

Credit: ENACKQT

## Understanding the Incentives for Multiple Players: mHealth Value Chain

One of the most crucial building blocks for successful and sustainable mHealth programs is to forge strong partnerships, particularly across sectors (for-profit, non-profit and public sector). A solid understanding of the needs and interests of these multiple players is required in order to marshal their energy and resources. One method of identifying these incentives is through value chain analysis, or an evaluation of the relationship between all organizations and steps in the commercialization or delivery process of a product or service. The diverse players—spanning from the patient to the equipment vendor—in the mHealth value chain are listed in Table 3.

### Value Chain Models for mHealth: One-way Data Applications

Figure 5 illustrates the most basic set of relationships and players for mHealth solutions based on a one-way messaging application. Examples of this type of application include medication regimen adherence and monitoring programs (e.g., SIMpill, which equips pill bottles with a SIM card and transmitter to track medication adherence) and education and support programs based on one- or two-way SMS alerts (FrontlineSMS, a platform for sending and receiving group SMS messages; MyQuestion/MyAnswer, providing education on HIV/AIDS via SMS communications). Figure 5 depicts the dynamics and incentives described in Table 3.

Player	Incentive
Patient or Citizen (Mobile Subscriber)	Improved health outcomes
Health Care Provider	More efficient and effective delivery of health services
NGO	Advance organizational mission, attract funding
Foundations	Advance organizational mission
Government	More efficient health care provision, effective government
Equipment Provider	Device revenue generation, improved brand recognition
Service Provider	Revenue from service fees, increased subscriber base
Application Solutions Provider	Revenue from additional applications license fees
Content Management	Increase in volume of readership or revenue
Platform Provider	Revenue from sales

Table 3. mHealth value chain players and incentives.

Considerations about project scale are crucial in planning for long-term project sustainability. Scale is a principal factor in the incentive structure of many value chain participants. For example, it is unlikely that project leaders will be able to obtain ongoing funding for special device modifications or customized features for small local initiatives, since there is not enough volume to warrant contributions from the platform developer without prohibitive development and maintenance fees. On the other hand, a basic 'one-way' messaging service can be an attractive investment even at low volumes, as it significantly reduces costs and improves efficiencies for health care providers, enabling the phase-out of cumbersome manual processes.

However, at higher levels of scale, a program can represent strategic growth for the larger value chain participants (those on the left side of Figure 5). Partnerships that are rooted in the business interests of for-profit participants have an intrinsic value beyond corporate social responsibility (CSR) and, therefore, are less at risk of being cut off during a downturn in the participant's overall business.

