



Building and strengthening digital ecosystems in humanitarian contexts

July 2021





GSMA Mobile for Humanitarian Innovation

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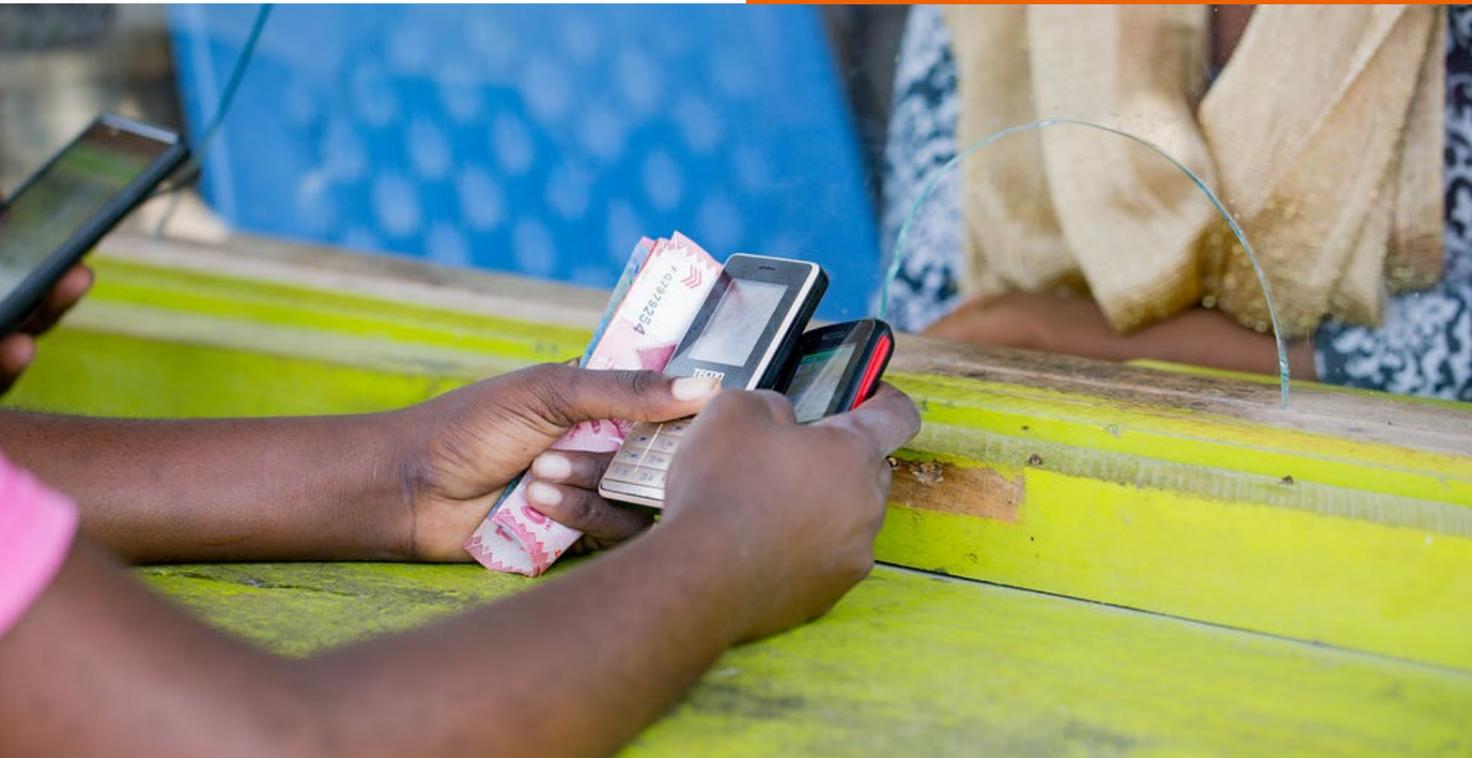
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Introduction

Context

For those in need of humanitarian assistance, mobile technology provides the opportunity to access essential services more readily and become more resilient in times of crisis. As such, mobile-enabled services are increasingly being used to enhance the delivery and impact of humanitarian assistance. This was demonstrated during the COVID-19 pandemic, when restrictions on movement often meant mobile technology was the only channel for humanitarian organisations to deliver life-saving information and support.¹

Depending on the context, digitisation of humanitarian assistance can make project implementation more efficient and effective. For instance, this can be achieved through faster delivery and lower costs, a wider reach across dispersed locations, better coordination between humanitarian organisations and greater accountability, transparency and traceability.

Building the digital ecosystem through strategic partnerships

Partnerships between humanitarian organisations and the private sector are growing in tandem with the digitisation of humanitarian assistance. When mobile network operators (MNOs) and humanitarian practitioners work together, their unique core competencies and expertise can improve the coordination, effectiveness and outcomes of joint response and recovery efforts.² Long-term strategic partnerships between MNOs, humanitarian practitioners and their partners are critical to creating value and a business case for engagement. This, in turn, supports the development of an operating model that enables partners to thrive and deliver critical assistance to people in crisis.

As mobile-enabled services are increasingly used to deliver humanitarian assistance, there is a clear need to develop sustainable digital ecosystems (see Box 1). Only once the digital ecosystem is fully functioning can these services have a transformational impact. This requires a long-term, integrated or ecosystem approach to meet the needs on both the demand and supply side. The [GSMA Mobile for Humanitarian Innovation \(M4H\) programme](#) facilitates sustainable digital ecosystems by catalysing strategic partnerships between MNOs and humanitarian organisations.

Box 1

Defining a sustainable digital ecosystem

A connected digital environment is one in which a range of accessible and sustainable mobile-enabled services are available to those responding to and affected by humanitarian crises. It enables partners from the private sector and the humanitarian community to provide better support to crisis-affected populations and leads to more scalable solutions and platforms that can further improve humanitarian outcomes.³

A fully functioning digital ecosystem can strengthen the resilience of recipients (including financial resilience when they have access to mobile money) and enhance digital inclusion.

The ultimate goal is to create an environment where:

- **Recipients of humanitarian assistance use mobile-enabled services safely and independently to improve their lives, and engage in and grow the local economy;**
- **Humanitarian practitioners leverage mobile technology to deliver humanitarian assistance quickly and efficiently; and**
- **MNOs provide essential products and services to an active, digitally included population.**

This goal can be achieved by building the capacity of humanitarian practitioners and MNOs to identify opportunities and understand how to use appropriate digital services successfully in unique contexts. It also requires ensuring that recipients of humanitarian assistance, and end users more generally, understand the benefits of mobile-enabled services (e.g. access to information and digital financial services) and have the digital literacy skills they need to reap the full benefits of these services.

¹ Hamilton, Z, (2021), [COVID-19 and Digital Humanitarian Action: Trends, Risks and the Path Forward](#). GSMA.

² Baah, B, and Downer, M, (2020), [Partnering During Crisis: The Shared Value of Partnerships between Mobile Network Operators and Humanitarian Organisations](#). GSMA.

³ GSMA, (2018), [Landscaping the Digital Humanitarian Ecosystem](#).

The GSMA M4H team uses two main approaches to facilitate partnerships between MNOs and humanitarian organisations:

- **The Strategic Partnership team** catalyses partnerships between MNOs and humanitarian organisations by providing technical advisory support. The team acts as an intermediary between MNOs and other digital service providers and the humanitarian community to find sustainable and potentially scalable solutions to the challenges of delivering digital humanitarian assistance.

- **The GSMA Mobile for Humanitarian Innovation Fund⁴** catalyses partnerships by providing financial and technical support for mobile-enabled innovations that seek to improve how crisis-affected populations engage and interact with those providing assistance, whether humanitarian organisations, governments or private actors.

