

Policy

Leveraging the Budget Telecom Network Business Model to Bring Broadband to the People¹

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How Voice Connectivity Was Achieved

Full participation in the global Internet economy requires electronic connectivity of considerable complexity. Today, due to a worldwide wave of liberalization and technological and business innovations in the mobile space, much of the globe is electronically connected, albeit not at the levels that would support full participation in the Internet. Yet, many millions of poor people are engaging in tasks normally associated with the Internet, such as information retrieval, payments, and remote computing, all using relatively simple mobiles. Understanding the business model that enabled impressive gains in voice connectivity, as well as the beginnings of more-than-voice applications over mobiles, is important not only because widespread broadband access among the poor is likely to be achieved by extending this model, but because it would be the basis of coherent and efficacious policy and regulatory responses.

Voice connectivity was achieved for a majority of the world's people, including substantial numbers of the poor, because governments removed or lowered barriers to participation in the supply of telecom services and created conditions conducive to competition, even if that competition was less than perfect. This was the necessary condition. Where multiple suppliers existed, intense competition occurred—the critical step in implementing the budget telecom network model. The radically lower prices attracted more minutes of use, which, in turn, made further reductions possible. Operators were able to load their networks with high volumes of revenue-yielding minutes because they had succeeded in reducing the transaction costs of dealing with large numbers of customers who generate small amounts of revenue. Prepaid, which reduces transaction costs and also accommodates the needs of those with irregular earning patterns, was a critical element. Along with these innovations, the exponents of the budget telecom network model also succeeded in drastically reducing both capital costs and operating costs. The new model makes ARPU (average revenue per user) irrelevant, because what really matters is how many revenue-yielding minutes are carried on the network, not how much money is earned from an average customer. In the same way that Ryanair and Air Asia make profits while conventional airlines lose money, budget telecom networks make more money than conventional operators. However, the model does increase the volatility of earnings, and it often results in a lower quality of service.

1. The article draws extensively on research conducted by LIRNEasia with the support of the International Development Research Centre (IDRC) of Canada and the Department for International Development (DFID) of the United Kingdom, as well as on work done for Nokia and the Organization for Economic Cooperation and Development (OECD).

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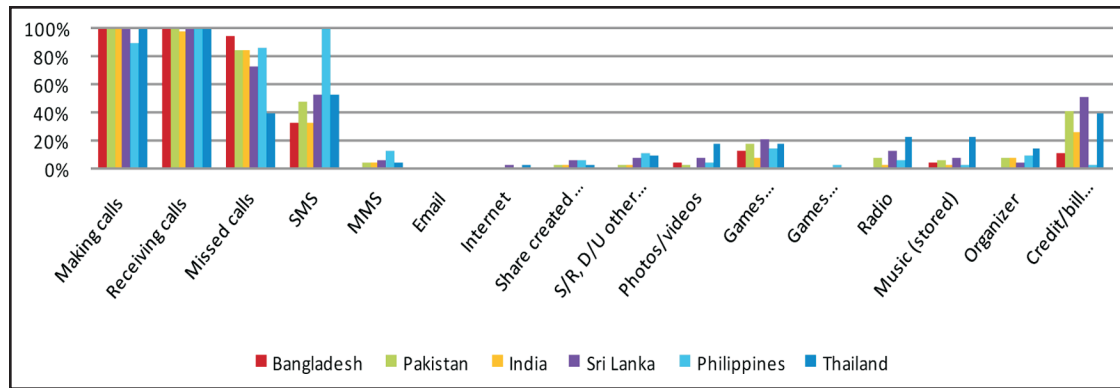


Figure 1. The Voice Model and Possible Extension to More-Than-Voice.

What mobiles are used for at the BoP (% of SEC D and E-mobile owners).

Categories: Making calls; Receiving calls; Missed calls; SMS; MMS; E-mail; Internet; Share-created content; Sending/receiving or downloading/uploading other content; Photos/videos; Games (individual); Games (inter-active); Radio; Music (stored); Organizer; Credit/bill checking.

Source: LIRNEasia (2009b).

