Serving the Poor – Drivers of Business Model Innovation in Mobile


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Introduction
There is a lot of hype in the mobile industry about the “opportunities” for serving low-income consumers in developing markets. There are at least 2.7 billion consumers at the very ‘base of the economic pyramid’, with per capita incomes of less than $1,500. Of those, more than a billion people - roughly one-sixth of the world’s population – have a per capita income of less than $1 per day, and very few have a mobile phone at present. There is also a lot of talk about the social and economic benefits that an increase in mobile penetration can bring to the poorest countries - a recent study by London Business School found that, in a typical developing country, a rise of ten mobile phones per 100 people boosts GDP growth by 0.6 percentage points

But the success of mobile network operators (MNOs) in penetrating low-income customers has been patchy at best. Despite the World Bank estimating that already 75% of the world’s population are within coverage of mobile networks, most companies choose to focus on the middle and upper income segments of the developing world. In most cases, MNOs have served the poorest consumers through shared-use models (see text box below), due to the commonly held belief that reaching these consumers is difficult due to two key challenges – affordability and availability.

Affordability relates primarily to the historically high-cost of mobile handsets in relation to the incomes of the poor, and the challenges of meeting recurring costs such as recharge cards or minimum monthly spend. Availability relates primarily to the difficulties of reaching poorer and more geographically isolated consumers – as ARPU’s fall in the face of increasing CAPEX, OPEX and distribution/marketing costs, the profitability of these consumers can become marginal or unviable (see Exhibit 1). This commonly held belief on behalf of both operators and regulators has resulted in various initiatives to address the so called “universal access gap” – universal access funds and subsidies for infrastructure investment in more isolated rural areas being two typical approaches. But our research and work with mobile network operators has revealed that this approach to serving the poor is based on established industry assumptions underpinned by (typically) duopoly/oligopolistic market structures and a lack of creativity in business model innovation.

Beyond shared-use models
Many have applauded the shared-use models pioneered by firms such as GrameenPhone in Bangladesh and Vodacom in South Africa. These approaches, as the argument goes, provide access to telecommunications services for communities that could not otherwise afford individual ownership. But one has to ask a more fundamental question – why can't the poor afford such services? The cost of mobile handsets has been targeted as a significant barrier for poor consumers, but experience from other sectors reveals that this aspect might well have been over hyped. In countries such as Brazil and China the ownership of white goods and consumer electronics products such as refrigerators and televisions amongst the poor is quite widespread, helped largely by innovations in consumer credit (especially instalment payments) and a willingness of the poor to allocate spend to life-style enhancing utilities. A 2003 study by the University of Michigan revealed that household penetration of refrigerators was 68% amongst the E segment slum dwellers of Brazil’s villas (shantytowns), while television ownership stood at 72%. Ownership rates for the same appliances amongst the D segment were 88% and 90% respectively. Mobile ownership in Brazil reached nearly 80 million individuals in 2006, making it the 5th largest mobile population in the world – a trend that has been accelerated by consumer electronics and whitegoods retailers such as Casas Bahia and Magazine Luiza extending their instalment payment models to mobile handsets.

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Business model innovation – beyond voice to financing

In India Reliance Infocomm saw its share of net adds increased from <20% to >50% after it introduced its ‘Monsoon Hungama’ offer: a Handset worth $120 for only $10 upfront and $4 per month for 36 months. Reliance partnered with a local finance company to provide the handset installment plan in a risk-sharing arrangement, and worked with an insurance company to include protection against theft or damage of the handset as part of the offer. Finally, the company redesigned dealer incentives, engaged in a massive marketing effort and built an elaborate collections infrastructure to control bad debt. Combined with aggressive tariff packages, Reliance saw its market share in the Indian market rocket from virtually nothing to more than 20% within an eighteen month period. We believe that one of the real failures of the mobile industry in recent years has been an obsession with producing lower cost handsets - rather, the industry should have been putting much more effort into ways to help individuals and families finance the purchase of a mobile phone.

