# North East India's Best ICTD Practices

'DIGITAL INCLUSION FOR

# INCLUSIVE GROWTH

IN NORTH EAST INDIA'

Editor: Syed S. Kazi

e North East Award 2012

# eNorth East Award 2012

## TOTAL NOMINATIONS

# 54

## FINALISTS

# 27

## CATEGORY WISE NOMINATIONS

Governance and Public Services Delivery **16**

**2** Innovative Department

Education **9**

**4** Livelihood and Entrepreneurship

Financial Inclusion **2**

**2** Commerce and Business

Culture and Heritage **4**

**7** Innovative IT/ICT

Environment & Tourism **2**

**4** Health

News And Media **1**

**1** Entertainment
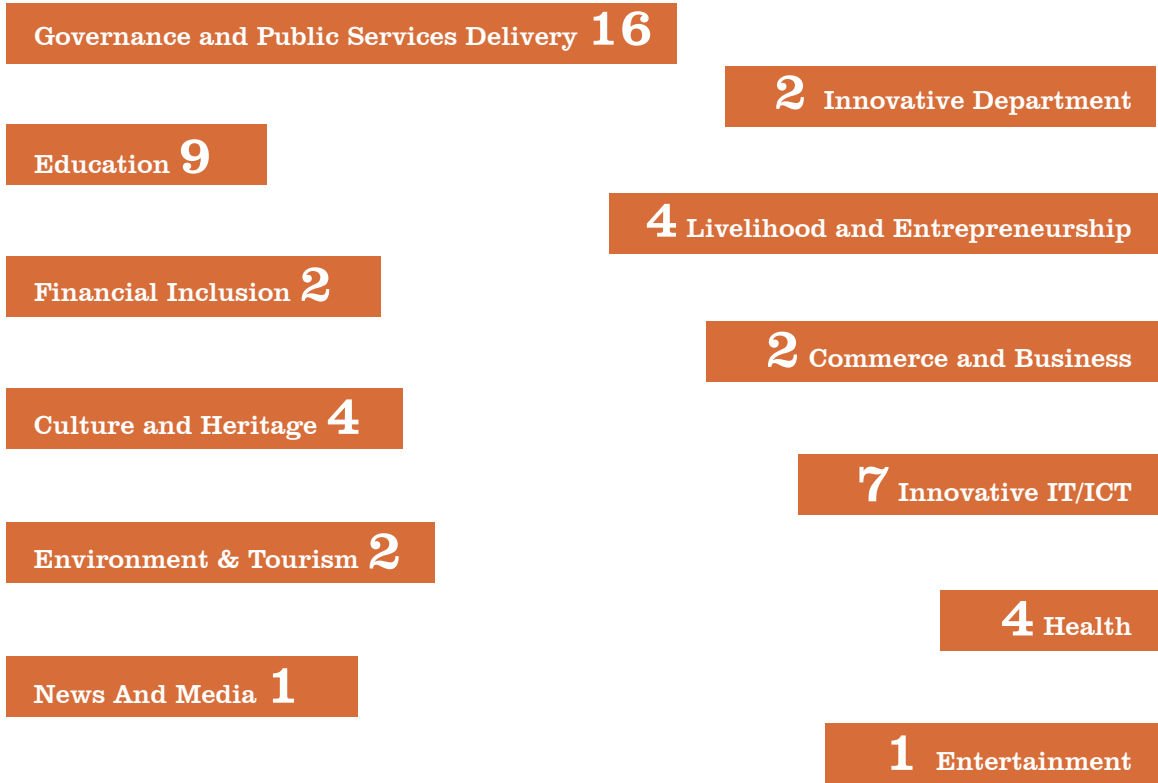
# eNorth East Award forging ahead

It is the time of the year when the ICT fraternity of North East India would once again get together to set the stage that will showcase yet another year of innovative digital applications at the much sought after eNorth East Award ceremony. Touted as North East India's biggest event on ICT for development initiatives, the prestigious eNorth East Award is a unique event that acknowledges the best practices in the digital revolution for the governance and social sector.

The annually held eNorth East award enters its 3rd year since its conception in 2010-11 with a steadfast aim to identify, encourage, support, nurture and provide the much needed platform for emerging and budding ICT innovators to contest their viable solutions against each other. The eNorth East Awards 2012 will showcase some of the best use of digital applications through its 54 nominations in around 12 categories across 8 States in India.

The core objective behind the awards is to adorn the role of a facilitator in order to help create a network of ideas and connect like minded innovators in the domain of ICT for development in the region. The past two years have been a witness to a steady rise in the ICT innovations and practices for empowering the diverse sectors. This move by the North East Development Foundation with support of its steadfast mentors like Digital Empowerment Foundation has resulted in an evolving and growing digital fraternity of researchers, innovators, grass root level members and practitioners across the region.

The eNorth East award recognizes the best digital and technology solutions to empower rural communities in different categories. These categories include those of e-governance, e-health, e-news and media, e-inclusion, e-livelihood, financial inclusion to quote a few. This award is instituted by the North East Development Foundation with support of partners like the Department of Information Technology (GoI), NIXI, ISOC, IGNOU, IAMAI and state governments of the region like Government of Nagaland and Sikkim, and other organizations to promote ICT for masses in the social sector and public empowerment.

As of today, the eNorth East Award fraternity has only grown over the past 2 years and comprises of over 200 plus dedicated members with the passion and belief to bridge the widening digital gap and reducing digital poverty plaguing the region.

The eNorth East award apart from providing a platform for various States and national and international stakeholders to showcase their works, it is also a frontier to enable cross region, country, inter-state, intra state exchanges of ICT applications and services. It is crucial to sustain this momentum but nevertheless along with the momentum, all the stakeholders and participants involved must work towards building a common knowledge repository through cooperation and mutual support.

This is indeed a herculean task of amalgamating all the information that is churned out year after year and cannot be possible without genuine cooperation and desire from the participants.  In order to achieve bigger strides there has to be a joint effort from all sectors such as those of policy makers, government bodies, civil society and the communities to help bridge this gap. And in a difficult terrain like North East India, this is all the more important.

It is indeed time for us, for the entire region and its stakeholders led by the governments of the region, to wake up to the pace of technology advancements and make the voices of the region's community in general and rural people in particular heard through need based and sustainable ICT application and innovative creations for digital and development inclusion!

# ACKNOWLEDGEMENT

**ACKNOWLEDGEMENT**

**T**he journey of the eNorth East Award is a new beginning and we are celebrating its third year of its existence. The third year of the eNorth East Award is bigger, wider, inclusive and as diverse as the North East India Region. By now it has almost covered the entire region across 8 States and has reached out to other parts of India and players having stake in holistic ICTD in the region. Its increasing coverage since 2010 is as vast to recognize digital innovations in as many as 12 categories covering every aspect of our living ecosystem influenced by technology and vice versa– from education to health, commerce to livelihood, language issues to localisation, environment to agriculture, governance to entrepreneurship, broadcasting to mobiles, and blogs to social networking.

It is inspiring to recall the wavelength of the eNorth East Award nominations scaling up from hardly 20 nominations in 2010, to a figure crossing 100 nominations in totality as best digital practices as repository despite the region being nascent in ICTD environment and practices. Further, listing the 2012 nominations is a heart warming experience given the innovations and diversity of digital applications and representation from every state in the region. This proves the point that there is no dearth of digital ideas to fructify and experiment in the region. This is all the more reason to recognize, encourage, mentor and sustain bright ideas for making human lives better and brighter. Significant to note is the point that the nominations richness is more visible in the governance and public service delivery area that reflects the importance and vitality of serving the citizens at large.

The point of significance is the nominees of the eNorth East Award, the people, the projects, and the innovations who make this award big, important and prestigious. And, what we relish most about the Award is the bonding with the award fraternity, linkages with them, and long term association for finding common ground to connect for bigger, better and sustainable goals. One common ground emerged is the exchange platform created where all the nominees and projects are being updated and encouraged to exchange ideas and projects online and do peer- learning.

Here, one cannot ignore the minds and hands working behind the eNorth East Award and making it sustain and grow. We have very basic team to put together this award, with the strong belief that ICT can really change the lives of the people and help the North East India society and economy leapfrog to match the national mainstream efforts and global benchmarks.

My warm acknowledgement to the dedicated team support from Devendra Singh, Fahmida Tasneem, Tanvi Manpoong, Roselyn D Osana, Harun Ahmed, Satyendra Singh,

Jolly Kazi, Amit Sanga, Satya Prakash, Stephen Imchen, Neeraj Singh, John Putsure, Ravi Kanta, Robert Sangma, Asma Kazi, Michelle Kire and others.

I must also reveal that we have a list of great believers, who keep our momentum always charged, and my sincere acknowledgement goes to the board members, advisors and the jurors – whom you can interact with through the pages at the end of this book.

Not to forget that, to carry forward an initiative like the eNorth East Award, we need a huge resource, and that does not come without proving the worth of it at a very large vision and its endorsement by those who can support it, invest in it and do not ask any question. We have always recognised the contribution of such organization.

NEDF and eNorth East Award warmly acknowledges the unparallel support of Department of IT, Govt. of Sikkim in coming forward to join hands to organize the 3rd eNorth East Award Summit 2012 alongside the prestigious SIKITEX 2012 exhibition programme, annually hosted by the Department as Sikkim's flagship IT event programme.

My sincere acknowledgement goes to Digital Empowerment Foundation (DEF) since beginning until now in making the eNorth East platform reach this level as exclusive mentoring organisation.  NEDF and eNorth East Award warmly acknowledges and recognizes support of  Sikkim Manipal University (SMU) & Sikkim Manipal Institute of Technology (SMIT) to come on board as Co-organisers in a short span of time.  The support from Internet Society (ISOC) as a strategy partner has been very critical, relevant and extraordinary for a region like North East India that lags in ICT and Internet pro-activeness. The support from North East India Information Technology Association (NEIITA), NASSCOM, IAMAI, VAR India, has been timely and overwhelming.

With this, the eNorth East Award platform hopes to receive continuous support, guidance, inputs and warmth to enlarge the nascent digital movement in North East India for desirable outcomes. Let us connect for the larger vision of knowledge and digitally enabled societies in the region for wider digital and development inclusion of our tribes and communities.

Dearest readers may ignore any errors and omissions in this book as humanly mistakes and enjoy the flavour and flow of digital diversities thereby ●

*Warmest regards,*
*Syed S. Kazi*
*Curator: eNorth East Award*
*Lead Partner, NEDF*
*kazi@nedfindia.org*

## Connectivity Solution for the 'Technically Not Feasible' Sites in the Northeastern States

**Ashis Sanyal**

> While plenty of end users' access nodes have been created by affordable handsets for voice services, the issue of high speed bandwidth access points at remote and difficult terrain locations remained unsolved.

**T**elecom connectivity has been one of the major drivers of economic growth in the modern world. It has been said that every 10% of telecom subscriber growth would bring in 1-1.2% growth in the GDP. It is strongly believed that telecom growth in India has also provided similar impetus to our economic growth profile. We have seen ICT-enabled services, riding on the telecom growth, have brought better information and knowledge flow, higher level of empowerment connected with better choices of livelihood, newer revenue streams and also created entrepreneurial attitude for alternate ways of income generation.

NE States are endeavouring for some time to align themselves to the mainstream growth. One of the major barriers to this effort is the telecom connectivity. Eventually, all the issues, get attributed to problematic telecom connectivity, in NE States. For example, in the difficult and remote places connectivity is non-existent. If connectivity is by chance there, then the same is not reliable. Further, the last mile connectivity speed may be low because original network design may be supporting very low concurrency ratio. And this could be because the demand was very uncertain and unknown and therefore the business model did not support provisioning high speed network components. Consequently, the legacy system and equipment are of low capacity and somewhat not scalable quickly. Even if there is some low speed reliable connectivity available at remote places then it is of high cost due to large transportation route length from distant points, e.g., from the state of West Bengal. Moreover, because of large geographical areas in the NE States, different states have different transportation cost of bandwidth thereby creating a non-standardised differential bandwidth cost for the telecom service providers, which does not allow them to take advantage of economy of scale and offer an affordable business model to the subscribers.

Before the mobile revolution took place, BSNL (the then P&T department) had been the prime service provider of telecom connectivity. For the remote areas in the country, some low capacity radio-relay network used to be deployed. Growth of voice-based landline circuits in the hilly terrain also has been very slow, understandably much slower than the growth prevailing in the Gangetic Plains and Deccan land areas of the country because of difficult geographical terrain, very high operational cost, low availability and high cost of skilled manpower for maintenance, absence of demand, sound business model, etc. The overall telecom growth situation was very grim in the country at a time when many emerging telecom technologies and proven business models were knocking at the door of the policy makers, warranting a fundamental change in the policy regime. Consequently, this stifling scenario started changing in nineties with the opening up of telecom policy and concurrently mobile revolution also started shaping up. Mobile towers with low opportunity cost and easy access to mobile connectivity, have somehow shaken many erstwhile barriers to proliferation of telecom connectivity.

One of the primary transport media which can carry abundant high speed connectivity bandwidth from one point to another in a large geographical area is the optical fibre cable (OFC). OFC is normally laid under the ground although over ground laying (alongside the power distribution cables on towers/poles) has not been uncommon. Due to difficult terrain, laying of underground OFC cables in the hilly areas of NE states has been slow. Moreover, BSNL, after the site survey, has declared in its record many potential connectivity Points-of-Presence (PoP) sites as 'technically not feasible' (TNF) sites due to difficulties in laying and maintaining OFC cables underground. Due to uncertain weather conditions in these states, the attempts of running the OFCs over ground on the poles have not been very attractive and not successful also, wherever deployed.

Keeping the above scenario in view in the NE states, the Telecom Service Providers (TSP) have resorted to technology solutions on hand, to resolve the issue of carrying reasonable bandwidth from one place to another in NE States. Satellite solutions with VSAT terminals have already been tried for remote NE locations, which have been earlier used by National Informatics Centre (NIC) in its flagship initiative named as Community Information Centre (CIC) project in each Block in the NE States. But it is an unattractive commercial proposition for the TSPs, due to limited availability

of transponders over the relevant locations in the geo-synchronous orbit and consequent high cost of bandwidth. Moreover, it does not offer scalability which is essentially a unique selling proposition (USP) for any commercially profitable communication network.

