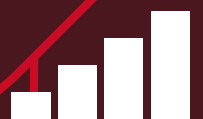


**Digital Innovation in
Humanitarian Settings:**
Lessons from the GSMA
Mobile for Humanitarian
Innovation programme



The GSMA is a global organisation unifying the mobile ecosystem to discover, develop and deliver innovation foundational to positive business environments and societal change. Our vision is to unlock the full power of connectivity so that people, industry, and society thrive. Representing mobile operators and organisations across the mobile ecosystem and adjacent industries, the GSMA delivers for its members across three broad pillars: Connectivity for Good, Industry Services and Solutions, and Outreach. This activity includes advancing policy, tackling today's biggest societal challenges, underpinning the technology and interoperability that make mobile work, and providing the world's largest platform to convene the mobile ecosystem at the MWC and M360 series of events.

We invite you to find out more at www.gsma.com
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GSMA Mobile for Humanitarian Innovation

The GSMA Mobile for Humanitarian Innovation programme works to accelerate the delivery and impact of digital humanitarian assistance. This is achieved by building a learning and research agenda to inform the future of digital humanitarian response, catalysing partnerships and innovation for new digital humanitarian services, advocating for enabling policy environments, monitoring and evaluating performance, disseminating insights and profiling achievements. The programme is funded by the UK Foreign, Commonwealth & Development Office, and is supported by the GSMA and its members.

Learn more at www.gsma.com/m4h or contact us at m4h@gsma.com

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01

Introduction

The Mobile for Humanitarian (M4H) Innovation Fund, with the support of the UK Foreign, Commonwealth & Development Office (FCDO), provides catalytic funding and technical support for innovative solutions to challenges faced during humanitarian emergencies, from sudden-onset disasters to protracted emergencies and forced displacement.

Launched in 2017, the Innovation Fund has helped projects in 27 countries take flight, providing more than 20 grants totalling more than £6 million. This funding has enabled digital innovators to harness the simple but lifesaving power of an SMS text message and design cutting-edge solutions and business models using frontier technologies.

Learning is a central element of the M4H programme. This paper captures key lessons from our Innovation Fund projects and research on innovation in humanitarian contexts. We also capture evidence and lessons through the innovations we enable in partnerships built between mobile network operators and humanitarian agencies. These lessons are explored further in separate publications.

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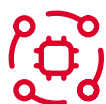
Why is innovation important?

The role of digital innovation in humanitarian contexts

Innovative digital solutions, whether low-tech or high-tech, have the potential to transform preparedness and response to humanitarian crises. They can provide better access to services, communicate lifesaving information and enhance choice for people affected by humanitarian crisis or at risk of being affected.

Digital and mobile-enabled innovations can offer better quality, lower cost and more efficient ways for humanitarian actors and their partners to resolve humanitarian issues. They can dramatically improve the resilience and capacity of communities to cope with disaster and make humanitarian response more transparent and accountable. Innovations are usually incremental, doing something similar but better, or radical, doing something completely different.

They tend to fall into one of the following categories:



Product innovations:
New technology solutions



Positioning innovations:
Adaptation of existing solutions



Process innovations:
Innovative business models and partnerships



Paradigm innovations:
Completely new systems, approaches or models

Digital innovation challenges

When developing or adapting digital innovations for use in humanitarian contexts, innovators must navigate diverse and complex challenges, from the volatility of humanitarian settings, to insecurity to the impact of repeated and multiple natural hazard disasters. The technology or service will also likely change as it moves through the innovation life cycle, from seed funding and market validation to eventual scale and replication.

While innovative digital and mobile technologies can offer transformational benefits to people affected by crisis, they can also inadvertently exacerbate inequalities, such as the mobile gender gap, and expose them to new risks. This is a particular risk for already marginalised and vulnerable groups, such as women and children, persons with disabilities and those living in remote rural areas.

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The role of the Mobile for Humanitarian Innovation programme

The Mobile for Humanitarian Innovation programme (M4H) directly supports three main types of digital innovation:



1 | Product innovation:

Development and testing of frontier digital solutions for use in existing humanitarian systems or approaches.



2 | Positioning innovation:

Adaptation and deployment of existing technology in new ways within humanitarian contexts.



