

CHAPTER 2

LITERATURE REVIEW

2.1. Rural ICT Program

Dasgupta (2005) suggest that proper ICT facilities in the rural sector had wide ranging impact on social and economic developments. In the following sub chapters, the concepts, initial ideas, and program mission of ICT are presented.

2.1.1. Rural ICT Program Concept

Telecommunication advancement guides telecommunication access in rural area and reduces costs (Lawson and Meyenn, 2003). Microfinance institutions play a critical role in creating telecommunication access in rural area. Village Phone (VP) program is concerned with the issue of communication access for the rural poor by creating a “channel to market” through microfinance institutions (ITU, 2008).

The members who participate in the VP program are called the Village Phone Operators (VPOs). The VPOs belong to a marginalized community some members of which use the phone to operate a telecommunication service business to their community in rural area where there is no telecommunication service has previously existed (ITU, 2008). In Bangladesh, the micro-entrepreneurs purchase the phone with a loan from Grameen Bank and then sell the use of it on a per-call basis.

Before starting the village phone business, the Grameen Telecom has to confirm about the network coverage. Once it has been confirmed that a phone signal reaches a village, Grameen Telecom buys a subscription from Grameen Phone. As there are no retailers in the villages, Grameen Telecom also supplies the phone devices, a price list for calling different locations, and training to operate the phone. A potential VPO uses a loan to purchase a Village Phone (VP) business kit that include everything needed to start a VP business, a mobile phone is also included in the package.

VP program needs to create partnership with trusted institutions having comprehensive knowledge of the local communities. Moreover, the institutions have to have a link with microfinance institutions (MFIs) and a well established business process and infrastructure in order to create ICT programs work properly. VP program has to provide schedule to regularly visiting the VPOs to transact financial services with clients (ITU, 2008). This assistance for the VPOs is very essential for introducing new services.

In VP program development, a phenomenal success happened in the history of the Bangladesh because more than 98 percent of VPOs repaid their loans in full (Lawson, 2000). Similar numbers have also been seen in Uganda. In Rwanda, VPO repaid their loans ahead of schedule and purchased additional phones.

There are many benefits offered from VP program to the VPO and the community. Economic impact that VP program brings to the VPOs is a clear benefit of the program. There is a clear evidence of economic impact in Bangladesh rural area, the technology creates link between local entrepreneurs with their business partner and clients, bringing more business to small enterprises (ITU, 2008). Phones have even been used in emergency situations, such as accessing medical assistance during natural disasters.

ICT service in rural area has many forms. Other than Village Phone Concept, there is also an ICT program for rural area like one in Ghana, i.e. the payphone project (Equatel). Under Equatel Rural Communications Project, Ghana Investment Fund for Electronic Communications (GIFEC) provides 12,000 rural payphones to underserved communities during year 2010 until 2012 (Gifec, 2009). The Equatel project offers telephone services to communities with low or no access to telecommunication service, communities with low disposable incomes, communities with low or weak mobile signal and communities that lack basic social needs such as electricity. The Equatel concept is a payphone based on GSM technology where the SIM payphone enables GSM cellular SIM cards to be used.

There is also a rural ICT project developed in Kenya known as mobile SMS project. The mobile SMS project aims to create employment for jobless youth in rural Kenya. This project creates job opportunities for Kenyan youth using the mobile phone (Kemimbaro, 2010). The mobile SMS project has been launched by a Kenyan firm, Information Convergence Technologies. The project is an SMS-based service that creates jobs for hundreds of young Kenyans employed by spreading specific and localized information using mobile phones.

In Mumbwa, one of the rural areas of Zambia, an ICT project has been established as Rural Communication Network Project (RCNP). The RCNP aims to increase access of telecommunication services to people who live in deep rural areas where there is no access to mobile telecommunication services (Mulozi, 2008). The equipment required for this project is a mobile satellite community phone. The project was initiated in late 2008 with support from international cooperating partners in South Africa.

2.1.2. ICT Program Missions

The ideas of ICT program has several missions to create benefit for the rural community. Here are several missions of ICT program:

a. Increasing Prosperity

ICT programs are designed to increase the prosperity of marginalized people who live in the rural area. Micro-credit that is involved in ICT program has created self-employments for the rural community through financial aid in order to give the opportunity for the VPOs to get additional income from running the telephone business. According to Yunus (2002), it has been able to generate a steady movement of people from poverty to non-poverty, improvement in housing, sanitation, nutrition, education, child mortality, women empowerment, etc. At least 7 million poor families in Bangladesh have access to micro-credit.