These two partnership models provide a learning opportunity – to identify, share and better understand the role of digital and mobile-enabled solutions in humanitarian contexts. Lessons from the first round of the Innovation Fund can be found in the GSMA report, [Building resilience through mobile-enabled solutions](#).

This report draws on lessons from the M4H Strategic Partnership portfolio. These lessons were identified in a detailed systematic review of over 150 pieces of evidence, 12 in-depth interviews and a workshop that validated the lessons. This process enabled the team to robustly identify the building blocks necessary to create and strengthen a digital ecosystem that benefits all stakeholders involved in the preparedness, response and recovery stages of humanitarian assistance.

Three overarching themes emerged from the research and form the basis of this report, providing information on how to build that ecosystem:



Theme 1
Developing strategic partnerships

Recognise the value proposition for MNOs and humanitarian organisations to engage and ensure expectations are aligned.



Theme 2
Shaping an enabling environment

Understand the necessary conditions for mobile-enabled interventions to be successful, from the regulatory and policy environment to infrastructure (both existing infrastructure and infrastructure that may need to be developed).



Theme 3
Building an ecosystem with users

Ensure the market is ready (from the perspective of end users) and interventions are tailored to the local context.

Box 2

Overview of the Strategic Partnerships project portfolio⁵

The M4H Strategic Partnerships Team has formed 24 partnerships, generating 29 projects in nine countries, primarily in Africa, and has engaged with 17 MNOs to provide expertise, develop projects and explore future partnerships. Given the number of projects and the complexity of the issues the partnerships address, four overarching categories have been developed to synthesise lessons and identify trends.

- **Strengthening foundations:** building the capacity of local humanitarian actors and service users to engage with the digital economy;
- **Innovative partnerships:** testing or integrating innovative new partnerships between the private sector and the humanitarian community;
- **Innovative new technology solutions:** testing or integrating innovative new technology solutions or using existing technology in new ways; and
- **Growing the digital ecosystem:** demonstrating how service users are using technology to improve their livelihoods or how the project helps them use technology more effectively.

Formed

24
Partnerships

Generating

29
Projects

Engaged over

30 Humanitarian organisations

17 MNOs

5 Fintech companies

in 9 countries:

Burundi, Ethiopia, Eswatini, Kenya, Nigeria, Pakistan, Rwanda, Somalia and Uganda

⁴ The Mobile for Humanitarian Innovation Fund

⁵ GSMA, (2021), [Mobile for Humanitarian Innovation Annual Report](#).



Theme 1: Developing strategic partnerships

Strategic partnerships can create real opportunities to accelerate the development of digital ecosystems and deliver digital humanitarian assistance more effectively. Partnerships are sustainable when the long-term goals of MNOs and humanitarian organisations are strategically aligned and shift away from transactional supplier/client relationships. From the outset of any successful partnership, it is essential to understand the motivation and capacity of MNOs to align with humanitarian objectives, and

vice versa. The ultimate goal should be to strengthen the capacity of partners to apply mobile-enabled solutions in appropriate contexts.

The following section looks at how the digital ecosystem can be built and strengthened through strategic partnerships that have a holistic understanding of the needs of humanitarian organisations, MNOs and recipients.

1.1 Key features of a successful partnership

Based on the GSMA's experience, there are four key features of a successful partnership. These were identified in interviews with MNOs and humanitarian organisations and from experience forming partnerships. Table 1 outlines M4H's experience of the foundational elements of any successful partnership or partnership model:

Table 1

Key features of a successful partnership



Identify shared value

Structure partnerships that are beneficial for everyone

Understand the business case by identifying the value of a partnership from the perspective of each partner. Partners should leverage their respective strengths throughout the project cycle to ensure this value is maintained. The feasibility of a partnership should be based on cost-effectiveness and partners' understanding both the potential for high upfront costs and the need for personnel to be involved in the preliminary stages of the roll out (as they are with any new mobile-enabled service). GSMA engagement in Ethiopia found that high upfront costs for mobile money-enabled cash and voucher assistance (CVA) may make it unsuitable for short-term interventions, and that extensive advance planning would be needed to deploy it quickly in future.



Align expectations and create structures for effective collaboration

Ensure that both sides agree on what they are accountable for, and are clear and honest about the details of the project

A systematic approach is needed to develop framework agreements, effective systems and coordinated processes. Effective collaboration will also depend on a genuine understanding of the capacity of each partner. This understanding will enable meaningful co-creation, greater responsiveness and mutual ownership of their work (see [Project spotlight: Ethiopia Collective Cash Delivery \(CCD\) Network](#).)



Use shared language

Eliminating jargon and sector-specific acronyms will make working relationships easier

Use non-sector-specific language to make requirements easier to understand. Both MNOs and humanitarian organisations use technical language and acronyms that can be confusing. Using language that is easily understood, and explaining important terminology when required, can help partners to understand how their sectors function, align expectations and avoid confusion. [Box 3](#) explains how the GSMA works to ensure that partners use appropriate language and avoid misunderstandings.



Allow time

The strongest partnerships are those that are developed over time

Recognise the importance of timing, strategic alignment and values. Projects need to align with the strategic priorities of partners, including timing and sustainable financing when required. The value of, and need for, more partnerships between the humanitarian and private sectors has encouraged greater alignment. The M4H team facilitates this by supporting partners to identify shared value and sustain partnerships without providing subsidies that could distort markets and/or encourage engagements that are not sustainable once external funding ends. This was demonstrated in a CVA project in Somaliland (see [Project spotlight: Mobile voice identification for recipient verification](#)).



In addition to the four features of a successful partnership outlined above, lessons from the M4H programme have identified two other elements of long-lasting and sustainable partnerships.

- **Leveraging existing partnerships:** This can accelerate and strengthen the quality of a partnership and subsequent partnerships. For instance, in Rwanda, an earlier collaboration between MTN and Alight, formerly the American Refugee Committee, helped create a clearer vision and eased buy-in from partners to instigate additional partnerships and projects.

- **Building on trust:** Partnerships can benefit from networks of trust that have been built over time by using existing technologies, channels and previous work. For instance, in Somaliland, the successful pilot of voice identification technology⁶ for verification of mobile money-enabled CVA – 91 per cent of recipients recommended the technology – has rapidly expanded its use in relevant programming.

“In the early days, people asked how they could trust digital currency...but as soon as they saw use cases they could use in everyday life, we created the ‘value’ for them and the trust slowly built up.”⁷

Mobile voice identification for recipient verification project, Telesom, Somaliland

⁶ Mebur, J. (14 January 2021), “The Voice ID Project: Verifying Recipients of Mobile Money Supported Humanitarian Cash Transfers in Somaliland”, GSMA Mobile for Development Blog.

⁷ Casswell, J. and Willitts-King, W. (3 March 2021), “COVID-19 and the future of digital humanitarian action: Advice from the experts”, GSMA Mobile for Development Blog.

Box 3

The GSMA as a relationship broker

Projects through GSMA M4H Strategic Partnerships are made possible with the support of subject matter experts who provide direct technical support, monitoring and evaluation (M&E) support and the convening power of the GSMA. This partnership and engagement model can create a sustainable, demand-led approach whereby each stakeholder clearly understands the value of the partnership, which builds from the bottom up and is tailored to their individual needs. The result is that every partnership nurtures an environment in which each partner is willing to dedicate resources, whether funding, time, personnel or a combination of all three, to see a project come to fruition.

