



Information and Communication Technology and Poverty Reduction in Rural India

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By

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**INTRODUCTION:**

Approximately 70 % of one Billion Indians are living in the 6,50000 villages, hence Indian economy is heavily dependent on the agricultural yield and trends of rainfall/monsoon is the major parameter of Indian GDP of that respective fiscal year.

Despite of all our dependence on rural India and agro-based economy, one third of our poor brothers and sisters are living in the villages where infrastructure like communication network, roads, transport, power supply, health care and education system is pathetic and hence leading our rural community to further backwardness.

Village Scenario-*Ask any rural young man “what are his plans/aims in life”? Obvious answer would be “planning to go to the town to search for job/ employment”. This is very common and ultimate dream of most of the rural young men. Majority of our young people, who get educated at primary or elementary level are desperate to change their destiny just by changing their geography.*

Checking migration of young brain and energy from their villages to cities has been a major challenge for our policy makers and development managers, how to check this growing burden of population on our overburdened metros is still unanswerable.

Take a good example of Indian metro’s like Mumbai, Delhi, Calcutta and Bangalore: you meet any riksha-puller, auto/taxi driver, labor working on construction or the roadside, factories or dhaba’s/resuturant’s most of them are young migrants from nearby villages, searching for better employment opportunities in these dream cities.

In majority of the cases, these migrants are first generation urbanites who are influenced with luxuries and glitter of life in these cities and do not want to go back to their native villages despite of hardship, uncertainty and difficult living conditions in the cities. There is an urgent need to find out the reasons behind this non-stop migration of young brain from villages and workout policies and strategies involving various stakeholders from Govt., Non Govt., Village councils and civil society groups.

Study shows that the rural belt with very poor or no infrastructure of roads, power supply, clean drinking water, health care, education system and non connectivity of the telecom has highest migration rate and on the other hands the villages with better infrastructure support of transport/roads, education, health and telecommunication has low migration rate.

Background: *Even after 55 years of India’s independence, the most pressing problem for the country is still how to deal with its rural poor and how to increase their income level. The green revolution did allow India to dramatically increase crop yield and become self-sufficient in food production. But India’s population more than kept pace with country’s economic growth, which ambled forward at the so-called “Hindu Rate” of 3.5 to 5 % for many decades. Only after a balance of payment crises forced Indian Govt. to*



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take steps to liberalize its economy and opening doors for Pvt. sector participation in infrastructure development in 1991, only thereafter the country began to achieve consistent growth of between 6 and 7 percent.

Today, even after half century has passed more than 350 million Indians – a number equal to the entire population of the country in 1950–live in absolute poverty and majority of them are in the rural regions or migrant population living in the urban slums.

India's poor makeup fully one third of its total population, which passed the billion mark on 15th May 2000. And India's population is increasing by 15.5 million people each year. This means we need 1,25000 new schools, 3,73000 new teachers, 2.5 million new homes and 4 million new jobs every year to meet the needs of its citizen. With its current rate of growth, existing work culture, policies, it would be difficult to keep pace for the poverty eradication, until Govt. redefine its policies and strategies dramatically, apply ICT innovations with application with active participation from Pvt. sector, CBO's and NGO's.

More alarming, even were India to move forward quickly with the next round of economic reforms and push growth upto the 8-10 percent range and even if we are able to sustain this high level of growth over the next ten years, the lives of the poor would remain visibly unchanged. In fact, in the best-case scenario, per capita income in India would rise from the current \$ 300 per year to all of \$ 500 (USD) per year a decade from now.

The cost of the poor to India is in-estimable, pressure on the cities is increasing at alarming rate, Govt. needs to workout on policies and define strategies to decentralize the development process. Build-up better or equal level of infrastructure in the rural regions, check the migration and offer equal opportunities in education and employment to the educated young rural community within their own villages.

Mass poverty is having a devastating impact on India's environment and economic growth, which also affects India's ability to compete against countries with better physical infrastructure for connectivity, informed citizenry and more educated population for foreign direct investment, which India badly needs to face a fiscal deficit.

