

## Money Transfer

Remittances are that portion of an expatriate's earnings sent back to family members remaining in the home country. For generations remittances have constituted essential components of less developed economies; they provide positive economic stimuli and hard currency reserves. In African countries, remittances routinely account for over 5% of GDP; in five Latin American countries, remittances exceed 10% of GDP.<sup>1</sup>

Expatriates use a variety of means to transfer money, most being inefficient. Approximately 80 percent of the individuals in developing countries have no bank account, frustrating some of the more obvious means to accomplish a safe funds transfer. In the United States a duopoly (Western Union and Moneygram) controls over 90%<sup>2</sup> of the US\$41 billion urgent money transfer market.<sup>3</sup> Western Union's dominance is comparable to that of Microsoft; it routinely earns 30% margins, revealing the lack of competitive alternatives. Western Union is partnered with national post offices in 25 countries, including those of India and China.

In 2001, approximately 95% of the transfers originated in the United States called for funds delivery in another country; flows from the U.S. to Mexico exceeded US\$9B, and US\$23B for all of Latin America and the Caribbean combined. There are no reliable published statistics on the African remittance market; educated guesses place it at over US\$10 billion per year. In 2000, Western Union transferred US\$1.2 billion into Africa. Other estimates show that Senegal alone received over US\$1 billion from the United States, and Senegal's ties to France would suggest at least comparable flows from there as well.

The average Western Union transfer into Africa is US\$400; the average transfer into Latin America is US\$200 (sent 7-8 times per year). Demographic differences may account for much of that spread. Two motivators for a smaller number of relatively large transactions are cost and convenience. The total cost of a transfer ranges widely but "competitive" rates are in the range of US\$20 to US\$25 for sending US\$200. This cost would not drop much if less money were transferred, so pricing naturally exerts a bias towards

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<sup>1</sup> The figures are: Nicaragua (24%), Haiti (20%), El Salvador (14%), Jamaica (13%), and Ecuador (10%).

<sup>2</sup> 90% is a low range estimate; others range as high as 97%. A merger between Western Union and Moneygram was blocked by the FTC. Both companies have faced more than half a dozen class-action and consumer protection lawsuits alleging high fees, poor exchange rates, and deceptive advertising.

<sup>3</sup> US\$41B is a 1999 figure for "official" money transfers. An "informal" sector of transfers accomplished by various ad hoc means is estimated to be at least as large as the formal transfers.

fewer transactions of higher value. If access to a transaction platform is inconvenient or insecure, for either the sender or the recipient, there is a natural tendency to avoid a transaction until the need is urgent.<sup>4</sup>

A substantial portion of the US to Latin America money transfer business is focused on transfers sourced from relatively low-paid “undocumented” workers. Many companies serving this market are focused as much on the needs of the US-based sender as they are on the recipient. For example, at many such services, senders are not required to present identification or to have a bank account, and the services might be offered at convenience stores and check-cashing shops, environments that may elicit further spending above that for money transfer. Traditional financial institutions that have tried to obtain market share against companies like Western Union, such as Bank of America, have not have much success with these customers because, among other barriers, such institutions typically require that senders have a bank account. For money-transfer services focused on this market, which is very large, the infrastructure to reach and serve money senders in developed countries is as important as the infrastructure to deliver money in developing countries.

However, expatriates living legally in the United States and EU countries typically enjoy easy access to “first world” money transaction platforms such as ATM machines, credit cards, telephones, and the Internet; intuition tells us that such expatriates also have the most money to send home. For such customers, the means to *initiate* transactions is not really a problem, and their focus is mostly on issues that affect family members on the receiving end, such as cost, safety and security, speed, and convenience. Certain market research<sup>5</sup> indicates convenience may be at least as important as cost (although that could be because costs are simply uniformly high in a non-competitive market). By far the cheapest means to reach these senders is the Internet.

Platforms such as Paypal and Xoom address the needs of money senders with bank accounts, but the development of recipient networks is a very hard problem. Meeting the needs of often poor and illiterate recipients in third world countries is a monumental task. Banking services are not common outside of the largest urban areas. Public telecommunications networks that could enable the widespread deployment of “retail” points of presence are underdeveloped. While, as a rule, any entity bringing hard currency into a third world country is officially welcome, interfaces into the financial system will usually involve exchange rate regulation and other burdens that must be managed on a country-by-country basis. While partnership opportunities abound, few partners can actually deliver the means to build a large, retail, cash disbursement

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<sup>4</sup> It is not clear if consumers might prefer to be able to make more frequent, smaller transfers, if it were practical to do so.

<sup>5</sup> From a study by the Pew Hispanic Center.

network. Certain choice partners, such as the largest regional banks and post offices, are already in partnership with Western Union.

