WING Mobile Payments

A Product Design Case Study
Product Design Case Studies

Overview
The poor and other underserved populations in developing countries have unique financial services needs. However, there is often a mismatch between what financial institutions offer and what underserved populations need or want. This ‘product gap’ may reflect a lack of interest by financial institutions in designing more target products, or a lack of willingness or capacity on the part of financial institutions to design, market and implement tailor-made financial products.

A better understanding of successful products and the processes behind their design, development and implementation may help increase Access to Finance for underserved populations. In line with IFC’s Learning Agenda on responsible financial inclusion, the Product Design Case Studies were established to bridge the gap between product design/innovation and financial inclusion; increase knowledge related to product design and development processes; and focus attention on the end beneficiaries of financial products.

The objectives of the Product Design Case Studies are to 1) develop expertise related to product design and innovation processes through a better understanding of best practices in the field, in-depth research and application of behavioral economics concepts; 2) increase awareness of product design/innovation and the links between product development and financial inclusion; and 3) generate publicity and knowledge sharing around product design and innovation.

IFC has partnered with ideas42 to research and develop the Product Design Case Studies with a particular focus on behavioral economics. The case studies present useful products and product innovations that are scalable across a broad range of markets and offer broadly valuable insights into features of successful products, customer behavior and the product development process itself. The case studies also highlight the benefits for financial institutions of implementing or designing new products, and the corresponding effect on responsible financial inclusion of underserved populations.

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Overview of the Case Study
The objective of this case study is to describe the design and implementation of WING, a Cambodian mobile-phone-based payment system. The product has been successful in providing access to formal banking to the previously unbanked in Cambodia.

The following sections present the problem of financial exclusion, how WING meets this problem by providing a mobile banking network, the unique aspects of WING’s design compared to other products, challenges in achieving technology adoption and other constraints faced by the product, and how WING has responded to these challenges throughout implementation. Finally, the case study presents lessons learned and behavioral applications for future products.

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The Problem: Financial Exclusion
Economists have long known that financial services have benefits for users by allowing them to smooth consumption, save for bulky purchases, etc. But the recognition of their importance even for people with relatively low incomes – those earning one to two dollars a day, for instance – is relatively recent. This recognition has been spurred by a better understanding of the financial lives of the poor, and of the critical role played by uncertainty and volatility.

This research has shown, for instance, that living on an income of a couple of dollars a day is made enormously more complicated by the fact that such a figure is an average. Some days may bring two or three times that amount while other days will bring no income. Without a way to save, people’s consumption is highly vulnerable to the volatility in their income streams.

There is also considerable evidence that poor people seek ways to store their savings safely, often at substantial cost. In rural West Africa, for example, people pay roving deposit collectors what amounts to 7 percent of their savings just to hold it safely for them. Forty percent of unbanked households in Mexico told surveyors they would like to have a bank account. Women in the slums of Dhaka pay other women with strongboxes to store their petty savings for them.

Despite all this, access to formal finance remains limited in many developing countries. According to CGAP’s Access to Finance Report 2010, the number of commercial bank accounts per 1000 adults was less than 500 in 36 of the 111 countries for which data were available. While
microfinance institutions have made substantial inroads into the part of the population that is not
served by the formal banking sector, their efforts have been disproportionately focused on the
 provision of credit, with which the microfinance movement began. Many people in developing
countries thus remain outside the ambit of the formal financial sector. This has spurred efforts
 towards what has come to be known as “financial inclusion,” which seeks to make formal financial services – deposit accounts, payment facilities, savings
accounts, and so on – available to the “financially excluded.”

Part of the difficulty of providing deposit services for low-income people arises from the fact
that it is hard to do so profitably because of the transaction costs involved in dealing with
customers who typically make a large number of very small deposits. Brick-and-mortar bank
branches, for example, may not break even; this problem is particularly marked in areas where
the overall volume of transactions is likely to be small.

All these issues are clearly important in Cambodia, a country whose GDP per capita is near the
bottom of the world rankings (189 out of 229)\(^1\) and 60 percent of whose residents live on less
than two dollars a day\(^2\). The practice of paying for a safe place to save, observed among the 80%
of Cambodians who live in rural areas, suggests demand for savings products in that country.
Cambodia remains an under-banked country even by the standards of other developing
countries with low banking penetration rates. With 96 accounts per 1000 adults, Cambodia’s banking
penetration rate is the lowest even among developing countries in southeast Asia

Cambodia’s low banking penetration suggests that there might be substantial unmet demand for
access to formal financial services. At the same time, it is difficult for banks in Cambodia (as
elsewhere in the developing world) to profitably serve low-income customers using traditional
brick-and-mortar branches. There is therefore widespread interest in using mobile phones to
deliver such services at lower cost than is possible using conventional branch-based banking
models, particularly as mobile phone penetration increases.