The other technology solution, which has been in use for quite some years, is a hybrid network where the back-haul is on OFC and the forward network is on terrestrial radio frequency wireless circuit. This system, with a legacy technology, has its own limitations like, limited number of voice channels, thereby a bit inefficient for many data-based services and unreliable communication success on account of shadow zones created by hillocks and mountains in spite of small hop lengths. Using such hybrid network technology, the village telephone scheme of the Department of Telecommunications (DoT) has been implementing rural telephone network for some time at a very modest speed of implementation.

However, fundamental policy reform in the telecom space and the consequent rapid proliferation and adaptation of mobile technology, has changed this scenario and taken the connectivity issues of the Northeast States to a different level. While plenty of end users' access nodes have been created by affordable handsets for voice services, the issue of high speed bandwidth access points at remote and difficult terrain locations remained unsolved. The main problem has been about how to transport high bandwidth over a longer distance, going over the 'technically not feasible' areas. The mobile tower serves well for the designed cell sizes (except of course for the shadow zones) but that addresses only the issue of the last mile connectivity with a limited speed. Before the last mile, the usual radio frequency back haul capacity is no way adequate for various value-added bandwidth-intensive services including mobile internet services.

In the seventies, when microwave channels were deployed for trunk line voice services across the country by the then P&T department, with the large towers having around 50 km hop length, it was an instant hit with 900 channels and carrier frequency around 2 GHz (some with 6 GHz also), as they served the purpose of limited demand trunk lines for voice-based services. They are still in demand as a second option trunk route for voice services after the OFC trunk lines, which have since proliferated in large numbers across the country.

WiMax technology (fixed, 802.16 a/b) is capable of transporting around 72 Mbps capacity at a hop length of around 50 km. This provides a possible solution for building a reasonably high capacity wireless-based back-haul for the TNF sites in NE States. At a contention ratio of 10% (which is anyway very good for current low demand areas in NE States) this 72 Mbps would cater to 720 Mbps capacity requirement at a TNF site PoP. If it is intended to provide data services at the last mile to a subscriber from that PoP with a speed of 256 kbps, then at 10% concurrency it can serve 2880 subscribers around that tower. And obviously if the subscriber base becomes larger than this 2880 number at any future time, then the last mile speed will come down which is a common phenomenon even in a city, where concurrency ratio falls below the designed value at peak usage hours.

It appears that many locations in the NE States will perpetually remain TNF sites for commercially viable OFC-based network, under or over ground. The National OFC Network project is mandated to take OFC lines to all Panchayat villages of the country in the next few years. It is to be mentioned here that in some NE States the concept of 3-tier Panchayat system is blurred and a different administration system is in existence. In that context it is not very clear how NOFN project will be executed for such locations. We have to cater for the connectivity to the remote locations, even if low population of those areas violates the usual norm of demand and supply for a commercial proposition.

In the remote small habitats of Australia or Canada, they provide satellite-based connectivity which is otherwise very costly for our subscribers at large. We may consider deploying terrestrial RF back-haul connectivity for our people in such remote locations with WiMax fixed 802.16 a/b like technology, which may fulfill the immediate and not-so-distant future requirements. For funding purpose we have Universal Service Obligation Fund Administration (USOFA), which looks after taking connectivity to village and remote areas in the country. USOFA may seriously consider running a special scheme for the TSPs for taking connectivity to TNF sites in the NE States. Funding for high towers with 50 km Line of Sight hop length and WiMax for base station may be provided, to carry reasonably high bandwidth pipe as the wireless back-haul from the point where the OFC line may possibly end. This could be a plausible solution for the primary issue of connectivity, being faced by the people in remote locations of our NE States. And obviously this would be a very important step to connect the NE people with the mainstream growth process of the country ●

*Ashis Sanyal is now an independent ICTD Consultant working with various government agencies and departments and IT corporate. He had been former Senior Director, Dept of Electronics & IT, Govt of India.*

# Let's Connect India's North-East

**Osama Manzar**

The North-East vision document 2020 talks of the region's holistic development, but falls short of envisioning how to utilize ICT to improve governance.

**T**he lack of digital connectivity is impeding development in one of India's richest regions culturally and ecologically- the North-East. The government has put in place some policies and programmes to bolster the use of information and communication technology (ICT) here, but their poor execution means a colossal loss of opportunity for both the region and the nation.

The North-East has more than 200 tribes and sub-tribes that have not allowed privatization and globalization to impoverish them culturally. The Assamese Bihu festival and Nagaland's Hornbill festival are celebrated with as much gaiety as ever, while unique dance forms continue to flourish in Mizoram and Manipur.

The region is one of the world's six ecological hot spots, producing red chilli, oranges, ginger, pineapples, orchids, bamboo, cane, jute and betel nut, apart from unique varieties of rice and cereals. In addition, the muga silk and artificial jewellery of Assam, the shawls of Nagaland, the bamboo crafts of Tripura and metal crafts from around the region are world famous.

The North-East is landlocked and poorly connected with the outside world. ICT can play a crucial role in overcoming its geographical exclusion and help develop and market its arts and crafts and horticultural products; but it is not doing so. A recent eMSME seminar in Guwahati, Assam, which aimed at building internet awareness among local micro, small and medium enterprises, concluded that a rich pool of entrepreneurs and their creative products are deprived of using the web to promote trade and commerce.

Another four-day wireless training programme at Tura, Meghalaya, showed that the deployment and use of the Internet in

the hilly terrains of the North-East is not an easy task and requires thorough planning. Both events, organized by the Digital Empowerment Foundation and its partners, witnessed stakeholders raising issues that are difficult to ignore any longer.

The government has adopted some ICT-related policies and programmes. The North-East-specific community information centre scheme was started in 2002 with much fanfare. An amount of Rs 220 crore has since been made to connect the region's 487 development blocks with various ICT mediums, including very small aperture terminal connectivity to empower local communities. But its implementation is as poor as that of the nationwide common service centre scheme, which is facing problems all over the country.

The North-East vision document 2020 talks of the region's holistic development, but falls short of envisioning how to utilize ICT to improve governance. The North-East industrial and investment policy of 2007 talks of promoting industrial development through a number of incentives and grants, but doest not talk about how information technology (IT) and IT-enabled services can utilize the region's rich human resource pool.

The lack of urgency and sincerity among stakeholders is also worrisome. IT departments are often clubbed with other departments, which are given priority. Most governments of the region do not have functioning websites. It is painfully difficult to use ICT, even the Internet, to communicate with public authorities. Internet usage is limited to 27,415 out of every 100,000 people (2003 figure), constituting just 0.78% of the whole country. The most commonly used ICT tool here

is the fax machine. Clearly, the IT revolution sweeping India has bypassed the North-East.

Are things going to change? "The government has begun an ambitious programme to wire up the entire North-East and remote border regions with telecom, WiMax (Worldwide Interoperability for Microwave Access) and broadband connectivity, and unleash an IT revolution in the region," Union minister of state for IT and communication Sachin Pilot, announced during his visit to the region in March 2010.

"I believe the North-East can become a big centre for attracting investments from the private sector in business process outsourcing (and) knowledge process outsourcing," he said. "A bulk of the money under what is called universal service obligation fund, collected by the government from private players to meet the demands of rural connectivity, will be deployed in the North-East."

One can only hope that these announcements are implemented on the ground. Digitally empowering a region such as the North-East can work wonders and change the life of villagers, women, youth, artists, civil society and micro and small entrepreneurs waiting endlessly to sell their products and services ●
(This column has been orignally published in Mint on 18th July 2012 )

*Osama Manzar is Director of Digital Empowerment Foundation and curator, mBillionth Award. He is also member of the working group for Internet governance at Ministry of Communication IT, Govt. of India*

# Digital Inclusion in North East India

**Tulika Pandey**

**T**echnology access and use have become harbingers of socio-economic delineation and evolution of information societies. Information and Communication Technologies (ICTs) diminish inequalities within and between societies by enabling better interaction across economic, social and cultural boundaries, which defines the societal fabric of India. Less than 40% of rural residents have broadband, due to lack of access, poverty, age and literacy and more so digital literacy.

Diffusion of ICTs especially Internet have consistently shown that individuals who have access to ICTs tend to have more schooling, higher status and incomes. Those most at risk of digital exclusion are poor, elderly, disabled, illiterate or those living in rural or remote areas of India. Digital engagement should not be driven by one's socio-economic status.

Digital divide can be defined as lack of access and proficiency in interacting with Information and Communication Technologies (ICTs). Disparity in the technological innovation and its absorption or usage by the population also brings about digital divide. Digital inclusion can then be defined as the ability of individuals and communities to access and use information and communication technologies for their social, economic, educational, health and civic development.

Digital inclusion cannot be achieved without easy and high quality access to technology and the Internet. The guiding principle for digital inclusion however, underlines the fact that access, accessibility, inclusion and social equity though essential are individually insufficient conditions for bridging any digital divide. The three tenets of Digital Inclusion can therefore be identified as Technological Inclusion; Financial Inclusion and Social Inclusion.

> Participation of the local community is imperative to the inclusiveness of any digital community. Along with this, a hands-on coaching approach to the introduction of digital technologies into any community ensures that technology will be used in a meaningful and beneficial way by individuals in the community.

## Technological Inclusion

The vast distances and extremes of climate in the Northeast India provide physical obstacles, the sparse population reduces the economic viability of these services and the community-based culture of an aging population resists computer-mediated communication.

Under the Universal Service Obligation Fund (USOF) of the government, Bharat Sanchar Nigam (BSNL) will soon rollout the National Optical Fibre Network. All districts of Meghalaya, Mizoram, Tripura, Arunachal Pradesh, Manipur and Nagaland will be connected on physical Optical Fibre Cable (OFC) Ring Route(s) with the District Headquarters (DHQ) node, ensuring the cable route diversity and ring capacity of at least 2.5 Gbps,

Broadband take-up and usage has become a central tenet of creating a digitally inclusive society. The take-up of national broadband facilities, particularly in regional and remote areas, is a complex, multi-factorial scenario in which personal and organizational decisions are shaped by physical, cultural, economic and political elements. It is well known that broadband service deteriorates with the length of line, the longer the line, the worse the service. In rural areas, exchanges serve homes with very long line lengths which do not often receive a broadband service at all – resulting in these 'notspots'. Implementing point-to-point wireless broadband networks or mesh networks provides cost effective, up to 8Mb/s solutions for remote rural communities as an innovative alternative to fixed line access.

5.8 GHz and 2.4 GHz are the unlicensed or license-free spectrum that the government provides to be utilized for community network connectivity. The spectrum is being used for providing point-to-point networking and point to multi-point networking (mesh network) for last mile wireless connectivity in remote areas as a community based network, where one connection is shared among multiple users on contribution basis.

Fortunately, we have now stepped into the era of Next Generation Networks (NGNs). Next Generation Networks (NGNs) or high speed broadband does not refer to an exact bandwidth, but alludes to a range of improved characteristics including speed, consistency and reliability of service. Next generation access infrastructure is based on optical fibre offering symmetric speeds of 100Mb/s or more or a mixture of optical fibre and coaxial cables.

The Government of India has already rolled out the National Knowledge Network (NKN) comprising of an ultra-high speed CORE (multiples of 10 Gbps), complimented with a distribution layer at 1 Gbps or higher for connecting institutions. The network is designed to support Overlay, Dedicated and Virtual Networks. Advanced applications in areas such as Health, Education, Science & Technology, Grid Computing, Bio informatics, Agriculture, and Governance are an integral part of NKN. The network will soon integrate with the global scientific community at multiple gigabits per second speed. Almost all the central universities, medical colleges and centres of central ministries and departments based in the northeast are covered under this network.

Mobile technology with Voice and text services (2G), mobile broadband (3G) as key service has become nearly ubiquitous. Mobile handsets are personal devices with greater

flexibility and are the preferred platform for accessing web and digital content and other services. It is therefore important to focus on the following five elements of technological inclusion - realignment of existing operator spectrum holdings; making more radio spectrum available for next generation mobile services; providing greater investment certainty for existing 3G operators; greater network sharing between operators; and commitments by mobile operators to push out their coverage of mobile broadband. Mobile broadband and mobile technology would play a key role in promoting greater digital inclusion.

### Financial Inclusion

This is one of the most important parameter of digital inclusion. In remote, hilly and sparsely populated areas with poor infrastructure, physical access itself acts as a deterrent. The use of IT solutions for providing banking facilities at the doorstep holds the potential for scalability of financial inclusion initiatives. Pilot projects have been initiated using smart cards for opening bank accounts with biometric identification. The same delivery channel can be used to provide other financial services at low cost such as savings and loan products, remittances and insurance. The last mile issues are - cost of transaction, familiarity with clientele, empathy and accessibility which can be covered through intermediaries. Intermediaries powered by information technology will promote financial literacy and credit counselling. Credit-plus activities for livelihood support and skills-building have to be integral part of any plan for financial inclusion.

### Social Inclusion

Social inclusion requires the need to address the three basic inhibitors of adoption of technology by the uninitiated. The three major types of people in the rural areas and their reasons for not adopting technology are:
• 49% can be identified as digital hopefuls or near converts – these are mostly children and youth who want to be online but lack resources and/or comfort and already have dial-up access, but worried about the monthly cost. They cite cost (24% monthly bill too high; 10% cost of computer, 9% do not want long-term service contract or cost of installation; 6% combination of factors);
• 22% have a lack of digital literacy (they are worried about the bad things) – and tend to be older; and
• 19% are digitally uncomfortable and distant; they have resources but lack skills and interest; see no point and relevance to their lives in being online.

Participation of the local community is imperative to the inclusiveness of any digital community. Along with this, a hands-on coaching approach to the introduction of digital technologies into any community ensures that technology will be used in a meaningful and beneficial way by individuals in the community.

