



Architecture of  
**INCLUSIVE  
GROWTH**

Report of the 5th Convention of  
**Grameen Gyan Abhiyan** 2008



**In this report:**

***Gyan Choupal* refers to telecentres, Village Knowledge Centres, Village Resource Centres, Common Service Centres, Community Information Centres, e-Choupals, Information/Info Kiosks, etc.**

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# ARCHITECTURE OF INCLUSIVE GROWTH

REPORT OF THE  
5TH CONVENTION OF  
*GRAMEEN*  
*GYAN ABHIYAN*  
OCTOBER 3-5, 2008

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# Executive Summary

This report attempts to capture the essence of deliberations of meetings and workshops held in New Delhi over October 1-5, 2008: The Fifth Annual Convention of *Grameen Gyan Abhiyan* (GGA), Technology Partners Pavilion and the Telecentre Managers Workshop.


The meetings provided a unique opportunity to engage with the perspective and experience of private government and non-government stakeholders. The inputs demonstrated the huge synergies that exist between the work of several different players and the goals of GGA. There were impressive stories of new approaches, experiences on the ground and challenges to overcome.

India reflects an overwhelming diversity—in languages, geographic terrain, culture, religions, livelihoods, income, education, health, etc. The discussions at the meeting reflected this diversity. There was a call for a rich and nuanced response to diversity, in an effective and creative fashion to empower people. This challenge requires partnerships amongst the stakeholders and all relevant resources to address the complex issues in development. People on the ground, experts in the lab, development practitioners, industry, and government agencies have unique inputs to offer. Peers in other parts of India and elsewhere have relevant insights. Given the nature and magnitude of the task implicit in the GGA, partnerships are critical.

Partnerships work best if attention is paid to creating, maintaining and institutionalising linkages between stakeholders. There is therefore need to ensure effective multiplayer dialogue on a regular basis as well as this convention symbolised, at a national level. This will allow the micro and macro agenda to be reconciled constructively.

Presentations, discussions and reflections suggested a shift in focus and a move away from reducing rural poverty to enhancing rural prosperity. There was agreement that social entrepreneurship is the way to go. Government and private agencies have made important strides in creating relevant and usable content and services of interest to rural populations. Others have helped provide effective telecommunications connectivity on which content can flow and be accessed. Inputs from and discussions on looking at the needs of existing and planned telecentres all over the country led to the consensus that content and capacity building are essential for success of telecentres.

The GGA or the Rural Knowledge Movement is a national movement to mobilise the power of partnership to use Information and Communication Technology (ICT) to empower rural households with knowledge and economic opportunities



The GGA has enabled sharing of experiences that enrich the Indian experience with *Gyan Choupal* or village knowledge centres and vice versa. Given India's enormous diversity, the meetings reflected the need of developing content that is both relevant and compelling for rural telecentres.

Policy and regulation can help bring GGA goals significantly nearer. A priority is to ensure that players keen to provide services can do so without hurdles. Wireless technologies are important for providing cheap and fast connectivity including mobility and broadband. Acting on spectrum reform can expedite the role of wireless in mobile voice and data services. Players and users also face regulatory barriers in providing accessing voice-over-internet (VOIP) technologies. These are particularly important and relevant for the rural poor-to maximise the benefits of VOIP in long distance telephony and a multitude of data based services.

Private industry has been a significant player in the knowledge revolution in rural India and contributed innovative solutions. Many of these innovations were highlighted in the technology pavilion that accompanied the GGA meeting.

The Government of India's flagship programme on e-governance has a distinctly rural focus and aims to improve the lives and livelihoods of rural communities by delivering to them actionable knowledge, including information about government services and programmes.

The Department of Information Technology's proposal to set up 100,000 CSCs in India-i.e. one in every sixth Indian village-as well the work of Indian Space Research Organisation to provide 2-way satellite connectivity in around 460 VRCs (several in challenging remote rural areas) reflects the relevance of the GGA vision and brings in government resources so critical for scale and legitimacy.

To put the discussions in a wider perspective of rural development, several cabinet ministers, government functionaries, and those directly engaged in the planning and rollout of CSCs, shared their perspectives on the range of work in several parts of government and the country. These presentations highlighted the need for this work to be amalgamated with the efforts of GGA – to improve and strengthen the effectiveness of both.

The Architecture of Inclusive Growth, the theme of the Fifth Annual Convention, calls for all stakeholders to come together and join hands in creating a real knowledge revolution and synergy among different ICT-initiatives in rural India. For knowledge is power. And, the ultimate goal of the GGA is to empower people.

# Foreword



**M.S. Swaminathan**  
Chairman  
Grameen Gyan Abhiyan

The idea of *Mission 2007: Every Village a Knowledge Centre* was born at the beginning of this millennium and century. The aim of this programme is to bridge the urban rural digital divide and to harness ICT for addressing the major problems of rural India like poverty, ill-literacy, ill-health, and low farm productivity. Thanks to widespread support for this goal, a National Alliance for Mission 2007 was formed in 2003. This Alliance has grown and now consists of over 400 members drawn from the public, private, academic, civil society and financial sectors. The Alliance is supported by an International Support Group of UN and Bilateral Agencies and private sector corporations. Every year, a National Convention of the Alliance is held to review the progress made in mobilising the Power of Partnerships for the Knowledge empowerment of rural families.

From the beginning the Alliance partners have been committed to taking ICT to rural India on the principle of social inclusion in access to this valuable technology. Concurrent attention has been paid to connectivity, content creation, capacity building, care and management and coordination between knowledge and its field application, i.e. bridging the know-how-do-how gap. To accord social prestige to grassroots ICT workers, a Jamsetji Tata National Virtual Academy for Rural Prosperity was established in 2004 with generous support from Tata Trusts. This Academy has over 1000 Fellows from all parts of the country and from a few neighbouring countries. The grassroots academicians feel a sense of pride in belonging to the academy and have become the torch bearers of the Rural Knowledge Revolution. Addressing the First Convocation of the Academy in 2005 our former President Dr A P J Abdul Kalam mentioned that the Academy represents “the celebration of India’s rural core competence”.

In 2007 the Alliance Partners decided to continue this movement under the name *Grameen Gyan Abhiyan* (Rural Knowledge Movement). In order to build capacity of both the Fellows of the Academy as well as other grassroots ICT workers in villages, a Jamsetji Tata Training School was established in 2007. The Alliance has developed the following strategy for taking the benefits of ICT to all parts of the country:

- Block Level: Village Resource Centres (VRCs) established with the help of the Indian Space Research Organisation. VRCs have satellite connectivity and tele-conferencing facilities in order to provide e-Health, e-literacy, e-Commerce, and other demand driven and dynamic services.

- Panchayat/Local Body: Village Knowledge Centre (VKCs) or *Gyan Choupals* with Internet connectivity and training facilities for local village school students.
- Last Mile and Last Person Connectivity: This will be achieved through the integrated use of the internet and cellular phones or FM radio or Public Address Systems.

At the Annual Convention, a Technology Pavilion is organised to demonstrate recent innovations in the digital empowerment of rural areas, as for e.g. The Fisher Friend Application involving the feeding of information on the wave heights and the location fish shoals to small scale fishermen (artisanal fisher families).

A Rural Innovation Fund has been established with the help of telecentre.org, IDRC Canada and Microsoft, to promote a spirit of entrepreneurship and inventiveness in the development of technologies for rural areas.

When the Alliance completes this phase of its mission in 2011, India will be the first developing country where the power and opportunity provided by ICT will reach every home and hut.

We feel confident that this goal can be achieved since the government of India has included Rural Knowledge Connectivity under its visionary *Bharat Nirman* Programme and has started setting up Community Service Centres (CSC) in 100,000 villages. In addition private sector companies like ITC will cover over 50,000 villages under the *e-Chaupal* programme.

There are numerous other initiatives in the country sponsored by state governments, civil society organisations, IITs, other academic institutions as well as bilateral and multilateral agencies.

A very important goal of *Grameen Gyan Abhiyan* (GGA) is to bring about synergy between ICT and the various Missions of the Government of India such as the National Rural Health Mission, National Food Security Mission, National Horticulture Mission, National Bamboo Mission, *Sarva Shiksha Abhiyan*, and *Rashtriya Krishi Vikas Yojana*.

Such an interaction will help to maximize the benefits of these Missions and ensure public participation in their effective implementation. This is why at each annual session of the National Alliance for GGA, there is a special discussion on the role of GGA in spreading awareness of the components of the different Missions and thereby generate the necessary enthusiasm and cooperation from all concerned.

Since knowledge connectivity is an important component of *Bharat Nirman*, it is desirable that the Common Service Centre (CSC) Programme of the Department

of Information Technology of the Government of India uses effectively the GGA network and also helps to improve the infrastructure of *Gyan Choupals* and other grassroots level ICT Centres.

GGA will then be able to confer multiple benefits to local communities and help to improve the economic well being of tribal and rural families and to ensure sustainable food, water, health, energy and livelihood security systems in rural areas.

A noteworthy feature of the 5th Convention of GGA was synergy and interaction among the participants at different events like the consultative workshop for telecentre managers, *Grameen Gyan Abhiyan* Convention and the Technology Partners Pavilion. This helped to promote mutual learning and thereby enhanced the power of partnership in working towards the Rural Knowledge Revolution. I am glad that the Annual Convention of GGA is now becoming the flagship of India's commitment to harnessing ICT for bridging the urban-rural digital divide. In this connection, I would like to cite a quotation from Pandit Jawaharlal Nehru

***“It is science alone that can solve the problems of hunger and poverty. The future belongs to science and those who make friends with science”***

GGA is an outstanding example of the friendship developed by rural families with information and communication science. Our gratitude goes to Mr Senthilkumaran, Director, Information Education and Communication, MSSRF and all his colleagues, for their tireless efforts to make the Convention and the associated events meaningful and memorable.

# Acknowledgements

The *Grameen Gyan Abhiyan* (Rural Knowledge Centre Movement–Mission 2007: Every Village a Knowledge Centre) Secretariat and the Indian telecentre.org Academy–Jamsetji Tata Training School (JTTS) is very grateful to Dr Mahesh Uppal and Ms Anita Anand of Com First (India) Private Ltd. for partnering with GGA in the production of this publication.

The GGA secretariat and JTTS extend sincere thanks to Tata Education Trust, International Development Research Centre (IDRC), Swiss Agency for Development and Cooperation (SDC), Tata Consultancy Services (TCS), telecentere.org, Microsoft, Qualcomm, United Nations Educational, Scientific and Cultural Organisation (UNESCO), Media Lab Asia, State Bank of India (SBI), National Bank for Agriculture and Rural Development (NABARD) and Multi Commodity Exchange of India Ltd. (MCX) for their valuable support for conducting the second version of GGA convention and this publication.

The GGA secretariat is grateful to honourable Ministers, panelists, moderators and chairs for their valuable inputs during the convention. The GGA Secretariat and JTTS thank all the participants to participate in the 5th convention of GGA–Architecture of Inclusive Growth; the consultative workshop on “Telecentre Networks for Strengthening the Capacity of Telecentre Managers”; the exhibitors for showcasing their technology and content products in the technology partners pavilion under the title of “Catalysing Innovations and Initiatives” and the students of Institute of Agribusiness Management for their participation.

The GGA secretariat and the Telecentre Academy–Jamsetji Tata Training School (JTTS) particularly thank Dr B Shadarach, Programme Officer, telecentre.org, IDRC for his guidance and support for the above events.

The GGA secretariat is grateful to Mr Ravishankar and his team of the Electronic Media Production Centre (EMPC), Indira Gandhi National Open University (IGNOU) New Delhi for extensive video coverage and relaying in *Gyan Darshan*. The secretariat is also thankful to Prof K Ravi Kanth, EMPC and Prof Rajasekaran Pillai, Vice Chancellor, IGNOU, New Delhi for the extended help for the video coverage.

The GGA secretariat and JTTS are thankful to Dr A Nambi, Ms Nancy J Anabel, Mr J Srinath, Dr J D Sophia, Ms S Velvizhi and Mr Surendran of M S Swaminathan Research Foundation, Chennai who took great care of the rapporteuring the consultative workshop for telecentre managers and GGA convention (October 1-5, 2008). The secretariat and JTTS also grateful to

Mr Jegan K, Mr A Ananth, Mr M. Muthukumar, Mr K. Saravanan, Mr G. Jayakrishnan, Mr P. Senthamil, Mr M. Selvaraj, Mr P.I. Maria Philip, Dr Vishwanath M. Palled, Mr Praveen Khumbalkar, Mr Deepak Kekan, Mr Praful Chandurkar, Ms Roja Rani, Ms M. Raja Rajeshwari and Mr K. Rameswaran of M S Swaminathan Research Foundation for their dedicated and patient support in the areas of registration, accommodation, transport, technology partners pavilion, media follow up, floor arrangements, etc.

Special thanks to Mr K. Udayakumar for his excellent photo coverage of the event & to Ms Anita Anand for contributing photographs from her personal archive.

The GGA Secretariat and JTTS convey special thanks to Mr P Sivakumar, M S Swaminathan Research Foundation for coordination at different levels.

I offer sincere thanks to the officials of ICAR, NAAS and IARI for providing all the necessary facilities to conduct the above events.

The secretariat and JTTS extend sincere thanks to Ms N Ganga Vidya, Coordinator, *Grameen Gyan Abhiyan* for her tireless and valuable inputs for all the three events and this publication.

Last but not the least, our sincere thanks goes to Dr Ajay K Parida, Executive Director and Prof M S Swaminathan, Chairman for their support at all the levels.

