

# **Making Mobile Money Daily Relevant**

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## **Executive summary in the form of an elevator pitch**

With today's mobile money platforms, the value proposition for keeping money digital and driving up usage of digital payments is still thin. Mobile money is built on speed (real-time clearing) and liquidity (thousands of merchants where you can cash in and out). It is *ready-cash* (an immediately accessible mobile wallet), *cash-to-go* (P2P money transfers, billpay). But mobile money is a flexible tool that can be expanded from *PayNow* to *PayPlan* – helping people ear-mark funds for and build up to the things they want to secure for tomorrow.

PayPlan allows people to set and contribute to spending goals. They can send money over time to others (delayed P2P transfers), or simply to themselves (*Me2Me*). With *Me2Me*, farmers can use this year's crop bounty to reserve money for inputs for the next season, and pay themselves a salary until the next crop comes in. Day laborers can build up to the amount they need for school fees, or to build a cushion for other things that will improve the quality of their lives. Traders can plan new supply purchases and loan repayments.

Mobile money today is a *prepay* product. By giving providers a more meaningful window to client's financial profiles, PayPlan ought to allow providers to extend advances to clients on the fly. Mobile money will then become more akin to a blend of debit and credit card services.

Savings and credit services enable a shifting of expenditures in time. Therefore, savings and credit services are a logical extension of a payments service. And all this needs to be conceived as an integrated customer *experience*, not just as a fixed set of products or receptacles for funds. By putting planning tools at the core of the mobile money proposition, we will set the basis for continuous financial education through usage.

## **The mobile money journey thus far**

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The sheer magnitude of the financial inclusion gap—70% of households in developing countries are unbanked—calls for pretty radical solutions. We need to overcome an *access* barrier (last mile infrastructure), a *relevance* barrier (right-sized products and services) and a *usability* barrier (friendly and intuitive customer experience). What makes these problems particularly difficult is that they cannot be thought of separately or tackled sequentially.

There is much promise of using mobile phones, in combination with retail shops acting as cash in/out points, in solving the access barrier.<sup>2</sup> There are two key advantages of using mobile phones: (i) they enable secure *real-time* communications from increasingly remote locations, a key ingredient for building trust; and (ii) they are cheap and already *out there*, thus slashing deployment costs in comparison with other technology platforms.

This is the logic of *mobile money*, a basic financial service that offers store-of-value and payment services to mobile phone subscribers. Each client's mobile phone number is linked to an electronic account, and the mobile phone acts as a virtual card and point-of-sale terminal enabling remote operations of the account such as checking balances and initiating payments between accounts. There is a class of super-users who make it their business to accept cash or electronic payments from any other user, in exchange for an equal (less a commission) and opposite payment of electronic value or cash. These are the retail cash merchants (sometimes called *agents*) through whom users cash in and cash out from their mobile money accounts.

Mobile money offers a basic *transactional account*. In Kenya and elsewhere, we have seen customers taking up this service in large numbers (see Box 1). But these accounts largely fulfill a *means of payment* function: they are not generally used to store significant amounts of money over long periods of time, and they are generally not linked to other financial products such as credit or insurance.

As a result, financial inclusion enthusiasts have tended to look at mobile money as providing low-cost *transactional rails*; once those are in place, we can then devise the right products to *ride* on those rails. But that leap is proving hard. Without the necessary range of products, we can't ensure sufficient usage of the rails, which undermines the case for the necessary infrastructure and marketing investments. But it is not clear how you get new-to-banking people to understand and use such a variety of financial services on a simple mobile phone.

#### **Box 1: Mobile money's global million-user club**

Kenya remains the poster child of mobile money globally. It is a market dominated by [M-PESA](#), the service operated by incumbent mobile operator Safaricom. Over 15 million users (82% of the Safaricom customer base) are able to cash in/out at some 30,000 locations across the country. Based on half-year results to September 2011, M-PESA's annual gross revenues (i.e. including agents' commissions) of \$90

<sup>2</sup> For a survey of the literature on mobile money and branchless banking, with full bibliographic references, see [this paper](#) by Ahmed Dermish, Christoph Kneiding, Paul Leishman and Ignacio Mas. As this is not intended as an academic paper, no further references are provided in this paper but it goes without saying that most of the ideas expressed here build on the ideas developed by others and I make few claims of originality.

million accounts for 17% of total Safaricom revenues.

Competing services have emerged in Kenya, some managed by smaller mobile operators (such as [Airtel Money](#), [Orange Money](#) and [YuCash](#)), some operated by banks (such as [Equity Bank](#)'s Eazzy247 service and KCB [Mobile Banking](#) ), and still others operated by independent players (such as [Mobicash](#)). But they all struggle to grow in the shadow of M-PESA.

Replicating M-PESA's success elsewhere is proving tough, but indications are that it is spreading successfully in neighboring East African countries. Numbers are hard to come by so it is not possible to portray an accurate picture, though the following are some general impressions collected from the field. Here we mention schemes in countries that have more than a million active mobile money customers.

In Tanzania, leading mobile operator Vodacom was first to launch mobile money services with [M-PESA](#). They claim 9 million registered users and more than 15,000 cash in/out agent locations , though many of these are not active: their active customer base may be closer to 2 million. There are competing services by the other three mobile operators ([Tigo Pesa](#) and the recently relaunched [Airtel Money](#) and [Easy Pesa](#) by Zantel). Unlike in Kenya, these have good prospects of developing alongside M-PESA given the more fragmented mobile telephony market and the widespread use of multiple SIMs (mobile phone subscriptions) by customers.

In Uganda, the mobile money market is dominated by the mobile operator incumbent with its [MTN MobileMoney](#) service, which is thought to have well over 1 million active users. There are competing services from three other mobile operators ([Airtel Money](#), UTL's [M-sente](#) and the recently launched [Warid Pesa](#)), but all these remain small.

Pakistan gets honorable mention, but not full membership, in the mobile money million-user club. [EasyPaisa](#) by TameerTelenor is probably used by more than a million customer for either paying bills or sending money, but the bulk of users are not registered with an account and instead use over-the-counter (or cash-to-cash) service. The competing bank-based [UBL Omni](#) service is smaller but growing rapidly as well.

All in all, the [GSM Association](#) has counted 130 live mobile money deployments across 93 countries. Most of these remain sub-scale and few offer anything other than basic transactional services. In fact, many are little more than pilots. But this high number speaks to the interest that M-PESA has sparked across developing countries.

Moreover, the rails part sounds telco-ish while the products part sounds bank-ish, and it's not clear how you can *phase in* telcos and banks as their role becomes more or less critical in that rails-then-products journey. If the telco takes the lead in the rail-building part it is hard to imagine them opening the doors for banks to realize substantial value on the products part. Their relationship is bound to be fraught with pricing, branding and customer ownership disputes, which will retard the use of mobile money platforms as a vehicle for financial inclusion.

## Renewing the focus on relevance and usability

Overcoming these challenges probably requires integrating the rails and the products more tightly, from early on. On the other hand, optimizing the mobile money environment by adding higher-level financial services (savings commitment features, credit, insurance) runs the risk of making the concept of mobile money more complex to market and practically unwieldy to manage on simple mobile phones.

To break out of this dilemma, what we need is a single mobile-enabled customizable experience that puts customers' goals and needs as the basis for the interactions between the bank and its customers. The key driver for this experience will be less the underlying financial products that fulfill the service and more the user interface and customer information management systems that guide the interactions.

Telcos and banks will certainly play a role in enabling such integrated service concepts, but perhaps what we really need is a third party playing an Amazon-like role: managing customer insight, presenting relevant offers and organizing the service delivery chain behind them.

This is the area explored in this paper. The aim is to examine how one could offer a rich menu of money management services in a way that is appealing to the bulk of poor people in developing countries. There are three conditions the service would need to meet:

- **What:** the service is easy to brand and communicate to the mass market
- **Why:** the benefits of using the service are intuitively understandable by the majority of poor people who are unfamiliar with formal financial services
- **How:** it is easy to use on a self-service basis from the phones that people already have in their pockets.

All this, delivered at scale. It would have to bring in a majority of people in developing countries, who have meager and erratic incomes that are paid in cash (or, worse, in kind), the majority of whom live in rural or urban slums. The question then becomes: what might a financial system that includes everyone look like? We can guess at some of the constituent elements of the solutions by looking at what has been successful in a number of related sectors. In Box 2 we ascribe two success factors or lessons to each of microfinance, informal finance, mobile money, mobile telephony and the internet.

This paper straddles the conceptual and the practical. We begin with a general articulation of the financial inclusion problem in developing countries, which brings out the key concepts that we need to wrestle with. We then propose a particular service framework which links together many of the necessary solution elements in an integrated fashion. The aim is not so much to give the recipe but to illustrate that solutions can be developed, that good ideas can be brought to bear. The purpose of this paper in its present form is to trigger broader thinking and reinvigorate the mobile money vision rather than to propose an immediate plan of action.

This is an ambitious paper. I won't claim originality on most (if any) of the ideas reflected here, for there is no shortage of reasonably generalizable customer insights and nifty product ideas out there. Instead, I aim to connect what today appear as disparate financial inclusion concepts and efforts into a single,

consistent and implementable framework. The service concepts proposed here have not been piloted in the field, hence my use of the word *framework*. But the ultimate objective ought to be very much to boil all this down into specific service specifications.

### **Box 2: What are the attributes of success in adjacent sectors?**

Microfinance success stories are many and diverse, but two common factors stand out across all of them. The first is the value of **proximity**: they all found ways to get physically close to the customers they wanted to serve. The second is **simplicity**: they focused on streamlining the product set and standardizing features.

There are now high hopes for mobile money as a new platform for financial inclusion, following M-PESA's success in Kenya. One lesson is the importance of cultivating the edge of the electronic payment network: make **conversion in and out of cash** easy and reliable. The other major lesson is that profitability in financial services need not come from credit alone: there is substantial **willingness to pay** for some types of payments which are costly or inconvenient for people to do today.

The rampant growth of mobile telephony even in the poorest countries has shown us the power of two additional drivers of demand. The first one is the **immediacy** of the service, which is inherent in the technology: being able to communicate here and now, on demand. The second one, slashing **price barriers**, came with the shift to prepay: introducing tiny top-up amounts (as low as 20¢) and eliminating fixed fees and usage commitments.