Effective stakeholder engagement is therefore crucial and modelled on four focus areas:

1. Identifying and addressing the barriers humanitarian partners face to adopting mobile-enabled solutions;
2. Building on the existing sector-specific strategies of humanitarian partners (e.g. livelihood resilience, financial inclusion, digital literacy and climate change);
3. Determining how engagement aligns with the MNO’s business model and contributes to their strategic goals; and
4. Understanding the partners’ business development strategies (e.g. donor positioning and areas for growth).

Breakdowns in partnerships are often the result of misunderstandings that lead to misaligned expectations and the partnership not living up to its potential. **Lessons from M4H Strategic Partnerships have shown there is a clear role for a partnership broker such as the GSMA to facilitate sustainable partnerships, coordinate actors and manage expectations.**

“The GSMA gets everyone in the same room and this is so essential. The GSMA’s role is important in creating further workshops on how to advocate for a more enabling policy environment and facilitating meetings and coordination towards this.”

Digital and financial literacy training project, MTN Uganda and Grameen Foundation, research participant

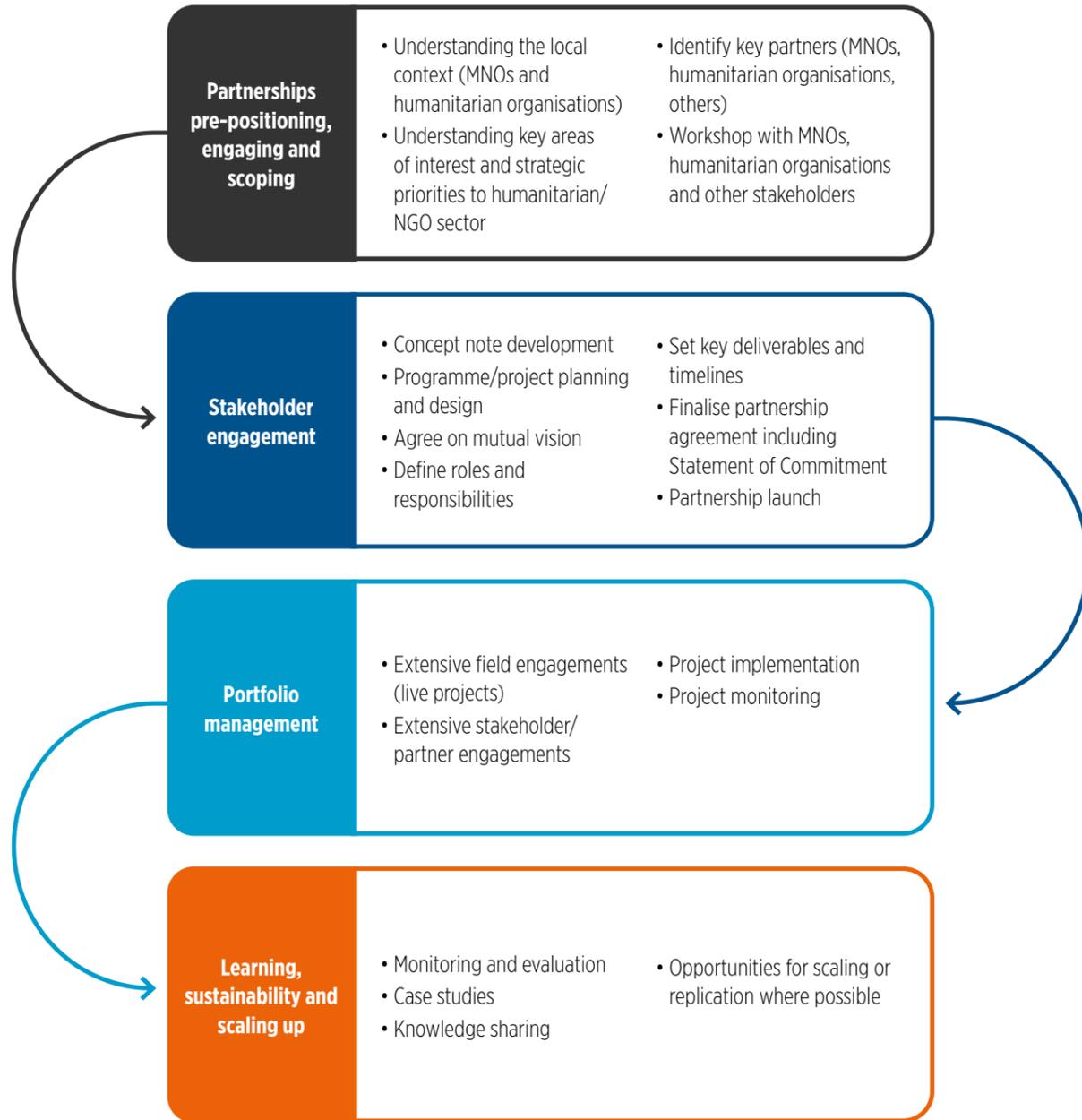
The GSMA is in the unique position of being a bridge between the mobile technology and humanitarian sectors, enabling it to broker partnerships and act as an intermediary. For humanitarian organisations and MNOs that have not worked together before, joint projects enable partners to test whether, where and how they can work together, discover the benefits of working together and find ways to iron out differences and overcome challenges, including policy or regulatory challenges (see [Theme 2: Shaping an enabling environment](#)).

For strategic partnerships developed through an intermediary such as the GSMA, the ultimate aim is to help partners identify these opportunities and build their capacity to integrate digital solutions in humanitarian programming successfully on their own. This objective has been met in Rwanda where Alight and World Vision (see [Project spotlight: Digitising VSLA operations](#)) are now engaging with digital providers without facilitation from the GSMA. Both partners are confident they are equipped with the knowledge to explore these opportunities independently. Alight has embraced digital tools to such an extent that they now consider how to incorporate digital solutions in every new project they design.

By having a standardised approach to strategic partnerships, the M4H team can ensure the conditions for a robust partnership are built into the partnership's mandate and there is a clear roadmap to success (see Figure 1).

Figure 1

M4H Strategic Partnerships: Four key steps to project roll out



Project spotlight

Digitising Village Savings and Loans Associations (VSLAs)



Country: Rwanda

Partners: World Vision Rwanda and EXXUS

Category: Creating new technology solutions

Summary: Village Savings and Loans Associations (VSLAs) provide a form of microfinance based on members' savings, and are often employed to enhance the financial security of vulnerable households in refugee camps. VSLAs are an effective way to foster savings habits, smooth household incomes and build household financial assets. Digitising VSLAs aims to make members' savings more secure, provide access to a broader suite of digital financial services and help members build their digital skills and capacity. Since July 2019, the GSMA has worked with stakeholders including World Vision Rwanda and EXXUS to facilitate the digitisation of 32,000 VSLAs that include more than 800,000 members, through World Vision's Saving for Transformation (S4T) model.⁸ EXXUS is a fintech company that developed and maintains the digital savings group platform SAVE, through which VSLA members can access their digital savings.⁹ As of February 2021, more than 1,800 VSLAs have transitioned from analogue to digital systems, with just under 800 new digital VSLAs activated, affecting almost 20,000 people. Over \$110,000 was saved digitally and over \$85,000 in loans were processed digitally, leading to just under \$14,000 in recorded interest.

