



The Village Phone Constituency in Bangladesh. A Case of a Sustainable e-Inclusion Enterprise

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2006

Paper for SPRU 40th Anniversary Conference, “The Future of Science, Technology and Innovation Policy: Linking Research And Practice,” 11th-13th September 2006.

Abstract

The UN Millennium Goals have set challenging targets to humanity to improve the living conditions of millions of excluded people. This has resulted in a search for experiences that are pioneering the innovative use of ICTs to combat exclusion. The ‘holy grail’ is ‘sustainable enterprises,’ i.e., those ventures that are able to continue growing and creating wealth and employment following their emergence into the world. This paper is about a ‘sustainable e-inclusion enterprise’, the Village Phone Constituency (VPC), born and making a difference in rural Bangladesh. The discussion describes the form and mechanics of the VPC; examines the “bottom-of-the-pyramid” framework and its appropriateness to the understanding of the nature of the VP constituency. It presents some theoretical pointers to understand the nature and process of development of the VPC, focusing particularly on the processual framework of “sociotechnical constituencies.” It proceeds then to apply the “constituencies” framework to the two initial phases in the creation of the Village Phone Constituency: (1) the vision and target problem, and (2) the formation of the institutional core. The final discussion identifies some salient aspects of the VPC experience and contrasts them with views from the BOP approach.

The Village Phone Constituency in Bangladesh. A Case of a Sustainable e-Inclusion Enterprise¹

1 Introduction

The UN Millennium Goals have set challenging targets to humanity to improve the living conditions of millions of people who are excluded from the benefits of development. One of those areas of development concerns access to information and communication technologies (ICTs) and, more generally, to the benefits associated with the development of the knowledge society. This has given rise to concepts such as “digital divide,” “digital dividend,” “ICT for development,” and e-inclusion,” to draw attention to both the threat of an increasing gap between the “information-rich” and the “information-poor” and the opportunity opened by the production, diffusion and implementation of the new technologies.

Concurrently, governments and international organizations have taken a very active role in the promotion of task forces, actions, studies and global summits, for instance, the Global Alliance for Information Technologies and Development (GAITD) (previously UN ICT Task Force - UNICTTF) and the World Summit on the Information Society (WSIS) have mobilised governments, the private sectors, NGOs and the civil society to discuss and find ways of promoting e-inclusion to try to make a reality of an ‘information society for all.’ This has resulted in a search for experiences that are pioneering the innovative use of ICTs with the aim of improving the work and living conditions of the poor, the disable and other people currently facing exclusion from the knowledge society. The ‘holy grail’ is ‘sustainable enterprises,’ i.e., those ventures that are able to continue growing and creating wealth and employment following their emergence into the world. These are seen as the best hope to realise one of the best known “millennium goals,” namely, “reduce poverty by half by the year 2015.”

This paper is about a ‘sustainable e-inclusion enterprise’ born and making a difference in one of the poorest areas of the world: rural Bangladesh, where over 100 million people live far removed from the developments of the knowledge society. Bangladesh has a population of about 145 million and 50% lives under the national poverty line. ICT development is amongst the lowest in the world with 5 fixed telephone lines, 2 Internet users and 4 PCs per 1000 people in 2004.

In 1996, however, the government opened the mobile phone market to private investment triggering the emergence of several companies, among which Grameen Telecom and GrameenPhone and their Village Phone Programme (VPP) represent a major example of ‘sustainable e-inclusion enterprise.’ Indeed, at the launch of the VPP in 1997, there was no telephony of any kind in the over 68,000 villages of rural Bangladesh. Today, over 215,000 women own mobile phones and run micro-enterprises that provide services to tens of millions of rural inhabitants in most of Bangladeshi villages. In the process for the first time these women –the village phone ladies (VPLs)- are earning an income and helping to connect their villages to information with both social and economic benefits. The understanding of the nature of this e-inclusion enterprise is the subject of this paper.

¹ I wish to thank Nazrul Islam for his support during the research for this paper.

For this purpose, the discussion is structured as follows: section 2, gives a description of the form and mechanics of the Village Phone Constituency (VPC) that has been responsible for bringing mobile telephony to rural Bangladesh; section 3 describes the “bottom-of-the-pyramid” framework and examines its appropriateness to the understanding of the peculiar nature of the VP constituency; section 4 presents some theoretical pointers to understand the nature and process of development of the VPC, focusing particularly on the processual framework of “sociotechnical constituencies.” Section 5 applies the “constituencies” framework to the two initial phases in the creation of the Village Phone Constituency: (1) the vision and target problem, and (2) the formation of the institutional core. Section 6 contains a discussion identifying some particular aspects of the VPC experience revealed by the two initial phases and contrasts them with views from the BOP approach. A final brief section 7 suggests lines for further research.

2 Description of the Village Phone Constituency²

Figure 1 provides an overview of the different players in the Village Phone Constituency and their relationships, operational roles and responsibilities in taking mobile telephony to rural Bangladesh. The entire governance is complex and contains a number of layers.

At the inner institutional core (light-yellow circle), there are three organizations closely related to each other through ownership arrangements and complementary roles in the value chain - GrameenPhone JV (joint venture) and its two shareholders Grameen Telecom and Telenor. The GrameenPhone joint venture is on its own capable of providing mobile telephone services to urban subscribers, but not to the mass of people in rural Bangladeshi villages, where incomes are very low and few people can afford to buy a mobile telephone. For the latter to happen, two other players are required in the value-chain: Grameen Bank and the Village Phone Operators (VPOs) (intermediaries) who are the direct service providers to the Village Phone Users (VPUs) or customers.

In Figure 1, Grameen Bank and VPOs are found in the second layer (light green oval) external to the joint-venture but with the same colour of the players in the joint-venture since they are essential to the value chain leading to the Village Phone users found in the third layer (light blue oval). In the second layer are also found organizations that act as financial and equipment suppliers to the GrameenPhone JV and to Grameen Telecom, including the supplier of the mobile telephones for the VPOs. Finally, in the outer third layer are also found players with which the GrameenPhone network must maintain interconnectivity such as the fixed telephony network of the national telecom company BTTB (Bangladesh Telegraph and Telephone Board), the fiber optic network of Bangladesh Railways (BR), the other private cell-phone service providers and the roaming partners that enable international connectivity. The government is also in the third layer as provider of the license to operate the cellular telephony service in Bangladesh.

² Many studies have been conducted on the experience Village Phone in Bangladesh, particularly in the early 2000s. See, for instance, Aminuzzaman et al. (2003), Bayes et al., (1999), Bayes (2001), Burr (2000), Chowdhuri (N.D.), Cohen (2001), Islam (2005), Knight-John et al. (2005), OECD (2004), Osterwalder (2004), Richardson et al. (2000), Rothery (2001).

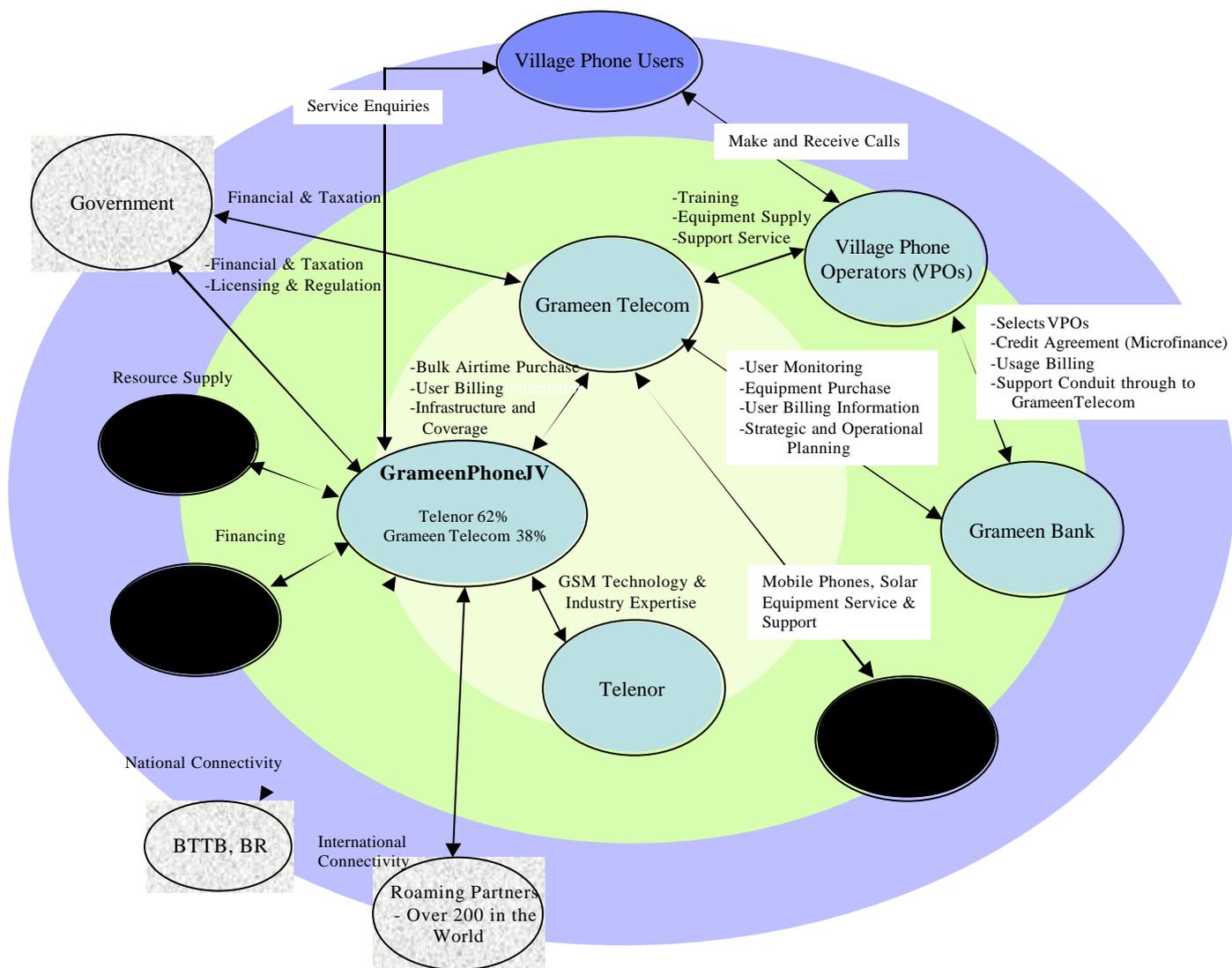


Figure 1. Grameen Phone Constituency – Operational Roles and Responsibilities Among Constituents

Source. Based on Keogh and Wood (2005), OECD (2004, 2005)

Table 1 contains short descriptions of the players that today constitute the core value-chain partners in the VPC. The technical partner is clearly Telenor that provides the GSM telecommunications technology and industrial expertise to GrameenPhone. Telenor is also the majority shareholder of GrameenPhone with 62% of the shares. Neither Telenor nor Grameen Telecom are suppliers of telecom equipment. Thus, both companies buy from suppliers such as Nokia for the cellular phone for the Village Phone Operators. GrameenPhone has become the largest telecommunications service provider in Bangladesh, covering urban and rural areas. GP raises capital from a variety of financial sources.

