

# Mobile Communication for Sustainable Development: Change and Challenges in South Asia

Kiran Prasad<sup>1</sup>

<sup>1</sup>Dept. of Communication & Journalism, Sri Padmavati Mahila University,  
Tirupati-517 502, Andhra Pradesh, India  
E-mail: <sup>1</sup>kiranrn.prasad@gmail.com

**Abstract**—Developing countries and international development agencies have begun to formulate steps to incorporate telecommunications policies into their mainstream economic policies to guide sustainable development. National mobile strategies focusing on m-governance, m-business, m-education and telemedicine involve the use of mobile communications technologies to benefit communities within and across countries and regions. This paper will focus on the use of mobile communications technologies by communities, the change due to access to these technologies and the socio-economic impact of mobile media on people's lives in South Asia. It will also look at the challenges before the governments of developing countries in tackling a series of socio-political, techno-economic and moral-ethical questions in building mobile communications policies for development and bridging the digital divide in South Asia.

## 1. INTRODUCTION

Information and communication technologies (ICTs) are playing a vital role in connecting communities in national, regional and global development. ICT is being applied to fight poverty, promote economic growth and support development efforts in the developing world. Most of these efforts are based on the international communication policy debates which emphasize that creating digital opportunities is not something that happens after addressing 'core' development challenges; it is a key component of addressing those challenges in the 21st century (G8, 2002). Nevertheless, there are roughly one billion people in about 800,000 villages in the developing countries without any kind of connection to communication technologies (United Nations, 2006). The growth of ICTs has been driven by the forces of globalization and privatization on the one hand and integration of telecommunication and information technology on the other; some of these effects have been experienced in the developing world. Meanwhile, the developing countries continue to experience the digital divide as the benefits of ICTs continue to reach only some.

Over the past decade, developing countries and international development agencies have begun to formulate steps to incorporate telecommunications policies into their mainstream economic policies to bridge the digital divide and guide development efforts. National mobile strategies focusing on m-governance, m-business, m-education and telemedicine involve the use of mobile communications technologies to benefit communities within and across countries and regions. This paper will focus on the use of mobile communications technologies by communities, the change due to access to these technologies and the socio-economic

impact of mobile media on people's lives in South Asia. It will also look at the challenges before the governments of developing countries in tackling a series of socio-political, techno-economic and moral-ethical questions in building mobile communications policies for development and bridging the digital divide in South Asia.

## **2. MOBILE COMMUNICATION AND DIGITAL DIVIDE**

The ITU sponsored Maitland Commission Report published in 1984 drew attention to the extreme inequalities of telephone access between rich and poor nations and argued that investment in telecommunications was not to be seen as luxury service for corporates and elites, but as an essential service that directly leads to economic growth. Telecommunication reforms were reinforced by Structural Adjustment Programmes (SAP) of the World Bank in India and in several other developing countries such as Brazil, Kenya, Ghana and Chile. While the teledensity in India was 11 percent in 2006, China had a teledensity of 29 percent. Rural teledensity in India stood at a meagre 2 percent compared with urban teledensity of 31 percent (Singh, 2006). Despite the pace of reforms, teledensity in the rural areas is still very low leading to a big divide between urban and rural areas. The fixed teledensity in 2006 in India (4.58), Pakistan (4.16) and Sri Lanka (9.50) continues to be lower than the mobile teledensity of 8.82 in India, 25.22 in Pakistan and 27.1 in Sri Lanka. Most of the growth in teledensity in these countries is due to the growth in urban mobile teledensity. Although mobile phones are diffusing rapidly, fast, data-capable third generation mobile networks are less common in low-income countries.

After two decades of policy reforms in telecommunications, the ITU in its development communication initiative acknowledged that 942 million people living in the world's developed economies enjoy five times better access to fixed and mobile phone services, nine times better access to internet services and own 13 times more PCs than 85 percent of the world's population living in low and lower-middle income countries. While there has been some improvement over the last decade, in bridging the gap between the information 'haves' and 'have-nots', they fail to paint a true picture for many rural communities who are still often unserved by any form of ICT (ITU *Connect the World*, 16 June 2005, [http://www.itu.int/newsroom/press\\_releases/2005/07.html](http://www.itu.int/newsroom/press_releases/2005/07.html)).