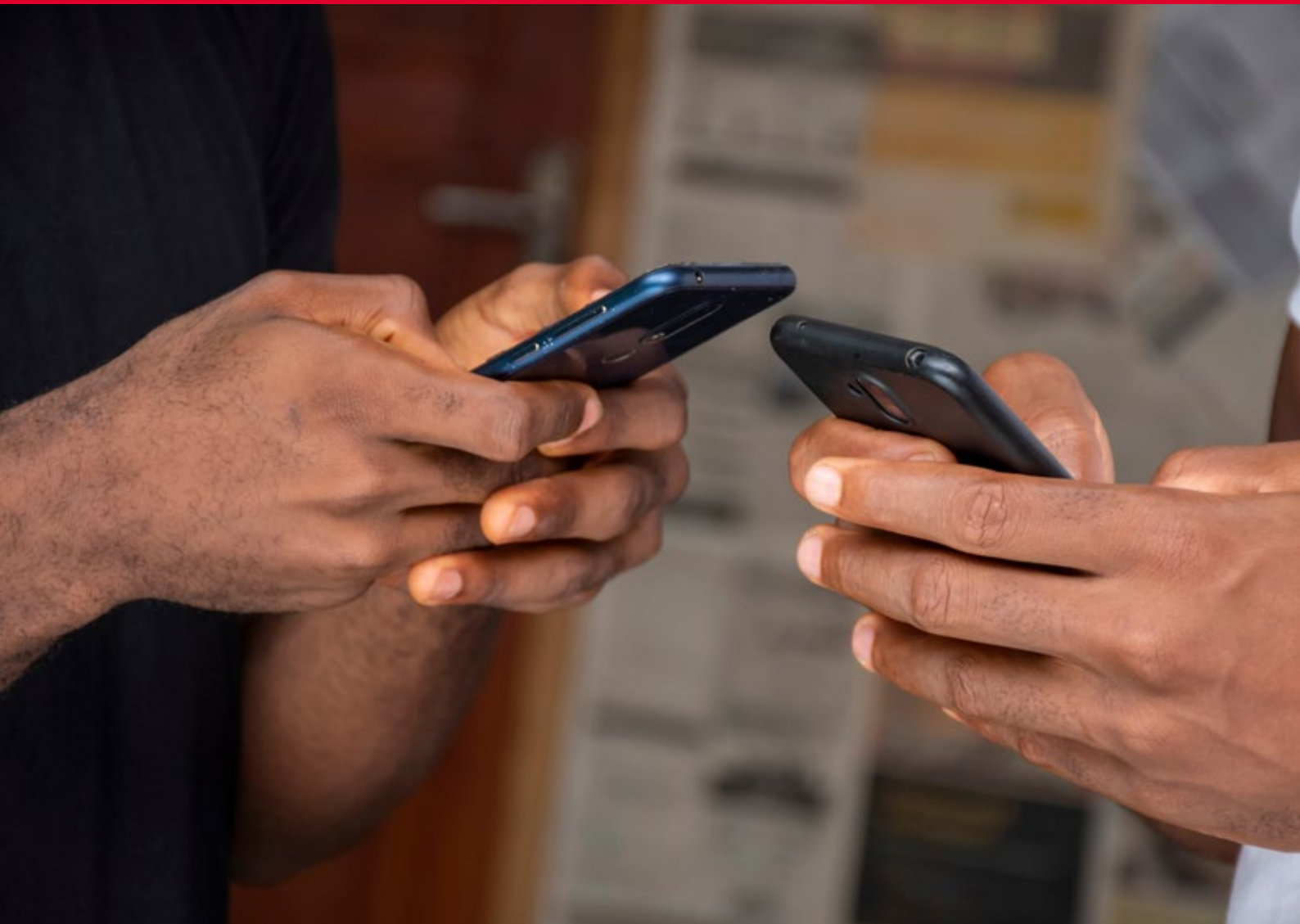
3 | Process innovation:

Identification of new, sustainable and replicable business models and partnership models.

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What we have learned from supporting innovation

The following lessons provide insights into how Innovation Fund grantees – all digital innovators – have best used mobile and digital technologies to transform humanitarian action. These lessons fall under two themes: design considerations and launch considerations.