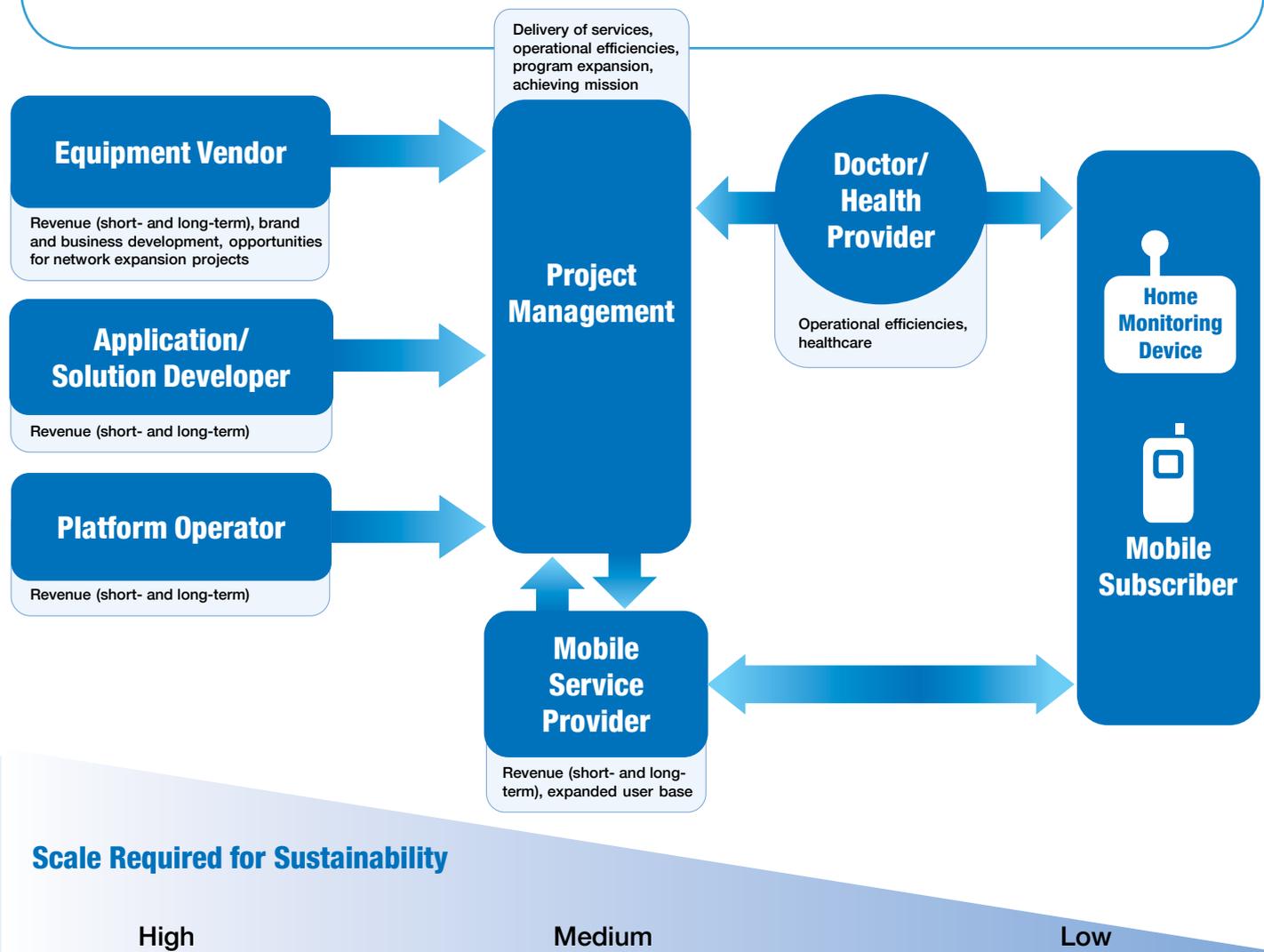


Figure 5. Value chain model for 'one-way' mHealth applications.