**S Senthilkumaran**

*General Secretary*

*Grameen Gyan Abhiyan*

# Abbreviations and Acronyms

AFPINET	Agricultural and Food Processing Industries Informatics Network
AGMARKNET	Agricultural Marketing Information Network
AgRIS	International information system for the agricultural sciences and technology
AIEP	Alternative and Innovative Education Programme
AISECT	All India Society for Electronics and Computer Technology
APHNET	The Association of South East Asian Nations (ASEAN) Post Harvest Horticulture Network
APMC	Agricultural Produce Marketing Committee
ARISNET	Agricultural Research Information System Network
C-DAC	Centre for Development of Advanced Computing
CIMMYT	Centro Internacional de Mejoramiento de Maíz y Trigo (International Maize and Wheat Improvement Centre)
CSC	Community Service Centres
CSO	Civil Society Organisation
CTLIC	Community Technology Literacy Centres
DACNET	Department of Agriculture & Cooperation Network
DISNIC	District Information System of National Informatics Centre
DNF	Digital Networks for Farmers
DRR	Directorate of Rice Research
EGS	Education Guarantee Scheme
FAO	Food and Agricultural Organisation
GGA	Grameen Gyan Abhiyan

GIS	Geographic Information System
ICAR	Indian Council of Agricultural Research
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRISAT	The International Crops Research Institute for the Semi-Arid Tropics
ICTs	Information and Communications Technologies
ICT4D	Information and Communications Technologies for Development
IFFCO	Indian Farmers Fertilizer Cooperative Limited
IFPRI	International Food Policy Research Institute
IGNOU	Indira Gandhi Open University
IIT	Indian Institute of Technology
IL&FS	Infrastructure Leasing And Financial Services Limited
ISRO	Indian Space Research Organisation
KVK	Kisan Vikas Kendra
MSSRF	M S Swaminathan Research Foundation
NAAS	National Academy of Agricultural Sciences
NABARD	National Bank for Agriculture and Rural Development
NBHC	National Bulk Handling Corporation
NDMNET	National Disaster Management Knowledge Network
NICT	Network For Information & Computer Technology
NPEGEL	National Programme for Education for Girls at Elementary Level

NREGS	National Rural Employment Guarantee Scheme
NRHM	National Rural Health Mission
NSEL	National Spot Exchange Ltd
NVA	Jamsetji Tata National Virtual Academy
PPIN	Plant Protection Network
PRI	Panchayati Raj Institutions
RIDF	Rural Infrastructure Development Fund
RIDF	Rural Infrastructure Development Fund
SDC	Swiss Agency for Development and Cooperation
SHG	Self Help Group
SSA	Sarva Shiksha Abhiyan
TCS	Tata Consultancy Services
TTSL	Tata Teleservices Limited
UNICEF	United Nations Children's Fund
UPP	Unlimited Potential
VIIT	Vidya Pratishthan's Institute of Information Technology
VKCs	Village Knowledge Centres
VLE	Village Level Entrepreneur
VRCs	Village Resource Centres
YPARD	Young Professionals Platform for Agriculture Research for Development

# Introduction

The *Grameen Gyan Abhiyan* (GGA) or the Rural Knowledge Movement is a national movement to mobilise the power of partnership to use information and communication technology (ICT) to empower rural households with knowledge and economic opportunities.


GGA is an action based initiative to address the many facets of knowledge access in rural areas. For instance, are there gaps in the huge knowledge base of rural communities which hold them back from realising human potential? Can knowledge of new agricultural practices or upgrading the skill sets of farmers address the crisis facing Indian agriculture? The Information and Communications Technologies (ICTs) revolution has multiplied millions of times the ability to carry and process a wide range of information, enabling users to overcome the barriers of literacy, language, disability, ethnicity, geography that have historically led to impoverishment of rural populations. Can this potential be leveraged for rural prosperity?

GGA is a coalition of diverse government and non-government actors—ranging from community activists, civil society organisations, academics, technologists, private sector players like telecommunications and IT companies, banks and other financial institutions, government agencies dealing with rural programmes, e-governance, Panchayati Raj and regulatory bodies.

GGA builds on the efforts of many players who have worked to bring the knowledge revolution to India's villages. The partners of Mission 2007, the predecessor of GGA, have engaged on many of the issues related to this challenge. The diverse experience of Mission 2007 demonstrated the nature and size of the challenge and the crucial need for partnership between communities, technologists, private sector and government agencies to meet the need for scale in a large country like India and to ensure that piecemeal efforts make way for concerted action of stakeholders to exploit the unprecedented opportunity to catalyse rural prosperity through technology.

As a logical next step, the Government of India has a comprehensive and ambitious plan to set up a Common Service Centres (CSC) in over 100,000





villages i.e. one in every 6 of the over 600,000 villages in India. In line with the vision of Mission 2007 partners, the CSC plan rightly envisages a strong role for public private partnership and recognises the role of community based entrepreneurs. It also equally and importantly recognises the importance of leveraging state infrastructure like State Wide Area Networks (SWANs) set up by various state governments in India in order to pull all plugs to deliver on an important step in rural empowerment.

The GGA recognises the unique opportunity offered by today's technology and partnership to help take India's majority that lives in its villages to a new level of prosperity, health and fulfilment in its lives and livelihoods. It further recognises that the impact and sustainability of its efforts will depend on the extent to which its fruits reach people across the many divides that exist in India and specially manifested in its villages. Poverty, gender, literacy, education, healthcare, housing and livelihoods are some examples of the many divisions that exist within communities.

Seen in this light, the challenges are daunting too. India is too diverse for a 'one-size-fits-all solution'. Equitable access will require specific attention to governance. What proportion of rural knowledge needs can be met with existing materials and what other effort will be needed to create more customized and usable knowledge products required in rural areas?

The challenges in knowledge access are as great as supply as they are in delivery. Rural markets may need to be nurtured before demand can be aggregated. ICTs, however powerful they might be, require resources to deploy the technologies—financial and human. Public as well as private funding will need to be mobilised. Identifying and procuring the technologies and training the users will be possible when those with experience, expertise, commitment and willingness to collaborate come together.

The theme of the fifth convention of the GGA, ***“Architecture of Inclusive Growth: Role of Grameen Gyan Abhiyan”*** reflects precisely these hopes, challenges and the new opportunities. The convention brought together practitioners and leaders from government, non-profit and private sector-to provide their perspectives on combining growth with social justice.

# Background

Since 1992, M S Swaminathan Research Foundation (MSSRF) has been implementing the Village Resource Centres (VRCs) and Village Knowledge Centres (VKCs). Village Resource Centres and VKCs use diverse ICT and non-ICT tools for rural development. In 2003, the VRC and VKC programmes were augmented by the creation of the Jamsetji Tata National Virtual Academy (NVA) and an ISRO-VRC programme. The NVA focussed on need based locale-specific, demand driven information content (both dynamic and static) collection from several secondary data, organising training and awareness programmes and made linkages with several leading institutions/organisations to customise the content into field-based applications. Several international and national partners have collaborated over the years to develop content and build capacity of communities as well as resource persons.

The results of this were shared in a workshop on “Rural Knowledge Centres: Harnessing Local Knowledge via Interactive Media” a Policy Makers Workshop in October 2003, followed by a number of consultations – with the goal of seeking ways to scale up the success story beyond Pondicherry to the entire country. Widespread support for the goal of ICT4D, from the UN, multilateral and bilateral agencies and civil society and corporate partners, led to the formation of a National Alliance for Mission 2007, with over 400 members from diverse sectors. The goal of Mission 2007 was to have a village knowledge centre in India’s 600,000 villages by the year 2007, India’s 60<sup>th</sup> year of Independence. It saw the knowledge centres using ICTs to address the problems of poverty, illiteracy, poor health and nutrition, productivity and low-earning livelihoods.

In August 2007, the Mission moved from being a concept to a movement and was renamed the *Grameen Gyan Abhiyan* (GGA) or the Rural Knowledge Movement. The second phase seeks to create synergies among the various models and develop necessary locale specific demand driven content. ICTs as well as traditional methods are used to disseminate content. An important objective is to create synergies among community based, private sector as well as government led efforts to build capacity of *gyan choupal* staff. The new name signifies a holistic approach to empower rural communities and leverage knowledge for prosperity. The GGA builds on the many lessons learned and challenges faced by Mission 2007.

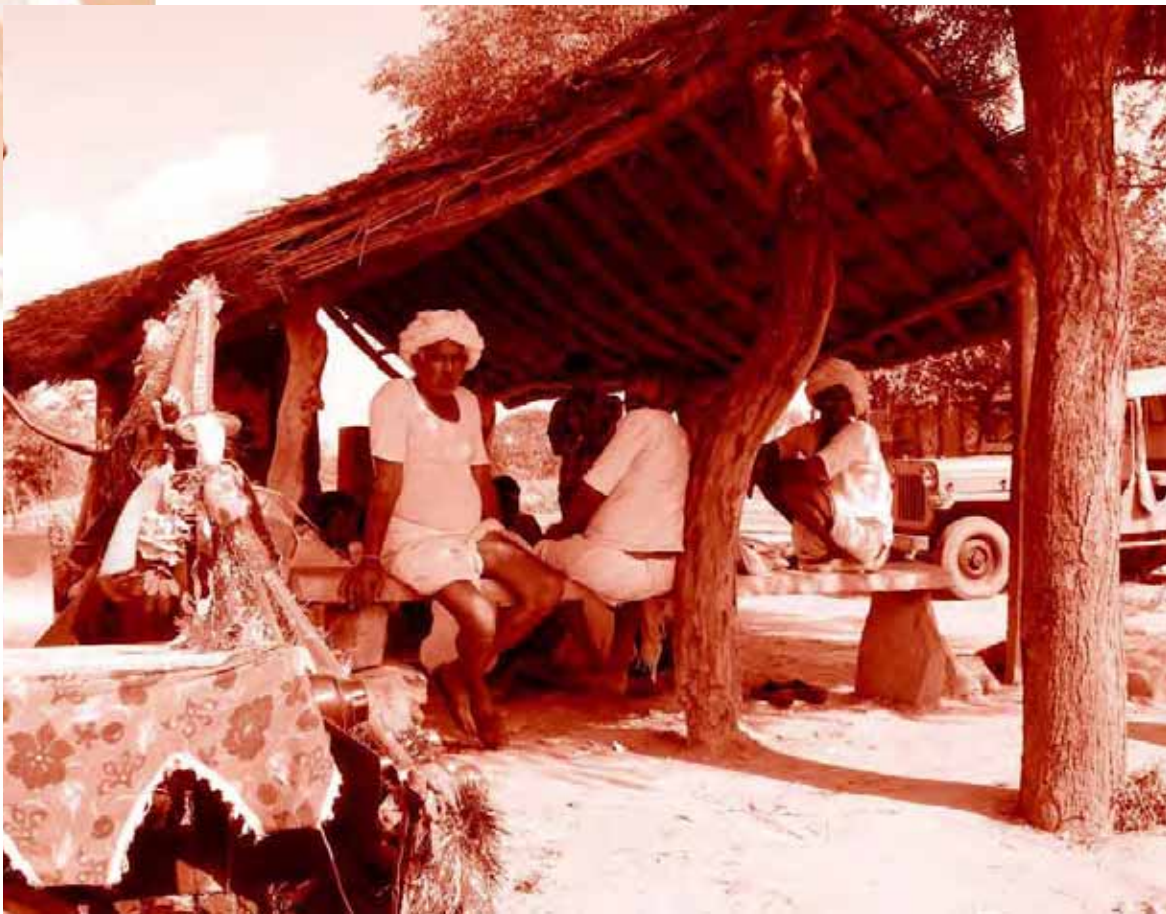
The ultimate goal is to develop a user-controlled, owned and managed network, which will help reach the unreached, include the excluded, in terms of information, knowledge and skill empowerment.

**MS Swaminathan**  
Chairman  
*Grameen Gyan Abhiyan*

As a multi-stake holder partnership, GGA coordinates national and regional programmes in ICT for rural development and regeneration. Its partners are the national and state governments, technology innovators and developers, civil society organisations, academicians, the corporate sector, the public sector and policymakers. The overarching commitment is to close the urban-rural digital gap and achieve social inclusion in access to technology.

Four earlier conventions under the auspices of Mission 2007 deliberated on the nature of challenges involved, the solutions available and the remaining work needed to create, customise and manage solutions. It focused on policy level initiatives required to facilitate the creation of knowledge centres in each village.

The fifth convention of the GGA was also the first meeting of the second phase held over October 3-5, 2008 at the National Academy of Agricultural Sciences, Pusa Complex, New Delhi. The theme of the convention was **“Architecture of Inclusive Growth: Role of Grameen Gyan Abhiyan.”**



During the convention, a wide range of topics, such as policy framework towards GGA, linking GGA with national government schemes such as *Bharat Nirman*, Nation Rural Health Mission (NRHM), National Rural Employment Guarantee Scheme (NREGS), Food Security Missions and the *Sarva Shiksha Abhiyan* (SSA) were shared and discussed.

Additionally, presentations were made on the realising the goals of GGA through national initiatives, digital literacy and distance learning, public-private global partnerships for bridging the urban rural digital divide and public policy support for the rural knowledge revolution. A goal of the GGA convention was to strengthen coalition building and networking among partners and encourage formation of coalitions based on themes, communities and dimensions of geography and demography. Recommendations for inclusion in the manifesto of political parties for the 2009 General Election were culled from the presentations and discussions.

Recognising that telecentres, VKCs, *Gyan Choupals*, etc, where village communities can access usable knowledge as well as other many related resources, are central to its long term goals of GGA, the convention was preceded by a two-day workshop on October 1 and 2, to deliberate on capacity building of staff employed in telecentres, VKCs, *Gyan Choupals*. Several operators of such centres from across India shared insights with researchers and funding agencies. The objective was to deliberate on the contents of the proposed training module for telecentre operators and managers. The Indian Telecentre Academy, JTTS, MSSRF plan to announce several capacity building modules for *Gyan Choupal* staff in the coming months. As part of the GGA convention, partners featured their work in a Technology Partners' Pavilion.

This report gives an overview of the GGA convention, the telecentre workshop discussion and the technology partners' pavilion. It highlights comments and perceptions of the participating experts and resource persons.









## The Many Synergies of GGA

In line with its holistic approach to inclusiveness, GGA has a pro-poor, pro-woman, pro-nature and pro-employment approach towards technology development and dissemination.

Concerted and diverse action is taking place on many fronts and by many partners to move towards ICTs for rural development. Phase II of the GGA, which will be coterminous with 11th Five Year Plan (2007-2012), aims to take the benefits of ICTs to every home in rural India, where over 60 per cent of Indians live. The development of knowledge networks is planned at three levels:

**Block level:** Village Resource Centres with satellite connectivity (with the assistance of ISRO technology) and tele-conferencing facilities to provide e-health, e-literacy, e-commerce, and other demand driven and dynamic services will be established.

**Village Level:** *Gyan Choupals* or Village Knowledge Centres, info kiosks, and others operated by any name either by community based organisations, self-help groups (SHGs) or local entrepreneurs, in a public-private partnership mode, will be established<sup>1</sup>.

**Last-mile:** The last mile and last person connectivity will be achieved through internet-FM radio or internet-cell phone synergy and Public Address Systems.

Other initiatives—that were represented at the GGA convention over the years as well as in 2008—have contributed to the expansion of taking ICTs to rural India. In the government sector:

In 2005, the government set up the National Knowledge Commission to transform India into a knowledge power. In the same year, Finance Minister P. Chidambaram announced Rs 100 crores<sup>2</sup> for Mission 2007, in the Rural Infrastructure Development Fund (RIDF) to be operated under NABARD. Alongside with Mission 2007, the central government and states began to expand their e-governance programmes.

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<sup>1</sup>All these different types of user interface facilities, though not always identical in functionality or other details, have been treated synonymously as GGA infrastructure for the purposes of this document. Unless otherwise stated, use of specific nomenclature, is incidental.

<sup>2</sup>Crores and lakhs are commonly used in India to denote numbers. 1 crore= 10,000,000 or 10 million, 1 lakh= 100,000 or 0.1million

The Ministry of Panchayati Raj is helping to empower the 2.37 lakh Panchayati Raj institutions (PRIs) with digital technology.

The Department of Information Technology, government of India announced a scheme to set up 1.13 lakh Common Services Centres (CSCs) in every block with a five-year hand holding support.

This scheme is about rolling out IT Kiosks and building 100,000 rural businesses, linking rural India to a basket of information, goods and services through end-to-end demonstrable models. Some 25,000 CSCs are functioning in over ten states.