To reach the poor in rural areas, GrameenPhone sells to its minority shareholder, Grameen Telecom, bulk airtime at discounted price. This discounted bulk airtime sustains the Village Phone Programme (VPP), a very innovative value chain that successfully brings mobile connectivity and multiple benefits to poor Bangladeshi villagers. It works as follows:

GTC has an understanding with GrameenPhone whereby GTC purchases airtime in bulk for all the VPs [village phones] in operation. GP prepares the monthly bills and send these for payment. GTC prepares individual bill in Bengali, the local language and send these bills to the corresponding Grameen Bank branches with a bill summary for a particular branch. Grameen Bank collects the VP bills along with its other dues. The concerned Grameen Bank branch pays the bill to GTC within the last date of payment.³

[In addition] ... Grameen Bank provides loans to the Village Phone Operators to buy the hardware equipment from Grameen Telecom. Also, Grameen Bank serves as the first level of contact between the Village Phone Operators and Grameen Telecom for bill repayments and support services.⁴

Table 1. Core Partners in the Value-Chain of the Village Phone Constituency

Core Value-Chain Partners and Share Owners of GrameenPhone JV (first layer in Figure 1)
GrameenPhone is the largest telecommunications service provider of Bangladesh with about 8 million subscribers. GrameenPhone operates in urban and rural areas establishing and maintaining the GSM telecommunications infrastructure. It is a joint venture owned by two institutional shareholders: Telenor (62%) and Grameen Telecom (38%). GrameenPhone describe itself has having “a dual purpose: to receive an economic return on its investments and to contribute to the economic development of Bangladesh where telecommunications can play a critical role. ... Telephony helps people work together, raising their productivity. This gain in productivity is development, which in turn enables them to afford a telephone service, generating a good business. Thus development and business go together.” ⁵ ... [And]... “The telephone is a weapon against poverty.” ⁶
Telenor ASA is Norway’s leading telecommunications company and a leader in GSM technology. ⁷ “Mobile is Telenor’s principal focus area for future growth. Continued development of the mobile activities is vital to the Group’s positioning as an international telecommunications player. Telenor has ownership interests in 12 mobile operations in Europe and Asia.” ⁸ “Telenor was listed on Oslo Stock Exchange and Nasdaq on 4 December 2000. ... The Norwegian State is the largest single owner, holding 54% of the shares as of 31 March 2005. Telenor’s market value as of 31 March 2005 was NOK 100 billion - the third largest company listed on Oslo Stock Exchange.” ⁹ Telenor also has a good reputation for its commitment to corporate social responsibility. Thus, “Additional to our own value creation, Telenor is committed to contribute positively in society, primarily through partnerships and networking and through a responsible management of our social obligations. ... Private industry is an important partner for both public authorities and NGOs in the collective effort to create safe jobs, socially useful products and services, a fair market and a sustainable development.” ¹⁰
Grameen Telecom is an independent non-profit organization established at the initiative of Grameen Bank.

³ Grameen Telecom (N.D.a).

⁴ Keogh and Wood, p.72.

⁵ GrameenPhone (2004a), p.3. See also GrameenPhone (2004b, 2005).

⁶ GrameenPhone (N.D.a)

⁷ Global System for Mobile or GSM technology is the most widely accepted digital system in the world, currently used by over 300 million people in 150 countries. The GSM standard started in Scandinavia in 1992. For news on GSM, visit the site of the GSM Association (www.gsmworld.com)

⁸ Telenor (2004).

⁹ Telenor (N.D.a). See also Telenor (N.D.b)

¹⁰ Telenor (N.D.c). See also Telenor (2002).

Started with one volunteer person, Khalid Shams - second top person in the Grameen Bank, Grameen Telecom has today over 200 people. Grameen Telecom's developmental mission is plainly expressed in its objectives, which are as follows:

"To provide easy access to telephone services, all over rural Bangladesh

To initiate a new income generating option for the villagers

To gradually bring the full potential of the Information Revolution to the doorsteps of Villagers (i.e., bringing IT to the Poor) using telephone as a new weapon against poverty since connecting rural areas to the rest of the world brings new opportunities to the rural populations."¹¹

Grameen Telecom and Grameen Bank use an extensive network of offices across rural Bangladesh. By June 2006, this network has distributed a total number of 218,687 village phones. "We have distributed the Phones under 1766 Grameen Bank branches, 155 Area Offices and 34 Zones by coordinating through 21-field level Grameen Telecom Unit Offices. The program has now spread in more than 40,000 villages in 61 out of 64 districts of the country."¹²

Core Value-Chain Partners External to the GrameenPhone JV (second layer Figure 1)

Grameen Bank was founded in 1976 by Muhammad Yunus¹³ who has championed microcredit¹⁴ without collateral as a tool against poverty and for socio-economic development of poor areas. Grameen Bank "provides credit to the poorest of the poor in rural Bangladesh, without any collateral. At GB, credit is a cost effective weapon to fight poverty and it serves as a catalyst in the over all development of socio-economic conditions of the poor who have been kept outside the banking orbit on the ground that they are poor and hence not bankable."¹⁵ Today, GB has 6.04 million borrowers, 2,014 branches and works in 75,847 villages across Bangladesh with a total staff of 17, 816.¹⁶ An important characteristic of GB is that "is owned by the poor borrowers of the bank who are mostly women [96%]. It works exclusively for them. Borrowers of Grameen Bank at present own 94 per cent of the total equity of the bank. Remaining 6 percent is owned by the government."¹⁷ Furthermore, Grameen Bank has grown into a family of enterprises. Thus, "There are now more than two dozen organizations within the Grameen family of enterprises. These include the replication and research activities of **Grameen Trust**, handloom enterprises of **Grameen Uddog** and fisheries pond management by **Grameen Motsho or the Fisheries Foundation**."¹⁸ Grameen Bank provides loans to the Village Phone Operators to buy the hardware equipment from Grameen Telecom. Also, Grameen Bank serves as the first level of contact between the Village Phone Operators and Grameen Telecom for bill repayments and support services.¹⁹

Village Phone Operators (VPOs) are the mobile communications service provider to the people in the villages of rural Bangladesh.²⁰ They play an essential distribution role in the value chain. They service the end user and collect the payments that enable them to pay their own suppliers, while leaving a profit to themselves. The VPOs are typically females and hence, they are also known as Village Phone Ladies (VPLs). The income of VPOs is not restricted to the sale of phone calls. They also can identify other "business opportunities, including the resale of information to others in their communities."²¹ The VPOs are key to the success of the Village Phone Programme as well as their main beneficiaries. For this reason, they are selected with stringent criteria from among the Grameen Bank's clients, "based on their loan repayment record, position in the community, location and business capabilities."²² It is estimated that VPOs in Bangladesh "earn an average net income of \$58 per month from their Village Phone businesses."²³

¹¹ Grameen Telecom (N.D.a). See also Grameen Telecom (N.D.b) and Alauddin (N.D.).

¹² Grameen Telecom(N.D.c).

¹³ On the philosophy of M. Yunus, see Yunus (2003a, 2006a).

¹⁴ "Microcredit is the extension of small loans to entrepreneurs too poor to qualify for traditional bank loans." (Grameen Bank, N.D.a). See also, Yunus (2003b).

¹⁵ Grameen Bank (N.D.b). See also Grameen Bank (N.D.c)

¹⁶ Yunus (2006b). See also Yunus (2002).

¹⁷ Ibid.

¹⁸ Grameen Bank (N.D.a)

¹⁹ Keogh and Wood (p.72).

²⁰ See Bayes (2001), GrameenPhone (N.D.b), Richardson et al. (2000), OECD (2004), Richardson et al. (2000).

²¹ Ibid., p.131.

²² Ibid., p.75.

²³ Ibid., p.73.

Figure 2 gives a more detailed account of the operational responsibilities of each of the core Bangladeshi partners in the value-chain of the Village Phone Constituency. Figure 3 shows the transactional financial flows between these core Bangladeshi members, together with an indication of their benefits.

At the start of the financial-chain is (1) GrameenPhone's investment in infrastructure and bulk sale of airtime to non-profit Grameen Telecom at a 50% discounted market rate. GP's benefit is extended market share, business and branding with high "corporate social responsibility" profile. (2) Grameen Telecom and profit-making Grameen Bank are part of the same family and take care of providing the service to the villages. As said above, Grameen Telecom provides to Grameen Bank the phone bill for the consumed airtime in Bengali language and receives from Grameen Bank the payment for the aggregate phone bill plus a 7.5% commission for its service. (3) Grameen Bank, apart from making and managing the loan that allows the Village Phone Operator to buy the mobile phone from Grameen Telecom, provides each VPO with an individual phone bill for the consumed 50% discounted air-time and, in turn, receives from the VPO the payment for this consumption plus a 15% commission for its service. (4) Each VPO provides a phone service to the Village Phone Users at full 100% market rate and, after paying Grameen Bank, retains 35% as reward for its retailing services. The Village Phone User makes use of the phone at full market rate and gains access to connectivity for social and economic purposes.

Keogh and Wood (2005) describes the workings of the scheme in money terms:

GrameenPhone charges are Taka 2.00 per minute for local calls at peak hour (compared to Taka 4.00 for urban subscribers). For NWD and ISD calls, GP charges BTTB rate plus VP air time charges. 15% Value Added Tax (VAT) is added to total call charges. To compensate the administrative costs incurred by GTC and GB, 15% service charges are added to the total GP bill. VP Operators are supplied with a price list that includes all kinds of charges and a margin of profit for themselves. For example, for a local mobile call, retail rate is Tk 5, out of which GP cost is Tk 2.00, VAT being Tk 0.30, Service charge Tk 0.30. Therefore the rest Tk 2.40 is the profit for the VP Operator.²⁴

Of course, out of this profit the Village Phone Operator has to pay back the starting-up loan to Grameen Bank. This is paid back in weekly payments over a two-year period, while the microfinance institution helps the VPO to attain sustainability. VPOs across Bangladesh earn an average net income of \$58 per month and have established a path out of poverty.²⁵

²⁴ Keogh and Wood, 2005, p.73. Note that this example is subject to variations depending on the market price of phone call. In fact, this price has fallen lately.

²⁵ Again this net income will vary with falls in market price of telephone call, although lower prices should in principle lead to an increase in the use of the telephone either by the same users or by new users.

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

Figure 2. Operational Roles and Responsibilities of Core Bangladeshi Partners in the Value-Chain of the Village Phone Constituency

Source. Keogh and Wood (2005).

The Village Phone Constituency has successfully transferred the GSM mobile connectivity and service to rural Bangladesh and has helped transform its socio-economic landscape in the last decade. The number of Village Phone Ladies has gone up from 28 in 1997 to 215,000 in less than 10 years (June 2006). These VPLs are now scattered all over the country offering mobile telephony to tens of millions people. At the same time, the total number of GrameenPhone's mobile subscribers has jumped to about 8 million, from about a total number of 13 million for the total mobile market in Bangladesh.

The benefits of the experience for the people of rural Bangladesh have been reported in a number of studies. Table 2 summarises a string of them. They are separated into broad developmental benefits, socio-economic benefits for Village Phone Ladies and socio-economic benefits for the Village Phone Users in general. There are clearly economic and social-status benefits for the Village Phone Ladies and their families. Their new income

varies from case to case but on average it is estimated at US\$ 2 per day. For phone users, the economic effect is also significant since the phone access to better information has reduced their cost of living and increased the income for the fruits of their work. It sounds paradoxical but poverty is expensive, as Prahalad and Hammond (2002) have shown (see Section 3 below). Lack of access to good information, credit and other factors commonly means the poor falls prey of intermediaries who profit from their weakness. The VPC has changed all this by providing both the microcredit and the mobile phone technology and service that have increased instant access to information.

