

INNOVATIVE DEPLOYMENT OF DIGITAL INTERVENTIONS FOR MASSES

DEVELOPMENT & DIGITAL INCLUSION

CASES FROM INDIA & SOUTH ASIA

Even in this era of digital age, India and South Asia are passing through the biggest challenges of the time - how to leapfrog the countless under-developments and lack of governance in public services delivery. It is time for looking beyond information communication technologies as merely tools but to concentrate on content, services and last mile deliverables. Incidentally The Manthan Award platform, in the last 6 years, has connected to more than 1,000 initiatives which are primarily known as digital content developers and innovative services deployers. However, such inclusive digital initiatives need to speak beyond the dias of the awards. This book is an effort to compile the successful deployments of ICT & digital media enabled projects, its impact, and learning that in many ways have impacted the society at large. This book also advocates the necessity of "digital content and services" over just "technology deployment" in the name of infrastructure but not going beyond that. The learning from this book is "map the need and necessities of the users and the stakeholders, then choose the right technology and medium".

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Foreword by
R Chandrashekhar

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This publication is an outcome of research from The Manthan Award platform database. In addition, DEF Research team has made all efforts to source the information from the case study practitioners. This book is an effort to provide select learnings of how ICTs and digital content and services are impacting the masses in India and other South Asian countries. This is not a claim on the authenticity of facts and figures mentioned in the book. It is hereby declared that nobody from editors, researchers and publishers will be responsible for any error found in the book.

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aaQUA	Almost All Questions Answered	LAN	Local Area Network
ADEO	Additional Employment Officers	LIDKAR	Karnataka Leather Industries Development Corporation
AIDS	Acquired Immune Deficiency Syndrome	MBBS	Bachelor of Medicine and Bachelor of Surgery
ASCENT	Asian Centre for Entrepreneurial Initiatives	MCI	Medical Council of India
B2B	Business to Business	MIT	Massachusetts Institute of Technology
B2C	Business to Consumer	MS	Microsoft
BDS	Bachelor of Dental Surgery	MSME	Micro Small and Medium Enterprise
BOOT	Build-Own-Operate-Transfer	MSP	Minimum Support Price
BPL	Below Poverty Line	NACO	National AIDS Control Organisation
BPO	Business Process Outsourcing	NASSCOM	National Association of Software and Services Companies
BRAC	Bangladesh Rural Advancement Committee	NBCC	National Building Construction Corporation
BSNL	Bharat Sanchar Nigam Ltd.	NeGP	National e Governance Programme
C2C	Consumer to Consumer	NGO	Non Governmental Organisation
CAM	Computer Aided Manufacturing	NHRC	National Human Rights Commission
CCTV	Closed-Circuit Television	NIC	National Informatics Centre
CICs	Community Information Centers	NLDP	National Leather Development Programme
CID	Computer Aided Design	OFC	Optical Fiber Cable
CLRI	Central Leather Research Institute	OSCAR	Open Source Simple Computer for Agriculture
CME	Continuing Medical Education	PDA	Personal Digital Assistant
CSC	Common Service Centre	PDS	Public Distribution System
CSCSC	Chhattisgarh State Civil Supplies Corporation	PHC	Primary Health Centres
DG	Director General	PMS	Prison Management System
DHAN	Development of Humane Action Foundation	RMP	Rural Medical Practitioners
DSRR	Digital Satellite Radio Receiver	RTI	Right To Information
F2S	Friends to Support	RWC	Rice Wheat Consortium for Indo Gangetic plains
FM	Frequency Modulation	SHG	Self Help Groups
FCI	Food Corporation Of India -	SMS	Short Messaging Service
FPS	Fair Price Shops	STDs	Sexually Transmitted Diseases
FTP	File Transfer Protocol	TCS	Tata Consultancy Services
G2C	Government to Citizen	TDPs	Targeted Public Distribution System
GDP	Gross Domestic Product	UGC	User-Generated Content
GIS	Geographic Information System	UGMed	Under Graduate Medical
GPRS	General Packet Radio Service	UN	United Nations
GPS	Global Positioning System	UNDP	United Nations Development Programme
GRH	Government Rajaji Hospital	UNICEF	United Nations Children's Fund
HIV	Human Immune Deficiency Virus	UPS	Uninterrupted Power Supply
HR	Human Resource	URC	Unified Ration Card
HSDRC	Health & Social Development Research Centre	USAID	United States Agency for International Development
HSTP	Hyper Speech Transfer Protocol	VICs	Village Information Centres
IAMAI	Internet and Mobile Association of India	VMS	Development and Implementation of Visitor Management System
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics	VMS	Visitor Management System
ICT	Information Communication Technology	VSAT	Very Small Aperture Terminal
IFP	French Institute of Pondicherry	WAP	Wireless Application Protocol
IGP	Indo Gangetic Plains in Rural Areas	WHC	Web Health Centre
IPS	Indian Police Service	WHO	World Health Organisation
IT	Information Technology	Wifi	Wireless Fidelity
ITU	International Telecommunication Union	WWTW	World Wide Telecom Web technology
IVR	Interactive Voice Response		
J2ME	Java 2 Micro Edition		
KVK	Krishi Vigyan Kendra		
KVS	Kalanjiam Samuga Vanoli		

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Development, digitally!

It gives me immense pleasure and joy to note that this special case study publication on select best digital content innovations and practices from India and South Asia is a product of research and analysis with due diligence with ground level realities. It is a manifestation of conviction on the power of digital technology and content having tremendous potential to support ongoing development efforts in this region as in rest of the world. It is a product of critical observation, induction and deduction analysis of digital experiments that are taking place on labs down to the fields. It is a compilation of priceless works of e-content practitioners & innovators from India and South Asia.

I must reveal that the sincere works of the Manthan Award winners is the prime moving force in bringing out this special case study publication as a first in its series: Development & Digital Inclusion: Innovative Deployment of Digital Interventions for Masses: Cases from India & South Asia. The content innovations and creations have propelled this initiative to document such practices that are having sizable impact in addressing key social, cultural, economic and governance issues deploying digital technology and content solutions. In a way, this publication is a sincere acknowledgement to our great content practitioners and pioneers for their continuous strive towards developing content solutions to bridge economic and developmental gaps and socio-economic drought areas. No wonder, these innovative solutions have propelled Digital Empowerment Foundation to ideate, plan and execute the task of documenting best digital content practices in the region in a series of such initiatives to be followed hereafter.

The efforts towards bringing out this publication would have been incomplete but for the warmth and support from key partners in both public and private domain who believed in the efforts of Digital Empowerment Foundation to shoulder this responsibility in mapping some of the best digital content practices from the region cutting across education, health, governance to community broadcasting. Of special mention here is the support from Department of Information Technology, Ministry of Communications & Information Technology, Government of India whose continuous guidance and timely support in DEF's objectives have bolstered our efforts to document this exercise. DIT's support in hosting the World Summit Award Grand Jury 2009 in India to select global best digital content practices and the supporting WSA India International Summit 2009 event have provided the relevant platform to release this publication wherein DIT's and WSA's resource and knowledge support have been immense through various occasions.

My acknowledgement is incomplete without writing a brief on the research and analysis undertaken for this accomplishment. My special acknowledgement goes to Emmanuel Neisa for his intense research analysis on the cases and for his painstaking efforts in arriving at this final stage. Emmanuel, though is an Intern with DEF, but his depth of knowledge about the issues around ICT for Development is full of hunger and desires. I can easily say, that this book was possible in the given dead-

line because of his focused attention and impeccable dedication. Also I must admire the efforts undertaken by Nidhi Sharma as a co-researcher in doing an excellent job in accomplishing the task in hard pressed time. It goes without saying in detail that the design, layout, colour pattern, presentation and visual appeal of the publication reserves all credit for Shaifali Chikermane.

My sincere acknowledgement is to Mr. R. Chandrasekhar, Special Secretary, Department of Information Technology, Government of India, for sparing his valuable time in writing the foreword for this publication. But that is what you can see here. What is invisible is his personal guidance, encouragement, and availability for any discussion and plans related to digital content if it is about national development. His thoughts and words have provided the much needed thrust in the relevance of this publication. Bringing out this publication with various limitations would have been difficult without the thorough guidance and editing role played by Mr. Ashis Sanyal, Senior Director, Department of Information Technology, Government of India. The value addition to this publication through his strategic involvement, editing participation, and even filling various gaps through tremendous knowledge contribution.

Syed S Kazi is always there for making any dream possible. His untiring stamina of bringing things together made this book possible. Of course his being pursuing PhD in e-governance puts a great perspective in the entire deliverables.

Finally, I would like to acknowledge the enormous contribution of the entire digital content fraternity in India and South Asia whose tangible and intangible role and contributions in enabling digital technology and content solutions reaching the last mile has been stupendous. The bottom line is without hard efforts the dream to build and sustain digital content enabled development framework is near to impossible. If the ultimate purpose is to enable technology become a great enabler for mitigating digital divide linking to the existing social and economic divides, then digital content must find its due place, relevance and recognition.

With this, I am hopeful that this special digital content case study edition will facilitate stakeholders in Public, Private, Civil Society and Academics domain to add value to their knowledge reserves on various creative applications of digital technology and content solutions in addressing social, economic and governance needs. This publication will give an interesting reading to know some of the best digital content practices in India and South Asia whose relevance stems not from the fact that technology can drive innovations but in the fact that digital content and applications can actually streamline governance and development challenges till the last mile.

Lastly, my request to you all would be to ignore any mistakes and errors in this special edition as a sign of visual errors or due to ignorance and unintentional acts of omission and commission.

Wish you all a meaningful reading

Thanking you all
Osama Manzar

Effective Deployment of Digital Content Innovations

Digital technology is surging to historic highs powered by a technology driven development paradigm. Against this backdrop of technological innovation, there emerges a clear need for greater focus and attention on digital content if we are to derive effective and meaningful gains from ICT led interventions. While the various ICT interventions are laudable - prompted by a desire to connect and develop disadvantaged communities and groups with ICT tools and digital technology devices - these efforts could be ineffective in the absence of any concrete moves to create suitable structures that foster creation, dissemination and management of digital content or e-content that fuel the whole ICT ecosystem.

Adopting a narrow 'induction-of-technology-will-lead-development' approach would be wholly inadequate and result in grossly sub-optimal gains. These symbolic instances would merely accentuate the digital and compound existing socio-economic divides. Consequently, there is a need to undertake the onerous task of identifying and proliferating relevant digital technology innovations that solve key informational problems by recourse to appropriate digital content solutions in diverse contexts and situations. This equally entails evolving effective means and methods for learning and sharing from existing practices and innovations without duplication of resources and efforts.

In this context, this special case study publication titled, "Development & Digital Inclusion - Innovative Deployment of Digital Content & Services for Masses: Cases from India & South Asia", has immense relevance and utility for India's dynamic ICT led development programmes spearheaded by public, private and civil society institutions. Selection of best ICT and Digital Content for Development practices in India, with a selection of practices from the Manthan Awardees network will provide insight and deeper knowledge of the dynamics of ICT and digital content applications and experiments. This will not only boost replication of innovative practices but also provide linkages for further scaling up and for sustainability.

The need for such documentation is acute. So far there is no systematised documentation of such practices cutting across areas like e-learning, e-health, e-commerce and e-livelihood. Documentation of practices is vital for learning and outreach purposes. Documentation will help in systematic profiling of best practices for their emulation and replication. There are so many practices in operation in India but there is little awareness, knowledge and information about them. Such documentation will help to address this gap. The selection of best practices from the Manthan Award platform is quite appropriate. The Manthan Award platform is a tried and tested initiative for half a decade now, ferreting out the best ICT and digital content practices in India so far and in South Asia from the year 2008 with many of these practices having been recognised in the International Arena including the World Summit Award.

The purpose and utility of this special publication is self-evident. With each case study focusing on key parameters such as replication, sustainability, cost effectiveness, speed of service delivery, participation, practice uniqueness, lessons drawn from each one, it is expected that this publication will meet key requirements of ICT practitioners and promoters, ICT experts, Policy makers and implementers, ICT for Development civil society agencies, CSR wings of private agencies, Academic Institutions, Individual ICT experts / pioneers / and researchers.

Even as I pen the foreword, this publication with 18 best practices in its first series, brought out by Digital Empowerment Foundation on the occasion of World Summit Award India International Summit on '21st Century India through Digital Content' on April 2, 2009 in New Delhi, has immense potential to serve critical information and knowledge needs for the above stakeholders. This publication incorporating pictures, flow charts, and graphs, with facts and figures will give high quality and clarity insight into each of the innovations and practices covered. I hope the Foundation would continue such endeavours through case studies to inspire and instill the spirit of entrepreneurship among practitioners of ICT and digital content for development particularly amongst the younger generation.

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The need for inclusion of rural areas in South Asia

Bangladesh, India, Sri Lanka, Nepal

South Asia is home to almost a fifth of the world's population, with more than 1.6 billion inhabitants. For the last 20 years, the majority of countries in the subcontinent have experienced sustained economic growth: over the past five, the average economic growth of the region was over 7 percent, stated the Asian Development Bank. Even in the global slowdown scenario we are into, South Asian economies are expected continue to grow at 6.7 percent in 2009, driven essentially by their increasing domestic demand.

Along the growth period, hundreds of millions of people have been lifted out of poverty across the region and a middle class has been emerging in most of the countries. Only in India, this middle class accounts for more than 270 million people, more than a fifth of its 1.2 billion population. Even if this figure is much lower in countries like Bangladesh, and Sri Lanka, middle class there is predicted to rise steadily over the next years.

However, this economic growth has not occurred at the same pace all over the subcontinent: the benefited are mostly located in the cities and rural areas still lag far behind, often caught in the poverty trap. The distribution of wealth in the subcontinent is highly disparate. A report by the National Commission for Enterprises, in the Unorganised Sector, stated that 77 percent of Indians - most of them in rural areas - were living on less than 20 rupees (less than half a dollar) per day in 2007. As a result, rural migration to the cities has become a worrying tendency, draining villages of their youth and compromising their future. This is largely due to the declining growth in the agricultural sector - in which more than half of the South Asian population depends on.

With 70% of the population residing in rural areas, most of the potential of South Asian countries, in terms of markets, labor, skills and creativity remain untapped until the moment. Beyond traditional normative or "moral" reasons, economic arguments support the need for inclusion. As a matter of fact, the inclusion of the poor could accelerate growth and nourish the whole economic system by the expansion of the consumer market. In such a scenario, government efforts across South Asia during the last several years have been directed to uplift development in rural areas through programs like the Sri Lanka's Government Poverty Alleviation Strategy initiated in 2003 and India's National Rural Employment Guarantee Programme in 2004. These different strategies focus on the inclusion of rural areas into mainstream develop-

ment, enhancing their access to resources - including employment, land, credit and markets - and services such as health, education and information.

In fact, figures in rural areas across the subcontinent are still very bleak. Literacy levels in most of the countries in the region, excepting Sri Lanka, are very low - Nepal 45.2%; India 61%; Sri Lanka 90.7%; Bangladesh 43.1% in 2008. The access to education in rural areas is far from being guaranteed, and when it is, quality, resources and basic services such as water and electricity are not there. Health services have also not reached the villages and it is estimated that only in India, 800,000 doctors are needed to meet the World Health Organisation (WHO) standards. Moreover, farmers and producers in isolated areas are not able to access the markets to their sell their products at a fair price because of lack of infrastructure such as roads and connectivity.

New mechanisms have to be found to include the bulk of the population located into mainstream services and to bring them the benefits of the growing economy. Here is where Information Communication Technology (ICT) comes into play. In fact, over the past years, many examples have shown that if they are rightly implemented and offer appropriate services to the community, they can be the missing tool to include the excluded in a sustainable, efficient and cost-effective way.

Benefits through inclusive digital content and services

The IT revolution that has been taking place in India over the last decades, with the implantation of thousands of BPOs and software companies and the creation of the IITs and other engineering schools, has made India one of leading IT countries in the world. However, in rural areas, people are still not able to grasp the benefits of this 'boom'. In fact, India and the other countries in the region have one of the lowest Internet penetrations in the world and even if mobile penetration has been growing exponentially during the past years, the IT revolution has still not brought the poorest parts of the population the benefits that were expected from it.

The real challenge today in South Asian countries is bringing technology at the ground level and exploring how it can be used to improve the lives of millions of citizens living in hunger and deprived of opportunities to overcome the so-called 'digital divide'.

This divide is the result of more profound inequalities in terms of access to land, education, credit, health services and so on. However, ICT projects in rural areas over the past decade have shown that the connections between access to information, livelihood and development are stronger than it seems to be at first glance. As a result, governments and development agencies, which have considered the access to information as secondary, focussing first on the fulfilling of basic needs such as food, education, health care and issues such as infant mortality, environmental resources and economic integration, have been changing their approach over the past years. In that sense, the 2005 enactment of the Right to Information Act in India is a great leap towards formally recognising the importance of information for empowerment and rights.

Providing the rural poor with appropriate information and services seems to be the right approach to bring lasting development to rural areas. Only when people at the grassroots will have the opportunity to understand their environment, to have access to information related on their businesses, on their daily problems, on their rights and share it with their counterparts in an understandable way, only then they will be able to be lifted out of poverty. Digital Content or e-Content has proved to be the most effective and reliable way to bring such important

Country	Population 2008 (est.)	Internet users 2008 (est.)	Penetration (% population)	Use growth (2000-2008)
India	1,147,995,898	60,000,000	5.2%	1,100.0%
Bangladesh	1,330,044,605	253,000,000	19%	1,024.4%
Nepal	29,519,114	337,100	1.1%	574.2%
Sri Lanka	21,128,773	771,700	3.7%	535.1%
World	6,676,120,288	1,463,632,361	21.9%	305.5%

changes to the local level and its flexibility and adaptability have been essential to overcome geographical, cultural and social barriers.

Bridging the Content Gap at Hinterland

Too much attention has been given to the 'digital divide' in terms of infrastructure, number of mobile telephones, radios, computers and Internet penetration. South Asia is the fastest growing telecommunications market in the world: India adds more than 10 new million mobile subscribers each month, Bangladesh's mobile penetration has grown more than 100% in 2008 and one of two people in Sri Lanka have a mobile phone. Even if Internet has not yet become widespread in South Asian countries, its penetration has also been exploding with impressive growing rates.

However, if an information society has to be built in South Asia, local content is the most pressing need as technology is already making its way to the villages. The creation and usage of content and services have not been able to follow the impressive and relentless pace of innovation and spread of technology, opening what is called the content gap. As this gap is widening, we are not taking full advantage of the new technologies, leaving most of their capacities untapped. This means that radio's potential, if fully utilised, can have a larger impact on people's livelihood than computers with broadband connection without the appropriate content and services.

This content gap is the real responsible for not having brought the benefits of technology to the villages. We must realise that South Asian society is oral through generations and that centuries of knowledge lie in their oral conversation. Therefore, the convergence of oral based-media and technologies like mobile, radio, and TV are extremely poised to fill this gap and reach the very last mile.

Bringing Mainstream Services and Information to Improve Livelihoods

Government services and inclusion

Efforts have been made by governments of the region to start offering digital content and services to rural areas in an adapted way. National level e-government policies have been created such as the National e-Governance Plan (NeGP) in India and the e-Sri Lanka development program. These projects have focused on the transformation of information repositories into digital

content and on the implantation of infrastructure at the local level to access them. The other important component of these initiatives has been the fostering of public participation, especially by enabling grievances and public surveillance to be made through ICT platforms. These services have decreased the costs of bringing information to rural areas and have made government processes and schemes more transparent and efficient. As a result, trust is being reinforced between the government and the citizens and new participation mechanisms have emerged.

Business and economic opportunities

Businesses have also been critical in providing content to and from rural areas. The inclusion of rural population into the mainstream economy can be enabled by facilities such as e-commerce platforms. In fact, villagers do not have choice while buying goods and are most of the times obliged to buy to local resellers. With the help of ICT tools, it is now possible for villagers to have an entire overview of the market and establish a connection with distant sellers to complete transactions and finding more adequate goods - for example, farmers can buy seeds and pesticides at a better price. Information is thus translated into direct economic benefits for the rural poor and has a striking impact on their livelihood. Moreover, e-commerce platforms are also emerging from rural areas, allowing rural producers - essentially farmers and artisans - to get access to regional, national and international markets, bypassing middlemen and getting fair prices for their products. By democratising the access to information in rural areas, ICTs are transforming local power structures, empowering the deprived ones and fostering their self-determination.

Health and education facilities

The infrastructure and human resources needs in terms of education and health facilities across South Asia are colossal. Bringing these services by conventional means by building schools, clinics and hospitals can take various decades and be extremely costly. ICTs have the capacity to connect underserved areas with medical and educational institutions to bring them content and services in a short span of time in a cost-effective way. The quality and resources gap between the existing educational and medical institutions can thus be filled through ICT tools, leveraging the quality of the services offered to the most deprived.

Leveraging Knowledge and Creativity at the Grassroots

Having a voice nowadays is the synonym of existence. For centuries, villagers across the sub-continent had no means to express themselves and their knowledge has been invisible to the rest of the world. ICTs are starting to bring the key to allow them sharing their experiences and ideas. Strength comes from exchange and ICT tools have proven to be useful for building knowledge communities and allowing ideas that otherwise would be forgotten to emerge and inspire people at the grassroots.

Furthermore, the South Asian region has hosted an incredible cultural diversity, being the product of different communities, each one with its own language and traditions. These immense repositories of traditional knowledge are largely under documented and untapped across the subcontinent. Without the means to collect, store and then diffuse traditional knowledge and culture for larger recognition, valuable heritage resources have been disappearing without leaving any trace. How much knowledge has vanished with time and we have not been able to see them at all because of ignorance and lack of care? How many ideas have faded away without anybody noticing them? These are crucial questions that we have to keep in mind while bringing ICTs to the grassroots if we want to save traditions, customs, music, dances, food recipes,

traditional agricultural wisdom and artisanry techniques from oblivion.

Despite the considerable efforts that have been made until now, villager's voices are still too weak and unheard. Content creation at the grassroots level is the driver to strengthen the villagers' knowledge base and help them dealing with situations in their daily life. With the power of storing and sharing solutions to recurrent rural problems, ICTs meet community demands in a relevant way and open new paths of collaboration between different people and areas.

Capacity & Community Building: e-Content is about Human Interaction

The appropriation of ICTs by local communities remains the principal challenge to make a real impact and is the sine qua non condition for their sustainability in rural areas. The vision of the farmer in the countryside being directly empowered by having a cellphone is well spread and far too idealistic. In fact, ICT for Development is not only about bringing technology, services and content to underserved areas; they are a totally new way of working and collaborating. What is needed while bringing these tools to rural areas is awareness and training on how to use them. Human contact remains the key to success in most ICT initiatives. In that sense, the staffs of the rural Internet kiosks have a key role to play in the success of ICT projects at the village level. Communities need local intermediaries and mediators to access the information and services brought by these new channels.

Furthermore, the introduction of ICT services has to be made in tighten collaboration with community members to respond to their necessities and be in phase with the local environment. What can be an extremely good project on paper can turn out to be a flop when implementing it. Too many times social preexistent conditions - such as the role of women, the local mindset and traditional practices - are not taken into account in the design of ICT initiatives. Participation of the different members of the community without gender, caste and age discrimination since the designing of the projects makes it more prone to be appropriated by the community.

The Study

This book covers ICT for Development projects across various South Asian countries that include India, Bangladesh, Sri Lanka and Nepal. These projects were selected among the Manthan Award winners from 2005 to 2008 in different categories: e-Government; e-Education; e-Health; e-Inclusion; e-Youth; e-Localisation; e-Business; and Community Radio. The Manthan Award is an annual recognition promoted by Digital Empowerment Foundation, which is given to the best projects in the field of digital content for development across South Asia.

Among hundreds of winners, 18 were selected for their originality in the ways of addressing recurrent problems of underserved people and by their potential to include them into mainstream services. Community participation was also an important factor in the selection of these projects as we, at Digital Empowerment Foundation, believe that it is the essential condition for having a real and sustainable impact. Finally, these projects were selected for their capacity to be scaled up and replicated in other areas.

The 18 projects use different platforms comprising Satellite, Internet, Radio, Landline telephones and Mobiles, showing the variety of the practices and the spectrum of technologies that can be used to bring information and services to the grassroots level.

Brief description of the projects

CELLBAZAAR

Cellbazaar has created an electronic marketplace where people across Bangladesh can buy and sell products through their mobile phone. In this e-bay like platform, people can post their items on the system and have an entire overview of the market through simple SMS. Cellbazaar has reinvented the use of mobile in Bangladesh and benefited rural people by providing them critical information and business opportunities.

VOIKIOSK

Voikiosk is a voice-driven application that allows villages to create their own information portal over the existing telecom network. Based on the World Wide Telecom Web technology, a Voikiosk is a network of Voice-sites - comparable to websites - through which villagers are able to post and access useful information using their telephone.

WEB HEALTH CENTRE

Web Health Centre (WHC) is an online health platform that aims to provide medical services to underserved areas through tele-medicine. Patients are able to get free consultations and receive medical advices from doctors working in leading Indian medical institutions. WHC also has a facility to store patients' medical records and has proven to be useful for doctors to share their opinions and get advices from their colleagues.