The Indian Space Research Organisation (ISRO) has set up more than 480 Village Resource Centres (VRCs). It has provided land use maps and information such as ground water location through satellite imagery and remote sensing techniques. ISRO is also in the process of expanding this work to all the blocks of India (approximately 7000 VRCs).

Civil Society Organisations (CSOs) have established several thousand *Gyan Choupals* or VKCs which use ICTs to deliver and share information on livelihoods, agriculture, health, emergency warnings, and governance and other services. During 2005-2006 NABARD announced Rs 100 crores to set up VKCs under the government of India's Rural Infrastructure Development Fund.

The Maharashtra government is providing door-to-door online services - from the government office to the citizens - under their e-governance programme. Kerala, Madhya Pradesh, Andhra Pradesh and Karnataka have similar programmes. The postal department has also taken several initiatives including electronic money orders.

Several ongoing big-ticket government programmes would also have a synergy with the GGA.

**Bharat Nirman** or a New Deal for Rural India is the flagship six-pronged rural infrastructure connectivity programme. In this, the government has included Knowledge Connectivity as an important component.

The **National Rural Employment Guarantee Scheme** (NREGS), the government's flagship employment programme will provide opportunity for imparting literacy using the computer based joyful learning techniques. Some others are:





**Dr. Stephen J McGurk**  
Regional Director,  
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- **National Rural Health Mission**
- **Rashtriya Krishi Vikas Yojana** (Rs 25,000-crore)
- **National Food Security Mission** (Rs 5000-crore)
- **National Horticulture Mission** (Rs 20,000-crore)
- **Sarva Shiksha Abhiyan**

- **Disaster Management**
- **Rainwater Harvesting and Watershed Management (National Rainfed Area Authority)**
- **Fisheries Development (National Fisheries Development Board)**

**The National Action Plan for Climate Change** - with eight missions - is one of the largest government programmes. Climate change affects farmers and agriculture in a major way and there is a huge potential for ICT collaboration on this.

In the non-government or private sector, for example:

ITC will upscale its renowned *e-Choupal* network for farmers, which is self-sustained and working in 40,000 villages to 50,000 villages and allow it to be used for other social services as well. A farmer can go to an *e-Choupal* to access a wide range of crop-related information, including fertilisers, pests and weather, as also updated news of market prices for produce and an opportunity to sell his own.

A team in IIT-Madras, led by Ashok Jhunjunwala, who pioneered the corDECT technology that combines high speed Internet with telephony for cheap connectivity and has since developed several technology solutions especially customised for Indian rural environment, uses it to bring ICT and other services to rural areas via n-Logue, a company formed by his associates as well as other collaborators.

The MSSRF which has systematically highlighted the knowledge challenge faced by rural India pioneered the concept of info-villages and knowledge centres in Puducherry. It has now expanded its work to Tamilnadu, Maharashtra (Vidarbha), Kerala (Wayanad) and Orissa (Koraput). Its various contributions include several innovative products to address challenge of sustainable development.

ISRO has a unique experience in use of satellite technologies to connect India and especially reach areas where terrestrial wire line or cellular phones cannot reach. ISRO has set up over approximately 500 VRCs.

The Azim Premji Foundation and Tata Consultancy Services have developed software in major Indian languages. Digital networks for farmers established by the National Informatics Centre provide support for eight Indian languages.

In collaborative ventures, The Rural Innovation Fund, a joint initiative by telecentre.org, Microsoft India, IDRC, MSSRF and GGA with approximately \$200,000 in grants so far, provides seed capital to local entrepreneurs working at grassroots level to foster innovative ICT applications for addressing specific rural problems.

India has the largest postal network in the world - with 155,516 post offices - of which almost 90 percent are in the rural areas and 9000 are computerized.

India Post offers the ideal nationwide physical infrastructure for synergies with GGA, especially as it has geared up to offer web-based services. Many of its e-post offices now allow online RTI applications, money transfer and receipt, e-post (email), instant paperless money orders, and other services like rail ticket booking, utility bill payment and tax return filing.

Some 16 states are now using the postal savings bank accounts for wage payment under NREGS and disbursement of old age pensions in Bihar and Jharkhand. More than 12.8 million accounts have been opened in these states. On a pilot basis, micro-credit is also being disbursed by the rural post offices to the identified self-help groups in five districts of Tamil Nadu in collaboration with NABARD.

India Post has also had a very effective tie-up with MCX, one of the four prominent commodity exchanges in India. In four states, covering 413 villages and 47 branch post offices, 3300 farmers have been registered for dissemination of price information, supply of quality, branded farm inputs and expert advice, warehousing and bank lending, weather insurance, tractor and farm implements, marketing of water-purifiers, and rural products such as torches, stoves, etc.

This helps the poor, especially in states such as Uttar Pradesh where 87 per cent of the population are small and marginal farmers. The partners in this venture are Syngenta, Mahyco, PHI seeds (DuPont), DSCL group, Weather Risk, TTSL, NABARD, NBHC, NSEL, Mahindra & Mahindra, Eureka Forbes and Philips.

Farmers say the service has helped save them Rs 50 per packet of seeds and expect additional revenue of Rs 5000.

All stakeholders of the GGA operate from the premise that as the movement grows there will be a perceptible impact on the parameters governing all





Indeed, the 'shining' India is somewhat visible in its bustling cities, but only occasionally in the countryside. It is not enough to have over

seven per cent economic growth; it is equally important that rural India takes part in enabling growth and reaping its benefits. This is 'inclusive growth', or growth that carries with it the part of India that has so far been neglected, bypassed or deliberately kept out.

**Mani Shankar Aiyar**  
*Minister, Panchayati Raj*

aspects of development. The focus is on enabling a paradigm shift from un-empowerment to empowerment in the villages, and a big step in moving towards eradication of hunger and poverty.

## Change Agents: Inclusive growth with GGA

Panchayati Raj Minister, Mani Shankar Aiyar, reminded the convention that as India increased its spending on the rural economy, its rating in the UN global Human Development Index has moved slowly from the 134th up to 128th. Without the Panchayati Raj Institutions (PRIs) - which make India a 100 percent fully functioning democracy - none of the benefits of modern technology and growth would reach the villages.

For the GGA, VKCs, VRCs and CSCs can become:

- Facilitating centres for community-based knowledge management which would translate growth into human development. Ideally, the centres would be staffed by a man-woman team, who would be trained as knowledge managers
- Facilitate the financial inclusion strategy followed by commercial banks and financial institutions such as NABARD, and play a major role in reducing the transaction costs and non-performing asset ratios or rural credit through ICT-supported credit and extension initiatives
- Develop socially sustainable and financially viable models of rural digital empowerment that can provide a market for social responsibility initiatives of corporate India
- Play a major role in promoting Technology Mediated Open and Distance Learning (TechMODE) linked to open universities such as IGNOU, distance learning courses or other e-learning initiatives to allow horizontal



transfer of knowledge and vertical integration for self-learning among village communities.

In other words, these centres can become an effective tool for GGA because they:

- empower rural communities by minimizing intermediaries through direct access,
- enhance government accountability by increasing transparency and its degree of response,
- reduce the cost of governance by promoting efficient and cost effective methods of service delivery,
- create a participative process via transparent, unbiased flow of information,
- enhance the skill set of rural communities through capacity building, and
- facilitate relevant knowledge creation via structured platform of service delivery.

Communities can be motivated to be involved in managing info-kiosks for which they will be reimbursed. However, government involvement is crucial for info-kiosks to play a role in improving citizen's access to government services and in increasing the outreach of state initiated development programmes.



Partnership with local government agencies, such as Panchayats, enables the infokiosk model to integrate essential e-governance services in the bouquet of



“Availability of technology doesn’t pose a significant problem but availability of and creating

good content does. Software, people, demonstration and scalability were constraints to sustainability. Scale comes with government intervention. In the NREGA in Andhra Pradesh and other places integration of services and their delivery are superior due to technological advances.”

**Jairam Ramesh**  
*Minister for Power*

The biggest challenge in the area of content seems to be mobilisation of relevant information—which could well be the cornerstone of ICT architecture of inclusive growth.

Professor Ronnie Coffman, Director, International Programs, College of Agriculture and Life Sciences, Cornell University, shared how ICT initiatives can spread awareness and control of a severe wheat rust disease that could spread to India through West Asia. The disease is currently being monitored by a GIS system using the Ug99 Pathway under the Borlaug Global Rust Initiative, a working partnership of CIMMYT, FAO & ICARDA. Farmers could be informed of this disease and keep an eye out for an occurrence if any—thereby averting a potential disaster.

However, this kind of information needs value addition to be converted and used as location-specific knowledge, and the grassroots knowledge workers would be in the best position to do this.

The major players in the content arena are working to diversify and expand the basket for timeliness and relevance. These include those in the government, private sector and the non-profit. Often the sectors come together to work on programmes.

In the government sector, ISRO, active in the fields of technology and content, has commissioned around 500 VRCs across 22 states and Union territories (UTs). They will assist with natural resources management, healthcare, agriculture development, education, training, skill development for livelihood support and social empowerment. The VRCs are connected to the VKCs through the hub-and-spoke model.

In tele-education, ISRO has over 60 networks, over 19 states and UTs, comprising over 3,100 interactive classrooms, over 27,000 receive-only classrooms as well as a special network for the sight-impaired.

In telemedicine, 450,000 patients are being treated every year at the 300 plus networked hospitals. Over 250 remote rural district and *taluka* hospitals are connected to 40 plus super-specialty hospitals and eight mobile vans.

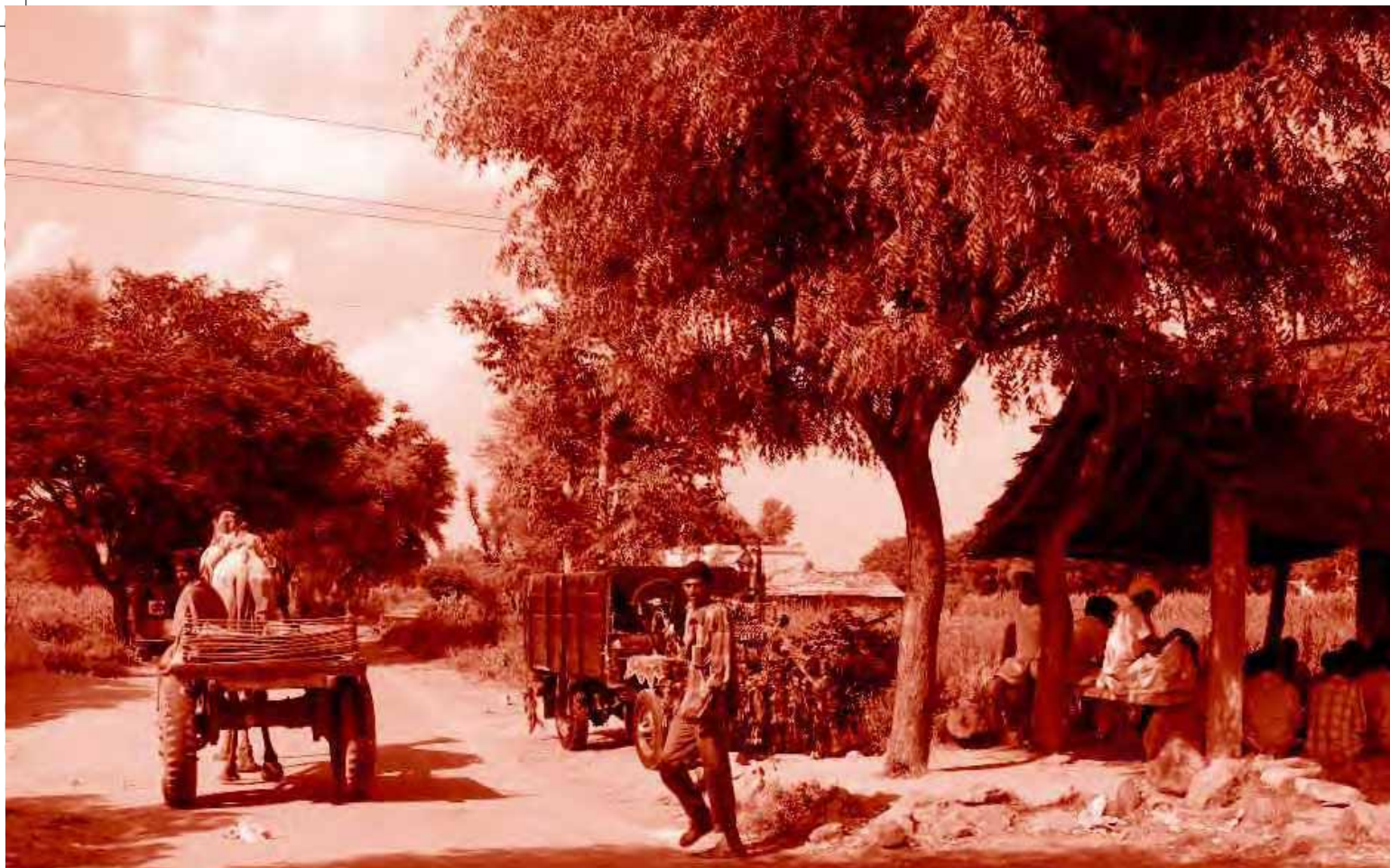
ISRO has also developed various applications in agriculture, fisheries, watershed management, drinking water, wasteland mapping, monitoring irrigation commands, which are being used in the *Bharat Nirman* programme.

ISRO plans to have ISPs in remote areas - Andaman & Nicobar Islands - and



"Synergy - with respect to sharing of content among the community - is essential."

**V S Hegde**  
Director,  
Applications, ISRO



a content server in which spatial information is uploaded. Users can also upload locally relevant content and benefit a large group of people, with search engine and tools in local and regional languages. It would be linked to national, global weather and disaster alert and information networks. The eventual target is to have 4000 VRCs in larger clusters, and eventually state, regional hubs and servers.

In the private sector, in 2007, Microsoft Unlimited Potential Group initiated projects to seek solutions and self-sustainable business models for the next five billion potential customers. UPG's focus is on delivering relevant, accessible and affordable solutions in education, local innovation, and livelihoods. Latif Nathani, General Manager, UPG India, said UPG is spinning out an independent NGO to scale Digital Green, its Stockholm Challenge award-winning innovative agricultural extension programme.

Under Project *Shiksha*, Microsoft is working with partners, educators, governments and NGOs to increase access to quality education through dynamic, learner-focused technologies and resources, customizable education solutions, and a comprehensive set of innovative educational tools. Some 60,000 teachers have been trained and 12 million students reached-at an investment of US \$20 million and another US \$20 million is committed for the next five years.

D Purandeshwari, Minister of State for Education pointed out that an educated population is a pre-requisite for any kind of sustained growth. Thus investments in education will yield the highest dividends. She highlighted

some of the government programmes that have potential to partner and benefit from the goals and initiatives of the GGA.

For example, the government's flagship education programme, SSA, was launched to achieve universal primary education by 2010, and to make free and compulsory education a fundamental right for children between 6 and 14 years. The scheme is being implemented in partnership with state governments and will cover 192 million children in 1.1 million habitats.


