



# **Business Models for Financial Services**

---

**Mélanie Aubé, Senior Operations Officer**

**THE FOUNDATION FOR DEVELOPMENT COOPERATION**

**10 November 2009**

## Acknowledgements

FDC wishes to thank all those in Australia, Papua New Guinea and other countries in the Pacific Islands, who freely gave their inputs during our discussions with them. Special thanks are due to Brooke Laidlaw for participating in this report, Luse Kinivuwai for conducting field interviews and peer reviewers from the Asian Development Bank (ADB) and the Microfinance Competence Centre (MCC).



Mélanie Aubé  
Senior Operations Officer  
The Foundation for Development Cooperation  
FDC House  
137 Melbourne Street, South Brisbane  
Queensland, Australia, 4101  
Tel: +61 (7) 3217 2924  
Fax: +61 (7) 3846 0342  
[www.fdc.org.au](http://www.fdc.org.au)

***"Innovation in International Development"***

## Disclaimer

In preparation of this report, every effort has been made to offer the most current, correct, and clearly expressed information possible. In no event shall The Foundation for Development Cooperation be liable for any special indirect or consequential damages or any damages whatsoever resulting from loss of income or profits, whether in an action of contract, or negligence, arising in connection with the use or performance of this information.

## Acronyms

ADB	Asian Development Bank
ATM	Automated Teller Machine
BFIA	Banks and Financial Institutions Act 2000
BMFS	Business Models for Financial Services
BPNG	Bank of Papua New Guinea
BSP	Bank of South Pacific
BSP	Bank of the South Pacific
CEP	Corporate Engagement Projects
CMCA	Community Mine Continuation Agreements
CSU	Co-operative Societies Unit
DTO	District Treasury Office
EFTPOS	Electronic Funds Transfer at Point Of Sale
FBO	Faith-Based Organisation
FDC	Foundation for Development Cooperation
FI	Financial Institution
GDP	Gross Domestic Product
HFM	Household Financial Management
ICCC	Independent Consumer and Competition Commission
ICT	Information and Communications Technology
IFC	International Finance Corporation
IPI	Ipili Porgera Investments
LFI	Licensed Financial Institution
MCC	Microfinance Competence Centre
MFI	Micro Finance Institution
MFPW	Microfinance Pacific Week
NASFUND	National Superannuation Fund
NBV	National Bank of Vanuatu
NEC	National Executive Council
NGO	Non Governmental Organisations
NICTA	National Information and Communication Technology Authority
NRLLG	Nimamar Rural Local Level Government
PANGTEL	PNG Radiocommunications and Telecommunications Technical Authority
PEAK	Porgera Environmental Advisory Komiti
PJV	Porgera Joint Venture
PNG	Papua New Guinea
PNGDSP	PNG Sustainable Development Fund
PnK	Putin na Kisim
POSF	Public Officers Superannuation Fund
PWA	Porgera District Women's Association
S&Ls	Savings and Loans Societies
TOT	Training of Trainers

## **Executive Summary**

Access to financial services for the majority of Papua New Guinea's poor and rural populations remains a challenge. The purpose of this report is to document and evaluate business models for financial services available in Papua New Guinea (PNG) and beyond, with the aim of identifying appropriate models for improving access to financial services for people living in the remote Porgera Valley region in the PNG Central Highlands.

PNG is home to a culturally diverse population, many of whom live in rural, and often remote, areas. The formal economy relies heavily on the resources sector, while it is estimated that the informal work force based on subsistence farming accounts for 75 to 85 per cent of people. PNG remains one of the poorest countries in the world with low social indicators. Though there are a wide range of financial services and institutions operational in PNG, the unbanked population is estimated at approximately 85%. In recent years, however, Microfinance institutions (MFIs) have had some success in reaching the unbanked poor in rural areas to provide microfinance services.

Similarly, for communities living in the Porgera Valley, a large percentage have no access to financial services, whether it be everyday banking for deposits and withdrawals or longer term savings and microcredit services. Constraints to the supply of financial services in Porgera have historically included the geographical remoteness of the area and associated high costs of financial service operation, law and order security concerns, limited telecommunications and unreliable infrastructure services.

Initial investigations suggest that demand for financial services, particularly savings, would appear to be very high in Porgera due the fact that the economy is largely cash based and there are very few financial services available or accessible in the region. Though a need for everyday microfinance alternatives has been identified in the Porgera community, improving general access to financial services is also a pressing need, which would contribute to the long term financial sustainability of this mining based community.

An important step in determining appropriate business models for financial services and possible implementation partners has been to identify the range and role of financial services stakeholders currently operating in PNG. These include; commercial banks, licensed and non licensed MFI's, Savings and Loans Societies, cooperatives, superannuation funds, insurers, a growing investment market, and with the introduction of PNG's first mobile phone banking service (M-banking), telecommunications companies.

The regulatory environment in PNG is constantly evolving with an impact on the development and delivery of financial services to the unbanked. In the last decade, the PNG financial sector received an overhaul, while the telecommunications sector was also reformed in 2007 and opened for competition. More established financial stakeholders such as the commercial banks and licensed financial institutions are regulated by the Bank of Papua New Guinea (BPNG). The liberalisation of the telecommunications industry in PNG has immense significance for the potential to make financial services more inclusive

through m-banking. However, a lack of clear regulations guiding telecommunications companies and partner banks in relation to M-banking models is still to be addressed.

Through extensive desk based research, several business models for financial services within PNG and beyond have been identified as potentially suitable for the Porgera context. They include:

- Branch model
- Community Funds
- Electronic banking
- M- banking led by a financial institution (FI)
- M- banking led by a non FI
- Rural banking through mobile branch banking

The limitations and benefits of each model have been assessed according to several criteria; security; inclusiveness; costs; reliability; accessibility; and flexibility. Likewise the implementation and impact horizons have been evaluated according to the time it may take implement and the potential of the particular business model to contribute to the short and/or long term financial sustainability of the community once implemented.

In the context of Porgera, it has been established through primary investigations that the most suitable business models for financial services would include as many of the following criteria:

- Highly secure and safe for the consumer and the provider
- Inclusive of the unbanked population, i.e. relatively low eligibility requirements
- Relatively low cost (affordable) both for service provider to implement and for user to access
- Accessible, i.e. services located in the Porgera Valley
- Offering necessary services such as transfers, deposit, withdrawal of cash, and most importantly saving products to improve long term economic sustainability of the community

Considering these criteria, two options have been presented as a way forward for improved financial services access and long-term economic development and sustainability. The final implementation strategy recommended was based on two options, a “bottom-up” and “top-down” approaches, which could be implemented jointly or separately. The “bottom-up” approach aims to empower the communities by developing and strengthening existing community groups or associations by providing them with i) a range of necessary financial services and technical assistance to the local communities, especially a means for saving and depositing money and ii) investment options to support the sustainable development of the community. The “top-down” approach aims to maximise the outreach of financial services to the unbanked in Porgera through a mobile phone banking model, based on the development of a solid partnership structure.

While the BMFS report does make some suggestions with regards to potential partners for implementation of the above recommendations, they are preliminary and will require further investigation before potential implementation.

# TABLE OF CONTENT

<b>DISCLAIMER</b> .....	<b>2</b>
<b>ACRONYMS</b> .....	<b>3</b>
<b>1. INTRODUCTION</b> .....	<b>7</b>
1.1 Purpose .....	7
1.2 Scope .....	7
1.3 Methodology .....	7
<b>2. OVERVIEW</b> .....	<b>8</b>
2.1 Papua-New Guinea.....	8
2.2 Porgera Valley.....	9
2.3 Financial Services Stakeholders .....	11
2.4 Regulatory Environment.....	14
<b>3. BUSINESS MODELS</b> .....	<b>16</b>
3.1 Existing business models .....	16
3.2 Most appropriate business models for Porgera.....	19
<b>APPENDICES</b> .....	<b>31</b>
<b>REFERENCES</b> .....	<b>31</b>

## **1. Introduction**

Providing greater access to finance, especially in rural areas, and improving financial solutions offered to the unbanked, has been a hot topic for many years already. In fact, in many countries rural population outweighs urban population. In Papua New Guinea (PNG) for instance, it is estimated at 85% of the population is located in rural areas (Bruett and Firpo 2008). High costs of operation, from high distance, low concentration of people, smaller transaction; security issue and complex logistics are some of the reasons why microfinance services are delayed.

### **1.1 Purpose**

The objective of this Business Models for Financial Services (BMFS) assessment is to document and evaluate business models for financial services available in Papua New Guinea (PNG) and beyond in order to make recommendations to Porgera Environmental Advisory Komiti (PEAK) and the Porgera Joint Venture (PJV) regarding potential actions that could improve the access to financial services for the currently unbanked population in Porgera Valley.

### **1.2 Scope**

More specifically, the BMFS report includes:

- Section 2: A brief overview of the financial context in PNG and the Porgera Valley, a review of the major stakeholders involved in the financial services in PNG as well as the current regulatory environment surrounding financial services in PNG.
- Section 3: A review of the existing business models for financial services and highlights the most promising opportunities/models suitable to the Porgera context. It also includes information about potential partners for implementation of the proposed strategies.
- Section 4: Recommendations for implementation of the selected models.
- Section 5: Options for PJV and PEAK to consider for next steps

### **1.3 Methodology**

The information presented in this paper has been collected by both secondary and primary data including:

- Desktop research: Compiling and reviewing available documents related to the financial sector in PNG, existing financial service delivery models, especially designed for secluded context, as well as on the supply, demand, legal and regulatory issues, and other issues related to the access to finance in PNG.
- Primary investigation through one-on-one meetings with stakeholders:
  - during the Microfinance Pacific Week (MFPW) held in Fiji, in July 2009;
  - in Porgera Valley, in September 2009; and
  - in Port Moresby, in September 2009.

## **2. Overview**

There are many things to consider when developing a suitable strategy to provide financial services. This includes the general context of the country, the specificities of the location, the main actors and their role in the eco-system as well as the regulatory system in place to support, or potentially limit the extent of the development of a selected strategy.

### **2.1 Papua-New Guinea**

The population of Papua New Guinea is approximately 6 to 6.5 million. Most people live in rural and often quite remote areas. Only about 15 percent of the population is employed in the formal sector mainly through government or mining jobs, while it is estimated the informal work force accounts for 75 to 85 per cent of people in mainly subsistence farming (Bruett and Firpo 2008). Social indicators in PNG are amongst the lowest in the world, with the country ranked 145 of 177 in the UNDP Human Development Index 2007 (E-standards forum 2008: 8). It is also reported that PNG also has a weak and underdeveloped infrastructure including poor roads and transport systems, inadequate electricity supply to rural areas and, up until recently, there was little provision of technology services such as television, telephone lines, internet and mobile phones (E-standards forum 2008:9).

#### **The economic context**

PNG's Gross Domestic Product (GDP) was 6 to 6.5 billion kina in 2008. The PNG economy relies heavily on the mining sector with mining, petroleum, forestry and associated industries accounting for close to 50 per cent of the GDP. Agriculture, fisheries and services account for most of the remainder of GDP (Bruett and Firpo 2008: 6). The E-standards forum (2008) report that after a prolonged period of slow economic growth, the PNG economy has been buoyed by high prices from mining and oil exports and external debt is at a manageable level. However, PNG remains one of the poorest countries in the world. The International Monetary Fund estimated that per capita income in 2007 was just US\$991 (E-standards forum 2008: 1). Though other estimates suggest this figure is closer to US\$400 per capita, which more accurately reflects the situation of the majority of the population, (Bruett and Firpo 2008: 6).

#### **The financial sector and access to financial services**

There are a wide range of financial institutions (FIs) and services operating in PNG. These include; commercial banks, licensed financial institutions (LFIs), Savings and Loans Societies (S&Ls), superannuation funds, insurance companies, licensed microfinance institutions (MFIs), and several non licensed FIs such as NGOs providing microfinance services (for further information, refer to section 2.3 financial services stakeholders).

