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Chapter 27

Bridging digital divides

Lessons learned from the IT initiatives of the Grameen Bank in Bangladesh

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The mobile phone is like a cow. It gives me "milk" several times a day. And all I need to do is to keep its battery charged. It does not need to be fed, cleaned, and milked. It has now connected our village with the world.

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Parveen Begum, owner and sole dispenser of mobile telephony services in Village Chakalgram, Savar Thana, Bangladesh, in a personal interview (May 2, 2001)

I want my fellow Americans to know that the people of Bangladesh are a good investment. With loans to buy cell phones, entire villages are brought into the information age. I want people throughout the world to know this story

U.S. President Bill Clinton in an address during his meeting with members of the Village Phone Project in Dhaka, Bangladesh in March, 2000

As a great social leveler, information technology ranks second only to death. It can raze cultural barriers, overwhelm economic inequalities, even compensate for intellectual disparities. In short, high technology can put unequal human beings on an equal footing, and that makes it the most potent democratizing tool ever devised.

Sam Pitroda (1993), the visionary technologist who spearheaded India's telecommunications revolution

428 | **A third of the world's population** has never made a phone call. This fact emphasizes what has become known as the digital divide –the tremendous gap between people with access to information technology (IT) and those without (Martínez-Frías, 2003). The present chapter discusses the experience of the Grameen Bank in Bangladesh in harnessing information technologies for social change. We especially focus on the Grameen's mobile telephony operations, including how the organization integrates mobile telephony services with solar power and Internet services to overcome the digital divide.

Grameen Bank, mobile telephony, and social dividends

How can information technologies be harnessed in rural areas, where there is no dedicated electrical power, and where the cost of installing, maintaining, and purchasing such services is cumbersome? One answer to this problem is provided by the Grameen (rural) Bank in Bangladesh. Founded in 1983 by Professor Muhammad Yunus, the Grameen Bank is a system of lending small amounts of money to poor women so that they can earn a living through self-employment. No collateral is needed, as the poor do not have any. Instead, the women borrowers are organized in a group of five friends. Each group member must repay their loan on time, while ensuring that other group members do the same, or else their opportunity for a future loan is jeopardized. This delicate dynamic between “peer-pressure” and “peer-support” among Grameen borrowers is at the heart of its widespread success (Auwal and Singhal, 1992; Papa, Auwal and Singhal, 1995; Papa, Auwal and Singhal, 1997; Yunus, 1999).

By 2004, the Grameen Bank had loaned the equivalent of \$ 4.3 billion (US dollars) to 3.5 million poor borrowers (of which 95% are women borrowers), and had an enviable loan recovery rate of 98%. The idea of micro-lending, based on the Grameen Bank experience, has spread throughout the world, and has everywhere proven effective in gaining a high rate of repayment of the loans. In short, interpersonal networks are effective collateral for poor women.

In 1997, Professor Yunus established a non-profit organization called Grameen Telecom with the vision of placing one mobile phone in each of the 68,000 villages of Bangladesh. At that time, there was one telephone in Bangladesh for every 400 people, representing one of the lowest telephone densities in the world¹. There was virtually no access to telephony services in rural areas. Professor Yunus realized that while it was not possible for each rural household to own a telephone, it is possible through mobile telephone technology to provide access to each villager.

Thus the Grameen Telecom's Village Phone Project (VPP) was born. In 1997, Grameen Telecom formed a joint venture company called GrameenPhone Ltd. (GP) in partnership with Telenor of Norway, Marubeni of Japan, and

1 In 2004, there exists one telephone in Bangladesh for every 175 people.

Gonofone Development Corporation of the US². The company, GP, was awarded license to operate nation-wide GSM-900 cellular network on 11 November, 1996. GP started its operation on March 26, 1997.

Creating win-win synergies

The business model of the VPP was deceptively simple and a potential win-win for everyone involved, including the service providers and the end users (Singhal, Svenkerud and Flydal, 2002). Four business entities were involved in the VPP: GrameenPhone (the for-profit business), Grameen Telecom (the not-for-profit business), Grameen Bank (the not-for-profit micro-credit bank), and the mobile handset owner in the village, commonly referred to as the Village Phone Lady (who was a member of Grameen Bank) (Malaviya, Singhal, Svenkerud and Srivastava, 2004a, 2004b).