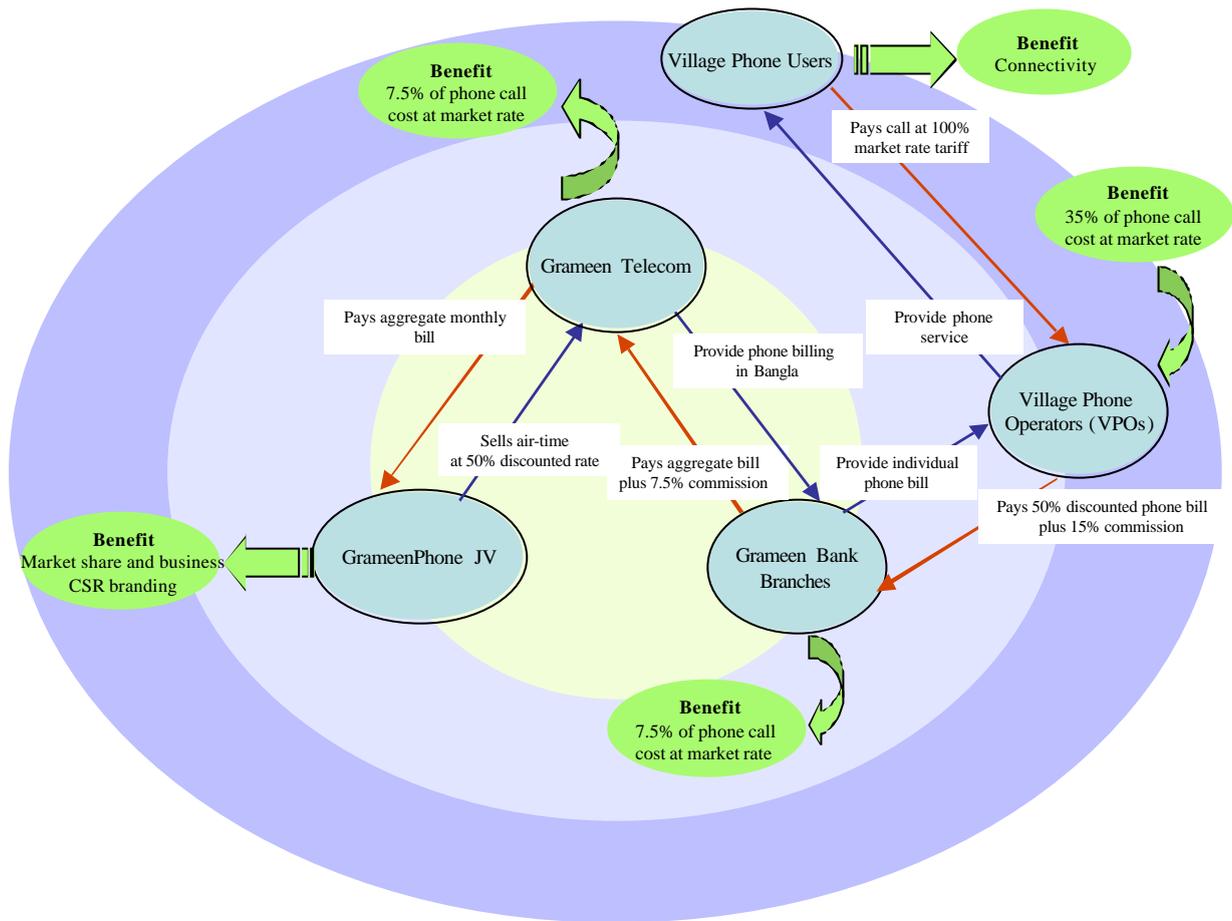


Figure 3. Money Flow for Village Phone Programme in Bangla Desh

Source. Based on Keogh and Wood (2005), p.35.

Table 2. Reported Benefits of Village Phone Programme

Development	
??	Effective strategy to bring telecommunication connectivity to rural Bangladesh, thus increasing teledensity and helping the poor lift themselves out of poverty. Enables compliance with universal service obligation.
??	Creation of a business model that is sustainable for all participants and enables both profit-making and social and developmental achievement
??	Fostering the emergence of thousands of phone micro-entrepreneurs, spreading a business culture among poor people
??	Improved market efficiency and price allocation
??	Improvement in law and order enforcement
??	Speedier and effective communications during natural disasters
Village Phone Ladies - VPLs	
Economic and Social Benefit	
??	VPLs can develop as micro-entrepreneurs, running their own business and turning a profit. On average they earn a net daily profit of USD 2, more than double the per capita income in Bangladesh. This increased income helps reduce poverty and improves food consumption.
??	Some creative and entrepreneurial users of the technology identify new business opportunities, including the resale of information to others in their communities.
??	Ownership of phone and the consequent increased income and standard of living tend to raise the empowerment and social status of phone-ladies and their households. Phone-ladies are well known in the village, have a greater say in deciding how to spend the phone income and are more mobile both within and outside their villages.
??	Women operators also gain status because other villagers must travel to their homes to make or receive phone calls, making the operator's home an important centre of activity within the village.
Village Phone Users, including VPLs	
Economic and Social Benefits	
??	Substantial reduction of cost of communicating information, associated with savings of time and transport costs, as well as with more timely and speedy conveyance of information. Costly absence of productive members can be avoided, thus generating important savings on the direct and opportunity costs of travelling away from home.
??	Better access to information helps improve both villagers' productivity and prices for their goods. In general there is a better and more efficient market pricing for villagers' products and inputs, associated with an increase in villagers' bargaining power vis-à-vis middlemen (who lose their information advantage), and a decrease in sharp swings in demand, supply and prices of commodities.
??	Major reduction of the risks involved in remittance transfers, and possibility of obtaining accurate information about foreign currency exchange rates (transferring cash from a Gulf State to a rural village in Bangladesh is fraught with risks)
??	The technology also serves to link regional entrepreneurs with each other and their clients, bringing more business to small enterprises.
??	Improvement to access to knowledge in general
??	Better and less costly access to health – villagers can contact clinics, doctors and ambulances in a timely manner, especially important in emergency situations such as natural disasters.
??	Helps reinforce kinship bonding, particularly in poor families where people are working abroad (e.g., more than five million Bangladeshis live in the Middle East and Malaysia), but also among villagers and relatives that live in Dhaka or other villages. Communication with the outside world is fast and regular.
??	Women users feel comfortable using Village Phones because the phone operators are typically female and the phones are in their places of business, thus women can go unescorted by a male relative. It is a liberating experience

Source. Aminuzzaman et al., (2003), Bayes et al., (1999), Bayes (2001), Chowdury (N.D.), Cohen (2001), OECD (2004), Richardson et.al. (2000), Zainudeen (2006).

3 Seeking to Understand the Nature of the VPC – The Bottom-of-the-Pyramid Framework

The ‘bottom of the pyramid (BOP)’ school of thought²⁶ has given one of the most systematic account of enterprises successfully doing business among the mass of 4 billion people who earn less than \$4 a day (bottom tier –tier 4- of the global market pyramid).²⁷ A major purpose of the “bottom of the pyramid” discourse and analysis is to persuade multinational corporations (MNCs) that they can benefit greatly by focusing their business on the billions of poor people that populate the planet, while helping to bring to an end to the scourge of poverty and associated ills that plague humanity today. The BOP approach is MNC-centred, since in its view only MNCs have the required knowledge, management and financial resources and capabilities to make a real difference on the massive challenge of poverty. Thus, MNCs can help develop the new BOP markets, building the missing commercial infrastructure and the environmentally sound products and services for these markets. MNCs can also leverage their global presence by transferring knowledge from one market to another, customizing it to local needs, including the transfer of innovative BOP products up to the Tier 1 markets of developed countries.

In a sense, the focus on MNCs is also a reflection of the fact that:

For more than 50 years, the World Bank, donor nations, various aid agencies, national governments, and, lately, civil society organizations have all fought the good fight, but have not eradicated poverty. The adoption of the Millennium Development Goals (MDG) by the United Nations only underscores that reality; as we enter the 21st century, poverty—and the disenfranchisement that accompanies it— remains one of the world’s most daunting problems.”²⁸

At the root of this failure, BOP writers identify dominant mindsets or dominant logic (i.e., “the beliefs and values that managers serving the developed markets have been socialized with”)²⁹ influencing the behaviour and pursuits of all the different players mentioned above. The result has been that the solution to poverty has been treated as the responsibility of government, international agencies and charitable organizations, with the private sector not only left out of this responsibility but, also, often seen as greedy profit-maximisers not to be trusted on matters of poverty. The MNCs own dominant mindset and activities have not done much to dispel this perception, although BOP writers see definite signs of changes in attitudes towards MNCs by the other main parties to the problem of world poverty. However, as Prahalad and Hammond (2002) make clear “To date few multinationals have developed a cadre of people who are comfortable with these [BOP] markets.” (p.54) And, “to date, NGOs and local businesses with far fewer resources than the MNCs have been more innovative and have made more progress in developing these markets.”³⁰

²⁶ Prahalad and Hart (2002), Prahalad and Hammond (2002), Prahalad (2004, 2006), Hammond and Prahalad (2004), Simanis and Hart (2006).

²⁷ The market pyramid has four tiers. The first tier includes the 75 to 100 million in the world who earn more than \$US 20,000 dollars per capita annually. Tiers 2 and 3 include 1.5 to 1.75 billion people who earn between \$US 1,500 dollars and \$US 20,000 dollars. This tiers are the current target of MNCs. *Tier 4 contains about 4 billion people who earn less than \$US 4 a day and, inside this group, over a billion people — roughly one-sixth of humanity — lives with a per capita income of less than \$US 1 per day.*

²⁸ Prahalad, 2004, p.3.

²⁹ Ibid., p.24. See also Prahalad and Bettis (1986) for concept of dominant logic.

³⁰ Prahalad and Hart, 2002, p.14.

The current dominant mindset of MNCs is characterised by a number of beliefs that act to block MNC's investment in the markets of the poor. These beliefs are summarised in Table 3 and an important part of the BOP argument is spent in demonstrating that they should be abandoned for the sake of MNCs own self-interest that is inextricably intertwined with that of the world.

Table 3. Current Dominant Mindset of MNCs Regarding the BOP Market		
1	Lack of Purchasing Power	The poor have no purchasing power to afford the products of MNCs
2	Mis-aligned Products	The poor not brand-conscious or value-conscious. They have no use for the products and services sold in developed markets.
3	Mis-aligned Technology	The poor does not accept advanced technology readily. The poor can use the previous generation of technology.
4	Difficult Access	Distribution access to the BOP markets is very difficult and BOP consumers are unconnected to networks
5	Uncompetitive Cost Structures	The poor are not target consumers because current cost structures do not allow profitable competition in this market.
6	Lack of Long-term Strategic Value	The market of the poor is not important to long-term business viability. Tier 4 can be left to governments and nonprofits.
7	Management Mis-alignment	Managers are not excited by business challenges at the BOP or with a humanitarian dimension. Intellectual excitement is in developed markets.

Source. Prahalad and Hart (2002) and Prahalad (2004).

Thus, it is argued that it is a myth that there is no money at the BOP. In fact, there is plenty of money given the huge numbers of people, who may have individual low incomes but large aggregate purchasing power. The BOP market is in fact estimated at about \$US 13 trillion PPP (purchasing parity prices),³¹ without taking into account of the potential massive increase that would result from economic development. Moreover, there is a lot of hidden purchasing power since, paradoxically, the poor lives expensively. They tend to pay much higher prices for food, for money-lending and ‘for most things than middle-class consumers do, which means that there's a real opportunity for companies, particularly big corporations with economies of scale and efficient supply chains, to capture market share by offering higher quality goods at lower prices while maintaining attractive margins.’³² It is also argued that the poor are value-conscious as well as brand-conscious and, indeed, they ‘often do buy “luxury” items.’³³ The poor also accept advanced technology readily and are getting connected through spreading information networks of telephony and Internet as testified by experiences such as the Grameen Phone Constituency. It is also a myth that MNCs managers are not excited by business challenges at the BOP or with a humanitarian dimension. In fact, BOP writers see some of the most exciting business challenges for MNCs precisely at the bottom of the pyramid.

³¹ Prahalad (2004).

³² Prahalad and Hammond (2002), p.50.

³³ Ibid.

The reason is that some of the beliefs are rooted in some fundamental structural realities that MNCs have to face if they are to benefit from the opportunity at the bottom of the pyramid. For instance, it is true that they have to work on re-thinking products, technology, access and cost structures. The BOP market is today an opportunity rather than a reality and MNCs are called upon to respond to a number of major challenges to develop it fully. Thus,

Serving the BOP consumers will demand innovations in technology, products and services, and business models. More importantly, it will require large firms to work collaboratively with civil society organizations and local governments. Market development at the BOP will also create millions of new entrepreneurs at the grass roots level—from women working as distributors and entrepreneurs to village-level micro enterprises. These micro enterprises will be an integral part of the market-based ecosystem. It will require organizational and governance innovations as well.³⁴

To a large extent the development of the BOP market is associated with the creation of the capacity to consume by Tier 4 people. This can be pursued in a variety of ways that improve both the purchasing power of the potential consumers (demand) and the MNCs product/service offer so as to match this purchasing power. On the first account, MNCs can help release spending power by (1) reducing the poor's cost of living through the displacement of expensive intermediaries and suppliers, (2) by improving income generation through the creation of jobs (not necessarily in the MNC-s payroll) or self-employment (micro-entrepreneurs), and (3) by stimulating access to credit. On the second account, the MNCs offer must take into account that the available purchasing power of BOP people has specific cash-flow characteristics: low, available for short time, geographically scattered (in rural areas). Therefore, the MNCs offer must be (1) *affordable* (without sacrificing quality), (2) *accessible* (taking account of the poor's living location and working patterns), and (3) immediately *available* to satisfy a buying decision. This in turn will call for innovative purchase schemes, single-serve packaging, aggregating demand and other inventive ways to respond to the cash-flow patterns of the poor.

