INDIA

Journey from Knowledge Economy to Inclusive Information Society

सत्यमेव जयते

Department of Information Technology
Ministry of Communications and IT
Government of India

working together towards 2015

World Summit Geneva 2003 Tunis 2005
on the Information Society
Turning targets into action

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Implementation of WSIS Action Lines:
India Case Study

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Acknowledgement

This report has been prepared based upon an extensive research of key ICT4D and e-Governance initiatives of Central and State Government agencies, civil society organisations and corporate. For a country as vast as India, trying to capture the entire ICT4D landscape in single document is like trying to shoot a bullet with a bow and arrow. The editorial team has relied heavily upon the information available on various Government web sites, project reports, project documents, published case studies and other secondary sources. The emphasis has been to present a snapshot of various policy initiatives and projects that have contributed to the achievement of sustainable growth and inclusive development.

The authors would like to thank many people who contributed to this book through interviews, provision of information regarding their Departmental efforts, reviews of the manuscript and above all – encouragement to create this report that summarises Indian journey towards an Inclusive Information Society.

The editorial team is grateful to Shri R. Chandrashekhar, Secretary, Department of Information Technology for his encouragement in this endeavour. We express our heartfelt gratitude to Shri Shankar Aggarwal, Additional Secretary, Department of Information Technology for personally guiding us throughout the process of report compilation and facilitating the collection of information from various Government sources. We are indebted to Shri Omkar Rai, Director General of Software Technology Parks of India for his sincere support in bringing out the publication.

The report could not have been completed but for the co-operation of all Line Ministries and Departments, especially Governance Knowledge Centre of DAR&PG which have promptly provided the authors with the latest data available with them pertaining to the ICT4D projects. In particular, we would like to thank the following people for sharing their time and insights: Dr. Ajay Kumar, Mr. Abhishek Singh, Mr. Anurag Goyal and Mr. S.P. Singh from Department of Information Technology, Government of India; Dr. Rajendra Kumar and Mr. Bhushan Mohan from National e-Governance Division; Mr. Shashank Ojha and Ms. Tenzin Dolma Norbhu from the World Bank; Ms. Gitanjali Sah - International Telecommunications Union; Prof. M.P. Gupta – IIT Delhi; Dr. Naimur Rahman – One World South Asia; Ms Miky Dhamanda - UNESCO, Mr. Sameer Sachdeva - Governance Now magazine; Mr. Deepak Halan – IMRB. We would also like to thank all those who have contributed towards the completion of design and publication of this report.

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MESSAGE FROM
HON'BLE MINISTER OF COMMUNICATIONS AND INFORMATION TECHNOLOGY, GOVERNMENT OF INDIA

World Summit on Information Society (WSIS) is the culmination of the efforts made by the United Nation's ICT Task Force in the area of use of ICT for socio economic development of the society. WSIS has done pioneering work in spreading the message to bridge the digital divide and convert the world into an information society.

India with over 1.2 billion inhabitants is the most vibrant and fastest growing economy with GDP growing at a sustainable rate of over 8%. The Government of India has attached highest priority to make use of this extremely powerful technology to help not only the businesses but also the common man. The internet and mobile revolutions have changed the global landscape and have made significant impact on the livelihood of the people. It has also worked as a catalyst in employment generation. In India, there are over 800 million mobile subscribers and this number is growing very rapidly. Moreover efforts are being made to provide connectivity through 100,000 rural kiosks – known as Common Service Centres. This will allow about 60% of the population which resides in rural area to have access to internet at affordable rates.

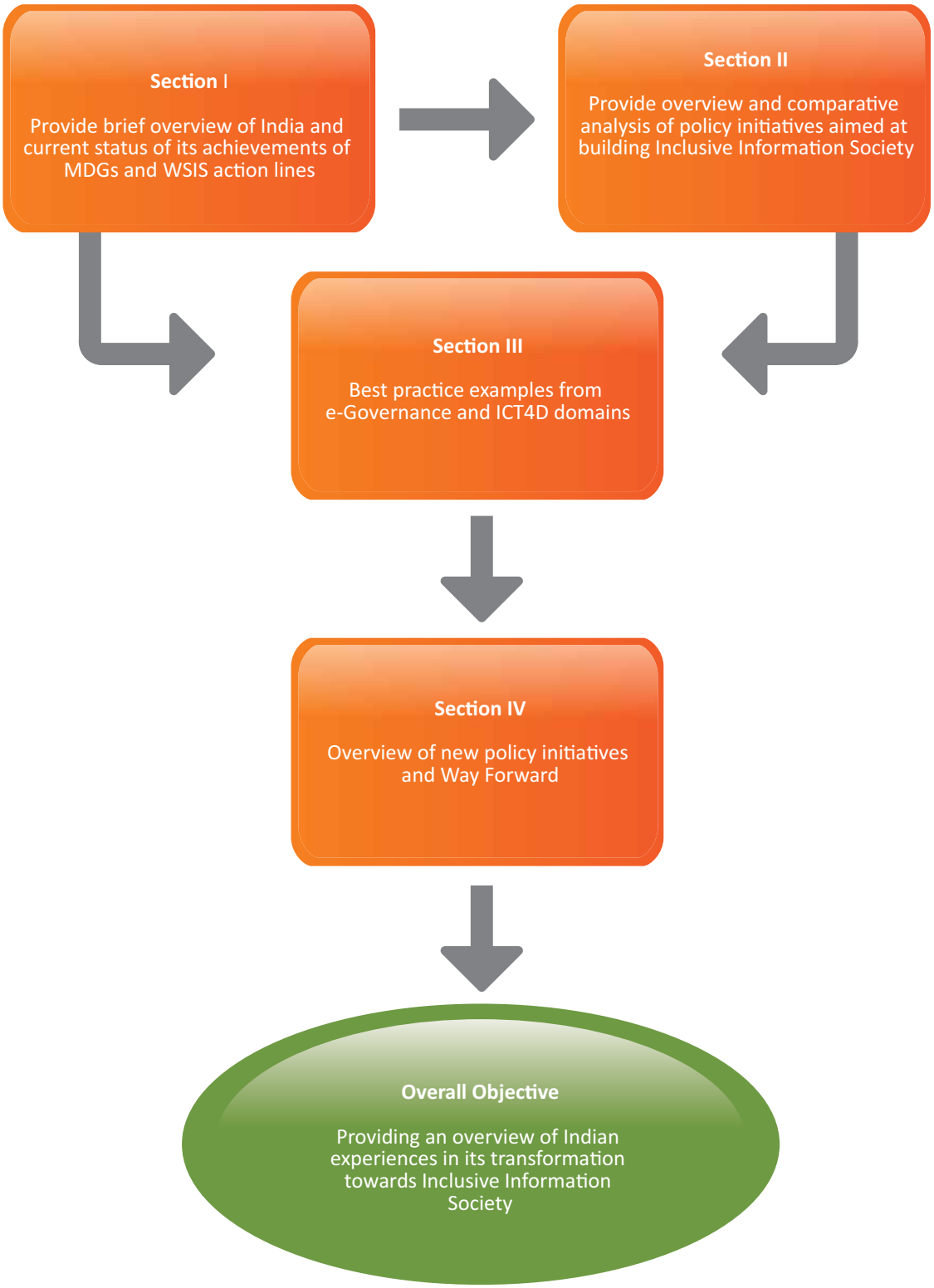
India believes that owning a separate Internet connection should not be the yardstick to measure ICT outreach in countries. Rather it is the access to Internet at affordable rates that matters more. 100,000 Common Service Centres (CSC) in rural areas being set up under our Flagship programme - National e-Governance Plan (NeGP) are a major contributor to this phenomenon in India. The CSCs are planned to be scaled up to 250,000 in next three years . These Telecentres, interalia, provide a large number of public services to citizens at their door steps. In addition, Unique Identification (UID), National Population Register (NPR) and Broadband at every Panchayat are other three major initiatives by the Government that are going to bring in paradigm shift in the way public services are delivered.

In India, the story of development, even in the midst of the global economic slow-down, has been very satisfying. Advances are most evident where targeted interventions have been initiated, and where increased funding and improved institutional mechanism have stimulated better delivery of services. This can be seen in the right based empowerment – National Rural Employment Guarantee Act (NREGA), Right to Information (RTI), Right to Education, Right to Food (Proposed) etc., universalisation of primary education and gender parity in school education.

The study - "India – Journey from Knowledge Economy to Inclusive Information Society" is an excellent compilation of Indian best practices in ICT 4 Development and achievements in WSIS Actions Lines. I am sure the global community will find it useful in developing their own ICT initiatives.

(KAPIL SIBBAL)

Minister for Communications and Information Technology
Government of India


Section I
Provide brief overview of India and current status of its achievements of MDGs and WSIS action lines
Section II
Provide overview and comparative analysis of policy initiatives aimed at building Inclusive Information Society
Section III
Best practice examples from e-Governance and ICT4D domains
Section IV
Overview of new policy initiatives and Way Forward
Overall Objective
Providing an overview of Indian experiences in its transformation towards Inclusive Information Society

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Message

In the context of the India's social inclusion agenda and the provision of Government services at the doorsteps of citizen, innovative use of ICT and new media technologies has become a key priority. The past decade's rapid stride made by India in the field of Information Technology at various levels, be it, Government, Businesses or Civil Society Organisations is so vast and dispersed that documenting an exhaustive experience would be difficult.

The study **"India – Journey from Knowledge Economy to Inclusive Information Society"** involved data collection and analysis from a large number of resources including Indian Government agencies, civil society organisations, corporate and multilateral agencies, etc. with a view to achieving several interlinked objectives, and in order to facilitate the realisation of one overall objective: To communicate to the world regarding the efforts India has made in past decade in its move towards transforming itself into inclusive information society.

The report may best be described as panoramic overview of relevant and promising initiatives and strategies to accelerate transformation towards inclusive information society, so that the central government agencies, state government agencies and relevant stakeholders can act in the most efficient manner. The different case studies and initiatives of Government of India, State Governments, and leading NGO initiatives that have been presented in this report reflect examples of scalable projects with a lasting impact and cover different domains of development arena, viz., livelihoods, access, improved governance, citizen centricity, transparency and accountability, policy reforms.

राष्ट्रीय इ-गवर्नेंस योजना
National e-Governance Plan

Public services closer home

The interlinked nature of the report's objectives and the complexity of data collection and analysis called for a concerted effort of numerous researchers and Department of Information Technology working together in collating information from various primary and secondary sources. WSIS Action Lines have been framed in a measurable format. This guided the data collection and reporting about the initiatives of central and state government agencies on their efforts to achieve the MDG goals as well as specific actions on WSIS action lines. The initiatives captured in the present report are:

- Reviewing the policy initiatives pertaining to various MDGs and WSIS action lines (Section II)
- Analysing the best practice examples from the domains of e-Government, education, health, agriculture and e-Infrastructure that are unique to the contextual needs of the developing country like India embarking on its journey to inclusive information society (Section III)
- Analysing the current policy directions and the way forward based upon the opportunities provided by new media technologies such as mobile and wireless, cloud computing and web 2.0 developments and formulating conclusions relevant for policy development based upon the developments so far. (Section IV)

The current document as well as the case studies presented is based on a scan of available information and studies, both as regards relevant e-Governance and ICT for development initiatives carried out by the government agencies, civil society and the other stakeholder groups. The structure of the document is guided by the directions provided by Department of Information Technology (DIT), Government of India, ITU, Software Technology Parks of India (STPI) and is validated by the study's expert panel put together by The Society for Promotion of e-Governance (SPeG) - The principal research agency entrusted with the task of compiling the report. In addition, a large number of practitioners from the civil society and corporate have provided valuable inputs and contributions via telephone conversations and email correspondence during the compilation of the document.

The aim of the study is to inform readers about Indian policy initiatives, experiences, challenges and the best practice models that have stimulated transformation of India into an Inclusive Information Society. In all these initiatives, there has been a particular focus on the contextual and cultural needs of India rather than replicating the initiatives from other developed countries. The report therefore presents a story of development unique to the developing country needs and we hope that other developing countries will see an advantage in learning from Indian experiences.

The report does not seek to provide a comprehensive catalogue of all initiatives, but rather a good representation and overall characterisation of the situation across the country, with special emphasis on identifying successful initiatives for the purpose of highlighting what works in the context of a developing country. We sincerely hope that the study will make an important contribution to the WSIS Forum 2011 from India as well as act as a ready reference for the academia, multilateral agencies and practitioners who want to learn about the Indian journey towards Inclusive Information Society.

(Shankar Aggarwal)

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Executive **Summary**

- **Introduction**
- **WSIS and MDG Implementation at National Level – A Brief Snapshot**
- **India at a Glance – Factsheet on various development indicators**

1.1 Introduction

During the past two decades, India has emerged as one of the fastest growing economies in the world. The progress she has made can be attributed to reforms in the financial sector, progressive and pro-development policies of successive Governments, the collaborative efforts of the corporate and civil society organisations and above all, the role of ICTs and new media technologies in enabling information enabled growth at the bottom of the pyramid.

The Government of India has been successful in inducing healthy policy competition among the states which in turn has been able to accelerate the overall development of the country. The progressive policies of Indian Government such as the National e-Governance Plan (NeGP), Right to Information Act (RTI), Jawaharlal Nehru National Urban Renewal Mission (JNNURM) Mahatma Gandh National Rural Employment Guarantee Scheme (MGNREGS), National Rural Health Mission (NRHM), Sarva Siksha Abhiyaan (SSA) etc. over the past decade have helped the country make significant headway in tapping the potential of ICTs and new media technologies in rapidly progressing towards the achievement of MDGs as well transforming the country into a knowledge economy. These initiatives have resulted in increased communication, interactions and collaboration among the citizen, government agencies, industry and the service providers at various levels.

The Indian approach to the achievement of sustainable growth and inclusive development is a unique model of how a developing country has been able to contextualise the use of ICTs and new media technologies based upon its own priorities. While the models adopted by the developed countries have their own learnings from which the Indian efforts have surely drawn benefits, the formulation of Indian policies have been based upon cultural and contextual needs of Indian citizen, government agencies, federal structure and the priorities of grassroot communities. In that sense, Indian journey of transformation from the knowledge economy to an inclusive information society is a unique model that may provide insight to other developing countries. Some of the salient features that make Indian journey towards transformation into inclusive information society are:

- Vibrant ICT industry
- Localised policy and deployment models suitable for the needs of a developing country
- Centralised planning and decentralized implementation approach
- Participative policy formulation marrying top down and bottom up approach
- Continuous assessment and performance management

The report 'India – Journey from Knowledge Economy to Inclusive Information Society' provides a high-level update and an overview of the progress made by India in transforming itself into inclusive information society as well as progress on WSIS action items.

1.2 India at a Glance – Fact sheets on MDG and ICT4D

Table: Indian performance on MDG Indicators

Millennium Development Goals[1]					
	1990	1995	2000	2005	2009
Goal 1: Eradicate extreme poverty and hunger					
Employment to population ratio, 15+, total (%)	*62*	61	61	60	*60*
Employment to population ratio, ages 15-24, total (%)	52	50	47	45	*45*
GDP per person employed (constant 1990 PPP $)	*11,748*	12,513	13,714	15,479	*16,964*
Income share held by lowest 20%	..	..	..	..	..
Malnutrition prevalence, weight for age (% of children under 5)	..	..	25	..	21
Poverty gap at $1.25 a day (PPP) (%)	..	..	..	..	..
Poverty headcount ratio at $1.25 a day (PPP) (% of population)	..	..	..	..	..
Vulnerable employment, total (% of total employment)	..	..	..	..	..
Goal 2: Achieve universal primary education					
Literacy rate, youth female (% of females ages 15-24)	78	..	83	..	87
Literacy rate, youth male (% of males ages 15-24)	87	..	90	..	92
Persistence to last grade of primary, total (% of cohort)	..	..	..	..	..
Primary completion rate, total (% of relevant age group)	*79*	..	82	86	*88*
Total enrollment, primary (% net)	..	..	84	88	*90*
Goal 3: Promote gender equality and women empowerment					
Proportion of seats held by women in national parliaments (%)	13	*12*	14	16	19
Ratio of female to male primary enrollment (%)	*89*	..	92	96	*97*
(%)	*83*	..	92	95	*96*
Ratio of female to male tertiary enrollment (%)	..	..	99	105	*108*
Share of women employed in the nonagricultural sector (% of total nonagricultural employment)	34.8	37.0	36.4	*36.7*	..