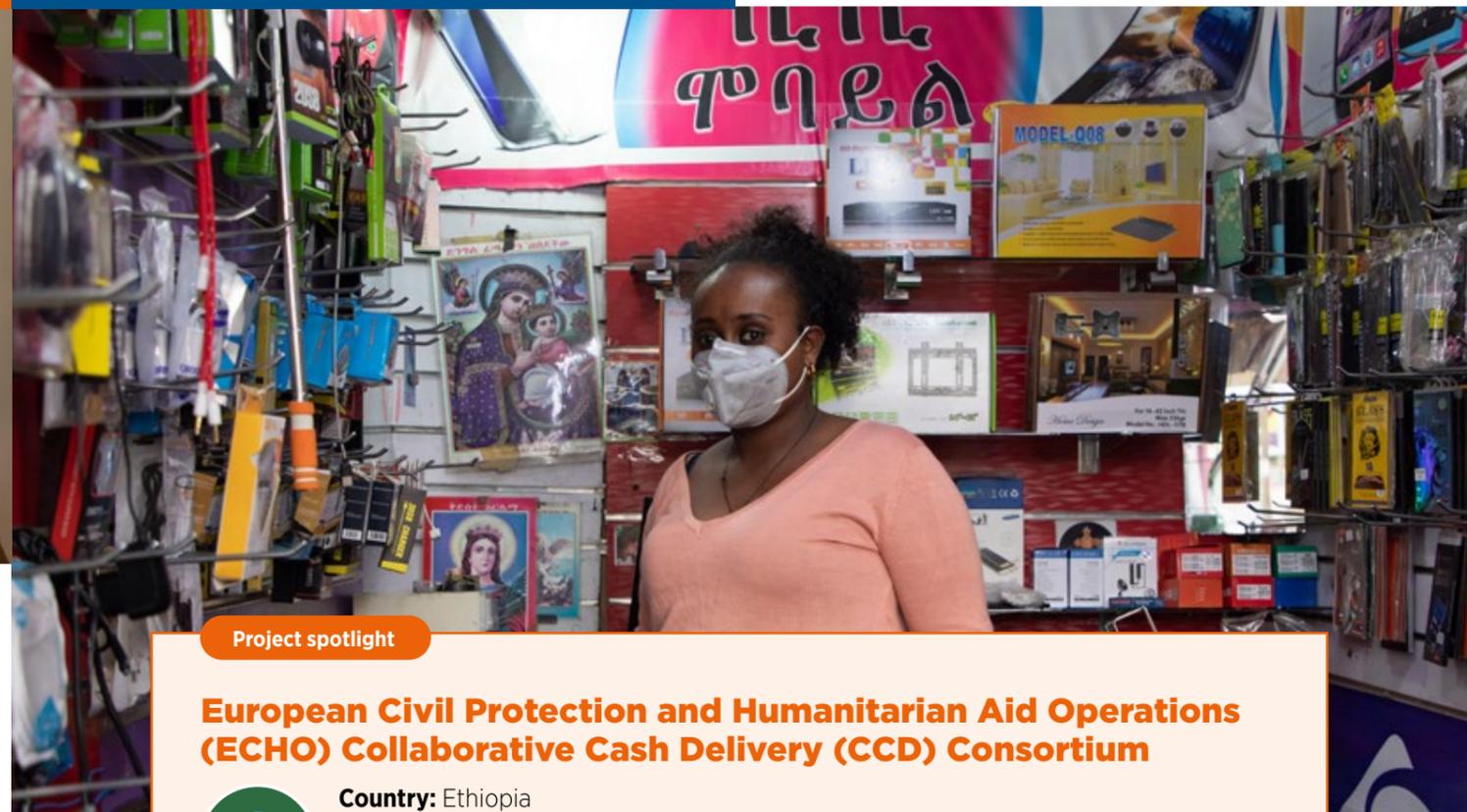
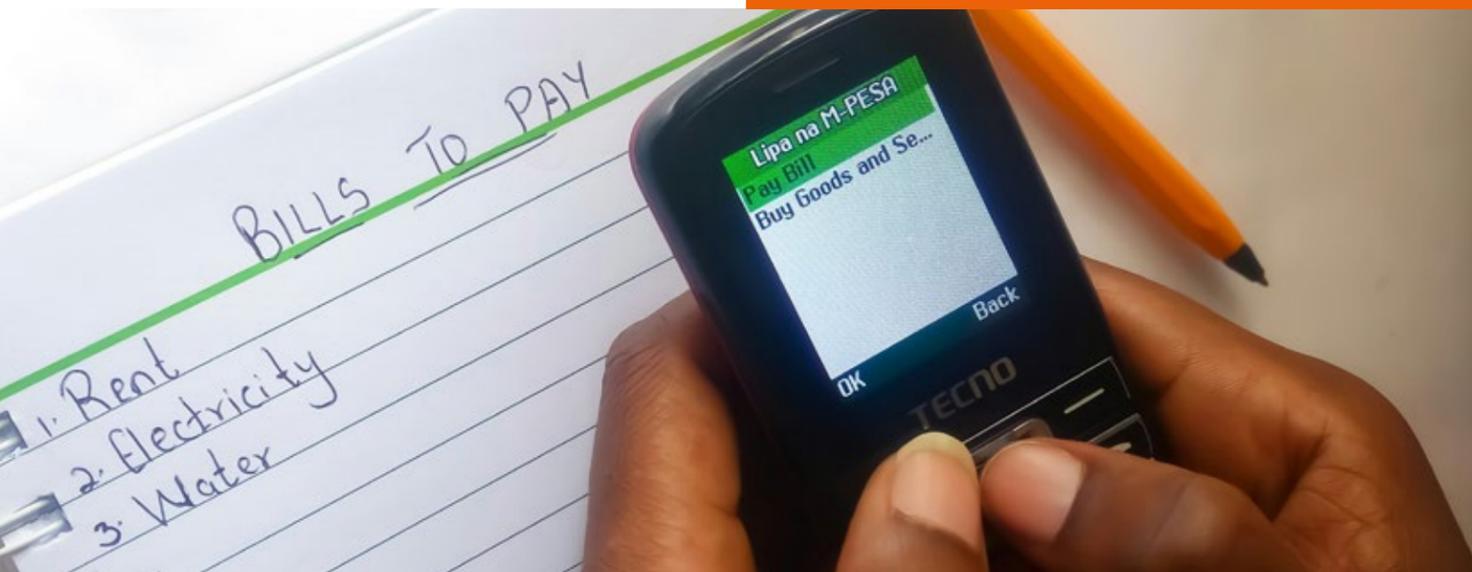
The impact: Despite the challenges of COVID-19, many people who have transitioned from analogue to digital VSLA membership in 2020 have reaped the benefits of digitised services: 296 farmers from Buranga and Nyungwe Clusters, 181 of whom were women, started a poultry business through microloans they received through their VSLA. They sold 131,420 eggs, as well as manure, earning approximately \$18,000.

"World Vision's Saving for Transformation is a self-sufficient development model that boosts livelihoods and self-resilience of marginalised households"

- World Vision Rwanda

⁸ World Vision, Saving for Transformation, <https://www.wvi.org/economic-development/savings-transformation>

⁹ Watch "Save Short Doc" for a short overview of digital VSLAs through the SAVE platform.



1.2 Partnership models

The GSMA M4H programme has tested different approaches to catalysing partnerships between the mobile industry and humanitarian sector, from **bilateral relationships** (e.g. a partnership between one MNO and one humanitarian organisation) to the **consortia model** (e.g. multiple MNOs and multiple humanitarian organisations). The partnership model that is ultimately adopted aims to improve coordination between humanitarian organisations and MNOs, make their engagement more efficient and help them to understand the opportunities in a sector they might not have engaged with before.