The Innovation: Mobile Banking

Launched in January 2009, WING Cambodia is an affordable, accessible, mobile-based money
transfer service that targeted the country’s unbanked population. It provides cash-in, cash-out,
bill payment and person-to-person money transfers. WING users can deposit or withdraw cash at
assigned outlets throughout the country and withdraw cash from their accounts at ATM’s. Users
can also send money to others using a secure PIN number. For example, a typical transaction
would involve a garment worker in Phnom Penh (the largest city and capital) sending wages
back to her family in a small village. The worker would simply send a PIN number that the
family would then provide their local outlet to collect the transfer in cash.

The potential of reaching the unbanked or under-banked using mobile phones was first
demonstrated by the growth of M-PESA in Kenya. First rolled out in March 2007, it is estimated

\(^1\) CIA World Factbook, 2010
that M-PESA reached nearly two-thirds of households in Kenya by the end of 2009 (Jack and Suri, 2011). This rapid growth – far in excess of anything achieved by formal banking channels – has led to many emulators throughout the developing world, particularly as the growth of mobile networks, cheaper phones and progressively cheaper phone services. A recent CGAP study of mobile-based banking services in several developing countries compared the cost to customers of 16 leading branchless banking services to the corresponding cost of using ten formal banks which target the mass market for each of eight plausible patterns of use. It found that branchless banking was, on average, 19 percent cheaper than a customer using a traditional bank for the same service.

The main challenge for developing this platform was low mobile phone penetration by developing-country standards. While WING offers a lower price than other money transfer practices in Cambodia, it has still had difficulty in getting people to change their old habits. There are several behavioral barriers that prevent adoption of mobile banking. Firstly, people are loath to change their current methods of transferring money because it is simply how they have always done it—this is known as “status quo bias” (Kahneman et al, 1991). Secondly, if the customer has established a trusting relationship with someone that transports their money (such as a truck driver) the customer is more likely to use them. Even if the customer is offered a lower price to change to mobile banking, it may not be enough to overcome these behavioral barriers. And both a lack of trust and preference for the status quo are even more difficult for mobile banking to overcome if customers have no previous experience with mobile phones.

WING has developed a distribution network and features meant to encourage people to trust the mobile delivery system. The network relies on microfinance institutions (MFI) and entrepreneurs to reach out to potential customers. Both of these channels seek to educate customers and promote the adoption of the new technology. WING is available for customers and non-customers, unlike most other mobile payment systems that require both the sender and receiver to be customers. This facilitates transfers to people in rural areas. The system is also operator-agnostic, working on most mobile networks in Cambodia. Both of these features of WING’s design, which set it apart from other mobile banking platforms, were necessary in the face of low mobile phone usage in Cambodia.

**Design and Implementation**

**Product design**

WING was launched in January 2009, after about eight months of product development and funding from ANZ Bank in Australia. The idea behind WING was to fill the large gap in formal banking services available in Cambodia. It was also meant to provide a cheaper, safer mechanism for movement of funds. Initially, WING targeted migrant workers in Cambodia’s textile industry, many among whom sent money to the villages where their families live (using bus drivers or motorcyclists, for instance). WING also targeted other kinds of people who frequently make money transfers, such as students from Cambodia’s villages and blue and white-collar migrant workers outside the textile sector.
The lack of formal banking, a large number of unbanked people and increasing mobile-phone penetration provided opportunity for the creation mobile-banking platform. However, the country also presented barriers to developing a mobile banking system. One of these was the low (though growing) level of cell phone usage. At the time WING was launched, only about 20 percent of Cambodia’s population owned a cellphone (even using the most favorable assumptions relating total units to ownership). This meant that in Cambodia – unlike in some other settings where financial services have been rolled out using cellphones – it could not be assumed that potential users would own a cellphone. WING could also not assume that customers would have familiarity with SMS technology or the idea of balances could be stored or transferred through a mobile phone. This was a psychological hurdle that WING would later try to counteract through added features.