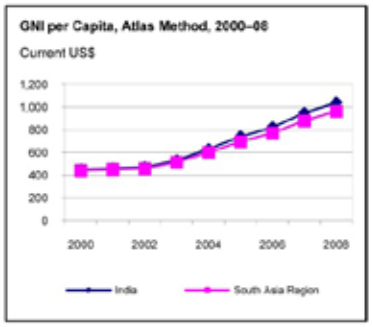
[1]*Source: http://ddp-ext.worldbank.org/ext/ddpreports/ViewSharedReport?REPORT_ID=1336&REQUEST_TYPE=VIEWADVANCED accessed on April 26, 2011*

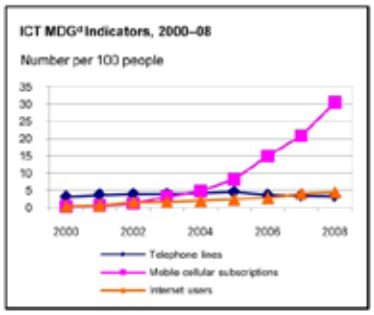
Millennium Development Goals					
	1990	1995	2000	2005	2009
Goal 4: Reduce child mortality					
Immunization, measles (% of children ages 12-23 months)	73	74	72	78	82
Mortality rate, infant (per 1,000 live births)	64	61	55	48	43
Mortality rate, under-5 (per 1,000)	92	88	79	68	61
Goal 5: Improve maternal health					
Adolescent fertility rate (births per 1,000 women ages 15-19)	..	..	60	54	50
Births attended by skilled health staff (% of total)	50	..	62	..	65
Contraceptive prevalence (% of women ages 15-49)	57	..	61	..	61
Maternal mortality ratio (modeled estimate, per 100,000 live births)	400	370	340	290	*260*
Pregnant women receiving prenatal care (%)	..	..	75	..	82
Unmet need for contraception (% of married women ages 15-49)	..	..	..	..	..
Goal 6: Combat HIV/AIDS, malaria, and other diseases					
Children with fever receiving antimalarial drugs (% of children under age 5 with fever)	..	..	..	..	..
Condom use, population ages 15-24, female (% of females ages 15-24)	..	..	..	..	..
Condom use, population ages 15-24, male (% of males ages 15-24)	..	..	..	..	..
Incidence of tuberculosis (per 100,000 people)	128	129	136	141	137
Prevalence of HIV, female (% ages 15-24)	..	..	..	..	0.7
Prevalence of HIV, male (% ages 15-24)	..	..	..	..	0.4
Prevalence of HIV, total (% of population ages 15-49)	0.3	0.8	1.0	1.0	0.8
Tuberculosis case detection rate (%, all forms)	55	**46**	45	56	62

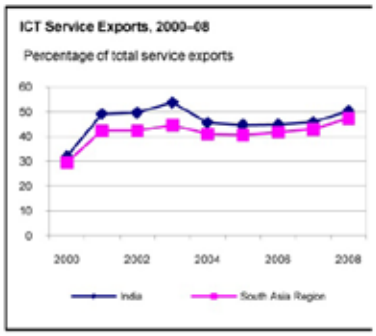
Millennium Development Goals					
	1990	1995	2000	2005	2009
Goal 7: Ensure environmental sustainability					
CO2 emissions (kg per PPP $ of GDP)	1	1	1	1	..
CO2 emissions (metric tons per capita)	4	4	4	5	5
Forest area (% of land area)	32.1	..	31.4	31.3	*31.1*
Improved sanitation facilities (% of population with access)	52	55	57	59	*61*
Improved water source (% of population with access)	77	80	83	85	*87*
Marine protected areas (% of total surface area)	5	6	8	9	9
Net ODA received per capita (current US$)	11	10	8	17	19
Goal 8: Develop a global partnership for development					
Debt service (PPG and IMF only, % of exports, excluding workers' remittances)	..	..	..	..	..
Internet users (per 100 people)	0.1	0.8	6.7	16.0	27.1
Mobile cellular subscriptions (per 100 people)	0	2	12	34	69
Telephone lines (per 100 people)	10	12	16	19	18
Fertility rate, total (births per woman)	3	3	3	3	3
Other					
GNI per capita, Atlas method (current US$)	4,064	5,061	5,293	7,129	8,732
GNI, Atlas method (current US$) (billions)	21,452.9	28,793.7	32,207.4	46,106.5	59,162.8
Gross capital formation (% of GDP)	23.4	22.3	22.3	21.9	19.0
Life expectancy at birth, total (years)	65	66	67	68	69
Literacy rate, adult total (% of people ages 15 and above)	76	..	82	..	84
Population, total (billions)	5.3	5.7	6.1	6.5	6.8
Trade (% of GDP)	38.0	41.8	48.8	53.7	48.5
Source: World Development Indicators					
Figures in italics refer to periods other than those specified.					

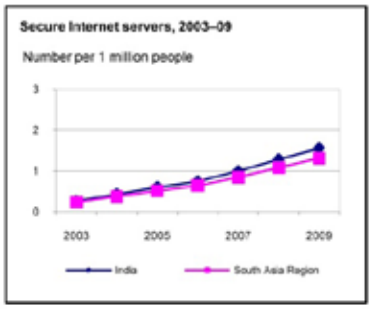
ICT Developments at a Glance

	India		Lower-middle-income group	South Asia Region
	2000	2008	2008	2008
Economic and social context				
Population (total, million)	1,016	1,140	3,703	1,545
Urban population (% of total)	28	30	41	29
GNI per capita, World Bank Atlas method (current US$)	450	1,040	2,073	963
GDP growth, 1995–2000 and 2000–08 (avg. annual %)	5.9	7.9	8.3	7.3
Adult literacy rate (% ages 15 and older)	*61*	*63*	80	61
Gross primary, secondary, tertiary school enrollment (%)	52	*63*	*64*	*58*
Sector structure				
Separate telecommunications regulator	Yes	Yes		
Status of main fixed-line telephone operator	*Public*	Mixed		
Level of competition[a]				
International long distance service	*M*	C		
Mobile telephone service	*P*	P		
Internet service	*C*	C		
Sector efficiency and capacity				
Telecommunications revenue (% of GDP)	1.5	*2.0*	*3.0*	*2.1*
Mobile and fixed-line subscribers per employee	85	—	*685*	*565*
Telecommunications investment (% of revenue)	49.3	—	*22.6*	—
Sector performance				
Access				
Telephone lines (per 100 people)	3.2	3.3	13.6	3.1
Mobile cellular subscriptions (per 100 people)	0.4	30.4	47.0	32.6
Fixed Internet subscribers (per 100 people)	0.3	1.1	*5.6*	1.3
Personal computers (per 100 people)	0.5	*3.3*	*4.5*	*3.3*
Households with a television set (%)	*32*	*46*	—	*46*
Usage				
International voice traffic (minutes/person/month)[b]	0.2	—	—	—
Mobile telephone usage (minutes/user/month)	*191*	440	328	383
Internet users (per 100 people)	0.5	4.5	13.9	*4.7*
Quality				
Population covered by mobile cellular network (%)	*21*	*61*	*77*	*61*
Fixed broadband subscribers (% of total Internet subscribers)	0.0	41.1	*40.4*	33.1
International Internet bandwidth (bits/second/person)	1	*32*	*153*	*31*
Affordability				
Residential fixed line tariff (US$/month)	—	3.5	4.8	3.5
Mobile cellular prepaid tariff (US$/month)	—	1.6	8.4	1.9
Fixed broadband Internet access tariff (US$/month)	—	6.1	31.4	21.0
Trade				
ICT goods exports (% of total goods exports)	1.4	1.3	19.7	1.2
ICT goods imports (% of total goods imports)	6.0	5.0	17.0	5.1
ICT service exports (% of total service exports)	31.9	50.3	18.6	47.3
Applications				
ICT expenditure (% of GDP)	—	4.5	5.5	4.7
E-government Web measure index[c]	—	0.48	0.29	0.37
Secure Internet servers (per 1 million people, December 2009)	*0.1*	1.6	1.8	1.3









Sources: Economic and social context: UIS and World Bank; Sector structure: ITU; Sector efficiency and capacity: ITU and World Bank; Sector performance: Global Insight/WITSA, IMF, ITU, Netcraft, UN Comtrade, UNDESA, UNPAN, Wireless Intelligence and World Bank. Produced by the Global Information and Communication Technologies Department and the Development Economics Data Group. For complete information, see Definitions and Data Sources.

Notes: Use of italics in the column entries indicates years other than those specified. — Not available. GDP = gross domestic product; GNI = gross national income; ICT = information and communication technology; and MDG = Millennium Development Goal. a. C = competition; M = monopoly; and P = partial competition. b. Outgoing and incoming. c. Scale of 0-1, where 1 = highest presence. d. Millennium Development Goal indicators 8.14, 8.15, and 8.16.

Figure: Indian ICT developments at a glance

1.3 WSIS and MDG Implementation at National Level – A Brief Background

The Millennium Declaration of the United Nations set 2015 as the time-line for achieving most of the Millennium Development Goals (MDGs), which provide quantitative benchmarks for eradication of extreme poverty, hunger, illiteracy and diseases apart from achieving gender equality and empowerment of women, environmental sustainability and global partnership for development.

world summit on the information society
Geneva 2003 - Tunis 2005

World Summit on Information Society was a historic process which began in 1998 and initiated a worldwide consultation and reflection on the current and future of the Information Society. It was held as two stage consultation - in 2003 at Geneva and in November 2005 at Tunis. The Tunis Action Plan made commitments for action at various levels. Reflections by all countries that have committed to Tunis Action Plan have looked at the following action items:

- Role of Governments and other key stakeholders in the promotion of ICTs for development
- Information and communication infrastructure: an essential foundation for the Information Society
- Access to information and knowledge
- Capacity building
- Building confidence and security in the use of ICTs
- Enabling environment
- ICT applications: benefits in all aspects of life
- Cultural diversity and identity, linguistic diversity and local content
- Media
- Ethical dimensions of the Information Society
- International and regional cooperation

India's National Development Plan for 2007-12 has reaffirmed its commitment to attain the MDGs and relies strongly on the innovative use of ICT and new media technologies for achieving the goal of transforming itself into an inclusive information society, thus conforming to the action line as laid out in the WSIS declaration. In a sense, the targets laid down in the five-year plan are nationally dovetailed forms of the MDG targets but by some measure, envisage faster results than what the MDGs defined for us to attain. The more inclusive development actions that we have planned for have no room, therefore, for missing the MDG-targets.

This report attempts to capture the counts and measures describing the progress towards achieving the goals so far and where we are likely to be at the end of it. The statistical system of the country provides evidence in terms of the measures of MDG-indicators of various development outcomes. The thrust of this report is how ICTs have played a pivotal role in achieving the developmental goals and provided a catalytic impetus to economic and social progress.

In India, the story of development, even in the midst of the global economic slow-down, has been satisfactory. Advances are most evident where targeted interventions have been initiated, and where increased funding and improved institutional mechanisms have stimulated better delivery of services and tools directly to those in need. This can be seen in the universalisation of primary education and gender parity in school education and literacy, fight against Malaria and Tuberculosis, immunisation of children against deadly diseases, safe motherhood and reproductive care, access to safe drinking water and development of telecommunication.

The present report captures the glimpses of policy initiatives and some of the key projects that highlight India's achievements in movement towards creation of inclusive information society. Section II covers in detail the action carried out by the government in terms of policy initiatives and efforts of other stakeholder groups in implementing these policy initiatives. The initiatives mentioned are those that relate to the MDGs agenda and the WSIS action lines. In section III entitled Profiles of Progress, case studies on select projects from different domains pertaining to innovative use of ICTs by Government and stakeholder groups in various verticals like Government, health, education and agriculture, etc. are presented. The presented cases are not an exhaustive list of all the initiatives but are a collection of some of the cases that correspond to WSIS action lines selected by the authors and may provide useful insights and possible best practice models to other developing countries.

Government of India has realised that in the era when the technology is changing so fast and new media technologies such as mobiles are fast becoming the primary mode of access for majority of rural citizen, it is necessary to continuously evolve new policies and undertake initiatives so that the gap among the Government policy, technology changes and citizen aspirations can be minimized. Section IV provides a glimpse of the key policy initiatives undertaken by Government of India in the year 2010-2011. A brief description and on the key proposed initiatives such the Mobile Governance Policy, Electronic Service Delivery Act, Framework for Citizen Engagement in Policy Formulation and Open Data Policy have been provided in the Section V entitled The Way Forward. These initiatives, if deployed successfully, have the potential of transforming India into world's first truly digital economy and inclusive information society.

Notes

From Knowledge Economy to Inclusive Information Society – **India's journey**

- **The role of Indian government and all stakeholders in the promotion of ICTs for development**
- **Information and Communication Infrastructure**
- **Access to Information and Knowledge**
- **Capacity Building**
- **Building Confidence and Security in use of ICTs**
- **Cultural Diversity and Identity, Linguistic Diversity and Local Content**
- **Media**
- **Ethical Dimensions of the Information Society**
- **International and Regional Cooperation**

Introduction

In the past decade, India has accelerated economic growth, improved on most of MDGs, and maintained a vibrant democracy. It has also emerged as a global power - the fourth largest economy in purchasing power parity terms, and a leading player in information technology, telecom and business outsourcing. The Government's Eleventh Five Year Plan's objective (2007-2012) is aimed at achieving a GDP growth rate of 9% and doubling the per capita GDP within ten years. Added to this is the fact that the mobile subscribers in India have been increasing at an explosive rate with the total number of subscribers already crossing the 800 million mark in first quarter of 2011. This provides an immense opportunity to Indian Government in taking the lead with innovative policy measures to make India world's first truly digital and inclusive information society. What makes India a unique developing country in the context of the emergence of Information society is unity in diversity.

India has the dimensions and diversity of a continent. Among its more than 1.2 billion inhabitants, there are some 300 million people living on less than the official poverty line, four of the world's eight richest billionaires, and a huge middle class in between. Poverty and plenty live side by side in the major cities, and images of the lives of the rich enter the remotest villages through television and movies. Mobile phones are ubiquitous, but 40% of India's villages are not connected to a road. Millions of farmers still toil under the sun with only the most rudimentary farm implements, while some Indian entrepreneurs and companies are taking centre stage on global markets-Tata Motors recently bought Jaguar and Land Rover from Ford. In government hospitals, 53% of paediatrician posts are unfilled, but Indian private hospitals install heart valves and replace hips for 'medical tourists' from developed countries. There are Indians living on islands that will disappear if sea levels rise, and Indians live at the foot of some of the tallest mountains in the world, where glaciers are shrinking. Some Indian women still never leave their homes unaccompanied by male members while others pilot commercial flights and fighter jets.

India has remarkable unity: in its democratic traditions, its sense of a national destiny, and a massive young population that has common aspirations and the potential and confidence to achieve them. Even as social, ethnic, and religious strife persists and often seems worse today than at India's Independence, some of the economic barriers that divided Indians are slowly falling. The top civil service in India, the Indian Administrative Service, now draws from a much more diverse pool, including not just the metropolitan elites but also from small towns and villages. Social mobility is rising, including in rural areas where communities are becoming more empowered through local self-Government and self-help groups, which cement the sense of national unity.

2.1 The role of Indian Government and all stakeholders in the promotion of ICTs for development

The vision of Government of India as laid in 11th Five Year Plan (2007 – 2012)[2] forms the basis for various policy initiatives deployed by different agencies during the period of last four years. It states:

"The central vision of the Eleventh Plan is to build on our strengths to trigger a development process which ensures broad based improvement in the quality of life of the people, especially

[2] *http://planningcommission.nic.in/plans/planrel/11thf.htm*

the poor, Scheduled Castes and Scheduled Tribes, Other Backward Classes, minorities and women. This broad vision of the Eleventh Plan includes several interrelated components: rapid growth that reduces poverty and creates employment opportunities, access to essential services in health and education, especially for the poor, equality of opportunity, empowerment through education and skill development, employment opportunities underpinned by the National Rural Employment Guarantee Scheme, environmental sustainability, recognition of women's agency and good governance."

As is evident from the vision statement, challenges of inclusive, sustainable growth and service delivery are at the centre of the Government's priorities. Action, which is less on policy formulation and the passage of laws and more on implementation and enforcement, lies as much with the Union as with the State Governments. In order to achieve the goals of sustainable growth and inclusive development, a number of policy initiatives have been taken by the Government of India during the past decade. Some of the key initiatives are described briefly as below:

2.1.1 National e-Governance Plan (NeGP)[3]

e-Government's role in supporting economic growth has rapidly become clear over the last decade and is likely to become even more important in the future. There is increasing understanding that improved efficiency and effectiveness of the public sector can provide direct and powerful support to multi-stakeholder driven economic growth, competitiveness, jobs and innovation, over and above the direct impacts the public sector itself has on these policy outcomes and thus on overall living conditions, quality of life and welfare in society as a whole.

राष्ट्रीय इ–गवर्नेंस योजना
National e-Governance Plan
Public services closer home

The vision for deployment of ICTs for public services was developed in India through the formulation of National e-Governance Plan (NeGP). A brief background of National e-Governance plan is as provided below:

Over the past decade or so, there have been islands of e-Governance initiatives in the country at the National, State, District and even Block level. Some of them have been highly successful and were ready for replication across other States while some have not produced the desired results or withstood the test of time.

Experiences from successes as well as the failures of the various initiatives played an important role in shaping the e-Governance strategy of the country. The basic lessons that emerged from the various e-Governance initiatives were:

- Need for political ownership at the highest level and a national vision for e-Governance for successful implementation of the programme;
- A dedicated team with a stable tenure from within the organisation to conceptualize and implement the programme down the line;
- New areas of Public-Private Partnership (PPP) in making e-Governance possible should be continuously explored;
- Defined architecture, standards and policies addressing issues of security, privacy, etc.;
- An urgent need to develop the basic core and support infrastructure for e- Governance such as Data Centres, Wide Area Networks and the physical access points for delivery of government services, which would be common to all departments and where services could be delivered at the doorstep of the citizen in an integrated manner;

[3] *http://www.negp.gov.in*

- Need to start with small pilots before scaling-up, as IT projects take a long time to implement and often there are modifications to be incorporated along the way; and Issues of re-engineering and management of change are of paramount importance in comparison to technical issues associated with e-Governance.