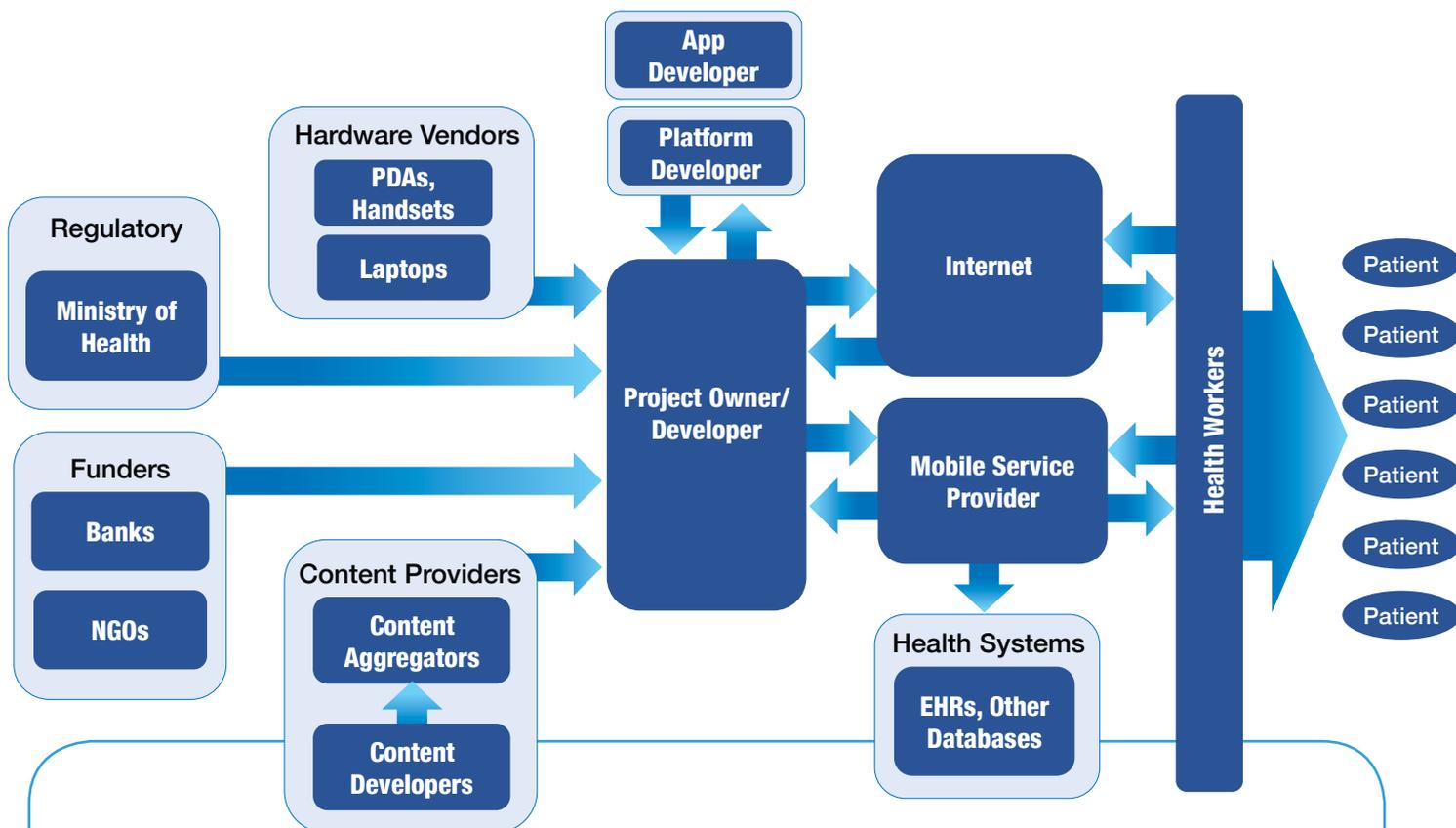


Figure 6. Value chain model for 'two-way' mHealth applications.

## Value Chain Models for mHealth: Two-Way Data Applications

Figure 6 presents a value chain model for a more complex service offering—a two-way data application. Two-way applications are developed for data access programs such as remote data collection, access to client records, access to health information databases, census taking, and electronic health records creation and storage (e.g., EpiSurveyor, a survey program for remote data collection). While it is not likely that two-way services will have the volume potential of one-way services, these services appeal to potential participants because they are Internet-based. Participants in the value chain may find incentive to integrate mHealth solutions with growth plans around Internet access, as it is an established functionality on both phones and laptops and the basis for other services (and thus revenue opportunities).

The complexity evident in Figure 6 creates opportunities for innovative health solutions, but also a number of challenges, including increased dependence on information technology (IT) infrastructure, the need for more sophisticated application development, greater support service requirements, and a more expensive hardware component. These higher-level solutions entail higher project cost and participant involvement, which in some cases may be prohibitive.

With more value chain participants and higher costs of execution, there is less reward (whether in the form of revenue gains or operational efficiencies) to go around. It therefore becomes progressively more difficult to achieve the financial impact that provides momentum and leads to partnership with larger players. These companies' contributions to the more ambitious initiatives, therefore, will likely be limited to the provision of standard services or as a one-off CSR project. ■



Credit: UN Foundation/Nothing But Nets

## A Call for Action

The mHealth field offers opportunities for players across multiple sectors, from governments to businesses to NGOs. By taking a strategic approach, each of these players can advance their organizational objectives while contributing to improved health outcomes on a massive scale.

### Operators

#### Combine mHealth with delivery of other mServices

Operators can capitalize on the popularity of mServices in developing countries to build support for mHealth initiatives. Rapidly growing mServices such as mBanking and mCommerce are proving the viability of mobile technology as a service model. Packaging such services with mHealth solutions creates economies for operators and takes advantage of shared resources and best practices. It also presents a more compelling proposition to end users by serving as a 'one-stop shop' for all their needs.

#### Leverage handset maker relationships

Mobile operators have tremendous influence and strong relationships with handset manufacturers, and they should leverage this position to bring to market phones and other devices that can provide the mHealth and other mobile services consumers in developing countries need. Affordability is critical, yet not sufficient to significantly increase the usage of mServices across the developing world. Low-cost phones that incorporate simple, innovative features are key to increasing access to mServices and helping to create the scale and market needed to sustain them over the long run.

## Be pro-active in developing joint solutions

Operators would do well to pro-actively seek out opportunities to improve health outcomes by initiating public-private partnerships, teaming up with governments and NGOs to address pressing national health issues, and collaborating with software providers to develop targeted healthcare solutions. Joint projects help ensure that key stakeholders are on board, increasing the potential for successful outcomes.