SMSONE

SMSOne is an initiative that tackles two main problems in India's rural areas: youth unemployment and lack of access to relevant information. SMSOne allows young people and dropouts from school to employ themselves by becoming community mediators and sending targeted information to the members of their community through SMS.

OPEN SOURCE COMPUTER FOR AGRICULTURE IN RURAL AREAS (OSCAR)

OSCAR is an open source application that allows villagers from the Indo Gangetic Plains to easily identify different weed species of rice and wheat through a graphic interface. It stocks information about more than 50 weed species and appropriate control measures, assisting farmers in taking decisions concerning their crops.

TOEHOLD

This project was initiated in 1996 to give access to national and international markets to leather footwear artisans in Athani (Madhya Pradesh). Through the use of ICTs, artisans were able to enhance their productivity, vary their products and gain international exposure. The company is entirely owned and run by the artisans themselves.

FRIENDS TO SUPPORT

Friends to Support (F2S) is an online platform created in 2005 that links blood donors and the needys in a fast and secure way. Through a well-organised database, people in need for blood can search for donors by geographical area and blood type. More than 20,000 people have donated blood since its inception.

DESICREW

DesiCrew is a Business Process Outsourcing (BPO) operator that connects urban clients to low-cost and efficient workforces located in villages in Tamil Nadu, bringing employment to rural

areas. Through ICTs, DesiCrew has allowed the successfully outsourcing of tasks such as digitisation, Geographic Information System (GIS) mapping, online research and User-Generated Content (UGC) creation and moderation.

RAFTAAR

Raftaar.com is an online integrated search engine in Hindi that was launched in 2005. Through a powerful search technology, Raftaar facilitates the finding of the available content in Hindi on Internet and provides useful tools such as typing in Hindi, dictionary and translation facilities. This website receives more than 200,000 visits every month.

HELPLINE ON HIV/AIDS

This Helpline provided 24-hours support and assistance to the population of Jaipur on issues related with HIV/AIDS. Information was pre-recorded in an answering machine for common queries and operators were trained to attend specific questions. The Helpline was settled in 1999 but was closed in 2008 because of lack of financial support.

MEDRC SMARTECH

MedRC SmartTech is a medical content repository that aims to bridge the quality gap between medical institutions and bring medical knowledge to underserved areas. Through a collection of courses delivered by leading doctors and enhanced with interactive material, this project has provided training to more than 1,000 students and informal health practitioners across India.

PRISON MANAGEMENT SYSTEM (PMS) AND VISITORS MANAGEMENT SYSTEM (VMS)

PMS and VMS are applications that were designed to enhance the functioning of the Tihar Prison Complex in Delhi. Through the digitisation of a series of administrative processes, these applications have brought efficiency to the prison and improved its security. PMS and VMS were implemented in more than 40 prisons across India.

ITSHED

ITShed is an initiative that aims to provide villages in Sri Lanka the facility to post and access relevant content on markets and jobs. Each village affiliated to the project has its own computer center where villagers consult and upload the information. ITShed has brought businesses opportunities to more than 1,000 villages in Sri Lanka and has proved to be a strong community-building tool.

KALANJIAM SAMUGA VANOLI (KVS) COMMUNITY RADIO

KVS is a Community Radio that was implemented in Nagapattinam district, Tamil Nadu, one of the most affected areas by the tsunami of December 2004. KVS has set an example of media as a tool for disaster management and has provided villagers affected by the tsunami useful information about aid schemes and reconstruction activities. However, during the past year, KVS has been changing its approach and has become a community development and community-building instrument.

UNIFIED RATION CARD

This e-Government initiative by the government of Chhattisgarh has entirely digitised the entire food grain supply chain in the state from paddy procurement from farmers to distribution of rice and other commodities to the ration cardholders. It has enhanced the delivery and reduced leakage and diversion in the implementation of two important schemes of government of India, paddy procurement at Minimum Support Price (MSP) and Public Distribution System (PDS).

LAKSHADWEEP EMPLOYMENT EXCHANGE

It is an e-Governance initiative that aims to tackle the problem of unemployment in the Lakshadweep Union Territory by providing transparent and efficient information of the job market through a web-based portal. About 20% of the population (13,800 out of 68,000 estimated population) is registered at the Employment Exchange platform, which is accessible by employers from all over the world.

ALMOST ALL QUESTIONS ANSWERED (AAQUA)

aAQUA connects farmers from different parts of India to agricultural experts to bring them information and resolve their queries about their crops through Internet and mobile phone. It has also created a large solution database, which is accessible for farmers from all over the country.

EQUAL ACCESS

Equal Access is a community broadcasting initiative that provides useful information to isolated areas in Nepal. Through World Space Satellite Radio (WSSR) and local radio stations, Equal Access reaches more than 9 million people. Listening groups have also been created at the village level to create debate among the community members and to channel the villager's feedbacks.

Emmanuel Neisa & Osama Manzar

aAqua

India

Category

Manthan Award 2005
e-Enterprise & Livelihood

Platform of product

Broadband/Online

Organisation

Agrocom Software
Technologies Pvt. Ltd

Contact

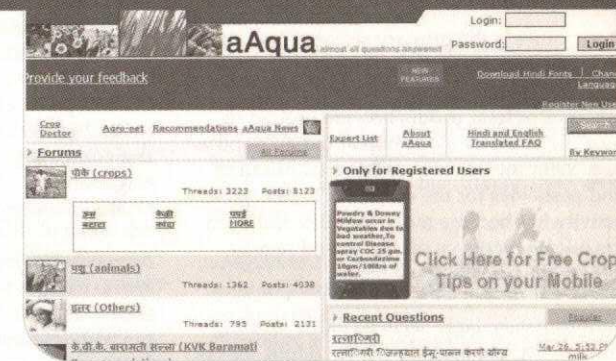
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=546

Agrocom Software Technologies Pvt. Ltd

<http://www.aaqua.org>

SUMMARY

Almost All Questions Answered (aAQUA) is a farmer-expert question and answer platform accessible through Internet and mobile. It allows farmers to interact with public extension staff and scientists, private consultants, agri-companies and other farmers around the country to get solutions to their queries and agri-related problems. Currently, 37 experts from various sub-disciplines of Agriculture and Animal Sciences work for the website and are available to answer farmer's questions.

Through a multilingual approach supporting Marathi, Hindi and English, aAQUA has reached 151 districts in India and has provided a discussion forum to Indian farmers at the grassroots level who do not have access to expert advice. Standard features such as support for photographs, scanned documents, audio playback and video content, expand the exchange opportunities and allow farmers to receive valuable material to solve their problems.

PRACTICE BACKGROUND

Agriculture is the primary sector of India's economy and accounts for about 60% of the total employment in the country¹. Large amounts of food production are needed to feed the more than one billion Indian population. With the use of sophisticated products and pesticides for the crops, the agricultural activity has become more complex and farmers often experience problems and require expert guidance to solve them.

Unfortunately, large sections of the farming community, particularly the rural folk, do not have access to the huge knowledge base acquired by agricultural universities, extension-centers and businesses. The Internet and mobile networks have the potential to provide agro-information services that are affordable, relevant, customised, searchable and up-to-date.

Keeping these factors and the needs of Indian farmers in mind, aAQUA was created to provide farmers in rural areas the necessary expertise to tackle the different problems that they experience in their daily activity and to enhance collaboration and knowledge exchange.

IMPLEMENTATION PROCESS

aAQUA was launched in December 2003 as a collaborative effort by IIT Bombay, Krishi Vigyan Kendra (KVK) at Baramati and Vigyan Ashram, Pabal groups in the field of agriculture and consumer forums. Media Lab Asia and Development Gateway Foundation's R&D Centre sponsored it and the Developmental Informatics Lab, KReSIT and IIT Bombay developed the required technology. The endeavor got licensed to Agrocom

Software Technologies Pvt. Ltd in 2006, and a network of partners was built to ensure aAQUA's success and outreach and to provide state-of-the-art expertise to the farmers. The partners include the University of Agri Sciences in Dharwad; the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT); Patancheru, Hyderabad and its Krishi Vigyan Kendra (KVKs) at Dharwad and Gulbarga; and the University of Pant Nagar and its KVKs at Kashipur and Dhakrani among others.

Anybody can register on aAQUA and there are no charges for the users, who can use the site on daily basis. After registering, questions can be posted on the site and computer illiterate farmers can post their question through kiosk operators, who are trained for the purpose and can also train the farmers, if required.

Questions which are asked concern market prices for commodities, solutions for livestock and crops diseases, horticulture, sericulture, pest control in plants, government support available for agriculture, new farming and irrigation techniques, renewable sources of energy and various other questions regarding agriculture.

With the low PC penetration and the connectivity problems in rural and isolated areas, other platforms were designed to expand the project scope. Posting of questions through mobile phones was habilitated as well as an offline computer platform that works as a database that lets users browse and search all aAQUA threads, forums, and other pages without being connected to the Internet.

aAQUA has been successfully deployed in more than 150 districts, providing services to 1,100 active users and has answered to more than 1190 queries of the farmers' community at large.

PROJECT FEATURES

Technology platform

aAQUA has an online archived repository and uses three-tier web architecture with Java server pages/Servelets, and MySQL databases run on a Tomcat Web server. The system uses Unicode UTF-8 compliant database and Lucene, a Unicode-compliant search and indexing tool.

Offline software is also available to tackle the connectivity problem in rural areas. This version connects to the online website for synchronising content and stores it on the users' computer to be searched and browsed quickly. Mobile telephony was also included as a platform to allow farmers to post their queries.

Accessibility and inclusiveness

The fact that the platform is multilingual - Marathi, Hindi and English - makes it useful for a larger farmer population. Users can access aAQUA via PCs and mobile devices, including those with limited or intermittent Internet access thanks to the offline version. The site is mostly text based and has been tested on dialup and slow Internet connections (as slow as 10 kilobits per second).

To overcome the literacy barrier, illiterate farmers can post their queries through kiosk operators and can be trained by them to directly access the content. Kiosk operators were also trained to take crop photographs and enrich the material sent by the users.

Community participation

aAQUA is a participative initiative that involves the farmer community at large and connects it with knowledge and advise sources such as agri-companies, agri-consultants, progressive agriculturists and agri-university staff and scientists. Farmers can directly post their questions and share their experiences and ideas with people around the region.

aAQUA thus strengthens the collaboration

among partners, bridging the gap with experts and providing a permanent forum essential for farmers' organisation and decision-making.

Sustainability and cost effectiveness

Farmers use the website free of cost and they are not charged for the answering service. Partnerships with agri-knowledge institutions and other agriculture-related organisations were essential to keep the running costs as low as possible.

aAQUA only charges the organisations who want to promote their products and activities on the website. It also contributes to the sustainability of rural kiosks that may take regular browsing charges for aAQUA use.

Replication and scalability

aAQUA users have so far grown by word-of-mouth publicity, including articles in regional newspapers which have been written by the users of the website. Content sustainability has been achieved and the questions keep coming from around 256 unique districts. aAQUA is currently promoting proprietary aAQUA Client versions to farmer-related organisations.

aAQUA is currently being spread in Uttarakhand and Karnataka districts through partnerships with local agri-universities and can be replicated in other rural areas around India with minimum connectivity.

CONCLUSIONS

aAQUA caters to the need of the farmers in rural areas by providing them a platform where they can access vital information to improve their production techniques and solve specific problems in a fast and easy way. The aAQUA panel of experts is available to respond to the farmers' queries and all responses are archived, creating a cumulative archived database of questions and answers accessible from any computer with Internet access.

Being a multilingual platform, aAQUA reaches farmers all over the country without language bias. Through local kiosk operators, illiterate farmers are also able to use the system and share their knowledge with the farming community at large. aAQUA has generated and distributed invaluable agri-content for the farmers, bridging the digital divide and fostering the development of rural areas.

LESSONS DRAWN FROM THE PRACTICE

>> While the dominant view is that farmers do not use Internet, aAQUA experience has shown that farmers can use e-content to solve their problems and to enhance collaboration among them. The installation of e-Choupals² and Internet kiosks are increasing access to the Internet in rural and remote areas and locally relevant services will be essential to make this access sustainable.

>> Public extension systems like Krishi Vigyan Kendras can use aAQUA as a platform to transfer their Research & Development knowledge to the farmers and other agri-related workers. It can be seen as a knowledge extension medium.

¹ CIA Factbook India, Central Intelligence Agency. Retrieved on 02-2009

² CIA Factbook India, Central Intelligence Agency. Retrieved on 02-2009

Cellbazaar

Bangladesh

Category

Manthan Award 2008
m-content

Platform of product
Broadband/Online

Organisation

CellBazaar

Contact

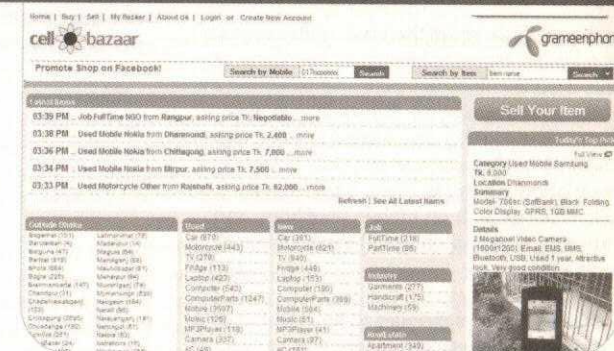
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=459

CellBazaar

<http://www.cellbazaar.com>

SUMMARY

Cellbazaar is a service that allows buyers and sellers to meet in an electronic marketplace through their mobile phones and computers in Bangladesh. In this e-bay-like platform, sellers post items and buyers view them and retrieve the contact information to finalize the transaction. Users can use this service to buy and sell any agricultural product such as rice, wheat and chicken; large-scale goods such as cars, TVs, fridges and apartments and even services such as tutoring and repairing. Cellbazaar is currently running only for GrameenPhone subscribers (20.99 Million¹) in four platforms: SMS, WAP, Voice and WEB, allowing users to choose the most convenient for them.

PRACTICE BACKGROUND

In Bangladesh, more than half of the population has no access to electricity and there are only 3 million Internet users, representing 2% of the total population. 80% of land phone lines in the country are located in the four major cities that account only for 20% of the population. However, there has been an incredible growth on mobile telephony and currently 44.6 million Bangladeshis have a mobile phone².

Cellbazaar allows mobiles to become the gate to an open marketplace where buyers and sellers can meet. Markets in developing countries suffer a lack of reliable information that distorts the prices, harming the most disadvantaged ones. For example, farmers have to travel long distances to identify buyers or sell their products through middlemen at lower prices. Cellbazaar gives the opportunity for micro-businesses to emerge and gain national exposure and maximum outreach. About 20% of sellers were able to sell their item within ten days of posting.

The service is also useful for low-income consumers as it allows them to find products at better prices. By providing an entire overview of the market, Cellbazaar benefits all sectors across the value chain, pushing towards efficient prices. Through its four platforms (Voice, SMS, WAP and Internet), it allows virtually anyone with a mobile to use the services in an easy way, overcoming the illiteracy problem.

IMPLEMENTATION PROCESS

Kamal Quadir, founder of Cellbazaar, created the idea of a mobile marketplace at MIT Media labs. He presented his project to the MIT Ideas competition in 2005 and eventually

won it, allowing him to raise funds to go back to Bangladesh and implement the project.

Cellbazaar established in 2006 a partnership with GrameenPhone, the principal mobile operator in the country, with more than 20 million subscribers and 60% market share. Cellbazaar keeps a small portion of the fee that GrameenPhone charges for each SMS, avoiding monthly or posting charges for the users. After a year of beta testing, the project was launched in August 2007.

Even if the service targeted rural populations, urban ones adopted it first, essentially through WAP and Internet platforms. Illiteracy and a lack of understanding of mobile capacities were the main problems to tackle to reach rural Bangladeshis. Cellbazaar established partnerships with grassroots NGOs and with capacity-building organisations, to teach the population in how to upload data and search items through text messages and voice commands. Massive campaigns at the back of CNG auto rickshaws, TVs and print advertisements and educational booklets were launched to show the benefits of Cellbazaar and to instruct people in how to use it.

CellBazaar has grown rapidly and in 2009, it has 1.5 million users and more than 90,000 hits a day (including page views and SMS messages). It has a registered seller base of 51,000 people and its unregistered user base is thirty times that size.

PROJECT FEATURES

Technology platform

Cellbazaar is accessible through four platforms: SMS: By sending and receiving SMS, user can browse for their preferred items and post what they want to sell.

Voice (IVR): User calls and hears the latest items in Bengali, ideal for users who cannot navigate buttons and commands and do not understand English or are illiterate.

Mobile Internet (WAP): User browses using the navigation button on mobile to find items and click to see the description

Computer Internet (WEB): Entire market can be seen on computer screen. User can quickly select any item due to the large screen.

Depending on the available resources and on their practical knowledge, users tend to choose one platform over another. Urban users access Cellbazaar mostly through Internet and WAP, whereas rural ones mostly use the SMS-based platform.

Accessibility and inclusiveness

The four platforms allow users to use the most convenient for them, overcoming technological barriers and even some kinds of disabilities. However, the service is operator-specific as users need to have a GrameenPhone number to register themselves into the system. The service is thus not available for all mobile subscribers in Bangladesh.

Cellbazaar's SMS and Internet platforms are only available in English, but WAP and IVR versions offer part of the content in Bangla. Despite the fact that only a minority of Bangladeshis speak English, language is not a major problem for Cellbazaar as users only need to know two verbs: "buy" and "sell" and the names of the commodities they want to exchange. However, platforms in Bangla and other local languages are being created in association with the Center for Research on Bangla Language Processing of the Bangladesh Rural Advancement Committee (BRAC) University in Dhaka to reach as many people as possible.

Community participation

The service is intended to be directly used by users, without the need of intermediaries. The platform is entirely fed by users through their mobiles and computers. Sellers post their items for sale (550 entries per day) and potential buyers navigate through the different categories to find what they are looking for.

Cellbazaar also generated a set of micro-

enablers around its service, by enabling people who have the knowledge in how to use the system, to offer training to the community in general.

Sustainability and cost effectiveness

Cellbazaar does not charge any fee for posting items or consulting the products and its revenues come essentially from a part of the operator's SMS, IVR and WAP fees and targeted advertising. Some other channels of indirect revenue include the voice revenue generated for the phone calls people make to complete transactions - shared within GrameenPhone and Cellbazaar. Its sustainability lies in its capacity to attract buyers and sellers and to make them interact through their mobile. Cellbazaar created a virtuous circle in which more users expand the market attracting sellers and increasing the attractiveness and usefulness of the platform for businesses.

Cellbazaar fosters mobile usage in deprived rural populations that do not use it regularly. Telecom providers can use Cellbazaar service to penetrate new markets and to strengthen existing ones. It has drawn a win-win strategy in which telecom operators, users and the platform, all stakeholders are benefited, thus ensuring its sustainability in the long-term.

Replication and scalability

Cellbazaar was mainly thought as a service for developing countries with low PC and Internet penetration but in which the mobile connectivity has begun to reach the masses. Other countries frequently approach CellBazaar, requesting to expand the project to those countries. This model can be replicated in urban and rural areas where markets are not efficient due to lack of information.

The model is scalable as it allows new buyers and sellers to post their products without any constraint.

CONCLUSIONS

Cellbazaar reinvented the use of mobile in Bangladesh and gave the possibility to virtually anyone possessing a mobile to buy and sell products at reasonable prices for both parts. Giving people the possibility to use different platforms allowed Cellbazaar to overcome problems of isolation, literacy and even disability.

Small formal and informal businesses emerged and reached wider markets; farmers increased their bargaining power by having access to new markets and price information. Cellbazaar also allowed consumers to have wider choices and buy more efficiently. These value-added services have a direct impact in the lives of more than one million Bangladeshis that have the opportunity to use technology for their own advantage. The skills acquired by these people could be used in the future for other ICT-based services.

Voices from the ground

"In Dinajpur, I never got a reasonable price for my rice. The wholesaler would haggle me down. After Cellbazaar, I no longer need the middlemen. I get the price I want and ship most of my rice to Dhaka. This is nothing short of a miracle"

Nuran Nabi, rice-seller from Dinajpur, Bangladesh

"I had been desperately looking for a car for three months but found nothing. Then after going through Cellbazaar, I found an '89 Starlet, which seemed perfect. One phone call later I secured the deal and now I've forgotten what life was without car"

Md. Ferdous Sheikh from Shanmondi, Bangladesh

LESSONS DRAWN FROM THE PRACTICE

>> Mobiles are often under-utilised and most of their capacities remain untapped. Growing penetration of mobile telephony in developing economies can be used to provide solutions to information failures and give isolated populations instant access to the markets.

>> Even if mobile has become a popular tool, changing the way people use it in their daily life and explain the benefits they can get out of that usage were Cellbazaar's main challenges. Education at the grassroots level, partnerships with development organisations for training people on how to feed and consult the data and educational campaigns were paramount to spread Cellbazaar's usage.

>> Penetration and strengthening of rural mobile telephony markets is facilitated when the appropriate value services are proposed to the population. By generating a direct and immediate benefit to the final users, Cellbazaar fosters the use of mobile and is thus also profitable for telecom providers. Partnerships between various stakeholders including telecom companies and content generators are essential to bridge the digital divide in a sustainable way.



NGPAY: Using mobile to access markets

Ngpay is India's first end-to-end, mass market mobile commerce service. It links directly the consumers - anywhere in India - with more than 65 businesses across 10 sectors. Through their entry-level handsets with the General packet radio service (GPRS) service activated and on any telecom network, users can bank, pay bills, book tickets, make donations, shop, order food, and more. Ngpay provides a viable alternative to the PC-Based Internet e-commerce.

In fact, mobile channel offers reach and convenience for completing electronic transactions that the PC simply cannot match - today or in the near future. It is the logical long-term channel for e-commerce in India given its penetration - there are more than 370 million mobile users -, growth rate, minimal cost, instantaneous reach and comfort level of users with the medium.

For the consumer, Ngpay is free as there are no charges for the download, registration and use of it. Customers can complete a transaction by spending only a few paise in data usage charges, in contrast to an SMS-based solution that requires several SMS costing approximately Rs. 3-4. With Ngpay, the consumer only pays for the price of the product or service as charged by the seller.

As in every e-commerce business, security is one of the main issues in the implementation of the project. Ngpay transactions offer security levels similar to ATM ones. It provides 128-bit end-to-end financial grade security from the user's handset through to the application servers and avoid storing card or bank information on its servers.

Category

Manthan Award 2008
e-Business

Platform of product

Mobile/PDA

Organisation

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¹ Bangladesh Telecommunication Regulatory Commission (BTRC), December 2008 statistics

² Bangladesh Telecommunication Regulatory Commission (BTRC), December 2008 statistics

DesiCrew

India

Category

Manthan Award 2007

e-Enterprise and Livelihood

Platform of product

Broadband/Online

Organisation

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WE JUST TURNED



Welcome to Desicrew

DesiCrew Solutions Pvt. Ltd. is a rural BPO company, incubated by KIST at IIT Madras. We set up 27 smallest service centers in rural areas, employ and train local people to meet the back office demands of clients. As we grow we will build capacity, we will also build our team of engineers.

What we offer

Our rural business model isn't just about fancy social agendas by integrating technology and trained resources in rural areas, we offer cost effective outsourcing solutions that help clients cut existing costs by upto 40 %. Don't just follow our word for it, see how some of the world's leading organisations are.

Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=459

DesiCrew

<http://www.desicrew.in>

SUMMARY

DesiCrew is a rural Business Process Outsourcing (BPO) service provider that connects large and small urban clients to low cost and efficient workforce located in Tier III towns and rural areas in Tamil Nadu. For the clients, DesiCrew results in substantial cost savings, sometimes as high as 50% and at the same time, it provides gainful employment to educated youth in the rural areas.

Through the use of ICT, DesiCrew started with outsourcing low-end labor intensive jobs like digitization. However, over the past two years, clients are outsourcing knowledge intensive, high value projects like Geographic Information System (GIS) mapping, online research, User-Generated Content (UGC) creation and moderation. It has installed 5 delivery centres in Coimbatore, Erode, Salem, Mayiladuthurai and Vaniyambadi districts, which are customized to play the role of an 'active virtual back-office', in order to run companies' operations.

PRACTICE BACKGROUND

In the present business scenario, urban companies face issues like high real estate, high attrition of up to 80 per cent, increasing human resource costs and shortfall of workers.

According to a NASSCOM - McKinsey report of 2006, the BPO industry needs 0.5 million more workers to cope with companies' demands.

On another side, there are 700 million people residing in the more than 600,000 villages of India. Even though rural migration is happening and some of the villages are becoming small towns, there is and will be huge untapped workforce available at low cost in rural areas. In fact, 60% population of the grassroots population is involved in agriculture¹ and there is need for non-agriculture gainful employment in villages and infrastructure to prevent youth migration to the cities.

DesiCrew has taken the BPO industry in India to the grassroots, tackling these two issues at the same time by linking the unemployed but skilled labor in the countryside with companies needing cost effective workers through ICT.