From the internet, we have learned about two new key sources of value enabled by digitization of services. The first one is the packaging of individual offerings into a fuller, friendlier, customizable **customer experience**. The second one is the **customer information** that can be gleaned from their transactions or interactions with the service, which can be used in turn to tailor products and further optimize the customer experience.

The informal money management practices that people use in their daily lives have two characteristics that set them apart from what banks normally conceive. First, they **blur the boundaries** between savings, credit and insurance (think of savings-led groups or lending money among friends). Second, they use a range of **discipline devices** beyond sheer time commitments (fragmentation by purpose, indivisibility of savings vehicle, creating habits, peer pressure, and assigning social/family value).

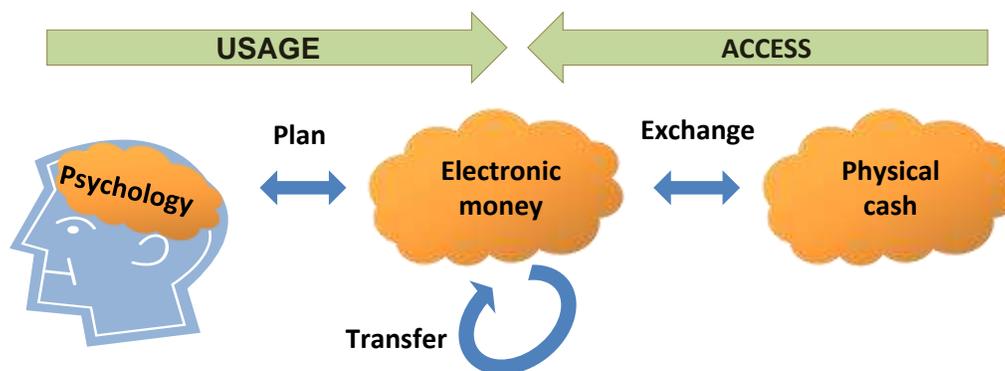
Let's now connect all the bolded keywords: to crack the financial inclusion problem all we need to do is to: design a customer experience which *(i)* combines features of savings, credit and insurance and a offers a variety of self-discipline tools, *(ii)* is manageable by the customer within a simple-to-use, logically consistent framework, *(iii)* is delivered as and when people need it in any amount they need, and *(iv)* has convenient local liquidity options.

### **Three representations of money**

Making financial services relevant to poor people entails connecting three different clouds, as represented in Figure 1:

- A **physical cloud** of hard cash (or, worse, specie currency), which is the legacy payment system on which most poor people operate today to exchange and store value.
- A **digital cloud** where money is just an accounting record. This constitutes an alternative payment system, and is where financial services ought to reside. Making money digital makes it easier to supervise the integrity of transactions and accounts, to create new financial products, and to move money around as a mere debiting and crediting of accounts.
- A **neural cloud** in people's brain, through which people form their ideas and habits around money in the context of their circumstances, their needs and their aspirations. It is through this cloud—the mind—that people interpret the range of informal and formal financial services proposed to them.

**Figure 1: Connecting three conceptions of money**



Connecting these clouds is the job of financial institutions. It entails three basic elements of service, represented by the three arrows in Figure 1:

- An infrastructure to **exchange** physical cash for electronic value (most commonly, branches and ATMs). This is not banking per se, because it merely enables exchange between two forms of money, just like one might exchange notes for coins. But it allows people to easily combine the forms in which they are paid their wages, store money and spend it.
- A digital payments ecosystem which makes electronic money directly useful for people, by allowing easy **transfer** of value within the electronic cloud. This is more immediately convenient than cash for larger payments (where cash presents a significant risk), remote payments (cash is costly to transport), business-related payments (cash leaves no evidence trail), and at unattended points of sale (cash fills and jams ticketing machines). Over time, electronic payments naturally come to be seen as increasingly convenient for smaller, face-to-face,

everyday transactions (e.g. at retail shops) between people who have (i.e. are *long*) electronic money and do not wish to incur the hassle of converting back to/from cash.

- A set of financial services that map simply and directly into people's mental models of their money. These services allow people to **plan** how to achieve their investment and spending goals and how to manage certain risks. Whereas the functions of exchange and transfer work best the more immediate they are, planning is by definition something that occurs over time.

In Figure 1 we see the double agenda of financial inclusion. We need to greatly expand **access** to financial services, through infrastructure that allows people to deposit, withdraw and make payments conveniently. Access is enhanced by connecting cash with electronic servers and networks. And we need to increase **usage**, by giving everyone the tools they need to better control how they accumulate and spend their money. Usage is triggered by modeling electronic-based services on people's psychology.

### **Why half the world is unbanked**

So why is half the world unbanked? The defining characteristic of the unbanked is less that they have a lower income level than the rest of us but the fact that, lacking stable or formal jobs, they tend to be paid irregularly and in cash. Whether they are farmers, day laborers, traders or micro-entrepreneurs, nobody is guaranteeing them where the next dollar will come from and yet they are probably earning some money on a daily basis when they sell their wares or their labor for cash. Small wages paid with high frequency make for very small payments indeed. Banks' offerings are stacked against them.

On the **access** side, bank's cash-to-electronic exchange infrastructure is largely one-way: the transactional workhorses of banks, ATMs, typically only offer withdrawals. That's because they are designed to serve the formally employed who are paid electronically on a monthly basis. But for everyone else, money enters from the far right in Figure 1, and much more frequently too. To deposit today's meager surplus, informal workers must go to branches, but those are few and far between, and poor people are not made to feel very welcome when they show up in large numbers to deposit small amounts. For them, branches are distant not only geographically but also culturally: they know that branches are not there to serve people like them.

On the **usage** side, banks typically structure their mass-market offerings into a few standard products. Their communications strategy with their clients is centered on explaining to customers when, why and how to use each product. That works well with the formally employed who have larger, regular and stable income streams. Products involving a rigid structure of payments over time (whether a loan schedule, regular pension plan contributions or a term deposit) are easy to analyze in the context of one's income.

But the informally employed face a more bewildering range of risks as they don't have regular, guaranteed income flows. Poor people naturally find it harder to build steadily towards their goals, they need more help. But banks' rigid products rarely work for them, they are not seen as relevant. Banks could offer more diversity of products or more flexible terms for poor, informal people, but that would make their service complex to market, sell and manage. Instead, they fall back to the single product, the

catch-all liquid account, which simply doesn't connect with people's mental model around money and discipline.

We can now more precisely articulate the three challenges around financial inclusion, relating to each of the three arrows in Figure 1:

- **Exchange.** There needs to be a much more **dense and cost-effective network of cash in/out points** which people can incorporate into their daily routines. These points need to be near where people live and work, located in retail environments that want to serve poor people like them, and offering two-way services (deposits and withdrawals) in small amounts.

The most promising approach is to engage everyday stores as cash in/out points, where they offer to buy and sell electronic money from/to their customers against cash (constituting a withdrawal and deposit, respectively), much like they would sell rice by exchanging their holdings of rice for their customers' holdings of cash. This can be made secure as long as stores operate on a fully pre-paid basis (i.e. it holds balances in both cash and electronic value), and the electronic transactions between stores and their customers are authorized securely in real time using a digital communications network.

- **Transfer.** We need to find mechanisms to **induce more payments in the informal economy to be made electronically**, such as for the sale of day labor, goods or services, in order to get as many people as possible *long* electronic money. This is a more direct method of access than through cash-in networks. One priority should be on *electronifying the sources* of money rather than making it convenient for people to use electronic money, as the latter will follow naturally from the former. The second priority should be to connect all the electronic accounts and wallets into one interconnected network: no one should be relegated to an island. This is about catalyzing and speeding the transition from the legacy payment system –cash– to new interconnected electronic payment platforms.

There are few policy ideas in this area, and in fact, policy may go against it if electronification of payments is used as a device to expand the tax net – or even if it only creates that perception in the market.

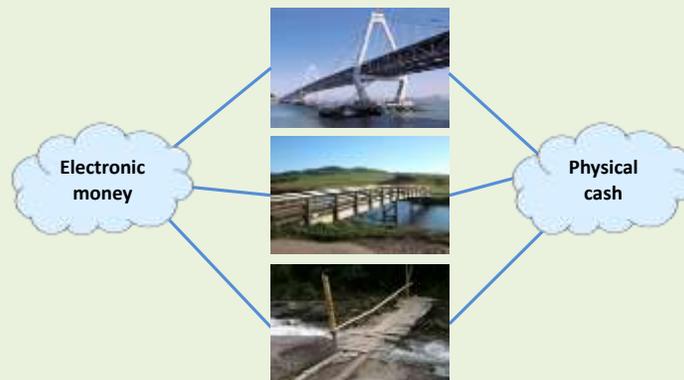
- **Plan.** Financial institutions need to devise **mechanisms to help people plan**: to buy the things they need, set aside small amounts of money over time to build up to that bigger expenditure they face or desire, and articulate and maintain a focus on their goals. Here the key is to balance people's desire for flexibility and liquidity to meet unforeseen circumstances (illness, weather shocks), and their need to establish commitment and discipline to avoid getting distracted with less valuable daily purchases. Their need is to plan for outlays, not so much to manage surplus resources: they have little income and many things they could do with it. People don't see it as a *financial* problem, they see it a spending prioritization or discipline problem.

Banks' traditional approach is to conceive their products as a family of value receptacles articulated around a rigid timeline. Each one has a particular set of rules, and most ask the client to make fixed commitments to the bank – when no one is guaranteeing any income to them. We need a different approach, where the emphasis is not on pots of money but on the tools that can help individuals and families to manage the goals they set for themselves and the risks they worry most about.

### Box 3: Building local bridges to cash

In order for poor people to opt to formal financial services, we need to dramatically increase the number of *bridges* between the cash and the electronic clouds.

Figure 2: The right bridge for every stream



The bridge at the top of Figure 2 is big and imposing: let's call it a branch. But it's way too costly to build in every village and neighborhood. It's efficient to build in high-traffic locations, but smaller communities on the river will need to travel significant distances to access it. To service these smaller communities more effectively, what we need is a whole hierarchy of smaller bridges that are appropriate in different environments.

The bridge at the bottom is no less safe than the top one given the stream it's trying to cross; it is entirely appropriate given the risks involved. Just don't build this type of bridge to cross the river at the top. Improving the economics of serving poor people shouldn't be done by relaxing safety standards; it should be done by deploying the appropriate infrastructure.