## **3. MOBILE COMMUNICATION FOR DEVELOPMENT (M4D)**

The twenty-first century has witnessed major changes in the media landscape. Digital technologies and advances in media such as the Internet, have driven the pace of development. As the Internet audience continues to grow worldwide, along with technologies such as mobile phones and broadband, these new media will continue to impact development (Leckner and Facht, 2010). The mobile phone which is spreading at a remarkable rate across the developed and developing world is the focus of

attention many public and private development initiatives. More research that explores mobile technologies which are employed deliberately for development purposes – in a more specific, economic and social sense – is needed (Donner and Tellez, 2008). This paper highlights some social and economic benefits that have accrued from the use of mobile phones in the developing world.

Over the past 25 years, developing countries have considerably increased ICT access, especially for telephone services. Developing countries have accounted for more than 60 per cent of the world's telephones lines (fixed and mobile) in 2005, up from less than 20 per cent in 1980. During this period, population increased by half and real GDP more than doubled in these countries- while the number of telephone subscribers rose 28-fold (World Bank, 2006: 5). Between 2000 and the end of 2005, telephone access is estimated to have tripled from 129 in 2000 reaching almost 400 subscribers per 1,000 people in 2005. Despite rapid growth in the developing countries, mobile phones are 29 times more prevalent and land lines 21 times more prevalent in high income countries than low income countries.

Most of the recent growth has involved mobile phones which now outnumber fixed ones. Mobile phones have an especially dramatic impact in developing countries - substituting for scarce fixed connections, increasing mobility, reducing transaction costs, broadening trade networks, and facilitating searches for employment and new markets. Mobile telephones provide market links for farmers and entrepreneurs and are mainly used for communication and information services. "Much of the voice traffic over the cell phones is commerce directed. Access to agricultural market prices, access to agricultural trade information, facilitation of remittances from foreign workers, information on work opportunities using the phone can reduce substantial travel costs" (Richardson, 1999).

It was hoped that national ICT policies of private sector participation, competition and effective regulation (PCR) would close the digital divide in the developing countries. While they have helped to reduce it slightly in certain areas, the digital divide persists, particularly among the least developed countries (United Nations, 2006b). To bridge the digital divide, there is a need to go beyond PCR policy by coupling it with proactive government planning, investment and procurement. India has been successful in establishing a framework of policies and regulations, which have enabled and stimulated the growth of mobile telecommunications. The government has undertaken several reforms to improve the quality of telecom services in India such as de-monopolisation of national long distance calls, basic services opened for all with no limit on number of actors, use of satellites and allowing high band data.

The government's policies have transformed the landscape for mobile telecommunications to ensure that the benefits of mobile communications can be shared amongst all of their citizens, not just the urban elite.

The government has adopted privatization of telecommunications but continues to be a strong national player and provides the impetus for public interest in telecommunications. The independent regulatory agency, the Telecommunications Regulatory authority of India (TRAI) liberalized long distance calls and introduced mechanisms to force private operators to provide minimum rural connectivity. With prepaid services and calling cards, even poor households have been able to benefit from increased telephone access. As recognition of these efforts, the Indian Government was conferred with the 'Government Leadership Award 2007' for exceptional achievement in the field of mobile communications policy by GSM Association in the 3GSM summit in Barcelona in February 2007 ([www.hindu.com/thehindu/holnus/001200702140311.htm](http://www.hindu.com/thehindu/holnus/001200702140311.htm)).

The incorporation of telecommunications policies into economic policies and national development agendas must involve the public and private sectors as both have important roles to play in the diffusion of mobile applications. The private sector is primarily responsible for providing access and competitive private sector-led markets go a long way toward making these services widely available. The public sector's main role is to provide a sound policy framework, regulate markets where they do not work well enough on their own, and support additional service provision where markets do not achieve economic and social objectives. The public-private partnership can be seen where mobile phones are widely shared and rented out by the call by local entrepreneurs, serving as *de facto* public telephones.

#### **4. M-GOVERNANCE**

m-Governance is defined as the strategy and implementation involving the utilization of all kinds of wireless and mobile technology services, applications and devices for improving benefits for citizens, business and all Government units. The rapid diffusion of mobile ICT gadgets such as laptops, mobile phones, PDAs (Personal Digital Assistants), along with emails, instant messaging and other networking services have rapidly fuelled the mobilization of interaction. In order to take the full advantage of the mobile and wireless ICT technology as well as dealing with the fluidity of the interaction with the mobile society and booming mobile usage rates, the Kerala State Government has initiated action to set up about 20 m-Government Services offered by 8 departments identified for pilot level implementation and to deliver services through mobile phones accessible to the citizens in the field, in the street, at home or other convenient locations on a 24 x 7 basis, rather than the users having to visit Government offices or log on to the Internet portals to access services. KSITM is working on several projects to deliver various services to the public using mobile phones. KSITM's objective is to make it possible for people of Kerala to access different kinds of information, and eventually even equip them to effect payments of bills, using their mobile phones.

