

# Global Development Observatory



**Empowerment through Mobile Phones**

# Global Development Observatory

## Introduction

This discussion paper proposes a community-based data gathering and dissemination system using mobile phones to support grass roots development and empowerment. Information can be treated as an exportable commodity and used to generate income for the sustainable development of the communities that collect it. The idea is to use the mobile phone network to set up a Global Development Observatory to collect and distribute information about the developing world to governments, civil society, international organizations and enterprises. The Global Development Observatory will exploit the successes of the microfinance movement to develop new models for income generation within the community by encouraging even more efficient micro-investment models and by taking advantage of the informal organizational structures set up by microfinance institutions.



The Grameen Village Phone programme is the best-known example of exploiting mobile phone technology for income generation. The phone is purchased using a microcredit loan and rented out for use in the village by members of the community. In addition to providing capital, microfinance has developed an effective grass roots organizational model. The vast majority of microfinance recipients are women organized in microfinance groups. These operate in a confidential setting where health, education and other matters that affect the women and their families are readily discussed. These groups that are even more empowering than the loans themselves. Mobile phones are a natural vehicle for microfinance, however as the phones become cheaper and more available, the revenue stream for rentals will start to diminish. The income generated from data collection activities has the advantage of being sustainable and to grow substantially.

Mobile phone technology is being looked at as a vehicle to overcome some of the obstacles in developing countries such as unreliable infrastructure, illiteracy and unemployment. Mobile phones are a powerful agent for change in the developing world largely because the cellular network is one of the few systems that operates consistently almost everywhere. It is often contrasted with the unreliability of other basic services encountered in developing countries. The Global Development Observatory is taking advantage of this to expand the use of the mobile phone from a reliable communications device to a means of sustainable income generation.

Until now using cell phones for anything other than voice or messaging has been limited by a combination of commercial and technical constraints. Mobile phone and calling charges have been expensive, and remain so in certain countries. The cell phone infrastructure has not been universal with insufficient coverage in many developing countries. However this is changing rapidly and secure communications and services are now available to provide affordable data connectivity solutions on a global scale.

An illustrative example of community-based data collection is the MobileMedia project conducted by Stanford University in cooperation with the Government of Brazil and a number of commercial partners. To quote the MobileMedia website<sup>1</sup>: “Organizations, such as governments and NGOs, outsource their data collection needs to MobileMedia, which trains and employs local youth to use wireless handheld devices (PDAs) to survey their own communities. Data is digitally transmitted to MobileMedia and then 'dumped' into a computer, where it can be accessed by the sponsoring organization”.

Models of Internet usage predict that the number of users will reach a ceiling of about 1 billion people by 2010. Forecasts of access predict that the developing world will still account for less than 10% of global usage<sup>2</sup>. These numbers may seem surprising unless they presage a change in access technology. Since Internet access to date has been through computers, it is quite possible that the rapid growth curve of Internet usage via cell phones is simply being masked. There is potential in the developing world for a dramatic growth in Internet usage over the next 10 years fueled by applications of the mobile phone.

### **The Global Development Observatory and Income Generation**

The Global Development Observatory would be set up as a network of community-based observation posts around the world. The observatory would start with simple applications to collect data on investment, commerce, health, education and human rights.



The choices of applications will be determined by balancing supply and demand, between locally relevant frames for data and requirements for aggregation over large area. Future applications could include the direct support for individual and community empowerment through voting schemes, decision-making and collective bargaining.

<sup>1</sup> <http://mobilemedia.stanford.edu>

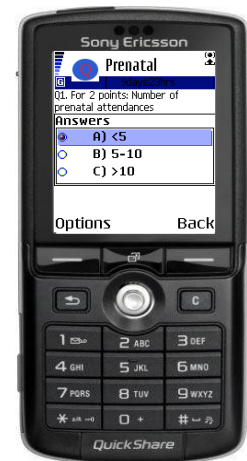
<sup>2</sup> [http://www.ncap.gr/tmodis/articles/End\\_Internet\\_Boom.htm](http://www.ncap.gr/tmodis/articles/End_Internet_Boom.htm)

The Global Development Observatory would act as a clearinghouse by collating socio-economic data across the world at regional, national and international levels. The information could be sold to and reused by private or public entities. A revenue sharing mode would be applied so that the individuals and communities involved in the data collection process could receive a fair compensation for their activities. There are intellectual property issues to be addressed as well.