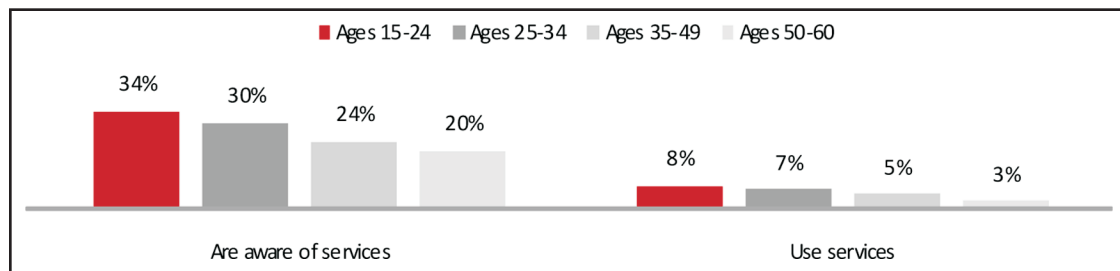


Figure 2. Awareness and use of Mobile2.0 (more-than-voice) services (% of SEC D and E teleusers, all countries).

Source: LIRNEasia (2009b).

The Teleuse@BoP survey specifically probed awareness, trial, and use rates by poor people of “more-than-voice” services over the mobile. These rates were low, unsurprisingly, because these services are just being developed and marketed, and the business models of marketing information and transaction services to the poor are still being worked out. What constitutes grounds for optimism, however, is the evidence of higher awareness, trial, and use of more-than-voice among the younger cohorts (Figure 2).

The successful extension of the budget telecom network model to broadband requires that small, prepaid, irregular payments must be allowed, which is a significant deviation from the dominant always-on, all-you-can-eat models. It appears that the former is already emerging in the mobile-based broad-

band offerings, such as HSPA (High Speed Packet Access).

The industry dynamics have changed, with mobile equipment manufacturers (network and handset) and mobile operators getting into the telecom industry’s driver’s seat in terms of investment, innovation, and thought leadership, and with new actors such as Google and Apple also making their presence felt. Network technology has also changed: The momentum, in terms of how people will access the functionalities currently associated with the Internet, is shifting to 2.5 and third-generation mobile networks, and away from ADSL and other wire-guided media and fixed wireless links in many developing-country markets. There appears to be a powerful trend of convergence, one whereby mobile handsets are becoming smarter and

easier to use on one side, and laptops are becoming more like handsets (e.g., netbooks with embedded mobile communication capabilities) on the other.

The recognition that providing information and related services on an as-needed, where-needed basis is superior to having farmers or other “beneficiaries” drop whatever they are doing to visit telecenters that have opening and closing hours is beginning to give rise to new approaches to service delivery. India’s Warana project, which used to provide market information through telecenters, is a good example: It has now switched to the use of mobiles (Veeraraghavan, Yasodhar, & Toyama, 2009). Especially in developing countries, m-payments are beginning to assume the role played by credit cards in developed countries (Boyd & Jacob, 2007). Kenya’s M-Pesa is leading the way (BBC, 2009; Vodafone, 2007). The trajectory of ICT development in the developing world will not be the same as in the developed world. Indeed, the trajectories in South Asia and Africa may differ even from the rest of the developing world.

Implications for Policy and Regulation

If business process innovations enabled by competition are solving the problem of electronically connecting billions of poor people, what is the role of government? When a business model is delivering the goods, rather than direct government action, the most appropriate government action is to leverage the business model.

Policy and regulatory actions must be derived more from analysis of the requirements of the business model, and less from public administration theory. Early in the present reform cycle, the need to adopt policy and regulatory solutions that fit well with the specific institutional circumstances was identified (Levy & Spiller, 1994). Yet, in actual practice, policy and regulatory solutions devised for developed country circumstances tended to be applied in very different settings because external consultancies were used to bridge the gaps of local capacity, among other things.

The emergence of a new business model and deeper understanding of the functioning of government institutions in developing countries offers a possibility of devising policy and regulatory solutions that are better fits. This would, for example, involve

a greater emphasis on lowering market entry barriers and making more spectrum available than on the previous preoccupation with interconnection. Market entry rules and spectrum assignments based on published policy frameworks and transparent procedures, consistent with the provisions in the reference paper that forms part of Protocol 4 of the General Agreement on Trade in Services (GATS), are obviously very good. However, opaque market entry rules and spectrum assignments are still better than none. Bangladesh, a country that arguably failed to meet standards of good practice on market entry in the past, has nevertheless succeeded in connecting more than 40% of its population belonging to socioeconomic classification groups D and E (the poorest), and it has done so at the world’s second-lowest mobile prices (Nokia, 2009; LIRNEasia, 2009a).

Even if operators can muddle through with poor spectrum management and opaque assignment in the early stages, there will be problems as the networks expand and more new services are offered if spectrum management, especially re-farming, is not done professionally and transparently (Dutta & Mia, 2009; Samarajiva, 2006). Delays in releasing 3G frequencies in many countries, including in important markets such as India, have already caused harm to the extension of the budget telecom network model to more-than-voice services.