The government is fully committed towards enhancing public private partnership environment such as its e-Governance initiatives. The government is upgrading e-Government infrastructure and IT services in eight states

situated in the northeastern parts of the country on capacity-building for Bharat Sanchar Nigam Limited (BSNL) in the northeast, building at least ten new ICT training centres for the youth, and upgrading the postal service using ICT in the states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The youth training centres in association with National Institute of e-Learning & Information Technology (NIELIT) will ensure availability of trained professionals in the Northeast and will attract the IT industry to set up units in the region. The training centres are expected to train at least 14,000 students per year.

Digital Inclusion efforts are also addressed in India's current National Telecom Policy which includes education and employment (language & IT skills, job search); communications (affordable alternative to traditional telephone and connectivity (discounted internet access); transactional efficiencies for accessing government & financial services; and health and well-being (access to online resources & support networks).

## Conclusion

In the digital world, access to education, health and economic opportunity is still dependent on place. Under-educated, poor, elderly, disabled and residents of rural, remote as well as difficult terrains are all uniquely vulnerable to deprivation of digital inclusion.

Broadband and mobile technologies are central to creating a digitally inclusive society but we need to shift the household broadband adoption focus from entertainment consumption to economic production for digital inclusion.

Digital inclusion cannot be separated from economic and social inclusion and is a major factor for social and economic justice. Within five years, digital exclusion will rival all other social and economic determinants, and may become the major social justice challenge of our time ●

*Tulika Pandey is Additional Director at Department of Electronics & IT, Ministry of Communications & IT, Govt. of India.*

# Telecommunication Technologies for the Hills

**Rajesh Verma**

WiMAX can be used for a number of applications, including "last mile" broadband connections, hotspot and cellular backhaul, and high-speed enterprise connectivity for businesses.

**P**roviding telecommunication coverage in the hills of Northeast India poses formidable hurdles. There are issues regarding landslides and other elements of nature that result in snapping of communication cables. Power transmission lines also get snapped due to falling of trees and branches and these cause power outages that undermine the functioning of the telecommunication network. In the hills, habitation is very sparse and providing telecommunication connectivity to remote localities also offers many challenges. In case of communication blackouts caused by malfunctioning equipment it sometimes becomes difficult to restore the equipment because of inclement weather and inaccessibility. The mountains obstruct radio signals if wireless communication connectivity is planned.

In the hills, due to the sparse population many service providers are reluctant to provide services as it not economically viable for them and returns are not remunerative. Therefore, such remote areas are covered by the BSNL as a part of their social obligation. However, BSNL also has its problems like shortage of technical man power at the field level, non-availability of spare parts to maintain equipment, etc.

Against the above backdrop, spelt out below are the various technologies that can be fruitfully used in the hills for providing telecommunication connectivity.

## Optical Fibre Communication (OFC)

We all know that optical fibre provides almost limitless bandwidth and can be used for transmitting large packets of information with ease. The traditional method of laying optical fibre is underground but in the hills because of the unstable nature of the terrain these cables are prone to breakages. Fortunately, in the hills many rivers are being harnessed to gen-

erate electricity which is then transmitted to urban areas using high tension pylons (132 KV). These pylons can be used to lay the optical fibers too. The normal practice is to replace the earth wire on the pylons with what is called Optical Ground Wire (OPGW) which is a reinforced and ruggedized ground wire that has at its core a bundle of optical fibers. Since the optical ground wire is strung almost 40 ft above the ground level the chances of its getting broken due to the vagaries of nature are negligible. 66 KV and 33 KV pylons do not have an earth wire therefore reinforced optical fibers known as All Dielectric Self Supporting (ADSS) also can be strung on the pylons below the power cables. Power Grid Corporation of India Ltd. is extensively using this technology all across the country and also functions as Internet Service Provider (ISP)

The State Electricity Boards are now offering the use of their pylons for optical fibres. The Bharat Broadband Nigam Ltd. (BBNL) is a Special Purpose Vehicle (SPV) that has been constituted by the Government of India to provide connectivity to the grass-root level using these pylons.

Optical fibre connectivity can further be enhanced by using next generation Passive Optical Network (PON). GPON - the next Generation Passive Optical Network (PON) is emerging as the most popular choice in new deployments. GPON takes advantage of wavelength division multiplexing (WDM) over a single mode fibre. It uses the existing fibre by passively splitting it and this technology minimizes the number of active nodes thus reducing capital and operational costs. GPON technology is capable of delivering extremely high bit rates while still supporting the transmission of native formats at extremely high levels of efficiency. Using GPON, an operator can roll out any service at any time by configuring the end nodes only. In rural areas where means of communication is almost negligible, GPON is the most cost-effective solution.

## WiMAX (Worldwide Interoperability for Microwave Access)

WiMax is poised to become a key technical underpinning of fixed, portable and mobile data networks. The technology enables long distance wireless connections with speeds up to 75 megabits per second. It is an implementation of the emerging IEEE 802.16 standard that uses Orthogonal Frequency Division Multiplexing (OFDM) for optimization of wireless data services. Wireless WANs based on WiMAX technology cover a much greater distance than Wireless Local Area Networks (WLAN), connecting buildings to one another over a broad geographic area. WiMAX can be used for a number of applications, including "last mile" broadband connections, hotspot and cellular backhaul, and high-speed enterprise connectivity for businesses. According to WiMAX promoters, each WiMAX node or "base station" would enable high-speed Internet connectivity between homes and businesses in a radius of up to 50 kms.

## 3G

3G, short for 3rd Generation, is a term used to represent the 3rd generation of mobile telecommunications technology. This is a set of standards used for mobile devices and

mobile telecommunication services and networks that comply with the International Mobile Telecommunications-2000 (IMT-2000) specifications by the International Telecommunication Union. To meet the IMT-2000 standards, a system is required to provide peak data rates of at least 200 kbit/s (about 0.2 Mbit/s). 3G mobile towers working in tandem can give wide Internet coverage in the hills.

## WLL

WLL (Wireless in Local Loop) is a network technology based on CDMA (Code Division Multiple Access) principle whereas the other mobiles are based on GSM (Global System for Mobile Communication) technology. This technology is useful for providing cost effective mobile services and wireless telephone connection in areas where provision of landline telephone connection is not feasible or where demand for mobile phones is very high. At present, there are two types of services offered:

*Satellite Telephone:* A satellite phone, is a type of mobile phone that connects to orbiting satellites instead of terrestrial cell sites. They provide similar functionality as terrestrial mobile telephones; voice, short messaging service and low-bandwidth Internet access are supported through most systems. Satellite and cellular phones are wireless devices. They almost look alike but the way they work is totally different. A cellular phone functions on the basis of cells sites, and hence are called cell phones. The whole network area is divided into small areas (cells) and an antenna

is installed in each area. These are also called towers. When a cellular phone is moving, it enters from one cell to another. When it crosses the border of one cell, the phone sends a signal to the MTSO (Mobile Telephone Switching Office). With the help of control channel, the database of the MTSO relocates the phone in a new cell or area. Satellite phones use Low Earth Orbiting (LEO) satellites. When a satellite phone is turned on, a signal goes up to any number of satellites of a group the phone is registered with. When a person makes a call from the handset, a signal goes to the nearest orbiting satellite. Calls made on a satellite phones are expensive but it can be the only option when no other means of communication is available. It is very useful during disasters.

*Digital Satellite Phone Terminal System (DSPT system or DSPS):* It involves setting up a VSAT-based network for BSNL. The system consists of HUB Station and Remote Digital Satellite Phone Terminals working in Ku-Band (Transmit Frequency is 13.75-14.5 GHz and Receive is 10.7-12.75 GHz). DSPT network provides PSTN connectivity to rural, remote, inaccessible and hilly areas via INSAT (Indian National Satellite) or leased transponder for DTS network. The VSAT system works in a star topology using DAMA (Demand Assigned Multiple Access) technology. In Sikkim, DSPTs are being extensively used in forward areas by the Police and Army where conventional forms of communication are not available.

## Microwave links

Where it is not possible to lay optical fibres to provide connectivity due to geographical and economic consideration, microwave links are a good option. However, microwave links require clear line of sight. A microwave link is a communications system that uses a beam of radio waves in the microwave frequency range to transmit information between two fixed locations on the earth. They are crucial to many forms of communication and impact a broad range of industries. Broadcasters use microwave links to send programs from the studio to the transmitter location, which might be miles away. Microwave links carry cellular telephone calls between cell sites. Wireless Internet service providers use microwave links to provide their clients with high-speed Internet access without the need for cable connections. Telephone companies transmit calls between switching centres over microwave links, although fairly recently they have been largely supplanted by fibre optic cables. One of the reasons microwave links are so adaptable is that they are broadband. That means they can move large amounts of information at high speeds but only a small fraction of what optical fibres can offer. Another important quality of microwave links is that they require no equipment or facilities between the two terminal points, so installing a microwave link is often faster and less costly than a cable connection. Finally, they can be used almost anywhere, as long as the distance to be spanned is within the operating range of the equipment and there is clear path (that is, no solid obstacles) between the locations. Microwaves are also able to penetrate rain, fog, and snow, which means bad weather does not disrupt transmission.

Microwave communication technology is improving and now STM (155 mpbs) links can be provided on microwave links. This is sufficient to provide basic mobile and Internet connectivity to small towns.

The hills also suffer from frequent power outages. Also, at many places conventional electricity supply is not available at all. Non-conventional energy like solar power can be used in such situations. Over the years solar photovoltaic cells have improved considerably to provide good through put. They work well even in low ambient light condition. In Sikkim, solar power is being used on standalone-basis for powering some of our Common Services Centres (CSCs) supporting 2 computers and one VSAT.

There can not be one telecommunication solution for the hills. We have to adopt a mix and match approach in which all the technologies like VSAT, WLL, Microwave and OFC are deployed as per the specific requirement ●

*Rajesh Verma is Principal Director, Information Technology, Government of Sikkim*

# Ensuring Environmental Sustainability in North East India with Green ICTs

**Dr. Bini Toms**

**T**he north east region of India is a treasure trove for herbs, plants, animals and microbial resources and ranks 6th among the 25 biodiversity regions of the world. At present, the region faces diversity loss. According to the State Forest Report for Arunachal Pradesh 1997, the North East has recorded a major loss of forest cover in the 1995 assessment. In Arunachal Pradesh, out of 51, 54,000 hectares recorded as forests in 1995; there is a net decrease of 1,900 hectares in the forest cover in the 1997 assessment. In Assam, out of 30,70,757 hectares forest area, there is a net decrease of 23,700 hectares in the forest cover in 1997 over 1995 (Barik, 2002). In the Lakhimpur district of Assam a diminution of 15 cm of rain was witnessed for many years between 1954 and 1978 that were also years of deforestation in that region (Kalita and Sarmah, 1981). Landslides are also rising in the region.

Such a picture raises ethical concerns and therefore, steps need to be taken urgently. To address these concerns, initiatives have been taken by different countries for resource management. The 2009 movie, titled 'Home', directed by Yann Arthus-Bertrand, beautifully demonstrates what we are now doing to combat and reverse the damage done: including renewable energy, the creation of more national parks, international co-operation between various nations on environmental issues and the education and reforms being initiated across the globe in response to the current problems facing the earth.

International initiatives in this direction, by the United Nations Environment Programme (UNEP), the Convention on Biological Diversity (CBD), the Food and Agricultural Organisation (FAO) of the United Nations, the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (IT PGRFA) and the FAO International Plant Protection Convention (IPPC) are noteworthy and commendable.

> The millennium challenge is for farming to become conserving rather than consuming, to produce a positive energy balance, high quality sufficient food and high animal welfare standards and result in attractive, renewing and rejuvenating countryside, not just for conservationists, wealthy individuals or corporate interests, but for all.

There are various ways of addressing the above-mentioned concerns; like, conservation of all plant types, protection of natural habitats, avoiding deforestation, advocating for reforestation and afforestation, allocation of funds for conservation, wise use of technologies and slowing down on modernisation of agriculture, management of industrialization, public awareness at the need of maintaining ecological balance, formation and implementation of policies/guidelines and use of Green Information and Communication Technologies (ICTs).

## Use of Green ICTs

The use of Green ICTs beginning with, bringing about awareness through education about the related issues, may be one of the most effective ways. Education also amounts to empowering people. Jussi *et al.*, 2010, says that 'empowering people' means using ICT to raise people's awareness of the environmental impact of their actions and to channelize their behaviour in a more environment-friendly direction.

The various reasons for the cited concern-causing situation are human activities like, replacement of land races by modern cultivars, clean cultivation, discarding obsolete varieties, vacating areas for construction purposes and grazing. These activities have led to plant genetic erosion causing adverse effects on plant breeding research, on food security and sustainability, the phenomenon of interdependence among life systems, on environment and on human health and health research. The situation indeed is of grave concern. Taking steps as mentioned earlier to check plant genetic erosion and to maintain ecological balance is the need of the hour. As Hawken (2009) rightly says, this planet came with a set of operating instructions, but we seem to have misplaced them. Basically, the earth needs a new operating system of which green ICTs may be a part.

This article defines Green ICTs as those information and communication technologies, which are employed to ensure a sustainable environment bearing in mind ethical concerns for sustenance of life forms. Although, the use of Green ICTs is widely propagated and talked about in scientific circles, there are several limitations being faced in their use; like for example, there is lack of reliable and standardized data regarding unused equipment and its disposal, and that national household surveys in general lack questions in this area. This lack of data makes it difficult to monitor developments regarding green ICTs and assess the impact of measures taken, (Munck, 2009). Further research/survey is required in this direction.

When discussing about green ICTs, a mention about sustainable agriculture would be worthwhile. Talking particularly about the northeast region of the country, it is heavily dependent on agriculture with 47.4 percent of the population being cultivators and 11.41 percent earning their livelihood as agricultural labourers and the area being frequently affected by natural calamities. To add to the above, most parts of the NER are backward and away from the mainstream. For example, a 2007 needs assessment by Saravanan, revealed that an overwhelming majority of Adi farmers (a tribal community inhabiting foothills of the Eastern Himalayas of the NE India) lacked access to agricultural information with which to address various challenges such as pest and disease management. Four-fifths of the population possessed a radio, and nearly one-third of farmers had a TV and a fixed phone line. Very few possessed mobile phones, and none had computer and Internet access; very few of the more highly educated community members even having ever used the Internet. More than half of the households (56 per cent) were not connected with electricity. A sustainable agriculture (Fox, 2005), is probably one that addresses all these chal-

lenges. The millennium challenge is for farming to become conserving rather than consuming, to produce a positive energy balance, high quality sufficient food and high animal welfare standards and result in attractive, renewing and rejuvenating countryside, not just for conservationists, wealthy individuals or corporate interests, but for all. This will necessitate great commitment from land managers, society and government.