The government of Andhra Pradesh has started an ambitious Short Message Service (SMS) alert system (Mathrudevobhava) for expectant mothers from July 11 2011. In order to attract rural womenfolk to government hospitals and encourage institutional deliveries and reduce mother mortality rate (MMR) and infant mortality rate (IMR), the district administration has embarked upon an a series of SMSes regarding next date of visit hospital for necessary treatment, vaccinations and diagnostics tests etc. Besides these SMSes, the authorities would also send SMS messages about the diet to be taken during the respective months of pregnancy, dos and don'ts for specific individual cases etc. These mobile health messages are intended to reduce mother mortality rate and infant mortality rate in the State (The Hindu, 2011).

## 5. EDUCATION

In countries where low literacy remains a substantial barrier to development, radio is universally recognized as the most cost effective mass medium for informing and entertaining a wide population. Considering the fact that an estimated 115 million children, mostly girls remain out of school in Sub-Saharan Africa and South Asia, radio programmes aimed at women's development are broadcast in several countries - for example India, Indonesia, Mexico, Sub-Saharan Africa and Dominican Republic. Radio can reach larger numbers of poor people because it is easily affordable and uses little electricity which is in short supply in many developing countries and barely affordable for the poor. In spite of radio's inherent advantages radio experts and communicators working on community radio were dismayed to find that the World Congress on Communication for Development held at Rome in October 2006 overlooked the vital role of community radio in empowering people and strengthening democracy (Kumar, 2006). In the developing world, the popularity of mobile handsets has been enhanced by the integration of radio. For instance, many mobile handsets sold in India and Pakistan integrate a FM radio receiver and it is found that those with such handsets listen to radio on their phones. It is also found that content such as audio and video content can be easier to consume than text-based SMS by users with lower literacy skills.

Mobile devices - such as handsets, MP3 / MP4 devices, personal digital assistants, and smartphones-have the advantage of not being online to store, play and/or record audio and video content. Many development communication projects are integrating offline rich content to support strategic implementation. Offline delivery is effective if the content being distributed does not need frequent updates. Offline systems are being used for educational content such as an audio or video lecture by a teacher. The One Media Player per Teacher (OMPT) initiative selects appropriate portable media players, speakers, battery-powered video projectors, and mobile power generators (solar and human kinetic) for use by international educational development projects (France, 2009). In collaboration with

various non-governmental organizations, OMPT targets teachers and students in remote areas without internet access to deliver offline audio content such as recorded lessons, health information etc. which is played in classroom and community group environments. In India, OMPT is working with the Microsoft-supported project Digital Green to disseminate agricultural information to small and marginal farmers, such as video testimonials by progressive farmers, or field demonstrations by agriscientists (Gandhi, Veeraraghavan, Toyama, and Ramprasad, 2009).

## **6. WOMEN'S EMPOWERMENT**

There are tangible examples of gender sensitive policies in telecommunications that have set the framework for achieving desirable outcomes established by national policy, particularly in the two areas of universal access and affordable services for the empowerment of women (Prasad, 2008). Such policies have suited the needs of many rural women who may be home-bound and have limited time for travel or limited income to incur travel costs. The 'Grameen Phone' project of the Grameen Bank in Bangladesh has enabled the borrowers, all women, to buy cellular phones in order to earn better income. Many rural women who are engaged in small scale enterprises like poultry, farming, fisheries, livestock, selling various produce can know the current market rate through cellular phone service thus eliminating the exploitation by middlemen (Amin, 1998: 8). In the villages of Bangladesh, which are among the poorest in the world, women entrepreneurs provide payphone services at a profit using mobile phones (Lawson and Meyenn, 2000).

