



## From the Guest Editor

### ***Mobile at the Bottom of the Pyramid: Informing Policy from the Demand Side***

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There has been a massive increase in the global use of mobile phones, especially in the developing world. It has been said that the diffusion of mobile telephony has been the fastest for any information and communication technology in human history (Kalba, 2008). It has drawn some scholarly attention (Donner, 2008), but perhaps not commensurate with the scale of the phenomenon and the way in which it involved the poor in the developing world on a scale not seen before. The one attempt at a magisterial review (Castells et al., 2007) fell short because it reported data only up until 2004, before the mobile boom accelerated in the developing world, as demonstrated by Figure 1, which shows the mobile SIMs per 100<sup>1</sup> for three South Asian countries that are featured in almost all the articles in this issue and account for almost a quarter (1.5 billion people) of the world's population, as well as most of its poor. The articles in this issue will contribute to filling that lacuna.

All of the articles in this issue share a common evidential base, primarily the Teleuse @ Bottom of the Pyramid (Teleuse@BOP) representative-sample survey conducted by LIRNEasia since 2005 and, secondarily, the qualitative research conducted as part of the same project.<sup>2</sup> Five of the articles draw from Teleuse@BOP3, conducted in 2008, while the review by Smith, Spence, and Rashid draws from the conclusions of Teleuse@BOP2 in 2006.<sup>3</sup>

Using both quantitative and qualitative methods, Teleuse@BOP investigates the use of information and communication technologies by individuals and households at the bottom of the pyramid (BoP), a term popularized by Prahalad (2004). Some argue that the actual population distribution may be more in the shape of a diamond than a pyramid, while others perceive a lack of political correctness in the term *bottom* and substitute *base* for it. However, all the authors in this special issue use the term propagated by Prahalad, possibly because LIRNEasia, which conducts the survey, uses it as part of the name of the survey and in its publications and presentations. Prahalad's "bottom of the pyramid" was integrally connected to his thesis that the poor were not simply objects of charity, but could and

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1. What the International Telecommunication Union and national governments count as mobile connections are actually the numbers of active mobile subscriber identity module (SIM) cards as reported by telecommunication operators. Given the prevalence of multiple SIM use (see for instance LIRNEasia, 2009; p. 6), it is more accurate to report mobile connectivity in terms of SIMs/100 than subscribers/100.

2. The Teleuse@BOP research was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada ([www.idrc.ca](http://www.idrc.ca)) and UKaid from the Department for International Development, UK ([www.dfid.uk](http://www.dfid.uk)). Additional funding was provided by Telenor Research and Development Centre, Malaysia.

3. For complete documentation on the Teleuse@BOP studies, see: <http://lirneasia.net/projects/icts-the-bottom-of-the-pyramid>

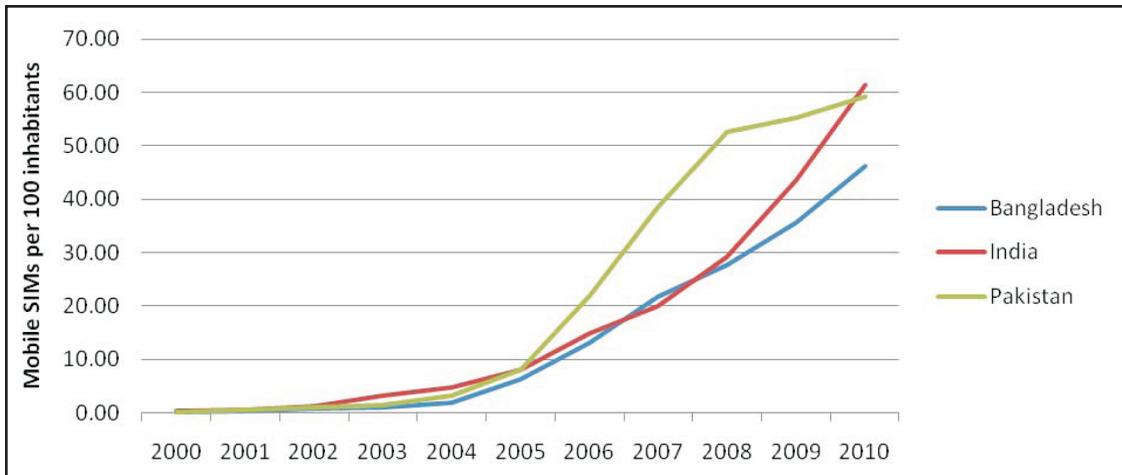


Figure 1. Mobile SIMs per 100 Inhabitants—Bangladesh, India and Pakistan, 2000–2010.

