



# **Untapped Humanitarian Demand: A Business Case for Expanding Digital Financial Services**

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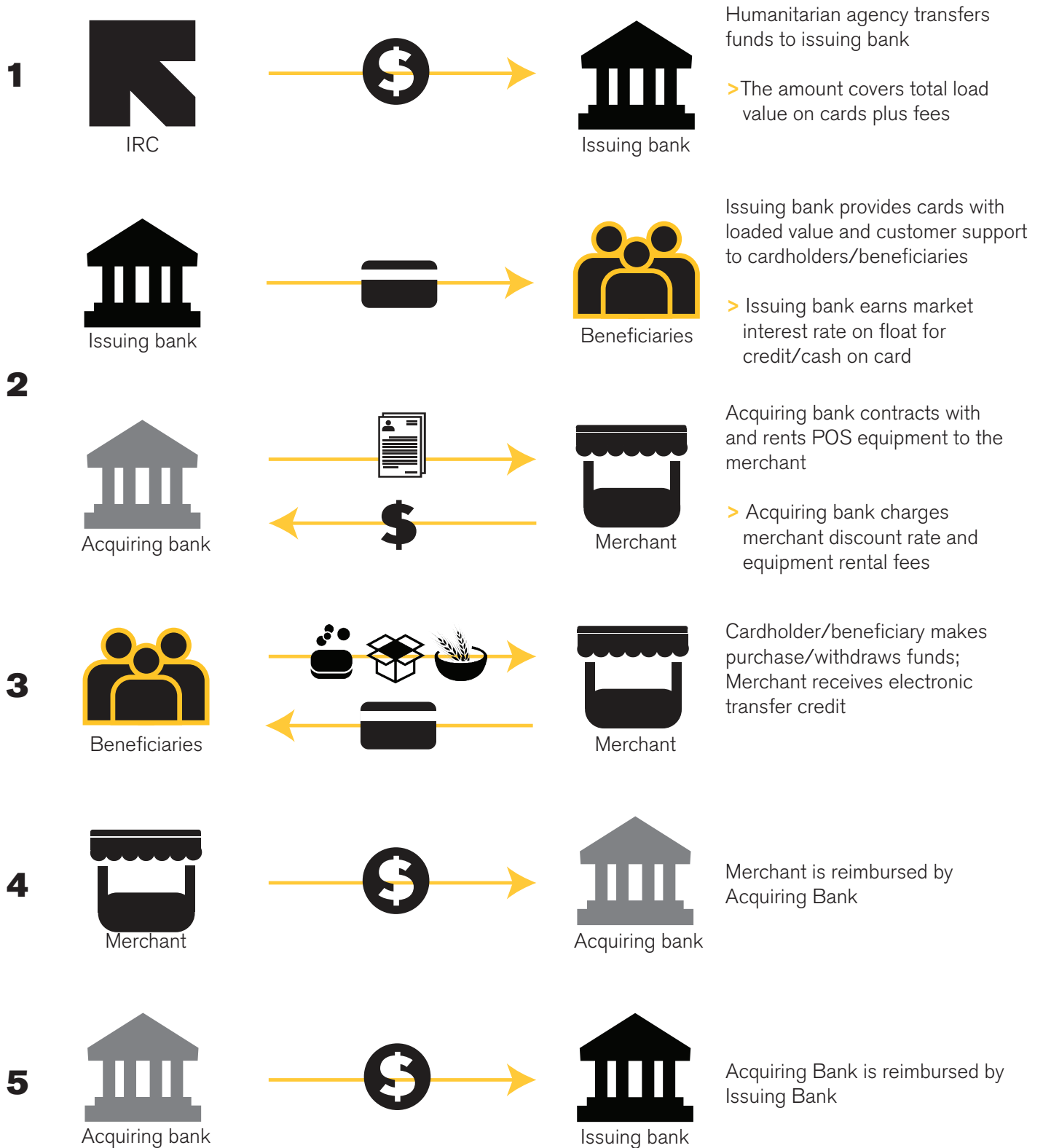


ABOVE PHILIPPINES IN THE WAKE OF TYPHOON HAIYAN TYLER JUMP/IRC



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# Example of transactional flow in an Open Loop Payment System



In a closed loop payment system, the acquiring and issuing bank are the same entity, resulting in fewer steps within the transaction process.

