



## Out of Africa

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## Two Million and Counting

The two billionth mobile phone has been switched on. There are 350 million mobile phone users in China and by 2009 it will be 600 million. India has 55 million and is on the same growth trajectory [1]. In a generation, mobile phones have gone from being yuppie playthings to consumer mass-market toys, yet the mobile phone revolution is far from over. We may have become rather blasé about it, with our mobile phone penetration rates over 100% [2], but then we all had telephones before we had our first Nokia. In many parts of the world, however, mobile phones aren't a convenient alternative to landlines but the only means of communication: they provide connectivity where there was none before. In Africa, to take the obvious example, mobile phones mean real change, even in the least developed countries. By any development measure, Congo is a pretty poor place. Yet it is heading towards two million mobile users: one network alone has 850,000 subscribers [3]. Subscriber growth in several sub-Saharan African countries exceeded 150% last year, and there are now eight mobile phones for every 100 people in Africa, up from three in 2001 [4]. To begin to understand the implications of this, we need to see the strong parallels with PC growth in the developed world: arguably, PC deployment was driven by office automation and game playing, until the rise of the Internet. Now, for the PC, connectivity is king. Never mind the '\$100 laptop', the mobile phone is already Africa's PC, and is having significant socioeconomic effects.

The mobile phone is creating niches that Africa's poor entrepreneurs are able to exploit in new ways. Wherever an opportunity appears, however obscure, someone will move to exploit it within days.

A man with a mobile phone can make a living by hanging around a market and providing a service linking market traders with their suppliers by allowing them to place orders in advance, based on that day's sales; alternatively, the supplier can choose which market to go to, using one of the increasing number of SMS-based market price information services.

So we see the vast growth in mobile phone usage having an interesting knock-on to other kinds of interaction and transaction that we take for granted. Look at payments. If you live in rural Africa, your payment options are pretty limited and so, therefore, is your participation in the wider economy. If you don't live within a hundred miles of a bank branch, don't have a cheque book and have never even seen a credit card or a PC, then how do you send money (perhaps for goods you want brought to a market) to someone else? Some examples clearly illustrate the problem:

- A migrant worker in the city wishes to send money home, back to his family in rural Africa. He can either take some holiday, and travel home by bus (possibly a two or three day journey), carrying the cash himself, or he can pay a relative to do it for him (including the costs of bus travel, food etc for the journey). This is clearly both expensive and a major security risk, since everyone on the bus will know he's carrying a significant sum of cash; there is a large charge associated with this particular transaction!
- If I want to buy three bags of cement from my local merchant, I must first get a chitty from the merchant, then take it to a bank and pay it. I must then wait at least three days, until the merchant receives notification from head office that payment has been received; I can then pick up my cement. Apart from the inconvenience and inefficiency, note that this also means I can only buy cement in towns where there is also a bank, which in itself provides a significant brake on development.
- Bar owners must pay the lorry driver (in cash, of course) for their beer when it is delivered, and before it is unloaded. Given the size of Africa, and the limited reach of the forces of law and order, it is not surprising that a fair proportion of these lorry drivers are held up and relieved, not only of their beer, but all of their cash, too.

In that environment, mobile phones provide an easy and convenient mechanism: for example, you might buy a \$5 scratch card, scratch off the panel to get the voucher number and then text that number to your counterparty. Voila! You've now sent \$5 a few hundred miles across the country for the price of a text message. And the person you sent it to can start using it right away. Try using your UK Internet bank account to send £5 from your account in London to a friend Edinburgh: if you're lucky it will take three days and it may take four [5].

Indeed, the scratch card solution has proved so popular that it has now spread to cross-border transfers. We've been looking at this market in recent assignments for clients in both the financial services and telecommunications sector, trying to assess the market size and find ways for new technology to address that market. We've already found evidence that technology is entering the remittance field: in London, to pick just one case study, Nigerian ex-patriates are able to buy scratch cards for their home network operator in a number of small convenience stores, and are using this mechanism to remit money back home. Simple, but effective.

A number of mobile operators in Africa have developed electronic versions of this mechanism by allowing the direct transfer of airtime from one person to another, thus hugely improving the liquidity of this 'currency' [6]. In places where the grey economy flourishes, 'filling in' for missing services, there is no shortage of people willing to buy that airtime, so it can be easily converted back to cash (at a price, of course). There are initiatives in countries such as Kenya and South Africa working to capitalise on this gap in the market by providing payment services matched to the needs of the poor and unbanked. We have developed a secure SIM toolkit-based service to implement P2P (phone to phone!) transfers for one of them, and it works well, so it is not surprising that many African operators are looking at future possibilities in this area [7].

## Central Not Bank

We think that what's going on in Africa may have wider implications for how people and governments view money and payments. One of the definitions of a currency, for example, is that it can be used to pay debts to the government. In some parts of Africa, mobile phone scratch cards have become a perfectly acceptable means of exchange for paying officials. That makes scratch cards or, more particularly, the prepaid airtime that they are a proxy for, an interesting new form of currency -- and, in many cases, a fungible currency, since it can readily be converted back into conventional cash.

Not only, according to The Economist [8], can you use prepaid airtime to pay officials but you can use it to pay them remotely. They give the example of an office worker whose daughter had been detained in immigration. She bought a scratch card and sent the voucher number to the relevant immigration official, saving the trouble of having to collect up the cash and go to the airport and thereby saving time and money.

This anecdote supports a long held suspicion that connectivity could become a kind of currency as we move forward into an online world: as the IT Director of the UK's biggest card issuer (Barclaycard) said back in 2002, mobile phone minutes are just another currency [9]. We're probably already at a point where fining errant teenagers those mobile phone minutes instead of fiat currency would be a more effective sanction and as connectivity becomes ever more critical it's only a matter of time before that idea appears in a government Green Paper!

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