BOP authors, however, do not argue just for the existence of appropriate purchasing schemes, or unit packaging, or credit facilities, which is something that has existed for a long time in Tier 4 markets. The key is “selling to the poor and helping them improve their lives by producing and distributing products and services in culturally sensitive, environmentally sustainable, and economically profitable ways.”³⁵ In so doing, MNCs “must play a more active role in narrowing the gap between rich and poor ... [and] ... This cannot be achieved if these companies produce only so-called global products for consumption primarily by Tier 1 consumers.”³⁶ It is therefore necessary that MNCs conduct R&D and market research specifically focused on the poor and local conditions, with a view to targeting product development and innovation to local solutions, marrying MNCs global best practices with local capabilities and market demands.

³⁴ Prahalad (2004), pp.1-2.

³⁵ Prahalad and Hart (2002), p.2.

³⁶ Ibid., p.10.

Such profound product/service realignment could not leave untouched MNCs cost structures and business models. Indeed, these must be reinvented through

radical innovations in technology and business models ... [requiring] ... MNCs to reevaluate price-performance relationships for products and services. ... a new level of capital efficiency and new ways of measuring financial success. Companies will be forced to transform their understanding of scale, from a “bigger is better” ideal to an ideal of highly distributed small-scale operations married to world-scale capabilities.³⁷

At the same time, managers will have to learn to create and operate successful alliances involving economic, intellectual, racial, and linguistic diversity. The reason is that MNCs also cannot develop the BOP market and solve the problem of poverty alone. Indeed, despite MNCs powerful resources and capabilities, BOP authors point out to the need for involvement of government, financial institutions, local private sector, and the NGO sector and civil society. The latter players in particular are sources of local knowledge about BOP customer behaviour and can act as lead users of new services. Such broad base of support is also important to counteract the reaction of entrenched interests profiting from the present situation of poverty. Most importantly, such “collaboration between the poor, civil society organizations, governments, and large firms can create the largest and fastest growing markets in the world. Large-scale and wide-spread entrepreneurship is at the heart of the solution to poverty.”³⁸ In the process, led by MNCs, a new market-driven paradigm for addressing poverty would emerge.³⁹

Ultimately, MNCs are called upon to develop a new mindset that would fundamentally alter the way they see themselves in the world market and even the purpose of the business. Thus, “these changes will only lead to a true business revolution if corporate perceptions regarding the world’s poor shift dramatically. Managers in multinational corporations are conditioned to think mainly of rich consumers. They are prisoners of their own logic.”⁴⁰ Table 4 contains the key elements of the new mindset for the 21st century.

³⁷ Ibid., p.2. “For example, **the basic economics of the BOP market are based on small unit packages, low margin per unit, high volume, and high return on capital employed.** This is different from large unit packs, high margin per unit, high volume, and reasonable return on capital employed. This shift in business economics is the first surprise to most managers.” (Prahalad, 2004, p.24)

³⁸ Ibid., pp.3-4.

³⁹ Prahalad and Hammond (2002).

⁴⁰ Hammond and Prahalad (2004), pp.34-35. Prahalad (2006) asks: “Why do multinational corporations find it had to embrace these approaches? The answer may lie in the dominant logic of successful companies: the business practices that have been successful in the past, the mindset tied to those old practices, the internal evaluation systems that reinforce this mindset, and the daunting problem of lack of experience in the new way of operating.” (p.71) Simanis and Hart

Table 4. New MNCs Mindset to Succeed in Developing the BOP Market		
1	The Poor Are Key Targets	The poor are resilient and creative entrepreneurs and value-conscious consumers. They are customers and co-creators
2	BOP markets as Core Business	BOP markets must make become part of MNCs core business. They cannot be relegated to corporate social responsibility initiative.
3	New Profitability Metrics	New business metrics that change the traditional focus on high gross margins to capital efficiency - getting the highest possible returns on capital employed (ROCE). In BOP markets the profit margin on individual units will always be low.
4	Inclusive Capitalism in Globalization	MNCs to look at globalization strategies through a new lens of inclusive capitalism. Return on investments must be acceptable in the context of results that benefit everybody.
5	Huge Benefits in BOP Markets	There are tremendous short-, medium- and long-term benefits in operating in the BOP markets
6	BOP Markets Key to MNCs future	BOP markets are core to the long-term strategic future of MNCs
7	Operating in BOP markets is in the self-interest of MNCs	Operating in the BOP markets has nothing to do with charitable purpose, it is primarily self-interest due to the huge benefits. Helping to solve major problems affecting mankind is an associated consequence. ⁴¹

Source. Prahalad and Hart (2002), Prahalad and Hammond (2002), and Prahalad (2004), Hammond and Prahalad (2004).

No doubt the changes being requested to MNCs in terms of products, technology, business processes/models and, finally, mindset or dominant logic are quite daunting. In addition, there is a very concrete base to this mindset in the fact that “though MNCs’ customers account for little more than 20% of the world’s population, these customers account for almost 80% of the resources consumed on the planet.” (p.44) No wonder that, as said earlier, “To date few multinationals have developed a cadre of people who are comfortable with these [BOP] markets.”⁴²

Nevertheless, BOP writers argue that these changes are not only worthwhile; they are in fact quite imperative given the trends and developments characterizing the global economy this century, and the huge benefits waiting for those who lead the way into the BOP markets. “I argue that the pain of change is worth the rewards that will be reaped from the BOP as well as from traditional markets.”⁴³ These benefits can be classified in at least three major ways and they are shown in Table 5.

⁴¹ “Achieving this goal does not require multinationals to spearhead global social development initiatives for charitable purposes. They need only act in their own self- interest, for there are enormous business benefits to be gained by entering developing markets.” (Prahalad and Hammond, 2002, p.48)

⁴² Ibid., p.54.

⁴³ Prahalad (2004), p.27.

Table 5. Benefits to MNCs from Pursuing and Developing the BOP Market

<i>Planetary Benefits</i>
<ul style="list-style-type: none"> ☞ Achievement of global stability and sustained growth through innovation and competition as a result of massive poverty alleviation and consequent averting of social decay, political chaos, terrorism and environmental catastrophe. ☞ Massive expansion of markets and prosperity due to widespread MNC-led entrepreneurial activity, investment, innovation and competition in countries with large BOP markets, for instance, China, India, Brazil, South Africa, Indonesia, etc. The vigorous growth in these countries makes them new engines of global economic growth, promoting prosperity around the planet.
<i>Direct MNCs Benefits</i>
<ul style="list-style-type: none"> ☞ Opportunity to (1) exploit innovations in BOP markets some of which are large and attractive as stand-alone entities; (2) leverage local innovations across other BOP markets and, potentially, across developed markets, and (3) influence management practices of global firms (Prahalad, 2004) ☞ Top-line growth counteracting near saturation of existing markets ☞ Reduced costs through exploitation of cost-saving opportunities furnished by outsourcing, streamlining supply chains, close attention to distributors' performance, etc. ☞ Great economic value for shareholders given that “[v]ery low capital needs, focused distribution and technology investments, and very large volumes at low margins lead to very high ROCE businesses” (Prahalad and Hammond, 2002, p.53) ☞ Innovation since success in the BOP markets demand R&D and market research as well as commercial and technological experimentation specifically focused on the poor and local conditions.
<i>Benefits for the Poor</i>
<p>While benefiting themselves, MNCs will benefit the poor communities of the world in various forms:</p> <ul style="list-style-type: none"> ☞ Improvements in quality of life as a result of access to new products, expanded choices, and increased purchasing power. ☞ Increase in productivity and incomes as a result of new services and information that improve efficiency ☞ Fair and respectful processes that help build loyalty and trust in companies and in the global economic system. ☞ Attention to the needs of poor people due to exercise of collective consumer market power (Hammond and Prahalad, 2004) ☞ Beyond the benefits above, poor consumers find real value in dignity and choice.

The benefits are certainly appealing and BOP scholars promote them forcefully to prompt a wide-ranging positive movement from MNCs. In the end, however, whether these benefits are realized or not as BOP scholars envisage will depend above all on whether the new “BOP-friendly” mindset is fully embraced since the response to all other challenges will follow. For this reason,

The biggest change, though, has to come in the attitudes and practices of executives. Unless CEOs and other business leaders confront their own preconceptions, companies are unlikely to master the challenges of BOP markets. The traditional workforce is so rigidly conditioned to operate in higher-margin markets that, without formal training, it is unlikely to see the vast potential of the BOP market. The most pressing need, then, is education.⁴⁴

⁴⁴ Prahalad and Hammond (2002), p.54.

The set of BOP concepts just discussed constitutes the most systematic framework available today to deal with business-developmental experiences focused simultaneously on profit making and poverty alleviation. It has obvious implications for the understanding of the Village Phone Constituency, since the latter is squarely addressing the bottom-of-the-pyramid market represented by the millions of Bangladesh's rural poor. Many of the fundamental tenets and issues of the BOP approach help raise various questions regarding the VPC. These questions concern the validity of the approach in explaining the specificity of the VPC experience. For instance, has the VPC involved the radical transformations in MNCs products/service, technology and business models suggested by the BOP approach? To what extent has the VPC product/service differed from the product offered in Tier 1 markets? To what extent has the process (service) technology been changed to satisfy the local requirements? To what extent has the cost-structure, business models and mindset changed for the MNC partner? Has the VPC being an MNC-led experience? Above all, to what extent the BOP approach with its "MNC-led alliance" formula explains the specific nature of the VPC as well as the detailed processes of its formation in the context of Bangladesh?

Some answers can be readily anticipated on the basis of the information already given in section 2 – description of the VPC constituency (Section 6 discusses these issues more deeply). Thus, we find that for Telenor -the MNC at the core of the VPC- the experience has not required the dramatic transformations suggested by the BOP approach. The product, airtime connectivity, is exactly the same as for the Tier 1 market of Norway, the core technology is fundamentally the same, GSM technology, with added antennae to expand the range of coverage (where necessary), something that has in fact led some observers to question the appropriateness of the GSM technology for the local conditions of rural Bangladesh.⁴⁵ Telenor has not supplied telephone terminals and other parts of the working kit for the Village Phone Ladies. The telephone has been supplied by Nokia and has been chosen with some characteristics adapted to local conditions such as robustness and price. For Telenor, however, it would be difficult to say that the company's involvement in Bangladesh has meant a dramatic revision of product and technology. Something similar seems to be the case with Telenor's dominant mindset. Telenor was looking for investment opportunities abroad and has a CRS policy that seems adequate enough to satisfy the company's role in the business model of the VPC. Remember that Telenor operates through the GrameenPhone joint venture, which is the top operator not just in rural areas but also in the profitable urban areas. It is difficult to see Telenor having invested in Bangladesh for the sake of the Tier 4 rural market alone. Where Telenor satisfies some of the BOP concepts is in its willingness to engage in an alliance that has successfully transform the telecommunications landscape and livelihoods of millions in rural Bangladesh. It has also being part to the innovative 'bulk airtime' business model that has enabled the mixed value chain of the Village Phone Programme to work effectively. In the urban areas, however, the commercial model has followed the normal market practices. All in all, it cannot be claimed that the MNC at the heart of the VPC has had to undergo radical product, technological, business and mindset transformations to benefit from the BOP market of Bangladesh.