Despite the wide range of institutions in operation in PNG, the unbanked population is estimated at 84 per cent. Of the estimated economically active population of 2.4 million adults, only 500,000 have bank accounts with commercial banks and can be considered 'electronically banked', while a further 200,000 people are clients of MFIs and S&Ls, which provide bank-account like savings facilities with passbooks (Porteous 2008:10). There is also a lack of accessible credit services in PNG. Although money lenders



exist, this is mainly in urban areas. More rural areas populations rely upon Wantoks and community finance schemes for their financial needs (Bruett and Firpo 2008).

Due to the harsh, rugged terrain of the country, financial service delivery to the large proportion of the rural population is limited. Banking and financial services tend to be located in most major cities and towns with some services such as ATMs and over 4000 Eftpos contact points being located in smaller centres and remote areas (Porteous 2008, Bruett and Firpo 2008). 90 percent of savings and deposits in PNG are held by Commercial banks, however, MFIs (licensed and non licensed) and S&Ls have been the most successful in providing financial services at the grassroots level (Biggs 2007, Porteous 2008:10). Bank of South Pacific (BSP), the largest commercial bank, has also had success in delivery of financial services<sup>1</sup> outside the major centres by developing over 70 agencies with Post PNG and the District Treasury Office (DTO) to service the provinces (Bruett and Firpo 2008:9). Porgera does not have a BSP branch or agency (in a DTO or Post Office) at the moment, but PJV has recently entered in negotiation with BSP leading to a confirmation of branch and ATM opening in Porgera by June 2010.

Relevant to the context of this report is a consideration of the extent to which the population can access telecommunications services which would enable financial services such as mobile phone banking (m-banking). Telikom Pty Ltd, trading as B-Mobile, has had a monopoly on the provision of mobile phone services throughout PNG until very recently. The mobile telecommunications sector was partially opened up for competition in July 2007, allowing the entrance of Irish owned company Digicel to the market. A third telecoms provider, GreenCom, a subsidiary of Dawamiba, an Indonesian operator, was also expected to join the market then but has never rolled out its network and is currently in liquidation. With the liberalisation of mobile telecommunications, it is estimated that the numbers of mobile phone subscribers in PNG have increased dramatically from just 140,000 prior to July 2007, to over a million in 2009 (Batton, Duncan and Guoy 2009:11). Some estimates expect that by 2010, 80 percent of the adult population in PNG will have a mobile phone subscription (Porteous 2008). The liberalisation of the telecommunications industry in PNG has immense significance for the potential to make financial services more inclusive through m-banking.

## **2.2 Porgera Valley**

The Porgera Valley is located in the Enga province of the central highlands in PNG. Geographically, the area is very remote, at about 200km west-northwest of the closest large town, Mount Hagen and the terrain is rugged and mountainous. The Porgera sub district, comprising of the Porgera and Paiam townships and various settlements, is home to approximately 40,000 people.

### **Social and economic profile**

The PJV gold mine opened in 1990 and is the main economic activity in the region. In 2007, PJV had 2,445 permanent employees, of which 1,549 were Porgerans, 35 Engans, 690 other PNG citizens and 171 non-citizens (PEAK 2009). Other income sources in the Porgera Valley include operations run by Ipili Porgera Investments (IPI), the largest local business in the Porgera Valley and local suppliers of mine

---

<sup>1</sup> Transaction and savings accounts, both statement and passbook-based accounts.

operation contracts. In addition, subsistence agriculture and a small amount of forestry activities take place, however unemployment is high (Enga Provincial Government 2007:4). Illegal gold mining is reported to contribute significantly to the local economy, while also being a considerable challenge to PJV operations (PEAK 2009).

PJV provides royalties and compensation packages to landowners for any losses such as land, gardens and houses due to mine activities and for areas affected by mining operations like waste dumps, camps and the lime quarry (PEAK 2009). In addition, the community receive relocation and resettlement packages from PJV. A large proportion of the compensation and royalties are distributed in cash form and the Porgera economy is mostly cash based. Primary investigations with stakeholders suggest that those who do not have access to bank accounts and regularly receive cash payments have great security concerns for their personal welfare and property. The demand for financial services, particularly savings would appear to be very high in Porgera, however financial services are very limited.

The closest branches of financial institutions to Porgera are BSP and the National Development Bank in Wabag, a 2 hour drive away. ANZ and Westpac both have branches in Mt Hagen, 130km away. Although most permanent mine employees, trades people and business are likely to hold accounts in bank branches at Wabag and Mt Hagen, the large majority of Porgeran residents are unbanked. According to estimates on the unbanked population mentioned earlier in this report, at least 84% of the population in Porgera would not have access to financial services. The only financial service currently available to Porgerans is the Porgera District Women's Association (PWA) who operates a successful microfinance program providing microfinance services to women (members) in the community.

### **Constraints to the supply of financial services**

Constraints to the supply of financial services in Porgera Valley include many factors such as the geographical remoteness of the area and associated high costs of financial service operation, law and order security concerns, limited telecommunications and unreliable infrastructure services.

Law and order security concerns have been identified as one of the major constraints to the supply of financial services in Porgera. Prior to the opening of the PJV mine, the population of Porgera district was estimated to be 10,000 people, mainly of Ipili origin. The dramatic population growth, now sitting at 40,000, brought people to the area from many other districts and tribes resulting in great ethnic diversity. Partly as a result of the increase in population and ethnic diversity, but also because of an inadequate policing and justice sector in the region, there has been a decline in peace and order in Porgera. Violent crimes, (particularly domestic violence) tribal warfare, common assault and theft have increased sharply in the last decade (Enga Provincial Government 2007: 5).

Commercial bank, BSP, had a branch in Porgera until 2005. Its closure was reportedly due to security concerns. Primary investigations with stakeholders revealed that a licensed MFI recently investigated the possibility of setting up a branch to provide services in Porgera, however concluded the project was not viable for a number of reasons. Namely, these were the poor security situation, unreliable

infrastructure, limited potential for lending services and an uncertain economic growth period looming with the expected closure of PJV in the next six years<sup>2</sup>.

Infrastructure has, in the past, also been identified as a major constraint on the supply of financial services to the area. In rural areas of PNG, the electrification rate is often as low as 7 percent (E standards forum 2008:3). Furthermore, the telecommunications access and mobile phone network coverage may have been a constraint to the supply of financial services in the past. However, Be Mobile now provides reliable mobile phone coverage to most of the Porgera Valley, and with the liberalisation of the telecommunications industry, Digicel are expected to also provide coverage in the area from 2009. Primary investigations with stakeholders find that the majority of Porgera residents own, or at least have access to, mobile phones.

### 2.3 Financial Services Stakeholders

There are many players in the world of financial services and each one with a very different strategy and market. The financial service providers involved in the PNG context are presented in the table below.

**Table 1 – Summary of Financial Service Providers in PNG**

<ul style="list-style-type: none"><li>- 4 commercial bank: BSP (35 branches), ANZ (12), Westpac (15), Maybank (2)</li><li>- + 200 ATMs and over 4000 EFT POS (mostly BSP)</li><li>- 2 licensed MFIs: Nationwide Microbank (12), PNG Microfinance Limited (9)</li><li>- National Development Bank (rural lending – 19)</li><li>- Bank agents (BSP-68)</li><li>- 8 LFIs</li><li>- 21 S&amp;L Societies</li><li>- 15+ non licensed MFIs, with a fast increasing number</li><li>- Stock Market: 7 superannuation funds, 5 Life insurers and 12 general insurers</li></ul>
---

Source: Table adapted from Bruett and Firpo 2008:8 and further updates provided by ADB, October 2009

#### Commercial banks

There are four commercial banks operating in PNG; Bank of the South Pacific (BSP), ANZ, Westpac and Maybank. In total, commercial banks account for over 90 percent of total deposits in PNG (Biggs 2007). Of these, BSP is the only locally owned bank and is the dominant commercial actor holding 53 percent of total assets and deposits and providing the most service points (including branches, ATMs and Eftpos) around the country (E-Standards Forum 2008:7). ANZ and Westpac banks are also significant commercial actors, with 12 and 15 branches around the country (Bruett and Firpo 2008:8). As mentioned in section 2, BSP has had some success providing financial services to grass roots customers outside of the main centres through its partnership with Post PNG and the DTOs. In addition, BSP has recently become the first financial service provider in PNG to offer m- banking in partnership with the telecommunications

---

<sup>2</sup> Correspondence with Nationwide Microbank, August 2009.

company Digicel. All four commercial banks provide basic deposit and withdrawal services, electronic banking, internet and phone banking, savings, loans, and some like Westpac deliver financial literacy education to their customers<sup>3</sup>.

### **Licensed and non-licensed MFIs**

Across PNG, there are two licensed MFIs providing microloans and savings to the wider public, and at least six non-licensed MFIs providing microloans and savings to their members in grassroots communities. The two licensed institutions; Nationwide Microbank (formerly known as Wau Microbank) and PNG Microfinance Limited, receive deposits for savings and make loans to customers. In total, they operate 21 branches around PNG and have opened over 170,000 accounts (Bruett and Firpo 2008: 9). Non-licensed MFIs provide microcredit and savings to their members only and include those groups operated by Non Governmental Organisations (NGOs), faith-based organisations (FBOs) and community groups, such as Putin na Kisim (PnK). PnK is operated through the PNG church network by the Lutheran Development Service. PnK groups are formed in areas which have no access to commercial banking facilities due to geographical isolation, or where banking policies have excluded those with lower income (Lutheran Development Service 2009). Non licensed MFIs typically rely on commercial banks to manage their funds (Bruett and Firpo 2008:9).

### **Savings and Loan Society**

There were twenty one Savings and Loans (S&L) societies registered in PNG as at July 2008 but it is reported that few of these are actually still in operation (Bruett and Firpo 2008). S&Ls are established by people sharing a common bond of membership such as those employed in the same organisation, industry or originating from the same province. The purpose of S&Ls are to; receive deposits for savings and make loans to their members, promote thrift amongst their members, and educate their members in financial responsibility (BPNG website). S&Ls also rely on commercial banks to manage their deposits and funds (Bruett and Firpo 2008:9).

### **Co-operatives**

The Co-operative Societies Unit (CSU) of PNG (2009) defines a Co-operative as an 'autonomous, united and voluntary association of persons, usually with limited resources, that come together to meet their common economic, social and cultural needs and aspirations'. For the purposes of understanding financial service providers in the PNG context, the CSU advises that Credit Co-operatives are essentially regarded as S&L Societies.

### **Superannuation funds**

There are seven authorised Superannuation Funds, seven trustees of the Superannuation Funds, three Investment Managers and four Fund Administrators registered to conduct their activities in PNG (BPNG 2009). The Public Officers Superannuation Fund7 (POSF), known as Nambawan Super, and the National

---

<sup>3</sup> Correspondence with Westpac, PNG.

Superannuation Fund (NASFUND) are the two largest funds. Nambawan Super had net assets of K2.261 million at the end of 2007 and NASFUND had net assets of K1.468 million at the end of 2008.

### **Insurers**

There are twelve insurers providing general insurance industry in PNG including companies such as QBE Insurance (PNG) Limited, American Home Assurance Co and Tower Insurance Limited (Biggs 2007). In addition there are five licensed life insurance companies including Kwila Insurance Corporation Ltd, Life Insurance Corporation (PNG) Ltd, Workers Mutual Insurance (PNG) Ltd, Pacific MMI Insurance Limited, and Capital Life Insurance Company Limited, formerly Pan Asia Pacific Assurance (PNG) Ltd (BPNG 2009).