As mentioned earlier, the efforts should begin with educating people about the situation and sensitizing them about the need for exploring ways like using green ICTs for ensuring environmental sustainability. The possible ways of education and sensitization could be:
• Awareness campaigns in print and electronic media and through government and non-government organizations on the need and ways to use Green ICTs; the target population for these awareness campaigns should also include local inhabitants, farmers and lay people who are closer to nature,
• Competitions by schools, NGOs and other social and government organizations, based on the theme of 'Using Green ICTs' or 'Ensuring Environmental Sustainability with Green ICTs through Education' and the ethical concerns being addressed,
• Providing consumers with accurate information about the ecological burden of every decision they make,
• Creating motivation to design new/sustainable practices and social innovations through social media and
• Urging people to take responsibility for their personal emissions as rightly underlined by Jussi *et al.*, 2010,
• Public debates and discussions/public forums,
• Formal education on environmental ethics and ethical decision-making in the use of technologies like green ICTs

To elaborate on the last point, that is formal education, there is a need to prepare the future generation for survival in the controversial and contentious realm of natural resources management by inculcating in them the virtues of critical reflection, empirical inquiry, and intellectual honesty. This would help in producing technically competent and ethically responsible professionals who are effortlessly capable of ethical decision-making.

Ethical behaviour and business conduct of ICT may cover areas like reduction of emissions, taking care of labour rights in factories, avoiding child labour, lowering environmental impact of shipping, delivering and goods packaging, designing sustainable products and processes, reduction of waste, increase of recycling with take-back service for end-of-life products and so on, accentuates Toppeta, 2010.

With the increasing awareness of the above mentioned aspects and initiatives in the endeavour of ensuring environmental sustainability with Green ICTs through education, echoing with the North East Vision document 2020 let us realise that we have lost opportunities in the past and any further delay in adopting wise technologies along with an integrated development strategy will only further delay the development of the north east region of India. The sooner we realize this and take necessary steps, the better ●

*Dr. Bini Toms is Deputy Director at the Educational Development of North East Region Unit at the Indira Gandhi National Open University (IGNOU), Maidan garhi New Delhi, India.*

# Enabling Citizen Services Delivery in North-Eastern States of India

**Charru Malhotra**

Taking cue from the lackadaisical success of CIC initiative, one could safely conclude that such ICT interventions that have been presumably created more from the perspective of technology trends, institutions or administrators, and hence did not yield the anticipated development outcomes.

Development is a dynamic process that attempts to improve economic, social growth and environmental protection of a region. Some of the impediments to rural development have been inadequate infrastructure, negligible access to government functionaries, poor resource base for productive economic activity and pitiable status of public service delivery systems in these areas (Bhatnagar, 2000). In the past, such service delivery mechanisms of Indian government departments had left much to be desired, especially when implemented in the rural context. However, the advent and rational utilisation of information communication technologies (ICTs) could certainly augment the rural access to these services and yield other commercial benefits for the villagers (Cecchini and Scott, 2003). Literature further affirms (Malhotra, Chariar and Das, 2009; Rittenbacher and Yoshimura, 2006) that within the context of national development agenda, ICT could also help governments in forging closer alliances with diverse communities to usher in participatory development. North Eastern states of India poses a unique and complex scenario; therefore, the prime concern confronting the academia, industry and market is if ICT could be used for Development (also referred as ICT4D) in these hilly, remote and diverse Northeastern states of India?

## Contextual Background of North East India

The first logical step in deciphering the potential of ICT4D for any region should be to decode the local context of that region (Malhotra, Chariar and Das, 2011). This entails detailed understanding of the socio-cultural ecosystem and local realities of North Eastern (NE) states of India. This region has 39 million inhabitants, with over 84 % being rural (2001 census). It inherits a paradoxical legacy of tribal roots (for instance 19.3% tribal population in Assam and 94.5% in Mizoram) juxtaposed with contemporary western culture lent by widespread christanity.

Sharing 98% of its borders with five different countries viz. China, Myanmar, Bhutan, Bangladesh and Nepal, NE could have easily encashed this unique development opportunity in the era of globalisation; On the contrary, it still stays as a landlocked region where its 220 ethnic groups struggle to retain even their basic indigenous identity. It boasts of high literacy rates (68.5 % as against the country's average of 64.8%) and yet faces high net unemployment rate of 12% (CDPS, 2012). The fact that the NE states have been lesser-developed than the rest of the country is also reflected in its poor values of composite District Infrastructure Index for each of its 86 districts (Ministry of Development of North Eastern Region, 2009). Moreover, the State-ranks, which are alloted according to a State's total percentage share of contribution of State Domestic Product (SDP) to the Indian Economy, also indicate that all the NE states stay at the lowest rung in the country. For instance, Tripura is at State-rank of 22nd position with GDP contribution of 0.24%, and Sikkim is at the lowest State Rank of 28th position in the country, having GDP contribution of 0.05%. The remaining six North Eastern states figure at the bottom rungs of State-ranks, cluttering between these two State-ranks only (VMW Analytic Services, 2012). Geographic remoteness, diverse citizenry profile and hilly terrain of the region are usually the reasons popularly attributed for poor development of this region (Sachdeva, 2000).

## CIC: The Ground Reality

In a step towards fulfillment of its ICT4D vision, Government of India (GoI) had earmarked an impressive budget of 200 crores in the year 2002, to establish 487 Community Information Centres (CIC) through National Informatics Centre (NIC), in all 487 blocks of North-Eastern states and some more too. The ultimate goal of CIC was to provide ICT infrastructure for providing easier access to socio-economic databases, e-literacy, e-governance applications, and related government to citizen services in these remote regions (Chaudhri and Dash, 2006).

As is usually true for majority of similar initiatives, even the CIC project of NE had a (self) congratulatory hype around it. The initial literature reportings had indicated a very high user-satisfaction level on the ground (Skotch e-governance Report, 2005), hailing it as a pioneering effort in e-learning (United Nations ESCAP Report, 2007). However, a few years later, close informal interactions of the author (in the year 2007) with approximately 28 district collectors and the concerned officers from the state of Mizoram, gave some inter-

esting insights into the utility ( or futility?) of the project . In certain instances, it was mentioned that some of the Mizoram Kolasi (blocks) had been using CIC as control rooms to send electoral reports to other CICs and NIC using chat-facility on the provided ICT infrastructure. A few motivated Mizoram officers had also mentioned using CICs for submission and receipt of examination results of local schools. However, it was simultaneously highlighted during these interactions that such instances of usefulness of CIC happened to be just stray occurences. In general, majority of these officers had indicated glaring issues hampering the complete acceptance of the project in the region. Some of these cited issues were lack of adequate support to CIC hardware and software, erratic power supply in the region with limited supply of kerosene fuel to run the back-up generator, lack of customised software and absence of meaningful content provided at CIC despite repeated assurances. As a result, the CIC project, as per them had not yielded anticipated development outcomes, which had been initially envisaged (for instance, Chaudhri and Dash, 2006). Several other independent researches also bought forth the disappointing outcomes of this project. For instance, Das (2007) as quoted in Gupta (2010) clearly stated:

*There exists a sense of helplessness and isolation among advocates of the project in the face of the response or lack thereof from the state government. …. There is lack of users' awareness, ease of interface, motivation of the CIC staff (who is low paid, adhoc people). …. CIC personnel made desperate attempts to be heard; by writing to local MLAs, MPs, District Commissioners, all the way up to the President of India. They also posted their grievances on various online chat groups.*

Taking cue from the lackadaisical success of CIC initiative, one could safely conclude that such ICT interventions that have been presumably created more from the perspective of technology trends, institutions or administrators, and hence did not yield the anticipated development outcomes. In a scenario as offered by NE region, sociological issues become relatively more important. Therefore, 'Technology-as-solution' adopted for designing citizen service delivery mechanisms, especially for its rural areas, inevitably encounter sustainability challenges (Heeks, 1999) that eventually widen the digital divide (Wilson, 2000). Therefore, this study affirms a need to fully appreciate, accept and address the contextual issues besetting NE, some of which have been partially enumerated in the previous section, to

assure optimum utilisation of ICT-based initiatives specifically incubated for NE, especially the ones designed for citizen service delivery.

## Brainstorming Solutions: Contextualising ICT to Assure Development

Communities are the closest to the grassroots' problems and hence are the best judge to evaluate impacts of technology implementation as well as provide innovative solutions besetting governance. Detailed field visits to various states of NE (in the years 2001, 2007, 2009), ethnographic study, review of local media and informal interactions of the author with citizens and other experts confirm that the citizens of this region are quite literate, aware and empowered to vocalise their needs and aspirations from such citizen delivery mechanisms.

The solution therefore lies in rising above the prevalent norm of treating local citizens as 'passive recipients' or the 'last link' whilst designing ICT4D initiatives. Service delivery software must be provided with adequate channels of accepting citizens' feedback, expectations, needs or any other inputs that could emanate from the local reality, leading to some synchronization between the design assumptions and grassroot realities of such regions. This would help to adapt these initiatives as per the indigenous requirements and would eventually lead to complete adoption of the solutions by the rural communities.

For instance, if the software of e-Suvidha provided in CICs of NE, could be easily customized to accept responses from all its stakeholders including citizens' inputs on local issues and available indigenous knowledge systems to resolve these issues. In such a case, the redesigned initiative could prove to be more responsive to its local needs and resources to offer more holistic, 'home-grown' service delivery solutions, making it more popular and therefore more sustainable too. Moreover, this increased usage of the modified version could eventually open up better commercial avenues for the local NE communities to become Glocal (Local resources capturing global markets).

The need is, therefore to evolve an interdisciplinary design perspective to service delivery solutions as *e-Suvidha* to appreciate the opportunities and synergies that could emerge between different stakeholders involved in citizen service delivery systems. In the same vein, mechanisms have to be developed in the existing service delivery models to ensure participation of the citizens to preserve their indigenous knowledge and develop them for the good of all, possible only through adequate citizen participation ●

*Charru Malhotra is Associate Professor, Indian Institute of Public Administration (IIPA), I.P. Estate, New-Delhi*

**DEF HEADQUARTER**

44, III Floor, Kalu Sarai
Near IIT Delhi
New Delhi - 110 016
Tel: 91-11-26532786/87
Fax: 91-11-26532797
Email: def@defindia.net
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# Winners & Special Mentions

## e-Governance & Public Services Delivery

Query and Alert-based SMS Service of Mizoram Transport Department
**Winner**

Computerisation of Pension Payment System
**Winner**

Meghalaya e-Governance Core Infrastructure and e-Service Delivery Project
**Special Mention**

ICT-enabled Web-based Progress Monitoring System for Horticulture Mission for North East and Himalayan States
**Special Mention**

## Education & Learning

Rajiv Gandhi Computer Literacy

Programme
**Winner**

IT Skill Development and Education
**Winner**

## Health

Sanjeevani, Mobile Health Services
**Winner**

## Business & Commerce

Teletaxi
**Winner**

## Culture & Heritage

Xahitya.org
**Winner**

enajori.com
**Special Mention**

## Environment & Tourism

Village Spring Atlas for the Conservation of Himalayan Springs and Adapting to Climate Change
**Winner**

GIS & RS-based IWMP Monitoring & Evaluation System (Geo-IWMP)
**Winner**

## News & Media

Community Page for Citizen Journalists
**Winner**

## Entertainment

Eclectic Vibes
**Winner**

## Financial Inclusion

Gram Tarang
**Winner**

## Innovative Department/PSU

Meghalaya Integrated Information (Mii) System
**Winner**

## Livelihood & Enterprise

YouthNet Opportunity Express
**Special Jury Mention**

# Query and Alert-based SMS Service of Mizoram Transport Department



**ORIGINAL TITLE:** Query and Alert-based SMS Service of Mizoram Transport Department

**MEDIA FORMAT:** SMS

**WEBSITE:** http://transmizo.nic.in/

**PRODUCER:** National Informatics Centre, Mizoram State Unit

**LANGUAGE:** English

**LOCATION:** Mizoram

**CONTACT:** Mr. Sandip Pramanik

**EMAIL:** sandip.p@nic.in

## DESCRIPTION

This is a citizen centric SMS service; provide 24x7 Government to Citizen (G2C) and Citizen to Government (C2G) services. In case of G2C, the system automatically sends Alert SMS to vehicle owner's mobile 7 days prior to their vehicle's road tax, fitness certificate expiry date. Every day at 10 A.M., the Java scheduler generates a list of all vehicles whose road tax, fitness certificate or both will expire after 7 days, after which SMS are automatically sent to all vehicle owners starting at 11.A.M. by another java scheduler. The system also sends SMS to those people whose road tax payment is pending or their fitness certificate has already expired with a request to pay soon to avoid extra penalty amount.

In case of C2G, citizen can send query to know their vehicle's road tax and fitness certificate expiry date by sending an SMS. Authorized users (Transport Official, Police, Enforcement Agency, etc.), get full information (Owner Name, Address, Vehicle type, Tax, Insurance etc.) on the spot by sending SMS from their authenticated mobile number.

## EVALUATION

*The Jury was appreciative of the fact that mobile based SMS platform is being used to deal with day-to-day tasks of transport activities concerning the citizens and the transport officials. According to the Jury, this project, apart from digitization of the functions of the Transport Department resulting in a streamlined workflow has an added feature where information is available to citizens and the government officials on their phones via SMS. This feature ensures that relevant information is available to stakeholders anytime, anywhere on the ubiquitous mobile phones.*

# Computerisation of Pension Payment System, Manipur

**ORIGINAL TITLE:** Computerisation of Pension Payment System

**MEDIA FORMAT:** Online

**WEBSITE:** http://pension.man.nic.in

**PRODUCER:** Directorate of Treasuries and Accounts, Manipur and National Informatics Centre, Manipur

**LANGUAGE:** English

**LOCATION:** Manipur, India

**CONTACT:** Th. Kirankumar

**EMAIL:** dtamanipur@gmail.com



## DESCRIPTION

The manual Pension Payment System followed in Manipur suffered from several procedural gaps and resultant leakages. Unethical practices and irregularities ingeniously devised by different individuals and groups both from within and outside the system was suspect. There were instances of using forged Pension Payment Order (PPO)/ duplicate PPO, forging of signature of pensioner who had expired, miscalculation and over payment of pensions, non-recovery of excess withdrawals detected subsequently, non-surrendering of PPOs after the demise of the pensioner, etc. The State government planned comprehensive reforms of the prevailing system and NIC Manipur was approached for taking up the challenge.