But, can it be said that the VPC has been an MNC-led process? The answer to this question requires knowledge and understanding about the detailed processes of formation

⁴⁵ Referring to the case of Grameen Phone, Simanis and Hart (2006) state, "it's worth stating explicitly that ... all or part of the core technology offering is an existing, off-the-shelf technology ... previously utilized only by the wealthiest people." (.46)

and functioning of the VPC alliance. Here the BOP approach remains rather abstract, since it lacks a theoretical analysis and understanding of the nature of both alliance-formation processes and the nature of the organizations driven by simultaneous profit-making and developmental pursuits. The emphasis on MNCs leadership and the need for alliances is not enough to explain these phenomena, and yet it is clear that such knowledge and understanding is badly needed, particularly, for its huge importance to the human challenge of eliminating poverty while expanding jobs, entrepreneurship and prosperity.

Walsh et al., (2005) have criticized Prahalad's book *Promises and Perils at the Bottom of the Pyramid* for being

a business-centric book. It does not particularly take the perspective of the impoverished people themselves to show us how they will directly benefit from this new commercial activity. We need to learn more about how BOP investments will enhance the buying power of the world's poor.⁴⁶

This paper definitely does not take an MNC-centric perspective in the treatment of the VPC. The key is to understand the VPC itself, its nature, formation, evolution and impact on the wellbeing of both alliance constituents and the poor masses of Bangladesh. Of course, this is a demanding intellectual task and the subject of a much larger piece of work than a single paper. Here it suffices to articulate the problem and present some pointers for future work both on the nature of the VPC organization and its process of formation and evolution. In particular, the paper proposes the 'sociotechnical approach' as appropriate to deal with the process of formation and evolution of the VPC.

4 Pointers to Understand the Nature and Process of Development of the VPC Constituency

4.1 Nature of the VPC Organization

On the nature of organizations, strategic alliances have been the focus of scores of studies in the last 25 years. These studies have documented the motivations, rationale, characteristics, and factors of success and failure of multiple forms of alliances. Among the multiple forms identified are: franchises, mergers, joint ventures, collaborative R&D agreements, etc., etc.⁴⁷

The nature of alliances is conceptualized as hybrids in transaction cost economics (TCE), one of the most systematic approaches of economics to the understanding of organizations, particularly firms.⁴⁸ Hybrids are a category of high relevance to the understanding of the VPC given its mixed character but is the least developed in the

⁴⁶ Walsh et al. (2005), p.478. In addition, "co-created BOP investments may do wonders to help unemployed people find work (and then consume first-world goods and services) in a developing economy, but BOP investments may not ameliorate poverty born of trapped capital..., debt overhang..., or other origins. Without a clear-cut matching process, and perhaps other interventions, we suspect that Prahalad will wake up disappointed in 2020. (Walsh et al., 2005, p.479)

⁴⁷ See for instance Contractor and Lorange (1998), Dussauge and Garrette (1999), Dyer et al., (2001), Grandori (1999), Gulati and Gargiulo (1999), Ireland et al., (2002), Kanter (1994), Mohr and Speckman (1994), Noteboom (1999), Osborn and Hagedoorn (1997).

⁴⁸ Williamson (1991, 1998, 1999, 2000).

conceptual apparatus of TCE. In the end, hybrids are just about every organizational form that stands in between the TCE's polar modes of markets and hierarchies. Thus, inside hybrids falls a large amount of organizational arrangements, including joint ventures and networks. Some authors have tried to extend the treatment of hybrids in TCE,⁴⁹ others have found it more appropriate to deal with the variety of hybrid organizations on their own terms. Thus, networks, bureaucracies, clans, business groups, heterarchies, constellations are among the concepts discussed by different authors.⁵⁰ An important issue of contention with TCE is its assumption that people are driven by self-interest and hence prone to opportunism in conditions of information asymmetry, while other scholars argue the importance of trust, norms and code of conducts, normally associated with the cultural embeddedness⁵¹ of organizations.

Most of the literature on alliances however has concerned inter-firm relations, although there is also an extensive literature on industry-university relations. In contrast, the VPC contains a blend of for-profit and non-profit organizations and has a declared blend of business and social-developmental objectives (profits and poverty alleviation). In short, the VPC is a blend of self-interested and humanitarian objectives. In this respect, it can be said that the VPC exhibits at least three types of hybridity:

- (1) hybridity of motives (mixed socially-business driven purposes)
- (2) hybridity of organizations, not in the TCE polar sense of market and hierarchy but in terms of legal status as for-profit and non-profit organizations.
- (3) hybridity of the TCE contractual type involving close-to-hierarchy forms (GrameenPhone joint venture) as well as close-to-market relations (GrameePhone's sale bulk airtime to Grameen Telecom with reference price determined by the market).

For this reason, we shall adopt the concept of "triple-hybrids" to distinguish the VPC and other similar experiences.⁵² The detailed theoretical examination and validity of this concept, however, is a matter beyond the scope of this paper. Here suffices to identify it as a pointer for further research.

⁴⁹ See, for instance, Borys and Jemison (1989), Garrette and Quelin (1994), Hennart (1993).

⁵⁰ Powell (1987). On networks, see Jarillo (1988), Thorelli (1986), Hakansson and Ford (2002), Wilkinson and Young (2002); on bureaucracies and clans, see Ouchi (1979, 1980), Alvesson and Lindkvist (1993); on business groups, see Hamilton and Feenstra (1998), Feenstra et al., (2003), Granovetter (1998); on heterarchies, see Girard and Stark (2003); on constellations, see Gomes-Casseres (2003).

⁵¹ Granovetter (1985).

⁵² Prahalad (2004) uses the term "market-based ecosystems" as "a framework that allows private sector and social actors, often with different traditions and motivations, and of different sizes and areas of influence, to act together and create wealth in a symbiotic relationship. Such ecosystem consists of a wide variety of institutions coexisting and complementing each other. We use the concept of ecosystem because each constituent in the system has a role to play. They are dependent on each other." (p.65) See also Prahalad (2006).

4.2 *Conceptual Framework for Innovation Processes - Sociotechnical Constituencies and Diamond of Alignment*⁵³

The fundamental postulate of the “sociotechnical constituencies” framework is that all innovation and technological processes are in essence an integration of *social* and *technical* constituents. That is, they imply the construction of ‘sociotechnical constituencies,’ understood as dynamic ensembles of *technical constituents* (hardware, software, etc.) and *social constituents* (people, interest groups and their visions, values, etc.), which interact and shape each other in the course of the creation, production and diffusion of specific technologies.

In addition, sociotechnical constituencies are created through processes of ‘sociotechnical alignment’ where sociotechnical alignment⁵⁴ is what social constituents try to do (however consciously, successfully, partially or imperfectly) when they are promoting the development of a specific innovation or technological capability (e.g., mobile telephony in rural areas) either intra-organisationally, inter-organisationally, or even as a service standard. ‘Sociotechnical alignment’ may be seen as *the process of creation, adoption, accommodation (adaptation) and close or loose interaction (interrelation) of technical and social factors and actors which underlies the emergence and development of an identifiable constituency*. As such, alignment should neither be seen as a mere jigsaw-like accommodation of static available pieces nor as complete and permanent, once achieved. Instead, alignment accommodates the rich picture of competing influences and trends, across institutional settings and governance systems.

The ‘diamond of alignment’ is the conceptual tool enabling a structured analysis of processes of sociotechnical alignment in constituency-building. Above all, it enables a dynamic analysis of constituency-building processes. Figure 4 shows the basic diamond of alignment with its six fundamental dimensions, while Table 6 gives a description of the content of each of these dimensions.

⁵³ The approach of “sociotechnical constituencies” was first published in Molina (1990). Subsequent publications have developed the concept further the approach into the process of “sociotechnical alignment” and a variety of associated aspects. See for instance Molina (1995, 1997, 1999, 2003), Molina and Michilli (2002) and Molina and Gregson (2002).

⁵⁴ The term "alignment" is commonly found in the literature on implementation of information technology in the business organization. It usually refers to the process of 'matching' business and information systems strategies and, more generally, to deal with the mutual adaptation process involving incoming technologies and user organizations (Leonard-Barton, 1988). For strategic alignment, see Baets (1992) and Luftman *et al.* (1993).

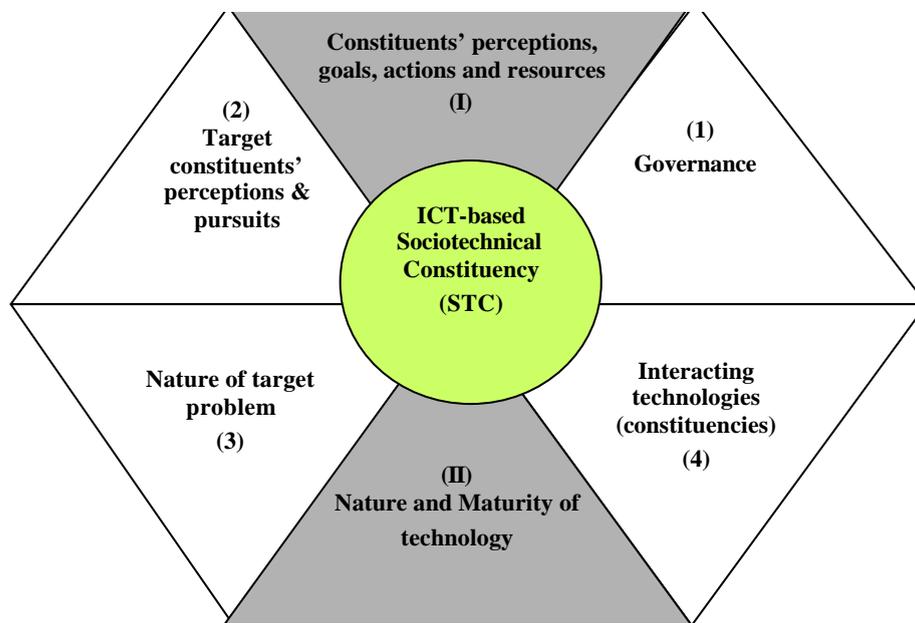


Figure 4. Basic Diamond of Alignment

Table 6. The Content of the Dimensions of the Diamond of Alignment
<p>(I) Constituents' Perceptions, Goals, Actions and Resources This relates to the present state of the constituency's resources: the type of organisation, people, material and financial resources, knowledge, experience and reputation. It also includes other elements such as current perceptions, goals, visions and strategies.</p> <p>(II) Nature and Maturity of the Technology This dimension highlights the importance of the nature and maturity of a technology for its successful constituency-building process. Adopted strategies must align with the strategic opportunities and constraints implicit in the particular technologies. Thus technologies such mobile telephony imply different requirements than, say, sewing machines.</p> <p>(1) Governance This dimension highlights the importance of aligning the constituency-building process with the governance and strategic directions of the organisational, industrial and market environments in which it is expected to flourish.</p> <p>(2) Target Constituents' Perceptions and Pursuits This dimension relates to the people and organisations the constituency is seeking to enrol. This includes the alignment of perceptions and goals between the innovating constituency and its target constituents in the organisational, industrial and market environments.</p> <p>(3) Nature of Target Problem This dimension highlights the importance of alignment between the capabilities of the emergent constituency and the requirements of successfully introducing new technologies and associated practices. This includes alignment between the technology and widely agreed technical and market trends and standards in the target area.</p> <p>(4) Interacting Technologies/Constituencies This dimension relates to the interaction a constituency has with other existing or emerging technologies. No constituency emerges in a vacuum. Other technologies, innovations, trends and standards may impact upon the constituency's innovation in both competitive and collaborative ways.</p>

Dimensions I and II represent the constituency's state of development and nature/maturity of its technology. Whereas dimensions 1, 2, 3 and 4 contain key factors the constituency interacts with in its process of development. The nature of the interactions and alignments helps explain the dynamism, direction, achievements and potential for success of the constituency.

Each of the diamond's dimensions influence each other and, put simply, the entire set acts as an overall setting and guide to alignments between people-people, people-technology, technology-people and technology-technology. A successful constituency building process will be a virtuous cycle in which all types of alignment reinforce and strengthen each other. However, mis-(non)-alignments can reverse this process, creating a vicious cycle exacerbating internal and external conflicts and contradictions. Indeed, care must be taken that alignment in certain directions should not involve potential mis-alignments in others.