The SSA plans to open new schools in those habitats that do not have schools, and to strengthen existing school infrastructure through more class rooms, toilets, drinking water, teachers and school maintenance and improvement grants. Existing teachers need extensive training. And, grants for developing teaching and learning materials are needed, while strengthening the academic support structure at each cluster, block and district level. The SSA seeks to provide quality elementary education including life skills with a special focus on those that get left behind due to discrimination and disadvantage—such as girl's and those with special needs.

The National Programme for Education for Girls at Elementary Level (NPEGEL), an important component of SSA, seeks to provide additional support for girls' education. It provides for development of a "model school" in every cluster with more intense community mobilisation and supervision of girls enrolment in schools. Gender sensitisation of teachers, development of gender-sensitive learning materials, providing of need-based incentives like stationery, work books and uniforms are other interventions. The NPEGEL and alternative learning strategies, such as bridge courses and residential camps for adolescent girls out of school are supported by UNICEF. Two other programmes, the Education Guarantee Scheme (EGS) and the Alternative and Innovative Education Programme (AIEP) have been specially designed to provide access to school-less habitations and out of school children.

The SSA also seeks to provide computer education with programmes developed by different agencies e.g. Azim Premji Foundation, TCS, One Laptop for Every Child, Intel's Teach, Learn and Higher Education programmes and Microsoft's Project Shiksha – which have tried to reinforce and enhance classroom teaching through effective use of technology.

In e-literacy, Kerala's *Akshaya* programme is prominent with three out of 14 districts already e-literate. It is driven by 2000 independently functioning micro-entrepreneurs and zero government subsidies. It has also launched an "entegramam" portal, already in operation in Kannur district, which gets average hits of 300 a day and has 1500 articles. Its news is sourced by media.





Vidya Pratishthan's Institute of Information Technology (VIIT) operates buses with computers and teachers which complement the 75 rural schools in 70 Maharashtra villages. Basic computer skills are imparted to 8000 students - studying in classes 4 to 7.

## Agriculture

Brajendra, Senior Scientist, Directorate of Rice Research (DRR), Hyderabad and India representative of Young Professionals Platform for Agriculture Research for Development (YPARD) shared initiatives that are also in remote areas of the North East. In Mizoram, for instance, the country's first complete e-village is at Saiden and is a collaborative effort of ICAR and NABARD. Through the KVKs, ICT is being used for minimal rainfall prediction, rapid soil health test, and detecting and arresting citrus crop decline.

Rajkumar, Secretary, IT and Science City, Department of Science and Technology, Gujarat, shared that where panchayats are connected with computers the provision of a Soil Health Card had increased the productivity of agriculture threefold.

In July 2008, C-DAC - in partnership with 60 development stakeholders-launched its unique portal called India Development Gateway for rural areas. [www.indg.in](http://www.indg.in) offers 1600 unique topics of information, about 60 per cent translated in six Indian languages, which help, search and ask an expert facility, focusing on five important sectors related to rural livelihoods.

The largest fertilizers producers' cooperative in the world, IFFCO offers a *Kisan Sanchar* (Farmer's News) service, connecting farmers to it through a unique Airtel SIM card. Daily, via a mobile, five SMS messages in local languages are sent-on planting & harvesting seasons and other appropriate issues related to the local environment.

V. Balaji, Head, Knowledge Management and Sharing, ICRISAT believes that emerging issues such as climate change and their impact on farming need more contemporary models of information delivery, as the older and more prevalent agricultural extension system has not been to deliver this.

Two online pilots have been developed by ICRISAT and IFPRI, Wikipedia and the Massachusetts Institute of Technology (MIT), Boston. The National Agriculture Innovation Project, in collaboration with agricultural universities, is a good move in this direction. Creation of a pilot platform on the lines of semantic web containing granulated content in multilingual format was required, which would be accessible to both experts and the ordinary people.

A host of networks allow digital inclusion for rural India-Digital Networks

for Farmers (DNF), District Information System of National Informatics Centre (DISNIC), e-Cooperatives, and Digital SMEs. Poverty Net is the government's digital initiatives and agenda (viz., AGRISNET, AgRIS, AGMARKNET, DACNET, VISTARNET, APHNET, FISHNET, HORTNET, SeedNET, PPIN, COOPNET, FERTNET, ARISNET, AFPINET, ARINET, NDMNET, etc), all steps towards "reaching" agricultural knowledge and technology to the rural poor.

M Moni, Deputy Director General, National Informatics Centre (NIC) suggested that the GGA could be connected to other networks that have similar access. The National Agricultural Information Network connects 48 agricultural universities, 89 ICAR institutions and 300 agricultural colleges, the India Development Portal and the Centre for Science & Environment's Portal on Environment and Sustainability Issues. There is an urgent need for an Agricultural Informatics Policy, he said.

## Health

Tarun Seem, Director, National Rural Health Mission (NRHM), Ministry of Health & Family Welfare pointed out that attuning the NRHM to GGA will lead to greater knowledge of health rights.

Since the launch of the NRHM, institutional delivery of children has gone up to over 60 per cent of total deliveries.

The NRHM aims at an architectural correction in health delivery system via flexible pooling of funds, entrusting primary health care to local self government, and improving range, depth & quality of monitoring and delivery through community health workers.

This is important because central programmes address about 25 per cent of all morbidities even as there is no dedicated health centre in a village. The first doctor is at the primary health centre, which serves 30,000 people, while the first specialist is at the City Health Centre serving 80,000 people.

In the reform process, community ownership is embedded and process monitoring by the community is part of the design. NRHM also seeks to use the village level knowledge and use it in public health. According to Tarun Seem, the GGA-NRHM synergy could have the following goals:

- Make public systems accountable
- Ready to respond to the rights/entitlements
- Focus on complicated cases, MLCs, outbreaks, curative health
- Empowered, trained, allocated & mandated to service them





- Create forums for harnessing local knowledge
- Collate systematic information about community needs
- Provide feedback according to locally developed yardsticks and indicators.

All these can be achieved through Village Health & Sanitation Committees, untied funding, improved skill-numbers mix, community health worker, community monitoring, Village & Facility level Report Card and public dialogues and adverse impact/denial redress avenues.

A lot of awareness and capacity-building material (analogue) has been prepared by the NRHM which could be used by the GGA partners for dissemination. In Gujarat, every PHC has a computer and a data bank.

## Water and sanitation

Raghuvansh Prasad Singh, Minister for Rural Development reminded the participants what Mahatma Gandhi said: Sanitation is more important than independence. We got Independence but forgot about sanitation.

India's target is that every village in India has to be self sufficient in water and sanitation by the year 2014.

Despite grand Integrated Water Supply Schemes, said P. Chidambaram, Finance Minister tail end villages do not get enough supply, leading to internecine water wars. Yet, technology is available to erect cost-effective

stand-alone water purification systems, which can be put up in schools and other community areas. An experiment in Andhra Pradesh has been successful and can be replicated in villages.

For Chidambaram, the GGAs litmus test is to address the information gap, which is the major cause of rural health problems. Education and information about good health and effective sanitation which is useful to the poor is of foremost importance to India's independence.

## Governance

Alok Bhargava, Executive Director, IL&FS, the Programme Management Agency of the CSC scheme said that in Gujarat, the CSCs-apart from the information related to governments departments, boards, corporations on SWAN made available to rural citizens through eGCI-are offering the following G2C services:


- Right of Record
- Birth Certificate
- Death Certificate
- Caste Certificate
- Domicile Certificate
- Income Certificate
- Public Distribution Card (Ration Card)
- Property Tax Collection
- APMC rates
- National Rural Employment Guarantee Scheme

NREGS, the flagship UPA government scheme, gives a legal framework to a citizen's right to employment. There have been questions have been raised on its implementation in several states and its actual impact on reducing the severity of poverty, its main objective. According to Raghuvansh Prasad Singh, NREGS is helping villagers in many ways other than just generating work for lean periods. About 50 per cent of the work done under NREGS is related to water conservation, tank repair and check dam construction, which has raised the ground water level.

NREGS has also helped reduce distress migration, broken the low wage ceiling in states,

"Empowerment + Entitlement = Enrichment."

**Mani Shankar Aiyar**  
Minister for Panchayati Raj



e-governance and MIS have helped local vigilance committees to check corruption. Even during disasters, such as the recent floods in Bihar, villages demanded wage work and not just relief. The VKCs can get information about NREGS to everybody, said Singh.

There is thus a critical overlap between NREGs and the goals of the GGA.

## Panchayati Raj Institutions

The 73rd amendment of the Constitution, which created Panchayati Raj institutions (PRIs), made India a fully functioning democracy, with power percolating down to the grassroots, the lowest possible level of government.

According to Mani Shankar Aiyar, Minister for Panchayati Raj, while this helped the middle class in urban areas and some parts of rural areas, farmers, scheduled castes, and tribals and women were largely left out of the process. This lacuna can only be addressed by the PRIs. Without the PRIs, which make India a 100 per cent fully functioning democracy, none of the benefits of modern technology and growth will reach the villages, he said.

According to Finance Minister P. Chidambaram, there has not been proper monitoring of vast sums invested in government programmes over the years and a look at outcome versus outlays was essential. But the delivery mechanisms were weak, especially in rural areas. The answer to this is stronger Panchayati Raj Institutions, civil societies and private-public partnerships. “We must address the issues of delivery and instruments that can deliver,” he said.

Ravi Kumarmarri, consultant TCS, showed how its innovative application to monitor the programme was working in Andhra Pradesh, which was chosen as the pilot state for checking out the ICT solution in April 2006.

The common complaints are: Inflated schemes and muster, fraudulent requisition of funds and wage payment, and bogus registration. TCS’s solution enables compilation of data bank up to household level including number of days of work done, wage earned for the work based on the quantity of work done, and the amount deposited in the respective bank account. The resultant transparency in the system facilitates social audit at the village, *mandal* and state level and enables reduced corruption and exploitation.

Further progress in this area could involve online-offline tie ups. For instance, all families in a village can be given an Entitlements Passbook, which provides data on the various government schemes available to rural families and on methods of accessing them. The data should be disaggregated on the basis of

gender, caste, religion, etc. Also, the PRI ministry should work towards creating a web presence for each Panchayat.

## Connectivity

To ensure scalability and sustainability of the knowledge centres, connectivity must be assured. While a great deal has been done in connecting the rural areas, more needs to be done.

Telephone connectivity is critical since it has been the primary means of voice and data connectivity. With relatively sparse fixed line network, the predominant means of connectivity in India is wireless. Mobile phone services are now available from both government as well as private operators across most parts of urban India and are increasingly popular. Satellite connectivity is however, crucial for connecting remote communities. Many data applications that require higher bandwidths, such as telemedicine, where for example ISRO, has carried out impressive work, are also available on the latter's satellite-based VRCs described above.

The ICT revolution has especially impacted urban India, with over 30 mobile phones per hundred Indians. The mobile phone market is growing exponentially, fuelled by cheap tariffs and ease of getting connections. At 300 million, the subscriber base is growing by over 10 million every month. Basic broadband accounts are available for a rental of Rs 200 a month, while for a little more, one can make long-distance calls at Re. 1 a minute. Costs of handsets have dropped, bringing a pre-owned phone and a no-frills connection within the reach of even the lowest income quintile.

More than half of India's villages have yet to enjoy the benefits of mobile phones which have transformed the lives of urban rich and poor alike. India's mobile operators now see that rural areas represent the next opportunity for growth, as urban populations are fast getting connected to the mobile network. With Universal Service Obligation Fund (USOF) funding mobile infrastructure like towers in difficult terrains found frequently in rural areas, it is expected that almost all villages in India can have mobile connectivity by 2012.

This will make it easier to deliver a wide range



"Villagers are repositories (yet sometimes prisoners) of traditional knowledge. There is reluctance to experiment with new knowledge often with good reason – for fear of loss of what they have as they have no back up or insurance. Training, imparting new skills and instilling confidence, especially among agricultural workers and farmers is essential. Compared to global workers, the skills of Indian workers are low. Skill up gradation to world-class levels is essential. Training is the most vital part of the digital empowerment programme in rural India."

**P Chidambaram**  
Finance Minister



of information, governance, health and entertainment services using mobile technologies. 3G and broadband wireless access services (BWA) will allow rapid deployment of broadband wireless services. These services will then be an important weapon in the campaign to deliver not just voice telephony but the other benefits of

wireless technologies. These will provide the bandwidths necessary for delivering services for diverse communities who will need support for multiple languages, graphic and multimedia support to assist the less literate or handicapped and the education, health and entertainment content currently in short supply in rural areas.

Personal computers are cheaper too. However, while they will assist shared access, mobile phone will be critical for the last mile.

## Capacity-Building

Capacity building in every sphere of the GGA is a significant challenge. Over the years, various initiatives have begun and there is a body of learning that was shared at the convention.

The UPA government made skill development one of the main planks of the Eleventh Five Year Plan (2007-2012) and set up the National Skill Development Corporation (NSDC). Some 320 million workers are required, and Rs 10,000-15,000 crore would be spent during the plan period on their training.

As of now, the KVKs are functioning simply as information centres. The supply side of scientific knowledge is essential and the GGA needs to move in this direction. At least 250,000 trained persons—telecentre managers and operators who can provide needed information in local languages—will be needed to operate the Common Service Centres, *e-Choupals*, VRCs and the *Gyan Choupals*.

A study carried out by MIT shows that to be effective, the optimum proportion of expenditure in the case of taking ICT to rural India should be 10% on hardware, 20% on software and 70% on human resource development.

The Jamsetji Tata National Virtual Academy (NVA) was launched in 2004 to bring scientific knowledge to the villages through ICT tools. NVA fellows are men and women - socially committed grassroots knowledge workers - chosen through a peer review process in which their role as ushering knowledge

revolution among the underprivileged in the community is taken into account. There are 985 Fellows (414 are women) who have been inducted in recent years.

The Unlimited Potential (UP) initiative of Microsoft, the Indira Gandhi National Open University (IGNOU), the state open universities, telecentre.org, TCS, Azim Premji Foundation and others are all playing significant roles in capacity building of rural people in the management of VKCs and VRCs. IGNOU is developing a curriculum to train telecentre staff of VKCs and VRCs.

The UP has collaborated with 14 NGOs, including MSSRF, for *Project Jyoti*, under which Community Technology Literacy Centres (CTLCs), involving an investment of Rs 37.5 crore over 20 states and Union territories (UTs), impart IT training based on the Unlimited Potential curriculum.

Some 900 CTLCs have trained over 120,000 persons, helping them to get work and set up rural IT kiosks-encouraging 'Chikankari' embroidery weavers in Uttar Pradesh to use CAD software for better designs and market price information for farmers. Through DPE programmes, such as Imagine Cup and Microsoft Innovation Centres, UP also helps to build university talent and local software economies.

For CSCs, United Potential has the Digital Literacy Program and Typing Tutor, as well as Resource Toolkit for Government Shared access, business and marketing aids for telecentre operator.