Source: International Telecommunication Union databases.

should be seen as customers and as sources of profit, a view that is far from uncontroversial (Landrum, 2007). All users of mobile phones are customers who pay for the voice and more-than-voice services they consume, albeit in small and irregular amounts. Therefore, the use of the term by LIRNEasia and the authors who base their work on the Teleuse@BOP survey connects it to a dynamic stream of scholarly work and is justified.

LIRNEasia conducted three Teleuse@BOP surveys in six countries between 2005 and 2009 (the first was a pilot, conducted in several districts in India and Sri Lanka). As in all research activities, scope and finite resources must be balanced. The focus of LIRNEasia’s work lies in South Asia, home to the world’s largest concentration of poor people. The inclusion of the three largest countries (Bangladesh, India, and Pakistan) requires little justification, nor does the exclusion of the two micro-states (Bhutan and the Maldives) and conflict-affected Afghanistan. Of the two countries with populations in the mid-range of 20 million to 30 million, only Sri Lanka has been included. Nepal, at the time the survey commenced in 2006, was a difficult place in which to conduct field work, due to civil conflict. Sri Lanka also had its problems (causing two provinces to be excluded from the study), but they were easier to manage because LIRNEasia’s office is located there. LIRNEasia has conducted research in the three less prosperous countries of the “original” ASEAN since inception. Of these, only two, the Philippines and Thailand, were included in the two full surveys because co-funding for Indonesia fell through.

Teleuse@BOP surveys those who have had some experience with voice telephony, namely those who have made or received a call within the past three months. It is not limited to “subscribers” or owner-users; it includes users who may or may not plan on becoming owners. In countries where teleuse is still not universal, this offers a unique opportunity to understand the dynamics of the rapid diffusion of mobiles, which has hitherto been examined only from the supply side (e.g., Dutta & Mia, 2009; Kalba, 2008; Samarajiva, 2010; World Bank, 2006).

The article by de Silva, Ratnadiwakara, and Zainudeen is a significant contribution to explaining the phenomenon from the demand side. It provides empirical evidence of the power of social networks in

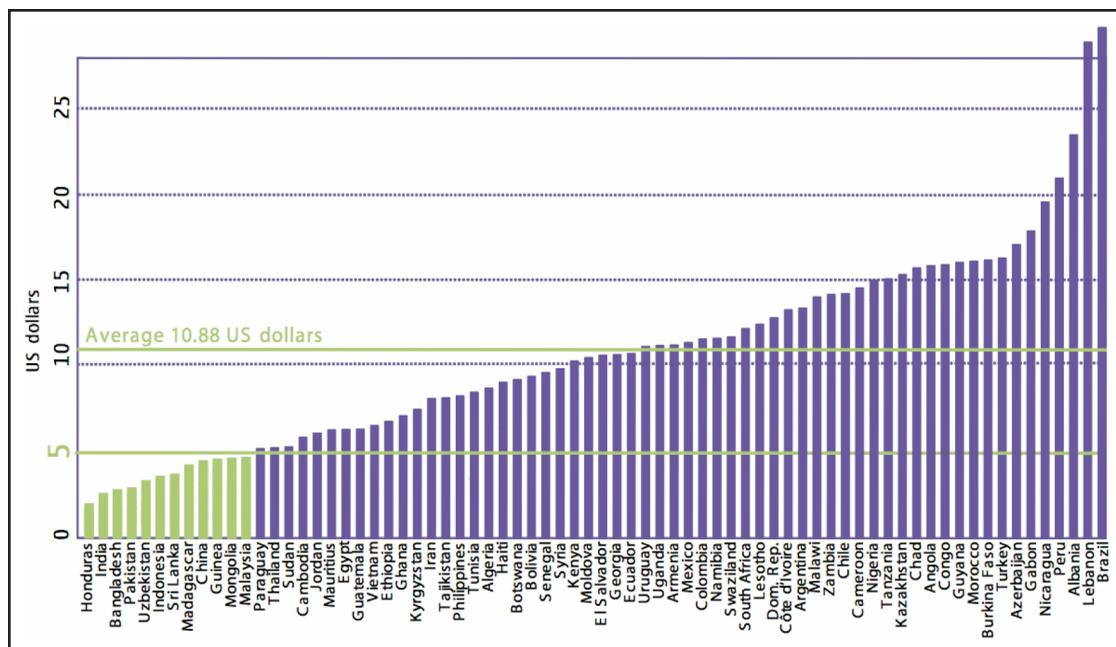


Figure 2. Total Cost of Ownership by Country—Emerging Economies, 2009.