Initially, WING needed to partner with mobile operators, and had trouble getting them to sign on. The challenge was that the Cambodian mobile phone market was both small and fragmented. At the time the product was launched, Cambodia’s three million mobile phone users were shared among eight competing mobile-service providers. Partnering with a single provider – often the way similar services have got off the ground in other countries – would have severely restricted WING’s potential customer base. At launch, WING had signed up only one of Cambodia’s mobile service providers. Since then it has added five more mobile partners, thus potentially giving it access to 70 percent of the mobile market in Cambodia.

Two key features of WING provided easier access to the product: the operator-agnostic design and availability to non-customers. Unlike other mobile banking platforms, WING is bank-based rather than operator-based. The operator-agnostic design of WING allowed for a majority of mobile phone users to have access. However, WING could not assume that people at either end of a money transfer would have phones of their own.

WING does not charge a cash-in fee. The sender pays a transfer fee for person-to-person fee that depends on the sum of money that is being transferred, according to a three-tier pricing structure. The recipient pays a cash-out fee. The transaction limits are large: regular account-holders can undertake transactions of up to $1000 per day, and maintain a balance of up to $2500. When sending money to someone who does not have a WING account, the limit is $200. From the outset, therefore, WING allowed customers to use the service using a unique customer registration number and PIN even on a shared phone. Recipients of a money transfer need not be WING customers if they have this passcode.

WING contributes to responsible financial inclusion by providing a cheap, accessible product, primarily to those previously excluded from financial access. The product is designed to be simple to use for those with mobile phones and is even accessible to those that are not participating customers. The transfer of money through WING is both cheaper and safer than traditional options for moving money in Cambodia. There is also evidence from surveys that WING customers are satisfied with the product, are less likely to use informal means and that some customers use it to save.

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3 There are now seven operators due to a merger after WING’s launch.
Distribution Network

As in any mobile money systems, a network of agents who can accept and disburse cash is a key ingredient of the WING system. In Cambodia, there was a shortage of potential partners who had a national presence. As a result, WING decided to partner with VisionFund, a microfinance institution that had a presence throughout rural Cambodia. Visionfund had the necessary infrastructure that could provide a distribution channel for WING. Initially, WING intended to provide loan disbursements through Visionfund but this was not possible at the outset since Visionfund borrowers were reluctant to change their habits. Instead, WING set up its Xpress points at Visionfund outlets for customers to deposit or withdraw cash and continues to plan on offering loan disbursements and repayments in the future. WING has since developed partnerships with other MFIs, most recently with AMK. These types of partnership are beneficial for both parties as the MFI can leverage more deposits and WING receives the necessary liquidity for its transactions⁴.

WING has also built its own agent network outside of MFIs, enlisting a range of small businesses and merchants as its retail agents called “WING Cash Xpress.” These include airtime resellers, foreign exchange offices, grocery stores, pharmacies, etc. In addition, WING is funded by ANZ Bank from whose ATMs all WING customers (including non-ANZ Bank customers) can withdraw money paid into their WING account, thus making it possible for them to withdraw money without being tied to the timings and liquidity situation of partner merchants.

Customer Outreach

WING has used a variety of media to advertise and market itself. Its television and radio advertisements take advantage of these media’s relatively low cost and deep reach to bombard the airwaves with advertising at prime time. The television advertisements tout the convenience and ease of use of the product. For instance, one shows a farmer receiving a PIN number on his phone; he proceeds to write the number on the cow (using mud), takes the cow into town (while hiding the number along the way) and finally reveals it to the agent in town to receive his cash. Other advertisements pitch the airtime “topping up” feature and also emphasize the safety of the product compared to other methods—one television ad jokingly shows a person using a slingshot.

To market the product at the local level, WING employs young salespeople known as WING Pilots, who market and explain the product to potential customers and are paid a commission. These are typically college students or young entrepreneurs who earn money from commission by pitching WING to customers throughout the country. The use of local MFIs provides a valuable distribution network but also a group of de-facto salesmen for WING. If a potential customer already has an established relationship with the MFI agent, it becomes easier to use them for WING transactions. The implicit trust between the customer and agent overcomes the behavioral barrier posed by the customer’s lack of experience with (and therefore, trust of)

⁴ Interview with WING CEO, Brad Jones: allpaynews.com/content/mmt-explained-wing-cambodia-an-operator-agnostic-mobile-money-service
WING itself. If the WING pilot or MFI agent is from the local area than a potential customers may see them as a peer and thus be more likely to listen to their advice.