In 2008, a pilot Digital Literacy programme was launched in 300 CSCs in Haryana. More than 1,500 students enrolled in the first month and over 150 students received certificates. The programme is available in Hindi and more languages are being added. The Digital Literacy Assessment portal is ready for launch and the plan is to cover all CSCs in the next couple of years, as well as kiosks with partners such as SREI, Reliance, 3i InfoTech, NICT and AISECT.

The Gandhinagar-based Dhirubhai Ambani Institute of Information and Communication Technology, a research-led academic institute started in 2001, offers degree and master programmes in ICT, including a two-year masters in ICT for agriculture and rural development.

According to Bhargava (IL&FS), timely rollout of CSCs would require ongoing capacity building in the following areas:

- Channel Management
- Marketing
- Government Interactions



- 
- Service Partnerships
  - Enabling social empowerment through the CSCs

The critical issue, according to S Siddharth, Director, Drishtee Development and Communications, is quality of the entrepreneur. Selection, training, induction and handholding were the factors that made a quality entrepreneur. The following values add to the sustainability factor:

- Grassroots ownership
- Encompassing strategy
- Process
- Passion
- Structured focus on technology, relevant product and services

## Innovation

Innovation is a key ingredient in content creation. Content is of no use unless it is innovative, accessible and usable. The Rural Innovation Fund, established by telecentre.org, IDRC Canada, SDC, MSSRF and Microsoft Global can play a vital role in promoting a spirit of entrepreneurship and innovation in the development of technologies for rural areas.

To build on existing content, the government can adopt a two-point strategy - provide e-access to all content that exists and create an eco-system for content that needs to be created. In this context, the right intellectual property rights (IPR) regime becomes important.

According to the Knowledge Commission, it has become imperative for India to scale up efforts to build a world class IPR infrastructure and ensure that IPR is used in the best national interest for more extensive innovative research, technology transfer, wealth creation and overall benefit of society. It is imperative to create an ecosystem for IP which will work towards cheaper IPR and enable IPR creators take calculated risks. At present, there are many kinds of legislation such as the Biodiversity Act-that have provisions like Prior Informed Consent.

## Role of Government and Regulators in ICT Rollout

Regulation and policy play a critical role in determining if and when ICTs become available to all parts of civil society - especially poor and rural communities. CSOs active in the rural areas need to lobby and advocate for regulation that enables more connectivity in underprivileged area. However, few CSOs have adequate levels of expertise and experience in interacting with regulators. Yet in some areas they have had notable success. For

example, the opening up of wi-fi based services recently is largely the result of CSO's relentless advocacy.

Since a mobile is often the first technology entry point for a rural unlettered Indian, it is of the highest importance. According to Nielsen Mobile Usage Survey, mobile internet usage in India is still only 1.8 per cent compared to 15.6 per cent in the US and 6.8 per cent in China. However, in India while fixed line subscription has gone down and internet subscription is still negligible, mobile subscription has leapfrogged and internet use has been shooting up.

In the light of this, Parag Kar (Qualcomm) advocated a mobile interface for CSCs. Today's mobile device, especially with the launch of affordable 3G models, provides functionality and computing power, close to that of a computer of moderate capacity, he said.

A mobile interface will then increase the reach and use of the CSCs, enabling a sustainable business model, will reduce the time consumed in travelling to these centres, especially for a villager who may face any number of other pressures, such as losing a wage, sometimes even access in rural areas afflicted with divisions or conflicts, if (s) he is the wrong gender, community, caste, religion etc. Mobiles offer a degree of autonomy unmatched by other technologies.

Mobile applications are cheaper, accessible, quick, convenient and are already being used both by the private and public sector.


Mobile can improve and enable new product and service offerings, ensure unbiased access and prevent monopoly while allowing personalised access of confidential information.

Sound proactive policy and regulation can do much to facilitate mobile growth by promoting access to more spectrum, supporting infrastructure through subsidies from the Universal Service Obligation Fund, reducing levies and taxes.

Effective regulation can help achieve scale and is the key to be able to ride the big waves in mobile application or the retail wave, said Latif Nathani from Unlimited Potential Group, India of Microsoft Corporation.

Mahesh Uppal of Com First suggested that scale and economies will come only if attention is paid to content as well as connectivity. If government funded content is freely available to those interested in delivering it, then entertainment, government information, educational services, health etc can help fill the wireline or wireless 'pipes' that telecom operators are creating. This means that there will be incentive for users to subscribe





to these services. Much like free email services e.g. Hotmail, Yahoo! that fuelled internet growth worldwide, such 'free' content will help speed up economies for those who risk their investments in rural telecom infrastructure where markets may otherwise take longer to mature.

GGA then must work to ensure that:

- All publicly funded educational content is in the public domain
- Publicly funded entertainment is in public domain

"Mobile governance is required to be extended for inclusive growth," said Rameesh Kailasam, Director, e-Governance Centre of Excellence, Oracle India, which has devised several m-governance applications in monitoring of NRHM, capturing reservoir storages and release of water, bill collection and public works (garbage collection).

A major challenge in connectivity is of assuring regular power supply and exploring alternative sources of energy. Government policy and support are essential to ensuring that there are the right incentives to developing alternatives to electricity and oil.

## Inclusive Growth

The notion of inclusive growth has captured the imagination of development planners and pioneers over the last few decades. There has been a great deal of discussion and debate, globally and in India on the various aspects of inclusive growth.

In a stirring presentation to the convention Raghuvansh Prasad, Minister for Rural Development reminded the audience that: *Roti, kapda, makan, davai, padhai* (food, clothing, housing, medicine and education) are central to ending poverty, and removing unemployment is the only way to reduce poverty. This explains the huge success of the NREGA, he said. So much so, it has now been linked to the *Janashree Bima Yojana*, the insurance scheme for the poor.

Inclusive growth will not come only through internet. Rather ICTs have to be used innovatively and perceptively to dovetail with the basic needs of the population as well as compensate for the social infrastructure that is still absent in the rural areas, more than sixty years after independence. GGA's target, therefore, should be to widen the villagers' access to the large government programmes in education, health, water and sanitation and e-

governance solutions that monitor the progress of such schemes as they are extremely important.

V S Hegde of ISRO said, “Even with new generation mobile phones and relevant content, is the ICT route enough to take development to the last mile? Or should we call it first mile? Are online activities adequate unless matched by offline ones?”

There have been compelling and bold experiments of various kinds of knowledge centres and community participation models. From these, lessons have emerged, and important lessons learned. Some have challenged many hypotheses and received wisdom. Of these:

S. Bhaskar, commissioner and IT secretary, government of Assam, narrated how, while there was a huge response and number of applications for the Arunodoy CSC model, the VLEs was unwilling to set up their centres in government premises and instead preferred market points.

An NGO and SHG representative in Andhra found no bank ready to fund its mobile-loan project for women goat-farmers, even while the mobile service operator had no problem.

Qualcomm, a mobile technology company, has worked with Astute, Tata Teleservices and MSSRF, has created a wireless service enabling fishermen at sea to find weather conditions and locate fish shoals and wave heights. Yet, thousands of farmers grapple still grappling with crop failures often simply due to lack of the right pertinent information about similar weather conditions, cropping and price advice at the right time.

It is not enough then to connect a remote village with a wireless computer, it is also important that the village get what they need at the time they need it.


At the same time, many innovative experiments, including those in the corporate social responsibility area, are going on apace, which are not necessarily online but off line too, demonstrating that every section of the society can well be integrated into the GGA.

In Trichy a community policing pilot was initiated under J.K. Tripathy, commissioner of Police, South Chennai. This was to address issues of fundamentalism, organised crime, and lack of support for police. A Community Based Intelligence System consisting of Dedicated Beat



“Inclusive growth is just a fancy phrase to say that villages should have all basic services. Unless Gandhi, *Gaon* (village) and *Garibi* (poverty) are kept on the agenda, India will not progress.”

**Raghuvansh Prasad**  
*Minister for Rural Development*



Officers who interacted regularly with community liaison groups was put in place; Wide Area Network (WAN) received complaints from women through emails and help lines for women; a Slum Adoption Programme and a Police Boys Club (for Juvenile Delinquents). Since the project started, crime rate has significantly dropped. “The Police are the Public and the Public are the Police,” said Tripathy highlighting the community link of the average policeman. The focus in the last seven years, he said, has moved from dealing with crime to preventing it. The police helpline approach can be replicated in disaster management, if a user-centred website is created with a single national phone number for reporting disasters, and tying in administrations from Panchayat upwards.

# Some Takeaways

The deliberations at the meeting demonstrate time and again that GGA can democratise knowledge in two important ways:

By allowing more people to contribute through community content, in their languages

By allowing communities to access more sources than they could access before.

## Need for New Focus


There is need for a shift in the current approach towards increasing rural prosperity, not just reducing poverty.

Entrepreneurship is a critical resource for meeting GGA goals. Subsidies are not always necessary. In several cases, entrepreneurs are willing to invest in creation of infrastructure including telecentres/kiosks/CSCs. Ownership of local communities is critical for long term success of the Village Knowledge Centres.

## Content

There is need to *let a hundred flowers bloom* and efforts should be made to expand content creation by allowing government, non-government, community as well as for-profit agencies to fulfil the huge demand for





affordable quality content. It could help to build a consensus over use of common tools for content creation to bring in uniformity

## Capacity Building

The importance of capacity building and the many possibilities that exist on the ground has been demonstrated by the work of the Jamsetji Tata National Virtual Academy (NVA) which is creating a team of competent rural development professionals. There is also enough experience and content across India to initiate telecentre courses through existing institutions such as IGNOU and others. However, there is a long way to go, in view of the scale and goals of GGA.

Civil society players who are part of the GGA have significant experience as providers of both knowledge and services. They can play an important role in the government of India's CSC programme and help deliver value to end users.

Communities are beginning to see tangible value in knowledge centres and related initiatives. Therefore, CSCs can learn from the experience of the Knowledge Centre movement.

GGA should promote computer literacy among PRIs, telecentre managers, ICT workers and communities. A mechanism such as UNDP's Solution Exchange could be useful for promoting effective knowledge exchange.

## GGA Secretariat and processes

The GGA is at a critical juncture. A strong GGA secretariat can ensure that the efforts and strengths of its participants and supporters can be leveraged fully. It can provide valuable and timely support through coordination, information sharing, and access to specialist expertise when and where it is required. Its constituents are located far and wide, speak multiple languages, and have diverse educational, economic and cultural profiles. The task of supporting them and their work is complex. Additional resources for GGA secretariat for suitably qualified staff, more powerful technology and other infrastructure can make it more effective and broad-based. Adequate capacity at GGA can be significant and valuable shared resource. It can conserve and augment precious local resources besides preventing wasteful duplication.

# Policy Recommendations

As mentioned earlier the GGA has important synergies with many of the most ambitious programmes launched by the government in recent years. GGA's infrastructure and human resources will deliver value of many programmes which require village level interfaces. The village telecentre could be used to mobilise end users, train users for specific tasks, share dynamic information, assist in delivery of key inputs for agricultural activities, etc.

Some of the recommendations for the consideration of specific ministries, government agencies carrying out programmes with a direct bearing on the GGA are listed below:

## Ministry of Communications and Information Technology

As the central agency presiding over policy making for telecommunications infrastructure including, connectivity and internet access as well as flagship e-governance programme is central to almost all aspects of GGA. The MOCIT is urged to:

Facilitate creation or augmentation of rural ICT infrastructure by public and private players including civil society players;

Include a mobile interface for the government's e-governance programme so as to extend the reach of CSCs to the last person;

Augment the current focus on telephone penetration to include broadband connectivity;


Facilitate access to spectrum and its efficient use by adopting transparent, technology neutral approaches to its allocation and pricing so as to enable the huge potential of wireless technologies in GGA;

Integrate the Common Community Service Centre Model with India Post.

## Department of Administrative Reforms and Public Grievances

The DARPG has an important mandate to improve government structures and processes and has been playing an important role in coordinating





e-governance efforts by complementing the technology based efforts with the equally important governance perspective. GGA stakeholders share a large part of its agenda and bring a wealth of experience in leveraging technology for governance and social justice. Creating a framework and process to support GGA initiatives as a part of its stated mission to promote “networking with various agencies” and of its infrastructure in creating and supporting “citizen friendly initiatives” could be an important step.

## Ministry of Human Resource Development

**Sarva Shiksha Abhiyan**, the Government of India’s ambitious mission to facilitate universal access to education needs will require village level access to quality teaching content as well as learning technologies to meet its goals in the most cost effective manner in the least time. The GGA infrastructure would be a critical element in identifying, accessing, sharing and disseminating educational materials at all levels-for children as well as adults. The proposed high speed access to Internet to be available in CSCs/VKC/VRC etc can be a critical ingredient of these efforts if advance plans are made to exploit its strengths and augment them to enhance their usefulness to village populations.

MHRD is urged to augment the resources of Indira Gandhi National Open University and other institutions to help build capacity of persons creating or providing services at Community Service Centres. A similar initiative for building capacity of PRIs should be considered.

## Ministry of Agriculture

Given their focus on rural areas and farmers, the agenda of the Ministry of Agriculture (MOA) and GGA, has a much higher level of overlap. Dozens of MOA programmes such as those related to crops, seeds, soils, animal husbandry, fisheries, agricultural technology and statistics can receive a boost if there is resource sharing between it and the GGA.

**Rashtriya Krishi Vikas Yojana**, (RKVY) the flagship programme of the Ministry of Agriculture and Rural Development, seeks to correct the current decline in investments and growth in agriculture, and the resulting high level of distress amongst rural people. The presence on the ground of GGA infrastructure’s interface with end users can be exploited for RKVY’s interventions.

**National Food Security Mission** is intended to enhance production and productivity of wheat, rice and pulses on a sustainable basis to deliver food security for India’s population. GGA infrastructure could be an important

interface for information exchange, capacity building as well as physical inputs required for the task at farmer level.

**National Horticulture Mission**, the central government initiative to promote holistic growth of the horticulture sector by evolving strategies pertinent to different regions of the country. It is recommended that the GGA infrastructure be used and augmented as necessary to enhance effectiveness of this scheme.

## Ministry of Rural Development

**Bharat Nirman** programme seeks to create and augment physical and electronic connectivity (e.g. roads, ports, telecommunications etc). Future efforts must explicitly link the newly created infrastructure to GGA facilities so as to maximise usefulness of both.

**National Rural Employment Guarantee Scheme (NREGS)**, the government's flagship programme for livelihood support to the rural unemployed can use the GGA facilities for delivery of benefits, monitoring and evaluation of its effectiveness and much more. Adequate steps must be taken by the Ministry of Rural Development to support creation of new GGA infrastructure or to augment existing facilities to reduce cost and time for delivery of its many programmes.





## Ministry of Health & Family Welfare

**The National Rural Health Mission** is intended to meet the huge gap in access to healthcare across India. To the extent possible, Ministry of Health and Family Welfare can build on GGA village level physical infrastructure including the skills of its human resources, for health care as well as preventive medicine. This can include training staff, work interviews, reporting medical significant information (e.g. epidemics), first aid, etc

## Ministry of Information and Broadcasting

It is recommended that Ministry of Information and Broadcasting facilitate access to all publicly funded content including education, agriculture and entertainment. This will help to reduce the current content shortage and assist creators of new ICT infrastructure attain economies of scale.