Hence, there was a felt need for taking a holistic view towards the entire e-Governance initiative across the country. Increasingly, it was perceived that if e-Governance was to be speeded up across the various arms of Government at the National, State and Local Government level, a programme approach would need to be adopted, which must be guided by a common vision, strategy and approach to objectives. This approach would have the added advantage of enabling huge savings in cost, in terms of sharing the core and support infrastructure, enable interoperability through standards, etc. which would result in the citizen having a seamless view of the Government. With this background, the National e-Governance Plan (NeGP) was formulated by the Government, for implementation across the country. NeGP comprises of:

- 27 Mission Mode Projects (MMPs) to be implemented at the Central, State and Local Government levels and
- 4 Common Core and Support Infrastructure Initiatives

Approach/Methodology[4]

The approach/methodology of NeGP encapsulates the learning from successes and failures of e-Governance initiatives across the country and the world, and incorporates the recommendations/ observations made by the Parliamentary Standing Committee and subsequently by the Committee of Secretaries (CoS). The broad approach/methodology of NeGP is:

- Department of Information Technology (DIT) GoI would create Common core and Support Infrastructure (State Wide Area Networks, State Data Centres, Common Service Centres, National/State Service Delivery Gateways)
- DIT would evolve/lay down Standards and Policy Guidelines, provide Technical and Handholding support, undertake Capacity Building, R&D, etc. as required for successful implementation of various e-Governance projects
- Mission Mode Projects (MMPs) would be owned and spearheaded by various concerned line Ministries and Departments. The Ministry/Department would be entirely responsible for all decisions connected with their MMP.
- States would be given the flexibility to identify a few additional state-specific projects (not exceeding 5), which are very relevant for the economic development of the State. In case, Central assistance is needed, such inclusions would be considered on the advice of the concerned Line Ministries/Departments
- e-Governance would be promoted through a centralized initiative to the extent necessary to ensure citizen service orientation, to realize the objective of interoperability of various e-Governance applications and to ensure optimal utilization of ICT infrastructure/resources while allowing for and adopting, as a policy, a Decentralized Implementation Model
- Successes would be identified and replication promoted proactively with required customization
- Public Private Partnership (PPP) would be promoted wherever feasible to enlarge the resource pool without compromising on the security aspects

The National e-Governance Plan of the Indian Government seeks to lay the foundation and provide the impetus for long-term growth of e-Governance within the country. The Plan seeks to create

[4] *http://www.mit.gov.in*

the right governance and institutional mechanisms, set up the core infrastructure and policies. In order to assist the Department of Information Technology, NeGP Programme Management Unit (PMU) has been setup.

NeGP has three-tier architecture. The Common Services Centres (CSCs) are the front end delivery points for a range of citizen services. The common man feels empowered when he is able to get a service in a transparent manner, at a convenient location and at an affordable cost. These centres also provide employment to the entrepreneurs running them, besides being useful in rolling out all kinds of governmental schemes such as those for financial inclusion, enumeration of data, insurance and IT education.

The second tier comprises of the common and support infrastructure that can allow information to be shared electronically between different agencies of the Government and with citizen. The State Wide Area Networks (SWANs) which form the converged backbone network for data, voice and video throughout a state/UT and the State Data Centres (SDCs) which can provide common secure IT infrastructure to host state level e-Government applications and data and the Delivery Gateways (NSDG/SSDG) provide the critical middleware.

Tier one and two form the following key infrastructure components:

- Common Services Centres (CSC)
- State Wide Area Networks (SWAN)
- State Data Centres (SDC)
- National Service Delivery Gateway along with State Service Delivery Gateway (NSDG and SSDG)

The third tier of NeGP architecture are the 27 Mission Mode Projects for Central, and State and integrated services to create a citizen-centric and business-centric environment for governance These MMPs will transform high priority citizen services from their current manual delivery into e-Delivery. Each MMP is owned and spearheaded by the relevant ministry/agency of the Central Government or by State Government, and is called 'mission mode' because it has a definite timetable, service levels, project implementation team and process re-engineering plans.

The progress made so far in deployment of various Mission Mode Projects is as depicted in the fact sheets presented below:

MMP	Conceptualization	Design and Development	Implementation	Post Implementation
Central MMPs				
MCA21				√
Pensions				√
Income Tax				√
Passport and Visa			√	
Immigration			√	
Central Excise				√
Banking			√	
MNIIC (Pilot)/ NPR			√	
UID			√	
e-Office (Pilot)			√	
Insurance			√	
Integrated MMPs				
CSC			√	
e-Courts			√	
EDI/e-Trade			√	
India Portal				√
NSDG			√	
e-Biz (Pilot)			√	
e-Procurement		√		
State MMPs				
Land Records (NLRMP)			√	
Road Transport			√	
Agriculture		√		
Police (CCTNS)			√	
Treasuries			√	
Municipality			√	
e-District (Pilot)			√	
Commercial Taxes			√	
Gram Panchayat		√		
Employment Exchange		√		

Fact Sheet : Dashboard View of MMP Stages[5]

[5] *http://www.mit.gov.in*

MMP	Project Approval Date	Target End Date	Total Outlay (in Rs. Crores)
Central MMPs			
MCA21	Feb, 2005	Sep, 2006	345.00
Pensions	Feb, 2006	Mar, 2007	2.70
Enhancements	-	Mar, 2012	-
Income Tax	Jun, 2005	Dec, 2008	693.00
Passport	Sep, 2007	Oct, 2011	29.00
Immigration & VISA	May, 2010	Sep, 2014	1011.00
Central Excise	Dec, 2007	Dec, 2009	599.00
Banking		Industry Initiative	
MNIIC (Pilot)/ NPR	Dec, 2009	-	3755.55
UID Phase I	May, 2010		147.30
Phase II (1st batch of UID Numbers)	Aug, 2010	Mar, 2011	3023.00
e-Office (3 Pilot locations)	May, 2006	Dec, 2010	1.81
Insurance		Industry Initiative	
Total Central MMPs			9607.36
Integrated MMPs			
CSC	Sep, 2006	Mar, 2011	1649.00
e-Courts	Feb, 2007	Mar, 2012	935.00
EDI/e-Trade	-	Apr, 2011 (ICES 1.5 at 115 locations)	Self support
India Portal	Aug, 2005	Nov, 2005	23.35
NSDG	Aug, 2006	Jan, 2014	26.28
e-Biz	Oct, 2005	-	23.07
e-Procurement	-	-	-
Total Integrated MMPs			2656.70
State MMPs			
Land Records (NLRMP)	Aug, 2008	8 Years from approval	5656.00
Road Transport	Apr, 2008		148.00
Agriculture	Nov, 2010	Aug, 2012	227.79 *
Police (CCTNS)	Jun, 2009	Mar, 2012	2000.01
Treasuries	Jun, 2010	Mar, 2013	626.00
Municipality	Dec, 2007	Dec, 2013	1150.00
e-District (Pilot)	Feb, 2006 (UP)	Mar, 2012	126.62
Commercial Taxes	Feb, 2010	Feb, 2014	1133.41
Gram Panchayat	-	-	6989.00 *
Employment Exchange	-	22 Months from approval	2167.29 *
Total State MMPs			20224.12
Total (All MMPs)			32488.18

Fact Sheet : Dashboard View of the major Timelines/Budget of the MMPs

In its second phase, the vision of Govt. of India is now focussed at the increasing importance of knowledge management in the provision of public value to the public administrators, to the citizen and to the businesses. The creation and management of knowledge on users' needs (of the citizen or the businesses), on citizen's involvement in policy making, on regulations, on administrative procedures, etc., are becoming key for the provision of public value within a network of public, private and civil actors where the latter are playing an increasing role in the delivery of public services. Examples of actors with increasing intermediary and mediator roles are: the citizen themselves, Civil Society Organisations (CSOs), Non Governmental Organisations (NGOs), private sector organisations (service providers), and public service providers (education, health, police, etc.). The current efforts in phase II of National e-Governance Plan are focussed on formulating strategies for using the mobiles and wireless technologies social media, cloud computing, enacting the Electronic Service Delivery Bill, etc. in order to keep pace with changing technologies and increasing citizen demands. Further to extend the reach of public services, a new policy on mobile governance is currently being formulated. More details about these initiatives have been provided in section IV.

2.1.2 Connecting Villages with ICTs and Establishing Community Access Points – Telecentre Networks and Common Service Centre Program

2.1.2.1 The 'Telecentres' is a generic term to represent several models of public access that are established and operating. The various models are based on the type of services that they render and their implementation strategy. CSCs are an important model of PPP franchise/ entrepreneurship which require large scale capacity building and sharing of experiences. It also hopes to create a large network of individual entrepreneurs, who would be exploring knowledge exchange through strategic networking activities.

A telecentre network refers to 'any group of people working in telecentres whose members come together to learn from each other and cooperatively access services. The common thread is that networks are about telecentre people working together to make their centres more effective, sustainable, and valuable to the communities they serve'. Each individual CSC is supported by a SCA (Service Centre Agency). In India, there are about 20 approved SCAs, who help to establish and support a network of CSCs in one or more States (provinces).

2.1.2.2 Unique Model of Ensuring Access

In a country as vast as India, the CSC programme was designed to ensure public access rather than individual ownership. There are over 640,000 villages that form the rural India. Telecom penetration here is rather low, though mobiles have been penetrating at a faster pace. The CSC plans to ensure ubiquitous access with each CSC servicing about 6 villages. Built on a Public Private Partnership Model, the infrastructure has been designed to develop entrepreneurial capabilities of the CSC operator. Since the success of the CSC programme (over 94000 CSC of the planned 113,000 CSCs are already operational across the country) it will now be upscaled to 250,000 covering all the Panchayats. Panchayats are the local elected bodies and form the first

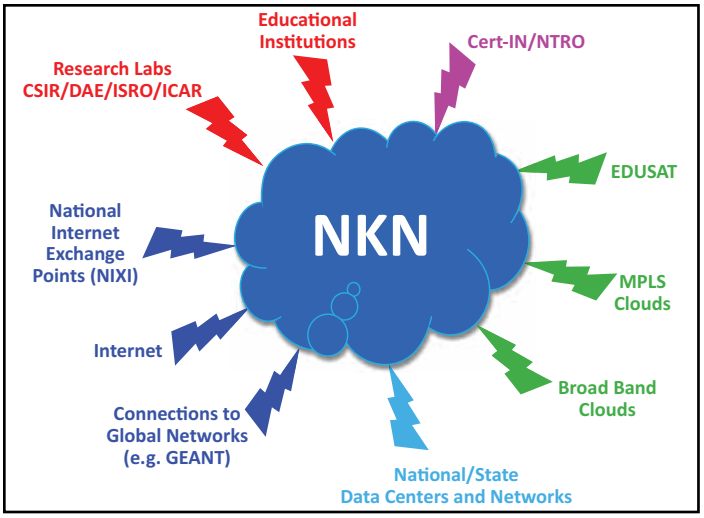
tier of governance in the country. Further, to support the capacities of the CSCs managers, there are special capacity building programmes that have been designed and are being implemented as Certificate Programme with Indira Gandhi National Open University (IGNOU) along with the Global Secretariat of the Telecentre.org Academy.

The Global Telecentre.Org Foundation is a global facilitating network, that works closely with Government of India and Grameen Gyan Abhiyan (GGA) or Rural Knowledge Campaign, which has enabled a number of the CSCs and other models of telecentres to gain from the knowledge sharing activities that they facilitate. The GGA is a national multi-stakeholder consortium that have over 200 members drawn from civil society, industry, Governments, academia, experts, etc. An individual entrepreneur who manages a CSC or a telecentre coordinates services, infrastructure, content, funding, etc. These networks are bottom up designs to enable collective negotiation of their needs. A more detailed description of the Common Service Centre network created by Government of India under the National e-Governance Plan (NeGP) is provided in Section III.

2.1.3 National Knowledge Network (NKN)[6] – Ensuring Access to Information and Knowledge

Objective

Announced in 2008-9, Government of India initially allocated ₹ 100 crore for FY 2008-09 to Department of Information Technology for establishing the National Knowledge Network. Under a High Level Committee (HLC), the conceptualization of the NKN was completed. Honorable President of India launched the programme on 9 April 2009, and on 25th March 2010 the Government approved the establishment of the National Knowledge Network (NKN) at an outlay of ₹ 5990 crore to be implemented by National Informatics Centre (NIC) over a period of 10 years. The objective of the National Knowledge Network is to bring together all the stakeholders in Science, Technology, Higher Education, Research and Development and Governance.



NKN is a revolutionary step towards creating a knowledge society without boundaries. It will provide unprecedented benefits to the knowledge community and mankind at large.

National Knowledge Network (NKN) project is aimed at establishing a strong and robust internal Indian network which will be capable of providing secure and reliable connectivity. Using NKN, all vibrant institutions with vision and passion will be able to transcend space and time limitations in accessing information and knowledge and derive the associated benefits for themselves and for the society. Establishing NKN is a significant step towards ushering in a knowledge revolution in the country with connectivity to 1500+ institutions. NKN is intended to connect all the knowledge and research institutions in the country using high bandwidth/low latency network.

[6] *Source : (http://www.nkn.in)*

Globally, frontier research and innovation are shifting towards multidisciplinary and collaborative paradigm and require substantial communication and computational power. In India, NKN with its multi-gigabit capability aims to connect all universities, research institutions, libraries, laboratories, healthcare and agricultural institutions across the country to address such a paradigm shift. The leading mission oriented agencies in the fields of nuclear, space and defence research are also part of NKN. By facilitating the flow of information and knowledge, the network addresses the critical issue of access and create a new paradigm of collaboration to enrich the research efforts in the country. The network design is based on a proactive approach that takes into account the future requirements and new possibilities that this infrastructure may unfold, both in terms of usage and perceived benefits. This will bring about a knowledge revolution that will be instrumental in transforming society and promoting inclusive growth.

Key Highlights

The idea of setting up the NKN was deliberated and finalised at the office of Principal Scientific Advisor (PSA) to the Government of India (GoI) and the National Knowledge Commission (NKC) after a collaborative engagement with the key stakeholders including experts, potential users, telecom service providers, educational and research institutions. The discussions resulted in a consensus for an optimal approach to be adopted for setting up such a network, to provide a unified backbone for all the sectors. Government of India has constituted a High Level Committee (HLC) for establishment of NKN, under the Chairmanship of the PSA to GoI. National Informatics Centre (NIC) has been designated as implementing agency for NKN. The vision of NKN has been translated into an action plan by the Technical Advisory Committee (TAC) set up by the HLC. NKN was approved in March 2010 by the Cabinet with an outlay of ₹ 5990 Crore. As a forerunner of NKN initial phase has been successfully executed by NIC. The architecture of NKN has been designed for reliability, availability and scalability. The network consists of an ultra-high speed core, starting with multiple 2.5/10 Gbps and progressively moving towards 40/100 Gigabits per Second (Gbps). The core is complimented with a distribution layer covering all Districts at appropriate speeds. The participating institutions at the edge would seamlessly connect to NKN at gigabit speed. The NKN shall be a critical information infrastructure for India to evolve as a knowledge society. NKN is a significant step which will enable scientists, researchers and students from across the country to work together for advancing human development in critical and emerging areas.

> The architecture of nkn has been designed for scalability and the network consists of an ultra high speed core inherently capable of progressively moving with multiples of10/40/100 gbps, complimented with a distribution layer atappropriate speeds.

Architecture

Encourage, enable, enrich and empower the user community to test and implement innovative ideas without any access constraints

- Establishing a high-speed backbone connectivity which will enable knowledge and information sharing
- Enabling collaborative research, development and Innovation
- Facilitating advanced distance education in specialized fields such as engineering, science, medicine, etc.

- Facilitating an ultra high speed backbone for e-Governance
- Facilitating integration of different sectoral networks in the field of research, education, health, commerce and governance

Connectivity

The backbone of the network starts from 2.5 Gbps and progressively moves onto 10 Gbps connectivity between 7 Supercore (fully meshed) locations pan India. The network is further spread out through 26 Core locations with multiple of 2.5/10 Gbps partially meshed connectivity with Supercore locations. The distribution layer connects entire country to the core of the network using multiple links at speeds of 2.5/10 Gbps. The end users are being connected upto a speed of 1 Gbps.

The network architecture and governance structure allows users with options to connect to the distribution layer as well. NKN enables creation of Virtual Private Networks (VPN) as well for special interest groups. NKN provides international connectivity to its users for global collaborative research. Presently, NKN is connected to Trans Eurasia Information Network (TEIN3). Similar connectivity to GLORIAD network is in the pipeline.

Applications

- Countrywide Virtual Classroom

  The NKN is a platform for delivering effective distance education where teachers and students can interact in real time. This is especially significant in a country like India where access to education is limited by factors such as geography, lack of infrastructure facilities, etc.

  The network enables co-sharing of information such as classroom lectures, presentations and handouts among different institutions.

- Collaborative Research

  The NKN enables collaboration among researchers from different entities like GLORIAD, TEIN3, GARUDA, CERN, etc. NKN also enables sharing of scientific databases and remote access to advanced research facilities.

- Virtual Library

  The Virtual Library involving sharing of journals, books and research papers across different institutions, is a natural application for NKN.

Sharing of Computing Resources

High-performance computing is critical for national security, industrial productivity, and advances in science and engineering. The network enables a large number of institutions to access high-performance computing to conduct advanced research in areas such as weather monitoring, earthquake engineering and other computationally intensive fields.

Grid Computing

The NKN has the capability to handle high bandwidth with low latency and provision to overlay grid computing. Some of the grid based applications are climate change/global warming, science projects like Large Hadron Collider (LHC) and International Thermonuclear Experimental Reactor (ITER). The NKN can be the platform to realize many such innovative applications. The Garuda Grid has enhanced its power and stability by migrating to NKN.

Network Technology Test-bed

NKN provides test-bed for testing and validation of services before they are made available to the production network. NKN also provides an opportunity to test new hardware and software, vendor interoperability, etc.

e-Governance

NKN acts as a super highway for integrating e-Governance infrastructure such as Government data centres and networks. NKN provides bulk data transfer facility required for e-Governance applications.