### **Investment Market**

The financial market in PNG has evolved in recent years to include other developments such as an investment market. Both banking and non-banking institutions provide investment fund management services. For example, BSP Capital is the investment arm of commercial bank, BSP, which offers stockbroker services to clients. Relevant to this discussion on business models for financial services in Porgera is a consideration of Community Fund investments, such as those developed by Resource Extraction Companies like Lihir Gold Limited (administered through the Nimamar Rural Local Level Government (NRLLG)). The objective of such funds is to ensure the long term sustainability of mine impacted communities through distribution of funds to various community development initiatives, capacity building an infrastructure projects.

### **Telecommunications companies**

B-Mobile is the former 100% state-owned monopoly provider of mobile telecommunication services in PNG, and used to be a part of Telikom PNG Limited. In September 2008, the Government announced that it had sold 50% of its stake in B-Mobile to a consortium of local and international investors. PNG Sustainable Development Program and two superannuation funds, Nambawan Super and Nasfund, resulting company of stakeholders called Black Dolphin, acquired a stake of 15% (5 % each), while Hong Kong private equity firm GEMS and Trilogy International Partners acquired the remaining 35%.<sup>4</sup>In July 2007 the mobile telecommunications sector was partially opened up for competition, allowing for the entrance of Irish owned company Digicel to the market. A third telecoms provider, GreenCom, was also granted a mobile telecommunications license but it has never rolled out its network.

While Digicel, in addition to providing mobile telecommunications services, also offers electricity vending via mobile, through a system called Easipay, B-Mobile solely provides standard mobile telecommunications services to its customers. Digicel also recently partnered with BSP to deliver PNG's first m-banking system.

---

<sup>4</sup> [www.Wirelessfederation.com.au/news](http://www.Wirelessfederation.com.au/news); [www.Reuters.com](http://www.Reuters.com) and [www.cmmca.com.au](http://www.cmmca.com.au)

## **2.4 Regulatory Environment**

The regulatory environment in PNG is constantly evolving. Currently, the Bank of Papua New Guinea (BPNG) is the independent body responsible for regulatory and supervisory oversight of the PNG financial system including; commercial banks, finance companies, S&Ls, superannuation funds, life insurance companies and other LFIs (Biggs 2007). From a legal perspective, PNG does not actively prohibit most mobile money models or agent banking relationships. However, because of the lack of specific regulations, it is not covered in details in this section.

### **Banking/Financial system**

The main legislation which governs banking in PNG is the Banks and Financial Institutions Act 2000 (BFIA) (Biggs 2007). The minimum capital requirements to become licensed are K15 million for banks and K1.5 million for LFIs. Financial institutions, including the two major MFIs and Banks must become licensed under the BFIA to conduct "banking business". The BFIA defines banking business as the "business of taking money on deposit and using that money to lend to others or to finance any other activity of the business, wholly or to a material extent, out of the capital or interest on money received by way of deposit" (BPNG 2009). Thus all institutions who take deposits from the general public in PNG are expected to become registered as an LFI. S&Ls are registered under the Savings and Loan Societies (Amendment) Act, 1995, which is currently under a review and expected to be modernised. Under the act, the members of a group own the society by virtue of their membership (BPNG 2009). There are no capital requirements for registration of an S&L, only a membership minimum of at least 500 members (or such other number as is determined by the Registrar) (BPNG 2009). While Credit Co-operatives are also governed under the same act, they are also regulated by the CSU of PNG.

Superannuation funds are governed by Superannuation (General Provisions) Act 2000 and Life Insurance companies are governed by the Life Insurance Act 2000 (BPNG 2009). Other general insurers are regulated by the Insurance Commissioner under the Insurance Act 1995 (Biggs 2007).

It is important to note that several non-licensed FIs and groups providing microfinance services in PNG fall outside of BPNG's regulatory remit due to their not meeting capital requirements and not being able to take deposits from the general public. Typically, these organisations can take deposits from their members though, and are registered with the Investment Promotion Authority (IPA) of PNG. Organisations in this category include microfinance services provided by NGOs, FBOs and community groups.

### **Mobile Telecommunications**

With regards to regulations guiding m-banking services conducted by a commercial bank (such is the case with BSP) or licensed FI, it is understood that the payment system lies within the remit of BPNG regulations<sup>5</sup>. However, regulations guiding m-banking services administered by non financial institutions is an area that has not yet been clearly defined and is subject to a review currently being undertaken by a consulting firm (Porteous 2008:16). In March 2009, the National Executive Council

---

<sup>5</sup> Communications with BPNG.

(NEC) approved a comprehensive set of reforms for the telecommunications sector, by endorsing the “National ICT Policy Phase 2 Reforms Final Report”, developed by the Department of Communication & Information. The report sets out a path for the staged introduction of open competition in the telecommunications sector in PNG. A National Information and Communications Technology (ICT) Bill was drafted to give legislative effect to the reforms, which is expected to be introduced into Parliament in October/November 2009. In summary, the following reforms were adopted by the NEC:

- The introduction of a new technology neutral horizontal licensing regime,
- The liberalisation of the international telecommunications gateway,
- The establishment of a new wholesale access and interconnection regime,
- The development of new Universal Access Scheme to provide a funding mechanism for telecommunication projects in areas where commercial investment is not viable, and
- The creation of a new ICT regulator to be known as the National Information and Communication Technology Authority (NICTA).

Other regulators whose mandate would have a bearing on a m-banking system in PNG include the technical licensing body; PNG Radio communications and Telecommunications Technical Authority (PANGTEL), and the economic regulator the Independent Consumer and Competition Commission (ICCC). Although PANGTEL has little influence over telecoms policy, its decisions and work do affect the reliability of mobile, satellite and radio communications infrastructure. The ICCC has significant influence over telecoms policy, with authority over consumer protection focusing on mobile phone tariffs and on competition issues (Stanley 2008:3, 4).

It has become clear that further development of telecoms regulations and banking regulations, as they apply to m-banking service providers, are essential to protect the interests of consumers and to maintain a balanced ‘playing field’ in both the financial and telecommunications sectors. A lack of clear regulations guiding m-banking will act as a barrier to the development of this financial service delivery model (Porteous 2008).

### 3. Business Models

A number of business models for financial services have been identified in PNG and elsewhere. An overview of the major models is presented in this section, including the transaction channel taken by the implementing partners, the limitations and benefits of each model, and a comparison between implementation and impact horizons. The special circumstances of Porgera Valley have led to the identification of certain models, more suitable in this context, which are discussed in more details at the end of this section.

#### 3.1 Existing business models

##### Summary of existing models

The following table summarises existing business models of financial services which have been identified in PNG and elsewhere, examples of those models in operation, and identification of the channel of transaction. A more detailed description of the business models for financial services can be found in Appendix 1.

The *transaction channels* (column 3 in the table below) refer to 1) the origin of the financial transaction and 2) the means and methods by which financial transactions occur. The origin of a transaction is the location for either opening of an account or registering to a service. This may occur at/with/through a LFI such as a commercial bank or MFI, or with a non bank such as a mobile phone service provider, a telecommunications company, or an agent. The means by which financial transactions occur are either cash or cashless (electronic) and the associated methods of those transactions include the following; branch, rural agent, Point of Sale (POS) merchants, person to person (P2P) transfer of funds within the same payment network, and electronic channels such as ATMs and Eftpos.

**Table 2 – Business Models for Financial Services**

Business Model	Description	Transaction Channel	Examples
Branch Model	Licensed and non licensed FI usual model whereby branches are established and provide financial services to their members (non licensed and S&L) or wider public (LFI).	1- Account: Branch or agent 2- Cash: Branch, rural agent, POS, ATMs	- LFI - Non licensed FI (e.g. PWA) - S&L Society
Community Funds (also see Table 3 below)	Community owned funds which can be externally managed (e.g. FI, private sector). The development of rules and regulations of Community Funds are handled by the owners of the funds (e.g. Community Association) and may be facilitated by other NGOs.	1- Savings 2- Cash and cashless: Transfer of fund, branch	- Lihir Gold Limited - Ok Tedi Mining Ltd - Oil Search Limited
Electronic Banking	Assistive Technologies in electronic banking include Personal Digital Assistants (PDAs) Smart Cards and Automated Teller Machines (ATMs). They can be used to facilitate delivery of other financial models discussed	1 - Accounts: FI & Non FI 2 – Cash and Cashless: Branch, Rural Agent, , POS,	- NBV use of PDAs in their rural banking scheme - BSP in PNG – wide



	here, particularly useful in remote locations.	P2P	network of rural Eftpos and ATMs
Mobile Phone Banking led by an FI	Mobile phone technology is utilised by FIs through: account activity notification by SMS; internet banking on mobile phones; and mobile channel enablement whereby the FI connects their banking system to the mobile network and allows customers informational and transactional access to their accounts through SMS.	1 – Account: LFI 2 – Cashless: Branch, P2P	- BSP m-banking , PNG
Mobile Phone Banking led by a non FI	Using the mobile network as its main channel, users exchange cash in return for an electronic record of value. This virtual account is stored on the server of a non bank, such as a mobile network operator. The user can make and receive payments with anyone else participating in the same system.	1 – Account: Partner bank or service provider 2 – Cashless: POS, P2P	- GCash., Phillipines - Digicel PNG: 'Easipay' electricity vending service - DataNets:PNG electricity vending with PNG power. - Yehdo Phone Card (TransTel Fiji)
Rural Banking Model through mobile branch banking	The fundamental aim of rural banking is to provide financial services, including savings and loans, to communities in remote locations, without having a fix base in the area.	1-Account: LFI, and/or agent 2- Cash: Rural Agent and Electronic	- ANZ Rural banking in Fiji - National Bank of Vanuatu (NBV)

### **Community Trust Funds Supported by Resource Sector Companies in PNG**

In complement to the business model for financial services - Community Funds- listed above, are examples of Community Trust Funds developed by resource sector companies in PNG. Such Community Trust Funds have been established with the objective of ensuring the long-term sustainability of mine impacted communities after the mine operations have ceased.

The following table summarises three case studies of such Community Trust Funds, developed by three different resource extraction companies in PNG. For more detailed information, please refer to appendix 3.

**Table 3 – Community Trust Funds - Examples from the Resource Sector in PNG**

<b>Name</b>	<b>Amount and Timeline</b>	<b>Governance</b>	<b>Beneficiaries</b>
Lihir Gold Limited (LGL): Lihir Sustainable Development Plan (LSDP)	K100 million over 5 years, plus one off investment of K7 million. To sustain community development activities such as education, health and infrastructure for 20 years.	Administered by the Lihirian people through Nimamar Rural Local Level Government (NRLLG)	Lihirian Community
Ok tedi Mining Ltd / BHP Billiton: PNG Sustainable Development Long Term & Development Funds	Aprox K150 million annually. To sustain community development activities such as education, health and infrastructure for 40 years after mine closure.	PNGDSP Board in partnership with implementing organisations and NGOs.	Western provinces (mine impacted communities) and nation wide

Oil Search Limited: Sustainable Development Trust	Aprox US\$13 Million accrued at end of 2006. No distribution or timeline specified as of yet.	To be established at time of funds release. Funds will be distributed by local NGO's.	Mine impacted communities
---	---	---	------------------------------

### **Limitations and benefits of the models**

The following table summarises the limitations and benefits of each model and provides a comparison between the implementation and impact horizons. The criteria by which the limitations and benefits of each model have been evaluated are defined by the following *characteristics*:

- *Security*: Can cash be transported and stored securely by the provider? How susceptible to fraud is the technology and its hardware?
- *Inclusiveness*: Does the model have the potential to reach a large proportion of the unbanked poor? This includes a consideration of whether the eligibility requirements for users are strict, and if the model requires users with a high level of financial and technological literacy.
- *Costs*: Are the start up costs for the provider low, medium or high? Are the user costs for the consumer low, medium, or high?
- *Reliability/ Accessibility*: Is the service easy to access for users in a remote location? Is the network and/or source of service reliable?
- *Flexibility*: Does this model offer a wide range of financial services such as transfers, deposit and withdrawal of cash, saving and loans etc? Can this model be used in conjunction with other banking technologies?