Unlike the bridge at the top, the bottom one is cheap because building it requires materials and skills that are available locally. So we can now afford to build many more of them. The service provider may be able to build 100 smaller bridges for each larger bridge. More significantly, the service provider will have *variabilized* costs: now small bridges can be built as and when they are required, with little upfront investment but with more upkeep costs based on actual usage – aligning costs with revenues. And the cost savings for local villagers will be huge: no more travelling long distances to get to the bigger bridge.

How to build the small bridges to cash? Start by using the bricks and mortar of existing retail shops that exist in every village and neighborhood. They are more convenient, less crowded, and, chances are, more friendly to customers than the bank branches. But is it safe to deposit at these retail outlets? It can be, as long as these shops trade entirely with their own stock of both electronic money and cash.

Think of how they might sell rice: they hold a stock of rice, and after a sale, they end up with a little less rice but more cash than before. They make a small margin in between. Making a deposit at the store would be the same thing, except that the commodity the shop stocks and exchanges for cash is electronic money sitting in its bank account. After the transaction, their bank account will have less value but they'll have more cash in the till. The customer's situation will be the mirror opposite. The store earns a small commission for the service -- and it will attract customers into the store.

Risk can be eliminated as long as electronic value can be transferred securely and in real time between the shop and the customer. We can ensure this with a traditional card and point of sale infrastructure, but even that is too expensive. Instead, we can use mobile phones which already exist in people's pockets, as a virtual card and point of sale system.

Beyond the security and reliability of the technology platform, there are three key success factors in building a dense network of cash in/out agents. First, as in all retail plays, is location, location, location. The stores need to be in high-traffic location, where they can have most visibility and deliver maximum customer convenience. Second, the store-based cash in/out system needs to be trusted by people. This will require building a strong branded presence in each store, so that customers understand that they are really dealing with their financial service provider and not the store itself. Developing this branding will be partly a matter of appropriate signage and partly a matter of ensuring consistency of the customer experience across all cash in/out points. The cash in/out points will need to be supervised regularly to ensure both. Third, the business needs to be viable for each store, in other words, they should see sufficient volume of business on a day-in, day-out basis to justify the costs involved for them in maintaining the necessary liquidity pools to service customers' deposit and withdrawal needs. The provider will need to develop appropriate marketing strategies to grow the numbers of users and stores in tandem, so that users can reap the convenience of cashing out at local stores but also local stores see the profitability in serving those users.

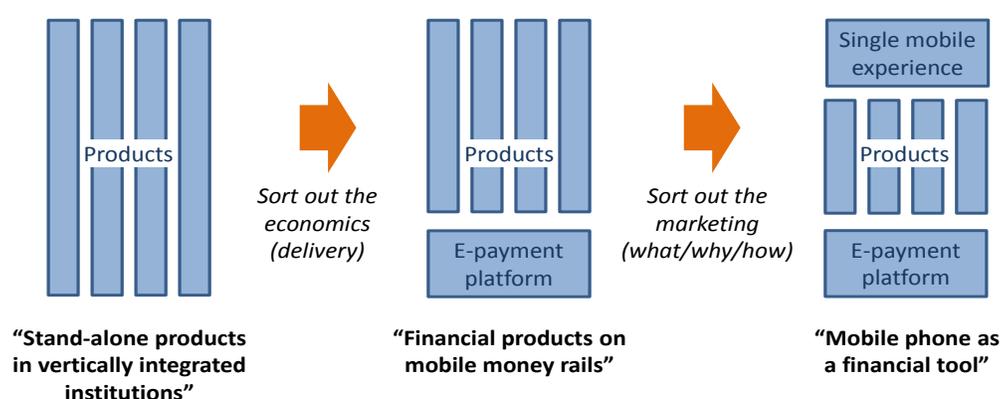
Using stores and phones that already exist, we could increase the number of places where people can deposit and withdraw by 10 or 20 times, relative to the number of bank branches that exist today. Only then will banking begin to be convenient for the majority of people in developing countries.

### **The advantages of specialization and scale: A platform perspective**

Fulfilling this agenda requires a substantial redesign of the institutional structure and the value chain within which financial services are offered to the mass market of poor people in developing countries. Most financial institutions have neither the proper cost structure to scale nor the marketing capabilities to cater to customers' diverse needs. Figure 3 shows a schematic of the journey that is required.

Today most microfinance institutions (MFIs) serving the poor tend to offer a limited number of discrete products (often just one, e.g. group-based lending or ordinary savings accounts) within a proprietary delivery structure (i.e. they manage their own cash points, treasury and investments, loan evaluations and recovery, etc.) Many interventions in support of financial inclusion entail creating new unconnected, vertically-integrated institutions in un- or under-served areas. These institutions are often mission-based and develop very good affinity and proximity with their target customers. But because they combine all functions (some scalable, some not) into a single structure, they tend to operate at very high unit costs and their systems and procedures cannot handle geographic expansion well.

**Figure 3: A platform perspective**



Balancing customer intimacy and scale is generally achieved through institutional specialization. One approach, shown in the middle of Figure 3, is to separate the operation of the basic payment platform from the development and marketing of value-adding financial services that ride on that platform. The *e-payment platform* box in Figure 3 refers the basic *exchange* and *transfer* functions in Figure 1. This service could be supplied by larger banks through interoperable switches or by mobile operators under mobile money schemes.

While it is possible that these players might operate such platforms as a closed-loop, one would expect that over time they would open them up to an ecosystem of specialized financial institutions who wish to offer a fuller set of services to their customers. These specialized institutions riding on the scalable platforms could operate as *cashless banks*, since they would collect and return value to their customers through third party electronic payment platforms. Freed from the operational challenges of handling cash and electronic payment networks, they would be in a position to focus more fully on marketing and product development, through which they could develop deeper and richer relationships with their customers.

This separation of functions would go a long way to put microfinance institutions on a more sound economic footing. But the proliferation of services running on these rails presents significant marketing challenges of their own. Communicating *what* each product does (features and terms), *why* or in what

circumstances it might be relevant for people (benefits), and *how* it is used (procedures) requires a level of attention from poor customers which providers may not be able to garner, and even if they did it may entail a cost which providers are not able to bear.

There is a need to create a simple framework through which people can discover, learn about and manage a diverse set of services. That is represented by the *single user experience* box on the right-hand side of Figure 3. Customers might avail themselves of a whole bunch of products and services, but all are presented and managed in a consistent, seamless way through common interfaces. This notion has been surprisingly slow to develop even with the better capabilities of internet banking in developed countries (see Box 4).

#### **Box 4: Why does internet banking remain convenient but uninspiring?**

See what a profound transformation the internet is producing in information-based sectors. Newspapers are under threat from online news sources and blogs. These same web destinations are becoming less relevant as people simply lift and filter the information they want using RSS feeds. The music CD is being unbundled as customers buy individual tracks online. These songs get remixed and re-distributed across an ever-growing number of online content repositories. Books are increasingly digitized, and customers can now sample content and search for information across entire libraries.

The internet is a destroyer of digital products but a great creator of new kinds of customer experiences. Power has shifted to users: it's no longer about the packages of content suppliers want to sell but about the content mash-ups users want to consume. Providers' best response is to try to extract more customer information with each interaction, and use that to deliver even more relevance and convenience to their customers. Think Google, eBay, Apple and Amazon: the new corporate battlefield lies in the control of the user interface and the customer intelligence system that supports it.

Yet there is one information-based sector that seems deaf to the great sucking sound of the internet: banking. What is banking but managing information of who has what financial claims on whom? For banking, the internet truly is still just another channel. Sure, it has added transactional convenience, but has it changed how banks talk to us?

Hardly. Online, banks still push products on their own terms (want a term deposit for 3 or 6 months? well, why can't I have it due on February 27<sup>th</sup>, which happens to be my lucky day?). They still insist on my managing a set of accounts (which account do you want to move money *from*? which account do you want to move money *to*?) rather than a set of goals (would you like to set aside some money for that motorcycle you wanted to buy?).

Some pure-play internet banks (e.g. ING Direct in the US) have championed online convenience and innovation, but that has tended to focus more on new payment methods. There is now a new breed of 'virtual banks' in the US that are showing us that banking in the digital age can be customer-centric, social – and even fun. (Check out the innovators such as [SmartyPig](#), [Goalmine](#) and [Mint](#), and the more recent, higher-profile [Simple](#) and [Movenbank](#)). But for the most part, internet banking sites still look like

a virtual point-of-sale terminal. Banks position *their* products online, rather than engaging customers at the level of their needs, goals and aspirations. Why hasn't online customer-centric innovation been used as a competitive strategy by mainstream banks?

Note that here we are talking about a single user experience *per customer*; but different classes of customers might be presented different user experiences based on their socio-demographics and level of familiarity with financial services. In fact, one could imagine customers having their user interfaces upgraded over time to deliver a richer and expanded set of potential services, commensurate with their growing financial capabilities and needs.

The customer experience box would be conformed by the following elements:

- A **user interface** available on customers' electronic access devices (mobile or web), which allows them to find, contract and interact with their services on a self-serve basis.
- A **customer relationship management** system, which allows the provider to create a detailed picture of each of their customers based on the history of interactions they've had through the user interface, as well as any other available socio-demographic data which can be cross-referenced from external sources. This system would also have a **customer analysis and proposition engine**, which evaluates the suitability of customers for certain services (e.g. credit scoring) and triggers relevant outbound messages to customers (e.g. to reinforce goals or propose a new service that the customer is likely to want).
- An **assisted sales and service channel**, which customers can use when they want to interact with people. This might be a chain of dedicated stores, an outbound sales force, or a call center.

### **The bigger opportunity with mobile phones: Making finance daily relevant**

Mobile phones' digital communications capabilities, combined with their increasingly pervasive presence in people's pockets, make it a phenomenally useful asset that can be leveraged in several ways. They can be a key enabler to create the two horizontal blocks on the right-hand side of Figure 3.

At the **e-payment platform** layer, mobile phones allow for a ubiquitous low-cost deployment strategy. If transactions can be initiated remotely through a secure electronic channel (ensuring the proper authentication of transacting parties and integrity of the data transmitted) and authorized in real time (ensuring that all transactions are pre-funded), then banking transactions can safely be taken outside of bank branches and into neighborhood stores (which act as cash in/out outlets) or right into customer hands (with mobile banking as a self-service channel).