5 The Birth of a Sociotechnical Constituency

The development of the Village Phone Constituency is almost 12 year now and its achievements have exceeded initial expectations. This section concentrates exclusively on the initial period of the emergence of the VPC since the constituency-building analysis of the entire period until today is too long for the purposes of this paper. Here the purpose is to show that the use of the "sociotechnical constituencies" approach, normally used to deal with innovation experiences in develop countries, is also appropriate for innovation experiences in Third World countries. It suffices then to discuss the phases (1) "vision and target problem" and (2) "formation of the core institutional constituency." Along the text an effort is made to signal the dimensions of the diamond of alignment involved in the specific events and developments, for instance (DI), or (D2-DI), etc.

5.1 *Vision and Target Problem*⁵⁵

The VPP constituency started as usual with the synergies of visions and ideas of a few people wishing to solve a problem, exploiting a new opportunity, or both. In this case, the original vision (DI) goes back to 1993 and came from Iqbal Quadir, a Bangladeshi working in the venture-capital profession in New York. Quadir foresaw the simultaneous business-and-development opportunity of bringing mobile telephony into rural Bangladesh out of a conviction that connectivity is productivity and hence development.

The provision of connectivity to the rural areas meant development of those areas while, from a business perspective, it meant tapping into the neglected rural market constituting 80% of the population and at least 50% of the economy.⁵⁶

Quadir knew little about telecommunications so begun to do research on the sector and technical trends and reinforced his conviction that his original vision was right. He envisioned an optimistic future where others saw massive problems and perhaps the impossible.⁵⁷ The latter was not surprising, after all the realisation of Quadir's vision implied tackling a target problem (D3) of massive proportions. To start with, the telecommunications infrastructure and service was among the worst in the world.

⁵⁵ This section is based on data from OECD (2004), Richardson et al. (2000), Cohen (2001), Rothery (2001), *The Economist Technology Review* (2006), Visscher (2005a, 2005b), Quadir (1999, 2000, N.D.).

⁵⁶ Quadir (1999).

⁵⁷ Visscher (2005a) quotes Tawfiq-e-Elahi Chowdhury, Bangladesh's former Energy Secretary and friend of Quadir, "I thought, has this man gone crazy? ... This is Bangladesh, I told him, People here don't have enough to eat. What would they do with mobile telephones?"

Bayes (2001) reports the following figures given by a 1998 joint study by the World Bank and the Bangladesh Center for Advanced Studies:

- the telephone density of 0.39 lines per 100 people is one of the world's lowest...
- the waiting time for a connection is more than 10 years and the installation charge of US\$ 450 for a new line is one of the highest in the world...
- the charge for calling the UK, US\$ 1.50/min, is about six times higher than the charge for calling Bangladesh from the UK;
- on average, only 2 of 10 calls are successfully completed, the complaint rate averages 50 complaints per 100 lines per year...⁵⁸

Bangladeshi rural areas, housing nearly 100 million of a total of 120 million people, suffered from a general shortage of institutional and technical infrastructure: roads for repairmen, customers' records for credit-scoring, access points for subscribers or collection of bills, etc. In addition, the governance of the telecommunications market/industry (D1) was extremely unfavourable with a closed market monopolised by the government telephone company BTTB (Bangladesh Telegraph and Telephone Board). In fact, without a change in this monopolistic governance of the industry, Quadir's vision would have remained in the realm of dreams. It was precisely because there was an indication of change in the country's telecommunications governance that Quadir saw the opportunity. In 1993 the Government of Bangladesh was preparing to issue cellular telephony licenses the year after in 1994. The fixed-line network would remain under the monopoly control of BTTB.

This helped define the limits to the solution to the target problem (DI-D3). The solution to connectivity for Bangladesh's rural areas had to be cellular telephony because this was the only "governance-path" available but, above all, because Quadir's calculations showed that this kind of telephony could provide access at about the same, or even less, cost than the cost of providing a fixed urban line. Mobile telephony was definitely economically attractive for the rural sector, as it saved all the cost and hassle of having to lay cables to individual homes; argument that was reinforced by the benefit of constantly declining prices of microchips and software.

The attractive comparative of cost-structure for cellular telephony, however, was not enough, given the unattractive socio-economic and infrastructural conditions of rural Bangladesh. Quadir concluded that this was a huge obstacle to bringing investment from a foreign telecom operator. The risks appeared too high to prompt an MMC-led "bottom of the pyramid" investment. Something else was required to reduce the perception of risk. By coincidence, rural Bangladesh is the original house of an outstanding institution that became Quadir's target constituent (D2) - the Grameen Bank, the micro-credit business that has helped transform into micro-entrepreneurs millions of people, mostly women, who before filled the ranks of the world's poorest. The Bank operated in 35,000 villages with 1,100 branches, 12,000 workers and 2 million borrowers who received loans without any collateral guarantee and who paid back their loans in 97% of the cases. Typically, a woman would receive a loan to buy, say a cow to start a micro-enterprise and with the income generated she would pay the loan and remain in business.

⁵⁸ Bayes (2001), p.262.

The Grameen model inspired Quadir and helped him to deepen further his understanding of the solution to the target problem (DI-D3), thus taking a step closer to the innovator's "critical problem," to paraphrase Tom Hughes (1983).⁵⁹ This "critical problem" was: *how to transform the cellular phone into an instrument for self-employment and income generation for the poor and not just for end-user communication*. This would solve the problem of poor people not being able to pay for the phone due lack of income. Quadir's answer was "a cell phone could be a cow."⁶⁰ A woman could acquire a micro-credit loan to pay for the phone, generate income by selling phone services to fellow villagers, and pay back the loan with part of the resulting income, leaving a surplus for her own. The business model would thus have the double benefit of creating self-employment and bringing connectivity and development to all rural Bangladesh. The phone owners would act as end-users but above all as intermediaries or retailers providing access to all other village end-users.⁶¹

Armed with this realization, Quadir was optimistic that a sound business could be built from scratch, particularly with the involvement of Grameen Bank's already established extensive rural banking network, reputation and experience with rural livelihoods. He shared his telecom business idea with Muhammad Yunus and Khalid Shams, founder and second top person of the Grameen Bank respectively, and following a period of doubts and "perception and goal alignment,"⁶² it was agreed that the Grameen Bank's extensive microfinance network, present in almost all districts of the country, could be utilized to help build a rural telecommunication service that could have both: profits and a significant impact on the country's enormous poverty and inequality. The Grameen Bank's international reputation and contacts also constituted a strategic resource in the search for a foreign telecom operator. But above all it gave reality to the idea of creating a market for cell phones and services among the poor of rural Bangladesh. The bank was now a constituent rather than a "target constituent" and Quadir was invited to pursue the business idea in the understanding that, in the end, at this stage, all depended of the announced change of governance in the Bangladeshi telecom sector (D1).

A constituency building process was beginning to crystallize coming out of the realm of dreams and moving into an institutional reality that would mobilize the necessary resources to satisfy the double motivation of profits and poverty-elimination in one of the poorest areas of the world. Table 7 uses the diamond of alignment to summarize the state of alignment of the nascent constituency-building process at the very early stage of 1994.

⁵⁹ Hughes' "critical problems" are those that are well structured and can in principle be solved. They are more technical nature but there is no reason why the same idea can be applied to problems of a broader socio-economic nature. See Hughes (1983).

⁶⁰ Quoted in *The Economist Technology Review* (2006), p.37.

⁶¹ This model fitted precisely Quadir's perspective on how to make business in poor areas of the world. "The key point, I kept in mind, is not how much money a village had to purchase telephone services, but how much money the village can make if the services were made available. The villagers would pay for the service from what they make from the services." (Quadir, 1999)

⁶² Molina (1995).

Table 7. State of Alignment at the End of the Initial “Vision and Target Problem” Phase of the Village Phone Constituency

(I) Constituents’ Perceptions, Goals, Actions and Resources

The VPC had a strong vision and motivation that through mobile telephony it was possible to have both: profits and a significant impact on the country’s enormous poverty and inequality. This vision was supported by excellent constituency-builders contributing business expertise, micro-credit expertise and extensive micro-credit network across rural Bangladesh. A sound business idea was taking shape following the Grameen Bank model but there was no organization at this stage.

(II) Nature and Maturity of the Technology

No available technology yet but aiming for a mature mobile telecom network and its cellular phone terminals

(1) Governance

Announcement of telecom deregulation for the cellular phone market had opened potential opportunity for investments from the private sector. Government telecom provider, BTTB, to keep monopoly of fixed telephony network in Bangladesh.

(2) Target Constituents’ Perceptions and Pursuits

Large number including investors, telecom-network provider, telecom authorities, people to work for the new organizations to be created, end-users and intermediary village providers (phone ladies). At this stage very few people knew about the emerging constituency.

(3) Nature of Target Problem

Bringing telephony to the rural sector to make profits and alleviate poverty implied a major socio-economic innovation, although from the point of view of the technology it could be characterized as a “me-too” innovation.⁶³ The implementation of the service however required a variety of learning processes from the workings of the service to the learning of village phone ladies to use the phone as a business tool. At the initial stage the constituency lacked most resources to face successfully the challenge implied in the target problem.

(4) Interacting Technologies/Constituencies

At this vision stage there were none but the future constituency-building process would demand interaction with BTTB and other cellular networks to be able to offer national and international coverage of telephony. No rural telephony provider at this stage.

5.2 *The Formation of the Institutional Core of the VP Constituency*

The Quadir-Grameen Bank alignment led to a spate of activity to create and/or attract missing institutional constituents: business strategies and plans, initial funding to cover the costs of their preparation, telecom partner, etc. In early 1994, Quadir left his venture-capital job and started looking for seed capital to be able to develop his business proposal (D2). Aware of the double motivation of the venture he went to a socially-conscious US banker, Joshua Mailman, founder of the Social Venture Network (SVN),⁶⁴ and proposed to him the creation a company in which both would have a fifty-fifty equity. Mailman joined the constituency (D2-DI) and contributed US\$100,000 and Gonofone Development Corporation was born in 1994,⁶⁵ the first new institution of the constituency-building process (DI) and an enabler of Quadir’s efforts to align further resources. Quadir chose the name Gonofone because in Bengali it means People’s Phone.

⁶³ “Appropriateness of technology in the context of a poor economy is not an issue, the appropriateness of institutions is. Institutions need to be developed that can deliver the technology to the common people so that they themselves can harness its power... GrameenPhone has not created any new technology, but it has established a new way, compatible with economic and social circumstances in rural Bangladesh, to provide access to telephones for the rural people in Bangladesh.” (Quadir, 1999)

⁶⁴ The SVN was created in 1997 with the mission “to inspire a community of business and social leaders to build a just economy and sustainable planet.” (<http://www.svn.org/organization.html>)

⁶⁵ Communication News (N.D.)

Quadir's double-motivation argument was encapsulated in the key point that "good business is good development" and, in a market environment, this meant securing good economic returns for investors while helping rural economic development. More specifically, Quadir made the following points to align target investors (D2):

- ✍ providing self-employment to the rural poor was good for development and simultaneously to lower the distribution costs of rural telecom services;
- ✍ providing connectivity and services to rural areas was good for development and, simultaneously, for tapping a neglected market with 80% of the population and at least 50% of the economy.⁶⁶

On its part, Grameen Bank helped to promote the case by organizing seminars and meetings with government officials and other relevant stakeholders. At one point Sam Pitroda,⁶⁷ the pioneer of rural telephony in India was invited to a seminar to show that the idea of village phones was not a pipe dream. In 1995, the government finally issued the call for licenses for private sector mobile phone operators. The change of telecom governance (D1) was now a reality and boosted the constituency-building process. The same year, two new institutional constituents strengthened the constituency (DI): Grameen Telecom (GTC) and Telenor ASA, Norway's leading telecommunications company.