## **Requirements**

Before considering any options, it is instructive to review the key requirements for a cash disbursement network that would deliver transactions originated on the Internet. Any such network must provide the ability to:

- Reach and authenticate the bona fide recipients of money; a challenge in countries where there are large undocumented populations and few reliable forms of identification;
- Access incoming transfer orders from the Internet and distribute them widely; ideally to areas not served by data communications networks;<sup>6</sup>
- Deliver cash to recipients who have no banking relationships;
- Absorb incoming hard currency at favorable exchange rates. In many countries where hard currency foreign exchange is in short supply the ideal partner is an entity that has “excess” local currency, and a willingness to pay a premium for foreign exchange<sup>7</sup>;
- Verify, before disbursing hard currency, that bona fide recipients have received the correct amounts of money and be able to deliver “proof” of said delivery to senders.

## **Mobile/Competitive Telephone Networks**

Today there are over one billion cellular telephone subscribers in the world. In developing countries, adoption of cellular far outpaces the adoption of personal computers and Internet access. In South Africa, a decidedly “first world” country by African standards, there are three-million computer/Internet users, and over eight-million cellular telephones. In Nigeria 2.2% of the population have cellular phones, a higher rate of adoption than cable TVs, computers or fixed telephone lines. There are 34 million cellular subscribers in all of sub-Saharan Africa.

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<sup>6</sup> One system design (by the author) uses a one-way satellite network (Worldspace) to deliver forward channel transaction instructions to relatively low cost remote terminals located virtually anywhere. That system cryptographically aggregates multiple transaction confirmations (needed to release cash in escrow) into a single short message to be delivered via a non-satellite return channel, such as an ordinary telephone call or fax transmission.

<sup>7</sup> Various “utilities” that have large retail customer bases and must purchase technology from foreign sources are the classic example.

Throughout the developing world, mobile telephone networks are invariably “venture” funded entrepreneurial companies licensed by governments to compete with a dysfunctional parastatal PTT, and having a mandate to drive telephone service beyond the limits of major urban areas. In many countries, there are several wireless telephone companies licensed to do business, either competitively or in different geographic areas. South Africa has two mobile networks, Tanzania has five; the average across 42 African countries is 1.85 networks per country.

Cellular telephony is closely linked to immigration. Morocco is home to the fastest growing cellular telephone company in the world, because of a very large expatriate community in France that buys phones to use while on vacation in Morocco, and leaves them behind with family members so they can stay in touch.

Cellular telephony is closely linked to remittances. Remittance transactions are rarely regularly scheduled recurring events; rather, each one is an ad hoc transaction inspired by business opportunity, or a family need back home, whose details are learned via a telephone call. Furthermore, a telephone call is often the way in which the logistics of a transfer are negotiated and money receipt is verified.

Wherever banking, credit granting and debt collection infrastructures are underdeveloped, prepaid systems are widely utilized to sell telephone services. In South Africa, more than 90% of all new cellular subscribers choose prepaid cards to purchase service. Globally, 41% of new cellular subscriptions are prepaid.



*In developing countries all over the world urban and suburban landscapes are alive with kiosks and street vendors selling cellular phones and prepaid airtime cards. Entrepreneurs often “retail” telephone calls to those who cannot afford to own a personal or family cell phone. In South Africa, “phone shops” enjoy average call volume of 42 minutes per hour on a 24x7 basis.*

Prepaid service cards are widely retailed by roving street vendors and at small shops. Printing and distributing prepaid cards is almost like printing money. Cash can be collected up front from the

distribution channel, and services do not actually have to be delivered until sometime after a card is actually purchased. Figures for breakage<sup>8</sup> and float are difficult to come by, but are undoubtedly significant.

## **Money Transfer & Mobile Operators**

There are several reasons why Mobile Operators are the ideal partners for a money transfer venture:

- Mobile Operators are major brands in developing countries. They have relatively large advertising budgets; across Africa, a company like MTN has consumer awareness comparable to Coke and MTV.<sup>9</sup> Because the choice of a money transfer platform is largely dictated by what is convenient and practical for the recipient, it makes sense to focus marketing resources on potential recipients, and let them influence senders. Mobile Operators can provide money transfer systems a high degree of leverage.
- Due to their focus on prepaid services, in the minds of consumers Mobile Operators are already associated with a class of retail situated financial transactions.<sup>10</sup> Mobile Operators are also collectors of local currency and yet require large amounts of foreign exchange to support the construction of their networks.
- Mobile Operators have almost new “first world” technology platforms, which are already globally networked, and contain certain infrastructure components needed to enable money transfers.

In order to bring these points together it would be useful to walk through an example of how a Mobile Operator and a money transfer venture could work together to facilitate money transfer.