There are several evidences proved that the ICT programs had increased the prosperity of rural community, especially in Bangladesh through the Grameen VP program. It had been confirmed by scholars (Rahman, et al., 1993) that per capita income of average Grameen Bank members was about 59% higher in

1985 than that in 1982. Grameen Bank members also had 15% higher per capita income than non-Grameen Bank members. Bayes (1999) had shown that the VP ladies had higher income than the average per capita income of Bangladesh. Higher income is always associated with higher spending which could give a dynamic interaction in the local market. Prosperity is not only measured in terms of the economy point of view. In order to increase the VPOs prosperity, Grameen also organizes occasional workshops on nutrition, hygiene, and healthcare. With UNICEF, Grameen Bank had promoted hand tube wells to its members in Bangladesh (Dasgupta, 2005). They also make sure that the VPOs along with their family members drink proper water.

b. Encouraging Entrepreneurs

ICT facilities have certain definite roles in the economic development of the entrepreneurs who live in the rural area. ICT program have a mission to encourage entrepreneurs who have their small scale business. It gives not only the VPOs opportunities to earn their living but also initiates a sequence of valuable side effects to the community (Dasgupta, 2005). These are economic activities, business methods, client-servicing techniques and other value added propositions coming up in the rural sector.

Grameen Telecom's program targets women entrepreneurs who are literate, have a good credit history, and have a feasible business close to the village center. Lawson (2000) showed that in Bangladesh, these factors have combined to ensure an excellent repayment record for 98 percent. The Village Phone Operators (VPOs) provide service to customers for both incoming and outgoing calls. Their income consists of the difference between the charges paid by customers and the billed amount the operators must pay.

Other than the VP program by Grameen Telecom in Bangladesh, there is also ICT program that have a mission to encourage entrepreneurs in Kenya. The mobile SMS project provides job to rural youth in Kenya who could otherwise be engaged in unproductive activities. The youth leaders will not be treated as employees but as social entrepreneurs who work on behalf of and for the interest of the community (Kemimbaro, 2010).

c. Empowering Women

Women empowerment becomes an international issue nowadays. It is one of the United Nations Millennium Development Goals (UN-MDG's). Therefore, ICT programs are also concerned with women empowerment which has become one of the missions of the ICT programs. There have been extensive studies on the degree of empowerment in general (Agarwal, 1986; and Agarwal B, 1995) and in micro-credit (Schuler, 1986) in particular. In most cases where NGOs are involved in group activities and education, an empowerment is observed.

Many of the VPOs in Bangladesh confirmed that the phone has brought them more respect in society. From almost a zero identity these ladies are getting a special identity in their own localities. They are all better known to the people in the locality (Dasgupta, 2005). Telephones in the villages of Bangladesh have a different level of respect. It was only the elites who had some access to telephones before. Grameen brought it down to these poor people. This improved social status gives a new meaning to the lives of these women.

There has been a paradigm shift in rural Bangladesh. Rich customers who used to lend these women money and clothes in times of needs now come to their houses to use the phones. There is definite increase in social status of VPO women (Dasgupta, 2005). The house, in which the booth is located, is a good meeting place for all the local ladies. Bayes (1999) has confirmed that these women become the centers for many discussions and happenings. Their popularity and the added factor of increased income put these women in higher social status.

Even though micro-credit financing for women has become an effective way to reduce poverty in developing countries like Bangladesh, there are certain interesting observations on the loans control issue. Rahman (1999) confirmed that loan repayment mechanism in Bangladesh apply pressure tactics that creates tension and frustration among family members of the VPOs. Efficiency on repayment mechanisms adopted by various agencies and skillful use of rules have made many of the programs in Bangladesh financially feasible (Hashemi, 1996).

Women involved in loans have other male members in the family controlling the benefits (Goetz and Sengupta, 1999). Critics towards VP program further argue that providing credit without proper training and support in business acumen might worsen the conditions of the rural women. They prefer to address gender subordination by directly confronting patriarchy practices.

d. Providing ICT to rural area

ICT program also has a mission to provide telecommunication in rural area. Since most of the retailers are located in cities, the cost of communication is still high amongst the rural poor. Ruma (2010) confirmed that in Indonesia, someone living in semi rural areas would need to pay transportation costs to get communication services.