Operators in other parts of the world, including Globe in the Philippines, are exploring handset financing models to replicate Reliance’s success. New handsets are also getting cheaper – spurred by the GSM association’s focus upon the development of ultra-low-cost handsets in recent years – and the availability of second-hand handsets is also becoming much more pervasive as huge numbers of ‘obsolete’ but perfectly functional handsets from developed markets are finding their way to emerging economies. Our research leads us to believe therefore that handset affordability has not been the key barrier to penetration in developing markets, especially amongst the “middle-income” poor of the C and D segments, and is likely to become even less of a barrier in the near future.

In view of the success of innovative retailers and operators in countries such as Brazil and India to develop models to finance handsets for the poor, we believe that the true barrier to adoption in many developing markets has been related more to established management mindsets and duopoly or oligopoly market structures in which the two or three operators in the market have had little incentive to reduce prices, or to innovate around tariff and distribution approaches to better serve poorer consumers, rather than any inherent barriers to greater mobile adoption. We recognise that this is a contentious proposition, but the success of truly innovative operators in profitably reaching progressively lower and lower income consumers proves that this is the case.

Shared use models – still relevant?

Shared-use models have been one of the ways for operators to provide mobile telecommunications services to low-income communities in the face of challenges related to affordability and availability. Our research has led us to believe that many operators who have launched shared use-models have been motivated more by universal service obligations rather than any real sense of opportunity, but there are exceptions. Some of shared-phone models are outlined below:

Grameen Village Phone: Pioneered by Grameen Telecom in Bangladesh, this model is based on the provision of $200 micro-finance loan to women villagers to purchase a handset and then sell services to a local village community. As of end 2006 there were more than 250,000 entrepreneur subscribers, providing telecommunications services to more than 60 million people in the rural areas of Bangladesh. The program has been extended in cooperation with African operator MTN to Uganda, Rwanda and Nigeria.

Vodacom Community Services Phones, South Africa: A franchise model for townships and rural areas, Vodacom provides a reconditioned shipping crate which functions as the business premises and is strategically positioned in an underserved area.
Do firms really want to serve the poor?

Our experience in researching and working with operators has led us to believe that in many cases operators are more concerned with the threat of cannibalising their high-margin A & B segment consumers than in realising the “opportunity” of serving the poor through novel tariff and distribution approaches. In many cases the operator exceptions to this, such as Smart Communications Inc. in the Philippines, that took an aggressive approach to expanding penetration to poorer segments through innovations such as electronic micro-recharges, and Grameen in Bangladesh through its Village Phone concept, did so with little attention to actually reducing per-minute prices for the poorest consumers. Indeed, per-minute pricing remained comparatively high in many of these so called ‘innovative’ operator markets and in many cases EBITDA margins actually increased as these operators pushed into lower-income segments. In the Philippines, Smart’s base prepaid rate for on-network calls is $0.14 per minute, while off-net calls are $0.16. In many parts of Africa, Asia and Latin America per-minute prices are in the range of $0.20 and $0.50, with off-net calls typically 25% to 50% higher, depending on the regulatory approach to termination. From a profitability viewpoint the approach adopted by operators such as Smart can make good sense – margins remain high and volumes are increased (to an extent) while at the same time minimising additional investment in CAPEX and OPEX. The alternative model, as now being witnessed in India where prices are lower than $0.02 per minute on most networks and minutes of use per month are amongst the highest globally, is to reduce margins but to compensate for this margin erosion through a significant uplift in volumes. But, of course, this also requires significant investment in CAPEX, and the ability to manage OPEX aggressively - it is no surprise that Indian operators such as Bharti have been at the forefront of network outsourcing.

There are valid arguments to suggest that prices need to remain high in some developing markets due to the high OPEX of maintaining networks in more isolated rural areas (the cost of providing security for network assets in Nigeria for operators such as Celtel and MTN is a good example), but we believe that this has been overstated by many operators. A study by Credit Suisse in 2006 revealed that the average ROIC of operators in emerging markets in Eastern Europe, the Middle East and Africa in 2005 averaged 24%, with many operators exceeding an ROIC of 35%. At the end of 2005, Smart realised a household penetration rate of 68%, with EBITDA margins of 63.5% - amongst the highest in the Asia-Pacific region. But actual per-minute usage of mobile by poorer consumers in the country remained comparatively low – it is no surprise that with high household penetration and literacy, but also relatively high voice prices the
Philippines has emerged as the SMS-texting capital of the world. A similar situation exists in Brazil - despite increasing mobile penetration amongst the poor being boosted by instalment financing plans offered by consumer electronics retailers, in the absence of real price-competition amongst the main operators average minutes of use remain low at 91 minutes per month per user compared with an average of 234 minutes worldwide.