The *implementation horizons* have been evaluated based on the length of time it is likely to take for the service provider to implement the financial business model - short, medium or long term.

The *impact horizons* have been evaluated according to the potential of the particular business model to contribute to the long term financial sustainability of the community once implemented. Some models will have little impact because they just provide everyday basic financial access services like transfers, deposit and withdrawals, while other models will have a more far reaching impact because they provide financial literacy and offer strategies for long term financial sustainability in the community such as community trust funds. The impact of some models may be increased when they are used in conjunction with another type of model.

**Table 4 – Characteristics of Business Models for Financial Services**

<b>Business Model</b>	<b>Main Characteristics (criteria)</b>	<b>Horizon</b>
Branch Model	<ul style="list-style-type: none"> <li>- Security: Average, issues related to the storage and transport of cash</li> <li>- Inclusiveness: Average, great outreach but may have limiting eligibility criteria</li> <li>- Costs: Reasonably low for provider and user</li> <li>- Accessibility/Reliable: Medium to high, accessibility in remote areas differs</li> <li>- Flexibility: Medium to high, range of services differs</li> </ul>	Implementation: MT to LT Impact: MT to LT
Community Funds	<ul style="list-style-type: none"> <li>- Security: Medium, increased as it grows and management is outsourced to FI</li> <li>- Inclusiveness: High, target community</li> </ul>	Implementation: MT Impact: LT

	<ul style="list-style-type: none"> <li>- Costs: Usually low, agreed by the members</li> <li>- Accessibility: High, in the locality</li> <li>- Flexibility: High, law and regulations developed internally by the members</li> </ul>	
Electronic Banking	<ul style="list-style-type: none"> <li>- Security: Medium, issues related to expensive technology equipment</li> <li>- Inclusiveness: Medium but does facilitate remote banking</li> <li>- Cost: High to provider and User</li> <li>- Accessibility: High</li> <li>- Flexibility: High</li> </ul>	Implementation: ST Impact: ST (unless used in conjunction with other models)
M-Banking led by FIs	<ul style="list-style-type: none"> <li>- Security: Medium to high, some issues related to risk of fraud.</li> <li>- Inclusiveness: Medium, banking eligibility requirements &amp; must have a mobile phone and be technologically literate</li> <li>- Costs: Low for provider, low for user</li> <li>- Accessibility: Medium, depends on network coverage</li> <li>- Flexibility: Medium, consistently established services but can be used with other models.</li> </ul>	Implementation: MT - LT Impact: ST (unless used in conjunction with other models)
M-Banking led by a non FIs	<ul style="list-style-type: none"> <li>- Security: Low to medium, issues related to risk of fraud.</li> <li>- Inclusiveness: High, few eligibility requirements, but must have a mobile phone and be technologically literate</li> <li>- Costs: Variable but usually low for provider and user</li> <li>- Accessibility: Medium to high, depends on coverage, some independent technologies work with various providers</li> <li>- Flexibility: High, broad service range and can be used with other models</li> </ul>	Implementation: MT Impact: ST (unless used in conjunction with other models)
Rural Banking Model through mobile branch banking	<ul style="list-style-type: none"> <li>- Security: Low to medium, issues related to the storage and transport of cash</li> <li>- Inclusiveness: High, though eligibility requirements can be strict</li> <li>- Costs; High for Provider, low for User</li> <li>- Accessibility: High</li> <li>- Flexibility: High, range of services and can be used with other models</li> </ul>	Implementation: MT Impact: LT

### 3.2 Most appropriate business models for Porgera

In the context of Porgera, the most suitable business models for financial services would include as many of the criteria defined below:

- Highly secure and safe for the consumer and the provider
- Inclusive of the unbanked population, i.e. relatively low eligibility requirements
- Relatively low cost (affordable) both for service provider to implement and for user to access
- Accessible, i.e. services located in the Porgera Valley
- Offering necessary services such as transfers, deposit, withdrawal of cash, and most importantly saving products

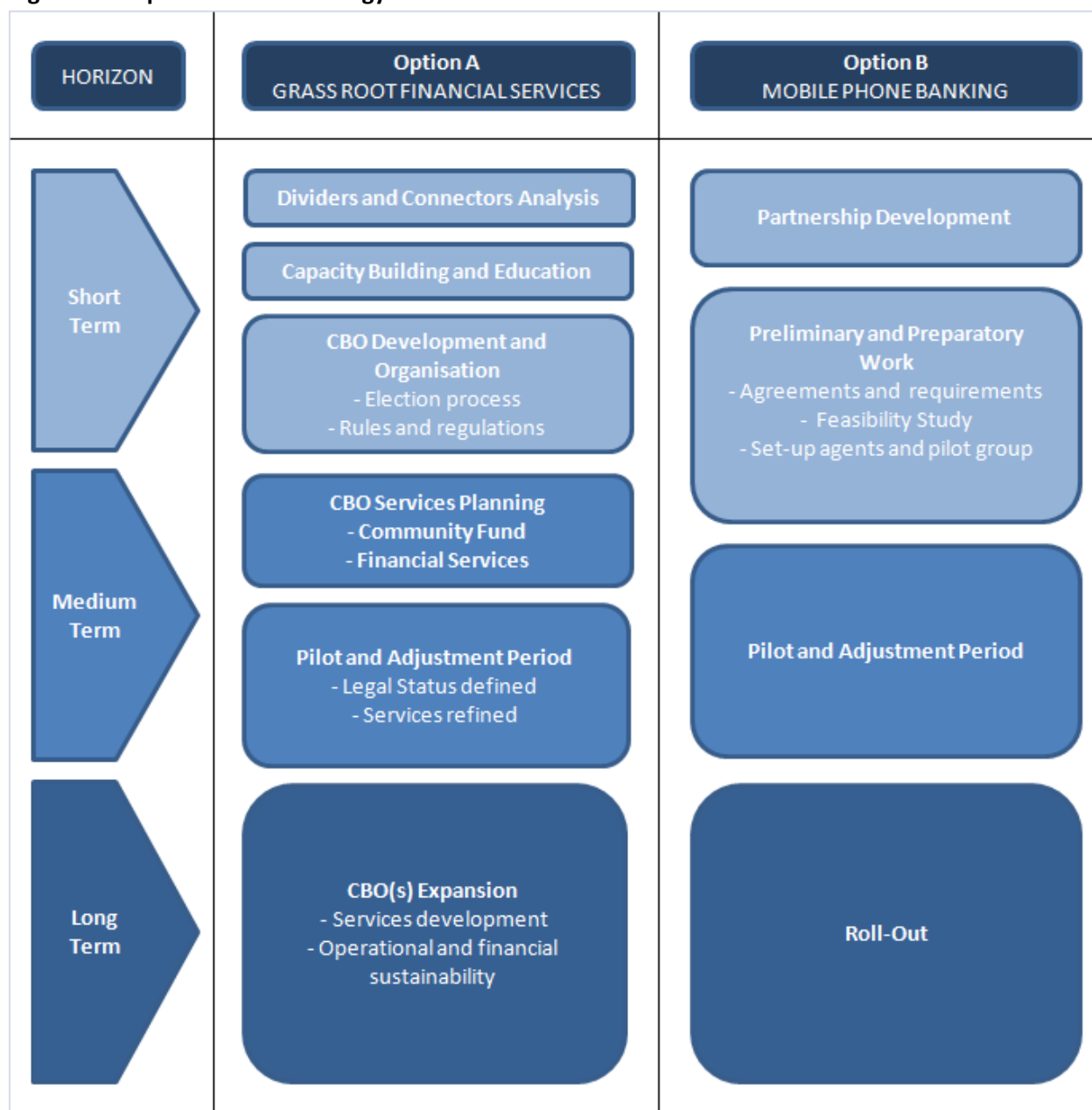
Considering the situation whereby no financial service is available in Porgera, most models described in tables 2 and 4 would add value and help improve the current situation. However, considering the community needs and the criteria mentioned above, the following business models would be most suitable:

- **Community Fund** for the Porgeran community and households, especially displaced families and recipients of PJV relocation and compensation packages through a Community Association.
- **Financial Institution (branch)**, offering a range of financial services, especially saving products, as well as technical support, such as financial literacy and business development programs. The preferable model would initially be an unlicensed Community Association, with the potential to become a licensed FI in the long term depending on growth, size and community need. Creating grass-root association(s) might provide additional incentive for commercial banks and licensed MFIs to consider opening a branch or providing financial services in the area.
- **M-banking** models, led by a FI or a non-bank. On one hand, partnering with a FI is safer and more reliable; however rigorous processes and requirements (e.g. feasibility studies) can result in a longer implementation timeframe. On the other hand, independent telecommunication organisations around the world are increasingly providing banking services to their customers and supporting the creation of viable eco-system, through local service providers and rural agents. This option may be implemented with less delay and more flexibility.

#### 4. Recommendations and Next Steps for Implementation

Following the business models review made in section three and especially the initial recommendations for suitable models mentioned (in 3.2), an implementation strategy, based on two options, a bottom-up and top-down approaches, is recommended and illustrated in Figure 1 below. The success of the proposed models is highly dependent on the selection of the right partners. While this section contains suggestions with regards to potential partners, those have to be seen as preliminary and will require further investigation. The limited time to conduct this initiative has only allowed FDC to establish first contact with the players.

**Figure 1 – Implementation Strategy**



Based on recommendations and observations from the team and discussions with financial inclusion experts in PNG and financial literacy Community Trainers in Porgera; two options for financial services could be developed and implemented simultaneously. Implementing two models simultaneously would increase financial access for the communities of Porgera and maximise potential benefits to the communities, thus ensuring PJV's sustainable economic development target is met by such time as the mine closure occurs.

#### **4.1. OPTION A – Grass-Root Financial Services**

This bottom-up approach aims to empower the communities by developing and/or strengthening existing community-based organisations (CBO) by providing them with:

- 1 –a range of necessary financial services and technical assistance to the local communities, especially a means for saving and depositing money.
- 2 –investment options to support the sustainable development of the community, for example through a Community Fund.

While full development and operational sustainability of CBO may only be seen over a long period of time, it is realistic to think that, through grass-roots financial services, both impact and outreach could be achieved in the short to medium term. However, the success of such initiative will depend on the response from the communities. While we have received great response from the HFMTOT, conducted in Porgera last September, and have seen a success story from the PWA, the large increase in ethnic diversity in the Porgera Valley remains a potential concern as in other locations in the country where the creation of cooperatives has been successful, there has often been a strong communal bond between members in the community. Therefore, it will be imperative that the process focuses on commonalities and not differences. This means that the process should support connectors within the community and minimize dividers. A series of Corporate Engagement Projects (CEP), led by practitioners showed that a dividers and connectors analysis of the local situation can guide resource sector managers to emphasize and reinforce common and collective interests, even in areas where the situation has led to a complete disconnection of the people. CEP has shown fascinating connectors that were not obvious, even to local people.<sup>6</sup>

The development and implementation of this strategy is explained below through the main steps. For the purpose of this report, focus has been put into short to medium term as long term activities will be affected by the previous.

---

<sup>6</sup> For more information see Getting in Right Makin Corporate – Community Relations Work. Full reference in the reference section

## **Step 1 – Dividers and Connectors Analysis**

What: The dividers and connectors analysis<sup>7</sup>, aims at identifying connectors amongst the Porgera Community in order to reinforce common interests across the community.