NKN Services

Application Areas

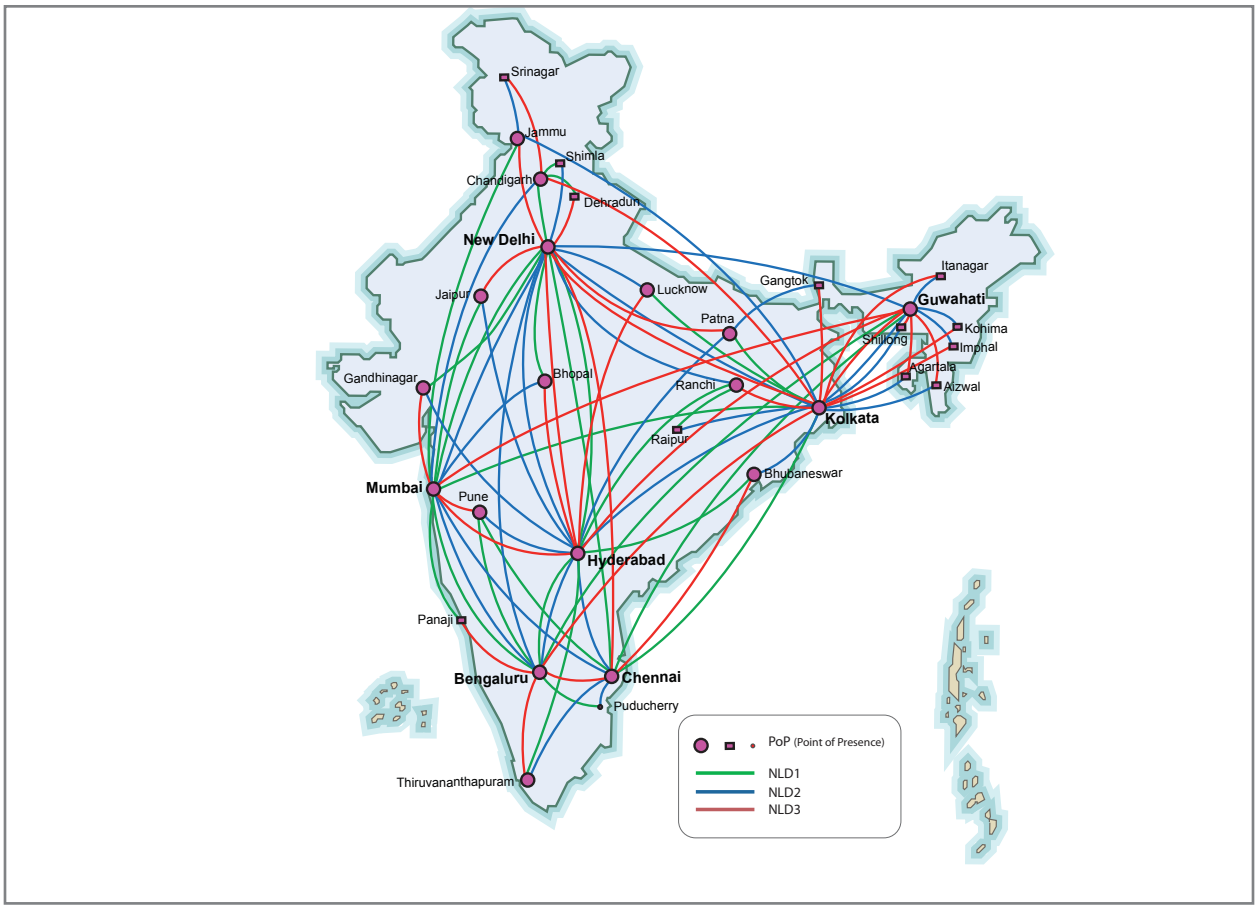
The application areas envisaged under the National Knowledge Network cover

- Agriculture
- Education
- Health
- e-Governance
- Grid Computing (High Performance Computing)

Generic Services: Internet, Intranet, Network Management Views, e-Mail, Messaging Gateways, Cacheing Gateways, Domain Name System, Web Hosting, Voice over IP, Multipoint Control Unit (MCU) Services, Video Portals, SMS Gateway, Co-Location Services, Video Streaming, etc.

Community Services: Shared Storage, e-Mail List Software Application (LISTSERV), Authentication Service, Efficiency Valuation Organisation (EVO), Session Initiation Protocol (SIP), Collaboration Service, Content Delivery Service, International Collaborations with EU-India Grid, Global Ring Network for Advanced Applications Development (GLORIAD), etc.

Special Services: Virtual Private Network Stitching Services [VPN@L2 (Virtual Private Wire Service/Virtual Private LAN Service), VPN@L3], etc.



Multiple 2.5/10 G Connecting all the State Capitals and Gigabit Connectivity to all the Districts

Expected Outcome

National Knowledge Network will facilitate creation, acquisition and sharing of knowledge resources among the large participating institutions; collaborative research; country wide classrooms (CWCR), etc. and help the country to evolve as Knowledge Society.

The output of the National Knowledge Network project will be a high capacity countrywide Infrastructure at education and research Institute level, to support education and research applications, and other application as envisaged by these institutions which require very high bandwidth. A high speed data communication network would be established, which would interconnect Institutions of higher learning.

Current Status

- A core backbone consisting of 18 Points of Presence (PoPs) have been established with 2.5 Gbps capacity. A total 96 number of Institutions have been connected to National Knowledge Network and 15 virtual classrooms were setup.
- Total 102 links have been commissioned and made operational.
- Total 50 core links have been commissioned and made operational.
- Trans Eurasia Information Network (TEIN3) links is integrated with National Knowledge Network.

2.1.4 Right to Information Act 2005 (RTI Act 2005)[7]

Enabling Citizens to access Government Information

Right to Information Act 2005 mandates timely response to citizen requests for government information. RTI Portal Gateway is an initiative taken by **Department of Personnel and Training, Ministry of Personnel, Public Grievances and Pensions, Government of India** to provide to the citizen quick search of information on the details of first Appellate Authorities, PIOs, etc. amongst others, besides access to RTI related information / disclosures published on the web by various Public Authorities under the Government of India as well as the State Governments.

Under this historic and enabling Act, the Government of India has empowered the citizen to make Governments more transparent and accountable.

Strengthening of the Act

Based on the experiences of the implementation of this Act, several guidelines and approach papers have been released by the Department, including national wide discussions on need for a Legislation on Privacy and a legal framework Data Protection and Security and Privacy Norms are being discussed. RTI Act itself has also been modified in response to public feedback.

Several citizen groups have actively engaged with Government to seek information and address concerns. Greater public awareness and wider capacity building of citizen and government officials are required to further strengthen this Act and its impact.

2.1.5 Community Radio Policy (2002 and 2006) – Giving Voice to the Voiceless[8]

The Ministry of Information and Broadcasting has since December 2002 opened up the Air Waves to academic institutions, and later on 4 December 2006 extended this to community based organisations, agriculture institutions and trusts. Now all these institutions can also obtain licenses to run, manage and operate community radio stations. This is a hugely empowering tool to provide cultural expression, conserve languages, diversity and voice to the community – an innovative and Inclusive Policy. Since 2004, nearly 109 Community Radio Stations have been accorded licenses.

2.1.6 National Skills Development Mission[9]

The National Skills Development Corporation India (NSDC) is a one of its kind, Public Private Partnership in India. It aims to promote skill development by catalyzing creation of large, quality, for-profit vocational institutions. It provides viability gap funding to build scalable, for-profit vocational training initiatives. Its mandate is also to enable support systems such as quality assurance, information systems and train the trainer academies either directly or through partnerships.

Vision

The NSDC was set up as part of a National Skill Development Mission to fulfill the growing need in India for skilled manpower across sectors and narrow the existing gap between the demand and supply of skills.

The Finance Minister announced the formation of the National Skill Development Corporation India (NSDC) in his Budget Speech (2008-09):

[7] *http://rfi.gov.on*
[8] *http://mib.nic.in/writereaddata/html_en_files/crs/CRBGUIDELINES041206.pdf*
[9] *http://nsdcindia.org*

Objective

To contribute significantly (about 30 per cent) to the overall target of skilling/upskilling 500 million people in India by 2022, mainly by fostering private sector initiatives in skill development programmes and providing viability gap funding.

Mission Statement

- Upgrade skills to international standards through significant industry involvement and develop necessary frameworks for standards, curriculum and quality assurance
- Enhance, support and coordinate private sector initiatives for skill development through appropriate Public-Private Partnership (PPP) models; strive for significant operational and financial involvement from the private sector
- Focus on underprivileged sections of society and backward regions of the country thereby enabling a move out of poverty; similarly, focus significantly on the unorganized or informal sector workforce
- Play the role of a 'market-maker' by bringing financing or viability gap funding, particularly in sectors where market mechanisms are ineffective or missing
- Prioritize initiatives that can have a multiplier or catalytic effect as opposed to one-off impact

More details on the initiative are available at the URL http://www.nsdcindia.org/

2.2 Information and Communication Infrastructure

India has become one of the most sought after destination for software development, IT-enabled Services and Telecommunications over past decade. India holds skilled manpower and infrastructure in these niche segments which attracts foreign investments like magnet. There is active and healthy competition amongst states in attracting investments in infrastructure as well as designing IT solutions in areas such as e-Governance, e-Learning, e-Commerce, entrepreneurship and software exports. The government is also making continuous efforts to make Foreign Direct Investment (FDI) policies more attractive and investor-friendly, with a view to make India an investment hub for all the major countries.

2.2.1 Mobile usage in India

Explosive is the only way to describe the growth of mobile phone subscribers in developing countries. India, with its more than 800 million subscribers as on March 2011 offers a unique proposition to develop into world's first truly mobile digital society. In relation to the delivery of public services to the rural citizen, there is a rapidly growing interest in the concept of mobility and the various issues that arise in 'being mobile', both for the individual as well as for the organisation. Therefore after rapidly evolving to e-Governance through the National e-Governance Plan (NeGP), Government of India is planning to move towards m-Governance. While e-Government is the conventional government services made available for citizen through electronic means such as Internet connected computers and other devices, m-Government is defined as the strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, new media services, applications and devices for improving benefits for citizen, business and all Government units.

Penetration *(Source: TRAI, December 2010)*

The Current Scenario:

- Total telephone subscriber base reaches to 787.28 million in Dec-2010
- Wireless subscription reaches to 752.19 Million in Dec-2010
- Overall Tele-density reaches to 66.16% in Dec-2010 with overall urban and rural tele-densities being 147.88% and 31.18% respectively
- Wireless Tele-density reaches to 63.22% with urban and rural teledensities being 140.53% and 30.11% respectively
- Broadband subscription reaches to 10.92 million in Dec-2010
- Mobile subscription and usage is cheaper than the Internet
- Mobile phones are the most comfortable mode to access services while on the move

In order to leaverage the potential of mobiles in delivering information and services GoI has formulated a policy on mobile governance.

Under the proposed policy on Mobile Governance for India, the Government proposes to:

a) Build an enabling mobile governance service delivery infrastructure integrated with and as an extension of the existing infrastructure created under the National e-Governance Plan (NeGP) and UID initiative. Additionally a suitable mechanism to pay for public services through mobile phones will also be developed.
b) Identify key services for delivery though mobile governance based upon the demand survey through stakeholder consultations, develop and test Proof of Concept (POCs) for the same by commissioning pilot projects before the national roll out of the services.
c) Formulate and notify the standards for mobile governance in order to ensure interoperability of services across multiple service providers and multiple Government departments
d) Formulate and apply a project assessment framework for the Government agencies to ensure compliance of services planned under the Mobile Governance Policy with an aim to have at least 5 mobile based services in each of the mission mode projects of NeGP
e) Create a state of the art knowledge portal as well as various toolkits for deployment of mobile governance. The aim will be to make India a thought leader as well as a global role model in the domain of mobile governance

f) Develop and deploy innovative PPP and Multi-Stakeholder Partnership (MSP) models for design and delivery of mobile governance services as well as to encourage development of cloud based implementation models and use of light technologies. This will ensure replication of innovative services across states without having to spend the public money on reinvention

g) Create an Innovation Fund to encourage and incentivise development of next generation public services by participation of all the stakeholder groups in nation building

h) Deployment of an appropriate capacity building framework to enhance both delivery and absorption capacity for m-Governance services.

2.2.2 Software and Services Sector

The Indian IT industry has been steered clear through recession owing to rapid boost in the domestic markets, augmented by significant contributions from emerging markets. Growth drivers include a thrust on platform Business Process Outsourcing (BPO), Analytics, Finance and Accounting, Remote Infrastructure Management and Cloud Services

According to a report titled 'Internet's New bn', by the Boston Consulting Group (BCG), India will see its number of Internet users triple to 237 million by 2015, from 81 million registered in September 2010. The report also stated that Internet penetration rate in India is expected to reach 19 per cent by 2015, up from the current 7 per cent. Some key figures are as mentioned below:

- For FY12, the software and services sector is expected to grow at 16-18 per cent with US$ 68-70 billion in revenues. The domestic market is estimated to grow by 15-17 per cent with revenues of ₹ 90,000-92,000 crore (about US$ 19-20 billion)
- The Indian IT-BPO sector is estimated to have grown by 19 per cent in 2010-11 to US$ 76 billion in revenues. Exports continued to be the mainstay of the industry with revenues of US$ 59 billion, growing at 18.7 per cent. Domestic market, on the other hand, grew 16 per cent , to aggregate ₹ 78,700 crore (about US$ 17 billion)
- IT enabled services sector is estimated to have grown by 2.4 per cent in 2010, and is expected to expand by another 4.2 per cent in 2011

2.2.3 Internet Governance

Information and Communication Technology (ICT) together with Internet is making it possible to share vast amounts of knowledge and information and is driving all round socio-economic changes and growth. Establishment of National Information Infrastructure and promotion of Internet is now of critical importance. **Internet Governance** encompasses all activities pertaining to the management of the Critical Internet resources and other Internet Protocol related technologies, applications, resources and services. This implies formulation of regulatory and governing policies of shared principles, norms, rules, decision making procedures and programmes that shape the evolution and use of the Internet by Governments in cooperation/consultation with the private sector and civil society concerning their respective roles. Some of the initiatives of DIT in this area include:

National Internet Exchange of India (NIXI)[10]

NIXI is a not for profit Organisation under Section 25 of the Companies Act 1956, and was registered on 19th July, 2003. NIXI was set up for peering of Internet Service Providers (ISPs) for the purpose of routing the domestic traffic within the country, instead of taking it all outside of India to US/other countries, thereby resulting in better quality of service (reduced latency) and reduced bandwidth charges for ISPs by saving on International Bandwidth. NIXI is managed and operated on a Neutral basis, in line with the best practices for such initiatives globally.

Since 2005, NIXI also manages the .IN Registry. The National Internet Exchange of India is the neutral meeting point of the ISPs in India. Its main purpose is to facilitate exchange of domestic Internet traffic between the peering ISP members. This enables more efficient use of international bandwidth, saving foreign exchange. It also improves the Quality of Services for the customers of member ISPs, by avoiding multiple international hops and thus reducing latency. The detailed information about the functions of NIXI may be accessed at http://nixi.in

Background

The Domestic Internet Scenario in India is unique with several large and small ISPs spread across a large geographical area. The policy described below attempts at addressing the concerns of the large as well as the small ISPs at the same time keeping the larger national interest in mind by promoting domestic hosting of content as well as saving foreign exchange by keeping domestic traffic within India.

Basic Routing Policy

- An ISP at any NIXI node must at a minimum announce all its regional routes to the NIXI router at that NIXI location. All ISPs connecting to that NIXI node are entitled to receive these routes using a single Border Gateway Protocol (BGP) session with the NIXI router. This will guarantee the exchange of regional traffic within a NIXI node. This is referred to as forced regional multi-lateral peering under the policy
- In the event, one NIXI member is already providing transit to another NIXI member, the exchange of regional routes mentioned in above, may also happen using a separate private connection between the ISPs
- ISPs should announce only those routes that belong to their (Asynchronous Switch) AS, i.e their own network, and their customer routes at the NIXI. An ISP in any region can aggregate traffic from other ISPs in the region and connect to the NIXI through a single connection
- The NIXI router will only exchange information but not carry any transit traffic
- All NIXI members must ensure that they suitably and proactively upgrade capacity from time-to-time so that they do not end up dropping traffic that other peers are exchanging with them. An ISP must upgrade its port capacity or take additional port if 95th percentile of its OUT or IN traffic in a month crosses 70% of its port capacity, for 3 months

Establishment of Nationwide Quality of Service (QoS) Network Test Bed

A Multi Protocol Label Switching (MPLS) network test bed has been established among 7 institutions to demonstrate Quality of Service assured network based applications and services. The project has also evolved traffic engineering principles and standards/protocols and traffic monitoring tools for QoS assured network based services and applications viz. Distance Education, IP telephony and Videoconferencing.

[10] *http://nixi.in*

Internationalized Domain Names - Implementation for all major Indian Languages of India

ICANN announced on October 27, 2009 that it is now ready to allow Country Code Top Level Domain Names (ccTLDs) in a few non-Latin scripts on fast track process. DIT will be submitting request for Hindi and a few other Indian languages. The Domain Name Policy for registration of Domain Names has been drafted. Consultation with States will be undertaken. On finalization, it will be put on the website of DIT and C-DAC.

Registration of Domain Names in about 5 - 6 Indian Scripts will be rolled out after the IDN Policy is vetted and a countrywide consensus is achieved. Domain Names in about dozen official Indian languages would then be available for registration.

Migration from IPv4 to IPv6

DIT is supporting workshops and seminars on the need for early adoption of IPv6, training of professionals and network operators in deployment of IPv6 and dual stack architectural setup of existing IPv4 network to make the network IPv6 ready and the development of applications and services that would increase the demand for IPv6 in the country.

e-Infrastructure initiatives of DIT[11]

Introduction

Information and Communication Technology (ICT) together with Internet is making it possible to share vast amount of knowledge and information and is driving all round socio-economic changes and growth. e-Infrastructure will be the key enabler for the information and knowledge society. **e-Infrastructure** comprises tools, facilities and resources that are needed for advanced collaboration and includes integration of various technologies such as Internet broadband channels, computing power, bandwidth provisioning, data storage, grid based resource sharing, etc.

To sustain the growth of Information and Communication Technologies (ICT) and to meet the challenges of globalization leading to highly competitive markets, there is a continuing need to invest in quality infrastructure, promote R&D efforts, create intellectual property in communications, Internet and broadband technologies, and address the related policy issues.

Software Technology Parks of India (STPI)[12]

Software Technology Parks of India (STPI), an autonomous society under Ministry of Communication and Information Technology, Department of Information Technology, Government of India has been set up with distinct focus to boost up software export from the country.