## National Disaster Management Authority

National Disaster Management Authority, according to its Mission Statement, is “developing a holistic, pro-active, multi-disaster and technology-driven strategy for disaster management through collective efforts of all Government Agencies and Non-Governmental Organisations”. The role of the GGA in mobilising the diverse inputs to it and to ensure that the impact of its responses to any future disasters can be critical, if efforts are made in good time to enable the two sets of initiatives to work in tandem.

## National Action Plan for Climate Change

Since climate change affects farmers and fishing communities, the resources mobilized by the GGA, especially ICTs for access to local data and for delivery of relevant and customised inputs, can enable effective response, so as to maximise benefits as well as mitigate likely risk. While NAPCC’s main themes (e.g. sustainable agriculture, water conservation “A Green India” etc,) are related to GGA’s core agenda, the programme’s focus on a strategic knowledge platform for climate change is integrally linked to the work of the GGA. It is therefore important that GGA resources are exploited to generate maximum efficiencies as well as impact.

# Agenda

Friday, October 3

10.00 - 11.20 hrs	<b>Architecture of Inclusive Growth: Role of <i>Grameen Gyan Abhiyan</i></b>
Welcome and Purpose of the Convention	<b>Dr Basheerhamad Shadrach, Senior Programme Officer, International Development Research Centre (telecentre.org), South Asian Regional Office)</b>
Brief Address	<b>Mr Francois Binder, Country Director, Swiss Agency for Development and Cooperation, Embassy of Switzerland</b> <b>Mr Pankaj Baliga, Vice President &amp; Head Global CSR, Tata Consultancy Services</b> <b>Dr V S Hegde, Director (Applns.), Indian Space Research Organisation, Bengaluru</b> <b>Dr Stephen J McGurk, Regional Director For South Asia And China, International Development Research Centre</b> <b>Mr Latif Nathani, General Manager, Unlimited Potential Group India</b>
Inaugural Address	<b>Prof M S Swaminathan, Member of Parliament (Rajya Sabha) and Chairperson, <i>Grameen Gyan Abhiyan</i></b>
11.20 - 11.40 hrs	<b>Tea</b>
11.40 - 13.30 hrs	<b>Architecture of Inclusive Growth</b>
Chair	<b>Prof M S Swaminathan, Member of Parliament (Rajya Sabha) and Chairperson, <i>Grameen Gyan Abhiyan</i></b>
The role of telecentre.org Academy in the Architecture of Inclusive Growth	<b>Mr Richard Fuchs, Regional Director of Southeast and East Asia, International Development Research Centre (IDRC)</b>
Presidential Address & Launch of the Telecentre Academy: India - Jamsetji Tata Training School (JTS)	<b>Shri Jairam Ramesh, Hon'ble Minister of State for Power, Government of India</b>
Speakers	<b>Dr Vikas Goswami, Lead-CSR, Microsoft India</b> <b>Dr Rameesh Kailasam, Director, India e-Governance Centre of Excellence, Oracle India Private Limited</b> <b>Dr Dhiwakar, Head, Regional Remote Sensing Service Centre (RRSSC), ISRO</b> <b>Dr Brajendra, Senior Scientist, Directorate of Rice Research, YPARD representative in India</b>



	<p><b>Prof. Ronnie Coffman, Director, International Programs, College of Agriculture and Life Sciences, Cornell University</b></p> <p><b>Mr S. Siddharth, Director, Drishtee Development And Communication Ltd.</b></p>
13.30 - 14.15 hrs	<b>Lunch</b>
14.15 - 15.45 hrs	<b>Policy Framework towards GGA: Architecture of Inclusive Growth</b>
Chair	<b>Dr D. P. S. Seth, Independent Consultant, Former Member TRAI</b>
Speakers	<p><b>Mr Parag Kar, Director, GA (India &amp; SAARC), Qualcomm India PVT LTD</b></p> <p><b>Dr Mahesh Uppal, Director, Com First (India) Pvt. Ltd</b></p> <p><b>Ms Ankhi Das, Director - Public Policy, Legal &amp; Corporate Affairs, Microsoft Corporation India Pvt. Ltd.</b></p> <p><b>Shri Rajkumar, Secretary, I.T. and Science City, Department of Science and Technology, Gujarat</b></p>
15.45 - 16.15 hrs	<b>Tea</b>
16.15 - 17.30 hrs	<b>Linking GGA with National Missions and Initiatives</b>
Chair	<b>Prof M S Swaminathan, Member of Parliament (Rajya Sabha) and Chairperson, Grameen Gyan Abhiyan</b>
Speakers	<p><b>Dr Tarun Seem, Director (National Rural Health Mission), Ministry of Health &amp; Family Welfare, Govt of India</b></p> <p><b>Mr Ravi Kumarmarri, Consultant, TCS-NREGA Solution: ICT for complete Transparency and Accountability</b></p>
Keynote Address	<b>Dr Raghuvansh Prasad Singh, Hon'ble Union Minister of Rural Development, Government of India</b>
Special Remarks	<b>Smt D. Purandareswari, Minister of State for Higher Education, Ministry of Human Resource Development, Government of India</b>
17.30 - 18.00 hrs	<b>Inauguration of Technology Partners Pavilion- Catalysing Innovations and Initiatives-Smt. D. Purandareswari, Minister of State for Higher Education, Ministry of Human Resource Development, Government of India (Interaction with each innovators at their stall-Rural Innovation Fund Application (5), Media Lab Asia, Ek Gaon, TCS, Nicheken, Qualcomm, MCX, INTEL and IFFCO)</b>

## Saturday, October 4

10.00 - 11.30 hrs

**Village Knowledge Centres/Village Resource Centres/Telecentre Networks for Strengthening the Capacity of Telecentre Managers**

Chair

**Prof M S Swaminathan, Member of Parliament (Rajya Sabha) and Chairperson, Grameen Gyan Abhiyan**

Speakers

**Dr Basheerhamad Shadrach, International Development Research Centre (telecentre.org), South Asian Regional Office**

Outcome of the Telecentre Managers' Meeting (October 1-2, 2008)

**Ms N. Ganga Vidya, Coordinator, Grameen Gyan Abhiyan Secretariat**

Outcome of the discussion for strengthening the coalition among the partners, formation of mini coalitions as subsets based on the themes, communities and other dimensions of geography and demography

11.30 - 12.00 hrs

**Tea**

12.00 - 13.30 hrs

**Realising the goals of GGA through National Initiatives**

Chair

**Prof M S Swaminathan, Member of Parliament (Rajya Sabha) and Chairperson, Grameen Gyan Abhiyan**

Speakers

**Dr V S Hegde, Director (Applns.), Indian Space Research Organisation, Bengaluru**

**Mr M. Moni, Deputy Director General National Informatics Centre, Government of India-Digital Networks for Farmers (DNF)-An Initiative of DAC and NIC, Government of India**

**Dr S.A Patil, Director, Indian Agricultural Research Institute (IARI)**

**Dr Ashis Sanyal, Senior Director, E-Governance Programme Management Unit (EGPMU), Department of Information Technology**

**Mr A Ramanathan, CGM, NABARD**

**Mr Alok Bhargava, Executive Director, IL&FS-CSC programme**

**Mr V.S. Bhaskar, IAS, Commissioner and Secretary IT, Government of Assam**

**Dr Kshatrapati Shivaji, Secretary, Information Technology, Maharashtra**

**Ms Radhika Doraiswamy, Secretary (Posts) & Chairman P.S. Board, Department of Post**



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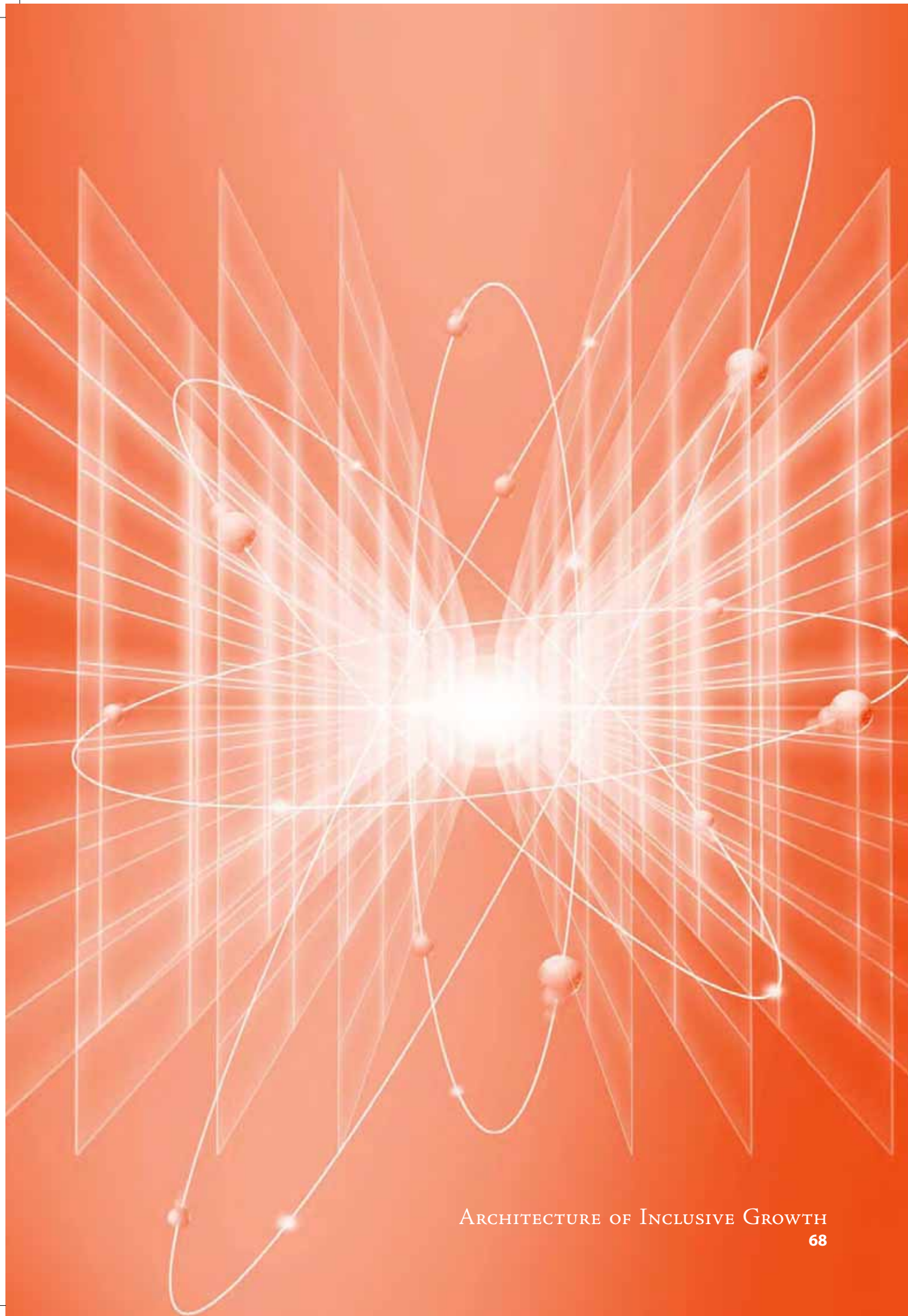
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Report of the Consultative workshop on  
**Telecentre Networks for  
Strengthening the Capacity of  
Telecentre Managers**

**National Academy of Agricultural Sciences,  
NASC Complex, New Delhi 110 012**

October 1-2, 2008



# Strengthening the Telecentre Manager

## Introduction

From a cup of coffee or tea to a computer screen - information - sharing over the centuries has progressed almost as fast as the evolution of new and newer technologies. Today, with the help of Information and Communication Technology (ICT) tools - from the familiar telephone to internet and more - it is now possible to take information places where power supply is irregular, or areas remote and difficult to reach, such as hilly regions, forests and the ocean. For example, a phone service that helps fishermen how to locate the shoals of fish or wave heights, while they are at sea; a doctor in New York treats patients in a remote village in Maharashtra through the net; a paperless technology which houses all certificates, from birth to death; to a small kiosk that provides copies of land records or grain prices at the nearest market at any time of the day. These are a few of the many ways in which technology can contribute to improving lives and livelihoods in rural India.

Information technology in combination with existing infrastructure systems can improve access to health and education, enhance the reach and impact of government programmes, expand options for entertainment, and bridge the gulf between the rich and the poor, within and across urban and rural areas. It can catalyse and transfer knowledge within and urban and rural communities, men and women, formal and informal experts, so as to empower them to be prosperous and competitive.

The telecentre has emerged as a powerful means to deliver many services that information technologies can provide in rural areas.

There is no standard definition of a telecentre in India. It has been called by various names such as a knowledge centre, *gyan chaupal*, an information kiosk etc. A telecentre is typically a room with a phone connection and computer with access to the internet. It is usually staffed by a person or persons who may be responsible for the maintenance of the facility, and who mentor and help users to use the various services. Over the years, government and non-government agencies, corporate bodies and technology players have helped conceive and implement telecentre projects in India.





These efforts received a boost in May 2004, when a consultation of stakeholders was held in Chennai on May 19-20, which proposed the launch of the Mission 2007: Every Village a Knowledge Centre, to be led by Professor M S Swaminathan. Mission 2007, an alliance of 80 organisations envisioned a knowledge centre in every village in India by 2007, the sixtieth year of independence. In 2005, the Finance Minister of India, acknowledging the importance of the Mission 2007, announced Government of India's willingness to join the alliance. The Finance Minister, in his budget speech, allocated Rs 1 billion to NABARD to channel support to the activities of Mission 2007 through Government of India's Rural Infrastructure Development Fund (RIDF). The alliance partners, combining a wealth of expertise and experience, worked on the many different aspects of Mission 2007 including technology, content, management, policy, sustainability etc.

Efforts of Mission 2007 alliance partners highlighted the challenge of scaling its activities in order to expand the telecentre movement to all parts of India. The government of India's Common Service Centre (CSC) programme became a logical next step to the vision of Mission 2007 partners and represents a more concerted effort and the backing of the government's authority, reach, linkages and resources.

### People-the most important ingredient

The most important ingredient in achieving the goal of setting up telecentres in villages and rural areas are people. There is an urgent need to have skilled people to effectively staff the telecentres. By 2015, there may be half a million telecentre practitioners in India, about half the total number around the world. The goal here is to have - in each village - one woman and one man trained to contextualise information into locale-specific knowledge and at the same time, develop and document local content for exchange between centres and local authorities. Thus, some 1.2 million people will be required to staff and serve as grassroots knowledge workers, and be the leaders of the rural knowledge revolution.