How: This process can be conducted through participatory activities, such as community group discussions or focus group discussions (FGD) with different group of people (e.g. ethnicity, tribe, religion, sex, age, gender, income level, village, clan, interest, etc). The implementation process could be summarised as follows:

1. Identify the preferred participatory method
2. Identify the target groups for the assignment (have around 10 people per group)
3. Organise the logistics of the assessment
4. Design your assessment tool: Prepare the activities and appropriate questions to be discussed with the groups
5. Have a team to conduct the analysis and ensure to have one good facilitator and ideally, another person recording the information
6. Revise final recommendations and outcomes from the process and adjust following steps

Why: It is important to be aware that both dividers and connectors exist in any society. Identifying and then using these connectors will help support positive company – community relations and ensure the maximum outcome from the community program to be developed.

Who: Dividers and connectors analysis process should be conducted with as many people as possible, representative of the community (e.g. ethnicity, tribe, religion, sex, age, gender, income level, village, clan, interest, etc). The process should be facilitated by a practitioner (minimum one, preferably two), ideally with no particular connection with the mine or the community projects to be developed.

## **Step 2 – Capacity Building**

What: In line with the *Household Financial Management* (HFM) project and recent training of trainers (TOT) in Porgera, the education component would include preparing and conducting a *Community-Based Organisation Development* TOT. Such training may include the following:

- Group development and facilitation techniques
- Legislative requirements for CBO operations and incorporation in PNG
- Committee and CBO development procedures

Why: To prepare Community Organisers for their role of facilitator for the preparation and organisation of associations. Also, when the concept of CBO is new, especially in areas where community bond may be lower, the role of facilitator becomes even more important to ensure success.

---

<sup>7</sup> Further reference to the dividers and connectors analysis, developed by CDA's Do Not Harm Project, from: B. Anderson, Mary, 1999, "Do Not Harm: How Aid Can Support Peace – Or War"

Who: The capacity building process should target community members/ agents of change with the following skills:

- Able to resolve conflict
- Capable of negotiating with the group and on behalf of the group, if necessary
- Able to implement change
- Able to identify leaders and develop networks

Note that the selected and trained Community Trainers under the HFM project may be an option to consider.

### **Step 3 – Community-Based Organisation(s) Development and Administration**

What: This step aims at facilitating the process of CBO development, e.g. basic rules and regulations, election process and general functioning of the group, and supporting the organisation, management and conflict resolution of an association.

How: The implementation methodology includes the following activities:

7. Identify target groups for pilot (+/-3), from existing groups, affiliations or based on specific criteria, for example location, occupational activities, type of family unit (clan), etc.
8. Develop and/or strengthen community association(s) and CBO. The facilitators will apply skills learnt during the TOT to start-up new CBO and/or strengthen existing groups, depending on suitability. This process includes, amongst other things:
  - To define purpose of the association
  - To elect representatives and management committee
  - To establish basic rules and regulations
9. Support the CBO in their management, organisation and issue resolution procedures. This may include:
  - To develop relationships with committee and individual members
  - To negotiate
  - To facilitate meetings
  - To provide information, when required, to support the development/well functioning of the association
  - To analyse situation and help find solutions to problem

Who: Potential organisations which can provide capacity building (step 1) and/or mentoring and support for CBO Development and Administration (step 2) include, but are not limited to: the Microfinance Competence Centre (MCC)<sup>8</sup>, PWA and FDC.

---

<sup>8</sup> For more information about MCC, refer to [www.microfinancecompetencecentre.com](http://www.microfinancecompetencecentre.com)



#### **Step 4 – Community-Based Organisation(s) Service Planning**

What: Once basic rules and regulations have been established, the members and elected committee will define the types of services they wish to offer to their members. Services may include investment options, financial services and technical support, amongst other things.

How: While a number of services can be provided by CBOs, for the scope of this report and considering the apparent need for financial services in Porgera, the following options and related activities are proposed:

##### *Investment Option - Community Fund*

The development of a Community Fund would involve the following activities:

1. **Fund Structure Development:** Discussion is required amongst the fund owners, contributors and experts in Fund development and management. The aim of this exercise is to define the sole purpose of this Fund, the targeted beneficiaries, the governance model, the set of rules attached to it, etc.
2. **Pilot Period:** Once the Fund structure has been developed and agreed upon, it needs to be piloted and adjusted. Basically, the structure will be test-run, during a period called pilot. The timeline will depend on the situation and can be as short as a couple of months but as long as a couple of years.
3. **Adjustment Period:** Based on the observations made during that period, , further adjustments will be allowed in order to let the Fund gain maximum value, whilst not putting too much pressure on the community.
4. **Management of the Community Fund:** The Fund can be managed by the association at the beginning or by an external financial institution (e.g. LFI) but may require management by a proper broker, depending on the growth and size of the fund.

##### *Financial Services*

A number of financial services can be provided. These include cash deposit and withdrawals, loans, savings, funds transfers, investment and insurance. Based on inputs from Porgera, saving and deposits are the most needed financial products. However, as mentioned in the previous sections, unlicensed FI can only provide saving services to its members, while a Bank or licensed FI can provide saving services to the general public. Therefore, a CBO may provide the necessary services to its members - a working example of this in Porgera is the PWA who provides microfinance services to its women's only member base - but may, at some stage, require a legal status in order to expand its outreach. Alternatively, once a CBO providing microfinance services is successfully established and functional in Porgera, this may demonstrate to banks and the licensed MFIs that the demand for and viability of commercial financial services is indeed sufficient to warrant their presence in the township<sup>9</sup>.

---

<sup>9</sup> Communications with Westpac PNG revealed they are investigating the possibility of setting up a branch model in Porgera.

### *Technical assistance*

Technical assistance services are usually customised and adapted to the needs of the local communities and members/clients of an association. In Porgera, the following programs would be suitable:

- Financial Literacy training
- Business Development training and market linkages program
- Time Management workshop
- Mentoring program to support the training programs

While at an early stage, these programs could be developed and piloted with the external support of PEAK or PJV, it would be ideal to aim at building capacity within the community, i.e. through Community Trainers, Community Organisers, existing and new local organisations/associations, for greater sustainability overtime.

When: Once a CBO has been developed and basic rules have been established, the service planning process can commence. Basically, along side step 2, activity 3 detailed above.

Who: The previously detailed activities should be facilitated or supported by experts. Some potential partners are presented below:

- The development of a Community Trust Fund can initially be facilitated by financial specialists or the PNG Association of Microfinance Institutions<sup>10</sup>, but would benefit from advice and follow-through from experts in Fund development and management, such as BSP Capital, the investment arm of commercial bank BSP, as the Fund gets bigger.
- The development of financial services suitable for small associations and responding to the needs of a specific location could be facilitated by the PNG Association of Microfinance Institutions, MCC or BPNG.
- Technical assistance programs should be provided by the association to its members. However in the early stages of development of an association, capacity building is required internally (i.e. CBO team and members) and externally (i.e. broader communities). Therefore, it is recommended to partner with organisations with a focus on community capacity building and economic development, such as MCC and FDC, to train the association members or local trainers, which will then be in charge of training the recipients of the association services.

### **Step 5: Pilot and Adjustment Period**

What: All the previous steps are building blocks to developing the basis of a solid CBO. Once the previous steps are completed, i.e. the CBO structure has been developed and agreed upon, it needs to

---

<sup>10</sup> Communications with representative of the PNG Association of MFI has shown their willingness to participate in such a process.

be piloted and adjusted. Basically, during a period called pilot, what has been developed and in the first steps will be test run in the aim to identify areas of weaknesses and potential improvements.

Based on the observations made during the pilot, further adjustments, for instance to the legal status and/or range and type of services, may be performed.

When: The timeline will depend on the situation and can be as short as a couple of months but as long as a couple of years.

#### **Step 6: Community-Based Organisation(s) Expansion**

What: This is a phase that many small associations never reach unfortunately. Those who will are the ones that found a niche to develop in a viable way. A successful association reaching this stage would for instance aim to upgrade its services, expand its outreach and attain operational and financial sustainability.

## **4.2. OPTION B- Mobile Phone Banking**

This top-down approach aims to maximise the outreach of financial services to the unbanked in Porgera and its success is likely to depend on/be impacted by any national program developed or implemented in the future.

The process of developing and implementing this strategy is as follows:

#### **Step 1 – Partnership Development**

What: Developing and implementing an m-banking eco-system requires various partners, which may include the mobile phone service provider, banking services provider, private sector company, local agents, and the target group (customers).

When: It is important to determine a viable and reliable partnership structure, suitable to the local context, at the very beginning of the process.

How: The process of implementing m-banking in Porgera could be conducted directly in partnership with FIs or with non FIs such as telecommunication companies and providers. Both have their advantages and disadvantages. Partnering with a FI may be safer and more reliable, however rigorous processes and requirements, such as feasibility studies, can result in a longer implementation timeframe. Partnering with non FIs may mean this model is implemented with less delay as they tend to have fewer requirements and regulations, however this also means operations may be riskier. Limitations and benefits of each option are presented in table 5 below.

Who: A number of potential business partners have been identified for implementing m-banking in Porgera. These are summarised in the table 5 and defined further below.

**Table 5 – M-banking Strategies**

Strategy	Limitations	Benefits	Potential Partners
M-banking led by a FI	<ul style="list-style-type: none"> <li>- Long implementation timeframe</li> <li>- No current coverage (i.e. Digicel)</li> <li>- Strict implementation processes and requirements</li> <li>- Bank account required</li> </ul>	<ul style="list-style-type: none"> <li>- Reliability</li> <li>- Secure/ Safe</li> <li>- High standard processes</li> <li>- Previous experience</li> </ul>	<ul style="list-style-type: none"> <li>- BSP and Digicel</li> <li>- ANZ PNG</li> </ul>
M-banking led by non FI	<ul style="list-style-type: none"> <li>- Risks related to costs establishment and consistency of processes</li> <li>- Poor security environment</li> <li>- Lack of banking experience</li> <li>- Small scale of operations</li> </ul>	<ul style="list-style-type: none"> <li>- Shorter implementation timeframe</li> <li>- Reliable coverage in Porgera (B-Mobile)</li> <li>- Piloted (Datanets)</li> <li>- Work with any provider (Datanets)</li> <li>- Do not necessarily require a bank account</li> <li>- May be tailored</li> </ul>	<ul style="list-style-type: none"> <li>- Telkom PNG Limited (B-Mobile)</li> <li>- DataNets</li> <li>- TransTel Fiji</li> </ul>

*M-banking led by a Financial Institution*

The first is the commercial bank **BSP**, who, in partnership with telecommunications company **Digicel**, already provide m-banking services throughout much of the country. The Porgera valley does not currently have Digicel coverage, however, communications with Digicel have confirmed they are planning to expand their coverage to the Highlands and Porgera valley area in the near future<sup>11</sup>. In addition to mobile phone service coverage, Digicel have confirmed it could be possible to expand the m-banking technology to Porgera but a preliminary feasibility study would be required. Other large commercial banks in PNG have begun investigating the option of m-banking services which could be valuable avenues of implementation partnership to follow up on.

*M-banking led by Non Bank*

Globally, telecommunications providers are increasingly providing banking services to their customers and supporting the creation of viable eco-system, through local service providers and rural agents for m-banking systems. Accordingly, the second potential partner for implementing the m-banking model in Porgera would be the national telecommunications provider **Telikom PNG Limited** who operates **B-Mobile**. As the Porgera valley currently has good B-Mobile coverage and a high number of residents have B-Mobile subscriptions, this would be a convenient partnership. Although B-Mobile has not, as yet, publicly expressed plans to enter into the m-banking market, this avenue of partnership would be valuable to follow up. Nevertheless, it seems that **TransTel Fiji**, who operates the Yehdo phone card as a banking service in Fiji, is currently discussing with Telkom PNG about the possibility to pilot m-banking technology in PNG.