1. **Approach for Poverty removal:** *there is a great deal of discussion in developed work and developing as well as academic world as to how to identify these poor, and hence how to reach them. Defining poverty was initially income concept, but in the recent years, development agencies are correlating it with "Information Poor" as it says :*

"A more informed citizenry is in a better position to exercise its rights, and better able to carry out its responsibilities and increase their income level within the community and region"



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Since the economic and social structure is so inter-connected, the solution too has to be integrated. This means that there is no single formula for poverty reduction, rather it has to be an approach which address the various economic, social, religious, political factors existing in our society, which causes and perpetuate poverty. Access to relevant, timely Information and knowledge can do wonders to change the face of our poor in rural, isolated and under-privileged regions.

What should be the aim?

From poor people's perspective, poverty is largely question of powerlessness. For example, poor people's inability to change the unwarranted behaviors of state official and local elite makes them vulnerable to corruption and humiliation. Higher level of corruption is associated with lower growth and lower level of per capita income. Easy access to public and Pvt. information could reduce the chances of corruption; humiliation, can save time, money and can empower poor.

The effectiveness of poverty reduction work therefore depends in part on poor people's ability to empower themselves to access information and knowledge resources through which they are able to analyze situation, learn necessary skills, seek social justice and participate in equal economic opportunities.

Refocusing poverty reduction as an end result of empowering people and for that purpose to create an enabling environment through ICT should be the main thrust of our development policies.

2. **What do the poor need:** *As we have seen that poor from rural background are not only deprived persons, but workers and producers on their own right. They wish to earn their living, not depend on outside support. They need a continuous flow of employment through which they can earn enough in terms of cash and kind. In other words, they also need social and economic empowerment by participating in all round economic development of the country.*

They move out of their village or region in search of better employment opportunities, we found that if given equal opportunities in their own village they would prefer to stay back and work with much more comfort level. Without adequate infrastructure of roads, power supply and telecommunication in the rural regions they have a feeling powerlessness, feel their voice is unheard, too much dependence on the cities/towns and exclusion from the major development process at regional and national level. As a result sometimes they become a victim of exploitation, humiliation and corruption, which can be avoided by brining them in the main stream and connecting them with rest of the globe without changing their geographical boundaries.

Poverty Reduction with Technology Intervention:



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Man kind has been witnessing a succession of inventions and discoveries, each facilitating further discoveries and inventions at accelerated frequency. Prosperity can be created by few people for the enjoyment of a few, on the other hand, if technologies are widely disseminated, understood and exploited by acquiring the needed skills by increasing number of people, then they conduce to the reduction of disparities in the wealth, comfort and convenience, leisure for all section of the people. For technology to benefit masses and not only classes, it is therefore necessary that all people, regions and communities are included, wired and is skilled to use the products of technology.

There is no society or nation in the world, which is technologically backward and has attained widespread well-being, prosperity and economic power.

This aspect is very important for development sector, Govt. agencies and civil societies to remember when we try to define polices, strategies and discuss how we are going to bridge the digital divide among “Classes to Masses”.

Digital Divide

Lack of information is one of the major causes for this situation. Relevant and concerned information, which they want to know, is missing. Hence, the gap between “information rich and Information Poor” community is also increasing.

The new millennium has ushered in a world of greater inter-connectivity, accelerating the flow of free data and information, and shrinking time and national boundaries. The force behind this rapid transformation is isolated islands into inter-connected superhighways is ICT (Information and Communication Technologies). The power of connectivity can transform the prevailing ailing system and can empower rural or urban poor with the power of information, which can be converted into knowledge and further to wealth generation.

Since knowledge is power and is great source with which they can become wealthy, healthy, powerful and dominant, not only confined within village, region or nation but by world-wide because of the globalisation of economics and trade taking place under the regime of WTO. Today for every information rich community the whole world is market, the whole world is the resource, and the whole world is the area of exerting influence and ingestion of knowledge. There are those who are not connected, wired, “Information Poor” and do not have the resources to acquire any of these capabilities, will be left behind in the new bandwagon of development or Information superhighway. The former will prosper rapidly and become richer and richer. The latter may improve by the trickle down effect.