The mobile phone's potential for enhancing financial access is now well understood. M-PESA in Kenya has shown that adoption curves typical of new information-based technologies (radio, TV, mobiles, internet) can be applied to financial services. Yet M-PESA-like mobile payment schemes have only

scratched the surface of what is possible: the typical mobile money user still uses it only a couple of times a month.

Beyond reducing costs, mobile phones also permit customers to interact more directly with their bank, checking balances and initiating transactions from wherever they are. Using mobile phones as the access device offers the customer a level of immediacy, convenience and control that no other channel can provide. The real power of mobile will come when it is seen not only as a mechanism for reducing access costs but also for building new types of banking experiences – the top block on the right-hand side of Figure 3. Mobile phones do not only represent the key to unlock access, they are also the key to increase usage.

Promoting financial inclusion involves developing customer experiences that help people plan for and achieve their goals, whether these relate to concrete planned expenditures or looser financial cushions. That requires two things: *(i)* extracting information from clients as to what their goals are and in what timeframe they aim to achieve them, and *(ii)* presenting the bank's various services (savings, credit, payment) in the context of those goals.

Both these things are hard to do when customer interactions are infrequent and not very consistent. In one month, a bank client typically listens to one bank advertisement on the radio or TV and walks over to a branch once, which means that communication is very limited and mostly one-way. In this setting, the bank's promotion has to be as simple as possible, and that means making it product-driven.

But when banks and their clients are connected by mobile phones, there is the potential for the relationship to be much more frequent and interactive. With this in place, the bank can start thinking about having a conversation with their customers based on their goals (whether based on aspirations or fears) rather than on the bank's standard list of products. There is less pressure to propose the right products to customers from the outset, as customers will guide banks on an ongoing basis as to what they need. The mobile user interface should draw customers into this conversation, so it must be structured around people's goals. It is up to the bank to fit their products to these goals. The interactions would also be bank-initiated: to remind people of their stated goals, congratulate them when they work effectively towards their goals, propose them new ways in which they can achieve their goals.

Mobile phones can be used as a lower-cost alternative to rolling out cards and POS terminals. But, beyond cost, the real opportunity with mobile phones is for the bank to establish a direct, on-demand connection with its customers. Mobile phones make it possible to think of a future where banks and their customers have daily interactions which are based less on the banks' products and more on the customers' goals. In a successful mobile banking relationship, clients would be reaching out for their phone every time they have money coming in. How do I assign this money across my goals? Banks' offerings then go from being productized (offering choices within a set à la carte menu) to being mass customized (where customers interact uniquely though using the same set of tools).

The key challenge in visualizing the single customer experience box is in imagining how multiple, apparently disparate services might be presented within a single logical framework and common user

interfaces. We explain that here with reference to the deferred payment scheme first developed by [Mas and Mayer](#). But first it is necessary to sharpen the notion of what drives people's financial behaviours, and in particular their notion of goals.

## Fragmentation of savings and goals

Setting money aside for planned future expenditures or for a rainy-day fund is tough if you are poor and you feel like you have a whole back-log of things you'd like to buy today. Poor people need to be quite deliberate in planning what they are saving for, what expenditures to forego and how they are building up assets over time. In this section we look at the psychology of savings, in terms of how poor people define and set spending and financial goals, and how they assign savings vehicles to these goals.

People's notions of spending goals are quite diverse. Some goals are explicit, a typical one across many parts of Africa being paying for school fees at the beginning of each school term. There is a clear amount that needs to be paid and a clear due date; let's call these *objectives*. But oftentimes the goals are aspirational and without a clear timeline – things like buying a motorcycle, a 'permanent' (i.e. brick) house, or a plot of land. There is a clear desire, but no clear plan to get there; let's call these *intentions*. The key difference between objectives and intentions is the degree of earmarking of money to the specific, stated goal.

There is a continuum between objectives and intentions, and in fact goals can transform between these categories. Goals may be recalibrated based on circumstances. For instance, building an emergency fund for unplanned health or funeral expenses may look more like an intention (no specific target amount, no clear timeline for its consumption), but it turns into a very tangible objective the moment someone falls ill or dies. Or I may be saving for a bicycle, but if the roof starts leaking I'll shift the goal to fixing that. In other words, some goals must be understood as a proxy for a category of potential expenditures. The individual might be quite clear about what *kinds* of expenditures she is saving for, but for an observer these might appear as shifting goals.

The next question then is how people assign savings vehicles to (classes of) goals. People will tend to consider three key high-level choices:

- **Liquidity versus discipline.** Liquidity is about having the flexibility to meet changing goals and circumstances, for instance by being able to dispose of saved balances quickly in the event of an emergency or when a good investment opportunity arises. Yet people know that if money is too accessible, there is a constant temptation to spend it. Saving and keeping money saved becomes an active decision that must be revisited every time there is a spending opportunity. These little decisions that prevent depletion of savings can grow exhausting, and once decision fatigue sets in self-control flies out the window. Discipline is therefore about making it hard for people to revisit prior savings decisions, in terms of how much and how often to forego current expenditures and set money aside (we can call this *discipline in*) as well as at any time subsequently when you decide not to raid your savings for current expenditures (*discipline out*).

- **Certainty versus surprise.** People want to know that the money they have set aside is accounted for and safe. They like to be able to check at any point in time how much they have saved (hence the popularity of passbooks and check balance capabilities on mobile-enabled solutions) and they want to know what return they can expect on that. On the other hand, people also like to surprise themselves about how much they have saved, to feel the elation of breaking the (real or virtual) piggybank. They may also embrace surprises as savings rewards, either by investing in schemes with higher though uncertain returns, or by participating in a lottery mechanism. While certainty creates confidence, an element of surprise carries more of a prospect of a different future and that can be more motivating.
- **Privacy versus social display.** People may have a strong preference to keep larger amounts of savings private given social pressures to share bounties. On the other hand, saving publicly helps create the commitment of regular savings which members find so important, and it can also be used to signal success or claim social status.

The choice of savings vehicle will therefore depend on the nature of the goal in question. School fees, which I—and everyone else around me— need to pay one way or another, might be saved in a mechanism that involves more discipline/less liquidity, more certainty, and more social contact. A village-level rotating savings scheme might meet these criteria. The motorcycle that I aspire to might be saved in a mechanism that involves more liquidity/less discipline (I might want to change my goal, after all), more surprise (I'll take a gamble on it) and less privacy (kind of announcing that I am working towards a bicycle). Buying a couple of pigs might meet these criteria.

People have attached a remarkable range of informal discipline-building mechanisms to their savings practices, among them:

- **Fragmentation** of savings across multiple pots, assigning a clear purpose to each. Creating a tight mental association between savings objectives and instruments (e.g. the goats are to pay for school fees and uniforms, the ROSCA is to buy a sewing machine) helps keep savings goals top of mind (you are reminded of your children's future every time you see the goats) and makes it more difficult to justify to oneself tapping into these savings on a short-term whim.
- **Indivisibility** of individual savings pots to prevent casual raiding. People often save in gold jewelry rather than gold ounces, they convert a pile of small banknotes into fewer larger ones, and trade up from chicken to goats to cows. One might be tempted to take out a one-dollar bill from under the mattress or sacrifice a chicken to fulfill some small desire, but everyone would hesitate to break a hundred-dollar bill or sell a cow unless there is a strong reason. There is a higher guilt-factor about tapping into a high-ticket savings item.
- **Mental labeling** of broad savings categories, for instance drawing a sharp distinction between savings and investments, or calling certain forms of savings heirlooms. All these represent *not-consumed* assets, but calling something an investment or an heirloom removes it from contention for meeting day-to-day needs. They seek to reinforce these distinctions by putting

different expectations on them, for instance expecting investments to yield higher returns (and correspondingly accepting higher risks).

- Vesting savings with **social meaning and constraints**. People often seek to add a social dimension to their savings in order to increase the stakes of failing to save or actually dis-saving. This can be done for instance by embracing peer pressure as a way of making regular savings contributions through community-based savings groups, or by displaying savings publicly and linking that to social status.

The end result is a compartmentalized, almost ritualized treatment of savings, where unconscious mental processes substitute for conscious ones.

### **Building on mobile payments: Saving within a deferred payments scheme**

Mobile money, as it is currently conceived, works best when there is a coincidence of timing between sources and uses of funds, as then the transaction can be realized immediately. But when there is separation in time between when money is available and when it needs to be paid out, mobile money has so far proved less useful.

The separation in time can occur for two main reasons: *(i)* if the payment needs to be made on a future date (e.g. rent, school fees, electricity bill, seeds for planting), or *(ii)* if the payment is sizable relative to income flows, such that there needs to be an accumulation of funds prior to the commitment of the expenditure (e.g. buying a motorcycle or new farming implement). These expenditures constitute their spending goals.

Bridging that gap in time between money inflows and expected outflows is the role of the store-of-value account in a mobile money system, except that it appears that most people don't leave much value in there. That is to a significant extent because, for regulatory reasons, mobile money is usually not marketed as a savings vehicle. But it could also be that people find mobile money too liquid, too easily available: like cash in the pocket, it is best gotten rid of in favor of something that will *stick*, lest it comes to be used for something superfluous.

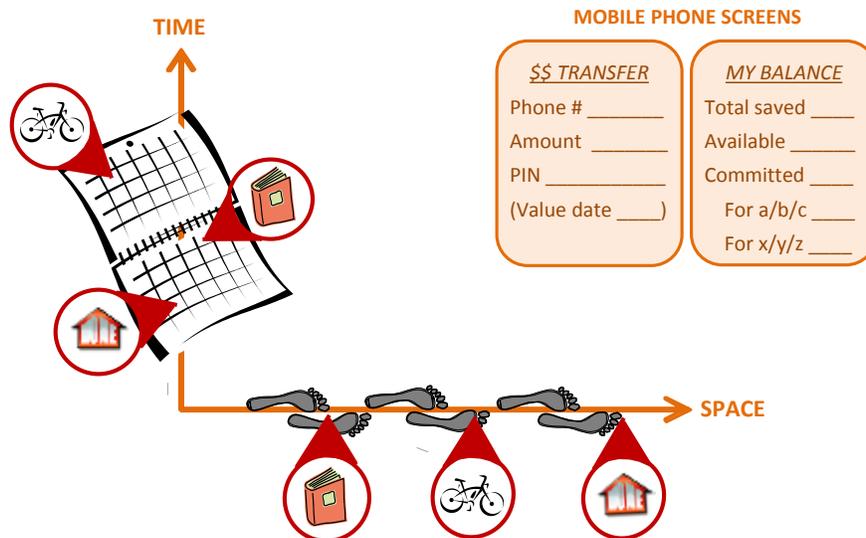
Since spending goals represent future expenditures, one could use a system of deferred payments to apply current income to future goals. One could therefore present savings services as an extension of payments: in the same way that you can use mobile money to send money immediately to someone else, you ought to be able to send money to yourself to be received at a future date. Think of these as Me2Me payments (across time), instead of the garden-variety P2P payments (across space, in real time), as illustrated in Figure 4.<sup>3</sup>

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<sup>3</sup> The term me2me was first used by Erin Taylor (<http://blog.imtfi.uci.edu/search?q=Me2Me&max-results=20&by-date=true>) who observed that a big use case of mobile money in Haiti was to store money and withdraw it at different geographic locations. While credit for the term must go to Erin, here we use it in a different sense, to make payments to self in time rather than across space.