---

<sup>11</sup> Correspondence with Digicel, August 2009 mentioned that expansion was expected for 2009

A third potential partner identified is the telecommunications networking company **DataNets** in PNG. DataNets are currently developing specialist mobile GSM based payment technology which has the potential to be implemented across mobile phone networks such that customer's are not tied to a particular mobile phone company in order to use the service (DataNets 2009). DataNets is currently piloting its technology nationwide in partnership with PNG Power, a national electricity company, which enables customers to buy prepaid electricity for home meters using mobile phone airtime. At present, DataNets executes over 100,000 transactions per month.

## **Step 2 - Preparatory and Preliminary Work**

What: Commercial banks and the mobile phone companies which provide the transaction channel for m-banking models have mentioned that preparatory activities can include, but are not limited to:

- Agreement(s) between partners
- Feasibility study (for both the commercial bank to provide Agents/POS and for the mobile phone company to provide the mobile phone coverage and implement the associated banking technology in the geographic area)<sup>12</sup>.
- Local agent selection and training
- Pilot testing of the product with a target group

When: As soon as the partners are identified and partnership agreement is signed.

How: The implementation process needs to be customised to the location and will differ depending on the partnership structure and model chosen.

Who: All partners will be involved in the process. Depending on the partnership structure chosen, the roles and responsibilities of each partner may include:

- Banking service provider: open bank accounts for customers, conduct feasibility and viability study, conduct ongoing monitoring, etc. (e.g. BSP)
- Mobile phone service provider: select and train local agent(s), select pilot customers, ongoing monitoring and follow-through of the pilot test, etc. (e.g. Digicel)
- Third party facilitator: support market and community linkages and liaise with providers and partners throughout implementation process. (e.g. FDC)
- Private sector company: define special features needed, if necessary, and provide recommendations to the eco-system.

## **Step 3 – Pilot and Adjustment Period**

What: All the previous steps are building blocks to developing the basis of the model. Once the previous steps are completed, the model will need a period to be piloted and adjusted. Basically, during the pilot

---

<sup>12</sup> Digicel PNG have advised a technology feasibility study would be required to determine a implementation suitability

period the model will be test run in the aim to identify areas of weaknesses and potential improvements, e.g. technology features, eco-system, POS agents number and selection process, partners involvement and responsibilities, etc.

When: The timeline will vary according to the local response, partners and model in place.

**Step 4: Roll-Out**

What: This stage will be approved only if the feasibility and viability of the pilot is proven. In the case of continuation, the service would become available to the wider population.

When: If approved, only once the final adjustments have been done, can the full roll-out be possible amongst the entire community.

## Appendices

- Appendix 1 Business Models for Financial Services – Description
- Appendix 2 Schematic Diagram of M-banking led by a Non FI
- Appendix 3 Schematic Diagram of Yehdo Card Services
- Appendix 4 Community Trust Funds – Description

## References

- ANZ. 2009. *Branches* [online]. Available from: <http://www.anz.com/PNG/importantinfo/branches.asp> [Accessed August 2009].
- Batton, A., R. Duncan and J. Guoy. 2009. Papua New Guinea Economic Survey: From Boom to Gloom? *Pacific Economic Bulletin*, 24(1), 1-26.
- Biggs, P. 2007. *The financial sector in Papua New Guinea — A good case of reform* [online]. Available from: [http://www.treasury.gov.au/documents/1304/HTML/docshell.asp?URL=04\\_The\\_Financial\\_Sector\\_in\\_PNG.asp](http://www.treasury.gov.au/documents/1304/HTML/docshell.asp?URL=04_The_Financial_Sector_in_PNG.asp) [Accessed August 2009].
- Bank of Papua New Guinea. 2009. *Financial Systems* [online]. Available from: <http://www.bankpng.gov.pg/> [Accessed August 2009].
- Bank of the South Pacific (BSP). 2009. *BSP SMS Banking and You* [online]. Available from: [http://www.bsp.com.pg/sms/bsp\\_sms\\_banking.html](http://www.bsp.com.pg/sms/bsp_sms_banking.html) [Accessed August 2009]
- Bruett, T and Firpo, J. 2008. *Building a Mobile Money Distribution Network in Papua New Guinea*. The Pacific Financial Inclusion Program & The International Finance Corporation.
- The Co-operative Societies of PNG. 2009. *Co-operative Societies Unit Concept in PNG* [online]. Available from: [http://www.csu.gov.pg/index\\_files/csuconcept.php](http://www.csu.gov.pg/index_files/csuconcept.php) [Accessed September 2009].
- DataNets. 2009. *Pay Esi, the Mobile Revolution* (presented at the Mobile Phone Banking Workshop) Port Moresby: PNG Institute of National Affairs [on line]. Available from: [http://www.inapng.com/2008\\_events.html](http://www.inapng.com/2008_events.html) [Accessed August 2009].
- Digicel Papua New Guinea. 2009. [online] Available from: <http://www.digicelpng.com/en/> [Accessed August 2009].
- E-standards forum. 2008. *Country Brief Papua New Guinea* [online]. Available from: [http://www.estandardsforum.org/secure\\_content/country\\_profiles/cp\\_139.pdf](http://www.estandardsforum.org/secure_content/country_profiles/cp_139.pdf) [Accessed August 2009].
- Grameen Foundation. 2009. *Village Phone: Connecting Technology and Innovation* [online]. Available from: [http://www.grameenfoundation.org/what\\_we\\_do/technology\\_programs/village\\_phone/](http://www.grameenfoundation.org/what_we_do/technology_programs/village_phone/) [Accessed August 2009].
- Liew, J. 2006. *Banking the Unbanked in Fiji: The ANZ Bank and UNDP Partnership Model*. (Paper presented at the World Bank Global Conference on Access to Finance: Building Inclusive Financial Systems) Washington DC. [online]. Available from: <http://www.microfinance->

[pasifika.org/Documents/Publications/Banking\\_the\\_unbnaked\\_in\\_Fiji\\_WB\\_Paper\\_16\\_05\\_06.pdf](http://pasifika.org/Documents/Publications/Banking_the_unbnaked_in_Fiji_WB_Paper_16_05_06.pdf)  
[Accessed August 2009].

Lihir Gold Limited. 2007. *Lihir Sustainability Review* [online]. Available from:  
<http://www.lglgold.com/asp/index.asp?pgid=10662> [Accessed September 2009].

Lutheran Development Service, The. 2009. *Putin na Kisim Division* [online]. Available from:  
<http://www.elcpng.org.pg/lds-pnk.htm> [Accessed August 2009].

National Bank of Vanuatu. 2008. *Expanding access to Financial Services in Vanuatu* (presented at the Mobile Phone Banking Workshop) Port Moresby: PNG Institute of National Affairs [online]. Available from: [http://www.inapng.com/2008\\_events.html](http://www.inapng.com/2008_events.html) [Accessed August 2009].

Oil Search Limited. 2009. *Oil Search PNG Stakeholders Report* [on line]. Available from:  
<http://www.oilsearch.com/Media/docs/OSL-PNG-Stakeholders-Report-Apr2007-319a4efe-e3d5-4a10-8162-0970981e809d.pdf> [Accessed September 2009].

PNG Sustainable Development. 2008. *Annual Report* [online]. Available from:  
[http://www.pngsdp.com/images/documents/2008\\_annual\\_report.pdf](http://www.pngsdp.com/images/documents/2008_annual_report.pdf) [Accessed September 2209].

Porgera Environmental Advisory Komiti (PEAK). 2007. *About Porgera; Overview* [online]. Available from:  
<http://www.peakpng.org.pg/overview.html> [Accessed August 2009].

Porteous, David. 2008. *The Potential for New technologies and Branchless Banking Models to Expand Access to Increase Access to Finance in Papua New Guinea*. Commissioned by the Asian Development Bank; Bankable Frontier Associates.

Enga Provincial Government. 2007. *Restoring Justice; Law and Justice Sector Partnerships in the Papua New Guinea Highlands*. Papua New Guinea: Enga Provincial Government.

Stanley, L. 2008. *Regulating the Telecommunications Sector in Papua New Guinea (Paper presented at the Pacific Telecommunications Conference, Apia)* [online]. Available from:  
[http://peb.anu.edu.au/pdf/PEB\\_STANLEY\\_WEB.pdf](http://peb.anu.edu.au/pdf/PEB_STANLEY_WEB.pdf) [Accessed August 2009].

TransTel. 2009. *Briefing notes, Yehdo*. Fiji: TransTel.

Waterfield, C. 2005. 'Personal Digital Assistants.' *CGAP IT Innovation Series* [on line]. Available from:  
<http://www.intercooperation.ch/finance/download/sk-wks/2005/2005-12/it-pda.pdf> [Accessed August 2009].

Williams, Howard and Torma, Maili. 2007. 'Trust and Fidelity: from 'Under the Mattress' to the Mobile Phone,' In the Transformational Potential of M-Transactions, Moving the debate forward: Policy Paper Series No.6, July 2007: 10-16 [on line]. Available from:  
[http://www.nokia.com/NOKIA\\_COM\\_1/Corporate\\_Responsibility/...new...Potential\\_of\\_M-Transactions/VOD833\\_Policy\\_Paper\\_Series.pdf](http://www.nokia.com/NOKIA_COM_1/Corporate_Responsibility/...new...Potential_of_M-Transactions/VOD833_Policy_Paper_Series.pdf) [Accessed August 2009].

Westpac Bank PNG Limited. 2009. [online]. Available from: <http://www.westpac.com.pg/pacific/>  
[Accessed August 2009]

Zandvliet, Luc and Anderson, Mary, 2009. "Getting in Right – Making Corporate – Community Relations Work".



## Appendix 1: Business Models for Financial Services - Description

MODEL	INSTITUTION/USER	MODEL DESCRIPTION	CASE STUDY/EXAMPLE	LIMITATIONS	ADVANTAGES
<i>Branch Models</i>					
A. <i>Savings and Loans Societies (S&amp;Ls)</i>	<ul style="list-style-type: none"> <li>Community Groups</li> <li>Industry/ Employer based groups</li> </ul>	Community or industry owned microfinance organisation. Established by people sharing a common bond of membership such as those employed in the same organisation, industry or originating from the same province. The purpose of S&Ls are to receive deposits for savings and make loans to their members, promote thrift amongst their members, and educate their members in financial responsibility (BPNG 2009)	<b>East New Britain S&amp;L Society:</b> A vehicle to reach and promote savings into the rural population. The movement plays an important role in the financial system in promoting thrift to its members and more importantly in extending the monetization of the PNG economy into the rural sector, so that the rural population participates meaningfully in economic development.	<p><b>Security:</b> issues related to the storage and transport of cash.</p> <p><b>Accessibility:</b> Because of cash transport and storage issues, operations may be limited to regions closer to major centres where cash can be banked.</p>	<p><b>Inclusiveness:</b> Extremely high as account eligibility requirements are low and regulation requirements with BPNG more flexible than other LFIs.</p> <p><b>Costs:</b> Can be quite low for Provider &amp; User, if managed appropriately.</p> <p><b>Accessibility:</b> This model can be applied to any geographical region.</p> <p><b>Flexibility:</b> High, range of services and can be used with other models.</p>
B. <i>Non-licensed MFI</i>	<ul style="list-style-type: none"> <li>NGOs</li> <li>Faith Based organisations</li> <li>Community Associations</li> </ul>	Community-based MF organisation providing financial services, including savings and loans, only for members. The role of the facilitating organisation includes: providing financial literacy and related information, administering a framework for the scheme, providing a space to meet and the required technology.	<p><b>Putin na Kisim (PnK) PNG:</b> A MF scheme operated through the PNG church network by the Lutheran Development Service. PnK groups are formed in areas with low or no access to commercial banking facilities. The network operates in the five provinces of Morobe, Western and Eastern Highlands, Simbu and Madang (LDS 2009).</p> <p><b>Porgera Women's Association:</b> A microcredit group operated for and by</p>	<p><b>Security:</b> issues around deposits and repayments of loans</p> <p><b>Flexibility:</b> Typically very small scale operation. Unlikely to act as a cash deposit and withdrawals service. The organisation is likely to rely on commercial banks and LFI's to handle its cash.</p>	<p><b>Inclusive:</b> Excellent way to initiate small scale savings and loans activities.</p> <p><b>Costs:</b> Few start up costs, and low costs to users.</p> <p><b>Accessible:</b> Owned and run by a community, this model is adaptable and highly suited to remote locations and has no requirements for a permanent place of operation.</p> <p><b>Flexibility:</b> The model can work in conjunction with other financial service delivery models like M-banking.</p>