There are two main reasons why the rural and semi-rural areas are underserved (Ruma, 2010). The first reason is that few retailers located in these areas have the upfront capital to sell phone credits (pulsa). If a retailer is to sell the phone credits of all 11 operators, he/she would need to have up front capital of at least \$1,100, as each of the 11 mobile operators requires each airtime reseller to have at least \$100 in start-up capital and purchase separate SIM cards. Moreover, retailers in the rural areas do not understand how to sell phone credits electronically and lack the skills to manage their business.

As one of the world's ten poorest and most densely populated countries, Bangladesh has one of the least developed telecommunications systems, with a penetration rate of less than four lines per 1,000 people (Dasgupta, 2005). To extend telecommunications to rural villages, Grameen Telecom provides cellular pay phone service at an affordable price. This is made possible by reselling airtime from Grameen Phone, a cellular operator with a national license that is building and operating a rural phone network.

There is also ICT program in rural Zambia known as the Rural Communication Network Project (RCN). It is the integration of a local telecentre that will serve as a local communication network center. In liaison with the project secretariat, the Kabulwebulwe Community Telecentre coordinates the communication network and provide resource information and knowledge sharing services among local communities in the project area once the equipment are installed in the center (Mulozi, 2008). The multi-purpose service telecentre enhance service levels, particularly in data and information resource exchange. Direct access to services for rural communities means money saved on travel to distant areas can be reinvested locally in business and in the community.

Other than VP program and RCN project, the Ghana Rural Pay Phone Project (Equatel) also has the same mission. Gifec (2009) has confirmed that the mission of the Ghana Rural Pay Phone Project are to bring ICT in order to enhance network quality in low or weak signal areas, to offer telecommunication services to rural community, and to support government's initiative in providing rural access with telecommunications or ICT

2.2. Village Phone Concept

Village Phone (VP) program is recognized as a solid business model for reaching populations in rural area (ITU, 2008). The program is also certified as a sustainable development tool by governments and development agencies such as United Nations (UN), United States Agency for International, International Finance Corporation (IFC), and World Bank.

The VP model has been applied in Bangladesh, Rwanda and Uganda. The program needs detailed partnership with a telecommunications operator that has a nationwide public access strategy (ITU, 2008). To reach as many rural locations as possible, the involvement of multiple microfinance institutions are also needed in this partnership. To be sustainable, this initiative must operate in a market that is sizable enough to generate revenues to support a company to run the operations.

To make the VP model sustainable, it requires consolidations, coordination, management and institutional infrastructure (ITU, 2008). But in order to do so, not all of the fundamentals elements can be provided for develop a joint venture and large scale approach, i.e. the microfinance sector may not have reached enough amounts or the telecommunications network coverage may not be covered in enough rural areas.

The VP program was developed to allow microfinance institutions bring the benefits of telecommunications to people who live in the rural area and come from the marginalized communities. The infrastructure of the joint venture does not have to coordinate the operational of VP program (ITU, 2008). Existing services available from telecommunications operators and training materials are provided in the VP program for creating a sustainable business.

Any microfinance institution worldwide can implement VP program. The program can serve any community within reach of telecommunications operators' network coverage. Telecommunications operators who have not yet developed a strategy for rural public access communications and want to conduct a trial to test the market can also implement the VP program.

A. Grameen Bangladesh

The VP program was initiated by a subsidiary of Grameen Bank in Bangladesh, Grameen Telecom. The VP micro credit schemes is claimed to be the first instance of any NGO involved in rural telecom development through a franchisee system (Dasgupta, 2005). The Grameen VP program has two main objectives. First, the VPOs who mainly are women, will earn their living by selling telecom services and second, villagers would benefit by purchasing these services.

GrameenPhone is a joint venture of Grameen Telecom (35 percent) and Telenor (51 percent), Norway's telephone company (Dasgupta, 2005). Grameen Telecom is a not-for-profit company. Its efforts to extend telecommunications services in rural Bangladesh are supported by its parent, Grameen Bank, a highly successful, for-profit microcredit bank with an extensive presence throughout rural Bangladesh. Grameen Bank's primary line of business is to make microloans, typically under US\$200, to women entrepreneurs in villages, financing installation and working capital for their stores, cottage industries, and other businesses. It also provides these women with credit to buy cell phones from Grameen Telecom. The women then provide mobile pay phone service in their shops, the local market, and elsewhere, charging a markup agreed on with Grameen Telecom.