Changes During Implementation
WING has modified its strategy in several ways since its launch. It found that its strategy of targeting migrant workers in the Cambodian garment industry came up against several barriers. The first was cultural: most garment industry workers were young women earning and remitting money to their families. But they deferred to their fathers about how the transfer was to be made. WING needed to market itself not just to senders, but to recipients. In addition, the garment industry was affected adversely by the global financial and economic crisis. This also led WING to broaden its reach to other industries.

WING has also had to rethink how it selects agents. As the service has taken off, it has also become necessary to ensure that there is a sufficiently wide and deep network of retail agents who also serve as cash-out points. Initially, most of WING’s retail agents were located in Phnom Penh, the capital city. But it has since recruited more agents in areas which supplied a large share of migrants to the capital, essential to the smooth functioning of its rural-urban transfer service. It now has agents in all of the country’s 24 provinces, about 60 percent of them outside the capital region. The selection of local agents means that residents are getting the service from their peers and therefore more likely to adopt it. At launch, WING had 130 agents, a number that had increased to 700 by the end of 2010. Over time, most Cambodians should be within easy reach of a WING agent.

WING, which initially began as a pure money transfer service, has expanded to providing airtime recharges for its partner phone networks. This “topping up” acts as an additional mode of marketing for WING, attracting people who are initially only interested in topping up their talk time but may at some point have use for WING’s core product. Perhaps most crucially, most would-be clients would have little experience with topping up their own accounts or those of others virtually. Yet such topping up – which demonstrates to a client that a sum of money entrusted to a mobile-phone company via an airtime reseller does not disappear or lose value, but remains available for use over a period of time – is thought by many to have played an important role in making people comfortable with the idea of money being stored and transferred electronically. Airtime topping up also may encourage people to adopt mobile phones since they would no longer have to buy scratch cards to add minutes.

In addition to behavioral constraints imposed by the relatively low level of mobile-phone use and familiarity, WING also faced a regulatory constraint because it only had permission to operate using Khmer Riel (KHR), the local currency. However, in December 2010 WING received permission to use US dollars (USD). This has several implications for WING since Cambodia is a de facto dual currency economy, with USD in use alongside KHR. WING can now serve those trading in US Dollars and can compete with money-changers, who charge very low “fees” for large transfers, making their profits off the currency conversion.
Results

Increasing Financial Inclusion

WING has grown significantly since its launch. There were 25,000 clients six months after the launch. Another 58,000 clients were added in the subsequent year. There are currently 260,000 customers, 700 Xpress points (in all 24 provinces) and 300 WING Pilots employed. According to surveys by WING, the majority of these customers had no financial access before WING. A significant fraction of its client base comes from the poorer segments of Cambodian society. For instance, a customer survey found that 60 percent of WING’s customers made less than $3 a day and half of these made less than $1.50 a day (Vada, 2010). WING has thus succeeded in its mission of spreading financial inclusion.

WING is used primarily for small money transfers from urban to rural areas—almost half are transfers under $5. In addition to money transfers, WING also provides electronic top-ups, which have become popular as an alternative to scratch cards, hitherto the most common way of topping up pay-as-you-go cellphone accounts in Cambodia. Customers still spend mostly using cash and a small percentage using WING. A good portion (30 percent) of WING customers use the service to store money which suggests that it has provided the poor in Cambodia with more opportunities to save (Vada, 2010).

Most importantly, WING has proven to be a much cheaper alternative than what was already available in informal means. On average, customers save more than 50 percent on transferring money by using WING in comparison to the most widely used alternatives, such as hiring drivers or using informal money-handlers. According to CGAP, customers typically pay between $1 and $5 to transfer $100 using informal money-transfer services, whereas WING charges $0.50 for the same service (CGAP 2010b).

Comparison To Other Mobile Banking Systems

WING’s expansion has clearly led to some degree of financial inclusion. This appears to be truer of WING than M-PESA, for example: Jack and Suri (2011) report that only about 35 percent of M-PESA users surveyed in 2009 came from unbanked households. International comparisons also suggest that WING is cheaper than the typical such product. CGAP has computed the cost to a typical customer of using various branchless banking services, and finds that WING is among the cheapest such services of those studied. Its monthly cost works out to $2.80 in PPP (purchasing power parity) terms, well below the cross-country average of $3.90 (CGAP 2010b).