### **Use Case**

In this example, Banke lives in a “fringe” community in an African country where cellular telephone service is not available. It is, however, available in a larger community about 50 kilometers away, where a large retail market is regularly held. While Banke does not travel on the bus to the market every week, others in her village do, and several have their own cellular telephones. There are also many phone shops in the market.

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<sup>8</sup> *Breakage* refers to income from cards that are sold but never utilized.

<sup>9</sup> It should be pointed out that it is far cheaper to build consumer awareness in a developing country than the relatively noisy and expensive consumer-marketing environment of the United States or the European Union.

<sup>10</sup> A number of Mobile Operators allow a cellular customer to transfer airtime value from one phone to another; effectively an “electronic funds transfer” between two phones/people.

Banke's son, Dayo, lives in America and has access to a money transfer platform on the Internet. In addition, he has his own cellular telephone, so his mother can reach him on those rare occasions when she is able to call.



*This card retails for slightly more than US\$3 and provides the bearer with a unique random number that can be used to facilitate a variety of secure transactions.*

On one trip to the market, Banke purchases a phone card for about US\$3. She has learned that the card has a secret number that can be used to receive money from Dayo. She scratches off the coating to reveal her secret number and actually uses the card's face value to place a call to Dayo. She does not reach Dayo, but leaves him a voicemail with the secret number, for future reference.



Weeks later, she is short of money and cannot go to the market. However, a friend is traveling there and is willing to place a call to her son. At a phone-shop in the market, the friend leaves Dayo a voicemail asking for \$25. This friend need not be entrusted with the secret number since it was communicated to Dayo earlier.

While Banke's card displays a special URL for money transfer, Banke does not understand that detail; fortunately, Dayo long ago heard about the service from his peers in the expatriate community. When Dayo picks up the voicemail, he visits the Mobile Operator's web site and finds a link to a co-branded site operated by the money transfer venture. Dayo creates an "account" tied to his checking account, enters his mother's secret number, and transfers \$50; the site will keep numbers on file for future transfers.

The village in which Banke lives is home to several traditional leaders with adult children who are respected businesspersons and government officials. Their relatives look to them for financial assistance and they generally carry gifts and a certain amount of cash on their frequent trips back to the village. Most have cell phones. Banke knows two or three families with such children, and is comfortable occasionally asking for a favor.

One leader's son, Aanu, is visiting and agrees to advance Banke \$25 and accept a scrap of paper with her secret number as payment. After Aanu returns to his job in the city, back within range of the cellular network, he enters \*141\* Banke's secret number and #. A confirmation message informs him that \$50 has been transferred into his phone account. He recalls that he gave Banke only \$25 and reminds himself to give her the other \$25 the next time he returns home.

## **Risks**

There are minor risks in the above transaction scenario.

Banke used her secret number to place a call, and dictated it to Dayo's voice mail in a public facility; either transaction might compromise the number.<sup>11</sup> In the event Banke is forced to rely on someone she does not entirely trust for a transaction, she has the option of purchasing a new phone card for future use and retiring any secret number that has become compromised.

Shortly after Aanu claimed the \$50 for his cellular account, Dayo received email confirmation that \$50 had been delivered to his mother's secret number, when in fact, days earlier, \$25 had actually been delivered. Neither Banke nor Dayo would discover the shortfall unless they discussed it. However, the network of familial and village trust that made Aanu a party to this transaction serves to insure that he is not likely to be tempted to "forget" to pay the full amount, or retain Banke's secret number for future use without her permission.

## **Incentives, Financial Flows and Logistics**

While Aanu is an amateur money transfer agent, the Aanu's of the developing world are trusted and are collectively capable of delivering large amounts of cash to locations no systematic business network could possibly reach. Aanu is reimbursed for his efforts and cash outlay with cellular airtime, and for the occasional "social favor" transaction; this is sufficient (Banke might provide a small tip as well). Other parties who operate in a more professional capacity will charge their customers fees as the market dictates, and their cellular accounts will tend to accrue correspondingly large positive balances. Many of these entrepreneurs will also be selling telephone calling, and will thereby utilize positive balances in the normal course of business. Those who engage only in money transfer will need to draw cash from their positive balance cellular accounts from time to time. To do so they can go to one of the many customer care offices that cellular companies operate in the developing world. Because these customer care offices sell airtime cards, accept payments for credit accounts, and sell handsets, they always have ready cash on hand. Like financial institutions, these offices may have policies that govern withdrawals and other local laws and regulations might apply; for example, unusually large withdrawals might only be accessible via transfer to an account at a regulated banking institution. A certain amount of structuring will be required in order for a money transfer venture to offer a program that enables these activities without having Mobile Operators wind up being regulated like banks.