The objectives of the Software Technology Parks of India are:

- To promote the development and export of software and software services including Information Technology (IT) Enabled Services (ITES)/Biotechnology IT (Bio- IT)
- To provide statutory and other promotional services to the exporters by implementing Software Technology Parks (STP)/ Electronics and Hardware Technology Parks (EHTP) Schemes and other such schemes that may be formulated and entrusted by the Government from time to time

[11] *http://mit.gov.in*
[12] *http://stpi.in*

- To provide data communication services including value added services to IT/IT Enabled Services (ITES) related industries
- To promote micro, small and medium entrepreneurs by creating environment conducive for entrepreneurship in the field of IT/ITES
- To establish and manage infrastructure resources such as Datacom facilities, Project Management, Consultancy and IT support facilities

STPI is one of the first data communication carriers of India. STPI also holds the Category-A Internet Service Provider (ISP) license with operational jurisdiction covering the entire country. STPI offers leased line services to the premium segment, where quality is of utmost concern.

a. Establishment of Bio IT Park

The e-Infrastructure Division is striving to promote Bio-IT activities in the country, Professional manpower creation in Bio IT field, R&D development in Bio-IT area, knowledge sharing with national and international companies. So far, only two States viz. Karnataka and Tamil Nadu have expressed interest to set up Bio-IT Facility. Process is currently underway to set up a Bio-IT facility in Bengaluru.

b. Information Technology Investment Regions (ITIR)

Information Technology Investment Regions (ITIR) scheme has been notified in the Gazette of India under which each State in India can set up an integrated township for facilitating growth of IT/BPO and Sunrise Industries with world class infrastructure in India.

c. Trans Eurasia Information Network - Phase 3 (TEIN3) under EU Co- operation

Trans Eurasia Information Network Phase-3 (TEIN3) is being set up under India EU Cooperation on Information Society Technologies (IST) Programme, to link ERNET India with European Research Network GEANT Network in Europe through collaboration between ERNET and Delivery of Advanced Network Technology to Europe Limited (DANTE) to produce a reliable and efficient connectivity between the two research communities so that the various network resources can be shared. A bandwidth of 45 Mbps connectivity was made operational from August 06 to various academic and R&D institutions to share data research information and build a partnership in the area of Information Technology, Life Sciences, genomic, biotechnology, material science, environmental science, etc. India is an important beneficiary and partner in this project. About 80% of the contributions are being borne by European Commission and remaining 20% is to be contributed by the participating countries in South East Asia to meet the core costs and the access charges. The total estimated contribution from India is of the order of ₹ 220 million over next 2 years for connecting India to Europe as well as Singapore hubs with protected links of 2.5 Gbps.

India's participation will be continued and further strengthened in terms of promoting applications and usage of the network and its up gradation as and when required.

d. ICT Vocational Centres for Skill Creation for the Children with Disabilities in the area of Information Technology

20 ICT Vocational Centres for training the physically challenged children were set up in Phase-I. The less privileged children in the proximity of these centres have learnt ICT skills enabling them to seek employment and earn livelihood. The infrastructure at schools is connected to LAN and Internet to explore the World Wide Web (www) also. In Phase II, the centres set up in Phase I are being maintained as well as the project has been launched for setting up 100 ICT Vocational

Centres in different parts of the country. 50 ICT vocational centres have already been identified in consultation with States/UTs and are under implementation through ERNET India.

The remaining 50 ICT Vocational Centres were also set up by December 2010. Ministry of Social Justice and Empowerment was requested to carry forward the scheme.

e. Setting up of ICT based distance training facility for Special Education

For providing distance training to the special educators, parents and teachers of children with special needs, a project has been initiated in e-Infrastructure Division with the following main objectives:-

- To provide infrastructure facility for imparting distance training for the teachers and other rehabilitation professionals in the field of special education coming in the region of EDUSAT southern foot print
- Design and implement innovative programmes for parents of differently abled persons and introduce the use of ICT in the process of programming the children with mental retardation and associates disabilities.
- The project envisages setting up of 20 Satellite Interactive Terminals (SITs) and 80 Receive Only Terminals (ROTs) at special/ SSA schools and institutions selected in the State of Kerala, Tamil Nadu and Karnataka with a total budget outlay of ₹ 442.72 lakhs over a period of 3 years

After receiving the equipment for SITs and ROTs, installation, commissioning is to be carried out to start the training work.

f. Creating Knowledge Data Centre (KDC) at Anna University, Chennai

The project envisages establishment of a Knowledge Data Centre to provide services like e-Education, digital library and technology resource centre for students and community of Tamil Nadu. The project is in early stage of implementation Anna University is collaborating with Sun Microsystems to execute the project on turnkey basis. Infrastructure and web content development for educational content access for 50,000 to 100,000 students in the first phase and then provide resources to tie up collaborative e-Content courses for students and community.

2.3 Access to Information and Knowledge

INFLIBNET

The Information and Library Network (INFLIBNET) Centre is an autonomous Inter-University Centre (IUC) of the University Grants Commission (UGC) located at the Gujarat University Campus, Ahmedabad. Major activities and services of the Centre are geared towards modernization of academic libraries and information centres, to promote information transfer and access, to support scholarship, learning and academic pursuits.

The Centre acts as a nodal agency for networking of libraries and information centres in universities, institutions of higher learning and R and D institutions in India. The Centre was established as an independent autonomous Inter-University Centre of the UGC in May 1996 and set out to be a major player for promoting scholarly communication among academicians and researchers across the country.

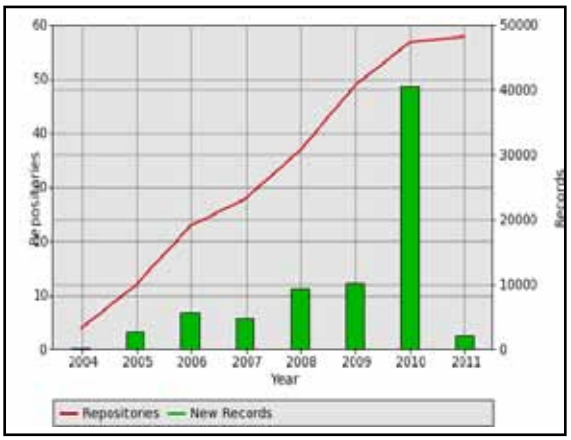
The technology being a driving force in the contemporary education system, the UGC had taken-up two major initiatives for academic community in universities under its purview.

The first initiative, namely '**UGC-Infonet Connectivity Programme**' provides ICT infrastructure for networking of university campuses with state-of-the-art campus-wide network and Internet bandwidth, the second initiative called the **UGC-Infonet Digital Library Consortium** provides access to selected scholarly electronic journals and databases in different disciplines. The INFLIBNET is responsible for execution and monitoring of both the initiatives.

DELNET was started at the India International Centre Library in January 1988 and was registered as a society in 1992. It was initially supported by the National Information System for Science and Technology (**NISSAT**), Department of Scientific and Industrial Reseach, Government of India. It was subsequently supported by the National Informatics Centre, Department of Information Technology, Ministry of Communications and Information Technology, Government of India and The Ministry of Culture, Government of India.

Vidyanidhi

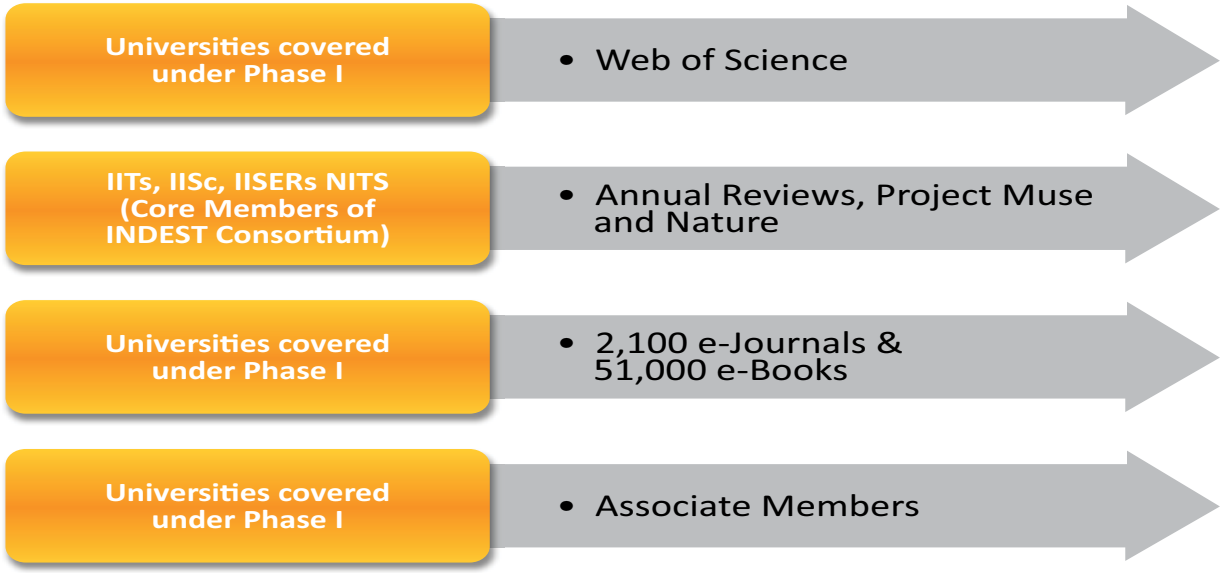
Vidyanidhi is a premier Digital Library initiative to facilitate the creation, archiving and accessing of doctoral theses. It is envisioned to evolve as national repository and a consortium for e-Theses through participation and partnership with universities, academic institutions and other stakeolders. It is supported by NISSAT, Government of India, The Ford Foundation and Microsoft India.



Growth of Institutional Repositories and Records in India (ROAR, 2011)

National Library and Information Services Infrastructure for Scholarly content (N-LIST) (Source: Seminar on Open Access, UNESCO, Feb 2011)

The project is funded by Ministry of Human Resources (MHRD) under its National Mission on Education Though ICT.



Beneficiary Institutions

DAE Consortium

Funded by the Department of Atomic Energy and administered by Bhabha Atomic Research Centre (BARC), Mumbai. Its access is restricted to 36 DAE institutions including BARC and Tata Institute of Fundamental Research (TIFR). It provides access to 2000 e-journals

Consortium for e-Resources in Agriculture (CERA)

The project was commissioned by the National Plan Implementation Unit in 2006 and executed by Indian Agricultural Research Institute (IARI). It provides access to more than 2000 journals on agricultural sciences to more than 100 ICAR institutes and 46 Universities.

Department of Biotechnology (DBT) Electronic Library Consortium (DeLCON)

Executed by National Brain Research Centre (NBRC) and funded by Department of Biotechnology. It benefits 10 DBT institutions and 24 institutions in North East. It subscribes to 917 journals and Scopus database.

MCIT Library Consortium[13]

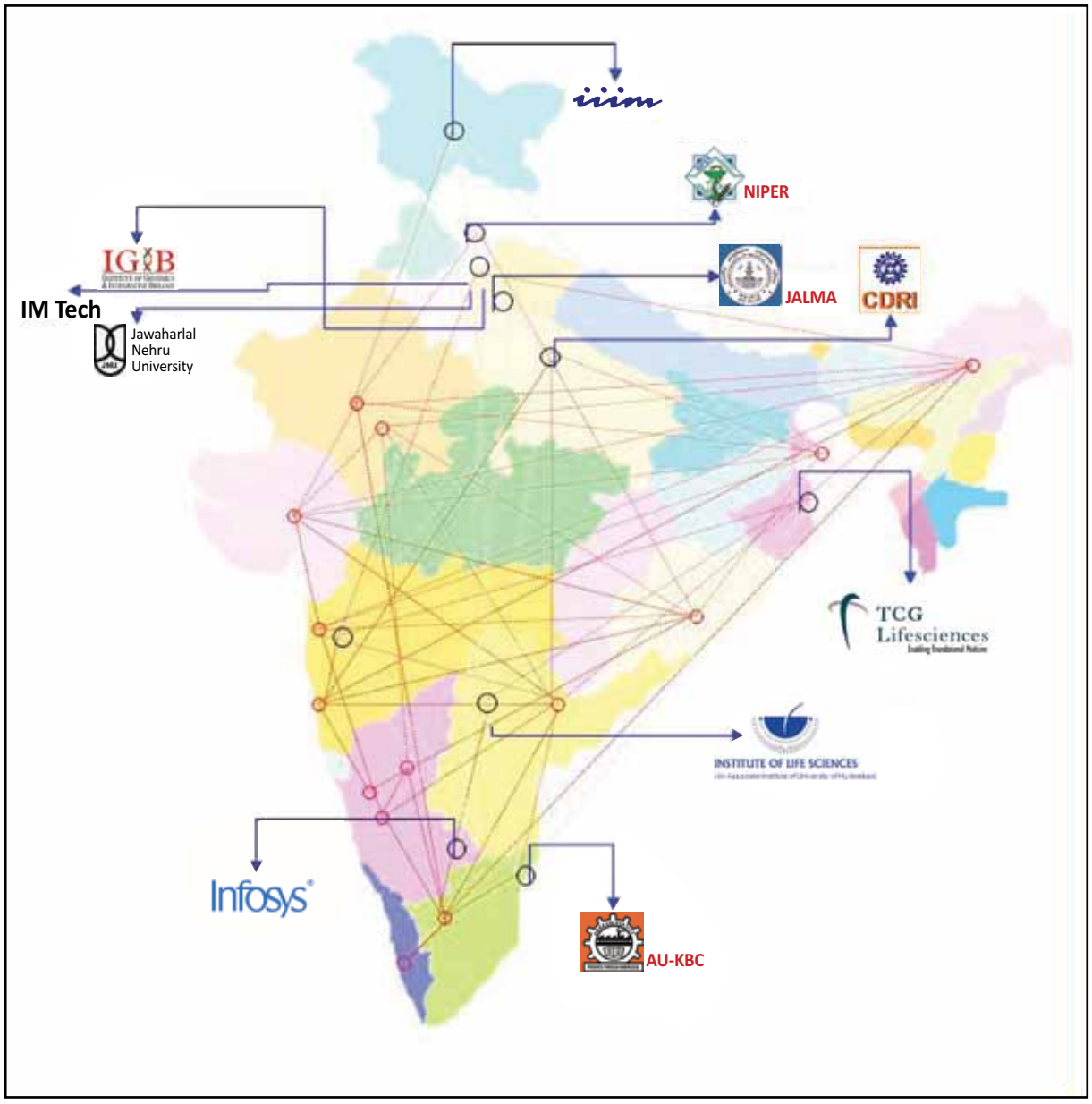
Funded by Department of Communication and Information Technology and administered by BARC, Mumbai. Its access is restricted to 18 institutions including NIC, CDAT and CDOT. It provides access to 2000 e-Journals.

[13] *http://mcitconsortium.nic.in*

Open Source Drug Discovery Project

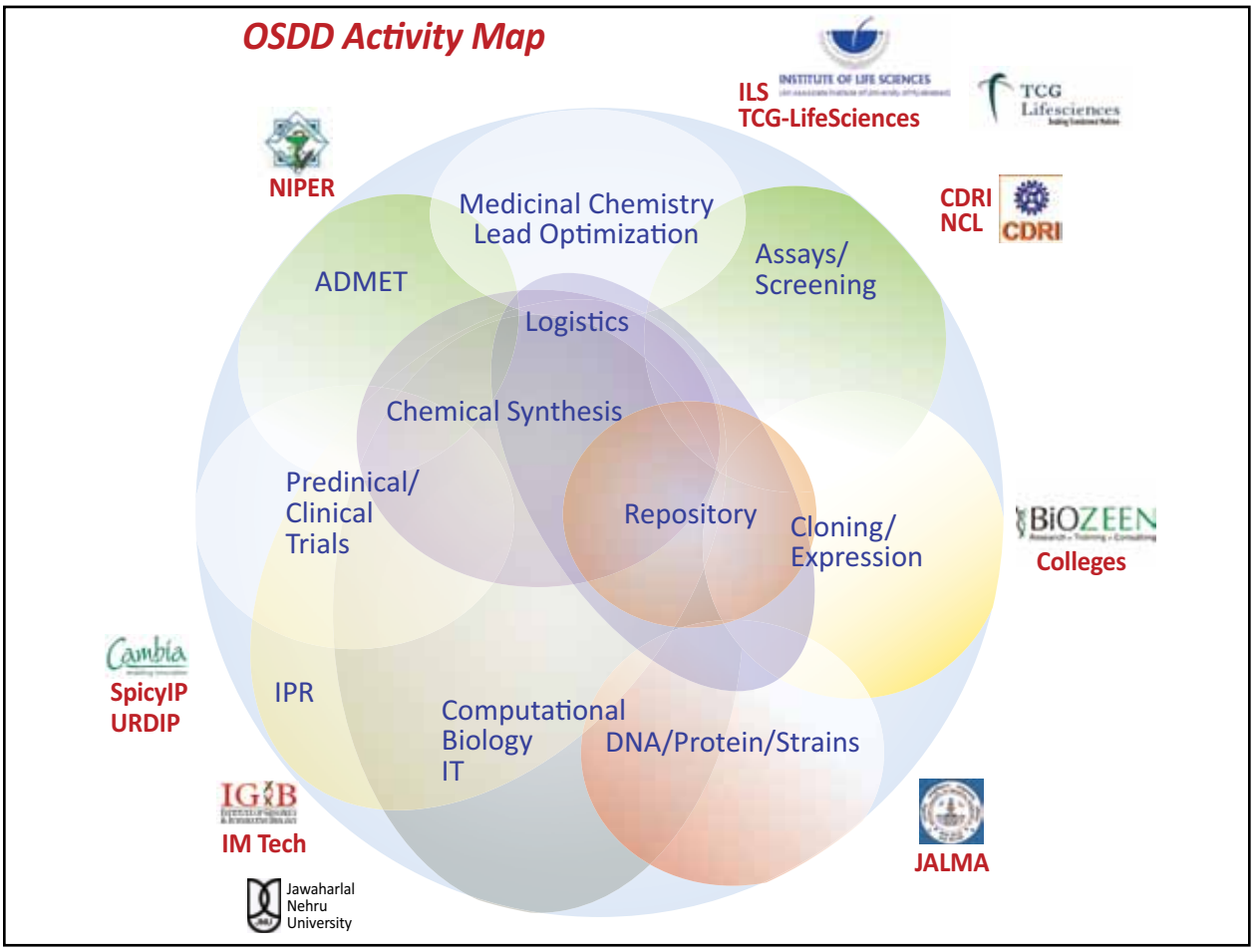
OSDD is a Council of Scientific and Industrial Research (CSIR) Team India Consortium with Global Partnership with a vision to provide affordable healthcare to the developing world by providing a global platform where the best minds can collaborate and collectively endeavor to solve the complex problems associated with discovering novel therapies for neglected tropical diseases like Malaria, Tuberculosis, Leshmaniasis, etc. It is a concept to collaboratively aggregate the biological and genetic information available to scientists in order to use it to hasten the formulation of drugs. This will provide a unique opportunity for scientists, doctors, technocrats, students and others with diverse expertise to work for a common cause.