CGAP has also carried out an exercise aimed at comparing costs to customers of using various branchless banking services for what it terms “short-term safekeeping”, which involves two deposits, two withdrawals, one airtime top-up and one balance enquiry. Of the 15 such providers studied, WING provides the cheapest service in PPP terms. WING thus seems to offer cheaper financial services than either domestic informal competitors as well as comparable international alternatives.
Lessons Learned

For Design
WING has been successful in drawing some customers away from informal means of transferring money and does well compared to other mobile-banking systems in the developing world. Its design offers lessons for other mobile-banking products:

- **Operator-agnostic design allows for flexibility:** Most mobile-banking products are servicer-based rather than bank-based. The design of WING allows for use on most of Cambodia’s mobile networks which makes adoption easier for those with existing mobile phone experience. This model would make sense in a country that has high mobile network competition.

- **Allow non-customers to use the system:** Low levels of mobile penetration in Cambodia mean that even generic experience with mobile technology is limited. Letting non-customers access funds sent from WING customers helps overcome this lack of technological experience—especially in the rural areas of Cambodia.

- **Profitability is achievable through scale:** Mobile-banking carries with it a high fixed cost for setting up such a system. However, the marginal costs of signing up additional customers are low. According to WING executives, this type of product—if scaled properly—can return a profit.

For Product Innovation
WING has grown to cover 260,000 customers and continues to scale up but still faces several obstacles to adoption:

- **Offering a cheaper service is not enough:** Informal means are still popular despite savings from mobile-banking. One reason for this has to do with the transparency of fees and charges. In Cambodia’s dual-currency economy, informal money couriers make part of their income not by directly charging fees, but on the currency conversion. This is not as transparent as a straightforward fee, as charged by WING, and it is possible that users are misled into believing that informal methods of transferring money are cheaper than they in fact are. This is partially solved by WING’s new adoption of trade with US dollars, but WING and other systems will have to clearly communicate cost benefits to customers. WING has also expanded operations of payroll services by including a direct deposit feature. This capitalizes on people’s behavior in favoring the status quo by making the default that their paycheck goes to their WING account instead of cash-in-hand that is liable to be more easily spent.

- **Include other options to help overcome the challenge of new technology adoption:** Reluctance to abandon informal providers and shift to a new service like WING is driven in part by the fact that the latter is a new method of making payments that relies on a
technology with which few potential users have experience. Most have naturally never transferred money using a mobile-phone-based system. Getting people to trust the mobile payment system is made easier since WING offers “topping-up” of airtime. Once customers see that this feature works they should be more likely to trust WING with transfer of their money.

- **Use an existing distribution channel and local agents where possible:** People are more likely to adopt a new system if either their peers or perceived experts are using it. The presence of an existing network can provide the necessary infrastructure for delivery. This was true with the use of local microfinance institutions as Cash Xpress points for WING. Many customers had already established relationships with the lender, making it easier for them to take-up WING. This design helped to overcome the behavioral barrier of trust in the system. The breadth of the network was also crucial for reaching remote, rural areas in Cambodia.

**Future Improvements**

WING is taking steps to offer a more comprehensive financial product in the future. The existing network of MFI agents offers an opportunity for WING to be used for loan disbursal. This option is currently being examined and would contribute to a deeper relationship between WING and MFI’s.

People are often understandably wary of new financial services. They are likely, for instance, to have legitimate fears about the money not reaching its desired recipient. WING could consider this behavior by using a couple of transfers of nominal amounts – perhaps to a friend of the prospective customer who can confirm, in real time, that the money has been credited – to demonstrate how the service works. A similar approach has been used by online-only banks in developed countries as a way of verifying account details. For instance, when a customer opens an online savings account with ING, the online bank deposits a few cents into the person’s designated checking account as a way of reassuring all parties that the right account is being linked to.

Also, WING could consider airtime discounts as a marketing tool. CGAP’s study of branchless banking in different countries finds that 4 of the 16 providers it studies provide discounts of between 5 percent and 10 percent on airtime purchased using phones. They argue that this allows customers to learn how to deposit money at an agent, and to transact using mobile money. Given the seeming importance of lack of familiarity with mobile money as a barrier to adoption in WING’s case, discounts on airtime could serve the dual purpose of getting potential customers through the door and also familiarizing them with the service that WING offers.
References


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