to efficiently plan for.

Functioning payment systems in humanitarian crises are critical to the success of CVA programmes.

This success will largely depend on strong partnerships between humanitarian organisations and mobile money providers.⁷⁸ These partnerships primarily include a shared long-term vision. This may mean that humanitarian organisations, who are well-versed in dealing with emergencies, but increasingly adapting to the protracted nature of humanitarian crises, modify their current response to a longer-term approach.

The other key ingredients for effective partnerships include leveraging each other's core expertise and setting clearly defined and delineated roles. Due to the often difficult physical and logistical terrain of humanitarian settings, humanitarian organisations may need to further incentivise providers by perhaps taking on some of the roles that providers usually perform, for example, by contributing to set-up costs where mobile or payments infrastructure may be absent or weak. **Mobile money CVA programming is not an off-the-shelf product that humanitarian organisations can purchase, but rather a customised product that will reach its full potential and capacity with long-term partnerships between mobile money providers and humanitarian organisations.**

In many developing countries worldwide, mobile money systems will be the best fit for humanitarian organisations' needs. Strategic partnerships between mobile money providers and humanitarian organisations will be the foundation of the wave of innovation that will occur in the next several years to build payment systems that are customised to humanitarian and crisis affected populations' needs.

The GSMA Mobile for Humanitarian Innovation programme is committed to supporting these partnerships, offering convening opportunities and technical support to stakeholders leveraging mobile money systems for CVA in humanitarian contexts. The work ahead will be challenging yet promising as these two sectors work together to create solutions for those who most need them.

78. For case studies on past development sector donor work with mobile money providers to scale their services, see: Porteous, D. (2010). *ES Series #9: Enabling Mobile Money Interventions: Primer, Diagnostic Checklist, and Model Scope of Work*. USAID.

Appendix: Important sources of information

GSMA's [Mobile Money Metrics](#)⁷⁹ site provides regional data on mobile money availability, accessibility, adoption and usage. Users can explore and download [GSMA's mobile money tracker](#), which details what services are offered in the country of operation and by which providers. Furthermore, the [GSMA Mobile Money Regulatory Index](#) provides information of how conducive regulation is for mobile money services across more than 80 developing countries. For global statistics and analysis on mobile money, the GSMA mobile money programme publishes the [State of the Industry Report on Mobile Money](#)⁸⁰ every year, which contains important macro statistics.

The starting point for more granular statistics is the regulating authorities in each country. The Communications Authority may publish statistics on SIM card market share, overall SIM card penetration, and on the number of registered mobile money agents. The Central Bank may also host statistics on the number of licensed payment entities, registered mobile money accounts, registered agents, and transaction volumes and values. The International Monetary Fund (IMF) publishes the [Financial Access Survey \(FAS\)](#)⁸¹ which provides annual indicators on mobile money by country.

For demand side data – data collected from users, or non-users of mobile money as opposed to supply side data which is provided by providers - the World Bank undertakes the [Global Index](#) survey

every three years (data available for 2011, 2014 and 2017) and provides data by country on a wide array of financial inclusion indicators including mobile money. Further, [Finclusion Surveys](#) and [Finscope Surveys](#)⁸² cover a number of countries facing humanitarian crises.

For more background knowledge on mobile money, the [GSMA Mobile Money programme](#),⁸³ [CGAP \(The World Bank\)](#),⁸⁴ and [The International Finance Corporation \(IFC\)](#)⁸⁵ frequently publish important content, covering a wide range of topics, and the [Digital Frontiers Institute \(DFI\)](#)⁸⁶ offers courses on an array of topics related to digital money, including an introductory course.

For information specifically on the use of mobile money in humanitarian contexts, DFI, Mercy Corps and ELAN partnered to create a course called, [Digital Humanitarian Cash: Extreme Operations](#). The Cash Learning Partnership (CaLP) curates the depository of [humanitarian digital payments](#) literature, in particular the past work done at [The Electronic Cash Learning Network \(ELAN\)](#).⁸⁷ Lastly, the GSMA Mobile for Humanitarian Innovation (M4H) programme published two [landscaping studies \(2017](#)⁸⁸ [and 2019\)](#) of humanitarian uses of mobile money, a [case study of mobile money](#)⁸⁹ in the Bidi Bidi settlement in Uganda (2017) and has a number of [other resources](#)⁹⁰ available and many more planned for publication.

gsma.com

79. GSMA (2019). Mobile Money Metrics. See: <https://www.gsma.com/mobilemoneymetrics/#global?v=2018?v=overview?q=global>
80. GSMA (2019). State of the Industry Report on Mobile Money. See: <https://www.gsma.com/r/state-of-the-industry-report/>
81. International Monetary Fund (2019). Financial Access Survey portal. See: <http://data.imf.org/?sk=E5DCAB7E-A5CA-4892-A6EA-598B5463A34C>
82. Finmark Trust (2019). FinScope. See: <http://finmark.org.za/programmes/finscope/>
83. GSMA (2019). GSMA Mobile Money Programme. See: <https://www.gsma.com/mobilefordevelopment/mobile-money/>
84. CGAP (2019). See: <https://www.cgap.org/>
85. IFC (2019). See: https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/home
86. DFI (2019). See: <https://www.digitalfrontiersinstitute.org/the-institute/courses/>
87. CaLP (2019). See: <http://www.cashlearning.org/thematic-area-digital-payments/digital-payments-1>
88. GSMA (2017). Landscape Report: Mobile Money, Humanitarian Cash Transfers and Displaced Populations.
89. GSMA (2017). Humanitarian Payment Digitisation: Focus on Uganda's Bidi Bidi Refugee Settlement.
90. GSMA (2019). Mobile for Development Resources. See: https://www.gsma.com/mobilefordevelopment/resources-2/?resource_cats=mobile-for-humanitarian-innovation



GSMA LTD

Armour Yards, Suite 150
165 Ottley Drive
Atlanta
GA 30324
USA
www.gsma.com