Process re-engineering was done and a new computerized system was developed and implemented to bring in reforms in the pension implementation system. Major transformations in the process include complete abolition in the preparation of monthly pension using bill forms, direct payment of monthly pension to the pensioners' bank account, take digital photography (using web cam) and fingerprints (using biometrics) of the pensioner

**EVALUATION**

*The Jury appreciated the switchover of pension payment from manual to a computerized system which not only ensures that the state's pensioners are disbursed their pension in a timely manner but also that the backend of the system is now smoother and error-free. Pensioners no longer have to fill up bill forms on the basis of which pensions were drawn and accounts compiled. The process re-engineering also ensure that the pensioners have hassle-free access to their pension which considerably reduces their stress.*

once in every 6 months in the computerized system and exclude pensioner from further payment unless the photograph and certificate is furnished once in every 6 months. Pilot implementation of the project was made at Imphal Treasury by February 2007, and by November 2007, it was extended to all 12 pension paying Treasuries of Manipur.

# Meghalaya e-Governance Core Infrastructure and e-Service Delivery Project



**ORIGINAL TITLE:** Meghalaya e-Governance Core Infrastructure and e-Service Delivery Project

**MEDIA FORMAT:** Core IT Infrastructure

**WEBSITE:** https://meghalaya.gov.in:8443/megportal/, https://meghalayaonline.gov.in/

**PRODUCER:** Meghalaya Information Technology Society

**LANGUAGE:** English

**LOCATION:** Shillong, Meghalaya

**CONTACT:** Mr. D. P. Wahlang

**EMAIL:** dwahlang@yahoo.com

## DESCRIPTION

This project involves setting up the components of ICT infrastructure to enable various govt. departments to offer and process their respective services to citizens through an online portal and deliver requested document (certificate/license etc.) digitally. The functional core infrastructure setup to deliver e-Governance services are Meghalaya State Data Centre (MSDC), Meghalaya State Wide Area Network (MSWAN), Meghalaya State Service Delivery Gateway (MSSDG), and Common Services Centres (CSC) under the brand name 'Rainbow'.

The citizen-centric services are available online through Meghalaya State Portal (https://meghalaya.gov.in) and other utility services from different departments are available through https://meghalayaonline.gov.in portal. These portals contain online application forms where citizen can log in and can apply for a number of G2C services available from various govt. departments.

These applications are being hosted in MSDC and all applications received from citizens are directed by MSSDG middleware (also hosted inside MSDC) to the re-spective departments connected via MSWAN. Citizens in remote and rural areas can avail these services by visiting Rainbow CSCs spread across 225 locations throughout the state or from anywhere using the Internet.

## EVALUATION

*According to the Jury, core IT infrastructure is the backbone on which all e-Governance services rely on. The jury congratulates Meghalaya Information Technology Society for this project and appreciates the fact that the citizens and the state administration will now be able to access and administer e-Governance services irrespective of their location. It is hoped that the state government takes complete advantage of the ICT backbone that has been created under this project and brings in more e-Governance services for the benefit of all.*

# ICT-enabled Web-based Progress Monitoring System for Horticulture Mission for North East and Himalayan States

**ORIGINAL TITLE:** ICT-enabled Web-based Progress Monitoring System for Horticulture Mission for North East and Himalayan States

**MEDIA FORMAT:** Online

**WEBSITE:** http://tmnehs.gov.in

**PRODUCER:** Horticulture Division, Department of Agriculture & Cooperation, Ministry of Agriculture, Government of India, New Delhi

**LANGUAGE:** English

**LOCATION:** New Delhi

**CONTACT:** Dr. Gorakh Singh

**EMAIL:** gorakh.singh@nic.in

## DESCRIPTION

This application is used to monitor the monthly State-wise / District-wise physical and financial progress of the Horticulture Mission for North East and Himalayan States (HMNEH). District-wise data, compiled for each state is reported by Districts. States report the annual action plan to the headquarters which is examined and approved. Data entry includes physical /financial achievement for 180 components at District level and some components at State level. Various reports include State/ District Level Monthly and Yearly Reports, Dynamic Query Reporting, Status Reporting. User manual and data entry formats are uploaded on the website. The mission headquarter monitors the progress periodically online.

## EVALUATION

*The Jury appreciates the fact that this system facilitates effective monitoring of physical and financial progress of the horticulture scheme of North East India and its components thereby bringing about transparency in mission management and also enabling a stronger decision support to the government. The Jury is impressed by the emphasis of this project on 3R (Release of the automated system to all North East and Himalayan states. Replicate by simultaneous release to the districts with subsequent use and increase of load and in order to ensure scalability, concurrency, availability and maintainability. Recover by adopting redundancy and business continuity during disasters by ensuring clear-cut recovery mechanisms) and 3T (Timely flow of information among functionaries. Truth with built in controls, audits and checking mechanism that ensure only the correct data is entered. Availability of total and complete information by checking against partial, incomplete or insufficient information flow that can lead to wrong or no decision-making).*

# Rajiv Gandhi Computer Literacy Programme (RGCLP)



**ORIGINAL TITLE:** Rajiv Gandhi Computer Literacy Programme (RGCLP)

**MEDIA FORMAT:** IT skills training

**WEBSITE:** http://www.rgclp.in

**PRODUCER:** NIIT Ltd – School Learning Solutions

**LANGUAGE:** English and Assamese

**LOCATION:** Assam

**CONTACT:** Mr. Hemant Sethi

**EMAIL:** hemant.sethi@niit.com

## DESCRIPTION

The Rajiv Gandhi Computer Literacy programme, with private sector participation intends to carry forward the vision of the Hon'ble Chief Minister, Shri Tarun Gogoi, to "Build a computer literate Assam" by harnessing the potential of IT in improving the quality of services to citizens. Initially, the Planning and Development Department and AMTRON, the State Nodal Agency for Information Technology, embarked on this project of providing computer education, free of cost, to the students of the Higher Secondary and High schools of the State. Later on this programme was run by AMTRON under PPP mode under the aegis of the IT Department and then the Education Department of the Government of Assam. In pursuance thereof, AMTRON has entered into a strategic tie up with NIIT to implement this project. Currently, NIIT is covering 1121 schools under this project.

## EVALUATION

*Computer literacy has increasingly become a skill that are essential for the youth no matter what their career. The ubiquity of computers has also ensured that people of all ages are benefited if they are able to use a computer. The jury appreciates the efforts of the state government and NIIT for planning and executing a programme that is essential for today's youth.*

*This project not only impacts millions of students and thousands of teachers, but also other stakeholders like more than 3000 faculty members as well as many local youths as a part of the project management team, who are employed under this project. Till now, over 3.1 million students have undergone this programme with more than 28,000 teachers being trained in Assam.*

# IT Skill Development and Education

**ORIGINAL TITLE:** IT Skill Development and Education

**MEDIA FORMAT:** IT skills training

**WEBSITE:** NA

**PRODUCER:** Meghalaya Information Technology Society

**LANGUAGE:** English

**LOCATION:** Assam

**CONTACT:** Mr. Sagar Desai

**EMAIL:** sagardesai@symantec.com



## DESCRIPTION

This programme aims to provide comprehensive training and creation of opportunities for IT-ITeS employment in the state of Meghalaya. The main objectives of the programme includes development and implementation of lT skills education programme for Meghalaya; capturing current skill requirements for lT enablement of graduates & imparting training based on Symantec education courses; creating necessary in-class instructor-led infrastructure that can train 2000 participants (Phase -1) and 1500 (Phase-2) and ; maintaining database of certified participants which can feed into employment initiatives. The program rolled out with series of campaign delivers globally acceptable content, course material, certification for courses and syllabus and it is making people employable in lT discipline.

## EVALUATION

*The Jury has noted the essence of this programme to offer educational content via necessary class instructor led training infrastructure and interactive way. The program has been noted for ensuring practical hands-on labs training, expert mentoring support, and choice of courses.*

# Sanjeevani, Mobile Health Services



**ORIGINAL TITLE:** Sanjeevani, Mobile Health Services

**MEDIA FORMAT:** N.A.

**WEBSITE:** http://www.hmri.in/oursolutions-mobile-health.html

**PRODUCER:** Piramal Health Management and Research Institute, Hyderabad

**LANGUAGE:** English

**LOCATION:** Assam

**CONTACT:** Ms. Suzanne Rizzo

**EMAIL:** suzanne@hmriglobal.org

## DESCRIPTION

Sanjeevani delivers primary healthcare, emphasizing chronic diseases, to 3,744 habitations throughout Assam on a fixed-date each month through 78 mobile health units (MHUs). Each MHU is staffed with a driver, Registration and Measurement Officer (RMO), lab technician, Auxiliary Nurse-Midwife (ANM) and pharmacist and equipped with a biometric fingerprint scanner, laptop, HMRI software and a mobile phone.

The RMO creates/updates each patient's electronic health record (EHR) by collecting their fingerprints and personal details, taking their photo and height/weight/BP/temperature and recording their complaint. The patient may be treated for a minor ailment or screened for one of seven diseases. If the patient tests positive, she/he will be referred to a primary health centre for confirmation. Sanjeevani than distributes one month of medication. Sanjeevani staff may use the mobile to call 104 Sarathi, HMRI's health information helpline, to reach a doctor, who will provide advice using HMRI's algorithm and disease summary software. Every day, Sanjeevani's data is uploaded to a server where it can be

## EVALUATION

*In a state where the average distance to the nearest public health facility is 20 km and is characterized by rugged and hilly terrain, the Sanjeevani Mobile Health Services have served 400,000 patients across 3000 service points. The Jury appreciates the integration of digital patient records with the primary health centres that has been done through this project. Additionally, the presence of mobile health units supplements the government's primary health centres and ANMs and reaches out to citizens who are unable to visit their local health centres.*

accessed by 104 Sarathi; in case the patient need advice in the absence of the MHU. Sanjeevani also works closely with health workers such as accredited social health activists and sub-centre ANMs. This close relationship includingHMRI's digital records ensure strict monitoring and follow-up for each patient.

# Teletaxi

**ORIGINAL TITLE:** Teletaxi

**MEDIA FORMAT:** Telecall service

**WEBSITE:** www.teletaxis.in

**PRODUCER:** Tele Taxis

**LANGUAGE:** English, Mizo, Hindi

**LOCATION:** Aizawl, Mizoram

**CONTACT:** Ms. Elizabeth Fanai

**EMAIL:** Elizabeth@teletaxis.in



## DESCRIPTION

Getting instance taxi services at a phone call is something rare to happen in remote hilly regions. Tele Taxis provides a telephone call service so that people can book taxis over the phone to arrive within 15 minutes. Taxi drivers can earn more money working with Tele Taxis and save petrol by not having to drive around looking for passengers. Though this could be normal phenomena in place like New Delhi or Hyderabad, yet in a small and remote state, located in a hilly terrain in North East India, this service in Mizoram has created a new model of local transport service using simple ICTs and thus run the project sustainably. As a method, Tele Taxis use customized software to manage all passengers and driver information. The software is integrated with SMS system so that it can send and receive messages to drivers and passengers.

## EVALUATION
*What had generated interest in the Jury about Tele Taxis is the approach to create a local transport business model using simple ICTs towards a local problem, local solution approach to serve citizens in Mizoram especially in capital Aizawl city to meet local transport needs. It has noted the fact that such an idea to come up and implement in a State like Mizoram and that too in North East India is something rare and yet eye opening to promote local commerce and business for local youths as a lead example.*

# Xahitya.org



**ORIGINAL TITLE:** Xahitya.org

**MEDIA FORMAT:** Online

**WEBSITE:** www.xahitya.org

**PRODUCER:** Pankaj Barah

**LANGUAGE:** Assamese

**LOCATION:** Global

**CONTACT:** Mr. Pankaj Barah

**EMAIL:** pankajborah@gmail.com

## DESCRIPTION

Xahitya.org is an intellectual movement by the Assamese people for the Assamese people dealing with all genres of new writings in Assamese Unicode script on the web. It is an ICT-based platform aimed at digital preservation of the literary heritage of Assamese and North East India for free online access. Two of the epics of Assamese literature, 'Kirtan' and 'Namghosha' have already been converted to UNICODE versions which will aid studies related to Sankari culture, since researchers can now perform lexicographical, indexing, semantic search, etc,. with effortless ease.

The second initiative of Xahitya.org is the community-based creation of audio books of Assamese masterpieces which will be an important multimedia tool for the visually-challenged. The third aim of the project is to give new Assamese writers an opportunity for creative development and an aid to get their voices heard easily by readers from across the globe free of cost.

## EVALUATION

*Preservation of our cultural and literary heritage is an important activity that has been simplified to a large extent with the emergence of modern ICT tools. Not only do they help us digitize and preserve our heritage but also help making this shared culture accessible around the globe through the Internet.*

*The Jury thinks that Xahitya.org is a model that can be easily replicated for developing many more ICT-based community projects for digital collection, preservation and distribution of cultural heritage of other ethnic and linguistic communities, not just in the northeastern region of India but among all communities.*

# enajori.com

**ORIGINAL TITLE:** enajori.com

**MEDIA FORMAT:** Online

**WEBSITE:** www.enajori.com

**PRODUCER:** Himjyoti Talukdar

**LANGUAGE:** Assamese, English

**LOCATION:** Assam

**CONTACT:** Mr. Himjyoti Talukdar

**EMAIL:** himjyoti84@gmail.com



## DESCRIPTION

enajori.com is the first bilingual (Assamese & English) monthly e-magazine from Assam. This project aims to promote the cultural heritage of Assam around the world through the Internet and also compile a database of Assamese culture, literature, wildlife, etc, through the portal. The vision of this website and magazine is to create a single platform to showcase the culture and heritage of Assam for the world. The e-magazine is an attempt to reach out to the Assamese diaspora who are scattered around the world.