Research on customer behavior has shown that workarounds for imperfect interconnections have been devised. Neither the incumbent fixed operator’s refusal to offer interconnection to mobile operators in Bangladesh, nor the failure of the regulator to compel interconnection have prevented the people of Bangladesh from getting connected to mobile networks at a compound annual growth rate of over 100% in 2002–2007, or from enjoying some of the lowest prices in the world. Furthermore, there is an increasing tendency for customers to carry multiple SIMs, switching them on the same handset, if not using them on dual-SIM handsets, to keep most of their calls “on-net,” thereby enjoying the various discounts offered for friends-and-family calling within networks (CKS Consulting, 2009). This suggests that conventional interconnection is being worked around, at least by those willing to suffer the additional inconveniences of multiple SIM use.

This is not to say that cost-based, nondiscriminatory interconnection is irrelevant. It is relevant, espe-

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cially in terms of reducing the differentials between on-net and off-net call prices and their intended or unintended effects on illegal termination of international calls (Samarajiva, 2008). Indeed, the oft-neglected issues of wholesale access to backhaul (the “fat pipes” that carry large volumes of voice and data over long distances) and essential facilities require even greater regulatory attention in light of the requirements of the budget telecom network model. Leased line costs are even more significant for data communication than for voice (Samarajiva, 2008).

Flexibility of pricing is essential for the success of the model, and alternatives for conventional tariff regulation are needed (Samarajiva & Iqbal, 2009). Multiple SIM use by prepaid customers (especially at the bottom of the pyramid) and affinity-based marketing by operators are reducing, but not eliminating, the importance of interconnection and mobile number portability. As costs come down across the board, the relative importance of the key input of domestic and international backhaul capacity increases, requiring greater regulatory attention to issues such as vertical price squeeze.

The considerable experience that has been gained with reform and regulation in the developing countries is now yielding “homegrown” alternative policy and regulatory solutions, but they must now battle with the over- and under-the-table rent-seeking incentives that have increasingly come to the fore as a result of perceptions (not always accurate) of the profitability of ICT infrastructure services.

In the same way that policy makers and regulators must understand and leverage the budget telecom network business model to achieve their policy objectives, it is important that other actors who seek to advance the supply of public/merit goods that depend on the ICT infrastructure also do so. For example, advocating reliance on universal service levies and funds is counterproductive at this point, because the past decade’s experience has shown that governments are incapable of disbursing the collected funds in timely and appropriate ways, and that in many cases, the end result is the taxation of poor mobile users for the benefit of the government and (possibly) incumbent fixed operators (Malik, 2008).

While quality of service is important for effective delivery of ICT-based services, rigid regulation is not only likely to be ineffective, it may even result in

stifling the budget telecom network business model that has succeeded in giving service to millions without drawing on public investment or subsidies (Baker & Trèmolet, 2000). Therefore, gentle supervision of quality of service (QoS), focusing primarily on publishing QoS performance against benchmarks and ensuring that barriers to unhappy customers switching suppliers are kept low, would be the most appropriate plan.

Taxation, a topic normally not discussed in the context of telecom or ICTs, is increasingly coming to the fore. Universal service levies are a form of taxation, but most governments do not stop at that. In many countries, there are layers of special taxes (mobile-specific or telecom-specific) over and above general taxes, such as value-added taxes. The cumulative effect, as high as Turkey’s 44% (Deloitte, 2007), can be disastrous for the budget telecom network model, which rests on offering the lowest possible prices.

In addition, there are instances when revenue-collection imperatives of governments are dominating policy design, even at the cost of damaging the entire sector and frustrating the achievement of larger public policy objectives, such as improving international connectivity for export industries and temporary migrant workers. The case of policy pertaining to international call termination in Bangladesh is a good example. Here, the government collects as much as 44% of the termination fee paid on each incoming voice minute, and that is before it gets to collecting corporate taxes on profits made. More than just the high percentage, the tax rate creates incentives for illegal bypass, which generates black money that is then used to corrupt the telecom policy and regulatory processes, as well as the political system. The tax maximization logic precludes actions to lower the costs of international connectivity and impedes improvements to quality of service. And unfortunately, the tax maximization logic does not even maximize taxes, as over 30% of the incoming international voice traffic enters Bangladesh illegally, thus avoiding taxation completely.

In sum, broadband can be brought to the people by extending and leveraging innovative business models, as has been shown with voice telephony among the poor in South Asia. The lower prices and widespread coverage that are central to the model are also desirable public policy objectives. The key steps in the coming period are the design and

implementation of policies and regulatory measures that support and leverage the budget telecom network business model. ■

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