# Background

In the last five years, many emerging markets have seen an explosion in digital financial services (DFS) solutions. New technologies enable DFS providers to extend financial services to populations who previously lacked access.

These services include the extension of traditional brick and mortar branches to agent branches, mobile phone-based payments as well as card-based payment solutions. The availability of functioning electronic payment (e-payment) systems can provide huge efficiency gains in the delivery of cash transfers during emergencies. However, as the Making Electronic Payments Work for Humanitarian Response report shows, there is often a lack of viable e-payments infrastructure accessible to those in emergency-affected areas.

Often, the key drivers for this gap in coverage include the high operational costs and low revenues from marginalized and often very poor populations. Put simply, it is not clear that there is a business case for private financial institutions to expand their coverage into at-risk areas and to people who are likely to be affected by crisis.

**BELOW:** WHILE IT MAY LOOK LIKE A PORTABLE STEREO, THIS IS AN ITEM THAT IS OF IMMEASURABLE VALUE TO SYRIANS DISPLACED BY FIGHTING. IN NORTHERN SYRIA, THE IRC HAS DISTRIBUTED THOUSANDS OF THESE SOLAR POWERED WAKAWAKA LIGHTS. THOSE LIVING IN CAMPS LIKE THIS ONE USE THE WAKAWAKA TO LIGHT THEIR TENT AND TO CHARGE THEIR MOBILE PHONE. NED COLT/IRC

# Objectives

The International Rescue Committee, commissioned Strategy Impact Advisors<sup>1</sup> to build a return on investment (ROI) model to estimate whether or not a business case exists for expanded coverage of digital financial services in crisis-prone areas (Lebanon and the Philippines<sup>2</sup>). This analysis provides insights into: 1.) what DFS providers can expect as a return on investment in sufficient infrastructure and services for the delivery of cash assistance during emergencies; and 2.) how their proactive engagement with humanitarian organizations can improve their short and long-term revenue streams. This analysis is guided by two key questions:

1. What is the projected demand for cash transfer services resulting from humanitarian crises in the Philippines and Lebanon?
2. What are the potential revenues and costs associated with serving that demand for DFS providers in the Philippines and Lebanon?

By modeling the potential ROI for DFS providers from meeting aggregate humanitarian demand, this paper aims to motivate greater investment in expansion of digital financial services in areas vulnerable to emergencies, incentivize humanitarian-private sector cooperation prior to crises, and encourage development and humanitarian actors to coordinate their respective DFS-related initiatives.



# Methodology

The ROI model for this analysis utilizes a set of assumptions surrounding projected revenues and costs based on the total projected number of transactions within a given year. The number of transactions is established by projecting the number of households affected by different levels of humanitarian crisis in each country, for instance a category 1 versus category 5 typhoon. The model then uses a list of assumptions to help generate both revenue and cost estimates associated with serving clients both in recovery period (immediately post-crisis) and steady state (once humanitarian intervention has ended) scenarios. The ROI is calculated over a ten-year period in order to reflect the recurrence of crisis, as well as the steady, non-crisis periods in between.

## The assumptions are broken down into three parts:

1. General assumptions include those based on demographic data, infrastructure and location and frequency of crisis. When combined, these assumptions help inform demand projections for financial transactions.
2. Revenue and expenditure assumptions for issuing banks include specific details around the number of transactions per month per card, average transaction sizes, any fees collected for account maintenance, ATM/POS transactions, or interchange. For expenditure predictions, it involves customer acquisition costs, platform maintenance, card printing and issuing costs, and any assessment fees paid to card associations.
3. Revenue and expenditure assumptions for acquiring banks include, for revenue projections, specific details around the merchant discount rate revenues, POS rental fees, and merchant account fees. For expenditure prediction, it involves merchant acquisition costs, interchange fees, ATM network maintenance costs, and merchant account maintenance costs.