All it takes to create these deferred payments is one additional optional field in the standard money transfer menu: the date when the transaction is to take effect. (Immediate execution could be the default, if no date is specified.) Users can then associate future dates with goals, and commit money to those goals as and when they earn it.

**Figure 4: Transactions in space and time**



When customers check their mobile money balances, the provider would provide a fuller description of saved balances: total amount in the account, available or liquid balance, and value of deferred payments (which could be split between deferred payments to others and to self – i.e. savings).

With these services, users would be able to allocate or *deal* their money across their various goals each time they come across some income. The various dates would operate like ear-marked savings receptacles. Consider two examples:

- Casual laborers would be enticed to reach for their phone every time they have money coming in – which happens unpredictably but often daily. Thus, if I had a good day and made \$5 today, I'll cash in the \$5, send \$2 to myself for February 28 because that's when school fees are due, and another \$2 to myself for June 30 because that's when I aim to buy a bicycle; the remaining \$1 I'll keep in my liquid mobile money account for daily expenditures.<sup>4</sup>

<sup>4</sup> Kim Wilson notes that it is not uncommon for people to like being surprised about how much they have saved, as it creates drama around breaking the piggy bank. Might there be a feature where customers have the option of *not* being able to check balances until the date of the goal (deferred payment)?

- Farmers have the opposite problem: all their money comes at once, at harvest time. Thus, I could deposit the entire value of the crop and send good chunks of it to myself to those dates when I need to pay for the rent of the land for the next season, and pay for soil preparation and seeds at planting time. With the remaining value, I could even create monthly payments to myself emulating a salary until the next harvest.

Remember the previous discussion on goals: some, like school fees, are clear objectives while others, like buying a motorcycle, might represent more a fuzzy category of intentions. Thus, future payment dates to oneself might sometimes be interpreted to be not necessarily exact dates when certain payments are planned but rather future financial decision points. Thus, I might push money to April 1<sup>st</sup> simply so that I don't have to think about how to use that money until then; on April 1<sup>st</sup>, I might decide to do something with it, or simply roll it over to, say, July 1<sup>st</sup>.

The interactions could also be bank-initiated, and evolve into an ongoing conversation. If the customer is saving money for March 31st, why not contact her (by SMS or a call from the contact center) to find out what her goal is and how much she needs? If she doesn't seem to be following through on a pattern of set-asides for her March 31st goal, why not reach out to her to remind her of her goal or find out why she is having trouble?

Each of these interactions is an opportunity to capture information that can be useful in two ways. First, the bank can play back this information to the customer and show that it listens and cares about her. Receipts for deposits, for instance, can now refer to how far the customer is from getting her motorcycle. Second, knowing how people manage their money and observing how regularly they meet their objectives constitutes valuable information for credit scoring (more on that later).

Me2Me payments to future dates are functionally equivalent to commitment savings sub-accounts, each of which is associated with a particular future date. Through this scheme, there is no need to pre-define or open multiple accounts. In the customer's mind, each date, and hence each sub-account, would be associated with a goal.

Most people save because they want to buy something. Applying a payments logic to savings behaviors makes it more tangible and relevant for people. It's parking money for a purpose, it's pushing money forward. From a marketing point of view, it reinforces the positives (the spending goals) rather than the sacrifices (savings).

Imagine a bank that never uttered the words savings or loan, only motorcycles and school fees and retirement. The account would be pretty much the same for all —simplicity!—but each customer would experience it differently. Each customer would be associating a different set of goals and dates with the account, and the bank would have a different understanding of what they need and what their credit risk profile is.

Where there is a very common goal, such as school fees across many countries in Africa, that could be a useful prototypical use case to drive marketing of deferred payments ('pay yourself to pay for your kid's school'), much like 'send money home' was used to drive the notion of P2P payments in Kenya.

Enabling Me2Me payments could offer significant added value for mobile money providers. But more importantly, it can help soften the brutal network effects that are inherent in the early phase of development of P2P networks. With Me2Me, mobile money may be very useful even when few other people are on the network, because it helps people manage their own money. If people were comfortable keeping higher e-money balances it would likely increase the activity rate on mobile money transfers, as well as reduce the proportion of transfers that are converted back into cash – a costly step.

### **Help me save: discipline on the way in and out**

We have seen how a payment platform can be used as a savings platform technically, simply by adding the possibility of making payments over time and to oneself. But turning it into a full-fledged savings platform requires adding features that help people link their savings vehicles to particular savings purposes or spending goals. That is, linking the electronic cloud (book-keeping) with the neural cloud (psychology).

A full savings proposition would need to address three specific aspects where people need help:

- **Discipline in:** mechanisms to help customers set money aside into their savings vehicle(s)
- **Discipline out:** mechanisms to help people keep money in their savings vehicle(s) once it is saved
- **Rewards:** a reward structure that incentivizes customers to save, i.e., to utilize mechanism for discipline in and discipline out.

A lot of the academic literature and practitioners' product development is focused on the *discipline-in* mechanisms. They typically take the form of automatic savings set asides, or, in our language, standing orders for deferred payments to oneself. A savings plan might require users to deposit a certain amount to a savings account with a pre-set frequency. Or a current account might be set up so that a certain percent of any amount deposited is directed to a paired savings account. Or customers might be invited to save a certain amount every time they spend money (à la Bank of America's [Keep the Change](#)).

Such features are relatively straight-forward to set up. They have been successful for instance to build retirement funds for the formally employed. But one wonders how relevant they are to the category of the informally- (or self-) employed poor. If no one is guaranteeing an income to them, why should they be guaranteeing a savings pattern to the bank?

For the informally employed who have no guaranteed income and substantial income volatility one day to the next, *discipline in* may be the best addressed through rewards rather than restrictions. It is in providing *discipline out* where restrictions may be as important, if not more, than rewards.

In the next two sections we focus on these two aspects: mechanisms to help customers keep money once they have saved it (*discipline out*) and the rewards that incentivize savings behavior in general. But we need to keep in mind that optimizing the mobile money environment by adding these sorts of features and rewards runs the risk of making the concept of mobile money more complex and practically

unwieldy to manage on simple mobile phones. We therefore propose simplified frameworks which would in principle be implementable on simple mobile phones.

### **Help me keep my savings: Options for balancing liquidity and discipline**

We noted above that when people make financial or investment choices they must strike a delicate balance between liquidity (being able to access funds if and as I wish) and commitment (not accessing funds until I really need to). So far, the deferred payment scheme has shown how people might commit by pushing money forward to certain dates. But what if they need to access their funds earlier? How can a bank expected to offer both flexibility and discipline, at the same time?

One approach is for banks to position a portfolio of products, some catering to the liquidity objective (checking and savings accounts) and others to the commitment objective (deferred payments or time deposits). Users can then segment their wealth and treat part of it as a liquidity reserve and part of it as a commitment fund. But the choice seems unnecessarily artificial and removed from most people's daily worries. Remember that no one is guaranteeing them a periodic income, they are exposed to deep crop price fluctuations and crop failures, and no one is underwriting their health risks. They may want to put away some savings for the future, but they will want to retain access to their money if a new business opportunity arises, or if they get sick.

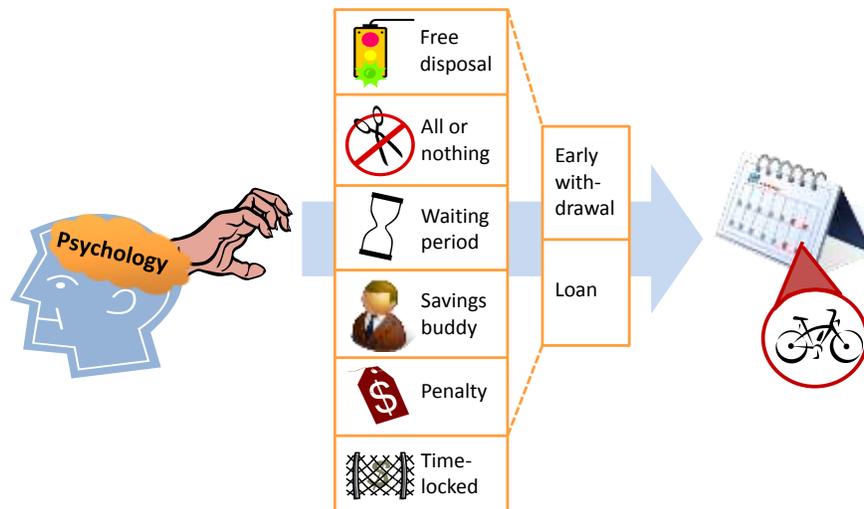
Instead of assigning each dollar I save to either a liquidity pool or a commitment pool, I'd like to assign a measure of liquidity and a measure of commitment to each dollar I save. I want to strike a balance between flexibility and discipline with each dollar I resolve to set aside, based on what I think I am setting it aside for and how much uncertainty I have in my life. I may want more commitment if I am setting aside money for school fees (which I need to pay one way or another) than for a bicycle (which I can defer if a more urgent need arises).

What we need is more of a continuum in liquidity-commitment options. This would need to be supported, functionally, by having the user assign *a priori* an early withdrawal option to each saving goal (which might be associated with a date or sub-account).