<p>C. LFI</p>	<ul style="list-style-type: none"> <li>Licensed MFIs</li> <li>Commercial Banks</li> </ul>	<p>An LFI such as one of the four commercial banks or the two Microbanks in PNG is licensed with the BPNG to conduct 'banking business'. Therefore they can provide savings and loans services on any scale to the public. Their services are not limited to members. This model would see one of the LFIs set up a conventional bank branch in the Porgera township.</p>	<p>women in the Porgera district.</p> <p><b>Westpac PNG</b> Operates a Branch in the rural town of Missima. It was opened to support employees of mining operation and supporting businesses in Missima with full banking services. Since the closing of the mine the Branch is not a profitable one and is no longer viable, however Westpac maintain a presence from a community service perspective</p> <p><b>PNG Microfinance Limited</b> has 5 rural branches in the Western Province to service Ok tedi mine impacted communities providing microfinance and distribution of compensation payments.</p>	<p><b>Security:</b> Average, Issues for a branch in remote areas and for storage and transport of cash. <b>Costs:</b> High to the provider for both set-up and operations. Rural branch banking is rarely viable.</p>	<p><b>Inclusiveness:</b> Although ID requirements may be strict, this model is designed to be inclusive of the unbanked rural populations. <b>Accessibility:</b> Highly reliable and accessible in remote areas. <b>Flexible:</b> Highly flexible and can provide a wider range of normal banking services.</p>
<p>Community Funds</p>	<ul style="list-style-type: none"> <li>Community Group in Partnership with -</li> <li>Resource Extraction Company.</li> </ul>	<p>Resource Extraction Company, in partnership with a Community Group, establishes a Community Trust Fund with the objective of ensuring the long-term sustainability of mine impacted community after the mine operations have ceased. The distribution of Fund may be managed by the Mining company itself or by the Community through a representative organization.</p>	<p><i>See Appendix 4 for detailed example</i></p>		<p><b>Security:</b> Medium, increased as it grows and management is outsourced to FI <b>Inclusiveness:</b> High, target community <b>Costs:</b> Usually low, agreed by the members <b>Accessibility:</b> High, in the locality <b>Flexibility:</b> High, law and regulations developed internally by the members</p>

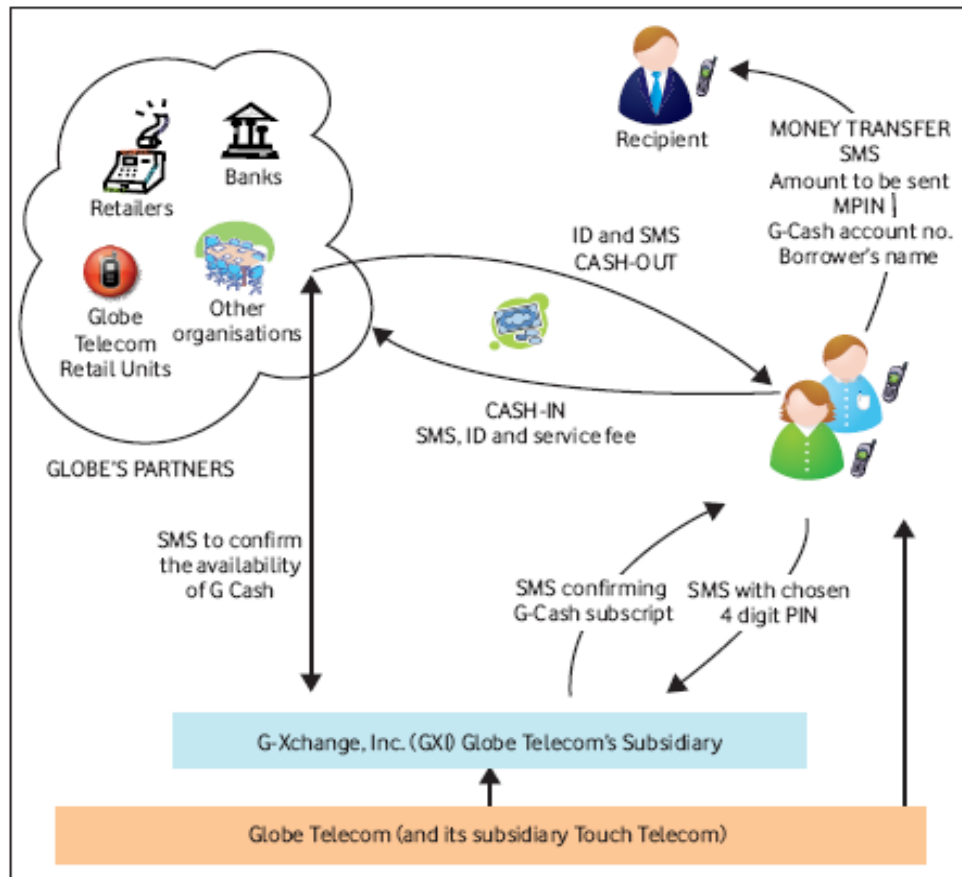
<p><i>Electronic Banking - Assistive Technology</i></p>	<ul style="list-style-type: none"> <li>• FIs</li> <li>• S&amp;Ls</li> </ul>	<p>Technologies used in electronic banking:</p> <ul style="list-style-type: none"> <li>- Personal Digital Assistants (PDA),</li> <li>- Smart Cards,</li> <li>- Automated Teller Machines (ATMs)</li> <li>- Eftpos</li> </ul>	<p><b>National Bank of Vanuatu</b> Rural banking officers who travel to remote villages via motorbike use PDA technology to assist in their delivery of services.</p> <p><b>Bank of South Pacific, PNG</b> Have an extensive network of 148 ATMs and over 2000 Eftpos points throughout the country.</p>	<p><b>Security:</b> Use of expensive technological hardware in remote areas where there is likelihood of theft is a risk. <b>Costs:</b> For the provider Software and Hardware costs of these technologies are relatively high. <b>Reliability/Accessibility:</b> Electronic network source of service may be unreliable in remote locations.</p>	<p><b>Inclusive:</b> Will assist other models in reaching a large proportion of the unbanked poor. <b>Costs:</b> Low to the user. <b>Reliability/Accessibility:</b> Makes many financial services easy to access for users in a remote location. <b>Flexibility:</b> Highly flexible. Technologies are designed to be used in conjunction with many types of banking models.</p>
<p><i>M-banking Technology led by Financial Institutions</i></p>	<ul style="list-style-type: none"> <li>• Commercial banks</li> <li>• Licensed MFIs</li> </ul>	<p>Variations on the use of mobile-banking technologies include:</p> <ul style="list-style-type: none"> <li>- <i>Account activity notification:</i> Financial Institution (FI) sends text messages to clients informing them of events on their account</li> <li>- <i>Internet banking on mobile phones</i> using a high-end handset with internet capability</li> <li>- <i>Mobile channel enablement</i> whereby the FI connects their banking system to the mobile network and allows customers informational and transactional access to their accounts. (Porteous 2008)</li> </ul>	<p><b>Commercial banks</b> in PNG such as BSP, Westpac and ANZ currently offer Account Activity Notification and Internet banking on mobile phone.</p> <p><b>BSP in partnership Digicel</b> PNG, currently offers a service whereby using the SMS function on a mobile phone, BSP customers can find out their account balance, details of transactions, transfer funds between linked accounts, and transfer funds to nominated 3rd party accounts.</p> <p>User charges include the mobile service provider SMS charges and any bank fees</p>	<p><b>Security:</b> If mobile phone lost or stolen containing saved details of previous SMS transaction, then unauthorised persons could access and transfer money. <b>Inclusiveness:</b> Regulatory Issues such as Proof of identity to open account may be strict. Low financial and technological literacy may limit users. <b>Cost:</b> although costs of mobile phones and user charges are reducing in PNG, this may still be a limitation for users. <b>Accessibility:</b> Initial set up of service difficult from remote areas because customer must go to branch. Relies on good mobile phone</p>	<p><b>Security:</b> As a cashless form of banking, personal security risks are reduced .When operated under the Licensed Banking regulations, such as commercial banks are, the regulations guiding payment system are much clearer. <b>Inclusiveness:</b> Has the potential to reach much of the unbanked population. <b>Accessibility:</b> Immense potential for Remote banking opportunities. <b>Flexible:</b> Offers a good range of services and can be used in conjunction with other business models.</p>

			charged for making transactions. Customers can only transfer funds to other BSP accounts, and only to those customers who are registered for BSP online Personal Banking. Customers must visit a BSP branch to register, change or delete transfer details (BSP 2009)	coverage in customer area.	
<i>M-banking led by a Non Bank</i>					
<i>A. Mobile Phone Network channel banking</i>	<ul style="list-style-type: none"> <li>• Tele-communications companies</li> <li>• Mobile phone Service Providers</li> </ul> <p><i>Note: Typically, a Mobile Phone company enters a joint venture or other type of formal agreement with a bank, or sets up as a standalone non-licensed payment provider. (Porteous 2008)</i></p>	<p>A banking system using the mobile network as its main channel. In this model, users exchange cash in return for an electronic record of value. This virtual account is stored on the server of a non FI, such as a mobile network operator. The user can then make payment of funds to anyone else participating in the same system and can receive payments from them.</p> <p>Areas where users can make and receive payments include:</p> <ul style="list-style-type: none"> <li>- Bill payments (for water, electricity, etc)</li> <li>- Payments to participating retailers</li> <li>- Micro-credit payments to MFIs.</li> <li>- Remittances overseas</li> <li>- Receipt of payments and withdrawal of cash via an</li> </ul>	<p><b>Globe GCash Phillipines</b> This ‘Mobile Wallet’ style model allows customers to transfer payments to merchants, to the government, to pay for bills, or to give and receive remittances internationally via their mobile phone (Williams &amp; Torma 2007). Refer to Appendix 2 for a schematic diagram of how the GCash system works.</p> <p><b>Digicel PNG</b> (Digitel Pacific Pty Ltd): In addition to its normal mobile phone service, Digicel PNG currently offers ‘Easipay’, a service for electricity vending whereby customer tops up electricity provision using their mobile phone credit. Digicel also offers the facility to top up one’s own or another person’s phone worldwide</p>	<p><b>Security:</b> Access to a safe secure mobile phone. Agent-related risks such as credit risk, operational risk, liquidity risk, anti-money laundering etc. Regulatory guidance on mobile banking services in PNG are unclear.</p> <p><b>Inclusiveness:</b> Mobile Technology literacy may be a limitation.</p> <p><b>Flexibility:</b> Services can be limited in providing cash transactions, unless there are agents in place who are prepared to provide related cash deposit / withdraw services.</p>	<p><b>Security:</b> As a cashless form of banking, personal security risks are reduced</p> <p><b>Inclusiveness:</b> Has the potential to reach much of the unbanked population.</p> <p><b>Costs:</b> Relatively low cost of mobile phone handsets and mobile service user charges. (in PNG costs reducing rapidly with expansion of telecoms).</p> <p>Low cost for provider as it decreases need for banking infrastructure and agents / branches in rural and remote areas.</p> <p><b>Flexibility:</b> Technology can be used in conjunction with a number of channels of financial service.</p>