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In both countries, the ROI analyses focus on card payments. In Lebanon, this is the primary e-payment mechanism, and mobile payments are not currently a viable option. In the Philippines, the research team initially set out to focus on mobile money payments given the significant investments that have been made in expanding the coverage of mobile money networks. However, uptake for mobile money has been disappointing in its ten years of existence, with a reported 3 percent of registered accounts being active. Improving ATM and POS infrastructure makes card payments a more reasonable payment mechanism.

# ROI summaries and Key findings

## Philippines

### > Projecting humanitarian demand:

The Philippines is the 4th most disaster prone country in the world, averaging 6 to 9 typhoons and nearly 900 earthquakes a year, and with 20 active volcanoes spread out across its 7,000 islands.<sup>3</sup> A combination of warm ocean waters and low-lying coasts make the Philippines especially vulnerable to devastating disasters. Given this background, the ROI model assumes that four category five typhoons will make landfall in the Philippines in the next ten years. In terms of demand, the model estimates that 15 percent of the population, or 840,000 people, will receive cash assistance through electronic transfers. This estimate takes into consideration historical experiences from Typhoon Haiyan. In this case, the number of cash transfer recipients was high at over 1.4 million people, but the vast majority of transfers did not use electronic payments due to a lack of sufficient infrastructure and continuity of cash-out services.

### > Return on investment to DFS providers for e-payment use:

Based on the model, an issuing bank's potential ROI for providing services to cash transfer programs in the Philippines is around 14 percent for the ten-year timeline. That is, for every dollar invested in expanding of financial services to disaster-affected areas without existing DFS infrastructure in place, issuing banks will receive US\$ 1.14 back. This indicates that there is a strong business case for issuing banks to expand e-payment services to disaster-affected areas to meet the needs of humanitarian organizations and the local populations. For acquiring banks, however, the potential ROI for providing services to cash transfer programs in the Philippines is negative at -28 percent for the ten-year timeline, indicating a weak business case for their participation in the humanitarian sector. The model calculates that for every dollar invested, acquiring banks will receive US\$ 0.72 back.

### > What to make of this:

By accounting for projected humanitarian demand, there is a strong business case for issuing banks to work with humanitarian agencies, in contrast to acquiring banks which have less of an incentive to expand their services in disaster-prone areas. The costs of merchant acquisition and developing a POS network to accept cards in the Philippines are high and make it difficult to establish a positive business case for an acquiring bank's participation in the process.

Humanitarian organizations, however, offer ways of improving this ROI for acquiring banks; they have been doing the equivalent of merchant acquisition for a long time through their voucher programs. When implementing voucher programs, humanitarian organizations work closely with merchants – identifying and contracting with local stores, training shop owners in handling vouchers, and monitoring purchase data. This experience and reach can help humanitarian organizations partner with acquiring banks to identify and on-board new merchants. Supporting a partner bank with merchant acquisition in this way can reduce the costs to acquiring banks, expand the e-payments network so more people can be reached with e-payments when an emergency strikes, and support a business case for the banking partner to continue supporting the network and people to use it before and after emergencies happen. A formal partnership with an acquiring bank may also potentially enable humanitarian organizations to diversify funding for acquisition activities, but more significantly, may encourage expansion into disaster-prone areas thereby enabling more timely and efficient humanitarian response.



■ SEVERE HUMANITARIAN CRISIS

■ HUMANITARIAN CRISIS

■ SITUATION OF CONCERN

*Based on the percentage of the population in need of assistance due to recent or protracted disasters and the level of access to the affected population, the Assessment Capacities Project (ACAPS)<sup>4</sup> collates and analyzes secondary data to prioritize countries according to three categories of crisis: severe humanitarian crisis, humanitarian crisis, and situation of concern.*



ABOVE THE IRC PROVIDES THIS ATM CARD TO HUNDREDS OF SYRIAN REFUGEE FAMILIES. IT CAN BE USED TO WITHDRAW A MONTHLY AMOUNT TO PAY FOR RENT, FOOD, UTILITIES OR OTHER ESSENTIALS. PETER BIRO/IRC

## ROI Summaries and Key findings (continued)

### Lebanon

#### > Projecting humanitarian demand:

Lebanon is a small country with a population of just under 4.5 million people. By welcoming an estimated 1.2 million refugees, Lebanon has become the country with the most refugees per capita.<sup>5</sup> It is estimated that currently around 25,000 households are receiving multi-purpose cash transfers through digital channels. UNHCR estimates that number will rise by 1,000 new households a month, through a variety of cash transfer programming, over the next ten years.