Six such options are depicted in the first column in Figure 5. The two extreme options, at top and bottom, are:

- **Free disposal** (full liquidity): the user is entirely free to withdraw any amount saved at any time even before the specified due date. The deferred payment still contains a mental discipline element, insofar as one can mentally associate a purpose and a timeframe to a particular pot of money. This can be reinforced by the provider with every early withdrawal made (e.g. on a small withdrawal: "are you sure you want to be set back your motorcycle fund by \$10, when it's not even March?"). But there is nothing stopping users from accessing their money.
- **Time-locked** (illiquidity): the account is illiquid until a defined point in time in the future, the deferred payment date. This offers full commitment on amounts saved.

**Figure 5: Early liquidity options**



In between, there might be the following four early liquidity options. Their objective is to make it a little hard for customers to dip into their savings prematurely, but falling well short of blocking access.

- **All-or-nothing** (indivisibility): early withdrawals are allowed, but they must be for the entire balance. The intention is to raise the stakes of dis-saving, thereby providing liquidity for large emergencies but preventing casual account raiding. Of course, if the full amount is not required for the emergency, the user can still liquidate the deferred statement and set up a new one to the same forward date for the unused balance.
- **Waiting period**: users must pre-announce an early (partial or full) withdrawal, and the funds will become available one or two days later, which gives the user an opportunity to re-think whether the early withdrawal is justified or not. This seeks to avoid impetuous financial decisions.
- **Peer pressure**: the user must nominate one person they trust upfront who will act as their 'savings buddy.' The buddy is informed of, or even must agree to, any (partial or full) early withdrawal. The buddy would readily agree if she knows there's been an emergency, and can talk to the saver if she feels the saver is being rash. The sheer notion that the savings buddy would be notified may by itself discourage hard-to-justify early withdrawals. The consultation with the savings buddy would occur automatically by SMS.

- **Financial penalty:** there is a financial cost to exercising early liquidity, which might be a flat fee (to disproportionately punish small temptations) or a percent of the amount withdrawn.

All these early liquidity options are intended to be deterrents –but not outright barriers— to dis-saving. There is a further separable choice of how to structure these early withdrawals, represented by the second column of Figure 2:

- **Liquidating savings balances:** this is the straight-forward reduction of saved balances following an exercise of early liquidity. This is easiest to implement, but has the drawback that the continuity of the savings goals is compromised or may even be extinguished when clients exercise early liquidity.
- **Borrowing against one’s savings:** savers can request a loan up to the value of what they have stored to a certain date. An amount equal to the unpaid balance of the loan is frozen from that deferred payment balance, so the loan is riskless. There might be fixed or flexible repayment terms on the loan, which in effect offers clients a path to rebuild their savings. There might be an interest cost to the loan, which we can map to the *financial penalty* option above, but equally there might be no interest if other discipline mechanisms are used instead. Providing early liquidity in this fashion gives savers an opportunity to meet unforeseen needs while preserving savings goals. It is often observed that poor people save and borrow at the same time, and that’s because they are simultaneously juggling goals and needs.

With the two dimensions shown in Figure 5, we have created a set of 11 liquidity options – five early liquidity conditions, each of which can be applied either as a direct withdrawal or as a loan, plus an illiquidity option. Thus, for a bank, helping discipline savers goes beyond extracting time commitments and can include a variety of other planning devices which customers might be free to choose from. It may not be necessary to offer all these options: with appropriate market research, this can be boiled down to the essential set of options that people consider most useful.

Regardless of how this is implemented, here’s the key: people yearn for ways to commit to themselves and possibly to each other in the community, but not to outsiders and much less to banks. In their informal savings mechanisms, they don’t commit to the savings medium itself: they make no promises of long life to the cow. Bank commitment mechanisms (recurring deposits, time deposits) are all about committing, in the first instance, to the bank. That doesn’t feel right to poor people: no one is guaranteeing them anything, why should they be guaranteeing money to the bank?

### **Adding credit to the mix**

So far we have bundled payments and savings into one consistent customer experience – consistent because they fall into one logical money management framework accessible through a single coherent user interface. Above we have seen elements of credit creeping into the proposition as well, which we can now formalize.

Mobile money so far has been a pure prepay product, acting *like a debit card*. The absence of credit in the system allowed it to be sold through third-party, mass-market retail channels, without requiring any customer screening. But its usefulness will grow when it evolves into being also *like a credit card*. To do so scalably requires reliable credit scoring, which will come from either capturing more relevant financial information from people or harnessing community-level information.

Credit is important because it expands customer's payment opportunities. The deferred payment scheme outlined above allows people to build their own pre-paid installment plans – accumulate money, then use it. Credit offers different means for the same purpose: it can be thought of as a post-paid installment plan. Credit is also important because customer willingness to pay is higher for credit (pay-out now, discipline later) than for savings (discipline now, pay-out later), and hence is often a key driver of profitability for banks and microfinance institutions. The possibility of credit is also an important hook for people to choose formal over informal savings in the first place.<sup>5</sup>

We can incorporate credit into our framework in three ways:

- **Credit collateralized by user's own savings.** As mentioned earlier in the liquidity section, it ought to be possible for users to request credit against a deferred payment or savings balance. If the user's savings are frozen until the credit is repaid, this is fully collateralized credit and hence should be riskless for the institution and cheap for the user. This mechanism gives liquidity to users without breaking their mental model of how and why they save.
- **Personal credit scoring based on users' past financial behavior.** The deferred payment scheme gives providers a good perspective on how people manage their money. If the bank knows how often I set goals (number of deferred dates I use), how regularly I contribute to them (number of deferred payments I make), how often I exercise early withdrawal options, and the purpose and extent of achievement of my goals (based on information obtained from the user through outbound calls from the provider's contact center, as mentioned above), then the bank has a pretty good handle on my financial habits. That ought to translate into automatic credit based on a behind-the-scenes credit scoring engine. The provider can now offer the customer to advance the rest of the money the customer needs to achieve a particular goal. The promise of the advance itself can induce the customer to set aside some more money ("if you get to 50% of your goal within a month, we'll advance the rest of the money you need for your motorcycle").
- **Social credit scoring based on the quality of users' social network.** A user soliciting credit might be able to extend his personal credit score by asking peers to vouch for him. Peers need not be guaranteeing the debt, they could simply be endorsing the borrower. People would be assigned a social credit score based on the repayment track record of people they have vouched for in

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<sup>5</sup> Susan Johnson calls this a "credit-led savings strategy. In her words, "*Depositors will be attracted to deposit funds in formal institutions if an acceptable reciprocating borrowing proposition is clearly in place.*" See Susan Johnson, "Kenya's financial landscape and the search for financial inclusion: Tectonic shift or the rift revealed?" Report for the Financial Sector Deepening Trust of Kenya, January 2012.

the past. They could build up social capital with their social network by vouching for them, but their social credit score would reduce and eventually vanish if they vouched for people who end up not repaying their loans.<sup>6</sup>

## **Adding rewards**

So far we have discussed features that embody certain possibilities and restrictions, not rewards. What is the proper way of incentivizing certain actions, beyond enabling them technically?

Banks typically concentrate their rewards on one or two dimensions: a toaster on account opening, monthly interest on saved balances. This may be adequate under a narrow product perspective, where the customer behaviors being sought may be narrowly defined. But how can this be extended to a customer experience logic, where the objective is to get customers to use the tools available to them rather than to *pull* particular products?

The problem is that, under this perspective, the range of customer actions (or behaviors) and outcomes that the bank might want to reward is rather large, whereas the total amount of money available as reward might be very small. This will be the case particularly for poorer customers who are likely to incur higher transactionality (as their income is more volatile, they are paid with higher frequency, and may be exposed to more risks) but will probably have lower expected savings balances and may be less subject to credit.

In this case, the best course might be to recognize each customer action individually but only make the reward tangible on a consolidated basis. This can be achieved with a system of points, analogous to airline miles.<sup>7</sup>

With a points program, a bank could variously reward (that is, assign clients points for): the number and size of deposits (sacrifices) the customer makes; the number of deferred payment dates (goals) a customer sets and how far into the future they are; total average savings balance; and the attainment of goals, both in time (no early withdrawals) and value (achieving the target amount); the number of advances taken and their prompt repayment. In addition, extra points may accrue if the customer acts as a savings buddy for someone else's savings goal, or vouches for a debtor who does end up repaying on time.

The exact rules for assigning points become less important the more opportunities there are for getting points, and the less immediate is the realization of the value from the points. It might seem complex to explain precisely how points are allocated, and probably few customers would try to master the optimal strategy they might use to maximize the number of points. But customers would come to understand that there is positive reinforcement every time they use the service, in whatever way they use it.

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<sup>6</sup> A lending service built along these lines is [www.lenddo.com](http://www.lenddo.com). Lenddo leverages clients' participation in online social networks to learn more about them and their relationships.

<sup>7</sup> Points are often used by banks in connection with usage of cards for purchase of goods. See for instance [FNB's use of eBucks](#) in South Africa. But they are not commonly used for other types of usage of financial services.

The more important question will be how and how often customers can realize the value of accumulated points. The principle has to be to maximize customer perceptions of value per dollar of reward. Options might include:

- **Yearly dividend.** Points could be converted into dividends payable into customers basic account, say at year-end. There would be a fixed relationship between points earned and dollars paid out at the customer level, though the conversion rate (and hence the total pay-out) might depend on factors beyond the total number of points outstanding, such as the profitability of the bank in the year.
- **Periodic lottery.** Where regulations permit, points could represent tickets to a regular (weekly or monthly) lottery operated by the bank. Customers may prefer the possibility of earning a big prize rather than the certainty of getting a small reward.
- **Free insurance.** In what is conceptually the opposite of the lottery-based reward, points could represent a level of free insurance coverage for clients. In this case, the points are consumed as a free financial service, thus reinforcing the purpose of the tool itself.

### **The role of peer pressure and social capital**

Microfinance has shown the power of leveraging social capital within communities and invoking peer pressure. This generally operates at two levels: to induce and screen new joiners into groups, and to impose loan repayment discipline. But the use of peer pressure has generally been limited to people living in close proximity, and to the management of credit.