The Global Development Observatory would provide a combined incentive and micro-payment mechanism based on development credits, operating similarly to pre-paid credits for mobile phone. Development credits could be earned for collecting data and be converted to income to pay for a wide variety of services, ranging from health insurance, microfinance and education.

The following steps outline how a community might participate in the Global Development Observatory:

- Communities are proposed as socio-economic observation posts by certified NGOs
- Each community observation post has a number of trained operators who collect data on behalf of the community
- The Global Development Observatory maintains a variety of data collection applications, for example recording the repayment of microfinance loans, reporting of treatments at health centers, checking supplies of drugs for counterfeits etc.
- Each application is embedded into an "educational content" envelope relevant to the development issue being addressed
- Every time a person provides data to an authorized community operator both they and the operator receive a specified number of development credits
- An operator may refer another person to join in the process by using their mobile phone to enter the phone number of the person being referred
- The referred person is then invited by the certified NGO for training on the educational content and on use of the data collection procedure
- Following training the specific application will be downloaded from the Internet Portal of the Global Development Observatory into the community operator's mobile phone
- The person then becomes an authorized community operator of the Global Development Observatory for the particular application
- Groups within the community would coordinate the day-to-day activities and apply the appropriate data verification procedures under the supervision of the certified NGO



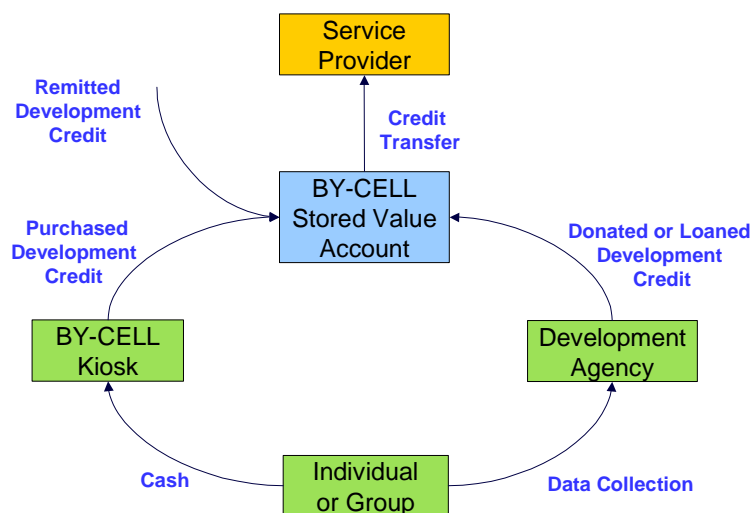
## Technology for the Global Development Observatory

The Internet Portal of the Global Development Observatory would be provided by the BY-CELL Venture, an open consortium of IT companies that has joined together to provide mobile phone accessible services to the developing world. The BY-CELL Venture has developed the BY-CELL Platform an integrated suite of Internet software applications that can be deployed to run on mobile phones.

The BY-CELL platform is independent of the mobile phone operator and the handset provider and uses either a local dialup connection to transfer and receive data or more advanced data transfer protocols such as GPRS.

The BY-CELL platform has three major parts:

- Mobile phone applications to collect and synchronize data
- Management Information Systems, which store and forward the data
- Stored Value Account Service to record the development credits



Individuals can redeem or purchase development credits at BY-CELL kiosks on behalf of communities or families. They can also be remitted by third parties such as relatives or provided by development agencies. The development credits can be assigned for specific uses such as payment for health insurance. The BY-CELL stored value accounts manage the credit transfers between agencies, individuals, groups and service providers and record the commissions earned by the authorized operators. Each observation post would operate a BY-CELL kiosk on behalf of the community. The stored value accounts track the data collection activities and assign development credits proportional to the level of activity, according to a predefined set of rules.

## **Economics of the Global Development Observatory**

A key question to be resolved for the Global Development Observatory is what to charge the consumers for the information being collected. The numbers used below give an order of magnitude only and are not intended to reflect a precise business case. The benchmark of a microfinance loan of \$100 will be used to estimate the acceptable operational cost structure for an observation post. Assuming such a loan has to be repaid in 50 weekly instalments with interest, the data collection process records weekly repayments to a collection agent and communicates the confirmation of payment to the microfinance institution that made the original loan. The benchmark level of \$100 per person per year also gives the right order of magnitude for other essential services such as health and education.