There are various types of divide in India, not all of which are of equal concern and consequence. The divide between educated and un-educated, English speaking and non-English speaking, the urban and rural, the wealthy and poor, those who have electricity and those who do not have, those who have access to good health care and



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those who do not have, those who have telephone connectivity and those who do not have. Each one of these divide has penalty and deprivation for the have not's.

In fact in the 21st century, when the world is open for everyone be it rural or urban, opportunities are immense around the globe, it is very essentially important for Govt. to provide last mile connectivity to its citizen in urban, rural, desert or hilly terrain and make them "Information Rich" citizens irrespective of the language they speak, class, caste and region for overall prosperity of the country and the region.

However, as common citizens we have to agree that access to the digital network, knowledge and resources, virtually everything is possible from finding job/employment, to have market access for rural products/services, marketing, admission to different schools/universities, access to Govt. development schemes, networking with like minded groups/organisations, advocacy, commerce etc. is a matter of consideration.

ICT and Poverty Reduction – a synergy

Information Technology is the road, which must be brought to the doorsteps of the poor be it rural or urban regions. The poor should be given the equal opportunity to master the skill to use this technology to their advantage. We must have to design the information technology in such a way that a totally unprepared poor person can immediately get hang of it without feeling threatened and convert acquired knowledge for his wealth creation.

Key Obstacle to for Digital Empowerment:

Using ICT for the empowerment of poor and lead them to the road of prosperity, Govt. policy should be poor-oriented rather than corporate- oriented that prevent many poor people from making use of ICT for their empowerment. Other than working on policy matter, we can say that following are the other major obstacle to overcome poverty:

- a. **Lack of awareness about the benefits of new communication technologies:** *Despite the growing number of people who own a computer and have Internet access, most people in the developing countries have little opportunity and affordability to connect to internet and therefore are unaware of the socio-economic benefits and the stimulus to good governance that ICT can bring. Also, among developing partners there is still a great deal of skepticism towards ICT and appropriate means for development in regions, where communities even lack the most basic services such as water supply, education, health and sanitation etc.*
- b. **Lack of access facilities such as computers and connectivity in poor communities and marginalised areas:** *The cost of computer is still beyond the purchasing*



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power of the majority of the individual in developing countries. The internet is often far too expensive to be accessible to ordinary person.

- c. ***The language barriers in using Internet:** Language barriers prevent people from familiarizing themselves with benefits of Internet – based information, resources, that invariably require an ability to understand international language, especially English. Since, most of information available on the NET is English. As a result, most people in rural regions cannot read and understand most Internet content that is available. Another factor is the high rate of illiteracy among people living under poverty.*

- d. ***Lack of appropriately packaged information products in local language:** There is a lack of suitable information products tailored to the needs and assimilation capacities of dis-advantaged people in developing countries. In order to better adjust their investment decisions people need updated information on market prices, new agriculture technologies and methods of farming to raise the quality of their products, to adapt to changing climate conditions or the demand of agriculture markets, More-ever, vital Govt. Information is not available online and most countries do not have pro-rural poor ICT policies with an objective to provide facilities for e-Governance and rural commerce.*

- e. ***Lack of motivation to use information available on the Internet:** Even with connectivity, people will not use ICT tools unless they are motivated to do so. The prevailing modality of the internet access requires a certain level of competence from the user, which not many individuals in poor communities have. There fore community ownership of access facilities and availability of facilitator are key points.*

India- a case Studies: In order to achieve “Total Digital Empowerment” for rural Indian folks, many good initiatives have been taken up by Indian Govt., Educational/Academic institutions, Pvt. and corporate sectors sector and entrepreneurs, few of them are as follows:

1. **GyanDoot:** The project is located in central Indian state of MP, which was initiated by local administrative authorities with consultation with gram panchayats/village councils. The project was a role model for other local Govt. bodies to bring governance and rural information kiosk at the doorsteps of the beneficiaries in the tribal India.

2. **SARI (Sustainable Access in Rural India):** A good and collaborative model between India’s best technology institutes like IIT-Chennai, MIT Media Lab-Asia and Harvard University, the projects aim to provide access to 1000+ villages in Mudurai. The objectives of the project were to

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provide easy and affordable access to rural entrepreneurs to empower and include them with connectivity.