The deferred payment scheme can take advantage of social capital and peer pressure in three ways, two of which have already been mentioned:

- **Vouching for other users' credit requests.** Users can develop a reputation with the bank for reliably vouching for the integrity of other borrowers. Each time they do so they are putting their reputation (but not necessarily their money) on the line. Building up this reputation allows them to help their peers when they require credit, which helps them build social capital within their community.
- **Managing early liquidity.** People who have set money aside to a date may opt to nominate someone they know as a savings buddy. A savings buddy helps you keep your savings intact, either because she won't agree that you are justified in withdrawing your money early, or because you might be shy to ask them in the first place unless you have a good reason. This brings the notion of peer pressure to work for savers.
- **Incentivizing community-level savings.** Imagine that when a bank is opening a new outlet in a rural area and announcing that when the whole village saves a certain amount, it will do something to [benefit the whole community](#): re-paint the school, purchase medical supplies for

the local hospital, build a new football field for the youngsters. What a way to arrive into town: bringing services, contributing to the community, engaging with community leaders. In fact, the bank might be wise to have the community leaders propose what the prize might be (within a spend limit). Moreover, imagine if the villagers could track the village's aggregate savings amount. There might be a thermometer-style indicator on display at some public venue showing how far the village is from the goal. People would get a sense of how their own savings accumulation is going relative to everyone else at the village. There might even be a kind of savings competition between villages, through which your village might gain additional benefit. If all of this is in place, community leaders might be expected to extol the virtues of savings, and savings might just become the talk of the town.<sup>8</sup> Thus, a defined community-level reward could complement individual rewards based on a points system.

The objective is to endow mobile financial services with as much richness of interpersonal interactions as possible. But it will certainly be impossible to capture electronically the subtlety of informal financial relationships. Susan Johnson notes that there is an underlying logic of *give and take* and social connections in people's transactions. *Giving* money to others is a form of saving, of putting money beyond immediate reach: while there is no explicit demand for payback, there is an implicit expectation that it might be returned in some way, eventually.<sup>9</sup>

### **Channel mix: Self-service and assisted**

So far we have assumed that the entire service is delivered through mobile phones, through a combination of customer pull (through a simplified menu structure) and bank push (through outbound calls or text messages to customers). We can call this the **basic mobile self-service channel**. Customers would need to go approved **cash merchants** strictly for cash in/out.

However, the complexity of the service might warrant establishing complementary assisted channels where customers can get fuller or more conveniently accessible information relating to the service. One can think of two complementary channels. There might be a **face-to-face full-service channel** in which existing or prospective customers can go to get financial advice and be guided in learning how to use the self-service capabilities on their mobile phone. This would likely be a brick-and-mortar channel directly managed and staffed by the financial service provider or bank that is behind the service.

There might also be an **enhanced kiosk self-service channel** based around a shared device in some public location, perhaps at selected cash in/out agents or at the branches at partner MFIs or NGOs. The device might be a tablet with an enhanced user interface—larger screen, touch-screen capabilities—but crucially it would be facing the customer rather than a clerk. A clerk might assist them technically to operate the device, but would not be advising on products or financial matters. While customers would be encouraged to use their own mobile phone to do basic things like send money (across space or time)

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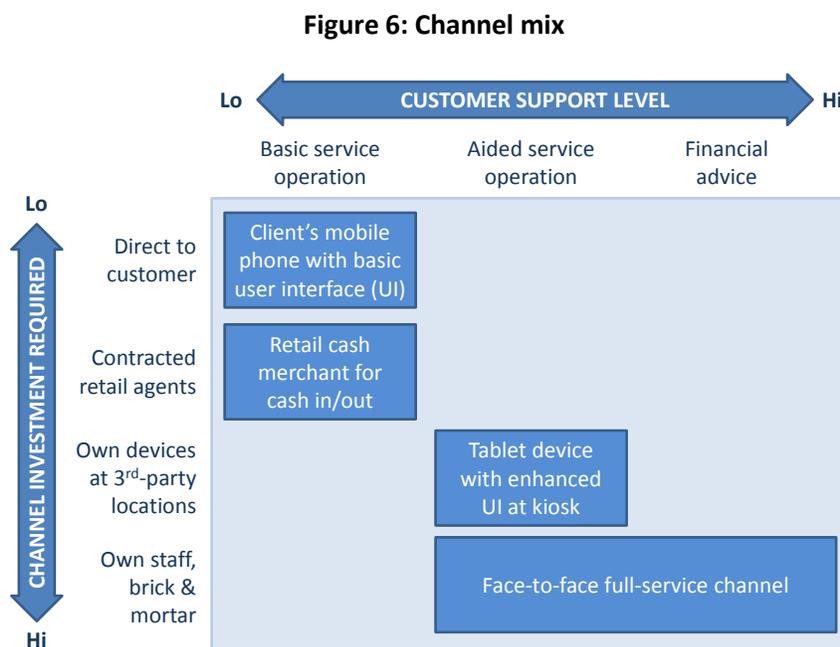
<sup>8</sup> Kim Wilson tells how in Coastal Orissa in India communities chart progress against communal savings goals (for disaster preparation for the incoming floods or communal resources like hand pumps and grain banks) on a communal wall.

<sup>9</sup> Susan Johnson, *opcit.*

and check balances, they might prefer to go to the kiosk for time to time to gain a more intuitive, fuller view of their financial situation and options. It might also be used by people who do not own mobile phones.

While offering these support channels may be essential to create enough understanding and trust in the service among clients, it is important that these channels do not dominate because otherwise the service is not likely to be economically sustainable. Access costs on the customer side (in the form of trips to distant locations) or channel costs on the provider side (terminals and/or staff) can quickly obliterate the economics of serving poor people. The mobile self-service channel needs to become the main focus point for interactions. But especially in the early stages of testing and adoption of this scheme, working these channels together will be essential.

Figure 6 maps the four channels mentioned above along two key dimensions: how much of a heavy investment do they require from the promoting financial institution, and how much service support do they offer. The objective is to place as many customer interactions as possible through the top-left quadrant – involving low customer support through a direct channel.



### Making it work for the provider: pricing and business case

The business model would build on top the model already in place for mobile money, namely: charging per transaction fees on P2P money transfers and cash-out. Account registration and cash-in tend to be free to customers, though the provider generally pays agents a commission for both. Cash-in commissions are generally recouped by the provider at the time of cash-out (i.e. the cash-out fee payable by customers is roughly equal to the commissions payable to agents for both cash-in and cash-

out). Thus, the business model works for mobile money providers as long as there is a rough balance in the number of cash-in versus cash-out transactions.

With the expanded service proposed here, it is envisioned that Me2Me transactions would be free, i.e., customers wouldn't be charged for reallocating their money across sub-accounts. However, new direct revenue sources would open up:

- **More savings mobilization.** The fragmentation and commitment features would result in higher average customer balances. This should result into a funding-cost advantage for the provider if licensing terms permit the provider to intermediate those funds, or greater interest income if it is able to deposit customer balances into a pooled account at a bank. Raising deposits at the base of the pyramid will never be juicy business, but it could definitely make a nice business even for poor households (see Box 5).
- **Margin on loans.** The system ought to result in good quality credit being placed, which would generate additional interest income (and possibly fees) for the provider.

#### Box 5: What might be a reasonable savings goal?

Can we agree that the aspiration should be for poor people to have at least one month's worth of household income safely saved? A buffer of less than one month's income would leave the household in a very precarious condition should the main bread-earner suffer a protracted illness or experience a spell of unemployment. The household would be forced to take on credit at its most vulnerable and uncertain moment, or take the children out of school thereby possibly locking in the short-term situation into longer-term disadvantage.

A month's worth of household income for a family living at the \$2-per-day poverty threshold is actually more than \$100. (Remember that's \$2 *per person* at purchasing power parity exchange rates; multiply by 4 or 5 household members, divide by two-point-something to convert to market exchange rates, and multiply by thirty days in a month.) For such a household, savings of more than \$100 can be considered to be *impactful* in the sense of drastically reducing the risk of falling into abject poverty.

An account with an average balance of more than \$100 is likely to be profitable on a stand-alone basis. (If the intermediation margin attributable to savings is 10% per annum, an account with \$100 average balance yields \$10 in revenue to the bank — enough to pay for ongoing IT and account maintenance costs and the odd call to the call center.)

A \$100 target average savings balance might seem high, but in fact it would probably be more about capturing savings that now go into informal options than about instilling new savings behaviors. The prevailing view is that poor people do save, it's just that they don't count on formal institutions to help them.

We must not use average savings balances only as a proxy for how *pro-poor* financial inclusion schemes are in targeting their members. Average balances should be, first and foremost, a measure of how

powerful savings are in members' lives.

In some countries, such as Kenya, the mobile money provider is not itself able to collect interest on the pooled account or issue credit. To benefit from these two additional revenue streams, the mobile money provider would need to structure its offering in such a way that a bank is the customer account issuer of record and negotiate some kind of revenue share with the bank.

A separate benefit of increasing customer balances is to reduce the number of withdrawal transactions taking place. This would reduce the total cost of operating the mobile money service, since agent commissions represent a significant share of the cost of the service. On the other hand, the mobile money provider might find itself funding agent commissions on cash-in without these being compensated by customer charges upon cash-out. Thus, the provider would need to monitor carefully the impact of this service on the ratio of cash-in to cash-out transactions.

On the cost side, the business case for this service would need to factor in some additional costs introduced by the scheme:

- The cost of the point-based rewards, as mobile money typically does not offer any interest of rewards.
- The increased burden on marketing and contact center resources, due to the more sophisticated nature of the offering.

### **Beyond products: Financial service as a tool for personal financial management**

Let's recap where we are at. Savings and credit enable a shifting of expenditures in time. Therefore, savings and credit services are a logical extension of a payments service. Savings propositions can be built by adding a time dimension to basic money transfers, and marketed as (pre-)payments to one-self. Presenting savings opportunities as deferred payments has the advantage of reminding people more directly of why they are saving at all. A savings service should begin by helping people *triage* across a range of savings purposes.<sup>10</sup> It should also provide people the option to define how inflexibly they want to stick to defined goals, as emergencies may occur and goals may shift. Thus, savings needs to be conceived as an *experience*, not just as a fixed set of receptacles for funds.

Rather than confronting poor people with a barrage of separable financial products, we need to envelop them within a consistent customer experience that blurs the boundaries between the various constituent products. Whether it's by providing electronic payments, savings or credit, the objective is to help customers buy the things they aspire to. We are also blurring the boundary between formal and informal financial services by bringing in elements of self-discipline, peer pressure and social capital. Even more fundamentally, presenting mobile financial services as means for planning expenditures involves a blurring of the notions of savings and consumption. *Buy that bicycle you've long desired* can be as much a call for consumption as for saving – you'll manage to buy the bicycle by not buying other

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<sup>10</sup> Thanks to Kim Wilson for offering the *triage* expression.