OPEN SOURCE DRUG DISCOVERY



OSDD Distributed Virtual Laboratory and some current partners

The success of the Open Source models in Information Technology (e.g., Web Technology, The Linux Operating System) and Biotechnology (Human Genome Sequencing) sectors highlights the urgent need to initiate a similar models in healthcare, i.e., an Open Source model for Drug Discovery. This success has encouraged many researchers to join the OSDD consortium of scientific organisations.



Access to research material and resources is one of the major constraints that researchers face. Often scientists have to rely on bilateral collaboration to further their research goals. Faster access to a standard set of resources not only would accelerate the pace of research in Tuberculosis, but also would enable the comparison and integration of research data. Identifying access limitations as a major roadblock for accelerated research into discovering novel therapeutics for Tuberculosis, OSDD announced the creation of an Open Access Repository for research material. This includes repository of clinical isolates, small molecules, clones and proteins.

The resource would be populated by contributions from researchers, clinicians and organisations including pharmaceutical Industries, and would also be available to all free of cost through the OSDD portal on request. Government of India encourages open source collaborations like the OSDD for similar research endeavours. The resources are available on a common, and shareable data format.

2.4 Capacity Building

The Department of IT drafted the Guidelines for Capacity Building in 2005[14]

On January 10, 2008 GoI approved, through the Cabinet Committee on Economic Affairs, the Capacity Building Scheme for taking National e-Governance Plan (NeGP) forward across the country in all the States and Union Territories (UTs). The scheme is mainly designed for providing technical and professional support to State level policy and decision-making bodies and to develop specialized skills for e-Governance. The scheme has an outlay of ₹ 313 crore (~$ 68 Mn) for a period of three years and will be implemented by the Department of Information Technology. The scheme envisions:

(i) Coordination and implementation of the Scheme

(i) Establishment of Institutional Framework for State Level Strategic decision-making including setting-up of State e-Governance Mission Team (SeMT)

(ii) Imparting of specialized training, orientation programme for SeMTs and decision makers (state legislature and senior bureaucrats), as well as for knowledge sharing and bringing in international best practices

(iii) Strengthening of Training Institutions in States

The approval would help in setting up of a central Capacity Building Management Cell under the chairmanship of Secretary (IT) especially set-up for the Scheme.

The CB Scheme will support Capacity Building through various means such as engaging experts, developing skills, imparting training and supporting the creation of State e-Governance Mission Teams (SeMTs) and Project e-Governance Mission Teams (PeMTs).

SeMT – State e-Governance Mission Team is a part of the programme conceptualised to provide professional expertise to Government Officials at the State Level. The strengthening of the SeMT teams is to enable states gain ground experience and expertise in the domain of Progamme Management, Change Management, Technology Management and Financial Management.

This team shall oversee project execution, manage implementation and deal with technology, process, external agency management and change management related issues. A total of approximately 328 professionals will be recruited for staffing SeMTs across all 35 States and UTs. These requirements are being sourced through these modes:

[14] *http://www.mit.gov.in/content/guidelines-capacity-building*

- Deputation from various Government, State Government, PSU and Autonomous organisations to National e-Governance Division (NeGD), Media Lab Asia
- Recruitment of candidates from open market to National Institute for Smart Government (NISG)

The SeMTs would be responsible for undertaking the groundwork for providing for an overall direction, standardization and consistency through Programme Management of the e-Governance initiatives in the States. All interdependencies, overlaps, conflicts, standards, overarching architecture, security, legal aspects, etc. across projects as well as core and support infrastructure shared across several projects would fall under the purview of SeMTs and will work in the following key domains:

- Undertake Strategic Planning
- Provide Project Consultancy
- Provide Project Implementation and Post Implementation Support
- Facilitate Setting up of PeMTs
- Perform Core SeMTs Activities
- Day-to-day SeMTs Operations

National Institute for Smart Government (NISG)

NISG is a not-for-profit company incorporated in 2002 (under Section 25 of the Companies Act) with NASSCOM; Department of IT, Ministry of Communication and Information Technology; Department of Administrative Reforms and Public Grievances, Government of India and Government of Andhra Pradesh being its initial promoters. Secretary (Personnel) of GOI, Secretary (IT) of GOI, President of NASSCOM, Additional Secretary (e-Governance) of GOI and CEO of NISG are the Directors of NISG. NISG is being shaped as an institution of excellence in the area of e-Government and operates in the area of providing consulting services in Strategic Planning, Project Development, and Capacity Building. NISG is assisting Government of India and State Government Departments in implementing e-Governance projects and the ambitious National e-Governance Plan (NeGP) by developing strategies and building capacity.

NISG has initiated a one year diploma programme[14] for in-service professionals and officers of the Government (Centre and State).

2.5 Building Confidence and Security in use of ICTs[15]

The Information Technology (Amendment) Act, 2008, which came into effect in October 2009, has added Section 43 (A) to address data security and privacy issues. Section 43 (A) necessitates corporate bodies to protect all personal information they possess on computer resources.

The Indian Computer Emergency Response Team (CERT-In) will act as a national agency to address cyber security incidents. CERT-In will have powers to monitor, collect, analyze, and block information. It is felt that very strict rules are required to govern the functioning of this agency.

Root Certifying Authority of India (RCAI)

The Controller of Certifying Authorities (CCA) has established the RCAI under section 18(b) of the IT Act to digitally sign the public keys of CAs in the country. The RCAI is operated as per the standards laid down under the Act.

[15] *http://searchsecurity.techtarget.in/news/1372824/IT-Amendment-Act-2008-and-its-effect-on-the-Indian-enterprise?asrc=SS_CLA_314606&psrc=CLT_204*

The IT Act provides for the CCA to license and regulate the working of Certifying Authorities and also to ensure that none of the provisions of the Act are violated. The Certifying Authorities (CAs) issue digital signature certificates for electronic authentication of users.

A cyber security strategy has been outlined by DIT to address the strategic objectives for securing country's cyber space and is being implemented through the following major initiatives:

- Security Policy, Compliance and Assurance
- Security Incident Early Warning and Response
- Security training skills/competence development and end user awareness
- Security R&D for Securing the Infrastructure, meeting the domain specific needs and enabling technologies
- Security Promotion and Publicity

In order to highlight the growing threat to information security in India and focus related actions, Government had set up an Inter Departmental Information Security Task Force (ISTF) with National Security Council as the nodal agency. The Task Force studied and deliberated on the issues such as National Information Security threat perceptions, Critical Minimum Infrastructure to be protected, ways and means of ensuring Information Security including identification of relevant technologies, legal procedures required to ensure Information Security and Awareness, Training and Research in Information Security.

In line with the recommendations of the ISTF, the following initiatives have been taken by the Government of India.

- Indian **Computer Emergency Response Team (CERT-In)** has been established to respond to the cyber security incidents and take steps to prevent recurrence of the same
- PKI infrastructure has been set up to support implementation of Information Technology Act and promote use of Digital Signatures
- Government has been supporting R&D activities through premier Academic and Public Sector Institutions in the country
- Information Security Policy Assurance Framework for the protection of Government cyberspace and critical infrastructure has been developed. The Government has mandated implementation of Security Policy in accordance with the Information Security Standard ISO:27001

Currently in India 246 organisations have obtained certification against the Information Security Standard ISO:27001 as against total number of 2814 ISMS certificates issued worldwide. Majority of ISMS certificates issued in India belong to IT/ITES/BPO sectors. Security Auditors have been empanelled for auditing, including vulnerability assessment and penetration testing of computer systems and networks of various organisations of the Government, critical infrastructure organisations and those in other sectors of the Indian economy.

Nationwide Information Security Education and Awareness Programme has been launched

The objectives of the project are:

- To establish a State of the Art Cyber Forensics and Digital Analysis Centre in Kerala for the benefit of Law Enforcement Agencies and other Stakeholders
- To develop Human 'Resources to handle matters related to Cyber' Forensics from among various stake holders
- To educate even the students in basics of Cyber Forensics as a preventive measure against cyber crimes

- To conduct real case analysis and give expert opinion in crime cases, civil disputes to facilitate investigation and to assist Courts
- To reduce the burden on the Cyber Forensics Resources Centre of C-DAC Thiruvananthapuram in order to give more time to the Scientists of C-DAC, Thiruvananthapuram for Research and Development.

CYBER and HI-TECH CRIME INVESTIGATION and TRAINING being executed by Central Bureau of Investigation (CBI) Academy, Ghaziabad

To impart training to cyber crime investigators, forensic examiners and Trainers and potential Trainers of the Police Training Institutions in the country in the fields of - (i) Cyber Crime Investigation and (ii) Cyber Forensics

DSCI-Cert-IN Alignment Programme (Source : Data Security Council Institute (DSCI))

In order to advance the cause of cyber security data protection, both within the Government for e-Governance projects, and for trusted outsourcing to Indian service providers by clients in different parts of world, CERT-In and DSCI signed a Memorandum of Understanding (MoU) on 22nd July 2010.

The purpose of the MoU is to create a framework within which they can jointly explore and work towards improving computer security in the country, and raise cyber security awareness, especially the importance of practices in keeping systems secure, software up-to-date and security practices and procedures current.

NASSCOM-DSCI and CBI Memorandum of Understanding (Source : Data Security Council Institute)

National Association of Software and Services Companies (NASSCOM) and Central Bureau of Investigation (CBI) have entered into a Memorandum of understanding (MoU) to establish collaboration between Law Enforcement Agencies through Cyber and Hi-Tech Crime Investigation and Training (CHCIT) Centre of CBI and the IT industry through Data Security Council of India (DSCI) and NASSCOM.

The MoU will help share better awareness on the emerging technologies, security standards, and best practices amongst various enforcement agencies globally, and in meeting newer challenges in managing cyber crimes while preparing the stakeholders in their ability to educate and update themselves in emerging cyber technologies leading to Cyber Crime Investigation, Training and Computer Forensics. The CHCIT Centre will serve as a networking platform for this purpose and NASSCOM and DSCI will act as a knowledge partner for the CBI in the cyber security areas.

Cyber Security Awareness Project

Department of Information Technology (DIT), Ministry of Communications and Information Technology (MCIT) has entrusted NASSCOM – DSCI with the responsibility of implementing the Cyber Security Awareness Project in the public private partnership mode. As a part of the awareness campaign, DSCI conducted a series of events. The programmes extensively covered audiences from industry sectors like IT/BPO, manufacturing, e-Commerce, e-Governance, telecom, banks, insurance and financial institutions, Public Sector Units (PSUs), law enforcement agencies like Police and Judiciary, Academia, Government, schools and colleges. This project comprises of the following:

1. Cyber Security Awareness Seminars organised on diverse subjects in several cities in India with a view to raise the levels of security preparedness to a wide audience.

- Understanding Wi-Fi cyber attacks - Awareness Seminar on Wireless Security
- Data Protection Imperatives in a Global Delivery Model
- Physical Security and Business Continuity Management
- Cyber Safe Tamil Nadu 2009
- Awareness Seminars on DSCI Best Practices Framework organised in Kolkata, Jaipur and Ahmedabad

2. Security Survey conducted to assess the state of data security in the IT and BPO companies in the Indian industry. The survey also assessed awareness about the IT (Amendment) Act 2008 and the role of CERT-In interface. The survey sampled 153 companies from different industry verticals.

3. Security portal that offer knowledge resources on various aspects of security to all stakeholders. The portal would serve as a platform for raising awareness levels of a wide range of netizens. It also helps to facilitate the network of security and privacy professionals being built across the key cities in India through e-security forums.

4. e-Security forums launched in Hyderabad, Chandigarh, Chennai, Jaipur and Ahmedabad having over 350 security professionals as Chapter members with an aim to promote exchange of security practices. These forums would be instrumental in encouraging knowledge sharing about data security and privacy protection and nurturing a community of security professionals.

5. Development of Computer Based Trainings (CBTs) on topics including Cyber Security Do's and Don'ts, IT (Amendment) Act 2008 and Privacy has been initiated. This will help DSCI to reach out to a wide audience.

6. Development of the Service Provider Assessments Framework has been initiated with the help of a leading consulting firm. The Framework would help in assessing the security preparedness of the service providers.

7. CERT-In Training Programme for Government officers, Public Sector Undertaking (PSUs) and organisations falling under Critical Infrastructure category was initiated. Over 300 officers of various levels have been trained through such training sessions on the following topics:

- Secure Coding for JAVA
- Secure Code Review for Java based applications
- Secure Coding in PHP Developing Defensive Applications
- Secure Code Review for PHP Applications
- Linux Security

- Securing Data Centres
- Network Security
- Security Information and Event Management
- Secure Architecture for System Administrators

8. Importance of security frameworks and standards for 'reasonable security practices'

Project RISE[16]

While the application of biometrics technology is increasing by the day, the use of this technology and its applications is raising a variety of ethical and privacy concerns with biometric identification methods, and on the data storage and subsequent usage. In some of the applications, collection and storage of data are seen to be in violation of the privacy principles preserved in privacy laws such as the EU Data Protection Directive.

More serious issues like intrusiveness of biometric recognition methods, collection of biometric information linked with criminal behaviour, apprehension about loss of privacy or of personal dignity, psychological resistance for contact based sensors in public places, privacy concerns in case the data is not protected properly, etc., are attracting attention of multiple stakeholders across the globe.

It is these issues on Biometric and Ethics that led to the launch of **Rising Pan-European and International Awareness of Biometrics and Security Ethics (RISE)** – a 36 month project by the **European Union** with the aim of promoting Pan-European International Awareness on ethical aspect of biometric technologies. RISE addresses several intersecting areas, security policy-making and responses to the security threats, data protection, ethics, principles of proportionality, biometrics and security technology. These areas are expected to directly benefit by the co-ordination, as proposed by the RISE project, in the following ways:

1. Co-ordination will create synergies and will avoid the duplication of efforts

2. Through the exchange of information, co-ordination will raise the knowledge base of policy-makers and security researchers

3. Co-ordination will help to create opportunity for new research in the field

4. Involvement of the media and their interaction with EU policy makers will help take the message to larger audiences

5. Co-ordination with, and implementation of, dialogue between the policy makers at the international and European level, security agencies and industry will help to build a consensus

Project RISE is similar to a Consortium comprising 10 partners that include 6 from the EU and 3 non-EU countries (USA, India **- Data Security Council of India (DSCI)** and China). All the inter-disciplinary competencies needed to fulfill the project objectives including ethics, technology, politics, social sciences and international affairs and economics are represented through these 10 partners. As part of this project, an international conference was hosted in Hong Kong in 2010. This was the third conference, the first two, as mentioned above, were held in Brussels and Washington DC.

As a part of the Project RISE work plan, DSCI organized a conference titled India Preparatory Meeting. The programme deliberated around the theme of identifying and defining the differences between nations that drive assumptions upon which security and biometric policies are based. The meeting was focused on:

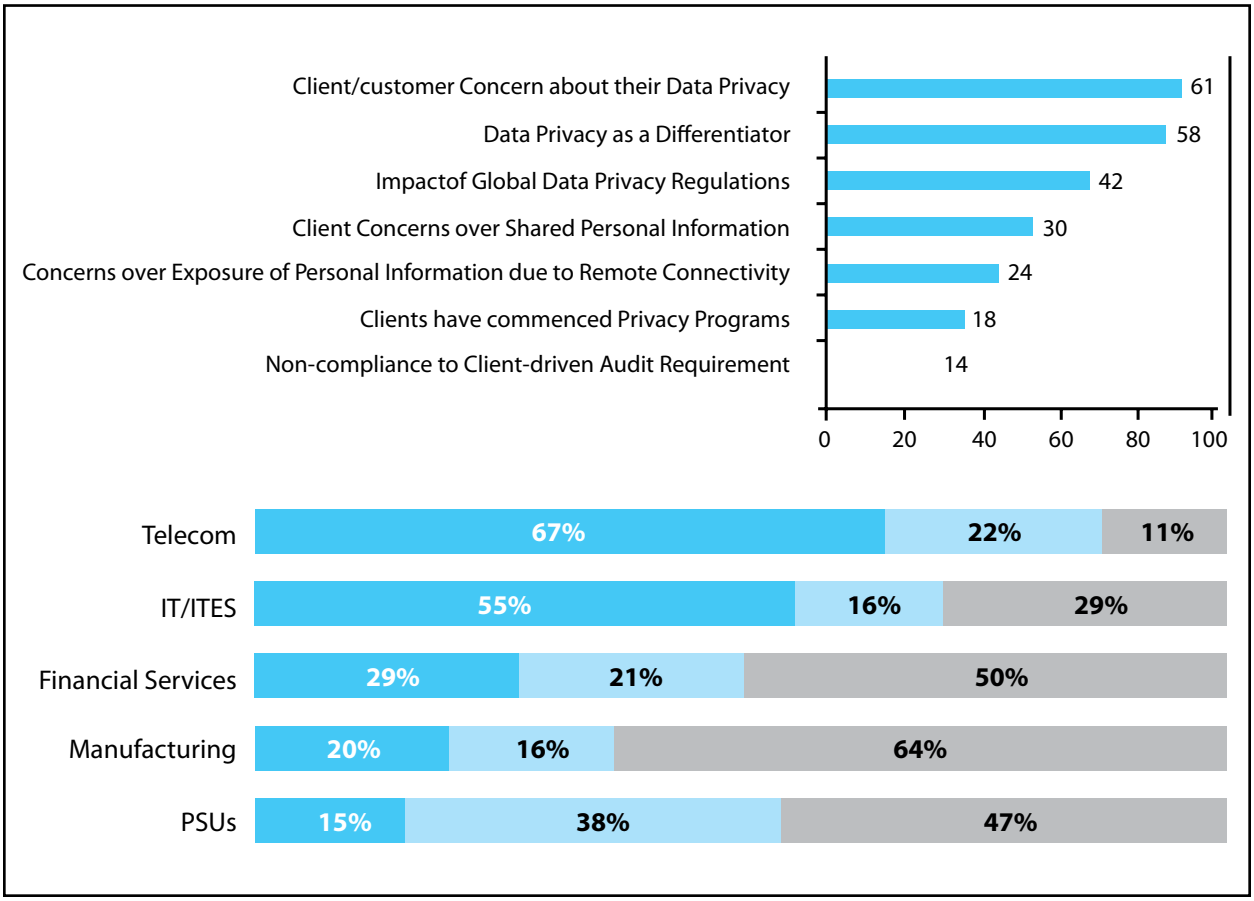
[16] *http://riseproject.eu*

- Differences and commonalities between ASEM States and the EU and the US as per ethics and privacy of biometrics and security technologies
- Privacy and Data Protection standards for India's IT and BPO industry according to DSCI

Objectives of Project RISE

The objective is to address several intersecting areas including security policy-making and responses to the security threats, data protection, biometric and security technology.