The 'Theli Phone' (shoulder-bag phone) initiated by SEWA (2003) in India with tie-ups with the cellular and limited mobility service providers and the handset manufacturers of the state enabled 5,000 members to buy mobile handsets as well as subscribe for the mobile services. The main intent is to increase efficiency and business outputs of its members like the salt farmers, artisans, vegetable producers and midwives through effective communication. The SEWA experience has also been shared internationally, resulting in similar models being set up, such as the Self Employed Women's Union (SEWU) in Durban, South Africa and the Women's Economic Empowerment Association (WEEA) in Yemen. The Self-Employed Women's Association (SEWA) in India has done outstanding work on this front by training rural women in the production and use of video to generate income, disseminate new skills and to advocate changes in policy.

The self-help groups of women in Andhra Pradesh, India are provided with mobile phones which have helped them to earn higher incomes by receiving more orders for their products and keeping in touch with the market demands and trends. The modest success of Bangladesh and India in improving women's economic status through the use of cellular mobile phones can enable the development of gender-aware universal access

policies that stress public access points as an alternative to more capital-intensive choices (one line per home) and ensure that the locations of public access points are gender-sensitive.

## **7. SOCIAL MOVEMENTS**

The use of mobile communications to organize popular movements against corruption, the campaign for the right to information and environmental conservation is growing in India. The campaign to create awareness about the law to fight corruption received the overwhelming support of common people who received SMSes about the venue and mode of protests being organized in the towns and cities across the country. Many supermarkets have begun to send SMSes to customers of bringing their own shopping bags in a bid to reduce the number of plastic bags in the environment. Mobile banking in India pioneered by the Corporation bank has led to a movement for branchless banking in the rural and remote areas. Various public health organizations send mobile messages on mother and child health including vaccinations in the community.

## **8. CHALLENGES TO M4D**

As a tool for development communication, the functionality of a mobile handset is bounded by a variety of factors including the availability and quality of network reception, and electrical power for recharging. Neither of these factors is readily available in many rural and remote areas. However, the utility of the handset is not completely negated in these situations. Literacy is of critical importance to the uptake of mobile applications. Text-based content or SMS interfaces have limited success for users with lower literacy skills. India is experimenting with Interactive Voice Response Systems (IVRS) to overcome this challenge. Income is also a limiting factor in the uptake of mobile services. Innovative mobile services such as family and friends circle, mobile number portability, pre-paid mobile vouchers of smaller denominations are targeted at those with low incomes who would like to receive calls and only make calls if necessary. In spite of some success in drawing women in the mobile revolution, gender practices persist that prevent women from owning or having access to a mobile handset in the socially backward areas of South Asia.

## **9. LEGAL AND ETHICAL CONCERNS**

A gender analysis of women and men's differential access and use of the mobile phone has uncovered the reinforcement of gender stereotypes in several parts of South Asia. The risk to privacy is the most frequently echoed concern all over the region. India has yet to legislate against the use of ICTs to encroach on the private lives of individuals. The MMS scandals of using camera phones to photograph women has thrown up some serious ethical issues about the invasion of privacy of girls and young women. They can be caught unaware using camera phones and can be photographed without their knowledge or consent.

Film advertising is also being promoted by using MMS clips. Pritish Nandy who promoted his film *Ek Khiladi Ek Haseena* released in November 2005 by sending MMS clips of steamy sex scenes of the actors to cell phone users called it an innovative publicity platform. Although the Censor Board had slapped 'Ek Khiladi Ek Haseena' with a "for adults only" certificate, the film's producers did not hesitate to use the adult content from the film in their promotional MMS clip even though it is easily accessible to people of all ages who own multimedia-enabled mobile phones. Their logic is that no censorship system exists to grade or monitor mobile phone content.

According to Pritish Nandy, "It's a censored version; we made sure that we only circulated a censored version of the clip. It's an adult film so there would be slightly more than you would see on TV, but TV is for universal viewing and since there is no such grading required for MMS we can send it out in normal course. These kinds of things are being aired on television as well, so I don't think that's a problem." Film advertising has been carried on using posters, billboards and on television but has not been done on mobile phones. They insist that not only are MMS clips less expensive than hoardings, TV spots and other conventional promotional tools, but they also reach out directly to the consumer. There is a fear that such trends can lead to greater video voyeurism and easy access to pornographic material among the youth who are the dominant users of mobile phones and Internet in India.

## **10. MEASUREMENT OF EFFECTS OF MOBILE MEDIA ON DEVELOPMENT**

The measurement of the impact of mobile technologies on development and evaluating the outputs of implementation of m-strategies to enable governments and planning agencies is needed to formulate effective mobile interventions, modify and continue policies and strategies for pursuing M4D. But to do so successfully, firstly, there is a need for credible systems of gathering statistics about its rate of diffusion and use of mobiles among the rural population, women and other marginalized groups. At present, within countries access to mobiles is uneven with urban / rural, gender, age and education as influencing factors. The situation is quite complex and often exact data on ICTs and the quantum of digital divide is not available in South Asia.