## Enhance mHealth infrastructure

Infrastructure conditions vary in the developing world, and operator services geared toward mHealth can enhance their networks to facilitated increased mHealth activity. As Eduardo Jezierski, Vice President of Engineering at InsteDD notes, “From a technical perspective you need to think not just about use of your network as a way for humans to communicate with humans but also as a way for humans to communicate with systems and information. The challenge is to build better application gateways that allow for different organizations involved in mHealth to build the applications themselves.

## NGOs

### For best results, think big and join forces

Think big. As Jesse Moore of the GSMA states, “Scale is of utmost importance to mobile operators. Operators evaluate value-added services, such as mHealth applications, by volume and volume is measured in millions of users, not hundreds or thousands. Scale is evaluated on three dimensions: how easy is the service to use by the end users? How easy is it to install and maintain on the operator’s network and how many handsets can use the service (many handsets in Africa are very basic and hence the service must be designed for simple handsets). Without scale, the mHealth application will be evaluated as a corporate social responsibility initiative and its sustainability will be in question.”

### Partner

The most effective approach to achieving scale is to join forces with companies that are already offering mServices (mobile money, mobile government services, mobile education), and propose a joint effort on mHealth. NGOs bring valuable assets to the table—they understand the local environment and how to design services with cultural and behavioral patterns in mind. NGOs also have feet on the ground and can assist with training and education around the mServices. In return, they can use the existing technology platform to launch mHealth initiatives.

### Design With the End User in Mind

#### Operators

- Combine mHealth with delivery of other mServices
- Leverage handset manufacturer relationships
- Be pro-active in developing joint solutions
- Enhance mHealth infrastructure

#### NGOs

- For best results, think big and join forces
- Partner
- Provide proof of concept by using the simplest available technology

#### Policymakers

- Define an mHealth policy and provide incentives

#### Funders

- Ensure project sustainability
- Provide resources for impact assessment

## **Provide proof of concept by using the simplest available technology**

Many operational mHealth programs build on the broad use of standard cell phones. Early applications provide data access and exchange in the form of one-way or basic two-way services. The infrastructure for these applications is already in place through standard telecommunications networks, and, unlike more complicated devices such as PDAs, users have widely embraced the functionality. These simple applications thus have the distinct advantages of lower start-up and operating costs and broader reach, pointing to a clearer path toward financial sustainability.

## **Policymakers**

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### **Define an mHealth policy and provide incentives**

Define what mHealth means within the national health system. mHealth applications can be designed as an integral part of the overall health information system, and policymakers are in a unique position to shape these efforts. One of the most important roles to play in this regard is in driving innovation through incentives. Incentives can include tax rebates to telecom providers for provision of mHealth services, and funding for universities and research institutes studying mHealth solutions.

## **Funders**

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### **Provide resources for impact assessment**

Help grantees help themselves. Non-profit and international development funding sources are placing a growing emphasis on 'demonstrable impact.' As such, mHealth proposals and programs need to be able to specify and measure program success. This is even more critical given the early stage of the mHealth market and the attendant absence of a body of research to which program managers can refer. To mitigate this problem, funders can set aside funds to enable independent researchers to conduct rigorous evaluations of mHealth programs.

### **Ensure project sustainability**

Partner with national governments once the initial pilot phase has been completed. By ensuring that mHealth projects are integrated into government health programs, funders gain long-term sustainability and greater health impacts for their projects. Academic researchers affirm the central role of long-term financial planning: Dr. Adesina Ilyumi of the University of Portsmouth states, "Foundations should incorporate sustainable business/financial models beyond donor funding into their strategic plan, and engage with government bodies at the level of implementation in order to ensure that the project continues beyond the seed funding." ■

**“In today’s mHealth environment there’s a general tendency to try and seek out solutions to the bigger health problems. Easier ‘low-hanging fruit’ are often overlooked. Enhancing basic communications within rural healthcare networks is a classic low-hanging fruit...Communication is fundamental to all NGO activities, particularly those working in the kinds of infrastructure-challenged environments often found in the developing world. Hospital staff often lack basic communication with their community healthcare workers...creating considerable inefficiencies in the use and allocation of scarce resources. We need to ensure that we address some of the simpler mHealth challenges...in parallel with our search for solutions to what we consider to be more complex problems.”**

**– Ken Banks, Founder,  
kiwanja.net**