IMPLEMENTATION PROCESS

DesiCrew was incubated by Dr. Ashok Jhunjhunwala's Rural Technology and Business Incubator at IIT Madras in February 2007. The endeavor was started as a research project in January 2005 and was spun off as a commercial venture two years later. In only 3 years, DesiCrew has grown to a 70 member team, (10 members at central office in Chennai and 60 at the 5 Delivery centers) and offers a variety of services. Each center is staffed with a supervisor and 3-10 associates, and run in one or two shifts of 8 working hours.

These delivery centres had at the beginning been set up as franchisees by local entrepreneurs but have now become full-fledged DesiCrew centres, managed by the entrepreneurs.

The Delivery Centers of DesiCrew specialise in one or more of the following:

1. *Data entry:* Digitization of manuscripts forms from insurance companies, telecom providers and directories amongst others. Services are available in English, Tamil, Telugu Hindi and Gujarati.
2. *Maintaining and updating sales databases:* Creating, maintaining and updating the client sales database. This function is independent of language.
3. *Data Conversion:* Converting data such as image, word, excel and PDF from one format to another. Service is available in English, Tamil, Telugu, Hindi and Gujarati.
4. *Proof Reading:* A final proofing of a manuscript, focused on cleaning up any typographical errors before the manuscript is typeset. Service is available only in Tamil.
5. *Type-Setting:* Arranging typed manuscript into a book as per requirements from publishers. Service is available in English, Hindi, Tamil, Telugu and Gujarati.
6. *Data translation and transcription:* Translation of textual content from English to Tamil, Hindi, Telugu and Gujarati and providing typewritten version of dictation, speech, or interview. Service is available only in Tamil.

PROJECT FEATURES

Technology platform

All the five DesiCrew delivery centres are equipped with 10-20 high-tech computers with broadband Internet connectivity. DesiCrew has developed 2 web-based applications to organise its distributed workforce. This internally developed software is directly used by the workers and can be viewed in Mozilla Firefox.

a) *Click 2.0:* An automated workflow applica-

tion that acts as a virtual office for the rural delivery centers. It helps manage and monitor a distributed workforce for delivery of outsourced projects.

b) *Pegasus:* A data entry software used to enable remote workers to convert handwritten data to digital format. The application uses field validation and double data entry techniques to ensure quality into the process. Based on feedback from the clients in the BPO industry, features have been added to ensure data security and confidentiality.

Accessibility and inclusiveness

The services are provided in English and regional languages like Tamil, Telugu, Hindi and Gujarati. There is manpower and provision available for delivering services in regional languages like Bengali besides those mentioned above. However, projects requiring those come up occasionally, so the people having knowledge of other regional languages are not hired on a permanent basis, but given work on project basis.

Females constitute 80% of the employees and especially-abled people are also employed at DesiCrew.

Community participation

Educated people from the rural areas where the DesiCrew delivery centres are operational constitute the workforce. A woman from the weaver community, who was the first person in the community to become educated, is heading one of the centres. The rural BPO has provided local people with an opportunity to pursue an alternate career instead of agriculture, poultry and local crafts.

However, many of the employees are also ex-lecturers, MBAs and teachers from the region who now want to return to live in their villages.

Sustainability and cost effectiveness

DesiCrew is a for-profit organization with the motto "Trade, not aid" and the organization does not accept any grant or aid. As an outsourcing project, it is a third company that

assumes the cost of labor. Some of the prominent clients include Internet and mobile companies, insurance companies, hospital chains, infrastructure projects companies and NGOs.

Replication and scalability

Rural India has not yet been able to reap the fruit from the IT/ BPO boom and companies are looking for opportunities to cut off operational costs. In this context, DesiCrew model has tremendous scope of replication by being carried forward to various other rural areas. Today, the current BPO activity in India is clustered only around 5 main metros and the industry is looking to expand to other locations for reasons of cost.

CONCLUSIONS

DesiCrew has delivered over 25 projects with 12 clients and the business model is showing growth as it has produced positive results in the projects handled by it. It has made use of computers and digital technology as an enabler to create jobs for local people at the grassroots.

This is a practice which has not only helped in bridging the digital divide and creating employment opportunities, but has also diminished the isolation of rural areas from the effects of globalisation.

Individuals who could not move out of their geographic areas because of social commitments - especially women -, now work at DesiCrew centres. These centres have been set up with the help of local entrepreneurs who are responsible for their infrastructure and daily operation.

Two of the centres are all-women centres even though that was not a policy decision. A significant number of the employees are those who returned from the cities, often willing to take a pay cut, for the better life and the facility of saving more by living at home. Some employees are earning three times of what

they were able to make at their previous jobs, showing that ICT solutions can make rural areas become attractive.

LESSONS DRAWN FROM THE PRACTICE

>> Rural BPOs are providing employment to educated people and preventing migration besides being cost effective for companies and organisations. However, they have to face problems inherent to rural areas like irregular power supply and increasing the costs and hindering the model competitiveness.

>> People from rural areas, even though educated, are not aware of concepts of corporate culture like deadlines, deliverables and quality maintenance. Time and training is essential to motivate them and familiarise them with this new working environment.

>> The biggest challenge for DesiCrew has been convincing its clients about the productivity of rural areas. The clients are mostly concerned about issues like electricity, staff efficiency, quality and deliverables.

Other rural BPOs empowering people at grassroots

Fostering Technologies in Rural Areas (FOSTeRA) is India's first rural BPO firm in Krishnagiri district of Tamil Nadu is on a major path of growth even during recession and will be recruiting 500 people in the coming three months.

Drishtee has rural BPOs in Bihar and Haryana. Women associated with these BPOs claim that the endeavour has helped in their empowerment. (<http://www.drishtee.com>)

Sai Seva Business Solutions at Puttarthi in Karnataka is a rural BPO nurturing the dreams of young people with ambitions. (<http://www.saiseva.co.in>)

What is Business Process Outsourcing?

Business Process Outsourcing (BPO) is the fact of relocating entire business functions third-party service providers.

In the early days, BPO usually consisted of outsourcing processes such as payroll and it grew to include employee benefits management. Now it encompasses a number of functions that are con-

sidered "non-core" to the primary business strategy. It is common for organizations to outsource financial and administration (F&A) processes, human resources (HR) functions, call center and customer service activities. These outsourcing deals frequently involve multi-year contracts that can run into hundreds of millions of dollars.

India is a very popular BPO destination for the Multi-National Companies (MNCs) and even major Indian companies because of the low cost of labor. Although major BPO activity is confined to metros, it is also being taken to rural areas now because it further brings down the business costs.

Employment Exchange Portal

India

Category
Manthan Award 2007
e-Governance

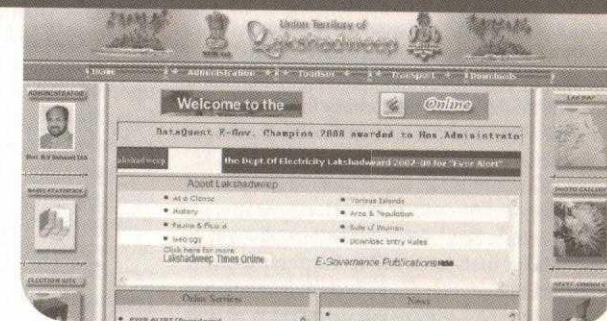
Platform of product
Broadband/Online

Organisation
Admin of UT of
Lakshadweep

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Manthan Award
http://www.manthanaward.org/section_full_story.asp?id=467

Lakshadweep Employment Exchange
<http://lakshadweep.nic.in>

SUMMARY

The Digitisation of the Employment Exchange of the Union Territory (UT) of Lakshadweep is an e-Governance initiative to tackle the problem of unemployment, by providing transparent and efficient information of the job market through a web-based portal. The project essentially targets educated young people but everyone can upload information on their qualifications, skills and education, which can be accessed by prospective employers from across the globe. The Administration of the UT took the step of digitising the entire Employment Exchange of the UT in 2007 and has become the first Administration in India to do so.

About 20% of the population (13,800 out of 68,000 estimated population) of Lakshadweep is registered at the Employment Exchange. People seeking for employment can register themselves at the Employment Exchange through the Internet from anywhere, and do not need to travel to Kavaratti: the capital island. This practice has made the process of registration and sponsoring of names for employment transparent and free from human manipulations.

¹ CIA Factbook India, Central Intelligence Agency. Retrieved on 02-2009

PRACTICE BACKGROUND

Lakshadweep is the third most literate among the States and UTs in the country after Mizoram and Kerala¹. Unfortunately, the problem of unemployment among educated youth in this UT is considerably larger as compared to other parts of India due to the geographical conditions and its small size (32 square kilometers). In fact, Lakshadweep is an archipelago composed of ten islands scattered in the Arabian Sea, virtually disjointed and remote from mainland India. Employment opportunities are very low, especially in the private sector.

On the other hand, connectivity between the islands and the rest of India is not efficient. Lack of adequate transport facilities and deficiencies in the communication network pose a major problem to the population. It can take quite a few days to reach Kavaratti, the state capital, from other islands and during the South West Monsoon, the islands of Lakshadweep are virtually cut off from each other.

Under the given circumstances, the digitisation of the entire Live Register of the Employment Exchange of the Union Territory was initiated to bring better employment opportunities to the people with the help of ICT, enhancing their economic well-being.

IMPLEMENTATION PROCESS

In April 2007, the Employment Exchange was brought under the Local Area Network of the Administrator's Secretariat. The National Informatics Centre (NIC) of the Ministry of Information Technology provided backbone support for this program. A dedicated leased

line was extended to the Employment Exchange offices from the nearest NICNET² node, and VSAT (Very Small Aperture Terminal) connectivity was also used as terrestrial broadband facilities are otherwise limited in the islands.

Data relating to about 15,000 registrants was updated and re-codified under the National Classification of Occupation, 2004 and then uploaded into the online database. The software was designed in a manner that employment seekers can get their names registered with the District Employment Exchange at any time in an easy way. In fact, the applicant gets the registration number immediately on feeding the data into the software online, which is user friendly and menu driven. A registration card is issued to the candidates on verification of their particulars.

For performing these tasks, the existing infrastructure and manpower has been utilised and additional powers have been vested with the office bearers. All the UT's sub divisional officers and collectors have been designated as Employment Officer of their respective islands, assisted by the Information Assistants and Village Extension Officers. The services are thus brought as close as possible to the users' homes as these Additional Employment Officers - trained by the NIC - are delegated with authority for assignments of registration, issue of registration card and its renewal.

The project has led to the digital integration of all the islands on the platform of a special website of the Union Territory: <http://lakshadweep.nic.in>. More than 13,800 people, representing 20% of Lakshadweep population are registered at the Employment Exchange presently.

Having gained confidence with the system, which required multiple checking and re-checking, a decision has been taken to start a 24x7, round the clock call centre with the exclusive responsibility of marketing and sponsoring the candidature of registrants in

India and abroad. A corporation of the Administration, namely Lakshadweep Development Corporation Limited will run this service on semi-commercial lines.

PROJECT FEATURES

Technology platform

A user-friendly portal has been designed and developed by NIC for the employment exchange services and Java. Post script SQL technology was used for the purpose. Internet access has been provided through NICNET and VSAT at the Employment Exchange offices and other departments.

The system creates a user name & password for the candidates who apply online for registration to guarantee the confidentiality and increase the security of the platform. The renewal of registration, updating additionally acquired qualifications, viewing placement status and other details can all be done online.

Accessibility and inclusiveness

Accessing the services provided by the Employment Exchange after digitisation is a simple process and requires basic computer and Internet skills. Moreover, the candidates can be reached by employers from across the world.

The portal is in English to reach larger audiences, especially from abroad. Women have been especially involved in the project and many received training in computers for the digitization of the information in terms of data entry and updating.

Community participation

The project is planned to take in its fold the large number of educated youth in the Union Territory. From the very beginning, there was continuous dialogue between the people's representatives at District Panchayat³ levels. The proposal was duly discussed in public and through media where the youth took

keen interest in facilitating the project and making it successful.

Sustainability and cost effectiveness

The project is supported by the government of the Union Territory of Lakshadweep and the National government is also backing it, securing its sustainability in the long term. The digitisation of the Employment Exchange has also eliminated administrative tasks and made processes efficient and economical.

Moreover, the entire project is managed with the existing human resource and no additional posts have been created for it. This contributed to making the project cost effective for the administration. As far as the population is concerned, the project has proved to save resources for every citizen as the expenditure incurred on traveling is removed.

Replication and scalability

The problem of unemployment is widespread in India. In such a scenario, other States can replicate this model to use ICT for helping the educated youth gain access to employment information. This would create greater efficiency in the job market, creating a win-win situation for the job seeker as well as for the employer.

Bihar has followed Lakshadweep's steps by digitising its Employment Exchange and under its National e-Governance Program (NeGP), the central government has decided to finance 75 % of digitising the UT employment exchanges. States like Andhra Pradesh, Karnataka and Kerala have already implemented computerisation of database.

CONCLUSIONS

Lakshadweep Employment Exchange Portal has contributed in enhancing the information about the job market in the UT that has become more efficient and transparent with the use of ICT tools. It contributes to the development of a critically important section

of the Indian society, the educated youth, by providing them access to employment opportunities. From this perspective, Lakshadweep has taken a commendable e governance initiative.

In the process, various other benefits have also been derived. For example, long and chaotic queues in front of the employment exchange offices have become a thing of the past. The need for physical travel by the user to Kavaratti for registration, renewal and information update has been removed, resulting in saving money and time.

The process of registration and sponsoring of names for employment has become transparent and free from human manipulations. The human interface has been minimised, and data retrieval process has become simpler, efficient, fast and transparent. Various statistical reports required can be now generated easily as up-to-date data is available.

By opening the doors of development for the educated youth of Lakshadweep, the digitisation of the Employment Exchange at Lakshadweep has organised its structure and helped in directly pushing the economy on the path of growth.

LESSONS DRAWN FROM THE PRACTICE

>> The use of technology with appropriate administrative reforms can benefit the masses at base of the pyramid as web based services are most suited for hinterlands like Lakshadweep and other geographically isolated territories. Public access booths and kiosks are now a reality in India.

>> Internet facilities bring mobility among people, removing physical constraints and sluggishness. However, the problem of web accessibility and especially slow and unreliable Internet connectivity pose a major stumbling block in the path of this project's growth.

>> The project was designed not just for creating a portal, but to be used as an ICT tool to empower the masses by providing the educated youth with a platform for lucrative employment opportunities.

Words from BV Selvaraj

Administrator of the Union Territory of Lakshadweep

The aims behind Lakshadweep Employment Exchange Portal

"The Employment Exchange was situated at Kavaratti, and to avail services persons from other islands had to travel to Kavaratti, which is highly expensive and time consuming, especially in the Monsoon season.. It was a huge burden upon the unemployed educated youths of Lakshadweep and the time consumed and the strain; both physical and mental were not explicable.

This e-Governance project aims at safeguarding objectivity and transparency in providing employment and in facilitating dynamic utilisation of human resource and bringing employment exchange services to the very doorsteps of the people of Lakshadweep. Sponsoring of names to employers and government departments has been achieved under this project, which goes a long way in bringing trust between government departments and the unemployed youths and the job seekers. Services are now virtually made available in all the islands on anywhere anytime basis. Incidentally, now Lakshadweep has attained the unique distinction of being the first state in the country to fully digitize its employment exchange and related services in the country."

Changes in the administrative processes

"The employment registrants can find their names, being sponsored, strictly according to their qualifications and seniority in registration. The registrants can also view the status of sponsoring of their names against various job notifications, through Internet by visiting the web site. All information on job opportunities and eligibility criteria are displayed in the site and can be directly accessed without the need of government officials."

The possible replication of the project around India

"This Project can very well be replicated elsewhere all over India and particularly in remote and hinterland areas. The digital technology and content can also be a universal one. Data updating, data correction and data synchronization can be done under national pattern. In the First Phase the live register has to be digitized and on-line registration started. In the second phase additional employment officers (ADEO) are to be designated. Reliable Internet access to these officers has to be ensured and VSAT technology can bring the necessary connectivity."

¹ National Family Health Survey, International Institute of Population Sciences, October 2007

² NICNET has been designed and implemented by the National Informatics Centre using state-of-the-art satellite-based communication technology

³ A panchayat is an administrative unit which sits below the Block level

Equal Access

Nepal

Category

Manthan Award 2008
Community Broadcasting

Platform of product

Satellite / Radio

Organisation

Equal Access

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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=638

Equal Access

<http://www.equalaccess.org>

SUMMARY

Equal Access (EA) is a community broadcasting initiative started in 2003 with the aim of providing critically needed information in rural areas in Nepal. With the use of World Space Satellite Radio (WSSR) and local radio stations, Equal Access reaches more than 9 million people in 51 of the 75 districts in the country. The programs deal with issues such as early childhood development, youth, sustainable livelihoods, women's rights, education, HIV/AIDS prevention, reproductive health, safe migration and peace building.

Equal Access has tied up with a number of grassroots NGOs, youth educators, radio producers, reporters and other community-based leaders to create listening groups at the village level - aggregating more than 10,000 people. Each of these groups was provided a Satellite Radio Receiver (SRR) - which costs between US\$ 60 and US\$ 200 - to be shared among the community. Regular listening sessions are organized in the villages. Villagers regularly send their feedbacks through letters, emails, SMS and field recordings, which are taken as inputs for the creation of the next programs.

Equal Access has also established a network of 100 village multimedia centers with computers and satellite connectivity to bring digital content to rural areas and enable villagers to create their own. In this way, data, video, text, images and music can be downloaded, exchanged and used for education and development purposes in these localities.

PRACTICE BACKGROUND

Nepal is considered to be one of the poorest countries in the world with a population of about 29 million, of which 30.9% live under the poverty line and an estimated GDP¹ of US\$ 1,000 per capita². 76% of the total population still depends on agriculture, which contributes to 38% of the total GDP. Rice and wheat are the main crops. Rural areas in Nepal suffer from an acute shortage of infrastructure in terms of schools, hospitals, electric power, roads and telecommunications. As per the International Telecommunication Union (ITU), only 1.4% of the population had access to Internet and 13% to mobile telephony in 2008.

The political unrest lasting more than a decade led to the death of more than 12,800 people and the forced displacement of an estimated 150,000 people. During that time, the majority of the development projects in rural areas were disrupted, the scarce infrastructure destroyed, and some locations were totally cut off.

With a literacy rate of less than 50% , Nepal remains essentially an oral society. There is an urgent need to empower local people with practical and understandable knowledge to enhance their daily lives, especially in the fields of health and education. Moreover, being a landlocked country with a highly accidented geography, appropriate communication tools have to be used to reach the isolated areas. For these reasons, community radios are extremely popular in Nepal and more than 130 have been granted license from the government in 2008.

It is in such a scenario, Equal Access entered into collaboration with various partners for developing the technology to bring useful radio through satellite and multimedia content to rural areas in Nepal.

IMPLEMENTATION PROCESS

Equal Access, a San Francisco based international not-for-profit organisation, partnered with the United Nations Development Program (UNDP) to launch this community broadcasting initiative in rural areas of Nepal. In order to meet local demands, a study was conducted in July 2002 to obtain information on the existing levels of knowledge in Nepal's countryside and people's attitudes towards issues like Sexually Transmitted Diseases (STDs), HIV/AIDS, Human Rights and women empowerment. The study concluded that the most pressing needs were health and education-related information among other livelihood topics.

An 18-month pilot project was started in April 2003 and the project was formally launched in Katmandu in June of the same year. Equal Access was designed to reach the widest possible audience by broadcasting culturally relevant content produced by the communities themselves. To this effect, Equal Access tied up in 2005 with grassroots organisations to set up 10 village multimedia centers with digital audio computer systems, satellite radio receivers, FM broadcasting capability and appropriate trained manpower to produce radio content and broadcast it at the local level. Workshops and training for the community at large were also provided to create a pool of radio reporters and producers.

The programs are disseminated to the masses through World Space Satellite Radio and FM waves reaching a total of about 9 million people. Local partners were essential to create village-level listening groups which receive the programs through a Satellite Radio Receiver - costing between US\$ 60 and US\$ 200. The cost is shared among the villagers. More than 400 community-based listening groups were created in 51 districts, representing more than 10,000 people.

The multimedia centers have been habilitated to use the World Space Satellite Technology for the dual purpose of exchanging data between them (data casting), and broadcasting the radio programs. In total, 100 multimedia centers have been set up in different parts of the country to provide the villagers rich multimedia content including audio, video and images. The data distributed through the multimedia centers is collected from various organisations like the Nepal's National Health Education Information Communication Center - Ministry of Health, International NGOs and government offices among others.

PROJECT FEATURES

Technology platform

Equal Access makes use of FM and World Space Satellite Radio to reach isolated communities scattered around Nepal. In mountainous and accidented regions, satellite has proven to be the most reliable and cost effective way to broadcast content without interferences and a single satellite can cover all India, Nepal, Bangladesh, Pakistan, Afghanistan and Sri Lanka. Moreover, the satellite channel has also enabled scattered communities to exchange content and data in a cost-effective way.

Satellite Radio Receivers are necessary to receive the satellite-broadcasting signal. Batteries and solar panels among other power solutions are utilised to run the SRR as power supply is still a challenge in rural areas in Nepal.

Equal Access' multimedia centers, where radio content is produced, are equipped with computers with digital audio software and a basic software platform to exchange the content with the other multimedia centers belonging to the network through a File Transfer Protocol (FTP) server. The entire equipment to set up a multimedia site is worth about US\$ 2,200.

Accessibility and inclusiveness

Most of the content has been developed in Nepali language, reaching the broadest possible audience in a culturally appropriate way. In a country with high illiteracy levels as Nepal, radio takes huge chunks of population under its umbrella, as it does not suffer from the bias of literacy.

Through its direct satellite linking, Equal Access reaches 400 listening communities in 52 districts of Nepal. It has also managed to broadcast its program from 100 radio stations and if one includes the audience through the FM stations, the total outreach is about 9 million people.

Community participation

Equal Access has realised various field studies to determine people's needs and was designed to provide community-centered content created by rural people themselves. Broadcasted programs address locally relevant issues such as women and girls' empowerment, youth life skills and education, human rights and health.

Women were trained as community reporters and they have become trusted ambassadors of their villages by giving rural women a voice on the radio shows. The shows enable them to share their unique stories of coping with war and domestic violence, while leading a healing process for their communities in general.

Listening groups at the village level have also been created in order to expand the project's impact. In fact, Interactive sessions are organised in which villagers are invited to listen to the programs and are then asked to give their feedback that is taken into account for further content development.

Equal Access has thus proven to be a useful tool to relieve communities affected by the recent conflict.

Sustainability and cost effectiveness

Equal Access has been a highly cost-effective initiative to reach the masses in Nepal. In fact, the use of the satellite technology has brought down the costs of addressing important messages to isolated areas. By setting up ICT multimedia centers in the villages, Equal Access has also brought services such as health and education that would have been much more expensive if delivered in traditional ways.

The sustainability of the project comes from financial partners like UNICEF and USAID. Besides, advertisements coming from different businesses, organisations and especially from the government are a major source of revenue.

Replication and scalability

Equal Access provides a scalable, cost effective and flexible information network that can be used to deliver a range of services and support a variety of development programs. Equal Access' scale up has been facilitated by the flexible policies on community radio in Nepal and it is often approached by NGOs and other grassroots organisations to assist them in the set up of other community radios.

Equal Access has replicated the model in Afghanistan, Nepal, India, Laos and Cambodia, cumulating an audience of more than 40 million listeners.

CONCLUSIONS

Despite Nepal's poor infrastructure and connectivity, Equal Access has provided villagers with critically needed information and fostered the development of rural areas across the country. Through its locally produced and targeted content approach, use of appropriate and cost-effective technology, community-building activities and effective partnerships, Equal Access has managed to reach a weekly aggregate audience of 9 million Nepalese (about 30% of the population).

¹ Gross Domestic Product

² CIA Factbook Nepal, Central Intelligence Agency. Retrieved on 02-2009

Through its multimedia centers, Equal Access has also managed to bring services such as educational material for students, distant exchange of images, texts and videos and entertainment facilities that were unavailable in the rural areas before. By creating an easy-retrievable and updatable content repository accessible from rural areas, Equal Access also helps in bridging the digital divide.

LESSONS DRAWN FROM THE PRACTICE

>> Radio has to be seen as a powerful medium that goes beyond providing entertainment and simple news to the people. It can reach to all sections of society without discrimination. Importantly, the habit of community bonding and discussion can be inculcated through it. Equal Access Nepal has proved to be a powerful community-building tool.

>> The creation of listening groups in the villages with the help of grassroots partners and the sharing of Satellite Radio Receivers among the community members has proved to be essential to scale up the project.

>> Radio has proved to be a cost-effective solution to bring information to remote areas with little or no infrastructure. Satellite technology allows broadcasting in large areas without the need of heavy infrastructure and avoiding interferences, common on FM waves.

>> Programs and content that make use of local languages and are relevant to the lives of the people, leave a deeper impact. Moreover, allowing people to provide their feedbacks on the broadcasted content is essential to respond to local necessities.