The overarching approach depends primarily on the opportunity and local context. In countries where MNOs are more advanced – due to past engagement with the humanitarian sector and/or greater capacity to engage, such as Safaricom in Kenya, MTN in Rwanda and Uganda or Telesom in Somalia – humanitarian organisations can work directly with MNOs. However, in countries where

MNOs are still in their infancy and/or there has been little or no engagement with the humanitarian sector, technology companies can act as a bridge, providing for example, third-party mobile money platforms to distribute CVA over the MNO's network, as seen in M4H engagements in Ethiopia.

Existing relationships and coordination mechanisms in Somalia and Ethiopia have enabled the collective engagement of MNOs, technology companies and the humanitarian sector. This consortium model helps to streamline efforts and avoid duplication through collaboration, to deliver better results for recipients and to increase the scale, efficiency, effectiveness and collective impact of humanitarian assistance. In Rwanda, a landscaping study conducted by the GSMA helped consortium partners better understand the digital humanitarian context and forge new partnerships to find solutions to existing problems.

The success of any partnership is ultimately determined by its outcomes – the efficiencies and value it creates for those involved and, most importantly, the impact of projects on recipients of humanitarian assistance. Underpinning this success is an enabling environment, a prerequisite for developing strategic partnerships in the digital humanitarian sphere and building a strong digital ecosystem. This is discussed in more detail in the next section.

Project spotlight

European Civil Protection and Humanitarian Aid Operations (ECHO) Collaborative Cash Delivery (CCD) Consortium



Country: Ethiopia

Partners: Action Against Hunger, Catholic Relief Services (CRS), International Rescue Committee (IRC), Save the Children and World Vision

Category: Innovative Partnerships

Summary: ECHO CCD Ethiopia members, and the wider CCD network in Ethiopia, consist of 12 leading international NGOs¹⁰ working together to deliver CVA to those in need of humanitarian assistance across the country. A partnership between CCD Ethiopia and the GSMA was established in 2019 to improve the efficiency of CVA in Ethiopia through the adoption of mobile money in locations where it was feasible, and to build capabilities to deploy mobile and digital technologies in humanitarian action.

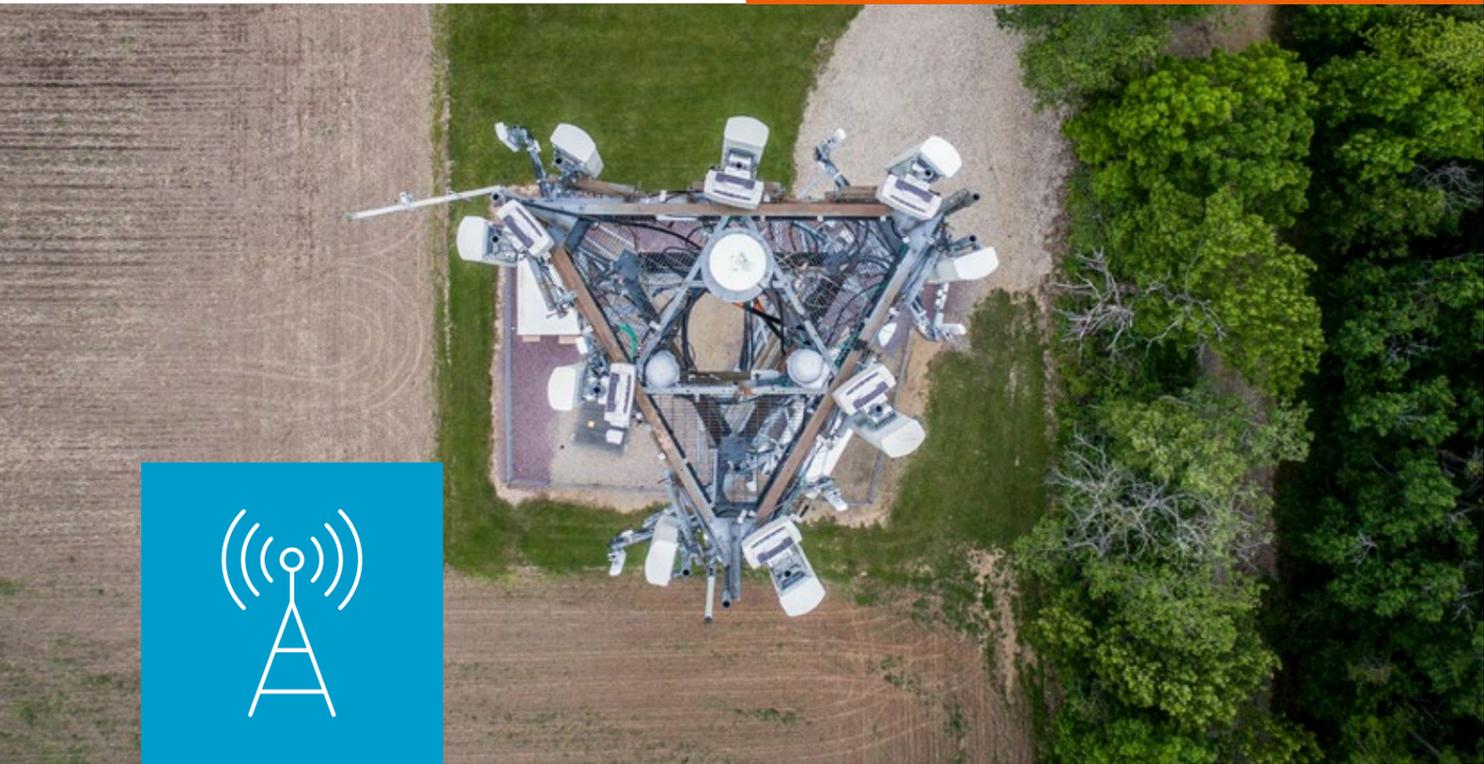
The impact: Through this partnership, the GSMA published a landscaping report on the mobile money ecosystem in Ethiopia, including the feasibility of deploying mobile money for CVA programming.¹¹ The GSMA has also provided technical assistance to CCD members seeking to use mobile money for cash transfers. This resulted in two partners piloting, and six partners planning to pilot, mobile money-enabled CVA in cash programming for the first time.

“GSMA engagement allowed the consortium to expand its thinking towards the adoption, scale up and utilisation of mobile money in Ethiopia. This has by extension facilitated new, innovative and efficient ways to reach our clients which resulted in the adoption of mobile money and e-transfers to 17,431 households (96,348 individuals). The broader cash community in Ethiopia will catalyse agencies to move faster on mobile money adoption through leveraging the ECHO's investment, the knowledge base of existing humanitarian and development interventions, and by taking advantage of new developments in the country.”

– Solomon Bekele, Head, Cash and Digital Business Unit, World Vision Ethiopia

¹⁰ Action Against Hunger, CARE, Concern, Catholic Relief Services (CRS), DanChurch Aid, Danish Refugee Council, International Rescue Committee (IRC), Mercy Corps, Norwegian Refugee Council, Oxfam, Save the Children and World Vision.

¹¹ GSMA, (2021), [Humanitarian Cash and Voucher Assistance Programmes in Ethiopia: Context Analysis and Capability Assessment of the Mobile Money Ecosystem](#).



Theme 2: Shaping an enabling environment

When building a digital ecosystem, it is important to understand and consider the existing policy **environment** and **infrastructure**. The local context can have an enormous impact on the implementation of digital humanitarian projects. While the digitisation of humanitarian assistance can be relatively straightforward in more enabling policy environments, restrictive or fragmented regulatory regimes or insecure political contexts can create serious challenges and make the work more complex. In many cases these will be out of the stakeholders' control, but there are steps they both must take to understand the local environment and can take to shape the long-term development of that environment.