Design considerations

We know that the design of innovations for humanitarian action should be guided by an inclusive approach and effective partnerships.¹ We have learned other lessons from the experiences of Innovation Fund grantees, which are outlined below.

Understanding and building on what is already there

It is important that digital and mobile innovations consider the local connectivity infrastructure, both the physical aspects, such as network coverage, and the human aspects, such as technology use, digital literacy and agent networks. Involving local partners in planning and implementation discussions can help to determine whether the operational models being proposed are feasible in the mobile ecosystem. Innovators may also seek to partner with international NGOs, United Nations agencies and mobile network operators (MNOs) to integrate their solution in existing resilience and recovery networks.

Innovative humanitarian solutions should fit within existing humanitarian approaches

Digital innovators can also seek buy-in from humanitarian actors to avoid duplication and encourage longer term trial and adoption of their services. This was the case with [Nokia](#), which designed their innovative communications and technical assistance service to be deployed by the Philippine Red Cross (PRC). By leveraging the local knowledge, expertise and technical skills of the PRC, Nokia could optimise the design, delivery and overall impact of their solution. A partnership with an established humanitarian organisation also ensured that their solution met context-specific needs and could be used by, and eventually integrated into, an established recovery network.



¹ GSMA (2023). [Mobile for Humanitarian Innovation Annual Report](#).

Understand what services are being used and what potential partners can offer

Services such as mobile money, payment services, voice identification or interactive voice response (IVR) services all have an important role to play in humanitarian contexts. For example, in the immediate aftermath of Cyclone Idai, the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA) and the International Federation of Red Cross and Red Crescent Societies worked with [Vodacom Mozambique](#) to provide in-kind support, distribute SIMs, share information and restore connectivity. Vodacom Mozambique even leveraged their relationship with local regulators to obtain a six-month waiver for SIM registration requirements so that people who had lost their identity documents were still able to benefit from mobile-enabled humanitarian services.

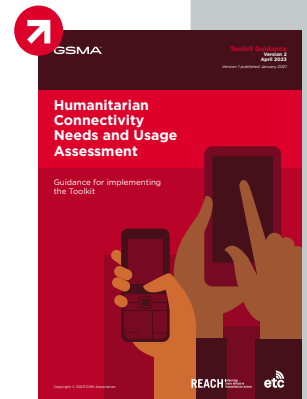
The [Connectivity, Needs and Usage Assessment \(CoNUA\) Toolkit](#), developed by the M4H programme in partnership with REACH and the support of the Emergency Telecommunications Cluster (ETC), is a resource that can be used to assess and understand the mobile phone access, usage, preferences and digital skills of a crisis-affected population.

Offline alternatives can help mitigate connectivity issues

Since mobile coverage and the availability of mobile money agents can vary significantly across humanitarian project sites, connectivity should not be taken for granted. All aspects of mobile-enabled innovation projects should be tailored to the local context and innovators should consider providing offline alternatives. Context and risk analysis should begin as early in the design phase as possible to identify and mitigate potential challenges, and should be continued throughout the project. In Uganda and Rwanda, Innovation Fund grantee [Alight](#) has overcome mobile coverage issues by providing “back-up” kiosks for users. By offering a stable network connection and charging points for mobile phones, the kiosks have helped Alight ensure reliable functionality when testing new mobile money services.

Leveraging well-known platforms can encourage uptake of digital humanitarian services

It is common for new digital innovations to encounter barriers to uptake and sustained usage, particularly in communities experiencing or at risk of crisis. For example, in Lebanon, Solidarités International was seeking a way to communicate with the Syrian refugee population so they could prioritise those with the most pressing needs. They were aware of the potential adoption barriers, but when they realised that more than 80% of the refugee population were already using WhatsApp to keep in touch with family, they developed [SOLIS Bot](#), a chatbot that works via WhatsApp to provide instant two-way communication for those in need of humanitarian assistance. By bridging the communication gap and focusing on existing user patterns, SOLIS bot has enabled the Solidarités International team to provide more targeted assistance to the most vulnerable community members.





Launch considerations

Once the design phase is complete and innovators are ready to launch their solution, there are several important considerations to keep in mind.