3. **E-Chaupal:** The only model of its own is supported by major Indian corporate house ITC, The model is successfully bridging the gap between rural community and buyer and increase the income level of the farmers by removing the role of middlemen. The model has also generated various employment opportunities in central and northern India for rural educated youths.
4. **TaraHaat-Rural Connectivity in Punjab and MP:** The project is a private sector initiative to provide online services to large number of rural communities in north India. One of the most innovative aspects of the project is its highly interactive and graphics –interface systems, which allow semi-literate and neo-literate users enhanced access to products and services.
5. **Village Knowledge Center by MSSR Foundation, Pondichery:** One of the oldest ICT4D model was initiated in 1997 with support from IDRC, as well as other funding agencies. The project is currently operational in 8-10 villages, although it originally began with 11 centers. Most successfully is the center based in fishing village downloading weather information from a decommissioned US navy satellite, which was then interpreted for local use and narrowcast over loudspeakers on the banks of the backwater lagoon from which fishermen head out into high seas
6. **MLA (Media Lab Asia):** a JV to bridge the “Digital Divide” was initiated by Indian Govt. and MIT/US, the project was focused on research and implementation involving various academic and research institutes like IITs and IIS (Indian Institute of Science) of India. MLA is now owned by Indian Govt. and running its own research with leading technology institutes for ICT4D.
7. **Simputer:** Developed with the aim to offer low cost computing for rural community. The Simputer is the most innovative model in the recent past by Indian Institute of Science, Bangalore. Aim of the innovation is to keep the hardware cost very low, so that rural consumer can also buy one and can have access to free information and knowledge.

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8. **n-Logue (CorDECT):** n-Logue is a Pvt. Company supported by TeNeT group of IIT, Chennai. The Co. was formed to provide voice and Internet services in every underserved village and isolated locations in desert and mountains. The company is optimistic to network 3000 access centers across many unwired regions of India at very affordable cost.
9. **Drishtee.Com:** Pvt. sector company seeking to bring a networked information and services to rural citizen–consumer. One such initiative is going on in Harayana state of north India and Punjab. The company is also starting its centers in newly born mountain state of Uttranchal also. They employ rural entrepreneurs those who sell Govt. forms, like birth, death and domicile certificates charge nominal Amt. from the villagers and making the model sustainable on its own.
10. **Swayam Krishi Sangam (SKS):** SKS is an MFI using smart cards as part of their work to promote micro finance and micro enterprise program to reduce poverty by reaching out 25,000 poor families in 1000 villages in rural Medak Dist. of AP.
11. **SEWA (Self Employed Women Association):** A volunteer initiative to empower rural women by employing them in their houses is one of the most successful model in Indian social sector. Today thousand of women SHG (Self Help Groups) are involved with SEWA and the implementation of their ICT has brought much better results in marketing and networking for them globally. It has helped to empower rural poor women in Gujrat and UP with the help of ICT.
12. **Datamation Foundation:** Women from poor community have very high level of economic insecurity due to our existing social system and the situation is worse for women living in rural and urban slums. Datamation with support from UNESCO is working to empower the socially and marginalized women living in the urban slums of Delhi with the help of ICTs . They get training on basic IT skills like data entry, designing etc. and are absorbed for the same level of job in the same group. This has helped 700+ women to get training on this and employed with different agencies.

The Role of Govt.: We strongly believe that a key objective of Indian Govt. in the digital age is the empowerment of society with special focus on poor communities living in villages and urban slums. They assume strong advocacy role for ICT development and use, and provide leadership in using ICT. In creating an information society, Govt.