In some cases, and where appropriate, the M4H team has shaped a more enabling and sustainable environment for digital humanitarian action to continue over the long term. This section will focus on two primary aspects: the **regulatory and policy environment** and **existing infrastructure**.

2.1 Policy and regulatory environment

Having a good understanding of the local regulatory context before a project starts can have a major impact on project implementation. While an enabling environment and a supportive regulator can facilitate digital humanitarian programming, restrictive policy can make it a challenge. It is vital to connect with relevant stakeholders in the government, technology and humanitarian sectors to understand the current policy and regulatory environment and how, if at all, it is likely to develop.

For example, in Ethiopia in 2020, the liberalisation of the telecommunications market was prompted by a government bidding process to provide licences to new telecom companies. This was part of a broader liberalisation effort that has been underway since 2012, marked by several key policy developments: the Government of Ethiopia opened the market to international MNOs, the National Bank of Ethiopia issued a new directive allowing MNOs to offer mobile money services and a national digital strategy was developed to digitise government-to-person (G2P) payments. These changes in the regulatory environment have significantly increased the potential of digital solutions for humanitarian actors, especially mobile money-enabled cash assistance.¹²

In some cases, stakeholders can engage with governments and regulators to improve policy and regulatory environments. For example, in [Uganda](#), Know Your Customer (KYC) requirements were a

barrier to refugees accessing mobile services in their own names. The GSMA, together with the UN Capital Development Fund (UNCDF) and the UN Refugee Agency (UNHCR), worked successfully with stakeholders across the mobile and humanitarian sectors to engage the Uganda Communications Commission (UCC) and the Office of the Prime Minister (OPM) to relax KYC requirements for refugees and open access to mobile services. This type of coalition-based engagement, although often a longer term solution, can unlock access to mobile services on a large scale and transform the local digital ecosystem.

The COVID-19 pandemic created new opportunities to engage productively with governments, in many cases highlighting the relevance of digital and mobile solutions for humanitarian and social safety net programmes and progressive, government-led policy changes. For example, in both Kenya and Rwanda, regulations were eased to ensure people could access digital technologies throughout the pandemic,¹³ revealing the important role of mobile technology in responding to humanitarian needs. Pilot projects can play a similar role. When they are successful, partners have said that pilot projects of digital humanitarian interventions can help them demonstrate to policymakers – with solid examples – the potential impact, current regulatory constraints and potential solutions.¹⁴

¹² More information on the Ethiopia case can be found in the 2021 M4H report, [Humanitarian Cash and Voucher Assistance Programmes in Ethiopia](#).

¹³ Chadha, S., Kipkemboi, K. and Muthiora. (2020). "[Tracking Mobile Money Regulatory Responses to COVID-19 – Part 2](#)". GSMA Mobile for Development Blog.

¹⁴ Alight Rwanda. (2021). Interview conducted by Triple Line Consulting.



Project spotlight

Mobile voice identification for recipient verification



Country: Somalia

Partners: CARE and Telesom

Technology: Biometric voice identification

Category: Creating new technology solutions

Summary: To overcome challenges with post-distribution verification, this project uses an innovative biometric verification process whereby the recipient's voice serves as a passcode for the cash transfer. This project has made verification more efficient and effective by relieving the heavy logistics and travel required to physically confirm receipt of the transfer. It mitigates the need to collect thumbprints to verify that payments have been made to the correct recipients, prevents the possibility of disbursements being delivered to unintended recipients and saves the cost of conducting verification missions.

The importance of protecting recipient's rights and confidentiality is of paramount importance when introducing biometric solutions.¹⁵ Mechanisms embedded throughout this project ensured compliance of national and international legal requirements and mitigated against data protection risks. Mechanisms included implementation of informed consent measures and the delivery of comprehensive sensitisation sessions, as well as implementation of rigorous data protection standards, including restricted access to sensitive information.

The Impact: Cash recipients in this project were drought-affected families. While only a quarter of users described themselves as literate, 85 per cent said the voice registration system was easy to use and 91 per cent would recommend the technology for future cash transfer programming.

"This system of payment is very good because there are no middlemen. It is transparent and you do not assume there is any mismanagement or corruption."

- Female user

2.2 Infrastructure

It is critical to understand the level of infrastructure on the ground to assess the readiness of digital interventions. This is especially important in humanitarian contexts, which tend to be more challenging for MNOs than their usual operating environments. Important factors to consider include mobile phone penetration, mobile network coverage, agent networks, existing technologies and electricity. Where these are underdeveloped, stakeholders can usually work to address them, develop the ecosystem and build a pathway for future digital interventions.

- **Mobile phone penetration:** In humanitarian settings, low mobile phone penetration among target groups, especially marginalised groups, is often a major barrier to digital programming. Mobile access and ownership must be considered to ensure that marginalised groups are not further excluded by digital interventions. The GSMA has recently developed the "[Connectivity, Needs and Usage Assessment Toolkit](#)", which provides the tools necessary to understand mobile phone access, use, preferences and digital skills among populations of concern, in a robust and standardised manner.
- **Mobile network:** While the reach of mobile networks has expanded significantly in recent years, there is still a coverage gap: 600 million people live in areas not covered by a mobile broadband network.¹⁶ This can affect the efficiency and effectiveness of digital interventions, and unreliable network coverage can also erode user trust. If users experience connection problems with the platform early on, it is difficult to gain the traction needed to adopt and embrace the technology. Although this is a difficult and costly factor for MNOs to address in the short term, it can be addressed in the medium to long term by effectively communicating the issues and collaborating with partners. For example, coordinating across humanitarian organisations to aggregate demand for services can help to build the business case for MNOs.¹⁷

¹⁵ Oxfam (2021). Oxfam biometric and foundational identity policy. <https://oxfam.app.box.com/v/OxfamBiometricPolicy>

¹⁶ See the GSMA Connected Society programme website: <https://www.gsma.com/mobilefordevelopment/connected-society/>.

¹⁷ Casswell, J, and Frydrych, J, (2017), [Humanitarian Payment Digitisation: Focus on Uganda's Bidi Bidi Refugee Settlement](#), GSMA.