The VP program developed by the village women is a positive move to increase their prosperity. It is different from conventional methods of the rich growing richer by taking advantage of new technologies (Dasgupta, 2005). Women who have very limited access to phone services feel comfortable in running the VP program because the VPO are typically female and the phones are in their places of business. The status of women in the communities where they work increases as they provide phones that become important for the whole village.

B. Grameen – MTN Uganda

In November 2003, Grameen Foundation join with MTN Uganda launched MTN Village Phone Uganda. ITU (2008) confirmed that there are over 7,000 rural VPOs throughout Uganda on May 2007. Each of the VPOs earns money to repay their loan from microfinance institution and put some of their income for their family's needs, such as food, education and health. These VPOs are typically poor, lives in rural area, and typically they are micro entrepreneurs who already have a well established primary business, such as small shop. The microfinance institution gets constant revenue from VPOs who buy prepaid airtime cards from them and the VPOs also often repay their VP loans in advance.

2.2.1. Steps to develop Village Phone Program

There are several steps to develop a VP program. The program is designed not only a set of equipment for communications, but also develops people to be catalysts for their communities and organizations (ITU, 2008). There is a high degree of parallel action and coordination required although they are presented as separate efforts. A high level of commitment is required from the microfinance institution as the progress begin continually from one phase to the next. Institutions must be prepared for the resulting increase in demands for resources. Table 1 gives information about the steps to develop Village Phone Program.

Table 1
Steps to develop Village Phone Program

No.	Steps
1.	Get Institutional Commitment
2.	Assess Demand and Survey
3.	Create a Business and Financial Model
4.	Select equipment and define sourcing
5.	Select Operators
6.	Develop a Training Curriculum
7.	Run a Pilot Program
8.	Market the New Loan Product
9.	Become an Airtime Distributor (this step is optional)
10.	Demand Management
11.	Deployment
12.	Ongoing Operations

Source: ITU, 2008

The first steps to develop VP program is to get institutional commitment. In the case of the VP program in Bangladesh, Cohen (2001) confirmed that 97% people who lived in Bangladesh rural area lack of telephone connections. Therefore the Grameen Bank (GB), a micro-finance institution, addresses the rural telephone connections issue by developing the VP program with two different institutions.

The institutions joining GB in developing the VP program are Grameen Phone (GP) and Grameen Telecom (GT). GP is a profit institution with a national GSM cellular license, while GT is a non-profit organization to offer telecom services to rural Bangladesh. GB, GP, and GT have to get institutional commitment, in order to synergizing in their join VP program development.

To create the loan product and determine the best way to select VPOs, the fundamental steps in operating the VP program are created (ITU, 2008). VP program being implemented in different approaches from different microfinance institutions. The criteria for selecting the VPOs can be seen based on the most loyal members who have been with the microfinance institution the longest and have the best record of repayment. VPOs can also be self-selected, where a lending group steps forward and chooses one of their members as a suitable VPO.

One of the key performance indicators in the success of the program is the business performance of the VPOs (ITU, 2008). Appropriate selection of the VPOs is fairly important in terms of risk mitigation and the success of the program. The business performance is determined by the program's ability to provide communications to a wide community of rural poor. The main purpose of VP program is to create a business opportunity for the VPO and to create a service for the community.

Selected VPOs get the financing of a loan for purchasing the hardware, and training (Dasgupta, 2005). GT then buys cellular phone subscription on behalf of the VPOs. The VPO sells the phone service to local people. Based on the bulk air-time rate GP prepares a monthly bill for the total air-time usage by the VPO. GT then makes the individual bills for the VPO and sends it to corresponding GB branches. GB branch managers are responsible for collecting the bills from the members.

2.2.2. Roles and Responsibilities for the VP Business

Grameen Phone (GP) is a for-profit telecom unit in Bangladesh responsible for maintaining physical communication infrastructure used by the VP system. Grameen Telecom (GT) is the organization responsible for the VP program. Grameen Bank (GB) is the finance organization that provides the necessary micro-credit to start the franchisee business. GB also is involved in the collection of money (Dasgupta, 2005). VPOs are the service providers to the end users. Table 2 presents the roles and responsibilities of all these parties.