## **11. CONCLUSION**

Developing countries in South Asia recognize the potential of mobile technologies for development of their economies and communities. But policies have to address a multitude of factors such as the levels of technology and supporting infrastructure, access to mobile technologies, cost of mobile applications, the legal and regulatory framework and the integration of telecommunications policies into national economic and development policies before a country can take advantage of the potential of M4D. There is also a need to measure the outcome of ongoing projects

in order to strengthen and review mobile communications strategies and policies for development. National m-strategies that are underway must be assessed to generate data for future planning and implementation of policies for development. Greater international cooperation is needed to enable the developing countries of South Asia to move from their state of digital divide to one of digital opportunities as envisioned in the international M4D policy and achieve sustainable development.

## REFERENCES

- [1] Amin, Aasha Mehreen (1998). 'NCTs: Helping hands for Women'. In Ila Joshi, (1998). (Ed). *Asian Women in Information Age: New Communication Technology, Democracy and Women*. Singapore: AMIC.
- [2] France, J. (2009, 09 April 2009). *Portable-media players acting as teaching tools*. Retrieved 12 July, 2009, from [http://news.cnet.com/8301-17938\\_105-10216636-1.html](http://news.cnet.com/8301-17938_105-10216636-1.html)
- [3] G8 (2002) *Digital Opportunities for All: Meeting the Challenge*, Report of the Digital Opportunity Task Force (DOT Force), available at [http://www.g7.utoronto.ca/summit/2002kananaskis/dotforce\\_reportcard.pdf](http://www.g7.utoronto.ca/summit/2002kananaskis/dotforce_reportcard.pdf)
- [4] Gandhi, R., Veeraraghavan, R., Toyama, K., and Ramprasad, V. (2009). Digital Green: Participatory Video and Mediated Instruction for Agricultural Extension. *Information Technologies and International Development*, 5(1), 1-15.
- [5] ITU (2005) *Connect the World*, 16 June 2005, available at [http://www.itu.int/newsroom/press\\_releases/2005/07.html](http://www.itu.int/newsroom/press_releases/2005/07.html)
- [6] Kumar, Rahul (2006). 'Communication Congress: Community radio left out in the cold?' *One World South Asia*, 27 October 2006, <http://southasia.oneworld.net/article/view/141619/1/2219> (accessed on 16th November 2006).
- [7] Lawson, Cina and Natalie Meyenn (2000). *Bridging Cellular Phone Service to Rural Areas: Grameen Telecom and Village Payphones in Bangladesh*, Viewpoint 205, Washington, DC: World Bank. <http://www.worldbank.org/viewpoint/html-notes/205/205lawson.pdf> (accessed on 9th January 2006).
- [8] Leckner, S. and Facht, U. (2010). *Nordic Media Trends 12- A Sampler of International Media and Communication Statistics 2010*, NORDICOM: Sweden.
- [9] Prasad, Kiran (2008) "Gender Sensitive Communications Policies for Women's Development: Issues and Challenges". In Katharine Sarikakis and Leslie Regan Shade (Eds.) *Feminist Interventions in International Communication: Minding the Gap*. USA: Rowman and Littlefield.
- [10] Richardson, D. (1999). *The Internet and Rural Development*. FAO, Rome Italy. □
- [11] SEWA (2003). [www.sewa.org](http://www.sewa.org) (accessed on 9<sup>th</sup> November 2006).
- [12] Singh, Harsimran (2006). 'Teledensity target to be revised for 2006, says DoT', *The Financial Express*, January 09, 2006 [http://www.financialexpress.com/fe\\_full\\_story.php?content\\_id=113956](http://www.financialexpress.com/fe_full_story.php?content_id=113956) (accessed on 9<sup>th</sup> January 2006).
- [13] The Hindu (2011). SMS alerts for healthy mother and child, *The Hindu*, June 26, 2011 available at <http://www.hindu.com/2011/06/26/stories/2011062655710500.htm>
- [14] United Nations (2006). *The Digital Divide Report: ICT Diffusion Index 2005*, New York: United Nations.
- [15] World Bank (2006). *Information and Communications for Development: Global Trends and Policies*, Washington, D.C.: World Bank.