GrameenPhone sold bulk airtime to Grameen Telecom at half the regular rate that was levied in the urban areas. The handsets were made available to villagers through Grameen Bank loans. Grameen Telecom was responsible for the sales, marketing, servicing and administration of the village phones. This arrangement meant that GrameenPhone avoided the costs of billing and bill collection from the village phone users, and had a steady revenue stream from Grameen Telecom. Grameen Bank benefited by cross-selling to villagers (who were existing Grameen Bank borrowers) the opportunity to start an additional business of providing mobile phone services in their village. Because the initial loan for a mobile phone set was about USD 390, an amount few villagers could invest on their own, these Grameen Bank members took loans to lease or purchase the mobile telephone sets, thus generating additional income for Grameen Bank (Malaviya, Singhal, Svenkerud and Srivastava, 2004b). In addition, villagers settled their monthly telephone bills while repaying their loan amounts. For Grameen Telecom, the VPP set-up meant that it could be optimistic about fulfilling its promise of providing mobile telephony in villages for the rural poor of Bangladesh. While most telephone companies targeted only the rich living in the cities, Grameen Telecom's VPP targeted the rural poor, particularly women, because 95% of Grameen Bank borrowers are women. The Village Phone Ladies benefited because they now had an independent source of revenue. The villagers who used the mobile phones to make and receive calls benefited because they were now "connected" to the rest of the world, using one of the most modern cellular technologies of the world, while paying one of the cheapest cellular rates in the world. And from the perspective of the Government of Bangladesh, with the 'mobile' presence of the village telephone lady, rural residents could receive and make telephone calls, obviating the need to install expensive large-scale telephone exchanges and digital switching systems.

² Telenor Corporation is the majority owner of Grameen Phone's equity (over 50%); Grameen Telecom owns about 35% of the equity, and the other partners own the balance.

430 | Rising profits

Since its inception in 1997, Grameen Phone's subscription has doubled each year to reach over a million subscribers by December 2003 (Malaviya, Singhal, Svenkerud and Srivastava, 2004b), which represents the biggest subscriber base and coverage of any mobile telephony operator in Bangladesh, and in South Asia. The company turned a profit in 2000 of \$14 million, which steeply climbed to over \$110 million in 2002 (Malaviya, Singhal, Svenkerud and Srivastava, 2004b). Many believe that even brighter business prospects lie ahead: demand for mobile telephony services in Bangladesh is estimated at about 5 to 6 million subscribers (out of a population of 130 million people). Grameen Phone's growing mobile telephony network in the country and its financial viability help the Grameen Telecom's Village Phone Project to piggyback on it.

Social dividends

By April 2004, some 54,000 village phones were operating (about 5% of all GrameenPhone's subscribers) in about 36,000 Bangladeshi villages. These 54,000 village phones were serving an estimated 65 million rural inhabitants, more than 60% of Bangladesh's rural population. The village phones, on average, generated 2-3 times more revenues for GrameenPhone than a personal use city subscription, although the total revenue from these village phones was a relatively small percent of total GrameenPhone revenues (6%) (<www.telecommons.com/villagephone>, 2000).

Although the village phones contributed a small percent toward GrameenPhone revenues, they yielded a very high social impact in terms of reaching 65 million rural Bangladeshis who previously did not have access to telephony services. Studies indicated that the VPP had a very positive economic impact in rural areas, creating a substantial consumer surplus, and immeasurable quality-of-life enhancements³. For instance, the village phone obviated the need for a rural farmer to make a trip to the city to find out the market price of produce. The village phone accomplished this task at about one-fourth the cost of taking the trip to the city and almost instantaneously (as compared to the hours of time it can take to make the trip to Dhaka). Further, the village phone helped families keep in touch with relatives overseas, to know about remittances sent to them from migrant workers overseas, and patients to arrange appointments with the doctors in the cities. Also, people living in the villages were thinking and doing things somewhat differently after the mobile phone arrived. For instance, many villagers started maintaining livestock and poultry stocks as it now became possible to contact experts if there was ever an outbreak of a poultry or livestock disease (Malaviya, Singhal, Svenkerud and Srivastava, 2004b). They could also learn of the current market prices of their poultry products achieving higher returns on

³ See Richardson et al (2000) and Bayes et al (1999).

sales. The supply of agricultural inputs like diesel and fertilizer become more stable in the villages because dealers could monitor the supply situation throughout the year and guard against any unforeseen contingencies.

Rural women in Bangladesh also became increasingly empowered through the Village Phone Project. Usually, technological “toys” (such as cameras, radios, cassette players and others) are appropriated by rural men. However, through the VPP the mobile phone was placed in the hands of rural women. Now even a rich landowner had to come to their home to access the telephone service. He had to wait in line for his turn if another villager was using the phone at that time. The home of the village phone lady became an important location on the village map, often being referred to as the *Phone Bari* (or “home of the phone”). The VPP thus conferred status and prestige on rural Bangladeshi women.

So what have been the overall effects of the Village Phone Project in rural Bangladesh? The Village Phone Project makes telephony services accessible and affordable to poor, rural Bangladeshis, spurs employment, increases the social status of the village telephone ladies, provides access to market information and to medical services, and represents a tool to communicate with family and friends within Bangladesh and outside (Richardson et al, 2000; Bayes et al, 1999; Quadir, 2003).

Integrating telephony with solar power and Internet services

Another information technology venture of the Grameen Bank is the Village Internet Program (VIP), a pilot project in which borrowers obtain loans to purchase and operate “cyber kiosks” for profit. The purpose behind the “cyber kiosks” is for Grameen borrowers to have increased access to agricultural and market information for business use, to provide distance and virtual education through remote classroom facilities, and to provide computer-based employment (such as data-entry, transcription services, etc.) in rural areas, as an alternative to massive migration to the cities (Yunus, 1998).