Table 2
Roles and Responsibilities in VP Business Model

Organisation	Roles and Responsibilities
Grameen Phone (GP)	Communications infrastructure Government licensing and regulation compliance and liaison Government financial and taxation liaison Bulk air time sales to Grameen Telecom Billing detail to Grameen Telecom Strategic planning
Grameen Telecom (GT)	VP network management Strategic planning Bulk air time purchasing Acquiring equipment from suppliers Equipment supply to VP system design for specific installations Service and repair (done with Nokia representative in Bangladesh) VP operator liaison Support for VP operators VP Operator billing Training
Grameen Bank (GB)	Strategic planning Credit finance to VP operator Paying GT for equipment provided to VP operators Usage billing and collection from VP operators VP operator's point of first contact and conduit to GT Providing information on the payment record of VP operators Conduit for GT correspondence to VP operator network
Village Phone (VP) Operator	Marketing Channel to market of consumers End user billing and collection Paying for usage to GB / GT Providing communication services to the community Loan payment to GB

Source: VP operations Manual from Grameen Foundation USA

2.2.3. VPO Selection Process

VPO selection is one of the fundamental steps for VP program development. There is no typical qualification needed to be a VP franchisee member. Level of education, standing in the community, entrepreneurial capability or any such criteria did not come in the way in selecting a VP franchise member (Dasgupta, 2005). Only Grameen Bank membership for two years with some sense of commitment to the Grameen cause was the main criterion for the selection.

According to Dasgupta, in Bangladesh a VPO has to be a member of Grameen Bank for at least two years with successful track records of business expertise as well as good repayment history. Members in the center (usually 40 members) first jointly decide on the selection of the VPO. Knowledge of English digits along with some elementary mathematical abilities is a must for the VPOs. In addition, they need to have a shop or a house with electricity connections.

There are several process for VPO selection. First, the GB Centre Manager sends recommendations to the GB Branch Manager. The Branch Manager will forward it to the GB Area Manager who finally gets the approval from the GB Zonal Manager. Generally the GB local managers have to recommend on the basis of their successful participation in GB activities and who are capable of operating small business (Dasgupta, 2005). There are selection criteria for Village Phone Operators and also a process for selection shown in Table 3.

Table 3
VPO Selection Criteria

No.	Selection Criteria
1.	Regular attendance at peer lending meetings
2.	High status within the group
3.	Microfinance institution member for at least one year
4.	100 percent repayment history
5.	Respected as a community member
6.	Central location for business operations
7.	Established 'primary' business
8.	Able to receive telecommunications signal with external antenna
9.	Overall gender representation consistent with microfinance institution client base
10.	Strong business management skills
11.	Ability to actively market their business
12.	Language skills representative of the community in which they intend to operate the business
13.	Literate, or at least numerate
14.	An ability to understand messages on the phone menu, as most phones are not in the local language.

Source: Grameen Foundation, 2008.

The process of identifying VPOs can begin at the community level and should be driven by demand (ITU, 2008). It could involve an education component, where such a business opportunity exists, outline the selection criteria, and open the discussion for nominations from within the community are advertised.

2.2.4. Business Competition

Business competition among the VPOs is important for a well established VP program. In Bangladesh, it was estimated that for the whole Bangladesh population of 120 million, only 400.000 telephone sets were available. Most of these sets were located in the cities and about 100.000 were non-functional at any given time (Dasgupta, 2005). So when VP system came in there was hardly any competition at all. Any meaningful competition could come from Bangladesh Rural Telephone Authority (BRTA) operating in the north and Sheba operating in the south of the country.

Even though there was hardly any competition for the VPOs in Bangladesh, there were some VPOs who are aware with their competitors in the phone business market. The VPOs that mainly the long term members of Grameen family in Bangladesh wanted to fight their competitors by providing better service and efficiency. They wanted Grameen to come up with some more advanced offerings like, internet, fax and other services (Dasgupta, 2005). Regarding the future prospects of VP program, Grameen Managers were not very vocal. They admit that competition was increasing. The income of the franchisee ladies declines. But still they felt that once villagers get used to the phone system, the usage would increase. That in turn will increase the business.