GTC was established as a non-profit organization to manage the Grameen Bank's nascent interests in telecommunication, including the provision of telecommunication services in Bangladesh's rural areas and sales agency for mobile phones for urban subscribers.⁶⁸ Table 2 above has described Grameen Telecom's clear developmental mission. GTC was to play a crucial role in trying to ensure universal telecommunications access in rural Bangladesh. GTC and the Grameen Bank together would ensure the distribution of cellular telephony to the many thousands of villages across rural Bangladesh. The specific roles of GTC and Grameen Bank have been described in detail in Section 2. They would basically build on the massive network of borrowers held by the Grameen Bank to select the Village Phone Ladies (VPLs) who would act as "phone micro-entrepreneurs" selling "phone airtime" to tens of millions of poor villagers. Grameen Telecom started with no capital and Khalid Shams became his first member, dedicating part of his time to the venture while still at the Grameen Bank.

As seen in Section 2, Telenor ASA became the much sought-after technical constituent. Quadir had talked to a number of possible telecom operators (D2), including Telia from Sweden but nothing had come out of it. Eventually, it was Telenor that decided to take the risk and bring the crucial telecom expertise and investment to make a reality of the mobile network and service across rural (and urban) Bangladesh. The reasons are various, among them, the fact that, at the time, Telenor was a public company⁶⁹ preparing to float part of

⁶⁶ Quadir (1999).

⁶⁷ In the early 1990s, "Sam Pitroda, currently chairman and CEO of London-based Worldtel Ltd., a company created by a telecommunications union to fund telecom development in emerging markets, came to India with the idea of "rural telephones." His original concept was to have a community telephone, operated by an entrepreneur (usually a woman) who charged a fee for the use of the telephone and kept a percentage as wages for maintaining the telephone. Today, from most parts of India, it is possible to call anyone in the world. (Pralhad and Hart, 2002, pp.9-10)

⁶⁸ Grameen Bank (N.D.c).

⁶⁹ Telenor (N.D.).

its shares and was just beginning to implement a strategy of international expansion of its operations based on its leading GSM cellular telecommunications technology.⁷⁰ This technology was well aligned with the new governance of mobile telephony in Bangladesh since it was central to the government's call for cellular licensing. The license was also national - urban and rural- so Telenor could exploit the much less risky urban markets. In the end, however, it was Telenor's CEO, Tormod Hermansen, who carried the company into the nascent constituency, overcoming internal doubts and criticisms. He had worked at the UN and as a social democrat had worked for the Norwegian government. He quickly aligned with Quadir's vision (D2-DI), as the following quotation testifies: "I think I wanted to participate because I share an interest with Quadir in combining development with doing business. I'm interested in bottom-up development and saw in this an effective way to help a population to move forward."⁷¹ Hermansen was also impressed by Grameen Bank's record of service to the poor. Conversely, Telenor had a good image corporate social responsibility⁷² associated with the Norwegian government's good reputation around the developing world. "At one time, the Norwegian government started a development programme in Bangladesh to lay an 1,800-kilometre fibre optic cable network along the country's railway tracks. This was a good place to start building a network of mobile transmission towers as well."⁷³

Telenor, Grameen Telecom and Gonofone worked together to crystallise a key new constituent (DI): a proposal to the government containing the constituency's bid for a cellular licence. As the only partner with the technical and industrial mobile telecommunications knowledge, Telenor clearly led the bid that was submitted in November 1995 following the mid-1995 government's call for bids for 4 licenses for cellular operators. The constituency was now trying to align the government (D2) to obtain one of the licenses to be able to continue its development. Telenor's presence provided the required credibility regarding both GSM telephony and financial clout to start up the venture. Telenor, however, could not be the only investor since Grameen Telecom and Gonofone were also constituents in the nascent venture. Other funds would also help speed up development once the venture started. Thus, the search to align further investors continued with visits to both private investors and international development funds. Rothery (2001), for instance, reports that:

Dr. Yunus approached Bhanuphol Horayangura, ADB's Resident Representative for Bangladesh, who passed on the request to ADB headquarters. In late 1995, Mr. Quadir and a Telenor manager visited Manila and processing began for what would become a US\$18.3 million dollar investment through ADB's private sector window. The International Finance Corporation and Commonwealth Development Corporation later joined ADB as cofinanciers.⁷⁴

A brief parenthesis is necessary here to note that the loan of US\$ 18.3 million Rothery (2001) is describing did not materialize until late-1999 (by then the venture was breaking even), so in reality the international agencies did not take any risks at the most fragile earliest stage of investment.

⁷⁰ "Mobile is Telenor's principal focus area for future growth. Continued development of the mobile activities is vital to the Group's positioning as an international telecommunications player. Telenor has ownership interests in 12 mobile operations in Europe and Asia." (Telenor, 2004).

⁷¹ Quotation reported in Visscher (2005a).

⁷² As shown in Table 2, today, Telenor has a well-developed policy of corporate social responsibility that includes the Village Phone experience in Bangladesh as one of its jewels.

⁷³ Visscher (2005a).

⁷⁴ Rothery (2001).

In the meantime Marubeni Corporation, a Japanese general trading company acting in multiple commodity markets⁷⁵ also came to the emerging constituency. Quadir had contacted Marubeni in the days of his search for a telecom partner (D2), since the company was selling telecom equipment to the Bangladeshi government.⁷⁶ Marubeni took a while to consider the proposal and by the time they decided they wanted to join in, Telenor had already stepped in as the constituency's telecom operator. Marubeni nevertheless remained interested since there was the possibility that they could sell equipment to the emerging telecom operation since Telenor is not a telecom equipment supplier. Marubeni also has a policy of corporate social responsibility⁷⁷ that fitted well with the idea of business and development.

In October 1996, in anticipation of receiving one of the licenses, the aligned institutional constituents –Gonofone, Grameen Telecom, Telenor and Marubeni- created GrameenPhone, a joint venture that crystallized in a single organization the state of alignment of the constituency after about three years of strenuous efforts (DI). As shown in the description in Table 2, the double profit-and-development motivation that had characterised the constituency-building process from the start became firmly enshrined in the dual purpose of GrameenPhone: “to receive an economic return on its investments and to contribute to the economic development of Bangladesh where telecommunications can play a critical role.”⁷⁸

Table 8 shows the percentage share of ownership by each of the partners in GrameenPhone at the time of the launch. Telenor became the majority partner with a 51% share, followed by Grameen Telecom with a 35% share and Marubeni and Gonofone with 9.5% and 4.5% respectively.

Table 8. Share Ownership of GrameenPhone, 1997	
<i>Company</i>	<i>Percentage Share</i>
Telenor	51
Grameen Telecom	35
Marubeni Corp.	9.5
Gonofone	4.5

The total capitalization of GrameenPhone at the time of its launch was about US\$50 million and it came from the partners in proportions reflected in the equity shares of the company. Telenor wanted to be the majority partner so it made the largest investment for a 51% equity share. Telenor's power was rooted in its commanding expertise and experience in the field of GSM telecommunications. This sustained a knowledge

⁷⁵ Marubeni Corp is active in a wide range of markets, including agriculture and marine products, forest products, textiles, chemicals, energy, metals and minerals, transport machinery, industrial machinery, development and construction, finance and logistics, telecommunications, etc. (Marubeni, 2005a)

⁷⁶ “No single company can match the influential links that MNET [Marubeni Network Systems] has established with the telecommunications industry, relationships cemented by more than four decades in the industry. This forty-year experience gives MNET unique access to firms, stations, cable connections, and the entire array of linkages that make the telecommunications industry.” (Marubeni, 2002)

⁷⁷ “The basis for corporate social responsibility at Marubeni is “Fairness, Innovation and Harmony,” which was formulated as the company creed when Marubeni was established in 1949. Every member of the Marubeni Group is committed to carrying on with the Corporate ambitions passed on by our predecessors in order to make a meaningful contribution to society.” (Marubeni, 2005a, p.14) See also Marubeni (2005b).

⁷⁸ GrameenPhone (2004a), p.3.

asymmetry that played in favour of Telenor's taking the commanding role in the joint venture. Telenor took 3 of the 6 places in the Board of Directors and appointed the Managing Director and Technical Director. The form of joint venture (JV) served then the double purpose of (1) structuring an organization that could formally receive the license and act as a telecom operator in Bangladesh and (2) distribute power through equity and representation in the board.⁷⁹ In this sense, the GrameenPhone JV can also be seen as a sort of Telenor's semi-subsiidiary that recognized another knowledge asymmetry, this time in favour of Grameen Telecom (Grameen Bank), namely, the local knowledge and extensive network of micro-financing and distribution in possession of GTC(GB).

The distribution of shares among partners was a consensual agreement. Expectedly, however, the initial negotiating perceptions and wishes were not aligned. Both Gonofone and Grameen Telecom would have wished for greater shares but these positions changed and converged to the final consensual distribution. Gonofone raised the funds for their 4.5% share by involving other investors (D2-D1) to the total of 12 shareholders. Marubeni funded its own 9.5% shareholding. Instead, Grameen Telecom's substantial 35% share was funded through loans since, unlike its partners, the company was a start-up non-profit venture. In this, GTC's strong developmental motivation served a useful purpose. It helped align the Soros Economic Development Fund (SEDF) - the organization founded by financier and philanthropist George Soros - with the constituency-building process (D2-DI). SEDF extended GTC a loan for US\$10.6 million⁸⁰ under terms more favourable than the commercial options at the time. These investments translated into two seats for Grameen Telecom in the Board of Directors and one seat for Marubeni. Gonofone took no seat in the BOD, although for the first two years Quadir was able to be present at the board in representation of Telenor.

The agreed formal distribution of power is particularly important in the case of GrameenPhone since Grameen Telecom saw itself as eventually becoming the majority shareholder and implementing a radical vision of offering Grameen Bank's borrowers the possibility to become shareholders in the joint venture, in the tradition of the Grameen Bank. Thus, as Burr (2000) reports, there was also:

an understanding - not made explicit in any legally binding contract but arrived at in the shareholders' agreement - that after 6 years of GP operation, Telenor and GT will actually switch ownership positions: Grameen Telecom will sell its 35% share to Telenor and Telenor will sell its 51% share to Grameen Telecom, which will thus become the dominant partner and true manager of the system.⁸¹

⁷⁹ As Williamson (1998) points out, "the critical - attribute of equity is the ability to exercise contingent control by concentrating votes over the board of directors..."

⁸⁰ Burr (2000).

⁸¹ Ibid., p.4.

This step would open the way for the implementation of M. Yunus' vision of wanting the Village Phone Ladies to own not just the phones acquired through the bank's micro-credits but also the company once this became profit-making and went to the stock-market. As Yunus explained in an interview:

Within six years Telenor (the majority owner of GrameenPhone) will reduce its holdings by 35%. Grameen Telecom will set up a mutual fund to buy those shares. Then we will sell shares in the mutual fund to Grameen Bank borrowers, who will become part owners of GrameenPhone. ... [The reason is that] ... As long as our borrowers are capable of working and generating enough income to take care of themselves, they're okay. But as they get older or become disabled, they become helpless. They become dependent on their children. We want to reduce that dependence. These shares will be a protection mechanism, a retirement fund.⁸²

If materialized, such vision would have a substantial social impact by transforming large numbers of rural women into small shareholders of a major telecom operator. It would also make GrameenPhone the first nation-wide telecom operator to have the rural poor as owners of a substantial proportion of its shares. Of course, this would require the agreement of all other partners and, particularly, Telenor who would have to surrender its majority shareholding.

On 28 November 1996, the Bangladeshi government issued a nationwide license for GSM 900 cellular mobile phone services to GrameenPhone Ltd. along with licenses to three other companies. On 26 March 1997 GrameenPhone launched its service on the symbolic Independence Day of Bangladesh. This service included the Village Phone Programme (VPP), the operation aimed at changing the poverty-stricken face of rural Bangladesh. A new phase was inaugurated in the evolution of the VPC constituency.