Building trust with end users is critical to uptake and scale

Building trust in a new technology is critical, not only for initial uptake but also to scale and replicate mobile-enabled innovations in other contexts. Trial and uptake of new digital products and services requires trust in both the technology and those implementing it, particularly when working with marginalised communities that may have been exploited in the past. While building trust can be time consuming and labour intensive, it is an essential step in the innovation journey. For example, Innovation Fund grantee [Sesame Workshop](#) identified the characteristics of a “trusted messenger” to deliver their early childhood development content for families affected by crisis and conflict in the Middle East.



Face-to-face engagement can be the most effective outreach

Understanding, valuing and trusting new technologies is vital to the uptake of a humanitarian digital innovation. In many cases, the most effective way to introduce new technologies or interventions to users is face to face. This is especially true when targeting marginalised groups or populations that may be more difficult to reach through digital channels alone. These interactions can help build trust because representatives can explain the new technology more clearly in person, and can ultimately make end users more willing to adopt it. For example, in Haiti, most users of [Mercy Corps' CHANTER](#) early warning response platform were engaged in person through community-based organisations and local leaders. Although this outreach took significant time and resources, it was identified as one of the main reasons why the CHANTER curriculum was so well received.



Leveraging existing relationships can lead to more meaningful engagement

MNOs will have already spent considerable time and resources raising awareness, engaging with and building the trust of their customers, and humanitarian partners may be able to leverage these relationships to achieve the same. Innovation Fund grantee [JazzCash](#) works closely with the humanitarian sector in Pakistan to increase access to mobile services for the most vulnerable populations. They have refined their marketing approaches to engage meaningfully with these customers, who are also often beneficiaries of humanitarian assistance. As a result, they have successfully supported the delivery of cash programming initiatives by the Government of Pakistan, as well as local and international NGOs such as the World Health Organization and CARE.



Word-of-mouth referrals can build community trust

Word-of-mouth referrals are another way relationships can be leveraged to build trust within communities. This can be particularly useful in regions where scams are common and people are hesitant to try new systems or services. In Uganda, [REFUNITE](#) found that new users were much more willing to try their smartphone app when it was recommended by someone they knew. Although the REFUNITE LevelApp was originally launched through paid adverts on social media, most active users discovered it through friends and family. These word-of-mouth referrals created so much trust and organic growth that the REFUNITE team had to create a waiting list for new users.



A holistic and realistic approach

Support digital and financial literacy capacity building

For large segments of humanitarian service users, low digital literacy can be a major barrier to adopting and using digital humanitarian programming. Older persons, those with low literacy levels and persons with disabilities face the greatest challenges. In Burundi, [M4H and Concern Worldwide](#) found that without the necessary digital and financial skills, end users may not be able to take full advantage of digital humanitarian programming.

To increase the digital and financial literacy of a target population, digital humanitarian services can benefit from broader awareness-raising and capacity-building activities. The M4H [Digital Literacy Training Guide](#) is a contextually appropriate curriculum designed to address the knowledge, attitudinal and skills barriers that prevent refugees from accessing and using digital financial services.

Find the right time to launch a new digital solution

For early-stage innovations, it is important to identify the right time to launch and promote a new digital solution to potential partners, clients and end users. Marketing humanitarian innovations is very important to attract the interest and engagement needed to encourage investment or partnerships. Innovation Fund grantee [Deutsche Welthungerhilfe](#) learned the importance of well-timed marketing and public relations activities when they were building their Child Growth Monitor platform. While still in the early stages of developing their app, they found themselves with too much interest from customers and potential partners. Not ready to engage properly with all interested parties, they had to turn many away.

Test a minimum viable product first

When it comes to developing, testing and piloting new technologies and approaches, early-stage innovators face several barriers and challenges. Projects with complex digital innovations have an even steeper climb, and innovators should begin by testing a minimum viable product. Once they have proof of concept, they can leverage additional funding to build functionality. The [British Red Cross](#) learned this lesson when developing their open-source 121 Personal Cash Aid platform, which uses a complex, blockchain-based, self-sovereign ID solution to register for cash and voucher assistance (CVA) payments. After assessing internal feasibility and regulatory challenges, British Red Cross adapted the scope and complexity of the project to maximise its success.