Source: Nokia Research (2009).

driving adoption. It identifies pre-existing small social networks as a key driver for mobile voice telephony adoption. The article goes beyond the platitude of increased utility from more people being connected to an interactive communication system (network externalities in general) and identifies those who matter the most to the adopter as the source of pressure to adopt (specific network externalities). It reminds one of what is now a commonplace but empirically established answer to the question why soldiers fight. They fight primarily for their mates, and secondarily for the nation, the army, or abstract ideals enunciated by their leaders (Costa & Kahn, 2008). In the same way, adopters of mobile voice telephony at the BoP (and perhaps throughout society) do so because of their mates.

Agüero, de Silva, and Kang examine the incomes and expenditures on telecommunication services by owner-users. They find that telecommunication services at the BoP in the six countries are a necessity, in contrast with prior hypotheses that they were necessities in developed countries but luxuries in developing countries. Recent findings by one of the co-authors, which confirmed the thesis that communication services were luxuries in Latin America, suggest that it is too early to draw general conclusions on the status of communication services in the developing world. Research on healthcare in Africa changing from a luxury to a necessity within a decade, reported in the article, suggests a hypothesis worth further exploration: As communication services become cheaper, they become necessities. Latin American mobile voice users currently suffer from much higher mobile prices than their Asian counterparts (Figure 2). When and if rates decrease, they too will be seen as necessities, and one would be able to conclusively refute the claim that communication is a luxury for the poor and a necessity for the rich.

In the next article, Sivapragasam and Kang mine the Teleuse@BOP data for evidence bearing on the policy question of whether or not to subsidize payphones in the face of rapidly growing mobile use.

The data show that people at the BoP are indeed substituting mobiles for payphones. However, analyses of those using only payphones indicate that they are the more rural and the more impoverished among the BoP population. The recommendations, therefore, are not to abandon payphones, but to understand their transitional nature and to direct whatever subsidies that are allocated to payphones in technologically neutral ways. This article also ventures into the fraught territory of government-administered subsidy schemes of varying efficacy (Malik, 2008).

Zainudeen and Ratnadiwakara extend the explanation of social networks as the driver of adoption from simple voice telephony (de Silva, Ratnadiwakara, and Zainudeen) to more-than-voice services. Voice communication requires someone to talk to, whereas most more-than-voice services involve information retrieval that can occur between the user and the network and does not require another human. Therefore, the challenge of establishing social networks as a causal factor is greater. Working with much smaller samples (because use, awareness, and even availability of these services were very low in 2008 when the survey was conducted), the authors make a valiant attempt. They do not claim to have identified causation, only correlation. Pre-existing social networks are a factor in the adoption of more-than-voice services, but its effect is not as strong as with voice telephony. Here it is interesting that the most powerful factor is not social networks, but prior use of the Internet. This indicates that the Rogers (1962) innovation model is at play, rather than the more intense mechanism of social networks.

With less reliance on Teleuse@BOP data (though findings such as the entrepreneurial attitudes of Bangladeshi women and men are utilized) and more on case-study methods, Zainudeen, Samarajiva, and Sivapragasam present findings on CellBazaar, a more-than-voice service used by around five million people in Bangladesh, including the BoP. Here the authors move beyond simple access to issues of trust and the complementary factors needed to make more-than-voice services truly useful. For example, it is necessary to establish reputation mechanisms for the looser environment of a mobile marketplace where a participant may have multiple identities in the form of SIMs, not necessarily associated with the same person. Reputation mechanisms that have evolved in developed country e-commerce services cannot be simply transplanted. For complete e-commerce transactions to occur, payment must be possible within the system and it must be possible to physically deliver tangible goods (as against certain services that may be delivered electronically). The article documents the gaps still existing in the workaround e-commerce service developed by CellBazaar and identifies certain solutions that may allow its development within Bangladesh and its replication in other countries sharing similar characteristics.

Smith, Spence, and Rashid provide a summative discussion, especially because their primary evidence is drawn from an earlier survey in the Teleuse@BOP series that is the common data source for the earlier articles. Here, electronic connectivity made possible by mobile phones is seen as enabling and strengthening social, economic, and governance networks and thereby generating collective benefits to society. The implication is that there is a welfare economics rationale for government subsidy. The authors accept the challenges posed to this policy proposal by the record of universal service funds in the developing world and also recognize that some governments may have disincentives to expand connectivity. By addressing the positive and negative implications of the massive expansion of voice, and potentially more-than-voice, connectivity associated with mobile communications, Smith, Spence, and Rashid round out the special issue.

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