Voices from the ground

"The content received from the Equal Access satellite system is very helpful to us for getting the latest information in Nepali. Though we live near to the airport, the flights only come few months per year and for rest of the time we know very little about what's happening in rest of the country"

Ratnadevi Thakali, 22 years old, Librarian in the Puthang Library and Community Center, Jomsom

Friends to Support

India

Category

Manthan Award 2007
E Health

Platform of product for F2S

Web/Internet, Telephone

Organisation

FriendstoSupport

Contact

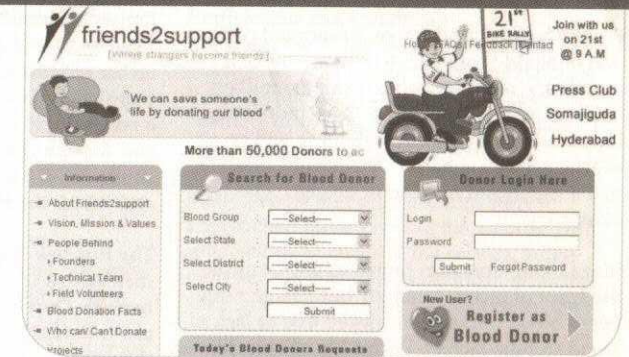
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=473

FriendstoSupport

<http://www.friendstosupport.org>

SUMMARY

Friends to Support (F2S) is a voluntary blood donors' initiative where people in need of blood can obtain the contact of donors on time. This interactive website is meant to provide contact information of voluntary blood donors to the needys round the clock and thereby break the monopoly of a few influential brokers over the information on blood donation.

This website is used in two ways: for voluntary donation of blood in case of emergencies intimated through the website or for searching a blood donor. An all-India search for donors' information has been designed, which does not require any registration or password. It also functions as an educational website to spread awareness and educate people about blood donation.

PRACTICE BACKGROUND

For the country as a whole, the annual collection of blood is only 5.5-6 million units against the requirement of about 8.5 million¹ units. It is said that if only 3% of India's eligible population donate blood, there will be no shortage in blood banks. This would mean that a significant number of deaths could be avoided.

Mega blood donation camps might inculcate the spirit of blood donation, but a large number of blood packets get wasted due to lack of blood storage facility. With a life of only 30 days from the donated date, there is no assurance whether a person's blood will be utilised or not. The shortage of safe blood particularly impacts children suffering from thalassemia, road traffic accidents and trauma victims, women with complicated pregnancy, cancer patients and those undergoing major surgeries.

Realising that there are so many misconceptions about blood donation and wastage as well, leading to shortage of blood availability, F2S was formed by a team of friends working in the IT sector with the motto that any person in need of blood at any place in India should get it within minutes. F2S was conceived as a medium to make people realise that blood should be donated when need arises.

IMPLEMENTATION PROCESS

F2S was officially formed in November 2005 by a group of five friends working in the IT sector. They started working on its creation since their college days, when they were approached by a number of people for blood as the latter did not have access to reliable

database of voluntary donors. This spurred them to maintain an online database for the same.

Others joined in as the initiative progressed. The process for promoting the website went on for months until it was known to a larger population. Eventually the team expanded as a result of growing awareness about the website. More and more people from different professional backgrounds showed interest and joined the F2S.

The first few donors were the core teams themselves, that is, the F2S founders and volunteers. During the initial years, 50,000 people voluntarily registered as blood donors on the website despite several teething problems and 20,000 donated blood during emergencies either once or more number of times as soon as a request came from F2S website.

Donors' contact details are stored page wise for each blood group (including some rare sub-groups). Donors in each group can be searched state/union territory wise and under each state the list is divided into revenue districts, assembly constituencies and cities. In metro cities like New Delhi, Mumbai and Chennai, lists are available major area wise to ensure the donors reach the place of need or hospital quickly.

Through regular screening exercise, the entries that are no more valid are deleted by the administrators so that reliability of the website database is maintained.

An all-India telephonic helpline has also been arranged to disseminate information on blood donors where Internet facility is not available. The helpline run from Guntur in Andhra Pradesh is toll-free from anywhere in the state, but charged at regular tariff from outside. Counselors man the helpline from 8 am to 10 pm everyday. People ring up for both registering themselves as voluntary donors and for getting information about the donors of any particular blood group.

F2S is in the process of considering putting its database on the SMS platform as well, but for the moment, the pros and cons of the technology and its practical implementation and acceptability by the registered donors are being weighed.

PROJECT FEATURES

Technology platform

To access the online database, there are no major technical requirements except a simple computer and Internet. The website is compatible with all browsers in all operating systems. The telephone service is also helpful for those who do not have access to the Internet.

Accessibility and inclusiveness

While mobile technology is accessible to large population, the use of Internet is also on the rise among various sections. Those in need of blood can post a request for a particular blood type on the website providing the details of the patient, number of units needed, hospital where the patient is undergoing treatment, telephonic contact numbers and addresses. The information runs like a scroll on the website, inviting the attention of likely donors.

Community participation

Registration of blood donors by providing their personal contact details like phone numbers, address and e-mail address is totally voluntary. Any person can opt out of the list at any time or make itself unavailable when he/she does not wish to donate for health or personal reasons. The service is functioning sans caste and creed discrimination.

Sustainability and cost effectiveness

F2S is a not-for-profit organisation, and it does not encourage funds from outside. F2S volunteers are working professionals who have pooled in their resources in terms of time and money to support F2S. The donors in the website have registered with the sole purpose of serving society and the website

works on a voluntary basis. Those in need of blood can access the database of voluntary donors free of cost.

Replication and scalability

The database of the website is completely scalable. The success of the model explains that it can be replicated and developed to promote uncommon life saving practices like organ donation - especially kidney.

Many people and organisations have approached those running the website with suggestions to improve the service. Some requests come from outside India, showing willingness to replicate this service in other countries.

CONCLUSIONS

Besides saving lives, enabling and promoting blood donation by linking people who are in need of blood and those who are willing to donate blood voluntarily through an ICT platform, the website is clearing myths and doubts about the same. More than 20,000 people have donated blood through F2S since its inception in 2005.

Donations are not accepted for F2S as it is fully sponsored by the founders. The endeavor is also reciprocated with numerous feedbacks, some of which are also available in the website. One can get to learn about donors who express their gratitude for getting an opportunity to serve the community and requestors who got a voluntary donor in a crucial moment.

F2S also keeps coming up with activities like walks, signature campaigns, awareness stalls and documentaries in various cities to motivate people about blood donation and the role of F2S in the same.

LESSONS DRAWN FROM THE PRACTICE

>> To enable accurate information to reach the people was and still continues to be a major challenge. Those running the website claim that people tend to have a misconception about F2S that it conducts blood donation camps which it does not. On the contrary, it is working towards promoting donation of blood as and when required.

>> Encouraging people to donate blood by clearing myths and doubts is a Herculean task as there is large number of healthy popu-

lation unwilling to donate blood out of fear.

>> There have been several instances where F2S donor details have been misused by blood banks, as they contact the donors asking for donation in their camps. This hinders people's confidence in the platform.

Other health-related toll free helplines

>> Tarshi, a confidential e-helpline working on a national level is similar to the tollfree HIV/AIDS Helpline in the sense that it provides information on issues related to sexual health and HIV/AIDS.

>> Telephonic helplines for various diseases are fast catching up. In fact, various helplines have come up in the last few years. The Heart Care Foundation of India came up with a toll free helpline for answering queries relating to cardiovascular prevention.

>> In February 2009 three new telephonic helplines were launched, including one on cardiac health by the doctors of Asian Heart Institute, a helpline for health issues related to first hand as well as second hand smoking by Tata Memorial Hospital, and one on Influenza supported by the Influenza Foundation of India.

Other blood exchange initiatives on the web

Presently, there are various websites providing a platform for blood donation in India. Here is a list of websites where one can register as a voluntary blood donor and contact voluntary donors in hour of need.

Bharatbloodbank.com /
www.bloodgivers.com /
www.jeevan.org /
www.blooddonations.org /
www.aabb.org /
www.redcross.org /
http://www.bloodbankonline.org/

A life saving incident

A family from Jharkhand visited Hyderabad. Unfortunately, during their stay, one of the family members had to be admitted to a hospital

because of a critical ailment. In the absence of known people in the city, the family had a very tough time searching for donors until they were informed about F2S by one of the hospital

medicos. They instantly found a donor through F2S. Later, they called up and expressed their gratitude to the F2S team and also joined F2S as donors.

Indianblooddonors.com, another blood donation platform

"An incident in 1999, where I saw a very resourceful friend of mine not being able to save the life of his employee because he was unable to manage a bottle of blood, left me with many questions - how do people with serious illness who are in regular need of blood, and those moving from one city to another with no known people there manage to get blood for saving their life? This is when I decided to use the power of the Internet to help save peoples' life," In these words, KA Poacha, the man behind Indianblooddonors.com, tells us how the first portal providing an extensive database of voluntary blood donors from across the nation came into existence in March 2000.

"Today we have over 45,000 registered donors from across the country. We can get blood donated today to the needy in any part of India in less than 30 minutes" adds Poacha.

Any healthy person interested in donating blood can register on the site and provide personal details. Those in need of blood can access the site and put in a request. An SMS is then sent to the donor located nearest to the hospital where the patient is. The patient or his relative is also informed about the identity of the donor. For security and preventing misuse of donated blood, specific identification numbers are given to donors and before giving out the donor's contact numbers, a few authentication checks are also run on the patients and their relatives. The entire process hardly takes 30 minutes.

There are certain unique features of this website which have been created taking into account certain practical issues so that inconvenience is minimized for the donors. This includes mapping of donors - location where a donor is registered for blood donation at a hospital near his/her area. Also, there is a blood donation calendar, where a donor is contacted depending on his eligibility to donate blood and the number of times he wants to donate blood in a year.

Category
Manthan Award 2005
E Health

Platform of product
Web/Internet

Organisation
indianblooddonors

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Helpline on HIV / AIDS

India

Category

Manthan Award 2005
E Health

Platform of product

Telephone

Organisation

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Development Research
Centre

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हमारे, हमारे और सबकी ही समस्या।

Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=545

HIV/AIDS Helpline

<http://hsdrc.org>

SUMMARY

The Electronic Helpline for HIV/AIDS provided 24 hours access to assistance and information related with HIV to any caller within the city of Jaipur. The services were provided through an answering machine for standard questions (pre-recorded) and personalised telephonic communication for those requiring tailor-made assistance including need for information, guidance, counseling and support. The project was pilot started in 1999 and fully launched in 2000. Although it was designed to cater to Jaipur locals, people across the country could make use of the service through the website of the Helpline and local office numbers provided for answers to their queries.

However, the Helpline was unexpectedly stopped in September 2008 for lack of financial support from the State AIDS Control Society, Government of Rajasthan. During the term, the project attended more than 2 million callers.

Although the Helpline is technically not functioning at the moment, it has not been terminated completely because after its growing popularity, those handling the project still receive personal calls from across the country and even abroad, seeking anxiety relief in relation to their queries on HIV/AIDS. Besides, the project incharges are working to replicate it in other locations.

PRACTICE BACKGROUND

After South Africa and Nigeria, India comes third in terms of the number of HIV positive cases in the world, with an estimation of 2.5-3 million infections as per the 2006 National AIDS Control Organisation (NACO). About 58% of HIV infected population come from rural areas where medical assistance is weak and within the infected population about 40% are women. Only few districts around the country have established networks of people living with HIV, and the bulk of the infected population do not have any access to information and support. The State-wise picture shows that Manipur and Andhra Pradesh have the largest number of AIDS cases and that about 0.11% of Rajasthani population is infected by the virus. As controls are not systematic and knowledge of the epidemic in rural areas is very weak, these numbers are largely underestimated and are expected to rise steadily over the coming years.

Until recently, government officials and public health experts in India considered HIV/AIDS to be primarily a health problem that could be addressed through medical intervention and behaviour change. However, there is now widespread recognition that HIV/AIDS has profound implications not just for public health, but also for the economy and society. HIV/AIDS needs constant dissemination of information and advice, as prevention is the only measure of avoiding this epidemic. This increases the importance of counselors and information infrastructure. In this scenario, the HIV/AIDS Helpline project was launched to address the increasing number of reported cases of HIV in Rajasthan.

IMPLEMENTATION PROCESS

The project was implemented by the Health and Social Research Centre, Jaipur and supported by the Rajasthan State AIDS Control Society in line with the National AIDS Program of NACO. The Helpline was established on trial basis from December 1999 to March 2000 and thereafter it continued until September 2008. The most important objective for starting this Helpline was filling information needs on HIV/AIDS among masses in general.

Publicity materials designed to inform the public about the service - stickers, posters, and advertisements in local newspapers - were produced in Hindi and English. Organisers also informed NGOs implementing related projects among high-risk groups about the Helpline in order to increase its outreach and utility.

The Helpline was extending anonymous services because there is widespread shame about the virus and people hardly discuss on issues of this nature. With the simple infrastructure of a computer and two telephone lines, the project implementation did not require any major equipment.

Large numbers of calls were received as the project gathered momentum. In the case of pre-recorded calls, the callers could select one or more from the options of questions like what is HIV/AIDS, how is it caused, how can it be prevented, what are the Symptoms of HIV infection, testing and treatment facilities, and available support for HIV-positive. For personalised telephonic communication, the caller could leave a message and the Helpline people at the Social Development Research Centre would call back and respond within a few hours with the required information.

However, in September 2008, the State AIDS Control Society, Government of Rajasthan,

unexpectedly stopped financing the Helpline despite the fact that it did not require much funds for carrying on.

PROJECT FEATURES

Technology platform

The Helpline was making use of one computer (Pentium 2) and two telephone lines attached with the help of an Interactive Voice Response System card (IVRS). There was customised software for catering to the requirements of the project. Besides this, the helpline was also making use of a recorder for recording response to personal questions.

Accessibility and inclusiveness

The Helpline had tremendous use for target audience and a large number of callers were interested in discussing their personal experiences and get appropriate information about the transmission of HIV. The helpline successfully extended services to all intended audiences without disclosure of their identity, and was open for anybody 24 hours a day, 365 days a year.

The medium made use of both Hindi and English, whichever language the caller felt comfortable in and the Helpline was free for people of Jaipur, any type of people - sans caste or class discrimination - could access the service.

Community participation

High call rate and publicity of the Helpline to a great extent by word-of-mouth expressed its popularity. The advantage people saw on it was that they could discuss themes as per their requirements, fearlessly and without any stigma. Moreover, they could remain anonymous while finding out the required information and answers to their queries.

Sustainability and cost effectiveness

The Helpline only required a simple computer and a telephone. Two telephone lines were provided by BSNL in public interest, free of cost for local calls.

The Helpline was highly cost effective and the total project installation cost was US\$ 3400. Recurring costs including the office, a one part-time counselor and a part-time technical assistance were of US\$ 2800 per year.

Replication and scalability

This initiative could have benefited more people and grown to be more useful for the masses and could have been replicated for information dispensation in areas like family planning, reproductive health, child health services and other areas like agriculture and animal husbandry. The scope of the project could have been expanded to include newer areas and target audiences.

Had the project been still going on, forward linkages with diagnostic and treatment centres could have been created and ideally should have been supplemented by a clinic once a week. It could have been replicated in other states and cities with not much expenditure to contribute in reducing the number of HIV/AIDS cases and assisting those infested with the disease.

Considering there is huge proliferation of ICT-enabled rural telecenters and village knowledge centers, HIV/AIDS Helpline could be an extended supplementary service in all these rural centers.

CONCLUSIONS

One of the biggest challenges to control the spread of HIV/AIDS and mitigating its impact in India is to understand the disease demographics and the main ways of transmission keeping in mind the cultural background and environment. This process is hampered by the fact that HIV/AIDS is the most under-reported disease in the sub-continent and a large part of the infected population is not reported to the health authorities. This is largely the result of stigmas, which deters people from getting tested and from receiving treatment and advice. Therefore, from the perspective of

providing information on HIV/AIDS at the basic level and providing immediate anxiety relief, the Helpline is a commendable effort.

Despite lack of funds and support from government authorities, the project managers do receive few monthly calls not only from people from India - but also from abroad -, who want first-hand information about HIV/AIDS and solutions on how to handle their situation if they fear having contracted the disease.

LESSONS DRAWN FROM THE PRACTICE

>> There is need of mainstreaming HIV/AIDS into development programs and more expenditure is required to strike at the root causes of the spread of HIV/AIDS pandemic. ICT projects can provide a direct link between HIV-positive and health advisers in a cost effective way and giving confidentiality to the user.

>> There is need for more interest among higher authorities to tackle issues dealing with HIV/AIDS counseling. It is only with political support that initiatives like the Helpline on HIV/AIDS can become a long-term success story. Otherwise, political and personal interests often hamper the growth of such development initiatives. The Helpline did experience funding problem, leading to its abrupt termination when funding stopped from the State AIDS Control Society, Government of Rajasthan.

Other health-related toll free helplines

- >> Tarshi, a confidential e -helpline working on a national level is similar to the toll-free HIV/AIDS Helpline in the sense that it provides information on issues related to sexual health and HIV/AIDS.
- >> Telephonic helplines for various diseases are fast catching up. In fact, various helplines have come up in the last few years . The Heart Care Foundation of India came up with a toll free helpline for answering queries relating to cardiovascular prevention.
- >> In February 2009 three new telephonic helplines were launched, including one on cardiac health by the doctors of Asian Heart Institute, a helpline for health issues related to first hand as well as second hand smoking by Tata Memorial Hospital, and one on Influenza supported by the Influenza Foundation of India.

"I firmly believe that we need to work on a call centre approach for projects like this if we want to handle issues that are as serious and widespread as HIV/AIDS. There is need for a more structured approach, with proper infrastructure, paid staff with sound knowledge and training that can contribute to their existing knowledge level. Unfortunately, we did not have any of this. There was not even proper training provided to us in all these years that the project was going on, except once in the start.

The years that have passed have seen tremendous increase in the research and findings on HIV/AIDS. We need to be made aware of all those developments if we want to help the people in a systematic way. I still receive calls from various cities on office and mobile numbers, where people in distress are looking for immediate stress relief and someone who can guide them to the right medical facilities and find solutions to their problems.

Very importantly, my efforts to get funds for the project are still in vain, and recovering some amount of the cost incurred in running the project previously is a matter which is in court now for settlement."

Mridula Chandra, Health and Social Development Research Centre

ITShed

Sri Lanka

Category

Manthan Award 2008
e-Enterprise and
Livelihood

Platform of product

Web/Internet

Organisation

Gemidiriya

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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=648

ITSHED

<http://www.itshed.net/>

SUMMARY

ITShed is a web-based initiative by which villages in Sri Lanka use Internet to access and post locally relevant content about jobs, services and market opportunities. For this purpose, over 200 IT and communication centres - run by the community itself - have been set up, connecting more than 1,000 villages. Each village affiliated to the project manages its own center and has a webpage where villagers can post their necessities and useful information in order to fulfill their needs. Information is also uploaded in the village's website concerning the existing infrastructure, talent and labor pool, products for sale and consuming habits, which can be further used for setting up new businesses in rural areas.

ITShed also provides villagers the necessary training to set up institutions at the community-level to create saving habits, foster entrepreneurship, and make good use of the benefits brought by the market linkages. It is part of the Government of Sri Lanka's Gemidiriya Community and Livelihood Improvement Project¹ that aims to empower the rural poor to take part in their own village and livelihood development and to build institutional mechanisms leading to self-determination

¹ <http://www.gemidiriya.com/>

PRACTICE BACKGROUND

In Sri Lanka, remote villages suffer from a lack of access to information, due to poor infrastructure in terms of roads and communication, which isolates them and hinders development and business opportunities. According to the International Telecommunications Union (ITU), only 3.7% of Sri Lanka's population was using Internet as of November 2008. Therefore, villagers do not get access to the dynamic markets to sell their products and services and are often obliged to sell their produce at lower and unfair prices through middlemen and buy costly goods. On the other hand, villagers are hardly aware of business practices and are not organised to rip the benefits of commerce and develop their own community.

Furthermore, villagers are not exposed to useful knowledge that could enhance their daily activities and improve their livelihood. There is strong need of information related to agricultural practices and irrigation, health issues and education, job markets and entertainment for youth.

Finally, information and statistics about rural areas in Sri Lanka are very poor and outdated, hindering the development of functional public policies and ground-based academic research. This lack of rural data also creates difficulty in bringing businesses to rural contexts as businesses and private sector companies in urban areas do not have the right information about the demographics and consuming trends in the villages.

Through ITShed, villagers get direct access to local, relevant and reliable information about their region in terms of markets, education and health. In fact, each village has a portal in which the information about services and products offered and wanted is regularly updated. This facilitates and enhances the transactions, giving more choice for buyers,

widening the markets for sellers and documenting village's economic activities.

IMPLEMENTATION PROCESS

ITShed comes under the scheme of the Gemidiriya Community and Livelihood Improvement Project, a 12-year development program supported by the World Bank, designed to assist the implementation of the Sri Lanka's Government Poverty Alleviation strategy, initiated in 2007.

ITShed was launched the same year when it was presented at the Gemidiriya workshop and an agreement was signed with the Thrirasa Institute for Economic and Social development to operate the project with a sponsorship of Gemidiriya Foundation. On March 2008, 15 village portals were created as a pilot project. It was decided that Community Information Centers (CICs), equipped with computers and Internet connectivity would be set up in each village and that people from the locality would be trained to run them, upload the data and be the technology mediators.

Numerous workshops were organised to train villagers - especially youth - in data collection, preparation of resource maps, content upload and Community Information Center management to ensure the project's success and sustainability. In fact, each center was designed to work as a single and autonomous entity owned and run by the villagers themselves. In parallel, community-building activities and trainings were designed to bring awareness to the community at large on issues like entrepreneurship, saving groups, cooperative creation, market links creation, village long-term development and women empowerment. Business groups were created to give farmers bargaining power and receive fair prices for their produce.

After being successfully pilot tested, the project was decided to be scaled up at the national

level with the support of the Government of Sri Lanka. The target was to have at least 200 villages in December 2008 and 500 in June 2009. In February 2009, the project had 212 Community Information Centers providing services to 1036 villages and new services are being explored such as community radio development.

PROJECT FEATURES

Technology platform

A web-portal was created to aggregate the content from the villages that are part of the project. Accessing and contributing to ITShed requires basic computer equipment, software and a basic Internet connection. Users can use the site with Internet Explorer, Firefox, and Flash pre-installed. Links to these software package providers are provided on ITShed.

Accessibility and inclusiveness

ITShed allows users to use their local language - Sinhala and Tamil - to communicate with their counterparts and to publish information. However, as the majority of the content on Internet is in English, ITShed has designed a translation service in which users can email their documents in local languages as a word document, and receive an English translation. This service allows the villages to reach wider audiences and overcoming the language barrier.

Community participation

ITShed is a community-driven project in which villagers own and run the Community Information Centers and directly participate in their village development. Young villagers are trained to collect and upload information on the products they want to buy and sell and about available labour force, as well as information about their locality and their consuming habits. ITShed thus encourages local content creation and villagers are able to create their own webpage and have a direct experience with ICT that can be useful for the further implementation of other ICT services.

Through the creation of saving groups and cooperatives, ITShed paves the way for community involvement. It has proven to be a gender-sensitive initiative. Each of ITShed activities involves at least 50% of women.

Sustainability and cost effectiveness

According to a Gemidiriya's 2008 report, it was observed that village organisations are capable of generating over 50% of the allocated funds by themselves by way of savings, interest income, community contribution for infrastructure projects (30%), loan insurance fund and income earned by teaching Gemidiriya community driven development to other visiting villagers. Since the generated earnings are reinvested in the village economy, the project proves its worth in pro-poor rural growth strategy.

However, the CICs still depend on the funds provided by the Gemidiriya Foundation and the Government of Sri Lanka and in the medium-term, they will have to find ways to finance themselves by expanding their basket of services.

Replication and scalability

ITShed can be replicated in rural areas where there is access to Internet connectivity and where information gaps for agricultural businesses and other activities exist. ITShed was designed to be scalable as the value of the platform comes from the exchange of information between villages. The more villages subscribe to ITShed, the more pertinent information can be found and development opportunities brought.

The government of Sri Lanka has decided to take ITShed to the national level and to scale it up to at least 500 villages by mid-2009.

CONCLUSIONS

ITShed directly involves communities to use ICT to bridge the information gap that compounds the isolation of the rural poor and

contributes to the goals of the Gemidiriya Community and Livelihood Improvement Project and the Sri Lanka's Government Poverty Alleviation strategy. Through the Community Information Centers, villagers can access Internet for posting and retrieving information on services, jobs, and find market opportunities. It has so far provided artisans and farmers with links to dynamic markets, increasing their income and having a direct impact on the lives of thousands of families. ITShed has also proved to be useful for business set up in rural areas and conception of governmental policies as it provides a constant and updated source of information about villages in Sri Lanka.

However, the success of the project is also explained by community capacity-building approach, encouraging savings, and providing capital for income generation and skills development. Community ownership and decision-making have been essential to ensure the success of ITShed and its appropriation by local communities. In this sense, trainings and workshops are constantly organised to improve the functioning of the centers, empower local communities with the latest tools and spread awareness about the utility of the CICs for rural development.