Towards this, the MSSRF, invoking a visionary builder of modern India and its infrastructure, established the Jamsetji Tata National Virtual Academy (NVA) in 2004 and the Jamsetji Tata Training School (JTTS), in 2006. The mission of the Jamsetji Tata National Virtual Academy and the Training school is to promote rural livelihoods through digital empowerment based on pro-poor, pro-women approach to choice of technology, dissemination and human resource development. Telecentre.org, a collaborative social investment programme of International Development Research Centre (IDRC), and

Microsoft set up 14 national telecentre academies. According to Basheerhamad Shadrach, Senior Programme Officer SPO, IDRC, the Telecentre Academy aims to develop:

- a) A Global certification System and
- b) A common but nationally referenced, multi-lingual and multi-format manual for telecentre managers and operators.

In the near future, more resources like the telecentre academies will need to be initiated offering courses designed to build skills for telecentre operators, managers and network managers.

### The workshop

To zero in on the development of outlines for such training courses, the GGA and JTTS, in partnership with telecentre.org and Microsoft Unlimited Potential, conducted a two-day workshop on October 1-2, 2008 on '**Telecentre Networks for Strengthening the Capacity of Telecentre Managers**'. The key objective of this workshop, according to Senthilkumaran, General Secretary, *Grameen Gyan Abhiyan* (GGA), was to bring together different telecentre stakeholders, study different models of telecentres operating in India, understand the challenges facing them, lessons learnt, and to identify key training needs of the telecentre managers and operators. More than 60 telecentre practitioners, policymakers, academics, and development and curriculum experts attended. The workshop identified the elements of a good telecentre and the skills of operators and managers.

Some training materials are available in the area. The Microsoft Unlimited Potential Programme, launched by Bill Gates during the Government Leaders Forum 2007 in China, seeks to create sustained socio-economic opportunities by transforming education, fostering local innovation and enabling job opportunities. It has so far trained more than a million people on various IT skills. There are courses offered by the Indira Gandhi National Open University (IGNOU), the Indian Institutes of Technology (IITs), the Indian Institutes of Management (IIMs), local universities and companies. But there's nothing uniquely designed for the telecentre operator/manager, who is being perceived as leading the grassroots digital revolution.

### Towards sustainability

Telecentres are seen as engines that will drive the digital revolution in the rural areas. The potential is huge and the





challenges enormous. And, there are as many questions. For example, can telecentres be the ideal knowledge and service hub powered by modern technology? Can they be the focal points for exchange of vital information in every village and town in India? Will there be resource persons to launch, run, manage and expand the telecentres? Are there sufficient finances or business models to make them viable and sustainable?

People who are in the telecentre movement struggle with these and other questions. As of now, a telecentre can be a simple infokiosk, with a mobile phone or two, serving villages of 500 to 900 people. According to the World Bank, a base of 2500 customers is a minimum for achieving financial sustainability. Ashis Sanyal, Senior Director, DIT, says that the CSCs need a profit of at least Rs 5000 to be sustainable-for which 6000 people would need to be serviced. Clearly, financial viability would depend on a number of factors, and scale would play a big role. The CSCs are assured of handholding for 18-20 months.

Sustainability requires a multi-stakeholder partnership principle-which involves the government, corporate and civil society organisations. Since the year 2000, several e-info initiatives launched by the central and state governments, public and private sector, as well as national and international civil society organisations have seen considerable success in tapping the emerging economic opportunities of the digital revolution. Some of these are community-centric yet private entrepreneur-run model, such as the Kerala IT department's *Akshaya*, under which around 700 kiosks work in e-literacy, e-governance and commercial services. Some are purely government initiatives in e-governance, such as the CIC programme of NIC in the north east which plans to set up one info kiosk in each block of the nine states, the Madhya Pradesh government's *Gyandoot* or the Andhra Pradesh government's rural *e-seva*, and the hugely successful *Bhoomi* project in Karnataka, which gives people access to about 20 million digitised land records. NIC has already set up more than 450 CICs in the north east region which are proposed to be incorporated in the DIT's CSC programme.

Some of these ventures are NGO-driven but private entrepreneur-based, such as the kiosks run by Drishtee and TARAhaat in several states. There are also a few private initiatives, such as the ITC Ltd's e-Chaupal, an e-procurement service for ITC's agri collection centres, which reaches out to 3.5 million farmers across six states. Since 1997, the Chennai-based M S Swaminathan Research Foundation has been running its VKCs in Tamilnadu, Puducherry, Maharashtra, Orissa and Kerala.

Therefore ICT can play a powerful catalysing role in promoting an India united by knowledge creation, access and capacity in rural areas.

## Content and services

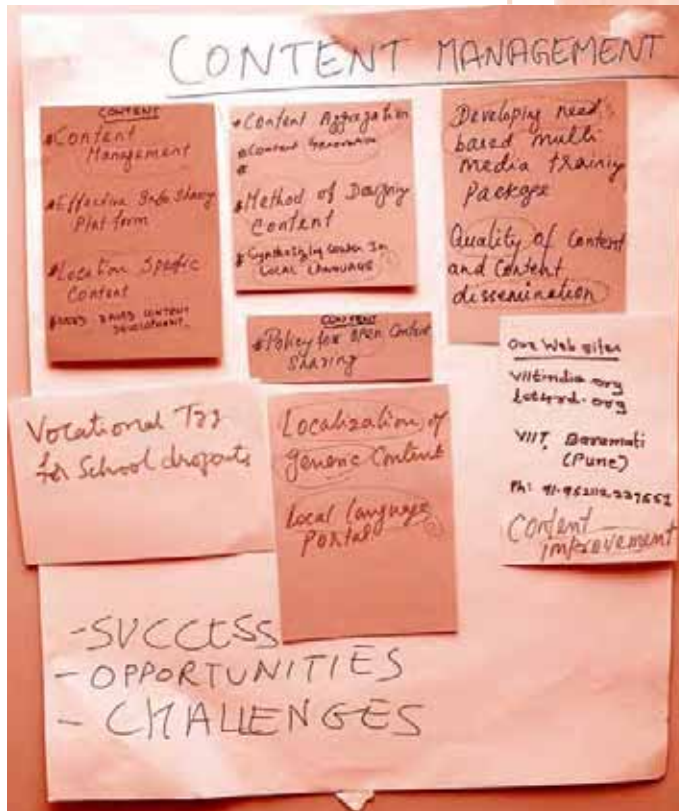
There is a huge demand for services in the rural areas and people are prepared to pay. Yet, the initiatives that have been launched have not tapped this need and opportunity. Demands range from the ordinary to the unique—from cropping suggestions to commodity prices, from certificates to land records, from looking for jobs to exam results, from government welfare schemes to business opportunities, and from idle net surfing and chatting to acquiring knowledge.

The government, for example, has listed 40 services to be offered at the telecentres among which—as a pilot project—is a plan to use them for census surveys and electoral roll revision. Telecentre operators at the workshop shared the creative ways in which they have responded to local needs and demands. Mukesh Hajela, a telecentre manager in Indore, Madhya Pradesh, responding to popular demand, set up a play-school on the lines of those in big cities! Hajela innovated of course, and instead of imported poly-carbonate blocks, he got cheap wooden alphabets to serve as learning and leisure aids. Another telecentre staff drew in local clients by showing them their homes on Google Earth.

Such innovation will vitalize content and services.

**"Never underestimate the innovative power of the villagers, be it a farmer, trader, or a telecentre operator,"** said Ashis Sanyal of DIT.

K Kamaraj from Vidiyal, an NGO and SHG working in seven panchayats in Theni district in Tamil Nadu shared his experiences. Vidiyal assisted in getting 300 women loans to buy 10 goats and a cell phone—which links them with the local veterinary college for troubleshooting and advice. Vidiyal's response to the local need - where goat-rearing is a successful commercial activity in the region - is an example of bringing together technology and expertise.





However, sustaining interest and demand requires content. While connectivity and technical expertise are difficult though achievable targets, content creation is a greater challenge. **Content must be dynamic, real-time, demand-driven, relevant, locale-specific, and replicable in local languages, even dialects.** It must reach out to niche populations such as tribes and unique communities. A workshop participant for instance, is running an e-group on AIDS, while another caters to the disabled.

Resources remain a huge challenge, but less so for the private initiatives or the larger NGOs. An important factor is scalability, and essential elements of this are capacity-building, training and sustainability. Community involvement and participation is essential, from the beginning and not as an add-on, or as an afterthought. A telecentre is somewhat different from other people-centric businesses because of its unique *raison d'être*: to be economically viable and socially responsible. This combination is crucial as the sustainability of service providers, mobile operators, technology providers and the future of rural economies and policymaking depends on this.

### Capacity-building and training

Training is an essential element in capacity building of telecentre enterprises. It involves key issues and challenges that telecentre operators or managers need to manage their operations. Telecentre operators are persons from villages or small towns with little exposure to technology, business and development issues. They could be either owning and/or operating the centre but need to interact with villagers and communities for the services. Telecentre managers are persons who will manage the network of telecentres, will work in back-end support, supply of services, negotiating with service providers, and marketing for new businesses, among other things. Most of the operators work on the hub-and-spokes model, though experimentations continue. While demand for services remains unmet, few have managed to scale up operations to the desired level.

Though their training needs will be different, both the telecentre operator and manager will need to have expertise in these five areas: Connectivity and Technology Operations, Content Development, Capacity Building, Knowledge-sharing and Sustainability.

Telecentre managers will face a higher level of challenges than the operators. They will need to deal with personnel issues such as with staff attrition and addition; mentoring and creation of the next generation of knowledge

workers; they will have to network, coordinate and maintain outreach with service providers, local administration and other government officials; they will need to assess training needs of operators and continue nurturing or incubating new telecentres. In short, they would need the same basic skills as the operator with some more managerial responsibilities.

## The training module

The small group discussions concluded that the training modules for the **telecentre managers** require focus on five kinds of skills:

- a) **Technical skills** – hardware and software-for first-level troubleshooting, innovation, newer technology and connectivity, knowledge of journals and magazines for up gradation, etc. Some of these training materials could be sourced from IITs, CDAC, Microsoft Unlimited Potential Curriculum, i-Care (IL & FS/IIMA), and MSSRF.
- b) **Soft skills** – communication, negotiation and leadership for networking, community mobilisation, conflict resolution and problem solving, decision making, and for management with a human face. The training material could be sourced from HIDE, ASK, Community & Progress Foundation (Life Skills), SIRD, NIRD and IRMA.
- c) **Business skills** – product and services identification, business continuity, price sensitivity analysis, needs assessment (forward linkages) and demand identification in domain knowledge (backward linkage). Google, National Institute of Smart Governance (NISG), IITB (e-cell) and MS telecentre operator toolkit could be sourced for this training literature.
- d) **Functional skills** – human resources, marketing, basic accounting. For project management, financial and human resource training and content management to ensure an efficient and effective network. Such training materials could be sourced from MSSRF, Karuna Trust and others.
- e) **Fundamental skills** – knowledge and awareness of development issues, sensitivity to gender, caste and community issues.

**Telecentre operators** would need a similar set of skills, though less intensive. The material could be sourced from the training manuals mentioned above. The modules could consist of:

- a) **Technical skills** – primary hardware and software training on how to operate a computer and peripherals, including basic trouble-shooting and network familiarization, to be upgraded as necessary.





b) **Soft skills** – communication and negotiation abilities, facilitation skills, front-office skills, gender, caste and community sensitization, conflict resolution abilities and a great deal of patience.

c) **Business skills** – ability to gauge and identify product and services required by customers, business continuity, price fixation, etc.

d) **Functional skills** – knowledge of project management-planning, implementation, monitoring and evaluation; basic accounting, record management, documentation. Most importantly, to assess, provide and disseminate content that is of interest and use to the clients.



e) **Fundamental skills** – be a leader and advocate; engage and mobilise the community at all levels, coordinate with local government.

### Telecentre Manager's Curriculum

The launch of the Indian Telecentre Academy (ITA), on February 17, 2006, is timely and will enable raising capacity of the VKC/VRC/CSC operators. The GGA & JTTS will collate all the training material available in India in English and other Indian languages and



serve as a knowledge repository of Indian telecentre.org Academy-JTTS. IGNOU is in the process of designing a course on telecentre management. It will be offered in distance-learning mode supplemented with face-to-face interactive training. The projected date for this curriculum to be offered is in the second half of 2009.

Since vertical mobility is important, three types of courses would be offered by the training school:

a) Appreciation course for the practitioners,

b) Certificate course for the beginners;

c) Diploma course for career movement.



The courses would involve certification, and need to be credible. There would be three levels of involvement:

- Mentors to support the learning environment.

- Learning movement-training material, content commons, training notes, developing instructional design and being part

of the testing space

- Window to the outside world.

# Agenda

Wednesday, October 1

10.00 - 10.45	<b>Introduction and Objectives of the Workshop</b> <b>Mr S Senthilkumaran, M S Swaminathan Research Foundation</b> <b>Dr Basheerhamad Shadrach, IDRC</b> <b>Ms Karishma Kiri, Microsoft</b> <b>Dr Ashis Sanyal, Department of Information Technology</b>
10.45 -11.00	<b>Introducing the theme of "Self-introduction with key messages"</b> <b>Dr Mahesh Uppal, Com First (India) Pvt. Ltd.</b>
11.00 -11.30	<b>Tea</b>
11.30 -13.15	<b>Self-introduction with key messages and expectation from the workshop - Participants</b> <b>Session Moderators: Dr Mahesh Uppal &amp; Dr Basheerhamad Shadrach</b>
13-15 - 14.15	<b>Lunch</b>
1415 - 1515	<b>Group work on Challenges identified from the key messages</b> <b>Capacity Building; Content Technology applications &amp; Connectivity; Knowledge Sharing; Networking and Sustainability</b> <b>Moderators:</b> <b>Dr Harekrishna Misra, IRMA</b> <b>Mr Anshuman Varma, Microsoft</b> <b>Rapporteurs:</b> <b>Dr Sophia, Ms Nancy Anabel, Ms Velvizhi, Mr Srinath, Dr Vishwanath Palled, Mr Surendran &amp; Dr V Nambi of MSSRF</b>
15.15 - 15.45	<b>Tea</b>
15.45 - 16.45	<b>Presentation of group work's outcome followed by discussions</b> <b>Moderators: Dr Basheerhamad Shadrach (telecentre.org) &amp; Dr Harekrishna Misra (IRMA)</b>