The cost of the operating the data collection is estimated at 2% of the value of the service being delivered to the community. The charge covers the infrastructure costs and payments to the operators and members of the community. Using the BY-CELL platform it is possible for many elementary transactions to be batched together so communications costs can be neglected in the first approximation. The data collection model applied to microfinance transactions yields an effective cost of \$4 cents per transaction. One can use the same number to compare with the costs of doing a survey, which is about \$20 cents per question per person interviewed (based on a more traditional interviewing cost per hour of \$20 for a survey of 100 questions)<sup>3</sup>. The implication is that using a generic observatory infrastructure rather than a specialized survey methodology could yield at least a five-fold reduction in the cost of data collection. With global scaling and process improvements, the improvement factor would be even greater.

The rule of thumb of \$4 cents per transaction can be used to calculate the income generated per observation post. Assuming that each observation post collects data from 2'000 households on a weekly basis for 5 different services for health, microfinance, education, insurance and various surveys, then the total revenue would be \$20'000 per community per year. Assuming that the revenue is split 50/50 between the community operating the observation post and the organization providing the Global Development Observatory infrastructure, then the community would receive an income of \$10'000 per year.

An observation post could potentially cover more households, especially in urban areas and the number of services or surveys per household could easily be higher. Furthermore, the above revenue model only addresses payment for the collecting of data and does not take into account the possibility of profit sharing for information derived from the data. Unlike most commodities, information can be sold multiple times and royalties collected by the author every time it is sold. There is no reason why the same rule cannot be applied to the information supplied by the community observation posts.

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<sup>3</sup> <http://unstats.un.org/unsd/hhsurveys/>

As a reference take the example of the Ekwendeni HIV/AIDS Resource Centre in Malawi, which is supported financially by the Church of Scotland in Geneva. The Resource Centre has a catchment of about 10'000 households. This means that 20% of the households would need to be covered to achieve the minimum sustainable revenue for an observatory run by of the centre. That income corresponds to about 50% of the church's current annual donation to the centre, a significant step towards self-sufficiency.

## **Implementation of the Global Development Observatory**

To make an assessment of the global impact of the Global Development Observatory, it is reasonably assumed that 1% of the world's communities could be sampled using the global network of observation posts. That would give a worldwide network of 5'000 community observation posts. Based on this assumption the global income generated would be \$100 million, which is not a bad start for a sustainable development project. Distributing these by population, Africa would take 13% or 650 observation posts, India at 16% would take 800 posts. Uganda, would take 18 posts, Malawi 9, and Rwanda about 6.

The success of the Global Development Observatory will depend on the linking open Internet-based technology with local communities. The initiative requires marshalling the efforts of local development NGOs around the world. The appropriate business model for such a venture is for NGOs to obtain and operate a Global Development Observatory franchise for a particular territory. The NGOs would then select and support the communities with the observation posts. NGOs would be selected based on their track record of grass roots advocacy and results, especially in the targeted application areas of health, education, investment, commerce and human rights. SIDUR<sup>4</sup>, which operates in both the slums and villages of Andhra Pradesh, is one example and FXB International<sup>5</sup> with its holistic Village Model operating in Africa is another.

It is proposed to launch the Global Development Observatory in Africa and India. Africa is of interest because of the amount of aid being directed there. The business potential of a project in India will attract the interest of the private sector. A further reason for including India is the Indian Right to Information Act, which came into effect in October 2005. There is a also a benefit in launching observatory projects in smaller countries since they could quite quickly reach the optimum sampling level in terms of number of communities needed.



In conclusion the Global Development Observatory is a unique sustainable development opportunity to link the entrepreneurship of local communities to the rapid expansion mobile phone based Internet services. The business potential in the larger countries would generate sufficient investment revenue to support the locations where the economics are less compelling, and provide the commercial justification for the global deployment of community observatory posts.

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<sup>4</sup> <http://www.sidur.org/>

<sup>5</sup> <http://www.fxb.org/www2/>