In oligopoly markets like the Philippines and Brazil where the start-up cost of mobile telephony (handset+SIM+taxes) is falling, but the recurring costs of usage are still relatively high in the absence of real price competition we should be careful to associate increasing penetration with significantly increased voice usage. This has interesting implications for the results of the London Business School study mentioned earlier in this article – that a rise of ten mobile phones per 100 people boosts GDP growth by 0.6 percentage points. Could this productivity be even higher if increased penetration actually equated with significantly increased usage?

**Competition – a driver for innovation**

It is interesting to compare the Philippines or Brazil to India where a truly competitive market has seen per-minute prices fall to amongst the cheapest in the world, with per-minute usage now the highest in Asia. Bharti and Reliance, the number one and two operators have MOU of more than 400 and 500 minutes per month respectively. Shared-use models are present in India, and will likely persist to serve the very lowest-income consumers, but the rate at which individual adoption and usage of mobile is accelerating in this truly competitive market is quite staggering. As mentioned above, revenues per minute are low in India, and operators have had to address this fact by focusing on low-cost business model approaches that drive high volume usage. Impressively, the largest operators have been able to do so profitably – the EBITDA margins of both Bharti and Reliance exceeded 40% in 2006. One could point to China, which is experiencing similar growth rates to India yet is a duopoly market, as a counter case to the competitive market situation in India. But there is a significant external pressure on the two main operators in China that does not exist in many other developing markets – the Chinese government and its desire to keep mobile prices low in its steadfast pursuit of universal access.

The other aspect that has not received adequate attention in the industry is the concept of business model innovation. The ARPU/Cost dilemma shown at Exhibit 1 above is a very static view of technology and business model evolution. Vendors such as Nokia are working on innovations such as GSM extension technology – quite simply attaching a long aerial to a mobile handset to extend range from 15 kilometres to 30 kilometres or more – that can reduce CAPEX and OPEX for operators. But beyond infrastructure, there is a real need to experiment with business models to increase penetration amongst the poor. Various shared-use models such as Grameen’s Village Phone have emerged as approaches to innovation to increase access to mobile telecommunications for the poor, although these shared use models have often emerged in markets where more universal access for the poor has been stifled by relatively high prices related to a lack of competition. Smart in the Philippines was a pioneer in the use of electronic micro-recharges and the development of a micro-franchisees (students, housewives, taxi drivers etc) network to resell airtime, and this model is now being replicated by other operators around the world. But perhaps the most exciting business model innovation in the world today is happening in India.

Unlike in duopoly and oligopoly markets, the structures that predominate in the vast majority of developing countries, there is a real driver of innovation to reach the poor with mobile telecommunications in India – competition. India is arguably the most competitive mobile market in the world. The country is divided into more than twenty regional circles, and each of these circles has at least four competitors, with many having more than six. This hyper-competitive market has combined with a huge low-income population to force
operators to focus on operational efficiency like nowhere else in the world. But operators have gone beyond CAPEX and OPEX optimisation to also focus on business model innovation.

To rapidly scale its market presence Reliance Infocomm has developed a network of direct selling agents called Dhirubhai Ambani Entrepreneurs (DAEs). Most DAEs are small entrepreneurs who work to persuade their family and friends to switch to Reliance’s CDMA phones, and the company is estimated to have more than 25,000 such DAEs across the country. This army of micro-franchisees provides a significant boost to the company’s 40,000 retail outlets, and has been particularly successful at reaching 2nd and 3rd tier cities in which established distributors have less pervasive distribution networks.