Voices from the ground

"ITShed coming to our village was a big thing for us indeed. We, the rural youth, usually do not get to know these things. Now we know what a website is and how to design it and we could design our own personal webpage. As youth living in rural areas like us, we are far away from these new things. We think that as youth in a rural Gemidiriya village we are lucky to have ITShed. We saw ways to improve our education and we could also learn about market opportunities and have market information. ITShed brings to us fortune."

Chandani, student, Ratnadeepa, Sri Lanka

LESSONS DRAWN FROM THE PRACTICE

>> ICT tools can provide economic benefits to villagers by giving them access to most dynamic markets and allowing their products to get exposure at a regional and national level. However, to rip these benefits, community building - especially cooperatives and saving groups - and training in entrepreneurship skills are essential.

>> ITShed has proven to be a useful tool for good governance and accountability as communities publish their accounts and activities online for public scrutiny. Moreover, by providing information and updated data directly from the villages, ITShed has filled an important gap for the designing of public policies.

>> The fact that Community Information Centers are owned and run by village members increases the ITShed sustainability and impact. It is also a mechanism to bring the community members together and generate public discussion and debate about the village development - inclusion of women and youth is paramount in the process.

Voices from the ground

"Gemidiriya ITShed commercial web portal is supporting rural village organisations to earn income for the rural people by providing market information. I live in Kabillegama and we have displayed (agricultural) production data on our ITShed web portal and offer information to those who are interested in purchasing. We can communicate through e-mail details and we plan to use ICT to market our production. Before ITShed, my computer knowledge was very poor. I sat in front of a computer for the first time in January 2008. I am working with 20 computer software now. At the time I got exposed to computer through the Gemidiriya workshop I did not know how to create a website and I thought it to be a very difficult work. However, I have now my own page and I can exchange information and store required one for further use."

Nimal Premasiri, Kabillegama People's Company, Kabillegama, Sri Lanka

Kalanjiam Samuga Vanoli Community Radio

India

Category

Manthan Award 2008
Community Broadcasting

Platform of product

Radio

Organisation

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Action Foundation

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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=639

Kalanjiam Samuga Vanoli

<http://www.dhan.org/themes/kalanjiam.php>

SUMMARY

Development of Humane Action Foundation (DHAN) has developed the Kalanjiam Samuga Vanoli (KVS) Community Radio to document the various development interventions that were taking place along the coast of Nagapattinam district of Tamil Nadu, after the tsunami of December 2004. KVS Community Radio has set an example of using media as an effective tool for disaster management, development and community building. It created awareness among the affected communities on aid schemes and other coping-up mechanisms to overcome the disaster's impact. The radio kept functioning and evolved as a community development tool.

KVS Community Radio is managed by Keelaiyur Kizhakku Vattara Vayalagam, a federation of farmers in Nagapattinam district that were affected by the tsunami. Five Village Information Centres (VICs) that act as audio production centres were set up to allow community members to locally produce the broadcast content. The different programs reach more than 3000 households in the region and cover topics like agriculture, managing stress caused by natural disasters, rebuilding lives and overcoming losses, innovation and promotion of local wisdom.

PRACTICE BACKGROUND

The tsunami of December 2004 caused major devastation in Tamil Nadu, particularly along the coast of Nagapattinam, killing more than 6000 people and destroying houses and infrastructure such as electric poles, wells, roads and telephone lines. It also damaged fishing boats, prawn culture ponds, soils and crops as beach sand and salt water entered into more than 200,000 acres of arable land. As almost 80% of the over 1.4 million population of the district depended on farming and fishing, the tsunami shattered the economic base of most of the families and affected their livelihood.

Large quantities of relief material poured in the region from all over the world, and innumerable schemes and aid programs were created by Government agencies, international agencies and NGOs to rebuild the tsunami-hit cost and provide assistance to the affected communities. With the destruction of the telecommunications infrastructure, informing people about these development interventions became one of the biggest challenges to ensure the success of such initiatives.

In this context, inexpensive and light weighted communications infrastructure was urgently needed and radio was found to be the most adapted way to reach the affected people. Kalanjiam Samuga Vanoli Community Radio empowered local communities with critically needed information through relevant programs broadcast through the existing Karaikal FM station.

IMPLEMENTATION PROCESS

KSV Community Radio was formally launched in October 2006 by the local communities of Nagapattinam district with sup-

port from the DHAN Foundation Centre for Development Communication and VOICES, a Bangalore-based NGO which provided technical support during the project's early launch period. United Nations Development Program (UNDP) was the resource body supporting the initiative.

The Station for Kalanjiam Samuga Vanoli has been set up at Vizhunthamavadi village and it is owned by Keelaiyur Vattara Vayalagam, a federation of Vayalagam Farmers' groups promoted by DHAN Foundation among Tsunami affected communities. By establishing the radio station in areas struck by the disaster, KSV has provided a platform for the community members for coming up with programs according to their requirement and liking. A team of local volunteers - which had never had any previous experience in media - was trained in the entire audio production process, comprising studio and field audio production, editing with computers and digital voice recorders usage.

The station tied up with Karaikal FM - which has the widest audience in the region - to broadcast its content on a weekly basis for 30 minutes. The station is also linked to five Village Information Centers that are narrow-casting the radio programs to the people within a small radius. These VICs also work as production centres, encouraging content creation at the grassroots level. Through both broadcast and narrowcast, Kalanjiam Samuga Vanoli reaches more than 3,000 households in the entire district. KSV is planning to deliver its contents over the Internet but this idea has not been able to materialize because due to the non-availability of Internet services in the region.

Although the crux of the programs remains development, there has been a slight shift in the focus on the content as well as time duration of the programs from the time the radio started. Initially the programs focused on rehabilitation but they gradually became more concerned with livelihood development.

KSV has also been approached by different NGOs to assist them in establishing Community Radios in other districts in Tamil Nadu.

PROJECT FEATURES

Technology platform

The radio station in Vizhunthamavadi and five Village Information Centers were equipped to produce the radio content with the adequate infrastructure comprising computers, a sound mixer, audio editing desktops, digital voice recorders and cassettes. The programs are delivered to the community through narrowcasting from the VICs and through established FM radio stations. To receive the signal, villagers only need a basic low-end radio.

Accessibility and inclusiveness

Radio is a very accessible and affordable model of communication and does not suffer from the bias of literacy. Programs are created in Tamil - the local language - and are therefore reaching the target audience at the grassroots. Considering the listeners' feedbacks in the form of Post-Cards and phone calls, it is evident that the program has created good reputation and awareness among the target audience.

KSV was designed as a gender-sensitive project: women make 40% of the radio programs and two thirds of the Board of Governance members are women. Unexpected enthusiasm and support came from students and children as well.

Community participation

The level of community participation in Kalanjiam Samuga Vanoli Community Radio is high as the station is owned and managed by the villagers and the programs are made in the villages. A 21-member Board of Governance drawn from different village organisations meets once in a month to provide frameworks for content production and discuss the radio management.

Teams of villagers have received training to become reporters and they have managed to successfully produce 40 episodes of weekly programs. Therefore, KSV is also providing employment to people at the grassroots by creating alternative career other than agriculture.

Sustainability and cost effectiveness

The running cost of the Community Radio is about Rs 40,000 per month. Village Information Centres have proven to be 70-80% sustainable and it is most likely that the difference will be covered by next year. The government policy on Community Radio has provided support to KSV in the form of advertisements, which help financing the project.

Other mechanisms for cost coverage have been explored with the communities and some villagers are often willing to pay for a copy of the programs. Last but not the least, Kalanjiam Samuga Vanoli community radio is backed by partners like DHAN Foundation and the UNDP.

Replication and scalability

The Kalanjiam Samuga Vanoli Community Radio is a highly replicable model as far as the use of community broadcasting in disaster management is concerned. The manner in which the radio has helped in building communities after the tsunami disaster can be replicated in combating various other disasters such as earthquakes, cyclones, floods, epidemics and terrorism. In 2008, after the Kosi river flood in Bihar, many communities used media tools - especially radio - that resulted in timely disaster management by providing adequate information to the authorities and the affected population.

CONCLUSIONS

Kalanjam Samuga Vanoli Community Radio has helped communities in the coastal villages of Nagapattinam district in the rehabilitation process after the 2004 tsunami. It has built a highly replicable model for development purpose and created greater awareness on recovery and livelihood issues among the community members. KSV gives villagers the possibility to voice their own ideas and share them with the community. The last few years have witnessed large number of natural disasters and tragedies, be it earthquakes, terror attacks, or other unfortunate events. KSV has shown that use of Community Radio as a tool for involving the general population in dealing with such challenges can be cost-effective and inclusive.

LESSONS DRAWN FROM THE PRACTICE

>> The policy on Community Radio in India has still many bottlenecks. Fulfilling 3 years requirement as the minimum existence period for an applicant organisation to get a license is a stumbling block for many community radios to emerge.

>> Involving local government officials for content and programming is very difficult. Community Radio initiatives require more support and sensitivity from district administrations to flourish.

>> To ensure the long-term sustainability of a Community Radio, it is paramount to move from participation and management into ownership and control and getting the communities involved in designing and implementing media production.

>> Community Radios have to be integrated with mainstream disaster warning systems and location-specific warnings.

Other Community Radios in India and Sri Lanka

>> "Our rule in our country" (Abua Disum Abua Raj) and "Let's go to village" (Chala Ho Gaon Mein) (<http://www.aidindia.org.uk>) are two popular programmes, that use AIR time to broadcast their community radio programmes on issues related to development in the remote region of Jharkhand, like Garhwa district. These two programmes are anchored by AID India.

>> Dambadeniya Community Radio (<http://www.dambadeniya.org>) of Dambadeniya Development Foundation, Sri Lanka, is managed by the youth of the area and producing programmes on socio-economic development activities. It covers 213 villages.

MEdRC SmarTech

India

Category
Manthan Award 2008
E-learning

Platform of product
Broadband/Online

Organisation
MedRC Edutech

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Manthan Award
http://www.manthanaward.org/section_full_story.asp?id=660

MedRC Edutech
<http://www.medrcedutech.com>

SUMMARY

MEdRC EduTech Limited's SmarTech is an innovative repository of reusable rich multimedia learning objects with lectures delivered by eminent medical teachers across India that aims to bridge the health educational divide. It enables flexible and easy retrieval, customisation, reconfiguration and sharing of existing learning and teaching resources from different sources and includes features like slides, graphics, illustrations, videos, 2D and 3D animations. The content is adoptable to a wide range of delivery methods like e-Classrooms, e-Libraries and over the Internet through e-Learning portals and podcasting.

MEdRC aspires to capacity build at the grassroots level, thus transforming all the existing 6000+ Community Health Centres across India in health education learning centers in the quickest possible time.

PRACTICE BACKGROUND

MEdRC addresses serious issues faced by India concerning the existing infrastructure and quality of medical and health education through a combination of rich media and converging technologies. According to the Planning Commission report of April 2008, India needs 800,000 qualified doctors and 1 million nurses - mostly in rural areas. There is an acute shortage of medical teachers in most medical subjects as private practice is more popular among doctors as compared to teaching. There is also shortage of clinical case material for training; lack of standardisation in the medical curriculum; and no means to uniformly provide continuous medical education. These problems result in a wide quality gap between various institutions.

There is an urgent need of creating new health professionals in the form of undergraduate qualified community health workers to take care of emergencies - as the majority of minor health problems do not require a proper doctor. The report states that there should be at least one person in every family who can learn all about health and diseases to take care of common problems. While the health needs are growing in India, the required number of healthcare professionals has not been scaled up.

To tackle this problem, MEdRC has created a healthcare and medical content repository so that people are empowered to take care of common problems. It also enables students to learn at their own pace, even those without English knowledge through its multilingual platform.

IMPLEMENTATION PROCESS

MEdRC EduTech Limited, a Hyderabad-based company working in the sphere of digital healthcare education, initiated the SmarTeach project in 2006. It was pilot-tested at MediCiti Institute of Medical Sciences, NTR Health University, Vijaywada in Andhra Pradesh.

MEdRC's healthcare and medical repositories are created by some of the best names in medical education from India and abroad. They are invited to MEdRC's multimedia studios for recording their expert knowledge into e-Lectures. The lectures are captured on video and subsequently enhanced by adding multimedia elements in the form of slides, graphics, illustrations, 2D and 3D animations. A team of doctors, subject experts and technologists work together at MEdRC to transform static video and audio files into rich multimedia learning objects, enhancing the effectiveness of the lectures. MEdRC's team of instructional designers and medical illustration artists work together to create pedagogically and anatomically accurate modular digital courseware, approved by the Medical Council of India (MCI).

While 550 students have been subscribed to the 1st Bachelor of Medicine and Bachelor of Surgery (MBBS) and the Bachelor of Dental Surgery (BDS) courses at the pilot sites, over 1,000 more students were exposed to the content at seminars conducted by MEdRC for students and faculty members at 40 medical colleges.

MEdRC develops e-Learning courses for Pharmacy, Dentistry, Nursing and Village Health Workers in various Indian languages and has partnerships with various medical teaching organisations. Simplified modules that shall be used to train large numbers of Health Workers and Healthcare Activists are also being created. In partnership with various organisations, MEdRC also captures and makes select medical conferences available online as

Continuing Medical Education (CME) modules to keep practicing doctors abreast of the latest developments.

The biggest challenge for MEdRC has been that without direct incentives and mandatory policies, medical colleges do not make financial commitments to invest in establishing digital infrastructure on their campuses - without which digital content cannot be delivered. Through an amendment to the Medical Council of India (MCI) Act from December 2008, the MCI has now directed all medical colleges to "use Information Technology for teaching medicine" by establishing e-Classrooms, e-Libraries and providing access to e-Content. All colleges have been given one-year time to provide these facilities. Through the same amendment, MCI has reduced the teacher strength in 6 Basic Sciences departments by 50%, presumably because the digital approach as a supplement enables teachers to teach more students at the same time.

PROJECT FEATURES

Technology platform

Users can access MEdRC content through any personal computer running MS Windows with MS Internet Explorer 6.5 or higher. MS Windows Media Player and Adobe Flash Player are required. While the institutional mode is provided over an Intranet, home access necessarily requires 512 kbps broadband Internet connectivity.

Accessibility and inclusiveness

The Paramedical and Healthcare Worker e-Learning courses are being developed in various Indian languages with an attempt to bridge the urban-rural divide and provide high quality material for non-English language audience. In order to make its offerings economical for students, MEdRC has tied up with Banks to provide 100% financial assistance in the form of education loans covering access to the full courseware plus a SmarTeach laptop. This allows students to subscribe to the comprehen-

sive ICT package when they join college and start paying once they complete their course and start earning.

Community participation

As health is a subject that deals with one and all, there is scope for participation from various groups besides those who are directly part of the medical world comprising doctors, lecturers and medical students. Rural Medical Practitioners (RMPs) who have until now never been exposed to any form of formal healthcare education can now get to learn at a Community Learning Centre and adopt a more scientific approach to treatment after going through structured courses from MEdRC. One member in every educated family can be empowered with knowledge and become the family's Health Activist at Home - taking care of the diabetic grandfather to dealing effectively with a child with fever or even saving a life by giving emergency first aid.

Sustainability and cost effectiveness

The project is sustainable as the user pay for the content. MEdRC's digital courseware can be delivered either directly to the consumer via the Internet or via an on-campus network at a medical college. In the former situation, an individual subscriber will access MEdRC's digital content by logging in to MEdRC's central servers. In the latter situation, a local mirror of MEdRC's server will be established at the subscribing college's campus and accessed by its user base in either of the following ways: a) by a teacher blending own content and MEdRC's multimedia content in a classroom; b) by students via self-paced learning at the college's Digital Library serving MEdRC's digital content. The medical college or university subscribing to MEdRC's courseware will allow MEdRC to set up necessary infrastructure for a digital access across its various teaching centers on a Build-Own-Operate-Transfer (BOOT) model.

By tying up with partners such as Cisco, Microsoft, Intel and BSNL, MEdRC wants to

build Rs. 300,000 worth of infrastructure in every Indian medical college to deliver the digital content. Per student, the cost of this will work out to Rs. 200,000, which is not significantly more than the total cost of a medical education. MEDRC is planning to deliver this content end-to-end: from their servers, on the BSNL backbone, to the student's laptop.

Replication and scalability

Basic human structure and function (Anatomy & Physiology), cause and progression of common diseases (Microbiology & Pathology), action and usage of medicines (Pharmacology) and prevention to remain healthy are concepts that remain the same whether one is studying to become a doctor, nurse, paramedic or a health activist. Through partnerships with government and medical colleges, MEDRC plans to provide e-Campuses at all medical colleges with e-Classrooms and e-Libraries connected to Community Health Centres (and even Community e-Kiosks) that shall act as Digital Healthcare Education hubs. MEDRC seeks to create a healthcare education network comprising each of the 6,000 Community Health Centres in India to convert them into digitally-enabled mini medical Colleges.

CONCLUSIONS

MedRC's project is unique from the perspective of student's learning experience. Every student, irrespective of the college he/she is studying, has access to a searchable and on-demand access to the best medical teachers through high-end multimedia platforms. By digitally archiving the lifetime teachings of such teachers, over 1,000 students have been trained.

Simplification of medical knowledge and translation into Indian languages makes feasible to educate the rural medical practitioners (RMPs) so that they can be more scientific in their approach. The entire MBBS knowledge is virtually available to every citizen of India,

empowered him to meet his common health needs.

MCI's Adhoc Committee - the high medical body authority - went through MEDRC's Under Graduate Medical (UGMed) project and approved it. While calling MEDRC's effort in this regard as a "praiseworthy attempt towards capacity building of medical students", the MCI has recommended MEDRC's UGMed program as standard reference material to be procured and used by medical education units of all medical colleges under its affiliation.

The General Body of the Dental Council of India has approved also MEDRC's digital approach towards Medical Education and it has communicated to all Dental Colleges in India to contact MEDRC for guidelines and solutions for the desired digital approach to be implemented.

LESSONS DRAWN FROM THE PRACTICE

>> MEDRC benefited from the Medical Council of India (MCI) Act from December 2008 that directed all Indian medical colleges to use digital education platforms and install the appropriate equipment. Policy support is essential to scale-up ICT projects in the education field to bring education to the masses in a cost-effective way

>> Most students prefer to use ICT learning platforms as they are highly customisable, allowing them to deepen their knowledge in the field of their interest and learning at their own pace.

Delivery Modes

Institutional Mode

In a Medical College or at a Learning Centre:

- (1) e-Class Mode: Teachers can project the rich media learning objects from the SmarTeach repository onto interactive whiteboards to enhance their classroom teaching sessions.
- (2) Virtual Class Mode: Reputed Professors' lessons can be projected, enriched with case data, graphics and animations.
- (3) e-Library Mode: Students can self-learn at their own pace at the college e-Library with e-Learning content structured as per curricular needs.
- (4) WiFi e-Campus Mode: Every student can access the content on the e-Campus over WiFi.

Internet Mode

MEDRC's courses and programs can be subscribed to in a modular manner through the website, using a broadband connection at home or through franchised e-Learning Centres that provide such Internet access to students.

OSCAR

India

Category

Manthan Award 2007
e-inclusion



Platform of product

Broadband/Online

Organisation

French Institute of
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SUMMARY

Open Source Computer for Agriculture in Rural Areas (OSCAR) is a software application created to help farmers, extension officers and students identifying the different weed species of rice and wheat in the Indo Gangetic Plains (IGP). It assists them in the decision-making about the selection and use of weeds and pesticides for the crops. The system contains information about more than 50 weed species in its database and suggestions about appropriate control measures. OSCAR has a graphic interface that simplifies the seed and plant recognition using drawings instead of technical terms and is thus accessible to non-botanists and illiterates. The project allows farmers to manage their crops in a more efficient way and gives them access to information about complex issues such as pesticide measurement and compatibility with other products and seeds.

PRACTICE BACKGROUND

Rice and wheat crops cover more than 13 million hectares in India, Bangladesh, Nepal and Pakistan, catering the needs of the majority of the population living in these countries. Food security of the whole region is thus extremely dependant on the rice and wheat productivity.

Moreover, two-thirds of the 600 million people living in the South Asia's rice belt depend on agriculture. The implementation of new cultivation and irrigation methods and the development of new types of seeds in the 70s and 80s were essential to keep up the food production with the exponential population growth. However, since a few years, food production has slowed down because of land degradation due to extensive cultivation and pesticides, diseases and weeds problems that are getting more and more complex. The sustainability of these agricultural systems is thus put into question.

In this context, crop protection has to be addressed by a correct identification of weed species and a good knowledge of pesticides and weed management. Local farmers in Southeastern Asia have limited access to this kind of information and OSCAR gives them the tools to identify the problems related to their crops and provides them expert advices. OSCAR is accessible mainly through local telecenters and is available in Hindi, Urdu, Bangla and English.

IMPLEMENTATION PROCESS

OSCAR was initiated by the French Institute of Pondicherry (IFP) in partnership with the Rice-Wheat Consortium for Indo-Gangetic Plains (RWC), CIRAD (Centre de Coopération Internationale en Recherche Agronomique,

France) and the department of Communication and Innovation studies of Wageningen University, the Netherlands. The project, co-financed by the Asia IT&C program from the European Commission, was launched in February 2004 and conceived and perfected until its release in April 2006.

Several fieldtrips took place over that period of time in Pakistan, India, Bangladesh and Nepal in order to understand the social, technical and biological background of agricultural practices. Experts traveled all over those regions to discuss with students, government officials, farmers and women and to collect information and photographs of the principal weed species. The software development process was constantly fed by these observations and testings on the ground.

Since the beginning of the project, a special focus was given on the appropriation of the system by the end-users (especially farmers and students). The identification of weeds through images; the translation of the content in local languages - Hindi, Urdu and Bengali - and the fact of being designed as an open source application responded to this adaptation necessity.

The lack of computer infrastructure in the targeted regions was detected as one of the main problems to overcome. Simputers were initially thought as the solution to bring OSCAR at the ground level but their limited space availability; the lack of technical assistance in remote places and the decrease in laptop prices made it an unpractical and costly solution. At the same time, computer penetration in the countryside was being driven by projects like e-Choupal and other government and NGOs programs. Without the means to bring infrastructure to remote areas - nor to train villagers in using the software -, OSCAR had to fit into broader ICT projects and partner with universities, extension agencies and organisations that were already addressing issues through ICTs at the grassroots level.

PROJECT FEATURES

Technology platform

OSCAR is an open source software written in the C programming language and available in four platforms: Linux, Windows, Simputer and Web.

The various field trips realised before launching the final product demonstrated the necessity to provide a simple interface that could allow weed identification by non-botanist people. Existing Software for Species Identification (IDAO) is a simple multimedia identification software that uses a graphical interface which reconstitutes the different parts of the plants such as leaves, flowers and root. The user can navigate and select the characteristics of each of these parts and the system automatically displays the most appropriate match that coincides with the weeds available on the database. This database contains the description and the appropriate control measures for each weed and is easily updatable - locally or by accessing the central database on Internet.

Accessibility and inclusiveness

The various field trips, interviews and testings at the ground level were used to identify the specific needs of rural people. The majority of the farmers in the IGP is illiterate and does not have the knowledge of the botanical technical jargon. The IDAO system with its graphic interface overcomes this barrier and makes the identification process much simpler and interactive.

The weed description and the control measures have been translated into the four main languages of the Indo Gangetic Plains (Hindi; Urdu; Bangla and English) in order to maximise the project's outreach. Some features like the addition of Text-to-Speech capability were discussed during the conception of OSCAR.

Community participation

The appropriation of OSCAR by the final users was one of the main concerns in the project design. The fact of OSCAR being a

Free and Open Source application gives the opportunity to various organisations and groups to make contributions and customize it to suit local necessities. The project targets a vast area covering four countries and thus different realities. Some regions may need more detailed information about certain weeds and control measures adapted to the culture and local practices. The current grassroots partners are in charge of customising the database to bring relevant information to the users.

Sustainability and cost effectiveness

The implementation cost of OSCAR has been absorbed by the Asia IT&C Program from the European Commission and by the partner organisations. Being an Open Source application, OSCAR works as platform in which communities are able to update the information concerning weeds management and control measures constantly. Therefore, it does not need major financial or technical involvement after its release.

The distribution of OSCAR is essentially made through the partner organisations on the ground and through Internet as the software can be downloaded without fees and its web version is accessible from any computer connected to Internet. Therefore, OSCAR can contribute to the sustainability of telecenters in the Indo Gangetic Plains as it can be added to the basket of services proposed by them.

Replication and scalability

OSCAR can be replicated in rural agricultural areas where there is a lack of knowledge on weed identification and appropriate control measures. The program has initially been designed for wheat and rice weeds but other species and their characteristics can be added into the database to adapt OSCAR to local contexts. Moreover, content concerning weed description and management can be translated in other languages.

However, the main issue to scale-up and OSCAR in agricultural regions is computer access. Rural areas in developing countries

face infrastructure problems concerning power supply and connectivity and computer penetration is very low. Moreover, rural inhabitants do not have the necessary skills to use computers and training is needed. Partnering with grassroots organisations running telecenters - that maintain the infrastructure and have skilled workers - is essential to bring OSCAR services to such areas.

CONCLUSIONS

The current situation in the Indo Gangetic Plains, where agricultural production is declining, calls for an urgent solution. OSCAR fills the knowledge gap concerning the identification of the different weeds and provides farmers the necessary information to tackle recurrent problems in a methodical way, integrating technical knowledge with traditional practices. However, OSCAR constantly needs aggregation of relevant content to make it widely adaptable and usable.