## EVALUATION

*The use of ICTs in the most innovative way to promote culture and heritage is the latest safeguard against dying cultural practices and wealth. Not only ICTs have given a new dimension to preservation, storage and restoration of our rich cultural heritage, it has also provided a new approach to adapt and view the past from a new perspective via the digital means. The Jury has noted the huge effort that has gone into the development of the digital enajori platform that has provided a new dimension to look at Assamese culture and heritage.*

# Village Spring Atlas for the Conservation of Himalayan Springs and Adapting to Climate Change



**ORIGINAL TITLE:** Village Spring Atlas for the Conservation of Himalayan Springs and Adapting to Climate Change

**MEDIA FORMAT:** Online

**WEBSITE:** www.sikkimsprings.org

**PRODUCER:** Rural management and Development Department, Government of Sikkim

**LANGUAGE:** English

**LOCATION:** Gangtok, Sikkim

**CONTACT:** Mr. Sandeep Tambe

**EMAIL:** jointsecy@gmail.com

## DESCRIPTION

The objective of this initiative was twofold, first to initiate conservation of the mountain springs by undertaking resource mapping of the springs on a GIS platform to better understand this valuable resource, and the preparation of a village spring atlas. The data collected from the extensive component of the study has been made accessible online at *http://sikkimsprings.org*. This online database provides information on the location, GPS coordinates, land tenure, catchment status, dependency, discharge (supply/demand) of nearly 400 springs of Sikkim and is also linked to Google earth. Secondly, in action research mode the initiative shows that these dying springs can be revived by rainwater harvesting. It is expected that the results will help to better design the revival of mountain springs and to also mainstream this approach as a climate change adaptation intervention.

### EVALUATION

*With Climate Change being a very real threat especially for the mountainous regions of the world, the Jury considers this effort as very interesting initiative. The two-pronged approach of the project has ensured that the primary data being collected and freely accessible on the website is not just used at the local level within the state of Sikkim but can also be used to design similar programmes in other parts of the world.*

# GIS & RS-based IWMP Monitoring & Evaluation System (Geo-IWMP)

**ORIGINAL TITLE:** GIS & RS-based IWMP Monitoring & Evaluation System (Geo-IWMP)

**MEDIA FORMAT:** NA

**WEBSITE:** www.lrdgon.com

**PRODUCER:** Department of Land Resources, Government of Nagaland

**LANGUAGE:** English

**LOCATION:** Nagaland

**CONTACT:** Mr. Menukhol John

**EMAIL:** menukhol@yahoo.com



## DESCRIPTION

Nature and diversity of works executed under the Integrated Watershed Management Programme, a scheme of Govt. of India and implemented in Nagaland, speaks out the magnitude and complexities involved in the management and, therefore, monitoring and decision making becomes very critical. The inadequate and age old information and communication infrastructure is a challenging task to management for monitoring and decision making. Identifying the emphasis and essence of spatial component in watershed management, State of Nagaland has taken initiatives towards use of Geospatial and related technologies to develop suitable web-based GIS solution for watersheds of Nagaland with key innovations including creation of spatial database of watersheds, assist executive staff in map to ground delineation of work sites, creation of digital inventory of all the interventions, and use of inventory for decision making in future planning.

## EVALUATION

*The Jury has appreciated the fact that the main purpose of this ICT initiative is to systematically organize planning implementation and monitoring of forestry and other related operations by systemic collection storage and retrieval of MIS and Geo-spatial data in an integrated manner. This is done through a computer based communication network so as to make the information readily accessible to all stakeholders and to make the whole process responsive transparent accountable and service oriented.*

# Community Page for Citizen Journalists



**ORIGINAL TITLE:** Community Page for Citizen Journalists

**MEDIA FORMAT:** Online

**WEBSITE:** www.merinews.com/community/iivet

**PRODUCER:** IGNOU Institute for Vocational Education & Training (IIVET)

**LANGUAGE:** English

**LOCATION:** Shillong, Meghalaya

**CONTACT:** Mr. Ananya S Guha

**EMAIL:** asguharsd@gmail.com

## DESCRIPTION

The IIVET has launched a three month module on Citizen Journalism for college and university students. It is also open to the public. The minimum eligibility is 10 +2. The course material has been designed by IIVET and the course writers are media specialists from different institutions of the country. In order to give the students a chance to sharpen their writing skills, IIVET has started this community page in collaboration with *www.merinews.com*.

## EVALUATION

*The advent of Web2.0 and the ubiquity of the Internet have combined to make the common citizen a contributor of news and information. Citizen Journalism is a step in the right direction that ensures that the news media is unbiased and is also an exertion of the citizen's fundamental right to freedom of expression. A course on Citizen Journalism (especially by one of India's largest universities) is expected to instill the ethics of journalism in the citizenry so that they can wield and exercise their powers more responsibly.*

# Eclectic Vibes

**ORIGINAL TITLE:** Eclectic Vibes

**MEDIA FORMAT:** Online periodical

**WEBSITE:** www.eclectic.co.in,
www.magzter.com/all_issues.php?magazine_id=212

**PRODUCER:** Eclectic Publications

**LANGUAGE:** English

**LOCATION:** Guwahati, Assam

**CONTACT:** Ms. Tanushree Hazarika

**EMAIL:** tanu.h@eclectic.co.in



## DESCRIPTION

Eclectic Vibes, launched in October 2009, is an independent music magazine published from Guwahati. It supports and brings to light independent musicians, be it mainstream music, western music or regional music. Independent musicians make up a huge chunk of artists and the magazine brings them and their work to focus for the world to see and admire. Earlier, the magazine was only available as a print magazine. It reached out to a select people in India. Utilizing Magzter as the delivery platform for the e-version of the magazine, it was introduced to global readers in February 2012. It gave them a bigger platform where they could introduce the music of North East India to the world.

## EVALUATION

*Music and other art forms are an important aspect of life, an aspect of the North East that the rest of the world is not familiar with. This project, starting as a print magazine, has been able to expand its reach from India to the globe by harnessing important global developments, the ubiquity of mobile Internet and smartphones/tablet computers which led to the development of digital newsstands like Magzter. The Jury hopes that this group acts as an inspiration to similar niche publications and other projects that document and share local knowledge and art forms of the region with the world.*

# Gram Tarang



**ORIGINAL TITLE:** Gram Tarang

**MEDIA FORMAT:** NA

**WEBSITE:** www.gramtarang.org

**PRODUCER:** Gram Tarang Inclusive Development Services Pvt. Ltd. (GTIDS)

**LANGUAGE:** Assamese

**LOCATION:** North East, India

**CONTACT:** Mr. Shivananda Kumar B.V.

**EMAIL:** venkat@gramtarang.org

## DESCRIPTION

GTIDS is currently working in 4000 Gram Panchayats spread across 8 states and plans to cover 10,000 villages by March 2013. In the North East, GTIDS is working as a business correspondent in 500+ Gram Panchayats where the population is more than 2000 in the states of Assam, Manipur and Tripura since January 2011. The banking and technology partner for this initiative are United Bank of India and ATYATI Technologies. Through this intervention, no-frill accounts are opened for everybody by Business Correspondents (BC) as he/she is equipped with a laptop, smart card reader, biometric machine, data card and a printer. The money earmarked for NREGS Payments and Pensions are channelized into the accounts of villagers. This initiative helps eradicate corruption and red tape to a great extent as the beneficiary has to come in person with their personalized smart card to withdraw money. Also, the beneficiaries can perform normal banking transactions like deposits, withdrawals etc using their smart cards in the village itself as the BC acts as an interface between villagers and the bank.

## EVALUATION

*Having a legal and formal bank account is a sign of economic independence as well as one of the hallmarks of being a citizen of a country. In the gross absence of this among millions in India has led to a kind of economic exclusion of a large chunk of India's citizens who are living on the edge of social and economic growth curve. The Jury has strongly marked the positive impact of the Gram Tarang in financial and economic inclusion in some of the States in North East India, which is otherwise known for wider financial exclusion marked with lowest credit delivery to the last mile.*

# Meghalaya Integrated Information (Mii) System

**ORIGINAL TITLE:** Meghalaya Integrated Information (Mii) System

**MEDIA FORMAT:** Online

**WEBSITE:** www.mii.nic.in

**PRODUCER:** Meghalaya Information Technology Society

**LANGUAGE:** English, Khasi, Garo

**LOCATION:** Shillong, Meghalaya

**CONTACT:** Mr. D P Wahlang

**EMAIL:** dwahlang@yahoo.com



## DESCRIPTION

Conceptualized by the Hon'ble Chief Minister of Meghalaya, Meghalaya Integrated Information System (Mii) is an innovative ICT-enabled project. The primary focus of the project is effective service delivery to the citizens across the state. It has been implemented by Directorate of Information and Public Relations, Govt. of Meghalaya with active support from the state IT Department. The project comprises of 3 components, namely, Mass Information Dissemination System (MIDS); Public Grievance Redressal System (PGRS) and; Citizen Information and Assistance Centre. The project, launched in February 2011 and completed in May 2012, is comprised of various independent systems forming a complete and complex integrated system of information dissemination and public grievance retribution. Mii is assisted with the help of a toll free number to call and obtain information and assistance by the citizens, a citizen help desk centre and, a citizen grievance portal *http://megpgrams.gov.in/* to register and monitor his or her grievance lodged.

## EVALUATION

*The Jury appreciates the project team for coming up with a comprehensive system that looks into multiple aspects of e-Governance service delivery. The Jury especially appreciates how the recently completed project has ensured that it is accessible through a variety of platforms (Toll free numbers, citizen helpdesk centre, citizen grievance portal). The government can reach out to citizens through a network of IP-based loudspeakers, LED text display panels, LCD video display panels, mobile vans etc. Another aspect appreciated is that existing state-wide IP network has been leveraged to carry voice, video and data to the most remote villages of the state and alternate power sources (solar/PoE) have been used to power remote equipment, all of which can be individually controlled and tested remotely from the Central Control Room.*

# YouthNet Opportunity Express



**ORIGINAL TITLE:** YouthNet Opportunity Express

**MEDIA FORMAT:** N.A.

**WEBSITE:** https://www.facebook.com/groups/211556155527637/, http://www.youthnet.org.in/

**PRODUCER:** YouthNet Opportunity Express

**LANGUAGE:** English

**LOCATION:** Kohima and Dimapur, Nagaland

**CONTACT:** Mr. Lezo Putsure

**EMAIL:** lputsure@hotmail.com

## DESCRIPTION

YouthNet currently runs a facebook group which has moved from 1500 Members in Oct 2011 to more than 13500 as on August 2012. This facebook group, acting as a platform for sharing information, is instrumental in enabling many young people get jobs. Through this group information about competitive exams, scholarships as also tips for career guidance, interviews and sharing of success stories. The group admin. have a target of reaching 40,000 members by 2017. Adding value through the help of Facebook, creating awareness and providing multiple job opportunities to Young people of Nagaland, YouthNet has already helped created close to 100 Jobs locally.

## EVALUATION

*This project is novel in the use of social media to connect and share information among the youth through a platform that they use on a daily basis. Apart from the facebook group, YouthNet also runs YNOX (Nagaland's only employment newspaper), and their tie up with SMARTER Nagaland to form Nagaland Job Consultants and Nagaland Career and Development Centre are steps in the right direction to connect young people with jobs, something that is needed to reduce the rate of unemployment.*

## Mission

'By connecting the world, collaborating with others, and advocating for equal access to the Internet, the Internet Society strives to make the world a better place. At the foundation of our work are a vision and a mission.'

## Vision

'The Internet is for everyone.'

## Our Work

- Championing public policies that enable open access
- Facilitating the open development of standards, protocols, administration, and the technical infrastructure of the Internet
- Organizing events and opportunities that bring people together to share insights and opinions

## Education & Leadership

- Providing reliable information and educational opportunities that include training workshops in developing countries
- Facilitating leadership programmes that include the cultivation of Next Generation Leaders and Internet Governance Forum (IGF) Ambassadors
- Supporting local Chapters that serve the needs of the growing global Internet community

## Get Involved

**This is Your Internet…Join It.**
Your membership to the Internet Society gives you a powerful voice.
As a grassroots organization, the Internet Society works hand-in-hand with its members to build a world that supports everyone's right to share knowledge, innovate, and be heard.
**By becoming a member you will:**

- Have your voice heard in critical policy debates that are shaping the future of an open Internet
- Have access to technical training and expertise
- Apply for grants and fellowships that could help you make your community, city, or country a better place
- Take part in or support projects and education in emerging economies
- Get the latest information that will help empower you to protect your online privacy and identity
- Become part of a powerful community that is working to make the world better

# Finalists

## e-Governance & Public Services Delivery
MAHANAGAR

Transport Computerization Project for Sikkim (Vahan) and Application for Computerization of Entire workflow in District Transport Offices

Transport Computerization Project for Tripura and Application for Computerization of Entire Workflow in District Transport Offices

Taxsoft, Mission Mode Project – Commercial Taxes (MMP-CT)

North Eastern District Resources Plan (NEDRP)

## Business  & Commerce
North East Mart

## Financial Inclusion
Banking services at the doorstep of rural communities in the un-banked areas of North East India

## Innovative Department/PSU
Flood Response System (FRS): Near Real-Time Flood Monitoring for Brahmaputra Basin using Microwave Remote Sensing

Development of Tools, Technologies and Resources for NE Languages

## Education & Learning
ICT interventions to enhance the learning of students through Multimedia content in Regional languages and Specialized Trainings

# MAHANAGAR

**ORIGINAL TITLE:** MAHANAGAR

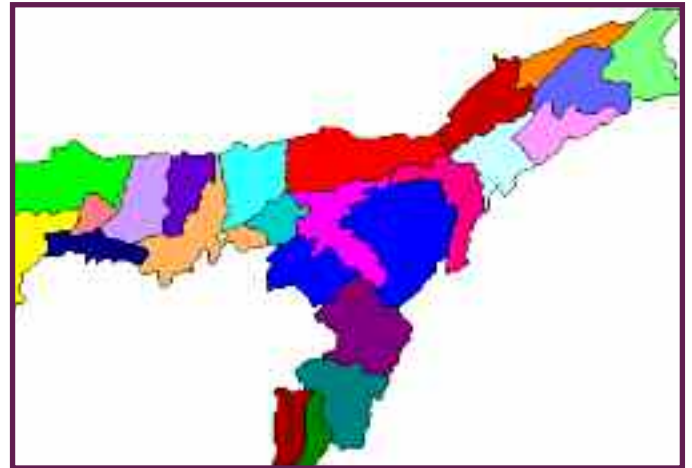**MEDIA FORMAT:** Online (Intranet application)

**WEBSITE:** NA

**PRODUCER:** Mr. Fakhruddin Ahmed

**LANGUAGE:** English

**LOCATION:** Kamrup (Metro), Assam

**CONTACT:** Mr. Fakhruddin Ahmed

**EMAIL:** mail2fakhruddin@yahoo.com



## DESCRIPTION

MAHANAGAR is an e-Governance system implemented in Kamrup (Metro) as a replication of ARONAI that was earlier implemented in Baksa and Nalbari districts. It is a combination of several applications designed for different branches of the district administration for day-to-day execution of works, especially to deal with matters related to citizen-centric services including disposal of RTI petitions in an efficient and transparent manner. The MAHANAGAR version of ARONAI has been suitably modified and customized with inclusion of more features like SMS-based information system, bar coding of certificates and computerized token system for registration. These advanced features have improved service delivery to a great extent and also have helped in curbing corruptions in some areas.