Another Indian operator is in the pilot phase of a highly innovative approach to rapidly scale-up distribution at low-cost in rural areas that combines some elements of the Smart approach (electronic recharge and micro-top-ups), but takes the concept of micro-franchising to the next level. Rather than recruiting students or housewives to sell airtime, the operators approach is based on the franchising of a base station! Working with regional distributors, the operator identifies and recruits a village entrepreneur who is given responsibility to promote adoption and usage of mobile within a 5km to 7km radius, and covering a population of at least 5,000 people. Typically a 25-35 year old university educated male son of village storeowner, this local entrepreneur is trained by the operator in key aspects of sales, marketing and financial management, and then goes on to recruit and train sub-agents who act as roving resellers of airtime. Recognising that its franchisees have excellent contacts at the local community level, the operator is now exploring the possibility of tapping into regional and village-level micro-finance organizations to help individual villagers to finance handset purchases.

The potential of this approach (combined with low per-minute voice prices) to boost household penetration and individual usage of mobile telecommunications amongst the poor is immense – it should, within a relatively short period of time make the village phone concept redundant. It is instructive to note that since the Bangladeshi market has opened to competition in recent years, village phone ladies have found it increasingly difficult to compete. In the words of Erik Aas, CEO GrameenPhone quoted in J.P. Sullivan’s recent book You Can Hear Me Now, “Now that villagers can buy subscriptions from any operator, buy a new SIM card for Tk100 and a phone on the black market, and choose to pay prepaid or postpaid, the village phone ladies can no longer count on 100 percent market share.”

This trend is only likely to continue, with customers evolving from village or payphone use, to shared family phone or phone pooling (the collective buying of air time that exists amongst peer groups - students, colleagues, friends) and eventually individual ownership. Of course, the further we move down the socio-economic pyramid, the longer this transition will take. We should also not assume that payphones will disappear altogether. If payphone rates remain cheaper than owned-phone rates, then the poorest consumers will be motivated to use payphones for outgoing calls and retain their own phones for predominantly in-coming use – a behaviour that we have witnessed in a number of developing markets in Africa and Asia. Exhibit 2 shows the likely shared phone models that we will see in different emerging markets (including predicted MOU patterns), taking into account start-up costs, recurring costs and market structure.

**Lessons from innovators**

Our research has revealed a number of common behaviours of operators who are developing particularly innovative approaches to serving the poor:
1. Collaboration with Non-Traditional Partners – Operators such as Smart and the Indian operator mentioned above have recognized the value of corporate and non-corporate partners. They have proactively established relationships with non-profit and other non-traditional partner organizations, and even with individual entrepreneurs.

2. Building Local Capacity – The most innovative operators have recognized the value of existing local institutions. They have provided training to local entrepreneurs and other partners, and have seen gaps in local infrastructure or missing services as potential opportunities.

By following similar approaches we believe that many other operators in the developing world have the opportunity to realize the full potential with consumers at the bottom of the economic pyramid.

We are convinced that there is massive opportunity to served low-income consumers in developing markets. But our experience also leads us to believe that the current debate on this topic largely ignores two fundamental issues – motivation and the need for true business model innovation.

Yes, there is an opportunity to serve the poor in developing markets but there is a fundamental dilemma for operators present in either duopoly or oligopoly markets. These operators can choose to focus on the low-hanging fruit – the A & B segment populations - often without the need to invest significantly in additional CAPEX or to add significant organizational complexity through a more widely segmented approach, and at the same time maintain high prices and meet political calls for universal access through the provision of shared-use business models. These shared use models can be profitable, but will never provide the kind of true universal access to which many developing countries aspire.

Or, as is the case in the Philippines and India operators can pursue real business model innovation to increase household and/or individual mobile penetration. In countries such as the Philippines and Brazil penetration still tends to be based on households in the lower income-segments, with relatively low minutes of voice use. In India, in an intensely competitive and innovative market, it is quite possible that we are seeing a trend towards true individual ownership and usage amongst the poor.

To achieve true innovation operators will need to recognize that the approaches that they have perfected in serving higher-income segments might actually prove a disadvantage as they move to serve the poor. There is one important piece of advice that we now share with mobile industry executives in developing markets – you have a lot of unlearning to do as you lead your firm in the race to the bottom of the economic pyramid.

References

GSM Association (2006), Universal Access: How Mobile Can Bring Communications to All, Polic Paper 2006023, June


Exhibit 1: The Challenge of Managing ARPU and Cost in Developing Markets

Exhibit 2: Mobile Phone Usage Models in Developing Markets