#### > Return on investment to DFS providers for e-payment use:

The return on investment model for the closed loop banking sector over a ten-year timeline is 43 percent. The model suggests for every dollar a closed looped bank spends, they will receive US\$ 1.43 in return.

#### > What to make of this:

Lebanon's cash transfer programming is an excellent example of how humanitarian organizations have the ability to play a business partner role to banks that are providing card payment services in a cash transfer program context. This kind of partnership can be mutually beneficial for DFS providers, humanitarian organizations and the people they serve. Because it is a refugee crisis, almost all of the cardholders in humanitarian programs are new customers for the banking sector, which mostly relies on existing cash-out infrastructure. As such, humanitarian organizations already do many of the acquisition tasks that a bank would have done to bring new customers onto the existing card-payment platform. They also ensure there is a strong enough distribution network, such as ATMs and merchants, in the areas where refugees are settling in order for cardholders to access points of service. For humanitarian organizations, partnering with DFS providers can reduce the cost and time it takes to deliver aid, improve the durability of interventions by leveraging more sustainable infrastructure, and net benefits to the local economy before and after the crisis.

# What the two ROI analyses tell us

There is a business case for DFS providers to engage in humanitarian response, even with expenditures associated with network expansion or inclusion of at-risk populations.

Especially when compared to the 9.7 percent historical rate of return for the S&P 500<sup>6</sup>, the ROI figures from both Lebanon and Philippines are significant, despite differing levels of development between their respective DFS markets. The fact that the Philippines is open loop and Lebanon is closed loop provides humanitarian actors with a strong understanding of where they might play the most effective roles in facilitating expansion of e-payments. This positive return on investment suggests that investing in expanding digital financial services can serve both private and humanitarian sector interests by meeting the needs of disaster-affected populations.

## **Expanding services before crises happen is critical to capture this potential return.**

The example from Lebanon particularly underscores how initial investments in e-payments infrastructure prior to emergencies can yield returns when a crisis hits. Unless both physical infrastructure (electricity, last mile connectivity, etc.) and networks of cash-out points are in place before an emergency, the services will not be used, as seen in the Philippines. Understanding the value of humanitarian demand for e-payment services is a critical step to incentivize digital financial service providers to carry out long-term investments in infrastructure, services, and cash-out networks to address the gaps in e-payment coverage for the most vulnerable populations.

## **There is a strong case for humanitarian organizations and DFS providers to form partnerships for merchant and customer acquisition.**

The ROI analyses identify acquisition costs of both customers and merchants as the main cost drivers. Considering that humanitarian organizations already undertake this type of acquisition as part of their programs, there is a clear role and added value for NGOs to support e-payment network expansion. The existing partnership between humanitarian agencies and DFS providers in Lebanon demonstrates the benefits of this relationship for DFS providers. Over the ten-year

lifetime of this model, organizations like WFP in Lebanon will save their banking partners nearly US\$ 50,000 in merchant acquisition costs and nearly US\$ 400,000 in customer acquisition costs. Likewise, acquiring banks in the Philippines could cut acquisition costs by 66% by partnering with humanitarian organizations to bring on merchants, even while paying them a US\$ 100 commission per merchant. Ultimately, DFS providers and humanitarian organizations working together to sign up merchants and customers and expand services results in a much stronger ROI for DFS provision and an alternative means for financing preparedness activities for humanitarian agencies.