The OSCAR interface was designed to be as interactive and intuitive as possible for people living in the IGP reality, with content accessible in local languages and a visual identification system for weeds. Being Open Source, it has the capability to be constantly adapted to local realities and provide relevant content for farmers and students. As a result, it promotes collaboration among villagers that are able to share critical information and enhance their decision-making capacity. It is imperative that all agriculture-related government organisations adopt OSCAR and proliferate the same.

However, the weak penetration of computers in the Indo Gangetic Plains remains the main problem for disseminating OSCAR throughout the region. Targeting the extension work-

ers allowed the project to gain outreach, as farmers often depend on them to obtain information on latest weed control methods.

LESSONS DRAWN FROM THE PRACTICE

>> The study of the end-users' environment - social, educational, economic - is essential to maximise the outreach of any ICT initiative. Numerous field trips, interviews and testings during more than two years helped to implement and shape functional features in OSCAR and facilitate its appropriation by farmers and students. The bottom-up approach has to be applied since the very beginning of the project's conception, if it has to be successful, and the same has been the hallmark of OSCAR development.

>> ICT initiatives targeting rural areas have to find the way to reach the masses in a context where infrastructure is very poor and where there is a scarcity of ICT-skilled people. Services or applications targeting these areas have to be included in broader ICTs strategies and partner with organisations or programs already present at the grassroots level to have a real impact. These initiatives can be added to the basket of services proposed by rural telecenters, giving them the possibility to expand their demand and having a direct impact in their sustainability.

>> As computers are hardly available in rural areas, OSCAR was implemented in a way to cover the widest possible section including the existing conventional methods of information dissemination, for example the agricultural extension mechanisms.

Voices from the lab

"Provision of a visual interface to the identification process is a major advantage in the tool. This eliminates any prerequisite botanical knowledge about weed species. All the end-users felt comfortable with the interface design and found it easy to identify weed species. Though there were issues with their first exercises, subsequently every one was able to navigate through the software with ease."

Dr. Rico LIE, Wageningen University, researcher responsible for the OSCAR social aspects

Prison & Visitor Management System

India

Category

e-Government

Platform of product

Web Server, Client Server

Organisation

National Informatics
Center

Contact

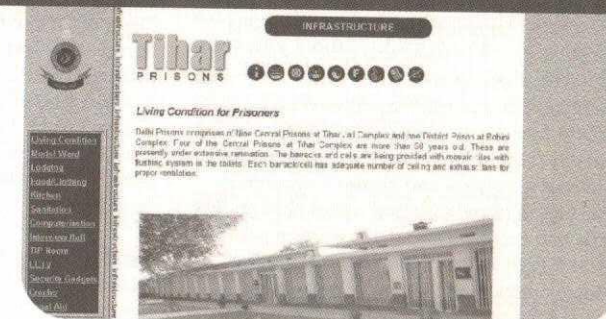
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Manthan Award

http://manthanaward.org/section_full_story.asp?id=502

Tihar Prisons

<http://tiharprisons.nic.in/html/infra.htm>

SUMMARY

Prison Management System (PMS) and Visitor Management System (VMS) are G2G¹ and G2C² applications, which enhance the functioning of the prisons and facilitate its daily processes: registration, movement and release of the inmates and control of the visitors. PMS captures the inmate's photograph and stores the same in the central database such that duplicate entry of the prisoners can be identified in a universal manner, which helps in tracing out the 'frequent flyers' to the jail. It facilitates monitoring the inmate movement - both inside and outside the correction home. VMS regulates and simplifies the processes of meeting between the visitors who are coming to visit their relations and friends lodged in the correction home. It is also helping the prison authorities in the generation of more than 65 reports of administrative, performance and statistical nature and provides quick and accurate information for better strategic planning for administration.

PRACTICE BACKGROUND

The Tihar Prison Complex at Rohini in New Delhi is the largest prison complex in Asia comprising of 9 prisons and one District Jail with a total strength of more than 11,000 prisoners against a normal sanctioned capacity of 6,250 prisoners. In a year about 70,000 - 80,000 inmates remain lodged in these prisons for different durations and crimes committed. This prison population has about 80% under-trials and includes about 480 women prisoners and high security criminals. There has been a substantial increase in number of prison inmates because of the phenomenal increase in the crime scene in Delhi.

Nearly 1700-1800 visitors meet their relative inmates everyday. A manual system managed the booking meetings in each jail but a centralised visitor record was not available. There was lack of exchange of visitors' information within jails and prison headquarters and there was no provision for identification, detection and verification of visitors, making it difficult to keep track of their movements. There was no control either on multiple meetings with an inmate or on number of visitors permissible to meet with each inmate and it was difficult for the jail administration to keep record of those prisoners whose meetings were to be stopped by the jail authorities by way of punishment. In this context, malpractices mushroomed in the manual system.

The introduction of ICT processes were paramount to organised information in order to cope up with the increasing number of prisoners being lodged in the Tihar Prison complex and to control and keep track of the visits. PMS also enabled considerable gaining of time for the prison personnel and for courts and other national agencies by reducing administrative overheads and eliminating obsolete processes.

IMPLEMENTATION PROCESS

National Informatics Center (NIC), under the Dept. of IT, Govt. of India, took up this task of automating and streamlining the processes of prisoner / visitor movement at Tihar Prisons. In consultation with all the stakeholders (Government, Jail authorities, courts and inmates and their relatives), NIC designed a series of automated processes that were implemented one after the other.

Establishment of LAN

Establishment of LAN connecting all prisons situated in a big wide spread complex using 5,500 meters of Optical Fiber Cable (12 and 6 core) operated with one Layer - 3 switch supported by 16 Layer - 2 switches in the entire jail complex. The network has 185 nodes and can be expanded to 300 without any additions, modifications or disruptions to the existing infrastructure. Surveys were conducted and laying of OFC was found to be the best suitable option.

Development and Implementation of Prison Management System

PMS was implemented in 2004 after various studies about the prison necessities and comprises 12 primary functional modules. It aims to facilitate modular but tightly integrated software solution for administering and managing the data related to inmates with their case details and other related activities of the inmates along with their photograph and biometrics and also facilitates dissemination of information over the LAN to all the concerned officials of the correction homes.

Development and Implementation of Visitor Management System

VMS was introduced in 2006 at the Tihar Prisons Complex and aims to manage meetings of the inmates with their relatives and visitors. It brings transparency in the 'Mulaqat' (Meeting). It facilitates visitors to register their appointments / meetings with

the inmates on telephone or in person at Central Public Relation Office of the Prison.

Videoconferencing (VC)

It was implemented in 2005, with a cost of Rs. 4.2 million. The use of videoconferencing facility in prisons is for the purpose of remand extension and trial of prisoners (e-Trial) in various courts of the country. The Delhi Government for speedy trial has changed the laws. This shall minimise the manpower of security personnel, transportation cost and production time. VC sessions can be conducted between 'jail-2-jail', between 'jail-2-court' within city and 'jail-2-court' outside city for many important inmates.

Training

In order to coordinate the processes involving different institutions, meetings were held to determine each stakeholder's tasks and to sensitise them to the use of ICT in their daily activities. The existing skills, tasks and needs of each institution and layer involved in the prison management were studied in order to organise the training and respond to the necessities of each role player. Regular training session was held from time to time for the staff and it has become mandatory for new recruited personnel to undergo training on the application software in addition to their normal physical training. Now each year trainees of all India Police Service are compulsorily brought to the Tihar Jail for 2 days such that they are made aware regarding ICT usage. Wardens working in processes have been identified and provided with additional training developed for their specific functions. Monetary incentives were given to them and good work done by them was recorded in their annual confidential reports so that they get benefit in future promotions.

The officials on the verge of retirement showed reluctance in getting acquainted with modern technology. It was difficult to make them understand and accept the system that later on was going to help them in administering jail functions more effectively and effi-

ciently. The pressure was thrust on them from the Director General of Prisons to learn and get them acquainted with the system.

50 data entry operators were hired from private agencies and were provided training on the visitor module of the system. They are on contract and deployed outside the prison for visitor management. Some of them also manage VC sessions in the jail.

PROJECT FEATURES

Technology platform

Prison Management System is a high-tech solution that needs installation of state-of-the-art equipment in the prisons. In order to connect all the offices inside the prison and link them, a LAN cable network has been installed and they have been equipped with computers with MS Windows Advance Server 2000 / 2003, MS SQL Server 7.0/2000, MS Visual Studio 6.0, Crystal Report 7.0/8.5 and MS Access. Prison Management and Visitor Management applications were also developed to centralise the information about the visitors and the prisoners. Other facilities have been added to the system comprising videoconferencing facilities and modern security gadgets like Closed Circuit Television [CCTV] cameras and Biometric Fingerprint identification system to enhance the security of the Prisons and reduce administrative tasks. The applications were made as simple as possible and each screen was not more than half page such that data entry was not cumbersome.

Accessibility and inclusiveness

PMS and VMS have enhanced and facilitated the administrative tasks related to the inmates management. It makes the prison functioning more transparent by aggregating all the existing information about each prisoner in an up-to-date manner, allowing fast retrieval when needed. VMS has also helped improving the services to the visitor by giving them the possibility to book their visit in advance through

their telephone and by reducing the administrative burden. Transparency in the entire system has made the environment inclusive.

Sustainability and cost effectiveness

PMS and VMS reduce administrative tasks and overlap duties for the prisons' daily activities. It has proved to be cost effective by reducing the wastage of time, suppressing certain administrative tasks and cutting hidden expenses such as inmates' displacement to the court by enabling videoconference facility. By lowering down the running costs of the prisons and making them more secure, the sustainability of PMS and VMS is guaranteed.

Replication and scalability

Prison Management System application is one of the most replicated systems in India and has been implemented in the following jails:

- >> Central Jail, Thiruvananthapuram (Kerala);
- >> All Central (3) and District (26) Jails in Jharkand;
- >> Central Jail, Alipore, Kolkata (West Bengal);
- >> Beur Central Jail, Patna (Bihar);
- >> Arthur Road Jail, Mumbai (Maharashtra);
- >> Planning stage in West Bengal and Orissa;
- >> Sabarmati Central Jail, Ahmedabad and Central Jail, Vadodara (Gujarat), and
- >> 8 Central Jails in Rajasthan.

Visitor Management System application software is implemented at the following places:

- >> All Central (3) and District (26) Jails in Jharkand;
- >> National Human Rights Commission [NHRC], New Delhi;
- >> National Building Construction Corporation [NBCC], New Delhi; and
- >> Supreme Court of India, New Delhi.

CONCLUSIONS

Prison Management and Visitor Management Systems were essential to reduce the administrative burden in the Tihar Prison Complex in Delhi and to make it more secure and efficient. It has proven to be useful for all the stakeholders around the prison, benefiting each of them: inmates, prison authorities, courts and visitors.

It has now become essential to embrace the new technologies in the area of Information and Communication Technology (ICT) for the development, modernisation and advancement of prisons. Internet implementation in all the jails across India for sharing of information related to prison inmates who had been lodged in various jails should improve the law and order within the state as well as within the country.

Tihar Prisons in Delhi have been pioneer in this area and through their IT setup, have set a model for other states where it has been replicated.

LESSONS DRAWN FROM THE PRACTICE

>> Training is a key part of any successful project. It should be tailored to the needs identified through the assessment of the work requirement, existing skills, knowledge and capacity of the employees. Training must be held for all levels and this training must be held separately for each level.

>> Installation and implementation were the critical phase of the deployment path of the PMS project. It is paramount that the main stakeholder understands the steps it shall need to take to implement PMS project, together with the resources that need to be put to ensure its success. When dealing with new ICT technologies there are numerous

problems that may arise, making it crucial for agencies to have a well-developed process for this phase of the project.

>> Prisons being a very sensitive and high security zone, prior permission is to be taken from prisons authorities for the labor / manpower to carry out work inside the Tihar Prisons complex and daily change of manpower requires daily permission from prisons authorities resulting to wastage of time and less productivity.

>> During the development of application software the requirements were not clear as the user was not supportive in sharing the information and subsequently could not be frozen. To overcome this problem, prototype of each module was first developed and then shown to the user department to get their suggestions / inputs. This regular interaction with the user helps in freezing out their requirements.

¹ Government to Government

² Government to Citizen

Integrated Prison Management System, Jharkhand

Prison Management System and Visitor Management System were replicated in all the 22 districts of the State of Jharkhand. The project was initiated in January 2007 to automate the management of the prisons in the entire state and make them more secure and efficient.

The project received full funding from the Government of Jharkhand and was pilot tested in the Birsa Munda Central Jail, Hotwar, in Ranchi. This pilot allowed the customisation of the software to meet the realities of Jharkhand prisons with the help of NIC, who provided the software, hardware and technical advice. Inter departmental teams composed of senior officials were motivated to ensure the success of the project and coordinate with the different institutions involved. The State department of Information Technology, Law depart-

ment, Home department, the prisons authorities and the Jharkhand Agency for the Promotion of IT were also engaged in the process.

The coordination of different entities and the cultural change to ensure that the employees adopt the system were the major challenges to implement the project. Extensive investigations were studied on the system functioning and the benefits were constantly communicated to the different entities to engage them in the process and maintain their interest in it. Numerous training and workshops also took place to apprise the prison staff of the changes and benefits that ICT introduction would bring. NIC's District Informatics Officers were the change agents in the process.

Until now, no 3rd party has studied the impact of the project but the change

is undeniable. While before the prisoners were taken physically to the courts, prison authorities are now able to produce inmates through video-conferencing, cutting down transport costs and eliminating the risk of inmate escape. The prison staff is satisfied as the introduction of ICT in administrative tasks has reduced the processing time for each task and reduced the margin of error, allowing better planning, timely and informed decisions for the administration. Finally, the introduction of VMS has benefited the visitors who can schedule their visits in advance and save time while entering the prison.

Organisation
Jharkhand state
government

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Jharkhand Prison Management System
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Raftaar.com

India

Category

Manthan Award 2007
e-Localisation

Platform of product
Web/Internet

Organisation

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Contact

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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=667

Raftaar.com

<http://www.raftaar.com>

SUMMARY

Raftaar.com is world's first integrated search engine in Hindi. It is an initiative to empower Indian users with Internet and its advantages. Through a powerful search technology, Raftaar allows vast, varied and easy access to Hindi content online for everyone. This ranges from news, education, images, blogs, Hindi music and utilities like typing in Hindi, dictionary and transliteration. It allows users to ask their queries in Hindi and search across all Hindi sites. However, availability of content in Hindi on Internet needs more attention and is still a challenge.

PRACTICE BACKGROUND

According to the Internet and Mobile Association of India (IAMAI), there are more than 30 million Internet users in India and the numbers are steadily growing. Besides web accessibility, availability of content mainly in English poses as a stumbling block in the path of progress of computer literacy in a country where English is not the language of the masses. Hindi is India's national language and also world's third most spoken language. It is necessary that the use of Hindi on the Internet is increased and appropriate steps have to be taken in this respect. Otherwise, Hindi-speaking people will be left behind in the field of information, communications and knowledge.

The National e-governance Plan (NeGP) envisaged provision of Internet access to 600,000 villages through 100,000 Common Services Centres (Internet kiosks) by the end of 2009. Of the total proposed, 30,000 kiosks have been rolled out so far. To make such efforts valuable, it will be paramount to having a portal where all the content in Hindi can be found.

With the belief that there is demand for local language content and that users are not connected to it, Raftaar came up as a platform through which users can reach relevant Hindi content. This is also seen as an initiative that would push the development of local language content as it will give it exposure and repertoriate Hindi webpages under a single platform.

IMPLEMENTATION PROCESS

The project was undertaken by Indicus Netlabs Pvt Ltd. Raftaar started its operations as India's

first integrated search engine in late 2005. It began by identifying constraints that have restricted the growth of Hindi on the Internet and developing innovative and easy-to-use solutions to overcome each constraint - typing, indexing, converting, and standardizing.

The Alpha version of raftaar.com was launched on January 2006 and the beta version was made available on August of the same year with over one million Hindi pages indexed. The full live version with over 2 million Hindi pages was made available again on the Republic Day in 2007.

Building each feature was a challenge. The multiplicity of non-unicode¹ fonts in Hindi was a major impediment to content's dissemination on the Internet and this issue was solved by providing users easy access to such content (that was in non-unicode fonts) in standard unicode format. To achieve this, an algorithmic solution was developed to detect the non-unicode font format and automatically convert such content into standardized unicode format. This content was then made available to users through an easy search option.

PROJECT FEATURES

Technology platform

For the population wanting to access and use the Internet in Hindi, a simple computer with access to the Internet is all that is required. Raftaar.com provides services like pure search, integrated spell check, categorization of sites, and integratable Search Bar for various other sites.

Accessibility and inclusiveness

A simple user interface, it is designed to enable typing in Hindi by a large spectrum of people. It can be used by people who recognize the Latin alphabet on the keyboard and can relate to the Hindi sounds associated with it, and by people who can use the on screen keyboard to type in Hindi.

The results are from all Hindi Sites. Raftaar.com's search algorithms are meant to ensure that one gets the most relevant results. The results are categorized to enable easier search experience for the user. The spell check and related word option help refine the search with ease. The cache results ensure that you can see any site in a standard Unicode font.

Community participation

Community participation is bound to be high because the large Hindi speaking population with little or no knowledge of English is encompassed in this endeavor. 94.7% of raftaar.com users are from India, while people from Saudi Arabia constitute 3.7%.

Every month, approximately 200,000 people visit raftaar.com and almost 800,000 pages are viewed, and the number is increasing. Half of these go for the news-related webpages in the portal, and the rest visit raftaar.com for web search.

Sustainability and cost effectiveness

The project is supported by the Economics Research Firm Indicus Analytics, which contributes largely to its sustainability. Raftaar charges for few services like the thesaurus and dictionary. Advertisements also contribute to its sustainability, but in a very small percentage.

Replication and scalability

India is a land of more than 16,000 regional languages and each language has its own dialects. There are States with large population where people are comfortable with neither Hindi nor English. This is where content and its reach becomes a problem. Efforts like raftaar.com can be replicated for many of these regional languages to bridge the digital divide and encourage content creation.

¹Unicode : Unicode is a computing industry standard allowing computers to consistently represent and manipulate text expressed in most of the world's writing systems.

CONCLUSIONS

Raftaar is a pioneer in the field of promoting use of Internet for Hindi speaking population. Some other sites have come up, but they do not provide such a host of services. Most of the world's languages can be seen on the Internet in Unicode format. Indian languages, especially Hindi, are now visible on the Internet through Unicode.

Raftaar's credibility lies in the fact that it has made use of ICT to enable bridging the digital divide by providing content in local language. In short, Raftaar has enabled Hindi users to query in Hindi and search the entire web for Hindi content without worrying about technology requirements.

The Raftaar index presently has the largest set of searchable Hindi pages. Any site in Hindi can be added to Raftaar from a link on the main search page. Raftaar plans to grow further by making use of the high level of mobile penetration in the country and providing its services through mobiles as they are expected to drive the Internet growth on the following years in India.

LESSONS DRAWN FROM THE PRACTICE

>> Though Raftaar works with all systems, sometimes rendering of the Hindi font is a problem, as not all systems support Indic language fonts.

>> Demand for relevant information will continue to increase, whether it is land record or agriculture prices or movie songs. ICT tools have the power to provide this information at a much cheaper and efficient manner, leading to users' empowerment by providing them useful content in their language.

Other local and regional languages search engines

Websites providing search in Hindi

- 1) Google
(<http://www.google.co.in/intl/hi/>)
- 2) Guruji (<http://www.guruji.com>)
- 3) Devanaagarii
(<http://devanaagarii.net>)
- 4) shabdkosh.com (dictionary/the-saurus in Hindi)

- 5) Webdunia (<http://www.webdunia.com>)
- 6) Yahoo (<http://in.hindi.yahoo.com>)

Websites supporting search in other Indian regional languages

- 1) Webdunia -
(<http://www.webdunia.com/>)
- 2) Yahoo -(<http://www.yahoo.com/>)
- 3) Google (<http://google.com/>)
- 4) Guruji.com (<http://guruji.com>)

SMSOne

India

Category

Manthan Award 2007
e-Youth & m-content

Platform of product

Mobile/PDA

Organisation

YouthNet

Contact

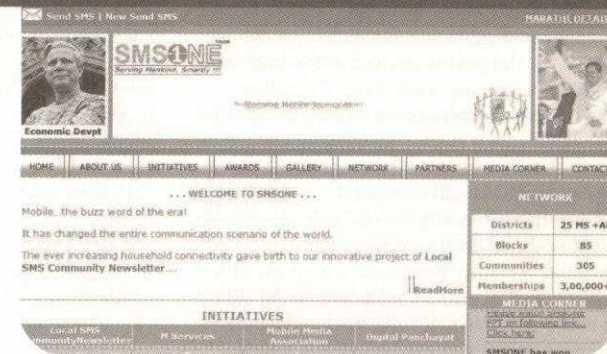
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=487

SMSOne

<http://www.smsone.in>

SUMMARY

SMSOne establishes SMS-based local media by reaching communities through their mobiles, allowing them to receive useful information about their daily life on issues such as health, government services, political information like elections, community events or education. This service enables deprived young people and dropouts from school to self-employ themselves by becoming the community mediators, sending targeted SMS to the different groups of their community. These young people are able to get earnings and financing the system essentially through local businesses advertising and by charging few paise per message.

PRACTICE BACKGROUND

Mobile penetration has incredibly grown in India over the past years and at the beginning of 2009, there were more than 370 million subscribers, many of them coming from rural areas. However, even if the masses are accessing to mobile connectivity, most of the handsets' potential is still untapped - as the content delivered is often not directly related to their livelihood and their environment. Rural communities certainly need local information concerning health, education, government services and other valuable information that can improve their livelihood and daily needs.

On the other hand, opportunities in rural areas for young people are very weak and rural education does not cover rural necessities and does not meet the requirements of local communities. In this context, young people, especially dropouts, are often unemployed or are obliged to migrate to the cities looking for jobs. Providing occupation to these people in their own locality is essential to prevent massive migration.

SMSOne tackles these two problems at the same time. First, it fills the information gap existing in more than 500 villages in Maharashtra, updating its members through the local-based SMS newsletter with local news and other community-related information. The system is able to distribute messages to targeted communities, thus increasing its impact. SMSOne is a useful tool to transmit urgent information at any time and can be used to alert about natural disasters, epidemic diseases and other critical information. Secondly, SMSOne gives young dropouts the opportunity to self-employ themselves and earn a monthly revenue, contributing at the same time with the development of their community.

IMPLEMENTATION PROCESS

SMSOne is a concept proposed by YouthNet, a Pune-based group of youth and was implemented in the first time in July 2007. The pilot project covered 70 communities in the state of Maharashtra. The diverse feedbacks from the community-mediators and newsletter members were taken into account to establish a generic process in order to make the project scalable and be assured that the services are delivered to the community in a right and efficient way:

- >> The young unemployed having strong local links contacts SMSOne in-charge to start the project in his/her locality and receive training and information for the implementation of the project.
- >> He/she collects local citizens' data concerning their status, interests, needs and preferences, and a permit from them that confirms their willingness to accept the local SMS newsletters and advertisements.
- >> He/she creates the database and sorts the data according to name, gender, age, profession and interests in order to target the right people while sending SMS.
- >> Later, he/she receives a one-day training to operate the SMSOne software to send bulk SMS through the computer.
- >> After having his/her database and starting the service, the youth can contact local advertisers through whom he/she can finance himself by sending targeted advertising to the community.

Currently, SMSOne covers more than 500 villages in entire Maharashtra and provides self-employment to more than 350 youth across the state, bringing information and services to more than 350,000 people.

PROJECT FEATURES

Technology platform

SMSOne does not need advanced equipment to be implemented, as it transforms mobile telephones into micro-media using their SMS capability. Therefore, end-users only need an entry-level mobile device without advanced features to receive the local SMS newsletter. To send the SMS bulk-messages, a computer with Internet access and the SMSOne Express software are needed. A simple desktop and web-interface software was designed to centralise all the SMSOne activity throughout Maharashtra.

Accessibility and inclusiveness

The fact of using mobile telephony to convey messages is inclusive per se due to the high penetration of mobile telephony in India. On average, every household has a mobile phone and only one SMS can reach an entire family. Word-of-mouth in the villages work as an amplifier of the information conveyed by SMS and helps to overcome the problem of illiteracy.

Community participation

SMSOne empowers young people by giving them the opportunity to self-employ themselves and to participate actively in the development of their community. Through SMSOne, the young self-employed targets the needs of the local community and delivers social messages and advertising. The information sent is customised to attract the interest of the community and meet its demands. Locals are also able to send important messages to their counterparts through the mediator.

Sustainability and cost effectiveness

Young self-employed are the only responsible for the local SMS community. Their revenue comes only from advertising, as they do not charge any fee to the community members. Therefore, their earnings depend on their capacity to attract people and organisations like political parties, schools, government agencies, and businesses willing to convey

messages to the community. The community mediator is free to negotiate the price for each message and is thus able to create his/her own business structure under the SMSOne umbrella. SMSOne only keeps few paise per message sent.