## EVALUATION

*The Jury is familiar with ARONAI, the project that MAHANAGAR is based on and thinks that this is a very good example of replication and adaptation of existing systems. This project brings in the benefits of a well-planned e-Governance application while reducing the financial burden on the state by modifying an existing system, thereby saving money and time spent on creating a new application.*

# Transport Computerization Project for Sikkim *(Vahan)* and Application for Computerization of Entire workflow in District Transport Offices



**ORIGINAL TITLE:** Transport Computerization Project for Sikkim (Vahan) and Application for Computerization of entire workflow in District Transport Offices

**MEDIA FORMAT:** Applications

**WEBSITE:** www.vahan.nic.in

**PRODUCER:** National Informatics Centre, Sikkim State Unit

**LANGUAGE:** English

**LOCATION:** English

**CONTACT:** D. K. Basnett

**EMAIL:** dkbasnet@nic.in

## DESCRIPTION

The Vahan applications have automated the entire workflow for issue of Registration Certificates (RCs) for vehicles and Driving Licenses (DLs) at 2 out of 4 Regional Transport Offices (RTOs) of Sikkim. Data from all districts is consolidated at the State Register and made available at the National Register for access by authorized persons on a synchronized system through secured VPN over Broadband and NIC RF Network.

For the Department, the benefits have been in terms of reduction in the processing time for all activities, increase in efficiency, and increased facility for day-to-day monitoring of all aspects including tax defaulters, revenue collection, identification of specific vehicles, etc. For the Government as a whole, the available data can be utilized for various monitoring and analyses by agencies such as revenue, law enforcement and security.

## EVALUATION

*With increasing urbanization it is essential that transport offices and systems are also computerized so that they are prepared for the future. According to the Jury, this project is a good example of such endeavours. This project has enabled the State Transport Department to streamline their workflow and ensure that the right information is available at the right time. Citizens also benefit from the system and thanks to digitization of DL and RC issuance. Additionally, this data is also available to line departments for matters related to law enforcement and security.*

# Transport Computerization Project for Tripura and Application for Computerization of Entire Workflow in District Transport Offices

**ORIGINAL TITLE:** Transport Computerization Project for Tripura and Application for Computerization of entire workflow in District Transport Offices

**MEDIA FORMAT:** Web-based applications

**WEBSITE:** www.parivahan.nic.in

**PRODUCER:** National Informatics Centre, Tripura State Unit

**LANGUAGE:** English

**LOCATION:** Agartala, Tripura

**CONTACT:** Mr. Chaitali Bhattacharjee

**EMAIL:** chaitali.b@nic.in



## DESCRIPTION

The transport applications have automated the entire workflow for issue of Registration Certificates (RCs) for vehicles and Driving Licenses (DLs) for all 5 District Transport Offices (DTO) of Tripura. Data from all districts is consolidated at the State Register and made available at the National Register for access by authorized persons through a synchronized system through secured VPN over Broadband and State Wide Area Network (SWAN). The process of issue of national permit has also been computerized and payments are made online.

State permit process is a web based application used throughout the state. The deliverables for citizens are RCs and DLs in the form of smart cards and paper documents which are delivered through postal service. Citizenry service through the website *http://tsu.trp.nic.in/transport* is provided where penalty calculation, tax calculation, application status can be availed. SMS service has been integrated upon completion of the process.

## EVALUATION

*The Jury appreciates the removal of red-tape, corruption and the overall improvement in workflow due to the introduction of this system. Timely and hassle-free delivery of DLs and RCs, shorter processing time of all activities, increased efficiency and monitoring of aspects like tax defaulters, revenue collection, identification of vehicles, etc., all add up to a system of governance that is efficient in its day-to-day functioning and has access to the right Decision Support System for future planning and exigencies.*

# Taxsoft, Mission Mode Project – Commercial Taxes (MMP-CT)



**ORIGINAL TITLE:** Taxsoft, Mission Mode Project – Commercial Taxes (MMP-CT)

**MEDIA FORMAT:** Online

**WEBSITE:** www.nagalandtax.nic.in

**PRODUCER:** Department of Taxes, Nagaland in collaboration with NIC, Karnataka

**LANGUAGE:** English

**LOCATION:** Nagaland

**CONTACT:** Mr. Dinesh Kumar

**EMAIL:** commr.tax-ngl@nic.in

### DESCRIPTION

Taxsoft application fully computerizes every transaction the taxpayers and their associates make with the Commercial Tax department on a regular basis. Thus, reducing paperwork, visits to the tax office, better administration and governance, transparency of the system, better information management system and easy auditing. Through this application the Department of Taxes, Nagaland is delivering a host of services to the taxpayers in Nagaland. The services are: e-Registration, e-Return filing, electronic issuance of statutory forms under Nagaland VAT Act and Central Sales Tax, e-payment of Taxes, e-TDS, e-Refunds, e-Audit, etc. The application also has interface for department employees which assists them in their day-to-day functioning thereby aiding in the effective implementation of Commercial Tax Act in the State. Further, through the website, which has been developed as part of this project, pertinent information is disseminated to the stakeholders of the project and the public at large.

### EVALUATION

*The Jury appreciates the computerization of Commercial Taxes in the State of Nagaland through Taxsoft which has made the process of filing taxes hassle-free for the taxpayers and at the same time also ensured that the government is able to better administrate, audit and manage the system in a transparent manner. With this, not only the governance of the tax process across the State has become easier but the revenue generation for the Department has become less complex and systematic.*

# North Eastern District Resources Plan (NEDRP)

**ORIGINAL TITLE:** North Eastern District Resources Plan (NEDRP)

**MEDIA FORMAT:** Online

**WEBSITE:** http://nesac.gov.in

**PRODUCER:** North Eastern Space Applications Centre (NESAC), Meghalaya

**LANGUAGE:** English

**LOCATION:** Shillong, Meghalaya

**CONTACT:** Dr. S. Sudhakar

**EMAIL:** s.sudhakar@nesac.gov.in



## DESCRIPTION

North Eastern District Resources Plan (NEDRP) is an attempt to use space technology input for preparing Detailed Project Report (DPR) for the benefit of district administrations as well as concerned line departments in the region for effective implementation of the Government of India plans such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Integrated Watershed Management Programme (IWMP), Provision of Urban Amenities in Rural Areas (PURA), etc.

Prime objective of NEDRP is to provide reliable, relevant up-to-date and affordable information to the district administration and other departments for planning various developmental activities in their district in a user-friendly web interface developed using Open Source GIS software and standards. It contains information on land-use, wastelands, wetlands, soil, infrastructures, etc., along with action plan inputs for land and water resources. Apart from these, district and block level socio economic data are linked with each of the thematic information. Statistical records of each of the thematic information in the form of table as well pie chart are also incorporated. Incorporation of climate information in the form climatic zones helps preparation of suitability maps for various crops, etc.

## EVALUATION

*Access to updated, reliable and on-demand information as provided by the system is an important aspect for efficient planning and implementation of developmental activities by the government. According to the Jury, the integration of the North Eastern District Resources Plan information dissemination mechanism with the capability of Decision Support System (DSS) helps in the effective utilization, management and planning of natural resources in the region. The system, being developed using open source software and standards while being able to support enterprise level architecture for hosting on public domain, is inherently scalable and sustainable.*

# North East Mart



**ORIGINAL TITLE:** North East Mart

**MEDIA FORMAT:** Online

**WEBSITE:** http://www.northeastmart.com

**PRODUCER:** Xview Media

**LANGUAGE:** English

**LOCATION:** Assam

**CONTACT:** Mr. Dhruba Jyoti Barua

**EMAIL:** iambabba@gmail.com

### DESCRIPTION

Provision of market for products from North East India outside the region has been always a challenging economic fact. North East Mart is an e-Commerce site for selling products from North East India. The primary objective for setting up the portal is to create a platform for small entrepreneurs in the region to sell their products around the globe. North East Mart is primarily designed for B2B and B2C business purpose.

### EVALUATION

*The Jury has noted the fact that the project www.northeastmart.com is an E-Commerce site for selling products from North East India. It's free to post any item to sell. Depending upon the features and goods it has categories and subcategories. The project is an effort to promote small entrepreneurs to sale their products around the globe.*

# Banking services at the doorstep of rural communities in the un-banked areas of North East India

**ORIGINAL TITLE:** Banking services at the doorstep of rural communities in the un-banked areas of North East India

**MEDIA FORMAT: NA**

**WEBSITE:** http://www.drishtee.com

**PRODUCER: Drishtee Development and Communication Limited**

**LANGUAGE: Assamese**

**LOCATION: North East India**

**CONTACT: Mr. Paragdhar Kanwar**

**EMAIL: parag.k@drishtee.in**



## DESCRIPTION

Drishtee has been operating mostly in the rural and unbanked areas of India, using local entrepreneurs and information technology to build a unique 'last mile' distribution network. It aims to provide innovative service in banking sector and employment generation to people in rural and semi urban India by an alliance with largest public sector bank SBI and its widest branch coverage, which deliver a variety of banking services to the segment. Based on its existing network, the organization selects promising and challenging entrepreneurs to take up banking services kiosks. Drishtee's banking service offers both sourcing and most importantly kiosk banking technology through individual deployment. The banking service has been working with more than 750 franchisees, in 5 Northeastern states, for last 7 years to provide reliable and effortless banking experience and employment opportunities to people in rural and semi urban India.

## EVALUATION

*Access to full-fledged banking services is an essential part of economic empowerment and having recognized that, the government and the private sector have been working to ensure that the rural masses of the nation have access to these services at their doorsteps. Drishtee has been working tirelessly in this direction for years and in the process has also provided employment to many through its multi-pronged approach. The Jury appreciates the extended programme of Drishtee to provide banking services in un-banked areas in North East India.*

# Flood Response System (FRS): Near Real-Time Flood Monitoring for Brahmaputra Basin using Microwave Remote Sensing



**ORIGINAL TITLE:** Flood Response System (FRS): Near Real-Time Flood Monitoring for Brahmaputra Basin using Microwave Remote Sensing

**MEDIA FORMAT:** Web-GIS based

**WEBSITE:** NA

**PRODUCER:** Geomatics Solutions Development Group, Centre for Development of Advanced Computing (C-DAC), Pune

**LANGUAGE:** English

**LOCATION:** Brahmaputra Basin, Assam

**CONTACT:** Ms. Upasana Dutta

**EMAIL:** upasanad@cdac.in

## DESCRIPTION

Centre for Development of Advanced Computing (C-DAC) has developed a Flood Response System (FRS) for the Brahmaputra basin. FRS is a network-enabled GIS based solution developed using open source software. It has flood damage assessment query-based modules with output in the form of spatial and statistical databases and theme-based maps. It is aided by microwave remote sensing to help plan and execute efficient emergency response and post disaster management measures. The system effectively facilitates the management of various activities related to disaster caused due to flood and maintains a steady flow of information at all levels. It is designed to facilitate users in managing information related to flood during critical flood seasons and analyzing the extent of damage in near real-time.

## EVALUATION

*Flood is a real and an annual threat for the Brahmaputra Basin and the implementation of an ICT-enabled flood response system is essential for the safety of people and property in the region. At a time when ICTs are not being used profoundly to deal with natural and environmental challenges in North East India, the FRS project has come handy and at right time due to the magnitude of the flood problem in Assam and rest of North East India. The Jury appreciates that the system is self-sustainable and scalable to the entire country.*

# Development of Tools, Technologies and Resources for NE Languages

**ORIGINAL TITLE:** Development of Tools, Technologies and Resources for NE Languages

**MEDIA FORMAT: NA**

**WEBSITE: NA**

**PRODUCER:** Graphic and Intelligence-based Script Technology Group, Centre for Development of Advanced Computing (C-DAC), Pune

**LANGUAGE:** Assamese, Bodo, Nepali and Manipuri

**LOCATION:** Assam and North East India

**CONTACT:** Mr. Mahesh Kulkarni

**EMAIL:** mdk@cdac.in

## DESCRIPTION

The project has been visualized as a nurturing one that is scaling and promoting major languages of the North-East on to the digital medium to ensure that these languages and the populations of this geo-linguistic region have their rightful place on the digital map. Language and Technology are closely tied and contribute to societal and economic growth. The project was conducted under the aegis of the Department of Information technology, Government of India. Conceived in Consortia mode, it had as partners Universities and academia from the North Eastern states whose languages are under survey.