Some of the VPOs members mainly the late-comers who had joined the system attracted by profits, found the profitability of the business low. They believed that since Grameen Telecom had come up with such a brilliant idea to help them to do a business, it should now come up with an equally great idea to raise their incomes again (Dasgupta, 2005). It is relies on the management to solve their problems.

GrameenPhone in Bangladesh dominates the market in the rural areas, but facing a high competition. Mobile Telephone Networks (MTN) in Uganda deals with a competitive and dynamic sector that brings new products to the market. IFC (2008) confirmed that other developments include a 25% reduction in tariffs, reduced prices for equipment kits, and relaxations of the VPO selection criteria and controls designed to reduce local competition among operators.

2.3. Village Phone Program Replication Review in Bangladesh and Uganda

The VP program has been implemented in Bangladesh with the one in Uganda. The partnerships in Bangladesh are all inter-related (IFC, 2008). The Village Phone company is owned by the main national telecommunication carrier, GrameenPhone (GP), which is partly-owned by the Grameen Bank, the largest micro-finance institution in the country. In Uganda, the Village Phone company is a joint venture between Grameen Foundation USA and MTN Uganda, and involves nine independent microfinance institutions that serve as its channel to market.

Uganda's leading telecommunications company called Mobile Telephone Networks (MTN), has joined Grameen Foundation USA in 2003. Grameen Foundation is an arm of Grameen Bank, a Bangladesh microfinance institution (IFC, 2008). MTN and Grameen Foundation join together to create MTN Village Phone.

As of February 2006, the program in Bangladesh had more than 196,000 Village Phone Operators, an estimated 96 percent of those are women (IFC, 2008). The MTN Uganda model was originally projected to grow to a maximum of about 5,000 operators. In year 2008, there are over 36,000 operators. As of the time of the project review, 55% of its operators were men and 45% were women. The rural micro-finance institution members will accept small loans to buy Village Phone equipment kits, which enable them to become VPOs. In Uganda, however, the institutions can bypass the loan process, and offer the kits to members and non members for cash.

2.4. Four VP Models for Replication

The variations between the Bangladesh and Uganda VP models demonstrate that there is no single way to establish and deploy Village Phone program. IFC (2008) after having evaluation of the experiences in each of the markets assessed indicates that future VP operation models could be configured in at least four different ways:

1. Legacy :

- Focuses mainly on micro-finance and women entrepreneurs;
- ideally operates in a market with one dominant operator, and
- involves funding partners who are interested in financing gender-specific programs.

2. Broadband:

- Works with a broad range of operators and micro lenders;
- ideally operates in a market with one dominant operator and very little competition.

3. Virtual :

- Works through an independent commercial operator;
- can operate in a competitive environment where intermediary partners are not involved.

4. Light :

- A commercial variation wholly within the control of a mobile operator;
- ideally operates in a competitive environment as a stand-alone product for resale, but may also fall under the operator's Corporate Social Responsibility program.

To give specific details, Table 4 explains about the four VP Models and Table 5 explains about pros and cons in choosing a VP model.

Table 4
Village Phone Models for Replication

Village Phone Models for Replication				
Operation Model	Legacy	Broadband	Virtual	VP Light
	Focuses on micro finance and women entrepreneurs; involves funding partners who are interested in financing gender-specific programs.	Works with a broad range of operators and micro lenders	Marketed through an independent commercial operator as a separate service	Marketed within a mobile operator, using commercial channels only (market-wide product)
Preferred Telecom Operating Environment	Ideal for a monopoly, could operate in an environment with up to two telcos, but better with one dominant Operator	Ideal for a monopoly, but could be adapted for a more competitive environment	Ideally suited for a competitive, dynamic environment with two or more strong mobile operators (Telcos)	Ideally suited for a competitive, dynamic environment with two or more mobile operators (Telcos)
Need for attractive, preferential wholesale tariffs	Definitely required to protect operators who take loans from non-loan competitors	Definitely required to protect operators who take loans from non-loan competitors	Important to Virtual Operators, but less crucial if network is based on non-borrowing VPOs	Less crucial if network is based on non borrowing VPOs
Distribution/management Mechanism	Loans to women clients	Loans to men and women, plus cash-only sales	Cash-only, plus loans for micro-finance institutions (if required)	Cash-only and no loans, to general public
Training	Training program plus manual	Training program plus manual	"Slim" manuals, possible fee-for-service training for Microfinance institutions	"Slim" manuals only
Revenue streams	VPO: airtime VP: VPOs and total airtime Micro Finance Institution (MFI): airtime sales, credit payments Telco: airtime sales and Branding	VPO: airtime VP: VPOs and total airtime MFI: airtime sales, credit payments, equipment sales' handling fees Telco: airtime sales and Branding	VP company: equipment kit sales, airtime sales Telco: bulk airtime sales to VP virtual operator and possibly branding VP Virtual Operator: airtime Sales	Telco: franchise package fee, airtime sales and branding Franchisee: airtime sales
Airtime distribution	Preferential incentives with MFIs (pre-paid cards and virtual top-up system) and some private dealers	MFI (pre-paid cards and virtual top-up system) and private Dealers	Private distributors (pre-paid cards) and MFIs	Private distributors (pre-paid cards) and virtual top-up system (could include MFIs)
Funding process	Funding required for country assessments, MFI relationship building and operating budget	Funding required for country assessments, MFI relationship building, operating budget	Start-up capital required for Telco sensitization & deal making, MFI sensitization & operating budget	Start-up capital required for telco sensitization and operating Budget