(supposedly less important) things in the meantime. That's why the ability to plan is at the heart of the savings problem.

Building strong relationships with customers – and using them effectively – has been essential to early microfinance models. To bring effective financial services to millions more poor households, providers need to continue developing a high level of intimacy with their customers. Those relationships help providers learn from customers and permit them to propose the right thing at the right time.

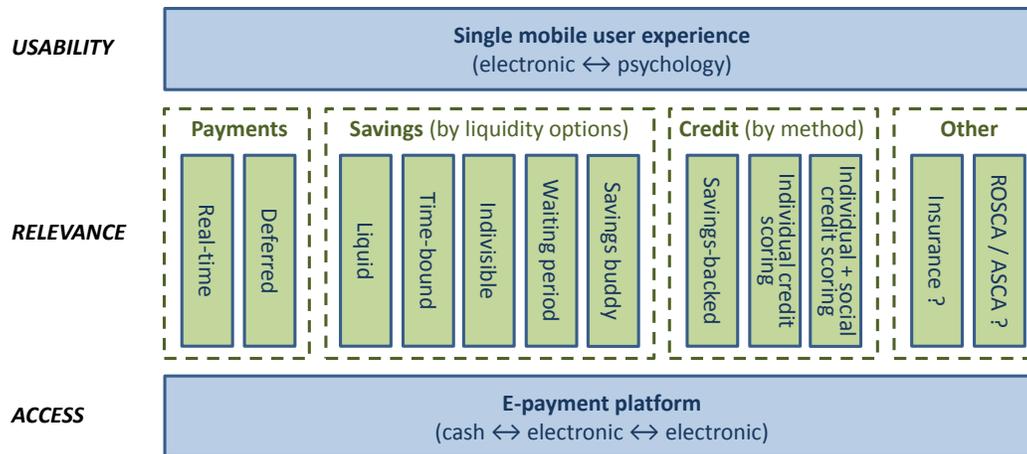
The most ambitious project to-date in this regard is the *private banking for the poor* model of KGFS in India. KGFS's strategy entails high-touch individualized service and product recommendations based on thoughtful analysis of livelihood sources and asset portfolio analysis. It may seem counter-intuitive to provide high-touch services for the poorest, but the KGFS premise is that private banking seems right for the very affluent (who have complex wealth management choices to make) as much as for the very poor (who have vital risk management choices to make). It's the people like you and me in between who feel adequately served by helping ourselves from a menu of off-the-shelf banking products.

Building a high-touch channel reaching millions of poor people is an expensive proposition, involving steady investment in staff training. Any staff-centric model is also likely to suffer from inconsistent quality of service as it grows, because quality will become harder to measure and financial measures of success will tend to dominate. This paper is an attempt to visualize what a *virtual KGFS* model might look like – one that achieves the same level of customer support but with a higher element of self-service and remote interaction.

Doing all this through a mobile phone is in fact both a challenge and an opportunity. A challenge, because the kinds of phones that poor people have in developing countries do not present rich user interface options. Moreover, customers need to step up to the task of learning about both financial services and a novel use of mobile phones. And an opportunity, because the personal, always-with-you, connected nature of the phone can be used to conceive savings services as a conversation between the client and the provider. Clients are empowered because they can help themselves through the mobile self-service channel.

Figure 7 is a blow-up of the right-hand side of Figure 3, with the three barriers we identified in the very first paragraph of this paper. The bottom layer, which provides *access*, is the basic mobile money platform, which we have taken here as a given. The middle layer, which provides *relevance*, reflects the service options that have been mentioned previously, plus two more which haven't been defined: insurance and group-based savings and loan products. The top layer is the critical one: it provides the *usability* framework.

**Figure 7: The full customer experience sandwich**



A central theme of this paper has been how the services in the middle need to be designed so as to fit seamlessly within a common service logic, reward structure and mobile user interface. Only then will it be possible for providers to position a variety of services with their clients, and for clients to become comfortable in using them. Under a branchless banking scenario, i.e. in a setting with very minimal face-to-face interaction between the provider and its clients, financial services need to be presented as an integrated experience, not as independent add-ons.

In this fashion, the service becomes a flexible tool in people's hands to manage their finances. The value to users then is more correlated with frequency of use rather than with the specific amounts of each service consumed (so much savings, so much credit). A tool that provides people with more effective management of goals can be expected to lead them to articulate their goals more deliberately. Isn't that what financial education is all about?

In so far as it is a tool, the service might be the same across a broad range of socioeconomic segments. Where important differences will arise is in *how* it is used, and that might drive differentiated marketing across segments. This can apply to gender, geographic location, education level or primary income source. We can standardize the tool, but there is no reason to standardize the uses of the tool. That's the advantage of moving away from products: products are more directly bound to uses, and hence standardizing products may be efficient for the provider but it is limiting for the customer.

Some might question whether poor people can possibly understand how this all works. The premises are reasonable enough: many poor people are illiterate, have never dealt with money in other than touchable form, and have seldom used a mobile phone for anything other than making the odd call - and now you want them to type numbers into a phone to transfer money electronically into a virtual account? All I can say is: people do learn, if only you market to them a service that they *want* to learn about. The real marketing challenge at the base of the pyramid is not so much telling them *how* to use it but *why* they should use it. If you have their attention (and for me the litmus test is: does this address one of the 'top 10' practical problems of being poor?), they'll make sure to find out they can use it. They will pick up the details - not necessarily from the provider but perhaps from a savvy nephew, a friend

who came over from the big town, or the corner shop that wants to be your cash merchant. It has worked for mobile phones in general: think of how complicated it is even for you to choose a phone and a tariff plan, and how badly they explain it to you at the mobile phone shop. But you still want one! And it has worked for M-PESA in Kenya, with its 'send money home' marketing mantra.

### **Some final thoughts: Financial information is financial access**

The notion that we cannot count on brick-and-mortar investments to massively expand access to finance in developing countries is now widely accepted. We need to go branchless, and to do so safely we have an opportunity to leverage mobile phones that are increasingly ubiquitous. That's clear at an infrastructure level, but there is insufficient understanding of what that means at the service level.

The starting point is recognizing that financial services are primarily about *information*. Mechanically, financial services are about recording a bunch of credits and debits: how much you'd like to transfer to whom, how much you have, how much you owe, how much you'll be owed if certain events occur. More fundamentally, financial services are about trusting or being trusted, and that's a function of the information you have on the other party.

Viewing finance as an information service has five implications. First, money needs to be digitized –i.e., turned into pure information—as much and as quickly as possible. I'm not saying going cashless, I'm saying that we need to create a cheap and extensive infrastructure that allows poor people to convert cash into electronic value on demand, in small amounts that are relevant to them, as close as possible to where they live and work. How many physical points do banks make available for poor people to cash in their meager wages? (ATMs don't count, those are still mainly about de-digitizing money, aka withdrawals).

Second, information about money has value in and of itself. Financial service providers must try to extract as much information value as possible from each interaction they have with their clients, and indeed they must seek to maximize the number of interactions so that they can create a fuller picture of each client. That can power service propositioning and credit scoring algorithms.

Third, we need to get over the obsession with finding silver-bullet financial products and focus much more on the *platforms* that create the basis for proper service innovation and delivery of whatever it is that customers need. Mobile money needs to be enhanced with a framework that puts customers in control of how they think about their financial needs and aspirations, that collects relevant insights from customers, that presents all the information that is pertinent to customers in a simple framework, and above all, that makes transactions commercially viable so that they become the friend rather than the enemy of the bank.

Fourth, information commands a premium if it is *immediate* – available here and now. Convenience is just a pre-condition: finding the channels through which I can find service. Immediacy is about being able to take action the moment I make a mental decision (pay the electricity bill, set some money aside for that bicycle I want to buy). Exercising responsible finance is about having discipline, and putting hassles and delays in front of the customer is an excellent excuse to avoid it.

Fifth, information wants to be accumulated, but mostly it wants to be shared. We need to look at poor people's money in the same way. The microfinance worldview has been mostly about accumulation: helping microentrepreneurs build up the capital they need. But what poor people need most is to be *connected*. With connections come opportunities. Financial inclusion is then about connecting poor people to a digital payments grid that allows them to transact more cheaply and broadly with each other (support networks across friends and families), larger service providers (utilities), their business relationships (clients and suppliers), government entities (getting social welfare payments or pensions), and yes, financial institutions. Primacy has to be given to the network; financial products will follow if that network allows for efficient distribution.

### **What institutional form will all this take?**

Banks tend to do none of these three things when it comes to the poor: they don't go near where poor people live and work, and when poor people go to them they tend to discourage transactionality through charges and long lines. Indeed, in banking the poor there are two key service attributes which are often neglected: convenience and immediacy. Formal financial service providers lose out to a range of informal services or practices mostly because they are not so easily and reliably available.

It is not surprising that mobile operators have taken the lead in branchless banking in developing countries. They've seen the power of letting people communicate and share pictures *here and now*. They reworked their distribution around prepay to allow people maximum buying convenience. They know they are payment layer enablers rather than packaged product providers.

But mobile operators' role may remain limited. In their core voice and data services, operators deliver basic connectivity but struggle to supply the value added platform layers on top (content management, unified communication or business support services). In the same way, other financial service providers will need to ride on operators' mobile money systems to build the kind of rich, tailored customer experiences that people and entrepreneurs at the base of the pyramid want.

Who will these financial players be? I don't think these players exist yet, with perhaps a few exceptions: existing ones would require too much reinvention. There isn't much evidence worldwide of larger commercial banks going down-market successfully, they lack the conviction that it's feasible or at least that this activity can meet the profitability rates they are reaping in their core market niches. Microfinance institutions may have the vocation, but their sub-scale, vertically integrated model saddles them with high costs which can only be recouped through expensive credit.

What we will need is precisely the opposite: nimble players that are specialized in horizontal segments of the value chain. That's what being a platform player means: you do only a small part of the total job, but you feel secure doing that because you can do it better and more cheaply than others, and you come up with frequent innovation. These are players who will think more in terms of customer interfaces and tools rather than in terms of financial products and education. Actually, we saw in Box 4 that they have started to emerge, in the US. That's also not surprising: that's the country where society and business has gone furthest in understanding what the information age is all about.