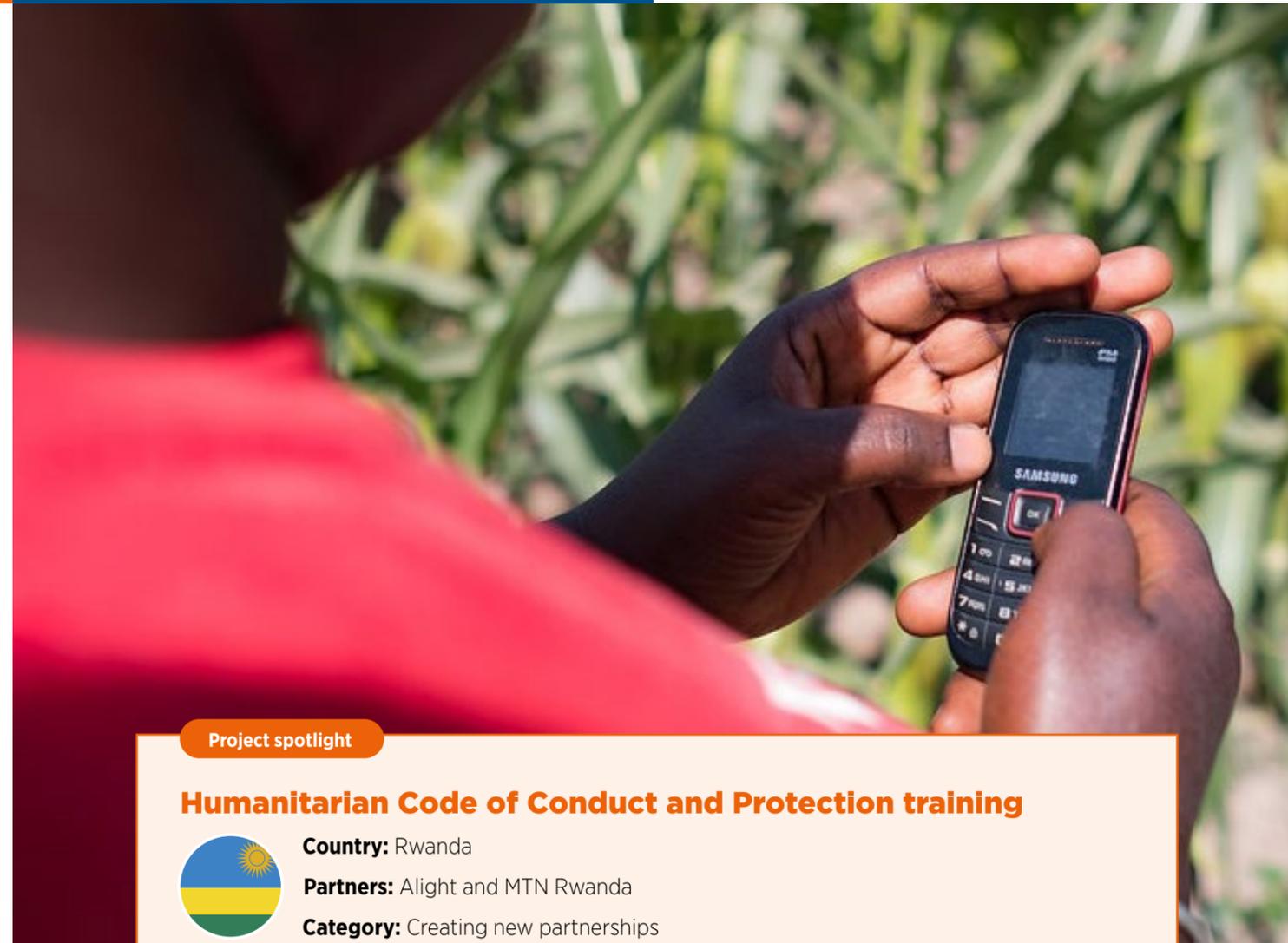
- **Agent networks:** For digital programming, including mobile money, the coverage and quality of the agent network plays a critical role. Investments in agent training underpin the sustainability, feasibility and quality of programming. In Uganda, joint research by the GSMA, UNCDF, Asigma Advisory and DanChurchAid found that most customers in Bidi Bidi Refugee Settlement typically do not make complaints or seek assistance from formal MNO customer service channels. Instead, most customers (75 per cent) turn to mobile money agents. It is therefore critical for agents in the region to have adequate training to deal with customer queries. Likewise, in Rwanda, the GSMA helped support local partners to leverage the presence of MNO agents in refugee camps to increase uptake of microsavings and loan products. There are clear advantages for MNOs to invest in their agent network, both by training agents on [humanitarian do-no-harm principles](#) and by assisting crisis-affected populations to increase their fluency with mobile money. This not only helps to provide livelihood opportunities for end users, but also to expand an MNO's footprint and subscriber base.
- **Existing technology:** When humanitarian organisations enter partnerships with MNOs, they should use existing platforms and technologies that can be adapted to humanitarian contexts since this is less expensive and time consuming than developing new interventions. It is therefore critical for humanitarian organisations to understand what services their MNO partner already offers. Services such as mobile money, payment services, voice identification or interactive voice recording services, for example, can all be relevant for humanitarian audiences.
- **Electrification:** While electricity is required for charging phones, it is not always reliable or available in humanitarian settings. Displaced people are among the most energy poor on the planet; the Chatham House Moving Energy Initiative estimates that about 90 per cent of people living in refugee camps have no access to electricity.¹⁸ This has been identified in previous GSMA research as a key barrier to accessing digital technologies in humanitarian settings.¹⁹ One way this can be addressed is through the provision of microgrids. For example, Mahama Camp in Rwanda is not connected to the national electricity grid, so the GSMA worked with Alight and MeshPower to provide solar installations through microgrids that would serve both their energy needs and those of camp residents.

It is important to note that existing digital infrastructure and participation does not necessarily lead users to adopt mobile services. Experience in Rwanda and Ethiopia has shown that market readiness alone does not guarantee uptake of new mobile services, nor that users will graduate from using a single service to a broader range of mobile services. In Rwanda, for instance, where 87 per cent of the population have access to a mobile phone, only 30 per cent have used digital financial services for payments and related transactions in the past 12 months.²⁰ Likewise, in Ethiopia, according to a scoping study by the GSMA and the Ethiopian CCD Network, users typically withdraw their full cash transfer when it becomes available and rarely use their new mobile money accounts for non-programme-related transactions. It is therefore important to look beyond market infrastructure and consider how to generate demand through user preparedness. This is discussed in more detail in the next section.

¹⁸ See the Moving Energy Initiative: <https://mei.chathamhouse.org/what-we-do/why-matters>

¹⁹ Casswell, J, et al (2019), [The Digital Lives of Refugees: How Displaced Populations Use Mobile Phones and What Gets in the Way](#), GSMA.

²⁰ Finscope Rwanda, [2020 Statistics](#).



Project spotlight

Humanitarian Code of Conduct and Protection training



Country: Rwanda

Partners: Alight and MTN Rwanda

Category: Creating new partnerships

Summary: Between July and August 2019, Alight (then the American Refugee Committee), in collaboration with the GSMA and MTN Rwanda, trained 800 refugee and host community MTN agents in humanitarian code of conduct and protection to better serve marginalised communities (e.g. refugees, persons with disabilities, older persons) with cash transfers. The training aimed to enhance the mobile money agents' understanding of sexual exploitation and abuse (SEA) and gender-based violence (GBV) in the context of humanitarian assistance. To do this, agents were oriented on a variety of UN guidelines and standards of accountability. This project is now being scaled up in Uganda.

User impact: The training raised awareness among agents of their responsibility to report abuse or violence and the channels for doing so. After the training, the agents expressed the importance of operating in a non-discriminatory way – an indication that they understood the principles of equality and “do no harm” for all.

“We learned that we should treat every customer as important and without discrimination, especially when providing services as we receive many individuals from different backgrounds. We were told to be careful in how we treat people, as sometimes we have customers with mental health problems and we therefore have to handle them with care and guide them.”

– Female agent



Theme 3: Building the digital ecosystem with users

A key ingredient in building a robust digital ecosystem is ensuring that the market is ready from a user perspective. This means that projects or interventions are tailored to the local context and take users' purchasing power, digital and financial literacy and socio-cultural norms into account. In the design phase, it is important to conduct research to understand these factors in addition to the regulatory and supply-side factors mentioned in the previous section. It is vital to meet users where they are, work to remove barriers and help them build the skills they need to be financially and digitally included.

3.1 Key barriers from a user perspective

Network and handset costs

Affordability of handsets remains the primary barrier to handset ownership in low- and middle-income countries (LMICs).²¹ This is an even greater challenge in humanitarian contexts where handsets and other costs related to the use of mobile services become more difficult to afford. Data costs and mobile money transactions are often cited by end users as an obstacle to using mobile technology independently. The GSMA's work in Uganda with the Grameen Foundation found that although members

of savings and loans groups were willing to use mobile phones for their group activities, they were limited by the cost of mobile phones and access to agents. To address affordability issues, humanitarian partners need to work with MNOs to ensure pricing is inclusive. Where users do not currently have access to handsets, partners may need to develop creative financing models to enable users to purchase handsets at cost or reduced prices.²²

Digital, financial and functional literacy

Basic literacy may be a barrier for a certain segment of aid recipients, especially the elderly and illiterate. Coupled with a lack of exposure to technology or banking, it is common for these recipients to share their PINs with others to collect their payments, potentially exposing themselves to coercion or fraud. Similarly, without the digital or financial skills required, users may not be able to take full advantage of digital humanitarian programming.