Source : IFC, 2008

**Table 5
Pros and Cons in Choosing a Model**

Model	Pros	Cons
<p>Legacy</p> <p>Focuses on micro-finance and women entrepreneurs; involves funding partners who are interested in financing gender specific programs.</p>	<p>Continues the Grameen model exclusively for women via Micro Finance Institutions (MFIs)</p> <p>Provides MFIs with a new loan product and an opportunity for future revenue streams</p> <p>MFI involvement provides rural channel to market</p>	<p>Focus on women could leave potential male VPOs looking for another product from another telco</p> <p>Focus on MFIs and need for credit mechanism potentially increases the cost of the equipment kits for VPOs</p> <p>Within a competitive environment this model will be less effective as a Universal Access (UA) mechanism due to VPO gender selectivity</p> <p>Slowest channel to market option of the four due to relationship building, capacity building, etc.</p>
<p>Broadband</p> <p>Works with a broad range of operators and micro lenders</p>	<p>Meets existing demand for rural phones from MFIs and general public</p> <p>Provides MFIs with a new loan product and an opportunity for future revenue streams</p> <p>MFI involvement provides rural channel to market</p> <p>Business objective offers whatever services are required to remain viable/relevant in the market</p>	<p>Not exclusively focused on maintaining a business focus on women</p> <p>Focus on MFIs and need for credit mechanism potentially increases the cost of the equipment kits for VPOs</p> <p>Within a competitive environment will be less effective as a UA mechanism due to VPO selectivity owing to MFI-only membership</p>
<p>Virtual</p> <p>Marketed through an independent commercial operator as a separate service</p>	<p>Demand-driven with a possible social component via the MFIs</p> <p>Opportunity for SME focusing on rural telecom operations</p> <p>Telco offers support as required via existing help lines, etc.</p> <p>Offers a low-cost equipment package for place phones in more rural localities</p>	<p>Operating budget required to support the VP virtual company operations, thus less profit Is more of a UA initiative than a social development initiative</p> <p>Possibility of management not having a presence in rural areas could jeopardize the sustainability of the Network</p>
<p>Light</p> <p>Marketed within a mobile operator, using commercial channels only (market-wide product)</p>	<p>Demand driven, low overhead, and relatively little revenue sharing required Product sold as any other product by the telco</p> <p>Telco offers support as required via existing help lines, etc. Offers a low-cost equipment package for place phones in more rural localities</p> <p>Fastest channel to market of the four options</p>	<p>A purely UA initiative with few traditional, donor driven “development” themes</p> <p>Possibility for little attention to the strategy of the program beyond its launch (program management?)</p> <p>Few dedicated staff to manage</p> <p>Lack of rural MFI involvement and the possibility of management (field offices) not having a presence in rural areas could jeopardize the sustainability of the network</p>

Source : IFC, 2008

The two tables are comprehensive guidance to every party (country or company) for their first stage of implementing or replicating the VP program. Each party can choose any model which suits its mission and unique condition.

2.5. Literature References Used for the Questionnaire

Questionnaire and data analysis in Chapter 4 for the Uber Esia (Usaha Bersama Esia) program are made based on literature review. Table 6 shows the links between each question in the questionnaire and its supported literature. The detail of this research questionnaire is given in section 3.4 on page 28.