The system cannot generate any loss to the young entrepreneur as he/she does not have fixed costs and the revenues are for him/her, making the model sustainable. Other informational services can be added to the system and generate new incomes to the young entrepreneur.

Replication and scalability

SMSOne can be replicated easily in other states of India and other developing countries. Through its innovative model, it can provide large-scale employment to rural youth and provide useful local information to underserved communities. There are three main factors that can foster the replication of the SMSOne model:

- >> The growing penetration of mobile telephony in India - with more than 10 million new subscribers added every month - and other developing countries, especially in rural areas.
- >> The growing informational needs of rural communities in terms of government schemes, public services, health and livelihood related information.
- >> With Right To Information (RTI) becoming Act in India, mobile could be considered as a medium for information transaction and empowerment through persuasive knowledge sharing.

SMSOne has only been implemented in the state of Maharashtra but through its franchisee model and partnerships with state wise NGOs, it is aiming to establish a pan-India presence with 10 million subscribers and 10,000 community mediators in the medium-term. SMSOne is also being approached by various network-based organisations that want to use the service to strengthen their network.

The system is also scalable as new users can be added to the database, increasing its attractiveness for advertisers and contributing to its sustainability.

CONCLUSIONS

SMSOne tackles two major problems of the Indian countryside: isolation and lack of relevant information and youth unemployment inducing fewer opportunities. Its standardised implementation process and its simplicity make it easily replicable in other regions. It is a cost-effective solution that provides free services to the community, targeting its special needs. Being managed by a young person from the locality, the information conveyed through the system is relevant for the subscribers and deals directly with their environment. SMSOne creates a virtuous circle as when it adds members to the service, it becomes more attractive for potential advertisers, providing more revenues to the young entrepreneur.

LESSONS DRAWN FROM THE PRACTICE

>> While many projects focus on high-tech solutions involving Internet, SMSOne allows areas with basic mobile connectivity to benefit from informational services generated in the same localities. It uses the existing mobile network and does not need special equipment to work.

>> ICT solutions can provide self-employment in rural areas and can be essential to reduce rural-urban migration by providing opportunities at the rural community level.

>> ICT projects using the existing connectivity infrastructure and having a standardised implementation process are easy to scale-up and replicate.

>> SMS is not only a one-to-one medium but can also work as a community media. By collecting data on the subscribers, relevant targeted information can be sent to each group of the community.

The story of Ahmed Siddiqui, SMSOne District Coordinator

"The biggest thing SMSOne has done for me is providing me a tremendous confidence boost after two years of remaining unemployed and feeling useless". These words, coming from Ahmed Siddiqui, a class XII dropout, go a long way to explain what the SMSOne initiative has achieved.

Ahmed Siddiqui, who joined SMSOne in August, has grown from a community leader to district chief in Parbhani district for SMSOne and manages to make between Rs 5000-6000 a month. He has also motivated few of his friends and local people to become part of this unique media and manages a group of 30 community reporters catering to a population of 30,000 in his district.

Talking about the work being done by SMSOne,

Siddiqui explained that now the local communities are able to get news about a whole range of relevant issues, be it tap water timings, load shedding, government schemes, camps for especially-abled people, political activities etc.

"Around one and a half month back, an important Congress leader of Parbhani district, Rao Saheb Bapu Saheb Jamka, died and within 5 minutes the people came to know about it," beamed Siddiqui informing about the efficiency of his project. "We have also started a weekly newsletter and have managed to come out with 12-15 editions," he added.

As far as making the venture sustainable is concerned, Siddiqui informed that they have now created a very good network of businessmen, politi-

cians and other organizations for advertising. These advertisements also provide useful information that enhance the economic condition of the area and bring efficiency into the local markets.

Exuding satisfaction with the work being done by SMSOne in the area, Siddiqui told that the community people often call him to express their satisfaction about getting instant news and becoming well-informed about the area. A very commendable effort in this direction was when people called him in December 2008 to thank SMSOne for reminding them that they had to take their children for pulse polio drops. They said that maybe they would have not done the needful if not reminded by SMSOne.

Toehold Artisans Collaborative

India

Category

Manthan Award 2005
e-business

Platform of product

Broadband/Online

Organisation

Asian Centre for
Entrepreneurial Initiatives
(ASCENT)

Contact

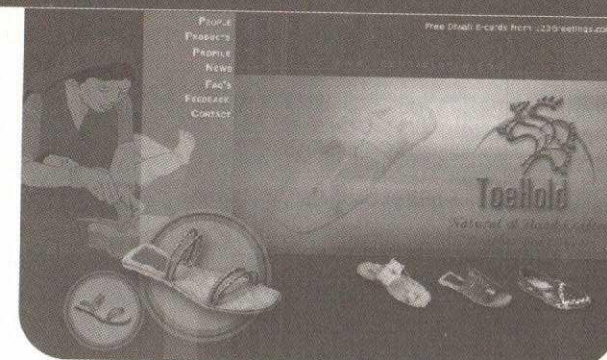
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=532

Toehold

<http://www.toeholdindia.com/>

SUMMARY

Toehold Artisans Collaborative is a business-oriented project that aims to give Athani rural artisans - mostly women - national and international exposure to sell their handcrafted leather footwear products (Kolhapuris) through an Internet platform and enhance and diversify their production with the help of ICT tools. This B2B project is owned and governed by 150 women organised into 11 Self Help Groups (SHG). A Common Facility Center was installed in Athani to provide the artisans a Raw Material Bank to have quick access to supplies and design support software (Computer Aided Design and Computer Aided Manufacturing) to widen their catalogue and reach larger markets.

PRACTICE BACKGROUND

Kolhapuri footwear is a traditional product from Athani and Nippani in Northwest Karnataka that was reputed two decades ago for its quality and was even exported to Europe and the US. Since then, the leather international competition became stronger and the exports of Indian handcrafted leather products went down, creating a downward spiral for artisans who could no longer afford high-quality raw materials, lowering the final products' quality and thus affecting their sellings in international markets. As a result, the reputation of the Kolhapuris went down in India and abroad and they started to be perceived as cheap and low-quality products. Many families stopped producing Kolhapuris and converted themselves to other alternative activities to earn a living.

Prior to 1998, the 500 families involved in kolhapuri production were thus facing two main problems: inadaptation to the market demands with a lack of originality in their designs and low-quality products and difficulty in accessing markets and getting a reasonable income. Furthermore, the few workshops and skill training programs that were realised in the region only targeted men, even if women were essential in the production.

Toehold provides the artisans the necessary tools and training to upgrade their traditional skills, increasing their productivity by standardising Kolhapuri production and enhancing the footwear quality and variety, giving them access to markets at the national and international level. Being run by the artisans themselves - mostly by women - through the SHGs, Toehold directly benefits the community. In fact, out of the net profit, 40% goes to the company, 40% to the artisans and 20% to the SHGs to develop the business and fund new income activities.

IMPLEMENTATION PROCESS

The Leather Technology Mission, a program launched in January 1995 by the Government of India - mainly targeting the small and unorganised leather production units - aimed at improving artisans skills and providing them sustainable links with the markets. It is under this frame that the Asian Centre for Entrepreneurial Initiatives (ASCENT), supported by the National Leather Development Programme (NLDP) and the Central Leather Research Institute (CLRI, in Bangalore), started the project in Athani.

In 1996, a group of scientists from the CLRI visited Athani's leather artisans and worked with them to detect the main problems they were facing and suggested new producing techniques to improve the leather quality and reduce the processing time. In this way, they established links with the artisans and gained their confidence to start pilot trainings. Two artisans were selected and guided to ensure the further training of the community and apply standardisation techniques at the village level. More than 1,000 families were trained in the region and the Karnataka Leather Industries Development Corporation (LIDKAR) was in charge of marketing the final products.

A Common Service Center was established in Athani to provide the artisans the necessary tools to standardise the production and have access to a varied design library through the design support software. This Center was developed with the support of LIDKAR and was equipped with computers with adapted software, machines for sole clicking, sole activating, pasting, and other equipment to enhance the artisans' production.

During these pilots, credit was raised as a major issue as many of the artisans were facing problems in paying back their loans and the interest rates were extremely high. Women Self Help Groups were found to be solution to cre-

ate a pool of money available for credit to the artisans. Even if it generated some resistance at the beginning, the SHG have allowed artisans to finance their business and now eleven groups have been formed.

Finally, the market links were created to secure the long-term sustainability of the project. Kolhapuris were exposed in national and international leather fairs, and attracted the interest of investors. The brand 'Toehold' was created to promote the artisans' production and give them a solid image for business-making. The web catalogue (toeholdindia.com) was also created to attract clients from abroad and continuously showcase the new designs.

PROJECT FEATURES

Technology platform

ICT tools were introduced in the production chain and in the selling of the footwear products. The digital design studio that was established in the Common Service Center allowed artisans to create better designs, giving added value to their products and enlarging their catalogue. Computers were equipped with Computer Aided Design (CAD) and Computer Aided Manufacturing (CAM) software capable of creating, transforming and combining designs to fit the demand.

Artisans were also equipped with Internet connectivity to get in touch with the clients in India and abroad. Electronic catalogues are sent by email and posted in the toeholdindia.com webpage.

Accessibility and inclusiveness

The local realities of Athani and the villages around were taken into account to implement the project. By managing the accounts through the Self Help Groups, women were attributed responsibilities since the beginning, shifting from previous development activities that focused exclusively on men. However, men were also taken into account in order to avoid

posterior gender tensions, and training was given to both men and women.

By being essentially visual and avoiding long texts, the Computer Aided Design software takes into account the low levels of literacy in Athani. Even if the artisans do not directly use the software, technicians have been trained to become the technology mediators. Touch screens were also planned to be established to allow artisans to directly use the software and look for useful information without intermediaries' assistance.

Community participation

Toehold is a community-centered project where the artisans own and run the business and are directly responsible for the decisions. The changes in the production chain were not imposed and were gradually introduced, constantly integrating the artisans' feedbacks. More than 1,000 families regardless of caste, gender or religion have received training in the CSC.

The fostering of the Self Help Groups has empowered local communities, strengthened the links among them and gave them a new business approach. In fact, they are now able to organise themselves to invest in productive equipment and have reached a higher degree of entrepreneurship.

Sustainability and cost effectiveness

Toehold is a business-oriented project that uses local skills and resources to build sustainable entrepreneurial capacity in the artisans' community. Through technology and standardisation, the artisans have gained a competitive edge: they are now able to produce more than 450 varieties of kolhapuris; the tanning process has been reduced from 35 to 15 days and they have been linked with new markets abroad through conventional marketing practices and the digital catalogue on the website.

The business management through the Self Help Groups and the involvement of locals in

the project are paramount for its long-term sustainability. Change agents from Athani have been qualified to provide assistance and training to the artisans.

Replication and scalability

More than 2.5 million people work in the leather industry in India, most of them in small production units in rural areas with backward equipment and techniques and poor access to markets. On another hand, the leather industry has an enormous scope of growth, inside and outside India. The Toehold project can thus be replicated in other villages in India where leather footwear is being produced and can be applied to a variety of other handicrafts to improve their designs and give artisans market access.

The project is scalable at the local level in the limits of the equipment installed and the CSC capacity.

CONCLUSION

Toehold has allowed footwear artisans in Athani to increase and diversify their production by standardisation techniques and the introduction of ICTs in the conception process, increasing the productivity by more than 50%. A focus has also been given to the implementation of a new marketing strategy and the creation of the Toehold brand to reach new markets at the national and international level.

Toehold has shaped an entrepreneurial envi-

ronment within the Athani artisans' community and created a social network - involving both men and women - capable of sustaining it in the long-term. Artisans feel more confident and have begun to take control of their own destinies, especially by the creation of credit mechanisms through the SHG. It has finally allowed artisans to increase their income by more than 100% and has thus contributed to the elevation of the living standard in Athani and its surroundings.

LESSONS DRAWN FROM THE PRACTICE

>> ICT tools can be introduced in artisanal practices to enhance their productivity, improve and vary the designs patterns and reach new markets. However, their introduction has to be done smoothly without drastically changing the artisans' traditional working techniques and explaining them the benefits of shifting to new production methods.

>> Involving local communities in the implementation process guarantees the project's long-term sustainability and increases its impact. Training change agents within the community facilitates the adoption of new productive practices by traditional workers.

>> New production techniques alone do not change the lives of the artisans. Providing them access to the markets is essential. For Toehold, traditional marketing channels such as assisting in leather fairs have been mixed with new ones such as the Internet to reach wider markets in India and abroad.

Voices from the ground

"We have been making kolhapuri footwear in Athani by generations. Though we were making good quality footwear, the middlemen used to say that the quality was bad and we were getting unfair prices for our labour. We were also supplying to LIDKAR but for years, we were not able to come up in life as we were getting very low income through this profession.

After joining Jyoti SHG, I came to know about the groups and through them; we got awareness about healthy living, importance of education, importance of saving, importance of quality and standardisation. At that time I attended a Toehold workshop, which gave me the insight of the business at various levels: negotiation, importance of timely delivery etc. We used to make only traditional footwear and made footwear with color leather only after joining the SHG.

We had taken a loan of Rs. 50,000 to take care of the medical expenses of my in-laws. We were not able to repay any amount after taking care of our day-to-day living expenses. Now, after joining the SHG, through the savings and credit, I am able to manage the house and education of the children and repaid Rs. 150,000 of old loans. Now I am sure, I will repay the entire amount soon."

Asha Gajanan Bhandare, member of Jyoti SHG, Athani

Other ICT initiatives to support grassroots production

Sewa (www.sewa.org/)- Sewa or Self Employed Women's Association is an organization of poor women, where their talents are honed and made use of in enhancing their economic well being by promoting art and craft work done by them. It was registered as a Trade Union in 1926.

Industree (www.industreecrafts.org/)- It is a social entrepreneurship initiative that makes use of the talents of rural people to provide home décor and office accessories, furniture, furnishing, packaged food and apparel that is handcrafted by rural artisans.



Tilonia (www.tilonia.com) - In order to provide employment and promote the art of rural artisanship, Tilonia provides training and support to rural artisans through the effective use of ICTs.

Unified Ration Card

Chhattisgarh, India

Category

Manthan Award 2008
e-Governance

Platform of product

Broadband/Online

Organisation

National Informatics
Centre, Chhattisgarh
State Centre

Contact

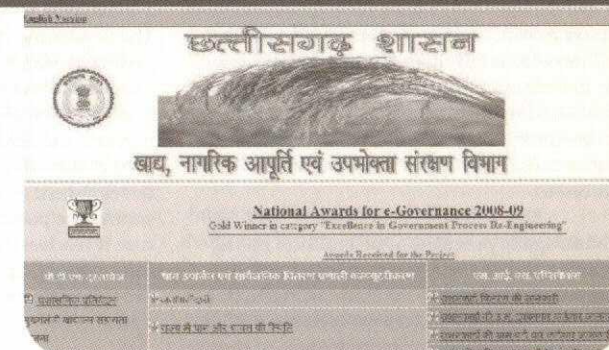
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=651

Unified Ration Card Project

<http://cg.nic.in/khadya>

Voices from the ground

"I got married in 1986 and I have two children. With my husband, we have been making Kolhapuri Footwear for decades. We were working as bonded laborers for a Sahukar (a rural money lender) and we had taken a Rs. 50,000 loan from him. They used to fix the rate for the footwear we make and though we worked hard, it was not enough for the entire family to have full meals. At that time, my neighbour told me about Toehold and the SHGs and I visited the office and joined in Jyoti SHG. Before joining, we used to do small orders and when Toehold received a big order, we received a part of it and we took a loan from a bank to do it. The bank official was happy to provide us the loan, as we were coming through the SHGs and Toehold. With that loan, we were able to finalise the order. Now we are repaying it regularly and do not have worry about unexpected medical expenses as we have a safety net from our Group. We have purchased small equipments for footwear production and I have travelled different cities and attended a workshop in Bangalore."

Anitha Bamane, member of Aarati SHG, Athani

SUMMARY

Unified Ration Card (URC) is a project by the Chhattisgarh government that entails the computerisation of the entire food grain supply chain in the State from paddy procurement from farmers, storage, milling and distribution of rice and other commodities to 3.7 million ration card holders through 10,427 Fair Price Shops (FPS). Paddy procurement centres, storage centres, warehouses and all district offices concerned have been computerised, involving six different organisations directly concerned in food grain management.

Various ICT tools are thus being used to improve service delivery and reduce leakage and diversion in the implementation of two important schemes of government of India, paddy procurement at Minimum Support Price (MSP) and Public Distribution System (PDS) which cover the whole food grain supply chain.

PRACTICE BACKGROUND

Union as well as State governments spend millions of dough through different schemes for development purpose. However, the magnitude of improvement does not match the funds spent as a result of overlaps in administrative tasks, corruption and inefficient processes.

Chhattisgarh procures over 3 million metric tones of paddy every year on Minimum Support Price from more than one million farmers. Paddy procurement is done in 1,577 procurement centres in remote areas of the State. The process involves purchase of paddy, payment to farmers, storage of paddy and its conversion to rice by milling. The procured rice along with other commodities is distributed under the Public Distribution System to more than 3.7 million families below the poverty line (BPL). The commodities under PDS reach beneficiaries through 10,427 Fair Price Shops and 99 distribution centres of the Chhattisgarh State Civil Supplies Corporation (SCSC).

Because of the huge amount of subsidies involved, the large number of Fair Price Shops, staff insufficiency and difficulties in controlling and monitor the scheme, leakages and diversion are very common. Various control methods had been tried in vain such as the inclusion of bar-coded food coupons, food stamps and biometrically coded ration cards.

This led to the State of Chhattisgarh to develop an end-to-end solution based on information technology where all processes involved in paddy procurement and Public Distribution System have been fully computerised. This required collaboration among various organisations and government institutions like the Department of Food, the Chhattisgarh State Civil Supplies Corporation, the Food Corporation of India (FCI) and the Central Cooperative Bank.

IMPLEMENTATION PROCESS

The Government of Chhattisgarh started the project in March 2007. All the information concerning the paddy procurement and distribution had to be computerised to bring transparency and efficiency into the process. The project started with the creation, design and development of a state ration card database to control the paddy end-distribution and make sure it reaches the right people. The National Informatics Centre (NIC) was given charge of providing the necessary software and assistance.

As connectivity was not available at the majority of the 1,577 paddy procurement centres and daily procurement details are required to be made available at state level, a group of 250 motorcycle riders was established to ensure near real-time data transmission from purchase centres to the central server and vice-versa. Through this way, data is brought to the block headquarters, where V-SAT¹ connectivity is available, and uploaded on the central server through the Internet.

All operations carried out by the district level offices - Collector Office, District Marketing Officer (DMO) and District Manager Officer (DMO) of Chhattisgarh CGSCSC - as well as headquarters are computerised through web-based applications using ASP.NET. The data transfer between these centres and the back-end Server is done through FTP (File Transfer Protocol). When good connectivity was ensured at these centres, a web-based application was created to facilitate the data transfer. A number of workshops and trainings were given to the administrative staff of these entities to ensure the adoption of the system and its sustainability in the long-term.

GPS² and GPRS³-enabled mobiles have been given to warehouses to record food receipt. The in-charge is supposed to take a photograph of the truck and receiver, using the application

loaded in the mobile send it along with latitude and longitude to server. This data is used to control in real time the paddy distribution pace through trucks and to avoid paddy diversion.

The project also included a grievance redressal system for registering complaints online or through a toll-free number run by some 1,000 operators in Raipur, capital city of Chhattisgarh. In one year, more than 1,700 complaints have been handled.

PROJECT FEATURES

Technology platform

Unified Ration Card is a hi-tech project with heavy requirement in terms of computers that are handled by experts at the ICT kiosks. Other components include Servers and GPS/GPRS-enabled mobiles loaded with a Java Platform application. Around 2,000 computers, mobiles and six servers have been provided for the project. ASP.Net format is used in the software. V-SAT technology is used for providing Internet connectivity to the different project locations.

Accessibility and inclusiveness

The primary objective of paddy procurement and PDS computerisation is to check diversion and leakage. Public surveillance has been enabled through a web interface to increase the scheme transparency. Complaints can be posted from any computer with Internet connectivity, from home or from ICT kiosks.

For the people who do not have Internet access, it is possible to get the information through a call centre by calling a toll free number. Through their telephone, citizens can also lodge complaints and give suggestions to improve the system.

Community participation

The Unified Ration Card system enables citizen participation for PDS monitoring. Whenever commodities are dispatched to the Fair Price Shop from the warehouse, an e-

mail message or an SMS is sent to all the e-mail IDs and mobile numbers registered for that FPS. This message contains the truck number, the quantities of PDS commodities transported in the truck, and the date and time of dispatch. Citizens participating in monitoring of PDS can then check whether that truck arrived at the FPS with full quantities dispatched and register their complaint if they notice any problem.

Sustainability and cost effectiveness

National Informatics Centre is committed to providing lifetime support, making the project sustainable. As it enhances the functioning and reduces wastages and bureaucracy, it proves to be cost-effective in the long term.

The project is fully functional throughout the Chhattisgarh State and administrative documents - millers registration letter, permission letter for milling, delivery orders and delivery memos - are being generated through the system. With the computerisation of the processes, farmers have been able to receive quick payment for their sale, eliminating costly and time-consuming administrative bottlenecks.

Replication and scalability

Public Distribution System is a union government's scheme operational in all the States of India. The delivery mechanism, Ration Card preparation, calculation of allotment, and operations of civil supplies corporation are similar in all States. Therefore, the ICT solutions used in Chhattisgarh for prevailing problems can be replicated in other States as well and make PDS work as efficiently and effectively as it was planned to be.

CONCLUSION

The Unified Ration Card project is putting ICT to greater public good. Computerisation of the entire food supply chain is ascertaining whether the scheme will be able to benefit about 750,000 farmers and 3.4 million BPL families by providing an end-to-end solution

to diversion and leakage of funds.

The whole process has been able to give the citizens a platform for their grievances and allowed them to receive information on paddy procurement and public distribution through Internet and the toll free number. More than 2,700 complaints have been registered after this project came into force. Of these, 800 have been found to be genuine. These statistics speak of how fruitful empowering citizens with ICT can be and that there is need of such participatory e-Governance projects across the country.

LESSONS DRAWN FROM THE PRACTICE

>> Coordination between different departments was a serious issue that needed to be dealt with, as six different organisations are

using different modules of the system and they are inter-dependent. For this purpose, the entities were coordinated through daily meetings at the beginning and there were constantly monitored during the project implementation.

>> Unreliable power supply at procurement centres is still a major problem. Anticipating bad power supply at procurement centres, generators have been made available at each centre. Proper earthing and UPS are provided for computers for voltage stabilisation.

>> Lack of trained manpower was a major stumbling block and more than 2500 days of training and workshops for administrative staff were conducted. Capacity building is essential when new systems and administrative processes are introduced.

Public Distribution System

PDS is a Government of India scheme to provide food security in the country. Under this scheme every Below Poverty Line (BPL) family gets 35 kilograms of rice per month at a subsidised rate of Rs. 6.25 per Kg. Another 719,000 Antyodaya Families get rice at Rs 3 per kilogram. Government of Chhattisgarh spend about 18,000 million Indian Rupees every year as a subsidy to operate this scheme for the benefit of 3.7 Million BPL families

The power of citizen participation

In Chhattisgarh's Dantewada district, a truck carrying rice to a government ration shop in Bijapur was being diverted to a mill in neighboring Bidam. In minutes, an anonymous call to a Raipur call centre - run by the state government's Department of food, civil supplies and consumer protection - helped the local administration seize the truck. The miller and the godown owner, who allegedly colluded to steal the rice, were also arrested.

Voikiosk

India

Category

Manthan Award 2008
Innovation

Platform of product

Telephone

Organisation

IBM India Research
Lab. & Byrraju
Foundation

Contact

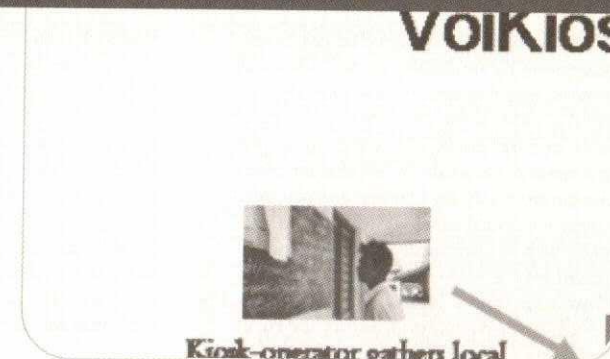
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=667

Voikiosk

http://domino.research.ibm.com/comm/research_projects.nsf/pages/pyrmeait.soln.html

World Wide Telecom Web technology

http://domino.research.ibm.com/comm/research_people.nsf/pages/aran_kumar.WWTW.html

SUMMARY

Created in the IBM Research laboratories, Voikiosk is a voice-driven application available on the telecom network and based on World Wide Telecom Web technology. It allows the creation and host of village portals on the telephone network by aggregating a set of Voisites comparable to websites by which users can navigate using vocal commands. Through this service, village communities can directly access and post relevant information to their daily life on a vocal server through their telephones.