This new phase and other subsequent phases are not part of this paper aiming at demonstrating the appropriateness of the constituency approach to analyse the process of development of the Grameen Phone Constituency. This purpose has been achieved and suffices here to say that GrameenPhone started operation and has gone on to become the largest telecom operator of Bangladesh with over 60% of the market. Table 2 has summarized the benefits accrued to rural Bangladeshi people, including over 200,000 phone-based micro-enterprises and access to most of the over 100 million Bangladeshi people living in the countryside. Just for the record, the first six years of existence came and went and GrameenPhone did change its shareholding structure with both Gonofone and Marubeni leaving the joint venture and Telenor increasing its share to 62% and Grameen Telecom to 38%. No shares have yet been made available to Grameen Bank's borrowers. Table 9 summarizes the state of alignment of the VPC at the end of the second phase and launch of the GrameenPhone in March 1997.

⁸² *FastCompany Magazine* (1977), p.60.

Table 9. State of Alignment of VPP Constituency-building Process at the Launch of GrameenPhone in March 1997

<p><i>(I) Constituents' Perceptions, Goals, Actions and Resources</i></p> <p>The constituency acquired a formal institutional expression through the creation of Gonofone and Grameen Telecom, the entrance of Telenor and Marubeni and the formation of the GrameenPhone joint venture. Other institutions joined in supporting members of the emerging institutional core, including the Soros Economic Development Fund (SEDF). The constituency successfully aligned the government and won one of the 4 mobile licenses. It also raised substantial start-up funds (US\$ 50million) and possessed leading edge GSM telecom expertise and a unique access to the rural/urban market through the combined strengths of Telenor and Grameen Telecom(Grameen Bank). The internal governance was consensual and reflected knowledge and resource asymmetries that favoured Telenor and Grameen Telecom but primarily Telenor who became the majority equity partner in GrameenPhone. However a not-legally-binding understanding left open the possibility for Grameen Telecom to become the majority shareholder in the future. The constituency also configured a basic kit to enable the start up of operations by micro-entrepreneurs in the rural areas. It comprised Nokia 1610 phone, 1200mAh battery, fast charger, sign board, calculator, stopwatch, user guide in Bangla, price list for calling different locations.⁸³ The cost of the basic kit for the village phone micro-entrepreneurs was about US\$ 370.⁸⁴</p>
<p><i>(II) Nature and Maturity of the Technology</i></p> <p>Proven GSM 900 mobile network technology to be provided by Telenor with specific equipment such as phones and towers to be supplied by telecom equipment providers. For instance, Nokia became the supplier of the telephone (Nokia 1610) to be used by the Village Phone Ladies. The entire system was basically a transfer of a technology created in developed countries to Bangladesh. Specific pieces such as the mobile phone required characteristics of low cost and ruggedness to facilitate economic access and heavy use in village conditions. In places where the transmission range of GSM towers needed a boost, an antenna was included in the solution at an additional cost of about US\$ 130.⁸⁵</p>
<p><i>(I) Governance</i></p> <p>Major change in the monopoly governance of Bangladesh telecommunications with the opening of the mobile telephony sector to the private sector. Maintenance of monopoly over fixed line by government company Bangladesh Telegraph and Telecom Board (BTTB). Overall poor regulatory frameworks and authorities. Industrial and market governance for the cellular telephony sector was just beginning to emerge. Four licenses were awarded by the government to different cell phone companies but GrameenPhone was to be the only company investing and operating in both urban and rural areas, thus ensuring an almost monopolistic governance in the rural part of the country.</p>
<p><i>(2) Target Constituents' Perceptions and Pursuits</i></p> <p>With the launch of GrameenPhone, rural and urban end users and rural phone micro-entrepreneurs or Village Phone Ladies became key target users. Also, further investors, telecom authorities, people to work for the new organizations, roaming partners and so on continued to be important target constituents.</p>
<p><i>(3) Nature of Target Problem</i></p> <p>This dimension remained very much the same as in the initial stage since the service was just starting in the rural and urban areas of the country. At the end of this institutional stage, however, the constituency was in a much stronger position to begin to face effectively the challenge implied in the target problem (see DI, DII and D1).</p>
<p><i>(4) Interacting Technologies/Constituencies</i></p> <p>Other mobile telecom networks were also emerging due to the four licenses awarded as a result of the government liberalization. At the same time, the fixed line network of BTTB was not available for interconnectivity to mobile providers. The VPC constituency had to try to establish interconnectivity with the fixed network and other cellular telephony providers at national and international levels.</p>

⁸³ Richardson et al., 2000, p.11.

⁸⁴ See Chowdhuri (N.D.), p.9.

⁸⁵ Ibid.

6. Discussion

The VP constituency has certainly had a massive impact in rural Bangladesh and its potential for emulation in other parts of the world (similar experiences have already emerged in Uganda and Rwanda) demands an effort to gain the best possible knowledge and understanding, so as to encourage and support the flourishing of a global movement.⁸⁶

The “bottom-of-the-pyramid” approach has successfully brought to the fore the importance of the market opportunities lying hidden in the mass markets of the poor (Tier 4). Something that fits well the case of the VPC, it has also identified the need for alliances between for-profit and non-profit organizations for the successful tackling of these markets. The VPC case also confirmed the strategic role played by MNCs in making a reality of successful business in Tier 4 markets.

As said earlier, however, the VPC case does not confirm some of the most radical assumptions of the BOP model, in particular, it cannot be claimed that Telenor, the MNC at the heart of the VPC, had to engage in a radical transformation of its product, technology, business model and mindset to benefit from the BOP market of Bangladesh. Telenor has contributed to the innovative ‘bulk airtime’ business model that has enabled the mixed value chain of the Village Phone Programme to work effectively. In the urban areas, however, the commercial model has followed the normal market practices. In fact, an OECD (2004) study refers to the views of Ola Ree, Telenor’s appointed Managing Director of GrameenPhone at the time,⁸⁷ regarding the rural operation with the following words: “For Mr. Ree, the Village Phone Programme is part of GrameenPhone’s corporate effort to show social responsibility. Village Phone represents a small part of GrameenPhone’s overall business ...”⁸⁸ The main part of this GP’s business is the urban markets and this has made possible the Tier 4 market operation. As Richardson et al. (2000) put it: “It would be financial suicide for a GSM cellular operator to only target rural subscribers, but when a service targeted to urban customers also reaches into un-served rural areas with high demand, the additional cost of providing the rural service is small.”⁸⁹

⁸⁶ One of the aims of the Ugandan Village Phone experience is “to disseminate this learning to the commercial telecommunications sector and the worldwide development communities so as to catalyze and establish a global Village Phone movement.” (Keogh and Wood, 2005, p.9)

⁸⁷ GrameenPhone’s current Managing Director is Erik Aas.

⁸⁸ OECD (2004), p.35. Also, “GP provides airtime for VPO customers at a discounted rate of approximately 50 per cent. This was initially part of GP’s business strategy (embodied in the principle, ‘good development is good business’, as the VP program started the day commercial services of GP were launched in 1997. However, it is now one of GP’s biggest Corporate Social Responsibility programs. The discount is exclusive privilege offered by GP to GTC, and applies to all rates that are normally charged to GP customers.” (Knight-John, 2005, p.25)

⁸⁹ Richardson et al. (2000), p.19.

This explains why Telenor needed not change radically its technological system originated for developed countries to satisfy local conditions. In fact, some analysts have pointed out that GSM technology was not the most appropriate for the local conditions of rural Bangladesh. Thus,

GSM Cell phone technology is a high-cost solution for universal access in rural areas. ... GSM cell phone technology also places much higher tariffs on rural phone users than would be the case for wireless local loop (WLL) technologies. ... [In addition] ... Cellular phone technology is currently [year 1999] not a viable option for inexpensive email/data connectivity. WLL and other options can provide much better bandwidth and cost of service.”⁹⁰

A similar point was made by Cohen (2001), “... wireless loop technology ... is less expensive to construct because the towers reach ten times as far as GSM towers (50km compared to 5km) and the handset are typically cheaper.”⁹¹ With hindsight, however, we know that GrameenPhone’s GSM technology has successfully spread allover Bangladesh and the company is the largest telecom operator in the country. The constituency-building story of how that has happened is subject for further research.⁹²

The key BOP concept of MNC-leadership is interesting in the case of the Village Phone Constituency. First it is clear that the originator of the vision and key player in the build up of the constituency’s institutional core was neither an MNC nor an NGO, although these became the most important players in the institutional core. The key constituent in the two initial phases dealt with in this paper is Gonofone, an investment micro-enterprise formed by I. Quadir the original constituency-builder. From early-1993, date of Quadir’s first inspiration, to the call for licenses in 1995 and Telenor’s entrance into the VP constituency Quadir-Gonofone was the catalyser of the constituency. Once the bid for the cell phone license started, the leadership passed to Telenor as the only partner with technical and industrial telecommunications experience. This was eventually reflected in the commanding equity share and control taken by Telenor in the GrameenPhone joint venture. This overall leadership, however, did not extend to the rural areas where the commanding knowledge of local conditions and, above all, control of a long-established extensive network of micro-finance and distribution gave the leadership to Grameen Telecom(Grameen Bank). This shows that leadership of “bottom-of-the-pyramid” experiences should not be seen in a static fashion nor fully concentrated on one partner of the alliance for the entire life on an experience.

Finally, there is an aspect that the BOP approach seems to underplay. This is the issue of the length of time of sustained investment required before getting a pay back. Chesbrough et al. (2006) have argued that their study of business models at the bottom of the pyramid showed that “these business models took significant time and experimentation to develop. Owing to differences in the infrastructure of many developing countries – or, more precisely, the lack of infrastructure – implementing effective business models took 5 years or more.”⁹³ In the case of GrameenPhone, the statistics following the launch of the

⁹⁰ Ibid., p.51. “WLL are systems that use wireless technology (radio) to connect subscribers to the local telephone exchange. WLL is a cost-effective solution in developing countries where meeting basic service demands through build-out of the wire network would take much longer to achieve.” (Ibid., Glossary)

⁹¹ Cohen (2001), p.10. See also James (2001).

⁹² Richardson (2000) made the point that the cumbersome regulatory practices of Bangladesh may have helped GSM technology. Thus, “[w]ithout regulatory improvements, cellular telephony is a practical solution.” (p.51)

⁹³ Chesbrough et al (2006), p.49.

service in 1997 speak clearly. GrameenPhone reached positive monthly net profit result in May 2000, made US\$ 29 million net profits (after tax) in 2001 and US\$ 48 million in 2002, and paid out its first dividend in October 2003.⁹⁴ By 2006, GrameenPhone has invested US\$ 1 billion and has yet to recover all this investment. This is almost a decade of sustained investment that, admittedly, is not uncommon in the field of telecommunications, an industry with long-horizons of investment. On the other hand, in Bangladesh, GrameenPhone's impact at the bottom of the pyramid has happened from the start due to the available network of Grameen Bank – Grameen Telecom. In other BOP markets the creation of such infrastructure of access is likely to take many years.

7. Conclusion

This paper has described the workings of the alliance of organizations making up the Village Phone Constituency today, with particular emphasis on the business-developmental programme that has changed the poverty-stricken face of rural Bangladesh. It then discussed the “bottom-of-the-pyramid” approach, the most systematic framework available to seek an understanding of these types of (Tier 4) experiences. It went on to identify some theoretical pointers for the understanding of the nature and process of development of the VPC constituency, particularly the processual framework of “sociotechnical constituencies.” This framework was subsequently applied to the analysis of two initial phases in the process of creation of the VPC: (1) the vision and target problem, and (2) the formation of the institutional core. A final discussion has identified some salient aspects revealed by the two initial phases of the VPC and contrasted them with views from the BOP approach.

There is a need for further research to complete the understanding of the detailed process of constituency-building of the VPC. Above all, there is a need to enhance existing theoretical instruments to deal with the analysis and understanding of both the nature of alliance-formation processes and the nature of organizations driven by simultaneous profit-making and developmental pursuits. This knowledge is critical because it will be a contribution to perhaps the biggest challenge facing humanity today, namely, the elimination of poverty through the expansion of jobs, entrepreneurship and prosperity across the planet.

⁹⁴ GrameenPhone (2004b, 2005).

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