Both these issues arose in Concern International's programme in Burundi, as documented in the GSMA report, "[Mobile money enabled cash assistance: user journeys in Burundi](#)".²³ The M4H team is now working with Econet Leo Cassava Fintech, one of the major mobile money providers in Burundi, to provide technical support for their humanitarian strategy and address some of these issues.

Social norms and existing inequalities

Social norms and power disparities need to be considered in the design of digital programming, as cultural barriers may prevent marginalised groups from participating fully. In LMICs, women are eight per cent less likely to own a mobile phone and 15 per cent less likely to use the internet on a mobile phone.²⁴ There are vast regional disparities in these digital divides. For example, in Pakistan, women are 38 per cent less likely than men to have access to a mobile phone,²⁵ and these gaps widen in humanitarian contexts. M4H partners

from the Agency for Technical Cooperation and Development (ACTED) reported that a woman who owns a smartphone may be perceived as being in greater violation of cultural norms than if she had a basic feature phone. Without understanding the complexity of such issues and designing digital interventions that seek to address these social norms, offering digital programming to these groups risks exacerbating inequalities or creating tension within households.

²¹ GSMA, (2020), [The State of Mobile Internet Connectivity 2020](#).

²² Karlsson, M, et al, (2017), [Accelerating Affordable Smartphone Ownership in Emerging Markets](#), GSMA and Dalberg.

²³ Casswell, J, and Hamilton, Z, (2020), [Mobile Money Enabled Cash Assistance: User Journeys in Burundi](#), GSMA.

²⁴ GSMA, (2021), [The Mobile Gender Gap Report 2021](#).

²⁵ Shanahan, M, (2021), [Addressing the Mobile Gender Gap in Pakistan](#), GSMA.



Project spotlight

Digital community innovation centre to increase job market access for young adults in Bidi Bidi Refugee Settlement



Country: Uganda

Partners: Community Technology Empowerment Network (CTEN), Mercy Corps, UNHCR, World Food Programme (WFP), UN Innovation Services, NetHope, Ecopolis

Category: Strengthening foundations

Summary: Recognising the need for greater training in employable skills among young people, a digital community centre was established for refugees and host communities around Bidi Bidi Settlement, Uganda. The curriculum included courses on computer repair and maintenance, graphic design, film production, data collection and analysis, digital literacy and entrepreneurship.

The impact: 540 students have graduated from the training and, as of January 2020, 12 students have found employment.

“We are directing all our energy in the refugee settlement to utilise technology to transform the lives of the refugees and host community. In one of our technology centres where we now combine business courses, other technical skills, like tailoring together with the digital literacy, we’re seeing women bursting, women that are coming every day now. It’s almost like women are taking ownership of the centre.”

– Peter Batali, Executive Director at CTEN

3.2 Addressing barriers

There are different ways to address these barriers and build a stronger digital ecosystem. Two solutions are outlined below.

Programming

Programming that explicitly addresses barriers is the most direct way of ensuring that users are equipped with the skills and tools they need to be digitally included – fully, safely and over the long term. The GSMA has supported local digital skills training for users to take full advantage of digital services. For example, the M4H programme partnered with the Grameen Foundation and MTN Uganda to develop training that addressed the barriers users, especially women, face in accessing financial and digital services. Together they developed the [Digital Literacy Training Guide](#) to increase awareness of, and comfort with, digital services that are appropriate to the local context. As users become more comfortable with mobile technology and build the

skills to use it independently, they will be able to safely use their phone for a myriad of purposes and become more autonomous. Likewise, programming can address restrictive social norms by designing programming explicitly to include marginalised groups, as detailed in the Digital Literacy Training Guide.

The benefits of this type of programming often extend beyond training participants to slower adopters of digital technology, who will be interested in learning more if their peers are benefitting from the services. They will also be much more likely to use the services if their peers can show them how.

Integrating users in the process

In addition to direct programming, a key part of building the digital ecosystem is ensuring user buy-in and long-term sustainability. The GSMA has worked alongside partners to guide human-centred design and co-creation approaches with end users.²⁶ Including user perspectives as programmes are developed ensures their experiences are the starting point for any new services and programming. By ensuring programming is relevant and tailored to their needs, long-term sustainability and user buy-in is also more likely. This process must continue

throughout the life cycle of the programme. For example, in Ethiopia’s CCD programme and Kenya’s digital VSLA programme, project participants were consulted throughout the process to identify barriers and improve the user experience.

There are many strategies that stakeholders can take to ensure user needs and preferences are at the centre of a digital ecosystem. At the heart of any approach is ensuring programmes are designed to promote dignity, autonomy and skills development.

²⁶ Casswell, J. and Hamilton, Z. (2020). [The Digital Lives of Refugees and Kenyans with Disabilities in Nairobi: A Human-Centred Design Approach to Identifying Mobile-Enabled Opportunities](#). GSMA.

Conclusion

People affected by crisis continue to rely on mobile technology, not only to communicate, seek and share information, but increasingly to access humanitarian assistance and become more financially resilient. As the humanitarian sector works more closely with MNOs and the private sector more broadly, strategic partnerships that enable mobile-enabled services to be used efficiently in humanitarian contexts have become ever more important.

Long-term partnerships between MNOs and humanitarian organisations are key. To create long-term sustainability and maximise benefits for all, these partnerships must be guided by a vision that extends beyond a single project to the development of a holistic digital ecosystem. A well-developed digital ecosystem has the potential to not only provide people affected by crisis with a suite of life-enhancing mobile services, but also strengthen the business case for MNO and private sector involvement by expanding the addressable market and the range of digital products, services and platforms that can be offered and scaled.²⁷

Sustainable partnerships can facilitate this and create opportunities to replicate and scale successful projects. This has been demonstrated by several M4H partnerships:

- In Rwanda, Alight is planning to roll out digital community centres (see [Project spotlight: Digital community innovation centre](#)) in five more refugee camps across Rwanda, replicating the centre currently operational in Gashora Refugee Camp.
- In Somalia, the mobile voice identification project (see [Project spotlight: Mobile voice identification for recipient verification](#)) is scaling to reach more recipients in different parts of the country.
- Mobile money agent training,²⁸ originally rolled out in Rwanda, is being replicated in new markets, including Uganda.

Lessons from the GSMA M4H portfolio have demonstrated that strategic long-term thinking is needed to build a digital ecosystem that works for everyone. It will take collaboration to address systemic barriers and develop solutions that not only serve the humanitarian sector, but also often tackle broader development and societal challenges. This requires intentional effort and long-term strategies, including greater coordination and collaboration between humanitarian organisations, policymakers, MNOs and other key stakeholders.

The M4H team will continue to share lessons to help facilitate the development of fully functioning digital ecosystems, and to create environments where appropriate, context-specific, mobile-enabled services can be used to better serve those affected by crisis and create opportunities for partners to deliver their services more efficiently.

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²⁷ GSMA, (2018), [Landscaping the Digital Humanitarian Ecosystem](#).

²⁸ GSMA, (1 October 2019), Video: ["Mobile money agent training on the humanitarian code of conduct"](#)



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