- Some biometric identification methods are relatively intrusive (like retina scans)
- People associate the gathering of biometric information like fingerprints with criminal behavior
- People tend to feel a loss of privacy or personal dignity, since detailed biometric information has been traditionally collected by institutions like the military or police



Data Privacy Concerns

Resource Centre for Cyber Forensics(RCCF)[17]

RCCF is a pioneering institute pursuing research activities in the areas of Cyber Forensics. The centre was started on August 2008 in C-DAC, Thiruvananthapuram, Kerala. The centre is dedicated to the indegenous development of Hardware and Software tools for Cyber Forensics in the area of Disk Forensics, Network forensics, Peripheral forensics and providing quality services in Cyber Forensics related cases

[17] *www.cyberforensics.in*
[18] *http://shodhganga.inflibnet.ac.in/dxml/bitstream/handle/1944/1262/293-299.pdf?sequence=1*

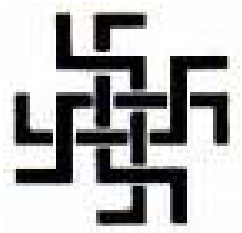
2.6 Cultural Diversity and Identity, Linguistic Diversity and Local Content[18]

Worldwide digital library initiatives are now resulting in form of various digital libraries. At present, digitization of both print as well as non-print material is going at a very fast pace in India. A lot of information is now 'born digital'. The large amount of digital content available in the libraries and archives of various institutions in India need to be managed and preserved for long time. This is a very daunting task. Challenges in Long Term Digital Preservation have just started getting due attention of the digital library experts worldwide.

2.6.1 Multilingualisation of the Internet

Development Implementation of Internationalised Doamin Names (IDN) Policies (ABNF and Language Tables) for Registrars and Making IDN Indian Languages Compliant by Centre for Development of Advanced Computing (CDAC) Pune: The project is to develop and test all the backend registration processing tools for registration of Domain Names in all the 22 constitutionally recognized Indian Languages by Registrar/registry and front-end Graphical User Interface (GUI) for registrant and registrar. IDN floating Keyboards, language Look up tables, software for registration of valid domain names without replication worldwide will be developed under the project.

Indira Gandhi National Centre for the Arts[19], National Mission for Manuscripts, Universal Digital Library, Vidyanidhi are some of the organisations who had undertaken some initiatives on Digital Preservation in India. The Indira Gandhi National Centre for the Arts (IGNCA), New Delhi, is visualized as a centre encompassing the study and experience of all the arts, each form with its own integrity, yet within a dimension of mutual interdependence, interrelated with nature, social structure and cosmology. IGNCA, is a premier research organisation in the field of Indian Art and Culture.



Kalanidhi Division of IGNCA is a National Information System and Databank of the arts, humanities, Cultural Heritage, etc. A fully supported Reference Library of multi-media collection, the information system in databank for research in humanities, in the arts and disciplines of archaeology, anthropology, philosophy, literature, art and craft, etc. is at the disposal of all researchers in India and abroad in the said field. One of the Prime aims of IGNCA is to serve as a major resource centre for the Arts, especially primary material, written oral and visual. Collections of about 200,000 cultural archival material alongwith 1700 rare books are some of the unique collections at Kalanidhi Division. 250,000 manuscript in microfilming format, 100,000 visuals more than 1000 hours of Audio Video recordings, 9 personal collections of eminent scholars and artists, photographic collection of eminent photographers such as Lala Deen Dayal are some of the other points of attraction at Kalanidhi. The following initiatives describe the digital conservation efforts under Kalanidhi:

[19] *http://www.ignca.nic.in*

Micro Film/Microfiche

Millions of India manuscripts are no longer accessible to research scholars in the original. It is proposed to develop a microfilm/microfiche library of unpublished manuscripts in India and foreign collections. This is a long-range programme, which will cover private and public libraries in India and abroad. Steps have been initiated to acquire on a selected basis microfilm/microfiche, from the collection of Durbar Library, Nepal; the Staats Bibliothek, Berlin; the Bibliothique Nationale, France and British Library, UK. Manuscripts already available in microfilm or microfiche form such as Tibtetan Collection and other Sanskrit manuscript in the IASWR programme have been acquired. Presently the microfiche collection of IGNCA reference library comprises a large number of back volumes of research journals in microfiche form. Important amongst these are British Burma Gazetteer; Bulletin de I' Ecole Francaise de Extreme Orient; Journal of Royal Asiatic Society of Great Britain; New India Antiquary; and Tamil Culture. Half of the material have already been digitized and added to the Digital Library of the Centre.

Visual Library and Slide Collection

Non-book material has assumed greater importance in the total resources of a library in which slides form an important storage medium for art and museum libraries. A concerted effort is being made to establish a large photograph and slide library. Here also the focus is on developing a resources centre where documentation on India and Asian art is easily accessible. The Reference Library of the IGNCA has built up selected and valuable visual material, particularly with emphasis on slides of Indian Art, painting, Architecture, and Performing Arts, etc. The library has acquired important slide collection from the Victoria and Albert Museum, Chester Betty Collection through the courtesy of Indian National Trust for Art and Cultural Heritage (INTACH). The American Association of South Asian Art has also gifted a complete set of 8000 slides.

The slide unit of the Reference Library has been in existence since 1989 and over the years it has acquired and generated over 76,737 carefully selected slides from 17 centres in India and 15 centres abroad. The growth rate of the collection is approximately 3,000 slides per year. In addition to the slides there are 300 photo-negatives on Himachal Pradesh (Land and People).The slide Unit of the IGNCA has the largest collection of slides on Indian art viz. painting, sculpture, architecture, illustrated manuscripts, performing arts in India and it the only library in India which is equipped with the proper infrastructure for archival storage, computerization of data, duplication and scanning of slides.

National Information System and Data Bank

Government of India has designated IGNCA as the Nodal Agency for all matters relating to the setting up of a National Data Bank on art, humanities and cultural heritage. The National Data Bank provides computerized storage, retrieval and dissemination of information on all aspects of arts and cultural heritage. This division supports the computerization programme of other divisions of IGNCA and will network institutions in India and abroad as well as undertake supporting Research and Development Projects.

Union Catalogue of Catalogues (CATCAT)

This database provides information on thousands of catalogues of published/unpublished manuscripts. Information from 700 catalogues has been computerized. Data on particular disciplines relating to published/unpublished material can now be retrieved by title, catalogue, repositories of manuscripts from India and abroad. Another 500 catalogues will be scanned for updating.

Manuscripts (MANUS)

The complete descriptive information about 3000 manuscripts of *Gita-Govinda, Meghaduta and Natyasastra* have been computerized as an experimental measure. This reveals the uniform character of the texts in diverse scripts, also variations in commentaries. Descriptive information about all the manuscripts available on the 84 identified fundamental Sanskrit texts being computerized, which will provide the base for providing the variant readings of manuscripts for critical editions planned as part of Kala Kosa Fundamental Text Series.

Art Object (PICTO)

This database will include information on 2D and 3D Objects. At present, information on Elizabeth Brunner's paintings and musical instruments of Shri S. Krishnaswami's collection available with IGNCA has been computerized.

Sound Recordings (SOUND)

This includes information on Vedic Chantings of *Ranayaniya and Jaiminiya Sakha of Samaveda, Paippalada Sakha of Atharvaveda*, etc. Databases on Sangita collections of Cultural Artchives have been developed, namely Natarajan Collection on Carnatic Music and S. Krishnaswami collection of musical instruments.

Kala Kosa Terms Database (KKTERMS)

The database KKTERMS for *Kalatattvakosa* project has been developed. Under this project 250 terms have been identified for the Glossary (Kalatattvakosa). In the initial phase, data relating to 12 selected terms is being computerized.

Cultural Informatics Laboratory (CIL)

CIL was established in 1994 with UNDP assisted multimedia documentation project titled '**Strengthening National Facility for Interactive Multimedia Documentation of Cultural Resources**'.

Under proper guidance from the subject experts, the team became trained in Interactive-multimedia documentation and in-depth analysis of cultural information. This expertise being used to demonstrate how cultural heritage can be recreated virtually, in holistic and integrated perception of culture.

Amongst the areas where the project has broken new ground are the creation of synergies between the disciplines of arts and information technology leading to usage, development and demonstration of new technology and cultural documentation. New design models, development processes and reusable software tools specially targeted at high quality multimedia content creation have been conceived, evolved and applied in some already completed and many ongoing projects.

With the help of Cultural Informatic Laboratory (CIL) at IGNCA Kalanidhi Division is in the process of digitization of all its non-print material and some print material. About 50% of the non-print materials have already been digitized. D-space, an Open Source Digital Library Software has been installed. A digital software has also been developed by CIL.

National Mission for Manuscripts is another important plan of Kalanidhi Division of IGNCA. Online catalogue of about 800,000 cultural resources in MARC 21 is under finalization. Installation of CD mirror server, networking of various Divisions of IGNCA and finalization of various meta

data formats for collection such as photographs, manuscripts, slides and audio-video material are some of the plans under implementation.

Kalasampada: Digital Library : Resources of Indian Cultural Heritage (DL-RICH)

Recognizing the need to encompass and preserve the distributed fragments of Indian art and culture, and to serve as a major resource centre for the arts, the Indira Gandhi National Centre for Arts (IGNCA) in collaboration with Ministry of Communication and Information Technology, initiated a project, KALASAMPDA (Digital Library: Resources of Indian Cultural Heritage), for the development of databank of cultural heritage. Kalasampada facilitates the scholars (users) to access and view the materials including over couple of lakh (1 lakh = 100,000) manuscripts, over 100,000 slides, thousands of rare books, rare photographs, audio and video along with highly researched publications of the IGNCA, from a single window. Multimedia computer technology has been used for the development of a software package that integrates variety of cultural information accessible at one place. This will provide a new dimension in the study of the Indian Art and Culture, in an integrated way, giving due importance to each medium. The system aims at being a digital repository of content and information with a user-friendly interface. The knowledge base thus created will help scholars to explore and visualize information stored in multiple layers.

Digital corpus includes over **50 Lakh folios of manuscript**, over **one lakh slides**, **4000 photographs,** IGNCA published books, Kalakalp (IGNCA's Journal), Vihangama (IGNCA's Newsletter), over 400 hours of audio and video and approximately 50 Walkthroughs. Digitization, post digitization editing and integration are continued to encompass all such materials available in the IGNCA. Preserving digital resources is made difficult by the fact that digital resources can only be read by software. This would mean that in order to ensure long-term access to digital resources, we need to preserve all the software, hardware, and operating systems on which the software ran.

The project has received the prestigious ***GOLDEN ICON Award for Exemplary Implementation for e-Governance Initiative under category Best Documented Knowledge and Case Study for the year 2004*** from the Ministry of Administrative Reforms and Public Grievances, Government of India. The IGNCA's projects on computer aided content exploration systems will intensify Cultural learning and visualisation. The CD-ROMs on *Devadasi Murai, Mukteswara Temple, Rock Art and Ajanta*: A world heritage site from the Maharashtra have been published by the IGNCA. The CD-ROMs on *Devanarayana* (an oral tradition from Rajasthan), *Two Pilgrims* (life and work of Hungarian painters Padmashree Elizabeth Brunner and Mrs. Sass Brunner), *Agnichayana, Vishwarupa, Brhadiswara Temple* and *Gitagovinda* are in the different stages of development.

CoIL-Net – Content development in Indian Language Network is a project sponsored by Ministry of Communication and Information Technology (MCIT). The objectives of the project are:

- To enhance the access to cultural resources using digital technology
- To develop a reusable 'Model Design' and 'Development Process' for implementing user friendly web enabled heritage library for hindi speaking population and other hindi knowing persons in india and abroad
- To implement a web enabled Hindi based multimedia heritage library also offering contextual and vetted links to important websites to contribute towards the socio-economic development of Hindi Speaking region
- To offer carefully selected, thoughtfully compiled and contextually integrated multimedia content on cultural heritage, folk literature and life style of Hindi Speaking region especially the states of Uttar Pradesh, Madhya Pradesh, Bihar, Rajasthan, Chattisgarh, Uttarakhand, Jharkhand through a digital library

2.7 Media

The expansion of television in the 80s and the flourishing of satellite television channels during the 90s, impacted the popularity of radio to some extent. But with the spread of FM Radio stations and the recent spurt in Community Radio, the Radio is staging a brave comeback. While the phone-in-programmes have made Radio more interactive, expansion of community radio stations in recent years has made this medium more locally relevant. Radio is widely used for distance education in India. Currently there are 27 such FM radio stations, devoted exclusively to education and development through regional production and broadcasting across the country. An evaluation study found that 40% of the students listen to IGNOU programmes broadcasted through *Gyan Vani* (www.ignou.ac.in)

In 2010, the Indian Media and Entertainment (M&E) industry registered a growth of 11% over 2009 and touched ₹ 652 billion ($1417 Mn). Backed by positive industry sentiment and growing media consumption, the industry is estimated to achieve a growth rate of 13 percent in 2011. Overall the industry is expected to register a Compounded Annual Growth Rate (CAGR) of 14 percent to touch ₹ 1275 billion by 2015 (Source: FICCI-KPMG Report 2011)

Media Sector Highlights

a. Television: TV Households to surge to ~ 156 million by 2015; digitization and addressability to go mainstream. Advertising and subscription revenues to touch ₹ 214 billion and ₹ 416 billion, respectively Television, meanwhile, saw a tremendous increase in the net Direct To Home (DTH) subscriber base totaling to 28 million at the end of 2010. Backed by growth in advertising and subscription revenues, the television industry grew by 15.5 percent in 2010 and is expected to grow at a CAGR of 16 percent to touch ₹ 630 billion by 2015.

b. Radio: With increase in scale, expected changes in regulation from phase III and music royalty structure, the industry is expected to grow at 20 percent per annum and become profitable. (Source: FICCI-KPMG report 2011).

The key growth driver of the media industry comes from digitization and this trend was even more pronounced in 2010. DTH has achieved robust growth of 75% in net subscriber base by adding 12 million subscribers in 2010. With the regulatory push on digitization, ongoing 3G rollouts, increasing mobile and broadband penetration, the market for digital distribution platforms is only expected to grow. Due to the increasing purchasing power across tier 2 and tier 3 cities, regional media consumption is expected to continue to rise. Geographical expansion by existing players in television, print and radio is expected to intensify competition.

The past decade marked the convergence of media and technology; of user generated content, social media and new publishing models that have changed the way of media consumption. Convergence of media, m-Commerce and emergence of a new economy are the expected trends likely to emerge. Availability of infrastructure and appropriately pricing content across these new media platforms are expected to be critical success factors for the Indian market. The Government's

thrust on digitization and addressability for cable television, is expected to increase the pace of digitization leading to tremendous growth in DTH and digital cable. The phase III auction of radio is expected to add ~700 licenses across tier 3 and a few tier 2 towns. Moreover, TRAI has submitted recommendations to the government to increase the Foreign Direct Investment (FDI) limits across several broadcast and distribution platforms including Radio, TV, DTH and cable.

Prasar Bharati - Public Service Broadcaster[20]

The goal of Public Service Broadcasting (PSB) is to meet community needs, which exist beyond traditional geographic and institutional boundaries. Today, Prasar Bharti through All India Radio (AIR) and Doordarshan (DD) provides maximum coverage of the population and is one of the largest terrestrial networks in the world. In a country, where the literacy rate is at ~64%, this medium has a great potential to inform, educate and entertain people. The immense social responsibility of the Prasar Bharati-AIR and DD is in consonance with the potential of the network as it reaches vast masses of the people throughout the country.

The goal of Public Service Broadcasting the world over is to make information available at doorsteps of everyone. It should be wide ranging in its appeal, reliable, entertaining, instructive and informative serving only one master – the public. It should strive to engage all communities through broadcast of thought provoking programmes and outreach projects. It should channelise the information and ideas that improve communities socially, culturally and economically.

Doordarshan (DD)

Doordarshan, the only public service television broadcaster in the country reaches people of all geographical areas including rural and urban.

Through its various programmes it entertains, informs and educates people. It provides media support to the socio-economic and cultural development of the country, educates people about their rights and responsibilities as a citizen, promotes people's awareness about health and sanitation, instills scientific temperament, helps communal harmony and national integration, propagates universal brotherhood and world peace and meets all the media objectives enshrined in the Prasar Bharati Act, 1990.