The project, initiated in 2008 and completed in 2011, was visualized in what is termed in management as an "exponential growth model in tree mode" and therefore laid down priorities to ensure a steady growth of the scripts and the languages in relation to the computer medium. To ensure sustained growth an exponential model was proposed. The project's main objective was to work hand-in-hand with its partners and acquaint them with tools for

## EVALUATION

*While the Jury agrees with the idea behind this project, that of the conservation of languages and scripts in the digital era, what is most appreciated is the way this project has been implemented by C-DAC and their partners. Creating the groundwork for the development of these resources and then handholding the partner universities and academia to ensure that the project does not remain a mere technology project but is a socio-linguistic project is a vision that has been sustained from the beginning. This approach also ensures that the project is self-sustainable as it is fueled by the enthusiasm of the linguistic group it serves.*

development of grass-roots technologies to ensure sustained growth of Assamese, Nepali, Bodo and Manipuri languages on the digital medium.

# ICT interventions to enhance the learning of students through Multimedia content in Regional languages and Specialized Trainings



**ORIGINAL TITLE:** ICT interventions to enhance the learning of students through Multimedia content in Regional languages and Specialized Trainings

**MEDIA FORMAT: NA**

**WEBSITE:** http://www.educomp.com

**PRODUCER:** Educomp

**LANGUAGE:** Assamese, Bodo and Bengali

**LOCATION:** Assam

**CONTACT:** Mr. Soumya Kanti Purkayastha

**EMAIL:** edureach@educomp.com

## DESCRIPTION

Given the size, cultural and linguistic diversity of India, ICT interventions need to be timely and customized to suit the needs of the people being served. Educomp provides specialized training to school teachers and to the other personnel who are involved in concerned ICT projects. The training programmes give teachers handholding support and quality training to help them understand technology and use it effectively in the classroom by developing training modules to contain 21st century learning skills, project-based skills, making lesson plans and continuous evaluation systems. Edumate is a device for technology-enabled learning that is also a computer-cum-projector with in-built speakers. It has been designed by Educomp keeping in view the requirements of schools to help ICT integration in pedagogy.

## EVALUATION

*The Jury has appreciated the learning inclusion approach of Educomp. It has noted the approach of making available ICT programmes /ICT content in the respective regional languages of the Indian states specific to requirement in North East India in Assamese, Bodo and Bengali languages. The approach is seen to have addressed the challenge in the lack of trained teachers who can spread the benefits of these ICT interventions to the masses in local socio-cultural context.*

Towards sustainable development in North East

www.nedfindia.org

Research, field programmes, skill enhancement, technology solutions and policy & citizen consultations

### Prof. (Dr.) M. P. Gupta
**Founder & Director – DEF**

Professor at the Department of Management Studies, Indian Institute of Technology Delhi (IIT Delhi), India. Also served as Professor-in-Charge of IITD Accounts and Audit at IITD. He is known for his pioneering works in the area of e-governance that include 15 Doctoral thesis, 11 sponsored projects worth >5 crores, co-authored book "Government Online" and about 176 research papers that appeared in National and International Journals/Conference Proceedings. Some of the reputed journals where his publications appear are 'Government Information Quarterly (GIQ)', 'International Journal of E-government Research (IJEGR)', 'Electronic Government: An International Journal (EG)' 'International Journal of E-governance', "Transforming Government: People, Process and Policy', 'Global Journal of Flexible Systems Management' and 'Vikalpa'. He is regular reviewer of these and other International Journals (Omega, Decision Support Systems, DATA BASE for Advances in Information Systems).

### Amitabh Singhal
**Board Director – .ORG, PIR**

Amitabh currently sits on the Board of .ORG, the Public Interest Registry, based in Reston, Virginia. He is the Director of Telxess Consulting Services Pvt. Ltd. and Vcon Services Ltd. He was a founder, Board Director and CEO of National Internet Exchange of India (NIXI). He helped conceptualize and set up NIXI as a public private partnership between ISPAI and Department of Information Technology, Government of India and was involved in restructuring NIXI as an autonomous Registry and Regulator of the .IN Domain (Indian ccTLD), including its commercial launch, drafting and implementing the INDRP, and appointment of Registrars, etc.

### Osama Manzar
**Founder & Director – DEF**

Osama Manzar is a convert social entrepreneur spearheading the mission to overcome the information barrier between India's rural sector, and the so-called developed society, through Digital Empowerment Foundation (DEF) – the not-for-profit organization founded to accomplish the mission. He is a Member, Working Group, Internet Governance Forum of Ministry of Communication & IT and was a Member, Task Force on Growth of IT, ITES & Electronics HW Manufacturing Industry, Ministry of Comm & IT, India.

## Rajen Varada
### Founder, Technology for the people

Rajen Varada is a ICT practioner since 1995 and continues to be actively engaged in designing and implementing proff of concept solutions for rural development using technology and in particular ICT. He has beeen at the forefront of developing solutions for health, early childhood care,( sisu samrakshak) disaster,( SMS4help), district administration (Parishkaram) and most recently 'Labnet" a migrant labour tracking and servces portal. Technology for the people and NGo of which he is the founder continues to research on ICTsolutions for the social sector. Rajen has been the founding of movements like public sector software and actively supports community ownership of technology, from community radio, community Tv and open source use.

## Ashis Sanyal
### Department of It, Government of India

Mr. Ashis Sanyal started his career as an Engineer in Ministry of Communications in 1975. During 1982-2000, he worked in the areas of Electromagnetic Interference and Compatibility and Millimeter wave Electronics. Since the year 2001 he was responsible for the implementation of e-Governance Projects. He was the Mission Leader of the Core e-Gov Infrastructure Project and was the alternate Mission Leader for the National e-Governance Plan. Since his retirement in 2010, Mr Sanyal has been actively providing consultancy services for the Capacity Building e-governance project and ICT projects.

## Asif Syed
### Editor, Current Newspaper

He is currently working as an Editor and Publisher for Current Newspaper. Current is a weekly newspaper about the business of politics and the politics of business. Every week Current gives its readers an insider's view of government, political and business activity from around the country. Before that He was the Director at Current Publications Pvt. Ltd. Current Publications Pvt. Ltd. is the company that owns the 'Current' weekly newspaper and other titles like Real Estate and Vibes. The company is headquartered in Mumbai with editorial and commercial offices in Mumbai and Delhi.

### Dr. Bini Toms
**Regional Director & Unit Head, EDNERU-Headquarters**

Dr. Bini Toms has a rich and varied experience at national and international levels in the fields of Bioethics, Genetics and Plant Breeding. She has had a brilliant academic career. She has completed her B.Sc.(Ag) in 1997 and M.Sc.(Ag) Genetics and Plant Breeding in 1999 and has been a university topper throughout, having received, Vishwa Vidyalaya Gold Medal, Silver Jubilee commemoration Rotary Silver Medal and Govind Prasad Silver Medal. She completed her Ph.D. in Genetics and Plant Breeding in 2003.Before joining IGNOU as the Regional Director, EDNERU headquarters, she was working at T John College (TJC), Bangalore as the Vice Principal after serving as Head of the Departments of Biotechnology & Genetics.

### Tulika Pandey
**DIT**

An Electronics and Telecommunications Engineer, Tulika has been with the Government of India since 1992 and holds the position of Director with the Department of Information Technology, Ministry of Communications & Information Technology.

North East Development Foundation

Department of IT, Sikkim

SIKITEX
SIKKIM'S IT EXHIBITION AND CONFERENCE

10 YEARS DEF
DIGITAL EMPOWERMENT foundation

NEIITA
North East India Information
Technology Association

Manipal
SMU
Sikkim Manipal University

nixi
National Internet Exchange of India

Internet Society

NASSCOM

IAMAI

VAR INDIA

GOOD GOVERNANCE

### SIKKIM MANIPAL UNIVERSITY (SMU)
*www.smude.edu.in*

Sikkim Manipal University (SMU) is the result of a unique partnership between the Government of Sikkim and Manipal Education. Established in 1995, it is the first government-private initiative in the region. It was set up with the objective of providing the best in education for students.

### SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY (SMIT)
*http://smit.smu.edu.in*

The Sikkim Manipal Institute of Technology was established in 1997 as a constituent college of Sikkim Manipal University and is approved by AICTE. SMIT had been accredited for engineering disciplines by National Board of Accreditation (NBA) in 2008. SMIT had also been ISO 9001 accreditated vide NS-EN ISO 9001:2000 for all its courses. The renewal process is currently going on for both NBA and ISO certification. The Engineering College has its own campus at Majitar, Rangpo East Sikkim. The institute's location on the banks of river Teesta, surrounded by green hills, adds to the vibrancy of the campus and makes it an ideal place for learning.

### NORTH EAST DEVELOPMENT FOUNDATION
*www.nedfindia.org*

North East Development Foundation is a registered not-for-profit, registered under Societies Act XXI of 1860, registered in New Delhi. Since 2006 NEDF is making constant efforts to create platform solutions to contribute to sustainable development practices and programmes in North East. Since its inception NEDF has engaged itself into number of activities while pursuing its mission and objectives. One of its focus areas of intervention had been development, promotion, spread and usage of information communication technology (ICT) for grassroots empowerment solutions.

### DEPT. OF IT, SIKKIM
*http://www.sikkim.gov.in*

Department of IT, Sikkim - The Dept of IT , Sikkim is spearheading the IT development process across the State. It is the lead agency in facilitating e-governance, IT hardware and infrastructure and software development and promotion in various departments. The Department annually organises the SIKITEX programme, Sikkim's flagship IT Event. http://www.sikkim.gov.in/

### DIGITAL EMPOWERMENT FOUNDATION
*www.defindia.net*

Digital Empowerment Foundation, a Delhi based not-for-profit organization was registered on December 2002, under the "Societies Registration Act XXI of 1860 to find solutions to bridge the digital divide. With no political affiliations, it was founded by Osama Manzar to uplift the downtrodden and to create economic and commercial viability using Information Communication and Technology as means. It was actively started in the year 2003 after the founder director left his software company to seriously pursue the aims and objectives of Digital Empowerment Foundation.

### NATIONAL INTERNET EXCHANGE OF INDIA
*www.nixi.in*

The National Internet Exchange of India (NIXI) is a non-profit Company established in 2003 to provide neutral Internet Exchange Point services in the country. It was established with the Internet Service Providers Association of India (ISPAI) to become the operational meeting point of Internet Service Providers (ISPs) in India. It aims to facilitate the handing over of domestic Internet traffic between the peering ISP members, rather than using servers in the US or elsewhere. This enables more efficient use of international bandwidth and saves foreign exchange.

### ISOC
*www.internetsociety.org*

The Internet Society engages in a wide spectrum of Internet issues, including policy, governance, technology, and development. We establish and promote principles that are intended to persuade governments to make decisions that are right for their citizens and each nation's future. Everything we do is based on ensuring that a healthy, sustainable Internet is available to everyone – today and for the next billion users.

### NASSCOM
*http://www.nasscom.org/*

NASSCOM is the industry association for the IT-BPO sector in India. A not-for-profit organisation funded by the industry, its objective is to build a growth led and sustainable technology and business services sector in the country. Established in 1988, NASSCOM's membership has grown over the years and currently stands at 1,350. These companies represent 95 percent of industry revenues and have enabled the association to spearhead initiatives and programs to build the sector in the country and globally.
http://www.nasscom.org/

## IAMAI
### *www.iamai.in*

The Internet & Mobile Association of India (IAMAI) is a not-for-profit industry body that seeks to expand and enhance the online and mobile value added services sectors. It is dedicated to presenting a unified voice of the businesses it represents to the government, investors, consumers and other stakeholders. The association's activities include evaluating and recommending standards and practices to the industry, conducting research, creating platforms for its members, communicating on behalf of the industry and creating a favorable business
environment for the industry.

## VAR INDIA
### *http://www.varindia.com/*

VAR India - With a wide portfolio of industry- KALINGA DIGITAL MEDIA PVT. LTD. (KDMPL) has a dominant position in the Indian IT media industry. Apart from publishing VARIndia, its flagship magazine and India's leading technology & IT news portal, the company takes pride in offering other on-line websites to address the VARs and Enterprises, IT Technology Test center, Market Research services and organizes several technology events throughout the year. Brand Book for Indian ICT Industry, which has become the prized possession of discerning readers and corporate across the country, is latest crème de la crème from KDMP. http://www.varindia.com/

**SMU**
**Sikkim Manipal University**

Sikkim Manipal University (SMU) is the result of a unique partnership between the Government of Sikkim and Manipal Education. Established in 1995, it is the first government-private initiative in the region. It was set up with the objective of providing the best in education for students.

SMU is recognised by the **University Grants Commission** and approved by the Government of India.

The beautiful campus is located in Majitar and Rangpo, amongst the picturesque settings of River Teesta and Kanchendzonga mountains. It hosts the second largest hospital in Sikkim, providing healthcare to the masses. The medical campus runs courses on medical, pharmacy, allied health and nursing while the technology campus has engineering, management courses, Twinning Programmes and Applied Sciences.

Sikkim Manipal University has the following constituent institutions:
- Sikkim Manipal Institute of Medical Sciences (SMIMS)
- Sikkim Manipal Institute of Technology (SMIT)
- College of Nursing
- College of Physiotherapy
- School of Basic & Applied Sciences

As ranked by Competition Success Review - October 2009, Sikkim Manipal Institute of Technology (SMIT) is ranked 8th amongst the Best University Engineering Colleges of India. SMIT Ranked amongst 17th in the Best Engineering Colleges of Excellence in India. SMIT has also bagged 27th rank amongst the Top 50 Engineering Colleges of India.

### Study Areas (Disciplines) at SMU
- Engineering
- Medical
- Management
- Applied Sciences
- Nursing
- Physiotherapy
- Doctor of Philosophy [PhD]

*Website: www.smude.edu.in*

'DIGITAL INCLUSION FOR

# INCLUSIVE GROWTH

IN NORTH EAST INDIA'

## 54
Total Nominations

## 27
Finalists

CATEGORY WISE NOMINATIONS:
Governance and Public Services Delivery- 16
Innovative Department- 2
Education- 9
Livelihood and Entrepreneurship- 4
Financial Inclusion- 2
Commerce and Business- 2
Culture and Heritage- 4
Innovative IT/ICT- 7
Environment & Tourism- 2
Health- 4
News And Media- 1
Entertainment- 1