## **Expanding e-payment account ownership and usage strengthens financial inclusion and emergency preparedness.**

In addition to the fees and transaction volume resulting from humanitarian response, the positive ROIs are driven in large part by post-emergency steady state transactions by customers who were introduced to e-payments during the crisis but continue to use the services after humanitarian aid ends. However, in order to capture this second revenue stream, DFS providers need to ensure users have stored-value accounts after the aid programs end and the knowledge to use and store value on the accounts. Humanitarian agencies have an interest in supporting vulnerable people to open accounts so that when emergencies happen, e-payments can be disbursed rapidly without first having to set up accounts for the affected population. Additionally, aid organizations' provision of financial literacy programs increases the propensity of affected populations to use the stored value accounts, in steady state times as well as in emergencies. **Taken together, establishing stored value accounts for populations in disaster-prone areas incentivizes DFS providers to expand operations to these populations, promotes greater financial inclusion, and prepares a mechanism for rapid e-payments when emergencies do happen.** The more digital stored value accounts that exist in a country, the more resilient and prepared the population will be for the next emergency.





ABOVE SINCE 2003, THE IRC HAS BEEN USING SATELLITE IMAGES, DIGITIZED MAPS, AND AERIAL PHOTOGRAPHS COLLECTED IN THE FIELD USING GPS TECHNOLOGY TO PINPOINT AREAS THAT LACK POTABLE WATER AND IDENTIFY NEW WATER SOURCES. EMILY HOLLAND/IRC

## What the two ROI analyses tell us (continued)

### **Aggregating demand for e-payments incentivizes DFS engagement in humanitarian preparedness.**

Grouping the demand for e-payment services from humanitarian actors in a given country can create a significant opportunity for DFS engagement in humanitarian preparedness. Clear operational efficiencies and implementation approaches across aid organizations (negotiated terms of services for all actors, etc.) can lower costs to DFS providers. Aggregating the demand for e-payment products (i.e. volume and value of transactions) as well as geographic coverage where

those payments are needed, incentivizes more service providers to show interest in the collective group. The value of the potential humanitarian 'market' in a given country can be a significant driver in DFS decisions on whether and how to contribute to e-payment preparedness efforts. Additionally, coordinated mapping of the geographic areas where e-payments are likely to be needed for emergency response helps DFS providers decide where to invest their resources in closing last mile connectivity and e-payment initiatives.

# References

<sup>1</sup>Strategy Impact Advisors is a global consulting firm with an enduring commitment to spreading the use of digital technology for financial inclusion and using economic analysis to drive decision making for development of communities

<sup>2</sup>Lebanon and the Philippines were selected for this ROI study based on the fact that both represent high-risk countries for humanitarian crises, both have relatively well-ranked DFS infrastructure already, and between them, they reflect natural rapid onset disaster (the Philippines) as well as slower onset conflict risk.

<sup>3</sup>Centre for Research on the Epidemiology of Disasters (CRED) and United Nations Office for Disaster Risk Reduction (UNISDR) 2015. "The Human Cost of Weather Related Disasters (1995-2015).

<sup>4</sup>The Assessment Capacities Project (ACAPS), hosted by the Norwegian Refugee Council (NRC), was established in 2009 with the aim of supporting the humanitarian community with humanitarian needs assessments and operates [www.acaps.org](http://www.acaps.org).

<sup>5</sup>Cash Consortium Presentation Geneva May 2015

<sup>6</sup>Dimensional Fund Advisors (2014). S&P 500 Index averages 9.7% for 10-year annualized percentage returns from 1930 – 2013.

**The International Rescue Committee (IRC)** responds to the world's worst humanitarian crises and helps people to survive and rebuild their lives. Founded in 1933 at the request of Albert Einstein, the IRC offers lifesaving care and life-changing assistance to refugees forced to flee from war, persecution or natural disaster. At work today in over 40 countries and 22 U.S. cities, we restore safety, dignity and hope to millions who are uprooted and struggling to endure. The IRC leads the way from harm to home.

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**FRONT COVER:** PETER BIRO/IRC

**BACK COVER:** BEKAA VALLEY SOLAR LAMPS PROVIDED BY THE WAKAWAKA FOUNDATION AND THE IRC HAVE BECOME AN EMERGENCY ESSENTIAL FOR FAMILIES UPROOTED BY SYRIA'S CIVIL WAR. THE WAKAWAKAS PROVIDE A SAFE SOURCE OF LIGHT FOR UPROOTED SYRIANS NOW LIVING IN TENTS. THEY CAN ALSO BE USED AS CHARGERS FOR MOBILE PHONES SO FAMILIES CAN STAY IN TOUCH WITH THEIR LOVED ONES.



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