¹ Very Small Aperture Terminal (V-SAT) is a telecommunication system based on wireless satellite technology.

² Global Positioning System (GPS) is a navigation satellite system

³ General Packet Radio Service (GPRS) is a mobile data transfer service

PRACTICE BACKGROUND

One of the main initiatives that has been undertaken by multilateral institutions, government agencies and NGOs to bridge the digital divide, is the implantation of Internet kiosks in rural areas. However, many problems remain associated with this solution: poor connectivity and power supply infrastructure in rural areas; illiteracy and villagers' lack of computer knowledge who depend on the kiosk operator to post and find information; and a lack of reliable and locally relevant information on Internet for rural necessities.

Voikiosk allows rural underserved communities to overcome these problems and access the benefits of the information-based economy through their land or mobile telephone, without the need of sophisticated infrastructure or advanced technical knowledge. Voikiosk facilitates the access to information services in local languages and enables villagers to become information providers themselves.

The three main usages of Voikiosk are:

- >> Information dissemination that is relevant to local communities: local doctors weekly visit schedule, bus schedule, crops and commodity prices, weather forecast, government schemes, educational information...
- >> Interactive services that allow users to demand services such as electricity lines, telephone connection, agricultural counseling, water provision, health checkups...
- >> User-provided services that allow users to create and provide content for the portal. Villagers can advertise their products and services to the rest of the community.

IMPLEMENTATION PROCESS

Voikiosk was designed by the IBM Research laboratories in partnership with Byrraju Foundation, which had already been working on distance education programs, health, and agriculture-related services at the grassroots level in Andhra Pradesh since 2001. As a pre-pilot project, a kiosk template was developed for a group of villages in the region in the local language, Telegu. Three main services were selected for the deployment of the kiosk template after a study of the villagers' informational needs:

V-Agri: This service is directed to farmers and aims to provide them the necessary information for their crops. With this service, farmers would have the possibility to post their queries to be responded by an expert on Voikiosk

Ashwini Center: It is a distance education school in the villages where a teacher from the city teaches students through teleconference. Information concerning new programs and changes on the schedule of the classes were transmitted by word-of-mouth or by going there. Voikiosk would have an Ashwini Center section where students would be able to consult this information.

Local Advertisements: Users would be able to post their advertisements promoting their services (micro-business such as drivers, cooks, cows, bulls, fertilizers) in the way people post advertisements in a newspaper. Other people from the village could retrieve this information through Voikiosk and contact the person who proposes the service.

Two kiosk operators residing in two different villages participated in the testing and were responsible for uploading the principal content and maintaining the platform. A group of volunteers was constituted to follow the implementation of the project on the ground, collecting users' impressions and data.

The project immediately drew the attention of the villagers and the number of calls registered showed that they were really interested in the service, mostly for the section that allowed them to upload content. After the first two months, the village voice portal was receiving numerous repeat callers and new ones, showing its acceptability with illiterate and semi-illiterate populations. Besides, villagers generated content that was not anticipated by the researchers, such as marriage requests and personal messages, thus showing the platform's versatility.

PROJECT FEATURES

Technology platform

Voikiosk is based on the World Wide Telecom Web technology (WWTW), which allows the storage and distribution of vocal information through the existing telecom infrastructure. WWTW is a network of Voicesites, - voice-driven applications -, comparable to websites in the World Wide Web that can be linked to other VoiceSites through vocal hyperlinks supported by Hyper Speech Transfer Protocol (HSTP).

End-users access these Voicesites through the telephone to interact with the system and navigate through it using voice commands. All the technology is integrated in the telecom network and is thus invisible for the end-users that do not require special knowledge or equipment to use it.

Accessibility and inclusiveness

Voikiosk is accessible from every ordinary landline or mobile phone as the end user navigates through the system by vocal commands. Accessing a telephone is incredibly cheaper than accessing a PC and has several advantages for developing countries: it does not need a constant power source; mobile connectivity is expanding its outreach, and it does not require special skills for using it.

Voikiosk was designed to support various lan-

guages and is thus accessible for illiterate people - as oral communication remains the only way of passing information in many rural areas. However, expanding speech recognition and synthesis technologies to the bunch of languages in India is still a big challenge.

People suffering from some disabilities such as speaking or hearing disorders cannot interact properly with this platform.

Community participation

Voikiosk is a community-centered project where the final users are habilitated to directly interact with the platform without any kind of intermediaries. Through their telephone, they can conduct their own research and become content-producers by creating Voicesites that could be further consulted by others. Therefore, content is locally generated and relevant to the local environment.

Sustainability and cost effectiveness

Voikiosk is a cost-effective solution to provide information in remote areas. It requires minimum training and equipment and can be hosted by the telecom provider or small organisations such as NGOs, voluntary organisations, Micro Small and Medium Enterprises (MSMEs) or Primary Health Centers (PHC) that would only need a web server and the right software, some of it available in open source.

Different business models can be drawn to make a Voikiosk sustainable. Local advertising can be a source of revenue and small fees can be charged for every call. Content concerning political campaigns, government schemes and personal Voicesites can also be charged to make the platform sustainable. Many companies who target consumers in rural areas can also pay to use Voikiosk as an advertising medium.

Replication and scalability

Voikiosk can be implemented over the existing telecom infrastructure. In India, out of a total of approximately 650,000 villages, nearly

90% are covered by telephone services and it is thus possible for them to have a local Voikiosk. However, the capability of the system to recognise other languages and accents can hinder its replication.

Voikiosk was designed to be scalable as it is a content aggregator and the villagers can add new services when needed. Nevertheless, its scalability poses some problems when the system handles too much information:

Browsing becomes difficult, as it is very hard to keep track of all Voicesites. The service can become too complex for the villagers and lose its appeal. New solutions for navigating through the different Voicesites are needed, such as the creation of an efficient voice browser capable of book marking favorite sites and storing the history of visited ones, learning the user preferences over time.

Searching information in the system would imply the adoption of advanced automatic speech recognition techniques for indexing, as well as methods to consider recognition errors.

In a country like India where thousands of languages and dialects are spoken and where people constantly mix them, the integration of different languages in the platform and the compatibility between them can be a burden for the project's scalability.

CONCLUSIONS

The reality in the Indian countryside, where the lack of infrastructure is impressive and where literacy and computer knowledge are very low, has been the Voikiosk's driver. To

overcome these problems, Voikiosk was designed to use the existing telecom network - present all over the country - and be accessed from every telephone through vocal commands.

Being entirely fed by the end-users, Voikiosk not only provides truly local information to rural areas but can also be used by villagers in ways that were not considered by its designers. Voikiosk is a flexible platform that can be adapted to the end-users needs and shaped in a personalised manner for each community.

However, scaling up and replicating Voikiosk can pose some problems. The data organisation and the browsing system can become unusable when content becomes too important and the compatibility between languages and the recognition of different accents are issues that are still under research.

LESSONS DRAWN FROM THE PRACTICE

>> Many efforts have been put on bringing computers and Internet to the villages and remote areas to provide locally relevant information. However, the fact of accessing a computer is not vital for villagers as what they truly need is information. Voikiosk makes the technology invisible to the end-users, utilising the existing equipment and overcoming barriers such as literacy and computer skills.

>> With minimal infrastructure, it is possible to equip remote villages with their own kiosk in which locally relevant information can be exchanged directly by the villagers, without the need of intermediaries.

Web Health Centre

India

Category

Manthan Award 2008
E-Health

Platform

Broadband/Online

Organisation

TATA Consultancy
Services (TCS)

Contact

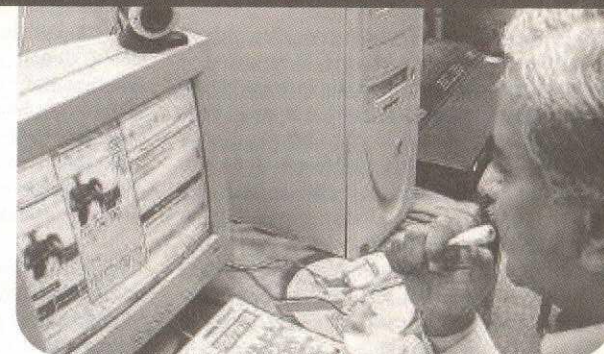
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Manthan Award

http://www.manthanaward.org/section_full_story.asp?id=474

Web Health Centre

<http://www.webhealthcentre.com/>

SUMMARY

Web Health Centre (WHC) is an online medical consultation facility linking patients and doctors from leading Indian institutions. It is a multi-purpose platform that allows people to get free consultations through telemedicine and to receive medical advices by high-level doctors from various specialties and wide-ranging information about health-related topics. It offers delayed teleconsultation in which patients post their queries and get a response in 48 hours and real time consultations. It is also useful for doctors to store information about their patients and to share opinions and get advices from their colleagues; it is finally a practical resource for medical students to deepen their knowledge in their field to prepare their exams and to get in contact with their counterparts.

PRACTICE BACKGROUND

India faces large problems in providing access to health services to its citizens. There are about 0.7 million doctors in the country but more than 0.8 million are needed to meet the standards of the World Health Organisation (WHO). Besides, there is a large gap in terms of infrastructure and access to health services between rural and urban India: there are 0.2 hospital beds per 1000 habitants in the countryside whereas this figure is 15 times higher in the cities. Moreover, the number of doctors per 1,000 habitants in rural India is 0.6 whereas in the cities it is 3.4¹.

Web Health Centre aims to bridge this divide through telemedicine. It brings health care to the patient rather than making him go to the health provider and gives people who lack quality medical services the opportunity to access leading doctors. It allows users to post their queries online; directly interact with specialists and doctors through videoconferences; make appointments and receive lab reports. WHC also hosts a large database of health-related information created by noted medical professionals and other facilities than can be used by patients, medical community and students. The platform hosts patients' medical history and images such as radiographs which can be consulted by doctors dispersed geographically, thus facilitating collaboration among them. WHC provides all these services for free to students, doctors and patients, overcoming the medical cost barrier and the geographic one by spanning its services in more than 16 countries.

IMPLEMENTATION PROCESS

Tata Consultancy Services (TCS) created Web Health Center as a Corporate Social Responsibility project in partnership with Web Health Systems Ltd in 2000. TCS had been developing healthcare solutions for more than two decades and was charged of designing the platform, whereas Web Health Services provided the medical content inputs.

Web Health Center established partnerships with more than 300 doctors, attached to premier hospitals all over India to deliver the consultations and medical advices to the final users. However, in 2003, WHC became a platform in which hospitals could set their own network. It thus became a facilitator that provides services to hospitals from all over Asia that want to tie-up with other remote medical institutions to exchange medical information and use telemedicine.

Dr. Sumanth Raman was behind WHC idea, and wanted it since the beginning to be a cost-effective, easy-to-use, secure and scalable. The Microsoft .NET framework was chosen to implement WHC and other technologies were attached to the system, expanding the platform and allowing doctors and patients to share information in various formats. Such technologies include the Digital Pen-based system that allows doctors to digitally transfer handwriting and drawings.

Using the site is cost-free for doctors, patients and general user as revenues come mostly from advertising and sponsorship. It receives about 3 million hits and 400,000 unique visitors per month and completed more than 50,000 teleconsultations. More than 1,000 doctors are currently using the site that stores more than 45,000 medical records. WHC reaches 100 villages with a total population of about one million.

PROJECT FEATURES

Technology platform

Web Health Center was initially designed for being consulted through computers. However, with the exponential growth of mobile penetration and the increased usability of mobiles and PDAs, WHC has scaled its services to suit these technologies. Today, the health directory, the remote patient care, the appointment fixment and some information services are available on mobile inclusive platforms.

WHC supports the exchange of images such as radiographs, videos and other content like audio between patients and doctors and between doctors themselves. New tools are regularly incorporated to improve the quality of the exchanges and open new paths. These technologies include Silicon Locket, which allows cardiac monitoring to be automatically sent through SMS to be consulted by other doctors. Low-band connectivity devices were also designed to bring telemedicine to under-served and under connected areas.

In order to integrate these different types of data and make them interoperate flawlessly, WHC uses the .NET Microsoft system integrator, which allows different applications to be compatible, regardless their operating system or programming language.

Accessibility and inclusiveness

Web Health Center has two versions: one free, open for the public in general, and the other one that provides services to specific clinics and hospitals. Services in the open platform are only available in English. However, only a third part of the Indian population, mainly located in the cities, speaks English. If the service wants to reach rural populations, it is paramount to diversify the languages and find ways to overcome illiteracy.

For the WHC version available for specific medical institutions, the services are accessi-

ble in five Indian languages, and facilities such as videoconferences allow illiterate people to directly interact with doctors and benefit from the platform services.

Finally, even if some services - such as real-time consultations - are designed for broadband Internet, tools for providing telemedicine through low-band connectivity have also been integrated into the system. Rural under-served populations situated in areas with weak connectivity can thus benefit from WHC services.

Community participation

Web Health Center is an important nodal point for health related issues and is designed to be participative. It is rather a medical and health service channel than a simply content portal as it has an interactive set of components to link patients to doctors and doctors to hospitals and medical students.

Patients looking for health information do not have to register themselves to access the WHC content. Any person having access to Internet in India and abroad can consult the site at any time.

WHC telemedicine interface provides an essential and permanent link between patients, doctors and specialists, making available the scarce skilled healthcare resources to the larger population.

Sustainability and cost effectiveness

Web Health Center started as a Corporate Social Responsibility project, but soon graduated to build its own comprehensive business model. Even if it offers delayed teleconsultation services for free, the large number of visits (400,000 page views per month) and the fact that they come from all over the world - most of them from the United States - have converted WHC in a nodal point for medical and health advertising on the web.

Working as a platform for medical institutions and government agencies, Web Health Center

also generates revenues by charging them annual charges for the services. WHC has thus assured its sustainability by constantly expanding its medical institutions network on the one side and by attracting visitors for its free services on the other.

Replication and scalability

Web Health Center platform is powered by a robust database that is capable of keeping millions of patient records and health data and make them instantly available through Internet. The site was conceived to handle growth and considerable traffic, making the additional cost per patient almost negligible. This facilitates its scalability at very low costs. WHC is a flexible platform that is capable of adding new institutions to its network and spread its services in a matter of days. By working directly with government agencies and medical institutions wishing to bring services to remote areas, the model is completely scalable.

WHC can be replicated in developing countries, where healthcare delivery does not reach remote areas due to poor infrastructure, scarcity of doctors, nurses and lack of simple governance. It is a cost-effective solution that is easily adaptable to local contexts, requires minimal infrastructure and that can be implemented in a short span of time.

CONCLUSIONS

Web Health Center has facilitated the delivery of healthcare services to underserved localities, bridging the quality gap between medical institutions, and has improved the access

to basic information for patients all over the world. It has become one of the world largest telemedicine platforms and its services are accessed in more than 16 countries. It is used by more than 1,000 doctors, hosts more than 40,000 medical records and has until now facilitated more than 50,000 teleconsultations in Asia.

It has proved to be flexible enough to be adapted to different contexts and necessities and to incorporate major technological to allow patients and doctors to share more accurate information. The Microsoft .NET Framework allows the platform to run on different operating systems and devices, increasing WHC outreach. This flexibility has facilitated the scaling-up of the project and the integration of new medical networks.

LESSONS DRAWN FROM THE PRACTICE

>> It is possible to bring high-quality medical services using minimal infrastructure in rural areas and facilitate the decision-making process for doctors by enabling them to exchange real-time information in various formats.

>> Flexibility is essential to increase WHC outreach by allowing people using different platforms and equipment to access it. As technology in the medical field is developing very fast, the platform has to be capable to be constantly updated to work with new equipments.

Web Health Centre, support for the Madurai clinic network in Tamil Nadu

14 local medical clinics and Primary Health Centres (PHC) in the Madurai and Theni Districts in Tamil Nadu benefit from Web Health Centre services. Real-time teleconsultation is available every day from 9:00 A.M. until 1:00 P.M. All these local medical centers are linked with the Government Rajaji Hospital (GRH) in Madurai, which provides them access to the local best doctors from different specialties.

Every day, about 10 patients get consultation through the WHC platform and doctors from local clinics get advices from their counterparts in GRH to take critical decisions with the help of medical images, medical reports, electrocardiograms, and other documentation.

This system enables patients from remote villages to save time and money as a trip to Madurai's Hospital can cost about Rs. 250 - including transport, food and stay charges for two people. The entire telemedicine expenditure for a PHC is about Rs. 300 a month.

Other Health support projects on the web

Ayushveda (<http://www.ayushveda.com>) is a complete portal on Ayurveda covering various Health diseases and natural treatment methods, where doctors can offer free consultation.

Aarogya (www.aarogya.com) provides various support services in the field of health. Aarogya's depth of 5000 pages covers a broad range of topics, from alternative medicine to latest allopathic and diagnostic practices.

¹World Health Organization, World Health Statistics 2007

“Appropriate content would reflect the need of the citizen”

Development is an essential bi-product of an informed society. Sharing of information, access and dissemination of appropriate information, even at the remotest habitats, keeping the citizens well informed, are few essential elements of all round development of the society. Information brings knowledge, which in turn brings empowerment and empowerment leads to choice for the means of better livelihood. Any rich, advanced and economically self-reliant country would be essentially 'information rich'. Therefore, information holds the key for development of the citizens. The role of information and communication technology (ICT) then becomes critical in facilitating an information rich society.

ICT through appropriate digital content creation and delivery of citizen-centric services can meet developmental needs of the community. Therefore, digital content remains fundamental to the success of any mission and also to meet the objectives of any particular developmental project. Creation of user need based content then becomes critical. Appropriate content would reflect the real need of the citizen, imagination of the content developer and also for the killer applications, would fuel further growth of the digital content ecosystem. If the content were designed in the correct context of a Public Good model, localised and innovation-driven, then it would accurately reflect the prevalent socio-economic paradigm. However, the challenges are equally hard-pressed.

Digital content holds the critical space in the context of e-Governance development framework for any Government initiative. It is here, development of appropriate digital content throws many challenges related to marriage of innovation and domain knowledge, government process re-engineering, extensive back-end automation, requirement of capacity building and change management and most importantly deployment of massive ICT infrastructure across the country. In the Indian context, these challenges have its own dynamics.

In India, for development of digital content with the mission of deploying e-governance across the country, the key challenging issue is that of 80% of Indians speak and understand one of the 22 major Indian languages, and definitely not the English language. There is no significant tool available for rural Indians to market or disseminate huge untapped gold mine of knowledge and wisdom. Nor any web-based information portal of worth global value is available, as on date, in any of the local languages of India. More than 95% of Indian websites are in English language with approx. only 5% Indians speaking that language. Add to this, we have to keep in mind that ½ a million of Indian villages is not yet financially included, without tasting a real economic freedom and so the issue is of accessibility and affordability of content as well.

The scope for content penetration, consumption and outreach is tremendous in a country like India. For a huge, little educated, grossly illiterate population of rural hinterland of India, e-content traditionally involved the medium of

radio, because the community is genuinely capable of information consumption and dissemination in an oral medium. The knowledge-rich village community remained vastly oral for centuries. Recent fast proliferation of FM radio has brought a paradigm shift in this ecosystem. With the exponential increase of mobile phone subscription crossing the low-entry barrier, even in the rural India, has added another dimension to the dissemination of e-content in the remotest areas of the country. It is expected that mobile phone infrastructure, being an interactive anytime, anywhere, instant and personalised, will become an important information structure in various pertinent areas of mobile-based applications and content e.g. health, agriculture, climate, education etc. With broadband facility being expanded in the villages, Internet-enabled information kiosks are also holding the best promise for delivering digital content related to Government-to-citizen and business-to-citizen services.

For the more privileged section of the society, digital content revolution would evolve around various medium like digital TV, HD TV, IP TV, web etc. where it is adequately localised, delivering good value for affordable money with the advantage of sophisticated technology behind them remaining totally invisible. However, television having a large market of digital content lacks in the feature of interactivity and also the content is primarily pushed by its producer. For urban and suburban educated and digitally-privileged community, web and Internet-based digital content is producing many killer applications and value added services. However, this also lacks with the feature of localisation with around 10% of the websites are only in local Indian languages.

The issue of the portable medium delivering the digital content need not be overlooked for some more time to come. A large chunk of digital content is normally available in portable storage medium like CD, DVD, flash drive etc. In the Indian context, the economics of digital content in a portable media would remain attractive for some more years to come. However, any portable digital content would need a machine to interact with and any such machine would need clean, reliable electric power which is still a basic requirement in many remote parts of the country.

Keeping the entire above scenario in view, the Indian efforts to develop digital content which are surfacing in various award evaluating platform, are commendable. It is more appropriate and prudent that these efforts are getting more and more recognized in various arenas. Globalization and internet have made this world smaller as it was never before. Global Diffusion of digital content overcoming the localization barrier appears to be inhabitable now and fortunately the process has already begun. We should all try to accelerate this process in order to live a better world for our future generation.

Ashis Sanyal

Acquired Immune Deficiency Syndrome (AIDS) - Disease affecting the human immune system. Although the disease can be easily prevented, there is no cure for it till date and it is fast spreading across the globe.

ASP.NET - A free technology developed by Microsoft that allows anyone to create websites, web applications and web services.

Closed-Circuit Television (CCTV) - Use of video cameras where signals are transmitted to a specific place, on a limited set of monitors with the help of video cameras. CCTVs are mostly used for surveillance purpose.

Fair Price Shops - Shops through which the government sells ration at subsidised rates to the millions of ration card holders in India.

File Transfer Protocol (FTP) - Network protocol used to transfer data from one computer to another through a network such as the Internet.

Geographic Information System (GIS) - Information system that integrates, stores, edits, analyzes, shares, and displays geographic information. (http://en.wikipedia.org/wiki/Geographic_information_system)

Human Immuno deficiency Virus (HIV) - Virus causing AIDS. HIV by itself is not an illness and an HIV-infected person can lead a healthy life for several years before he or she develops AIDS.

Hyper Speech Transfer Protocol (HSTP) - Technology enabling WWTW. It helps in creating voice websites through cellphones.

Interactive Voice Response (IVR) - Technology used in telecommunications for automating interactions with telephone callers. It brings down costs in business and also efficiency for services like banking and health by reducing human interaction.

J2ME - In computing, the Java Platform, Micro Edition or Java ME (still commonly referred to by its previous name: Java 2 Platform, Micro Edition or J2ME) helps in providing certified collection of Java application programming interfaces for small devices used in automobiles to cell phones and cellphones.

Java - A computer programming language that is used for software enabling online games, chatting, calculating mortgage interest and viewing images in 3D. It's also integral to the intranet applications

and other e-business solutions.

Local Area Network (LAN) - Also known as Intranet, it is a computer network covering a small physical area, like a home, office, or small group of buildings, such as a school, or an airport. Its salient features include their usually higher data-transfer rates, smaller geographic range, and lack of a need for leased telecommunication lines.

Minimum Support Price (MSP) - A Government of India scheme where the government purchases farmer's produce immediately production in the season at a Minimum Support Price (MSP) because the farmers do not have adequate storage facilities to store the produce and they require money at the earliest to repay the loans taken.

National e-governance Plan (NeGP) - Programme dedicated towards promoting e governance within the country and thus making government service more accessible to the common man. It was approved by the government on May 18, 2006 and comprises of 27 Mission Mode Projects (MMPs) and 10 components.

National Informatics Centre (NIC) - A Department of Information Technology body, it provides network backbone and e-Governance support to Central Government, State Governments, UT Administrations, Districts and other Government bodies. It offers a wide range of ICT services.

Primary Health Centres (PHC) - Mobile healthcare centres comprising a medical officer, block extension educator, one female health assistant, a compounder, a driver and laboratory technician. PHC is equipped for provisions to carry out small surgeries as well.

Self Help Groups (SHG) - Groups formed by 15 to 20 community women in rural areas. The group is mostly formed for providing emergency, disaster, social reasons and economic support through ease of conversation, social interaction and economic interactions.

Simputer - A self-contained handheld computer, designed for use in environments where computing devices such as personal computers are deemed inappropriate.

Targeted Public Distribution System (TPDS) - Government of India scheme under which every Below Poverty Line (BPL) family gets 35 KG rice per month at a subsidized rate of Rs 6.25 per Kg.

Unicode - A computing industry standard allowing computers to consistently represent and manipulate text expressed in most of the world's writing systems. (<http://en.wikipedia.org/wiki/Unicode>)

User-Generated Content (UGC) or Consumer Generated Media - Content coming directly from the users. This is made use of in all the digital media technologies comprising question-answer databases, digital video, blogging, podcasting, mobile phone and photography.

Very Small Aperture Terminal (VSAT) - A telecommunication system based on wireless satellite technology. As the name itself indicates, this is a technology made up of a small satellite earth station with a less than 3 meters tall (most of them are about 0.75 m to 1.2 m tall) dish antenna.

Wireless Application Protocol (WAP) - Technology that enables access to the Internet from a mobile phone or Personal Digital Assistant (PDA).

Wireless Fidelity (WiFi) - Popular wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections.

World Wide Telecom Web technology (WWTW) - Also known as spoken web, WWTW is a network of interconnected VoiceSites (analogous to web sites) that are voice driven applications created by users themselves and hosted in the telecom network. (http://en.wikipedia.org/wiki/World_Wide_Telecom_Web)