Table 6
Links between the questionnaire and the literature references

No.	Objective	Question / Statement Number	Literature and Theory Base
1.	To provide general information about the rural phone program.	1. Age	Dasgupta, 2005 Grameen, 2007
		3. Education Level	Dasgupta, 2005 Grameen, 2007
		4. Occupation	Dasgupta, 2005 Grameen, 2007
		12. Customer's reason needs for Phone	Dasgupta, 2005 Grameen, 2007
		13. VPO Entrepreneur Parents Background.	Dasgupta, 2005 Grameen, 2007
2.	To get the evidence that the VPOs are from marginalized communities with low purchasing power.	5. VPO monthly income from selling phone Credit	Dasgupta, 2005 Dang et al, 2008
		6. VPO's monthly total income	Dasgupta, 2005 Dang et al, 2008
		8. Member of family	Dasgupta, 2005
		15. Uber Esia is a main income for the VPOs	Dasgupta, 2005 Dang et al, 2008
		16. Uber Esia increasing VPO's Prosperity	Dasgupta, 2005 Dang et al, 2008
3.	To get the evidence that the VPOs are micro-sized enterprises owners.	17. Uber Esia program encouraging VPO's micro sized business.	Dasgupta, 2005 Dang et al, 2008
		18. Uber Esia program providing training to motivate VPO's entrepreneurship.	Dasgupta, 2005 Dang et al, 2008
		19. To start Uber Esia program, VPO must to have their own small scale business.	Dasgupta, 2005 Dang et al, 2008
		20. Uber Esia program is dedicated for micro-sized business owner.	Dasgupta, 2005 Dang et al, 2008
		Continue to the following page	

4.	To get the evidence that the VPOs majority are women and empowering women.	2. Gender.	IFC, 2007 Dasgupta, 2005
		21. Uber Esia program empowering women.	IFC, 2007 Dasgupta, 2005
		22. The VPOs feels Uber Esia is important for women empowerment.	IFC, 2007 Dasgupta, 2005
		23. Uber Esia program is dedicated for women.	IFC, 2007 Dasgupta, 2005
5.	To get the evidence that the VPOs are people who have a minimum access in telecommunication in rural area.	24. The VPOs join the Uber Esia program because they want to get easier access to telecommunication.	ITU, 2003 Dasgupta, 2005
		25. Uber Esia program provide easier access to telecommunication.	ITU, 2003 Dasgupta, 2005
		26. Uber Esia program provide easier Telecommunication access in the place where VPO live.	ITU, 2003 Dasgupta, 2005
		27. The VPOs and people who live in VPO living area are in highly need of phone.	ITU, 2003 Dasgupta, 2005
6.	To get the evidence that the rural phone program works well.	9. The frequency of phone credit transaction in a week.	Dasgupta, 2005
		28. Uber Esia program useful for the VPOs.	Dasgupta, 2005
		29. Uber Esia program easy to start.	Dasgupta, 2005
		30. VPO have sufficient knowledge about Uber Esia program.	Dasgupta, 2005
		31. VPO's customers are satisfied with the services provided by Uber Esia program.	Dasgupta, 2005
		32. Price & product from Uber Esia program is worth it.	Dasgupta, 2005
		33. Uber Esia program provide training for VPO.	Dasgupta, 2005
		34. The capital needed to start Uber Esia program is affordable.	Dasgupta, 2005
		35. The VPOs get financial aid for starting the Uber Esia program.	IFC, 2007 Dasgupta, 2007
		36. The VPOs have never loss in running the Uber Esia program.	Dasgupta, 2007
		37. The VPOs assure with the advantage of Uber Esia program	Dasgupta, 2005
		38. The VPOs feels that Uber Esia program is important for getting additional income.	Dasgupta, 2005
		39. The VPOs are facing high competition.	IFC, 2007 Dasgupta, 2007
		40. There is a high needs of telephone in the area where VPO live.	IFC, 2007 Dasgupta, 2005
7.	To get information about the VPOs expectation towards the rural phone program	7. VPO's expectation on their income from Uber Esia program within 2 years ahead.	Dasgupta, 2005
		10. VPO's expectation on the growth of their customers within 2 years ahead.	Dasgupta, 2005
		11. The VPOs willing to remain running the Uber Esia program within 2 years ahead.	Dasgupta, 2005