The VIP is supported by established infrastructures and technologies within the Grameen family of companies. For instance, Grameen Shakti (“Energy”) has developed photovoltaic solar systems to provide electricity to villages that lie beyond the national grid of central station electricity. The plan of VIP is to have cyber kiosks that run on solar power and connect to the Internet by mobile wireless, microwave, and laser connections. Each cyber kiosk will be run as an independently-owned and operated franchise of Grameen Communications, in which the borrower will earn money by selling Internet, telephony, and other computer-related services (Yunus, 1998).

Lessons learned

The key lessons of the Grameen Bank approach to the use of mobile telephony and Internet services are the following.

432 | 1. *Poor people should not just be the passive consumers of communication technology, but rather its owners.* When poor people own communication technology in ways to provide increased access to information to the resource-poor and, in so doing, create a viable business proposition for themselves, they help bridge the digital and economic divide in society.

2. *Low-income emerging markets for information technology products can be profitable.* Reaching out to rural customer segments in emerging markets should not always be equated with charity and benevolence; rather it is possible to create models of social entrepreneurship which subscribe to multiple, co-existing, and mutually-reinforcing (win-win) bottom-lines (Prahalad, 2004; Quadir, 2003; Singhal, Svenkerud and Flydal, 2002). In low-income markets, such as in Bangladesh and other developing countries, companies must view the consumers as actively engaged in seeking a good life, not as passive consumers who merely want satisfaction (Letelier, 2003). The GrameenPhone was able to identify culturally relevant opportunities by making the link between culture and the purchase motive of the consumers.

Grameen's venture (in cooperation with Telenor of Norway and others) shows that multiple bottom-lines, such as the following, can be met.

- » *Commercial interests* in terms of revenues, profits, and growth.
- » *Social cause-related interests* in terms of serving unserved and underserved markets nationally, and also serving poor, rural, illiterate inhabitants who are traditionally excluded from traditional markets –thus overcoming the digital divide.

However, Telenor's forays into Bangladesh were not free of problems, pointing to the complexities in forging long-term win-win partnerships. The bureaucratic and regulatory hurdles under the state-owned telecommunications monopoly Bangladesh Telegraph and Telephone Board (BTTB), as well as Bangladesh's unstable political regime, is problematic for GrameenPhone's business operations (Malaviya, Singhal, Svenkerud and Srivastava, 2004b). For instance, the uncertain political support and the fear of heavy taxation have forced Telenor to re-invest all its profits into the Bangladeshi venture rather than attempt to take these profits out of country as dividend for its shareholders (Telenor's shareholders, understandably, were clamoring to receive dividends).

3. *Development organizations that have a good "brand" value and wide rural reach in a developing country, are uniquely positioned to partner with corporations to extend the benefits of information technology in rural areas.* Here Grameen's collaboration with Telenor Corporation of Norway is instructive. Clearly, in Bangladesh, "Grameen" has tremendous brand equity by virtue of its widespread success in poverty alleviation, empowerment of rural women, and its well-known credo that "good development is good business" (which is also the slogan of the Village Phone Project). Many in Bangladesh feel that the "Grameen" brand is far more recognized in Bangladesh than even Coca Cola! So

branding the new venture Grameen Phone brought instant credibility to Telenor's business venture in Bangladesh. Also, Telenor's partnering with Grameen Telecom made possible the Village Phone Project, whereby Grameen Bank borrowers who take loans to lease or purchase the mobile telephone sets now settle their monthly telephone bills through the bank workers. The already existing village-based loan disbursement and repayment infrastructure of the Grameen Bank allows for handling the logistics of the Village Phone Project at a very small, additional marginal cost.

That said, Grameen Bank's involvement in the Village Phone Project is perceived by some as problematic. Critics argue that the selection process of village telephone ladies propagates inequity by disallowing the most disadvantaged rural women to participate (Singhal and Rogers, 2001). At the present time, the "selected" village phone lady should have (a) a solid record of borrowing and repaying Grameen Bank loans, (b) a successful existing business, for example, a village grocery store, (c) a residence that is centrally located on the village map, and (d) a family member who knows English letters and numbers. Few village women in Bangladesh fulfill these criteria. Further, such a 'self-selection' of village telephone ladies propagates a monopolistic control of telephony services at the village level.

Conclusions

Despite the aforementioned problems and constraints, the Grameen Bank's integrated initiatives in harnessing information technologies for development are exemplary and laudatory. That is one reason why the GrameenPhone project directly inspired, in 2003, the MTN villagePhone project in Uganda to bring telephony to underserved areas. This project—representing a unique collaboration between Grameen Foundation USA, MTN Uganda (the country's largest telecommunications service provider), and five local microfinance institutions—was operational in 350 Ugandan villages by mid-2004, serving close to one million rural inhabitants. By 2008, the MTN villagePhone project is estimated to place 5,000 village phones in rural Uganda, serving 10 million poor inhabitants who previously had no access to telephony.

In conclusion, the Grameen information technology operations in Bangladesh, and its emerging replication in Uganda, demonstrate how "penny" capitalism can operate creatively to bridge the digital divide and serve the underdogs of society.