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<sup>11</sup> Using the money transfer portal, Dayo can generate secret numbers and read them to his mother over the telephone. This allows his mother to avoid purchasing a phone card entirely and eliminates the need for her to dictate numbers to Dayo in a public setting, where the number might be overheard.

In the above scenario, the inbound hard currency is retained by the Mobile Operator,<sup>12</sup> who only need disburse airtime and in certain instances, local currency. It is in the Mobile Operator's interest to promote the service at a grassroots level so that most transfers are fulfilled by phone shops and the informal sector; entities that will be satisfied by reimbursement in airtime. Mobile Operators can promote the service by offering to pay a "commission" in the form of "bonus" airtime.<sup>13</sup> Such a "commission" might reduce the social friction of "asking a favor" for those dependent upon people like Aanu. Professional moneychangers may charge extra fees, just as check cashing and pawn shops do, but these fees will be paid by recipients, willingly, in accordance with the local micro-competitive situation.

A money transfer venture's revenue can be derived from up front fees charged to the sender, and parameters such as exchange rate, float, and breakage (all of which could be limited by regulation) that apply in a given country and are negotiated with a given Mobile Operator. Because an Internet based upstream network has low costs, net costs will be largely a function of the local agent network. Because some Mobile Operators run networks in multiple countries, a money transfer venture may, on occasion, be able to reach single agreements that cover service rollout in more than one country.<sup>14</sup> For example, in Latin America, one company, TelCel, has operations in Mexico (77% market share), Guatemala, Ecuador, Nicaragua, Argentina, Brazil, Colombia and Venezuela; collectively reaching over 35 million subscribers. In Africa, a deal with MTN Group alone could deliver a presence in four African countries responsible for 63% of the GDP in sub-Saharan Africa; a deal with Vodacom, which carries 10% of all the telephone calls made in sub-Saharan Africa, would deliver three countries responsible for 49% of GDP.<sup>15</sup>

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<sup>12</sup> Depending on regulatory issues, the inbound currency need not enter the country immediately (or ever); it can be invested outside the country. A money transfer venture may create a "sweep" account facility for this purpose; and to retain certain funds in "escrow" in order to guarantee certain (re)payments.

<sup>13</sup> In many cases, a bonus will be entirely economically neutral to the Mobile Operator because the airtime is being purchased with hard currency.

<sup>14</sup> The opposite case, dealing with multiple Mobile Operators in a single country would not be the headache it might seem. Mobile Operators typically locate their infrastructure near the PTT's major central office (and thereby, indirectly, near each other). Furthermore, competing Mobile Operators are starting to implement their own private interconnects, and Africa is seeing the development of several Internet Exchanges. Thus it is becoming quite possible to co-locate infrastructure at a single location from which several different networks can be reached.

<sup>15</sup> Of course the important metric is to reach those countries with large legally resident expatriate populations in the US and EU (Egypt, Ghana, Nigeria, Senegal, Mali, Morocco, India, China). There are other choice pairings to be considered; certain Gulf States in the Mid-East have large "guest worker" populations from India, Pakistan and the Philippines.

## **Technology Issues**

Implementation of the aforementioned ideas requires surprisingly few technology elements, none of which presents much technical risk.

- All developing country Mobile Operators have pre-pay platforms in place that all contain the same key elements including random secret number generation and self-care IVR interfaces to transfer value from a secret number to a handset/account. Most of these systems are relatively modern and have vendor supported APIs for tuning and customization.
- Virtually all developing country Mobile Operators have web sites and Internet connectivity into their core network (for maintenance and support if nothing else).

## **Business Issues**

The business environment and relationships needed to support this model are somewhat more complex than the technical issues. However, Mobile Operators in developing countries are viewed as extremely important businesses by their governments; their executive teams tend to have upper echelon access to government officials and the ability to command attention from banks, accountants, and law firms. Thus, the right partnerships should make assemblage of the necessary business elements a tractable problem by developing country standards.

- An in-country subsidiary (ICS) will have to be created in each country in which money transfers are to take place. This subsidiary would own infrastructure, certain bank accounts, and responsibility for regulatory reporting and licenses.
- The ICS would have as minority shareholders one or more Mobile Operators, banks, and perhaps key private investors. The board of directors of the ICS would be composed of individuals with the ability to facilitate relationships with government ministers and the key Mobile Operators.
- The ICS would have minimal overhead. It would likely consist of a file drawer in a law firm or CPA office (and a retainer fee), a field service contract with an in country IT resource, some collocation space, and a ½ time administrative staff (outsourced). Quarterly board meetings would be held at hotels in a rotating list of important business capitals depending on the country in question.