16.45 - 17.00	<b>Wrap up of day 1 and set the agenda for day 2</b> <b>Dr Subodh Gupta, Safal Solutions</b> <b>Final Report - Dr Vignesh, CSDMS</b>
18.00 - 20.00	<b>Develop Telecentres Directory-Interaction with individual participants by rapporteurs</b>
<b>Thursday, October 2, 2008</b>	
10.00 - 10.10	<b>Recap of sessions of Day 1 - Mr Vignesh, CSDMS</b>
10.10 -10.30	<b>Questions for Sustainability group Moderator - Dr Subodh Gupta (Safal Solutions)</b>
10.30 -11.00	<b>Introducing the theme of "Training needs and deliveries for Telecentre Operator (TO) and Telecentre Manager (TM) including training material available and gap" - Dr. Subodh Gupta and Prof Harekrishna Misra</b>
1100 - 1130	<b>Tea</b>
11.30 - 13.15	<b>Group work on Training needs and deliveries for Telecentre Operator (TO) and Telecentre Manager (TM) including training material available and gap</b> <b>Moderators (Passive):</b> <b>Mr Anshuman Varma (Microsoft)</b> <b>Prof Vidyanand Jha (IIMC)</b> <b>Dr Mahesh Uppal (Com First)</b>
13.15 - 14.15	<b>Lunch</b>
14.15 - 15.15	<b>Presentation of group work's and discussion</b> <b>Moderators:</b> <b>Dr Subodh Gupta (SaraI)</b> <b>Dr Harekrishna Misra (IRMA)</b>
15.15 - 15.45	<b>Tea</b>
15.45 - 16.45	<b>Road map for capacity building of Telecentre operator (TO) and Telecentre Manager (TM)</b> <b>Moderators:</b> <b>Dr Basheerhamad Shadrach (telecentre.org)</b> <b>Dr Subodh Gupta (SaraI)</b> <b>Ms Karishma Kiri (Microsoft)</b>
16.45	<b>Vote of Thanks - Ms Nancy Anabel (MSSRF)</b>

## List of Participants - Telecentre Managers' Workshop

October 1-2, 2008


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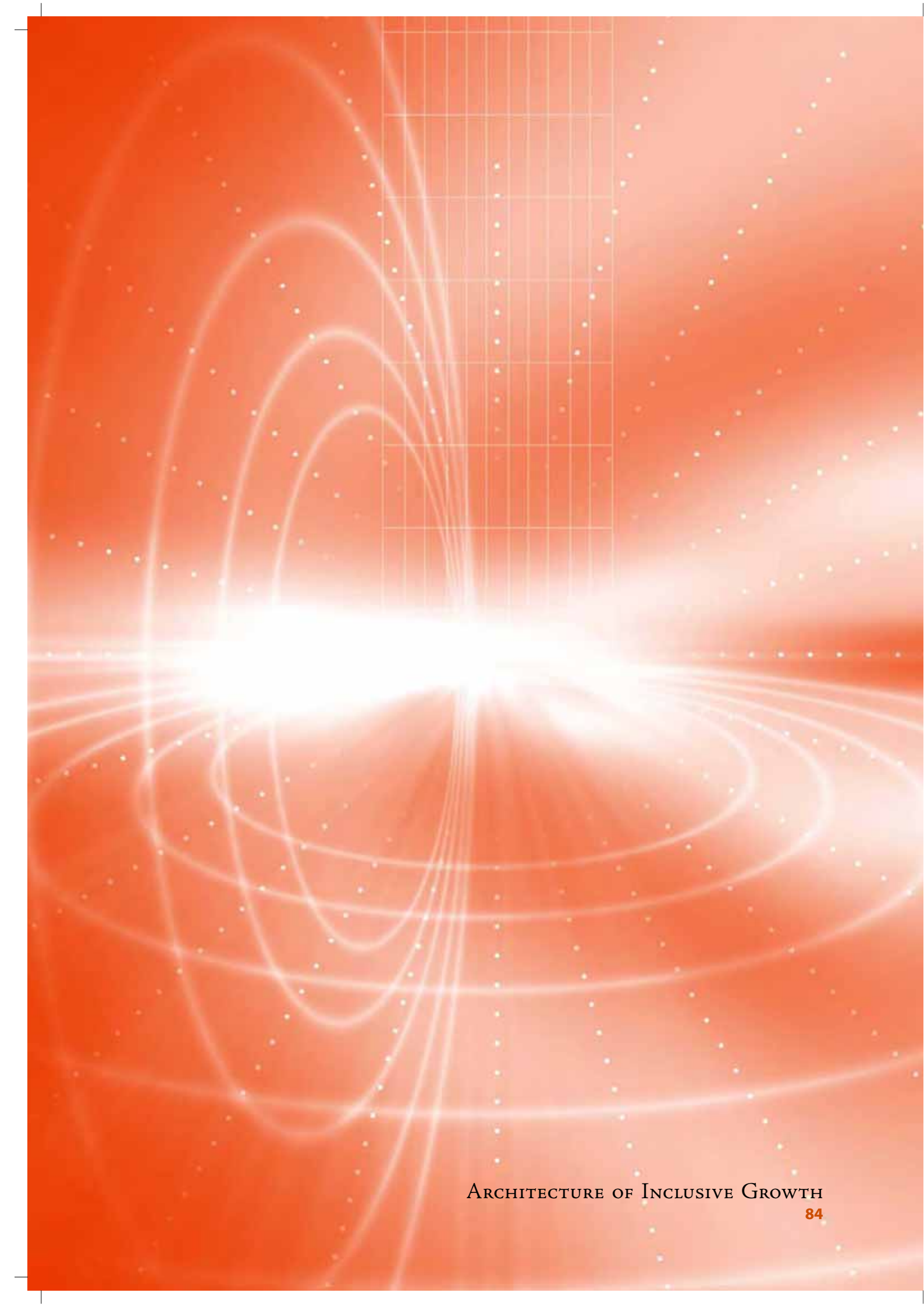


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# The Technology Partners Pavilion - Catalysing Innovations and Initiatives

**An Exhibition at the  
5th Convention of Grameen Gyan Abhiyan**

October 3-5, 2008



# The Technology Pavilion

## Introduction

The Technology Pavilion, titled "Catalysing Innovations and Initiatives", demonstrated recent innovations that ensure and encourage digital empowerment of rural areas.


The Pavilion was inaugurated by Honourable Minister Ms. D Purandareswari, Minister of State for Higher Education, Ministry of Human Resource Development. All visiting Ministers, namely, Finance Minister Mr P Chidambaram, Rural Development Minister Mr Raghuvansh Prasad Singh, Panchayati Raj minister Mr Mani Shankar Aiyer and Power Minister Mr Jairam Ramesh, as well as other dignitaries, visited the stalls and interacted with the staff of the Pavilion.

Since the third Convention, at each annual conference of the GGA, a Technology Pavilion is organised to showcase the latest rural ICT applications, communication technologies and content products.

The Rural Innovation Fund, was initiated by telecentre.org and Microsoft, monitored by GGA Secretariat with the goal to develop grassroots' applications to entrance livelihood and agriculture practice, education and literacy, local content applications and village level administration tools, disaster preparedness and management, rural health and telemedicine and e-commerce.



Honourable Minister Ms. D Purandareswari, Minister of State for Higher Education, Ministry of Human Resource Development inaugurating the Technology Pavilion



Several technology-software providers were represented in the Pavilion, including five awardees of the Rural Innovation Fund.

These awardees were:

- **The Manipal Centre for Information Science, Manipal University, Karnataka**

The Centre received a grant for its application, Bone Mineral Density (BMD) Scan, to monitor Osteoporosis, a disease characterised by low bone mass and deterioration of bone tissue more common among older women. The X-Ray combined Bone Mineral Density (BMD) Scan can be used as a screening tool for preventive health care and for confirming osteoporosis, after which the patient can go for more advanced scans and tests. The test, at Rs 130, is a low cost alternative to high-cost radiography and a boon to rural families and communities who would find radiogrammetry or digital radiography of bones, available only in big hospitals, impractical and unaffordable. Also, a radiograph can reveal bone erosion only when it has already advanced by about 30 percent, when it is too late for treatment. Use of BMD Scan tool could motivate people to visit a primary health centre and get them screened for osteoporosis on a regular basis.

- **Aravind Eye Care System, Madurai**

This is a venture of Aravind Eye Hospital. It is a low-cost telemedicine application, which helps patients in remote areas to acquire diagnostic and treatment advice at its connected vision centres directly from ophthalmologists. The centre staff collects patient data on the PC and send to the base hospital, where the doctor discusses online via video with the patient and conducts the eye examination. Prescriptions can be printed at the centre. The technology has been in use for 18 months and is available at 49 vision centres in Tamil Nadu, Tripura and Andhra.

- **The School of Communication and Management System (SCMS), Cochin**

The award was for the SCMS Patient Logistics Management System (PLMS), designed by its Centre for Socio-economic Research Cell. The PLMS software, currently being pilot tested in Palicherry Hospital in Ernakulam district, attempts to apply IT tools in health care planning to improve the efficiency of the existing health care system. It is a standard system for collecting, filing and compiling health information for patients by doctors and registration staff at the Public Health Centres (PHCs). Data is also filed by field staff collecting the information on communicable diseases in their respective wards.

- **Vritti Solutions Ltd, Mumbai**

A Disaster Management System (Disaster Resource Network) which is an IT-enabled tool for efficient and effective response from the government. In India, when disaster strikes, there is a lack of correct information of the extent of the damage, the support services available and the persons accountable. The web-based data bank software can be used to file data of contact persons, institutions and their phone numbers. It has been tested in about 2000 villages in Pune, Maharashtra. When the local person gives information about a developing situation to the data managers, for instance, a rise of water level in rivers and dams, the disaster agency alerts the personnel for preparedness or rescue operations through SMS.

- **The Rajiv Gandhi College of Veterinary and Animal Sciences, Puducherry**

An award for its Knowledge Kit for Goat Keepers, a finger touch computer programme to enable learning of goat rearing practices, diseases, fodder, etc. E-contents were designed to reach the goat keepers who are neither literate nor computer-savvy. The package contains 150 screens with text and appropriate pictures and clickable icons, supported by audio backup both in Tamil and English.

**Other organisations in the ICT field displayed their innovations at the Pavilion.**

### **Qualcomm**

Qualcomm displayed the Fisher Friend Mobile Application based on its 3G technology. This mobile software-developed for the rural fishing communities in the coastal areas using wireless connectivity-provides real time, location-specific information at mid sea about wave height, weather conditions, location of potential fishing zones, availability of government schemes and possible markets. Astute Systems (Indore) have designed the application based on BREW, Qualcomm's mobile platform.

MSSRF staff identifies content of interest to fishing communities and uploads it from its VRCs onto the server placed with Tata Teleservices Limited (TTSL), the CDMA telecom service-provider. The software allows the information to be updated as required. Around 175 fishermen in Tamil Nadu and in Puducherry are using the mobile phones on rotation basis both on sea and land successfully.

### **Media Lab Asia**

Media Lab Asia, a not-for profit organisation, is promoted by the Department of Information Technology, Ministry of Communications, government of



India and, works to take ICT to the grassroots at its research hubs at five IITs.

Among its innovations are:

- **E-Sagu:** a combination of mobile camera and internet usage to share problems in crops (through photographs) to the expert centre in Hyderabad-for advise on remedial measures
- **Punarbhava:** a package for disabled persons to get on-line registration about government schemes
- **Sanyog:** a three-language augmentative and alternative communication (AAC) system for cerebral palsy affected persons
- **Sehat Saathi:** Rural telemedicine and patient database management
- **Ca:sH** (Community Access for Sustainable Health): handheld device based collection by grassroots health workers
- **Digital Ecosystem for Agricultural and Rural Livelihoods (DEAL):** a multimedia platform for creating, sharing and dissemination of agriculture information

### Tata Consultancy Services

TCS showcased the Mobile Agro Advisory System (*mKrishi*), which can be used to promote land-to-land as well as lab-to-land linkages. The service addresses the issues related to crop cultivation such as information on weather, soil, fertiliser and pesticide that are specific to the land. Using networks, *mKrishi* transfers the farmers' environment to the consultants. TCS also runs a mobile agro advisory system in Hindi and Marathi in 4 rural areas. So far 15 mobile phones are being used. TCS, Hyderabad centre has developed a Drupal based "Village Knowledge Portal" portal for the VRCs and

VKCs in 11 languages, is currently installed in MSSRF in Chennai as a pilot project.

### Indian Farmers Fertilizers Company Ltd (IFFCO)

IFFCO displayed their inexpensive battery-operated lantern and torch for farmers in electricity-deficient areas. The batteries can be charged manually and last for half an hour. The torch light can reach up to 300 meters and the lantern can be used for reading too. IFFCO Kisan Sanchar Limited (IKSL) provides a toll-free number through Airtel in which the farmer send voice-based query to the expert centre in each state. It has established 150 kiosks at farmers' centres or cooperative societies. The IKSL-Airtel network provides 5 audio agricultural advisories for their subscribers (mostly farmers) every day through their Green SIM card system.

### The Multi Commodity Exchange of India (MCX)

MCX launched *Gramin Suvidha Kendras* (GSK) as part of a strategic alliance with India Post. Its marketing, warehousing and expert advisory services are offered at selected post offices. The farmers get to know the *mandi* and future market rates of crops, access better warehousing, avail of bank loans and access expert crop advisory.





**Technology Pavilion:** Mr. Jairam Ramesh, Hon'ble Minister of State (Power), Dr. Basheerhamad Shadrach, telecenter.org & Ms. Ankhi Das, Microsoft Corporation India

### Ek Gaon Technologies

EGT introduced a Management Information System for *micro-finance* Clients, a mobile connected server based web services to the self-help groups to maintain their group accounts. The group account can be accessed either through mobile phone/STD booth phone or through internet in any cyber café. The account is maintained in the *Ek Gaon* Technology's centralised server. Each group has a bar coded card which is read by the mobile phone.

### One Laptop per Child

This project aims to create educational opportunities for disadvantaged children with a rugged, low-cost, low-power, less than 1.5-kg, connected XO (X for cross and O for noughts in the tic-tac-toe children's game) laptop with content and software designed for collaborative, joyful, self-empowered learning. It has been extensively field-tested and validated among some of the poorest and most remote populations. It features a 7.5 inch, 1200×900 pixel, TFT screen and self-refreshing display with free and open-source software. Each machine is a full-time wireless router. OLPC is using open-document formats for much the same reason: transparency is empowering.

## Intel Education

Intel Education introduced the Intel Learn Programme in India in 2001 to support the education goals of the Indian government. In 2004, it was introduced in Tamil Nadu schools at an existent technology lab and in Computer Aided Learning Centres (CTLCs). Intel Learn helps students to develop skills such as digital literacy, problem solving, critical thinking and collaboration. Through this, more than 695,000 educators from over 14 states are now able to effectively integrate technology in instruction.

## Nicheken

Nicheken demonstrated its concept of a rural empowerment network characterised by state of the art technology which is economical, flexible and powerful to meet ever changing users' need, consumers' satisfaction and addresses security and other legal concerns. The network would include bank, police, Panchayat office, hospitals, schools, kiosks etc. and support e-commerce, public distribution, micro finance, agriculture programmes, tele medicine, education etc. The goal is to ensure that the village of the future has a better environment, good transportation opportunities for wealth generation along with information and communication facilities.

## Centre for Science, Development and Media Studies (CSDMS)

CSDMS is committed to advocacy and developing solutions for under-privileged societies through the use of innovative and effective Information and Communication Technologies (ICTs) and Geographic Information Systems (GIS). CSDMS is focussed on using ICT for development through the new advanced communication technology media and traditional medium like print. The aim is to reach out to more people from all walks of life and to transform them into more aware citizens with the power of information. CSDMS brings out several publications including i4d, Digital Learning, e-Gov, e-Health, Telecentre-Magazine, and Radioduniya Magazine.



## List of Participants - Technology Pavilion

October 3-5, 2008

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