Positioning and operating factors

Early-stage digital innovators encounter a variety of barriers and challenges when developing and testing new digital technologies and approaches in the real world. They also face difficult decisions about the business and revenue models that will ultimately determine their ability to scale and be sustainable and successful over the long term. Research to understand the local context and potential users should be an ongoing process in the life cycle of any digital innovation.

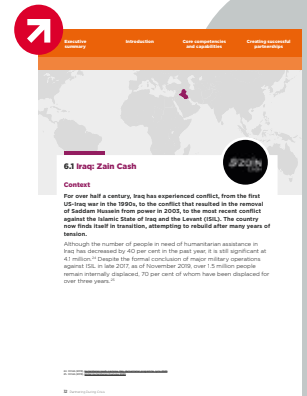
Affordability directly affects the trial and uptake of services

Pricing and affordability for end users should be a key consideration when launching humanitarian innovations as this will have a direct impact on the uptake and use of digital services. Pay-as-you-go (PAYG) is an example of how mobile technology can make technology innovations affordable for lower income populations while also creating a sustainable business model. The M4H report, [Mobile-enabled energy for humanitarian contexts](#), discusses the case for PAYG solar home systems in Kakuma Refugee Camp. While the opportunity for PAYG is significant, it can also be challenging, particularly in complex market environments where there are regulatory barriers. In addition to complex payment collection methods, innovators may also have to consider raising awareness about the wider use and benefits of mobile financial tools and services.



Revenue models need to work for both partners and end users

For innovations to be sustainable over the long term, business and revenue models need to reward both partners and end users. Even if MNO engagement is at first driven by moral imperatives and a desire to help, in the long run they still need profits to sustain their philanthropic engagements. The initial value of a humanitarian partnership may seem small, but MNOs are more likely to engage in projects that can generate some form of incremental revenue. In Iraq, [Zain Cash](#) recognised the added value of humanitarian partnerships, both in terms of greater brand awareness and recognition and the business benefits of developing the country's digital ecosystem. By helping to develop mobile infrastructure and encouraging the uptake of mobile money accounts, Zain Cash is increasing the potential for revenue generation through broader uptake and use of mobile money services.



Open-source technology can encourage trial and adoption of new digital solutions

Many mobile and digital innovations require high upfront costs in the launch and testing phases and can only be cost-effective when delivered at scale. Using platforms and technologies that can be adapted to a variety of contexts can help make the services accessible to more humanitarian actors. This was demonstrated by Innovation Fund grantee Flowminder when they developed [FlowKit](#), a fully open-source version of their software that uses call data records to produce mobility data for humanitarian response planning. By allowing their software to be used across a variety of databases and modified as needed, any organisation interested in trialling the solution can do so without committing their own resources.



Internal capacity is important for innovations to evolve and remain sustainable

Maintaining quality of service and oversight is important when adapting, scaling up or replicating innovations, and sufficient internal capacity is needed for innovations to evolve and remain sustainable. This is particularly important when building and maintaining trust in new resilience-building services. In addition to the other skills most humanitarian innovators need, teams need to include people with specific technical experience, such as coding knowledge or an understanding of how to integrate services with MNOs. Innovation Fund grantee [Lumkani](#) discovered how difficult it is to hire and retain software developers in South Africa where these skills are in high demand. Their experience demonstrated what a serious challenge it can be for humanitarian innovators to attract and afford the technical skills they need when these skills are better compensated in the private sector.



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The future

The M4H programme will continue to catalyse innovation for digital humanitarian services through partnerships between humanitarian organisations and mobile network operators, as well as through innovation funding. Launched on 24 November 2022, the [GSMA Innovation Fund for Anticipatory Humanitarian Action](#) will back solutions that use mobile digital technology to anticipate potential humanitarian impacts and enable effective early response. By focusing on the important theme of anticipatory action, the Fund will help to minimise humanitarian impacts and strengthen preparedness in the face of sudden-onset crises. This will be our fourth iteration of the Mobile for Humanitarian Innovation Fund, and successful applicants will be announced in Autumn 2023, when their projects will begin. The programme will continue to focus on learning and research from the different types of innovation support it provides, and developing practical tools and guidelines to support innovators and the wider humanitarian ecosystem.

GSMA Head Office

1 Angel Lane
London, U.K.
EC4R 3AB
United Kingdom
Tel: +44 (0)20 7356 0600