		agent. (Williams and Torma 2007)	(Digicel 2009).  <b>DataNets, PNG:</b> Have piloted technology nationwide in partnership with PNG Power, national electricity company, to enable customers to buy prepaid electricity for home meters using with mobile phone airtime.		
<i>B. Pre Pay Vouchers/ Cards,</i>	<ul style="list-style-type: none"> <li>• Tele-communications company</li> </ul>	A pre paid stored value account is accessed using a card or voucher with a PIN code via any landline or mobile telephone. This account facilitates bill payments, fund transfers from one account to another and local and international phone calls. This model also has the potential to facilitate the transfer of funds to savings and loans accounts with other FIs in much the same way as m-banking channel however, the user is not required to have a mobile phone to use this service	<b>Yehdo (FIJI)</b> owned by Transtel Ltd: Yehdo is a pre paid stored value card utilised in Fiji. The User first registers for service, then adds value to their account through a number of different methods. The options for card loading include purchasing a pre paid voucher at a retail outlet, direct credit from salary or bank account or via a rural agent. Using a landline or mobile phone the user can then make payments to providers for a variety of goods and services (e.g. internet, phone, water, electricity) (TransTel 2009). Note: See schematic diagram of Yehdo in Appendix 3	<b>Inclusiveness:</b> Technology literacy of users may be a limitation. <b>Flexibility:</b> Transactions limited to other accounts within the same network, or to specified Bill payments and Companies Range of services limited, as it does not allow withdrawal of cash, nor savings facilities for example.	<b>Accessibility and Inclusiveness:</b> Customer does not have to possess a mobile phone to utilise service, this makes it far more accessible for those who do not own a mobile phone and for those who are in a location with poor mobile phone coverage. <b>Flexibility:</b> This model can be used in conjunction with other models. Potential for customer to use this service to transfer payments to savings accounts such as held with an MFI.
<i>The Rural Banking Model or Mobile branch banking</i>	<ul style="list-style-type: none"> <li>• Commercial banks</li> <li>• Licensed MFIs</li> </ul>	The geography and population density of communities impacts on the method of service delivery and the frequency	<b>ANZ Rural banking in Fiji:</b> 6 mobile bank branches operate out of buses. They travel regularly to 250 designated rural villages and settlements where	<b>Security:</b> Risk, mobile bank branches often carry a lot of cash each day before they can deposit at a central bank branch. <b>Inclusiveness:</b> Regulatory	<b>Accessibility:</b> This model is designed specifically to meet the financial service needs of rural communities. It often provides a much needed link between remote

		<p>Therefore, there are many different variations on how the rural banking model works</p> <p>The fundamental aim of rural banking is to provide financial services, including savings and loans, to communities in remote locations.</p>	<p>customers can open and access (deposit/withdrawal) savings accounts in addition to micro-loans. The mobile branches are operated by 12 specially trained staff, and as at 2006, had serviced 160 000 people and opened over 54,000 rural accounts (Liew 2006).</p> <p><b>National Bank of Vanuatu (NBV):</b> Mobile banking operated by Mobile Bank Officers who travel to remote villages via motorbike carrying Personal Digital Assistants (PDAs) to conduct real-time banking transactions.</p>	<p>issues such as proof of identity to open a bank account. In rural areas many people may not have proof of ID such as birth certificates. Also, financial literacy in rural communities.</p> <p><b>Costs:</b> Often such models are commercially unviable. However, banks such as the NBV consider it an important service to be delivered.</p>	<p>communities, businesses and financial centres.</p> <p><b>Flexibility:</b> This model can be used in conjunction with other banking technologies like Smart cards, PDAs and mobile phone technology.</p>
--	--	---	--	---	--

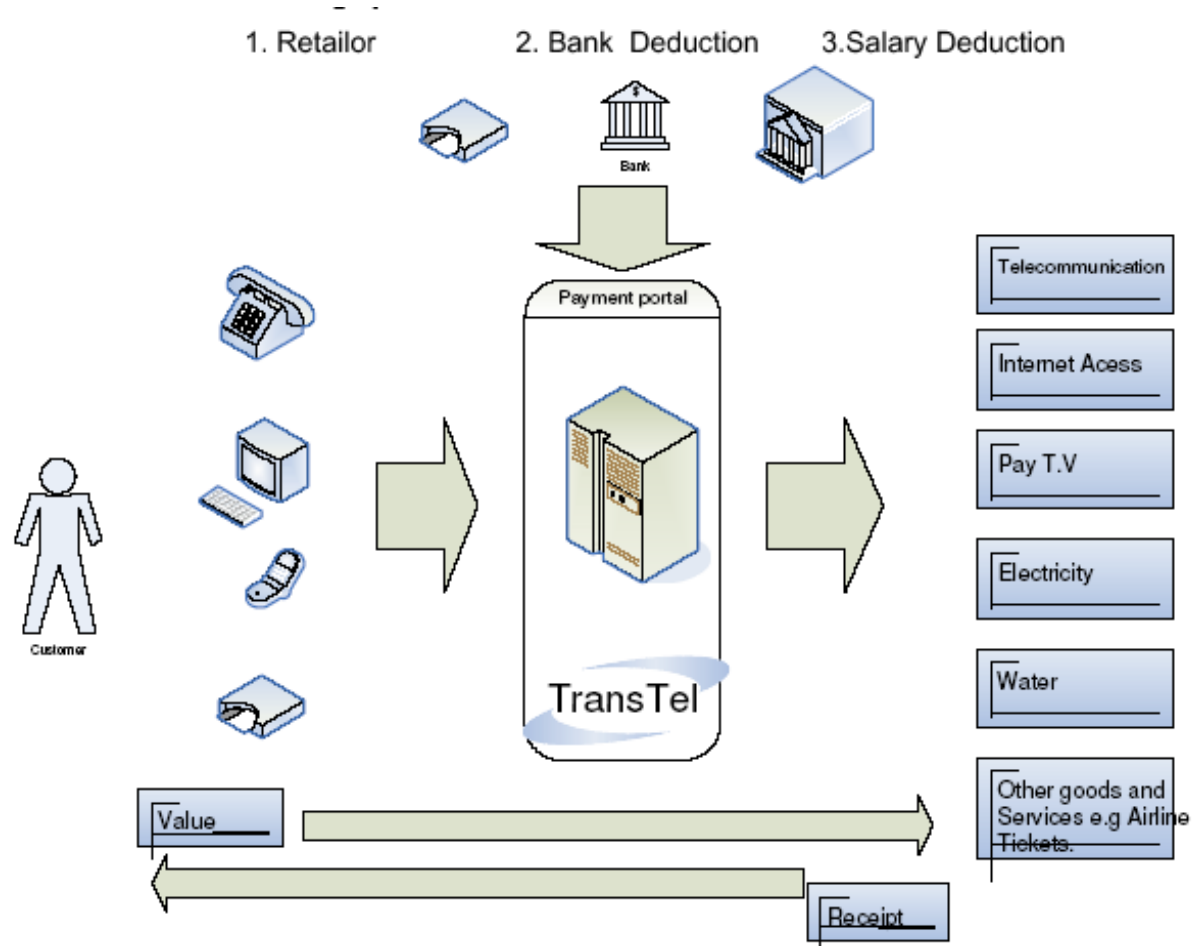
## Appendix 2: Schematic Diagram of M-banking led by a Non FI <sup>13</sup>



Source: Williams and Torma 2007

<sup>13</sup> This diagram demonstrates the payment system of a successful mobile banking system GCash in Philippines. Mobile Phone Banking led by a Non Financial Institution such as a Telecommunications company in PNG would work in a very similar fashion.

### Appendix 3: Schematic Diagram of Yehdo Card Services



Source: TransTel 2008



## Appendix 4: Community Trust Funds -

Name of company	Name of Fund	Fund amount and Timeline	Fund beneficiaries	Distribution channels	Fund Governance
Lihir Gold Limited (LGL)	Lihir Sustainable Development Plan (LSDP)	Funds derived from LGL profits. K100 million over 5 years, plus one off investment of K7 million, e.g. K12 million distributed in 2007  LSDP has set time-based objectives to be rolled out over 20 years. Particular programs identified for each stage.	The wider Lihir community	Various health, education and Com Dev programs including: <ul style="list-style-type: none"> <li>- HIV/AIDS education.</li> <li>- Donation of K40000 to schools in Lihir</li> <li>- Capacity building with CSRM (UQ) 9 PNG graduates sponsored</li> <li>- Road sealing between village and mine</li> </ul>	Administered by the Lihirian people through the Nimamar Rural Local Level Government (NRLLG). The NRLLG is responsible for allocation of funds.
Ok tedi Mining Ltd (OTML)/ BHP Billiton  PNG Sustainable Development (shareholder in OTML) (PNGDSP)	A. Long term fund	Funds derived from OTML profits. Objective is to ensure long term operations of PNGSDP for 40 years after OTML mine closure in 2013.	Western province communities (area of mine operation)	<ul style="list-style-type: none"> <li>- Infrastructure, energy and communications</li> <li>- The Community Social Investment Program (CSIP) education &amp; health.</li> <li>- Gender and Violence programs</li> <li>- The Community Sustainable Development Program (CSDP) health education, skills training &amp; agriculture</li> <li>- Agriculture development program</li> <li>- Environment and fisheries</li> <li>- Forestry</li> </ul>	<p>PNGSDP manages the Fund.</p> <p>An independent Board (7 international and PNG directors) controls and manages the affairs of the company and reports to the stakeholders. This Board is responsible for approving allocation of funding for project implementation to specific project partners.</p> <p>Partners include:  <ul style="list-style-type: none"> <li>- IFC, World Bank, Local Government Authorities, CMCA's, and NGOs</li> </ul> </p>
	B. Development Fund	Funded from OTML profits. Will only operate until 2013. Aprox K150 million annually.	PNG Nation wide programs.	Same as above	PNGSDP manages the Fund. (also see above)

	C. Compensation payments	10% of the OTML compensation package paid directly to female headed households (FHH) in the impacted communities. Approx K5 million (\$1.7 million) per quarter.	Women and children differentially recognised.	PNG Microfinance Ltd (PML) directs payments to over 10,000 FHH with passbook accounts. Cash is transported by boat to 5 PML branches in Western provinces.	Administered by PNG Microfinance Ltd (. Actual amount and who it goes to is governed by the PNGSDP.
	D. Community Mine Continuation Agreements (CMCA) Trust communities & The Ok Tedi Fly River Development Foundation	2.5% of OTML dividends or K21.5 million (whichever is greater) for the years leading up to the mine closure in 2013.	Specifically Western province communities where mine is located.  Some CMCA programs specifically benefit women and children.	CMCA community projects include: - Health, microfinance and social enterprise programs. - Min of 10% of this funding allocated to gender mainstreaming	CMCAs: 14 local governments, 153 villages – 60,000 people represented. PNGDSP board distributes funds to the CMCA trusts and the Ok Tedi Fly River Development Foundation for project implementation.
Oil Search Limited	Sustainable Development Trust	Trust with tax-free 'charitable institution' status. Funded by Oil Search. The trust deed states that a proportion of funds will be 'released upon the cessation of petroleum production from, or petroleum transport through project license area'. The exact time of mine closure has not been established, though it is speculated to be within 10 years. By 2006, the fund had accrued to US13 million, however the amount expected to be distributed and how long it will sustain community activities has not been publicly shared.	For the long-term benefit of wider project impacted communities.	Trust will be applied to support a range of eligible capacity-building, livelihood, economic and sustainable development activities. To be distributed by qualified local NGO's at time of funds release.	Exact governance will be established at time of funds release.  Fund currently managed by Oil Search Ltd.