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should ensure that communities are both participants and beneficiaries. ICT should not preserve for few, and the enabling environment that government must establish for ICTs to succeed should provide opportunities for all- individual and businesses – to access ICT training, and application and services. Specific actions government can take include:

- Promotion, advocacy of ICT and ensuring that it is high on national agenda.
- Formulating national objectives and strategies for ICT within the wider development context, poverty reduction and establishing public obligation for ICT actors.
- Establishing appropriate legal and regulatory frameworks that encourage more open competition in the telecommunication and other ICT industries, as well as universal access for disadvantaged groups in the rural and isolated regions.
- Championing ICT use through promoting e-Govt. services at national, regional and village level.
- Facilitating linkages between Govt., NGOs, CBOs, businesses and strengthening mechanism for interaction between Govt., Consumer and citizens in the urban and rural regions.
- Encourage private enterprise through the establishment for an enabling economic environment and getting to economic fundamental right.
- Encouraging civil society to contribute to the development and make effective use of ICTs for rural development and poverty eradication.
- Attracting investments in the rural regions into the development of ICT related capacities, including the development of infrastructure and the reduction of connectivity and access cost, and
- Encouraging domestic investment in the ICT industry and in ICT application by domestic small businesses through appropriate incentive schemes and greater competition.

Policy Consideration:

Govt. is always in a pivotal position to influence the uneven spread of ICT through its own strategic actions and by facilitating the actions of others:

* Effective ICT policy and strategic action should be guided by five key principle: *vision, legal and regulatory framework, human resource development, technical and information infrastructure development and e-governance and new forms of governance.*

* Efforts to mobilize resources and to build more inclusive information societies must be goals and value of development at the core of their vision, it is essential to incorporate plurality as well as common goals within vision that guide ICT policy.

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- Legal and regulatory framework are essential to create an enabling environment for ICT development and use, the market must operate effectively if the private sector is to invest in social and commercial ICT applications, framework are essential for e-commerce and for citizen, consumer and producer trust in e-services in every region.
- The urgency of capacity building and skills development can not be over emphasized the range of skills that is needed is enormous.

Co-operative Approach to bridge the digital divide:

- A major role for Govt. is to create a positive ICT environment at every level of decision-making within and outside the Govt.
- There is enormous scope for entrepreneurs and the Pvt. sector to tap demand.
- Civil society organisations have an important role to play in advocating the needs of communities, raising awareness about services and generating opportunities and benefits within communities and at the national level.

Policy Constraints: As mentioned earlier also, when Indian Govt. relaxed restriction on diverse kind of communication and media, most significantly effect was IT and Telecom.

Even today most valuable aspects of any ICT project is still it role as and experimental pilot that allow us to understand the further implication of networked technologies.

Many NGOs, CBOs and civil societies are advocating in the country. Voluntary online portals like Byteforall.org, have shared information about such development with other web oriented advocacy groups across the country, and region. MLA (Media lab Asia) has emerged as a new source of networking policy advise for the Govt. of India and TeNet Labs at IIT- Chennai continue to be valuable advocate for a comprehensive rural ISP policy. The Global Internet Policy Initiatives has recently established a presence in India, so as to able to review and critique internet policy for south Asia.

Issues for Change:

- *Systematic Changes*
- *Shift in power relations*
- *Access to resources*
- *The poor have strength of numbers*
- *Need for organizational structure*
- *Need for facilitating tools and environment*



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- *changes are best driven by poor people themselves*
- *Promotion of voice and empowerment are central tasks*
- *Change in social norms*
- *Change in Mindsets*
- *Power of the individuals*
- *Pervasive gender inequalities.*

The WORKING approach:

Govt. need to change their present working mindsets, as for any kind of development process and involvement for overall region and communities , Govt. must adopt the following parameters to get better and tangible results

- *Collaborative*
- *Cooperative*
- *Investigative*
- *Innovative*

a. CONCLUSION:

The information-oriented society is opening to us a new global world that we have never experienced before. To be sure, both the information-oriented society and informational technology will bring us conflicting results in the form of promising opportunities or threats. What influence the results are poor community’s potential capabilities, ingenuity and positive thinking.

Rich and poor, Men and women together need to make necessary preparations for social changes the informational technology may bring us. It would not be enough just to recognize what the informational technology can do for us. It is no less important to recognize what technology cannot do for us.

That is because the benefit of technology will appear to use in various forms directly or indirectly. Again emphasizing the potential of digital empowerment with creative sensibility. I would like to conclude my presentation by citing one of Toffler’s quotes

“ We might end up with entering a new Dark Age unless we redesign an information-oriented democracy of 21st Century”

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