Programmes for agriculture and allied activities, rural development, women, children, family welfare, adult education, youth, workers, communal harmony, national integration, health and sanitation, science and technology, sports, civic sense, public awareness about citizen's rights and responsibilities, consumer protection, legal aid, special programmes during natural calamities, socio-cultural functions, news and current affairs, educational programme like school and IGNOU broadcasts, programmes on tribes, sports etc. form about 40% and 44% programmes of DD-1 National and Regional channels, respectively.

About 63% programmes of DD Bharati are on health and fitness, art and culture, children and youth.

DD News channel telecasts mainly news and current affairs programme and about 25% of its programmes are on current affairs including debates/discussions relating to issues of local, regional, national and international importance.

DD Sports channel telecasts mainly sports events and covers sports of national and international importance including indigenous sports like hockey, kabaddi, khokho, etc.

Doordarshan's health programme "Kalyani" funded by the Ministry of Health and Family Welfare,

[20] *http://www.prasarbharati.gov.in*

Government of India has been creating awareness amongst the people on various health issues such as cholera, diarrhoea, tuberculoses, harmful effect of tobacco/smoking, iodine deficiency, HIV AIDS, mother and child care, etc. Agriculture programme under mass media support to agriculture extension sponsored by the Ministry of Agriculture is being telecast on national, regional and local (area specific) level, besides its own agriculture programme on its regional channels in local language/dialects. The programmes on socio-economic and cultural issues have been very helpful in creating public awareness and knowledge about these issues, which is very necessary for the all round development of the people and the country.

DD India channel mainly targets overseas audience in the world with particular emphasis on Indian Diaspora and telecasts programmes of entertainment like serials, feature films, sports, educational programmes on health, sanitation, children and informative programmes like news and current affair etc. for them.

Doordarshan currently reaches 99.14% of the Indian population through a network of 1,414 terrestrial transmitters. Gyan darshan is an exclusive educational television channel of India set up by IGNOU, MoHRD and Prasar Bharati. It provides a blend of core curriculum based programmes in the area of primary, secondary, higher, distance, technical and distance education.

All India Radio (AIR)

The AIR network comprises of the national channel, regional stations, local radio station, Vividh Bharati centres, FM stereo service, external services and North East services. AIR upholds the democratic values enshrined in the Indian constitution. It promotes a fair and balanced flow of information of national, regional, local and international interest, including contrasting news without advocating any opinion or ideology of its own. The phenomenal growth achieved by AIR through seven decades has made it one of the largest media organisations in the world. AIR reaches to all the corners of the country to serve the people. As a public service broadcaster, in the field of education a Science Magazine namely 'Vigyan Bharthi' is broadcast every month. HIV/AIDS awareness programme *'Jeevan Hai Anmol'* at Inauguration of Kisan Vani workshop at AIR Pondicherry sponsored by NACO is broadcast from 184 Primary and Local AIR stations in different languages and dialects. It has the highest impact on listeners as has been gauged by Audience Research Feed-Back survey on this programme, according to which on an any specific day 58.6 Lakh (1 lakh = 100,000) audience listen to this programme. AIR also broadcasts a serial on Girl child titled *'Taru'* and Phone-in-programmes of IGNOU. There are special educational programmes related to Farm and Home named *'Kisan-Vani'.* It is broadcast from 96 AIR FM stations across the country to educate farmers country-wide on Agriculture and allied subjects. The Ministry of Agriculture and Co-operation, Government of India and Prasar Bharati jointly launched this project known as 'Mass Media Support to Agriculture Extension'. There are also special educational programmes related Family Welfare, children and women broadcasted from all the AIR stations.

'GYAN VANI' devoted to education and development on a FM frequency allotted to IGNOU by the Ministry of Information and Broadcasting (MIB), Government of India. Such 40 FM broadcast stations across the country will be established on decentralized model for education and development by IGNOU. Twenty-six Gyan Vani FM stations all over India have already been commissioned at different places across the country. These stations are operating as media cooperatives with day-to-day programmes contributed by different educational institutions, non-governmental organisations and national level institutions like IGNOU, University Grants Commission (UGC), National Council of Educational Research and Training (NCERT), National Open Institute of Schooling (NOIS), etc.

The mandate of Gyan Vani is to carve out a distinct identity from the other radio channels through its distinct educational awareness out-reach mission and cooperative management philosophy. It will serve, as an ideal mass media catering to the local educational, developmental and socio-cultural needs of the community.

All India Radio during the year 2006-07 did a vast coverage on the issues affecting the common man and how the various schemes of the Central government including the ones for the welfare of SC/ST, OBCs, minorities, farmers, unorganized workers, women and youth have fared.

Flagship programmes of the Government such as National Rural Employment Guarantee Scheme, Bharat Nirman and Sarva Siksha Abhiyan, etc. were given special coverage. The Right to Information Act was given top priority in its news bulletins and programmes.

During the year 2006, the pattern of programme composition of broadcast from Primary Channel of the Regional Stations of All India Radio was as follows:

Programme Category	Percentage
Entertainment	42.9
Educational	1.9
Women	2.1
Children	0.9
Rural Environment	0.3
News	23.7
Current Affairs	0.3
Others	23.0

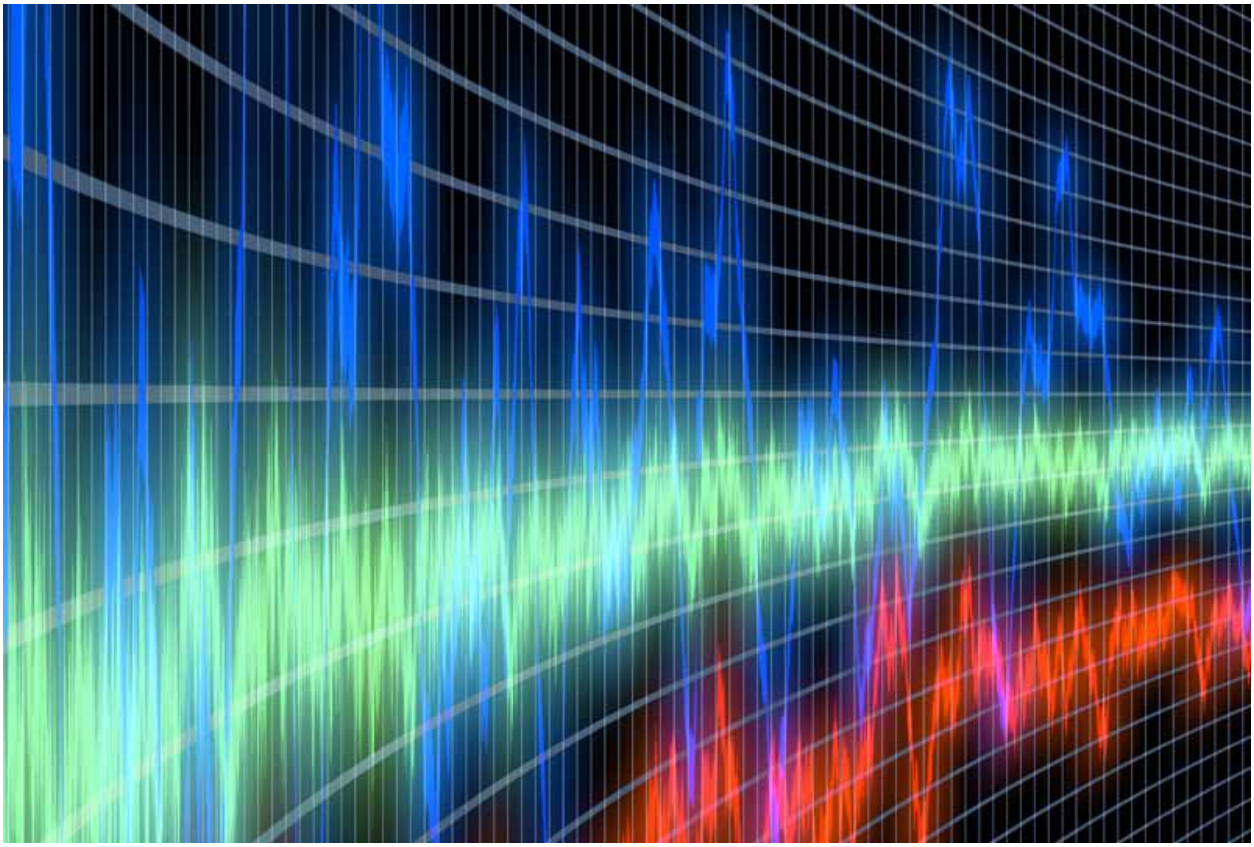
AIR today has 225 radio stations and 361 transmitters and its coverage extends to 91.78 % by area and 99.14 % by population. **Operating in a multi-cultural, multi-linguistic country like India, AIR broadcasts in 24 languages and 146 dialects.** In External Services, it covers 27 languages including 16 foreign and 11 Indian languages. AIR operates its broadcasting services on Medium Wave, Short Wave and FM. The FM Service uses a larger bandwidth to provide a programme service of high fidelity and lower noise distortion.

AIR Channels

According to Radio Audience Survey-2006-07 the listenership of different channels are given below:

(i)	**Primary Channel 53.2%**
(ii)	**Commercial Broadcasting Service Channel 57.1%**
(iii)	**FM Rainbow 49.2%**
(iv)	**FM Gold 26.4%**
(v)	**Local Radio Station 65.2%**

Other Media



Community Radio

Community-based media, as per definition, is media, of, for and by the community. Its lack of reach is compensated by its depth, interaction and participative character. A Community Radio (CR) station can be roughly defined as a short range radio station that caters to the information needs of communities living in surrounding areas. CR stations often involve local community members in programme production, centred around topics including discussions on civic amenities in the area, health and hygiene, advice on common economic activities such as agriculture, and even local folk songs and cultural events. Though the importance of community radio has been well known in India (thanks to few well known experiments by NGOs), until 2006, only educational institutions were allowed to set up community radio stations.

The scope was expanded in late 2006 to also include non-profit agencies, agricultural research institutes, and schools, to set up community radio stations that would involve local communities in the content production process. Organisations such as Voices, Drishti Media, Himalaya Trust, Deccan Development Society (DDS), Myrada, and *Kutch Mahila Vikas Sangathan* have been involved with experiments on using radio for production and broadcasting of locally relevant information even before, but they have been using narrowcasting (audio programmes played over loud speakers at community meeting points or within listener groups of women) and cable casting (through cable TV run by local operators), until recently. They have all obtained the CR licenses since 2006. In Uttarakhand, a number of CR initiatives started in 2001 after Himalaya Trust organized training and these include: Henvalvani CR, Mandakini ki Awaz, Pradeep Samudayik Radio Kasauni, Shristi Samudayik Radio, Bageshwar, Bal Ganga CR, Tehri Garhwal in Uttarakhand.

Realising the potential of community radio, the University of Agricultural Sciences (UAS), Dharwad launched the Krishi Community Radio in May 2007. The channel with the catch line '*Raitarinda Raitarigagi*" (by the farmers for the farmer) deals with issues related to agriculture, health, nutrition, hygiene and income generation activities of farmers. The programmes are aired for three hours in the morning and three hours in the evening every day and it is delivered in Kannada language mainly in the local north Karnataka dialect in various formats (drama, talk shows, interviews, phone-in programme, etc.).

Sangham Radio, established by the Deccan Development Society (DDS) in 2008 at Medak is another community radio in India. This radio is managed and operated by women. The radio's team of reporters collects stories related to agriculture, education, health issues, women empowerment and local culture, which are then edited and mixed with interviews, discussions, folk songs and drama. *(www.ddsindia.com)*

Kalanjiam Samuga Vanoli, initiated by DHAN Foundation is another community radio initiative in Nagapattinam District, Tamil Nadu. The station was set up with UNDP funding under its 'Tsunami Restoration Initiative'. The activities are managed by *Keelaiyur Vattara Vayalagam*, a federation of farmers groups promoted by DHAN foundation among the tsunami affected communities. This CR addresses local information and community needs that revolve around disaster preparedness, local best practices, women and children, health, education and farming.

Digital Green (DG) is an initiative that seeks to disseminate targeted agricultural information to small and marginal farmers in India using digital video. DG has been enabled by recent advances in digital video technology, including low cost camcorders and PC solutions for editing digital video. One of the crucial aspects of DG is the inclusion of local farmers in these instructional videos.

The videos are also localized to a region and feature the participation of familiar farmers as opposed to experts in idealized conditions. The videos are edited and then digitized on a PC. These videos are then uploaded in the DG web repository and are also physically mailed or couriered to villages where a minimum of one TV and one DVD player is provided.

Video

Use of videos for disseminating new information and knowledge is not new. Several agricultural extension projects including the Training and Visit (T&V) used videos to bring about awareness on certain agricultural practices.

Video SEWA (VS) was established as a means to provide training to the members of SEWA and to motivate, mobilize and strengthen the existing membership of SEWA through the use of video recordings and tapes. Since 1984, Video SEWA has produced countless tapes and more than a hundred programmes of organizing, training and advocacy.

SEWA is currently working in 15 Districts of Gujarat, nine States in India and three other countries. However, VS is so far confined to Gujarat as they are trying to make themselves self-sustainable. However, the videos produced by VS are used for capacity building and demonstration purposes across the SEWA network.

Mobiles

The number of telephone subscribers in India increased from 723.28 million in Sep-10 to 787.28 million at the end of Dec-10. This reflects year-on-year (Y-O-Y) growth of 40.05% over the same quarter of last year. The overall Teledensity in India has reached 66.16 as on 31st December 2010.

Subscription in Urban Areas grew from 487.07 million in Sep-10 to 527.50 million at the end of Dec-10, taking the Urban Teledensity from 137.25 to 147.88. Rural subscription increased from 236.21 million to 259.78 million, and the Rural Teledensity increased from 28.42 to 31.18.

About 63.17% of the total net additions have been in Urban areas as compared to 66.83% in the previous quarter. Rural subscription recorded an increase in rate of growth during the quarter, from 7.81% in Sep-10 to 9.98% in Dec-10. Rate of growth for Urban subscription also increased from 7.62% in QE Sep-10 to 8.30% in QE Dec-10.

With 64.48 million net additions during the quarter, total wireless (GSM + CDMA) subscriber base registered a growth of 9.38% over the previous quarter and increased from 687.71 million at the end of Sep-10 to 752.19 million at the end of Dec-10. The year-on-year (Y-O-Y) growth over the same quarter of last year is 43.25%. Wireless Teledensity reached 63.22.

In Southern and Northern India nearly a quarter of rural households have a television set and in Western India one in five households own a television set. However in Eastern India not even one in ten households possess a television set. A series of village surveys conducted by the Foundation for Agrarian Studies (FAS), found that the ownership of TV, radio, mobile phones, telephone and mobiles vary significantly across social groups. Inequality in the ownership and access to basic goods and services tends to mirror the inequality in the distribution of income-generating assets, particularly land.

Radio (All India Radio) and Television disseminate a wide range of information relevant to socioeconomic development and these include agriculture, health, rural employment, environment, e-Governance, etc. Out of the different ICTs, only Community Radio (CR) and Rural Knowledge Centres (RKCs) were found to have an agenda and a mechanism for addressing the locally relevant information needs.

2.8 Ethical Dimensions of the Information Society

Ethical dimensions of Information Society pertain to ensuring that Internet is not discriminatory due to barriers of class, gender, language or diversity of cultures. The efforts made to address these issues include initiatives of Government of India, International Cooperation Initiatives and those led by private sector. Notable examples have been presented below.

2.8.1 Development Gateway Foundation (DGF)

The DGF funded project, 'ICT Research and Training Centre for Bridging the Digital Divide' has resulted in the development of several useful technologies, tools, products, solutions and applications many of which have also been widely and successfully deployed in several locations in India (and in one case abroad also).

Several notable products that were launched include Bharateeya OO (OpenOffice for Indian languages), ECKO (a community centric portal), *Vartalaap* (Virtual classroom), *Vyapar / Pradarshani* (application for exchange of information regarding rural products and services), e-Forms (a form designing tool for rapid data collection), *Matrubhasha* (a text to speech engine for Indian languages) and DAAL (application for cross-lingual information retrieval). Some of the organisations/locations where these applications have been deployed are Dhan Foundation, MSSRF, AFFARM, Kutch Nav Nirman Abhiyaan, BIRD-K, UNDP-Orissa and several others Non-Governmental Organisations (NGOs).

ICT for Empowerment of the Disabled

Content Generation for Capacity Building of Persons with Blindness or Low Vision:

The content is being generated in accessible format like e-Text, Braille, Daisy, large print and audio for text books for graduate/post graduate level visually impaired students. 321 hours (30 Nos.) of English Audio Daisy Books and 347 hours (30 Nos.) of Hindi Audio Daisy books have been generated for Inclusive Education. 11 books in Hindi and 27 books in English have been converted into e-Text. 10 books have been generated in synthesized voice. 20,000 copies of CDs of these books have been distributed.

SAFA™:

SAFA™ (Screen Access for All) is a screen reading software in local language to enable the visually impaired persons to operate PC using speech output support for MS Word applications in windows environment. It has been used by more than 1,000 visually impaired regular users in Hindi and English. A helpline is being run to provide support to SAFA users. 18 SAFA training sessions at different organisations have been conducted throughout the country benefiting 215 persons of various age groups.

The Information Village project, Pondicherry, India[21]

The Information Village project in Pondicherry cites significant educational results from their project including support to women's small business development. Women self-help groups use the system to contact other women groups with which to share their experiences. One innovative use of ICTs is the development of a multimedia presentation and multimedia flash cards to provide gynaecological information to reach women who are prevented by cultural attitudes from discussing their health problems with male doctors and younger females.

Visually Impaired Women Empowerment through Shruti Drishti[22]

The objective of this project is to deploy the Shruti-Drishti (Text to Speech and Text to Braille) software with the associated required hardware along with support and training in 40 special schools for visually impaired women throughout the country. PCs with accessories and Shruti-Drishti Software have been supplied to the schools benefiting 4000 blind students (including 2314 female blind students) and 80 teachers.

A Comprehensive Satellite/Internet based National Network for Education Training and Empowerment of the Disabled[24]

Media Lab Asia, together with Indian Space Research Organisation (ISRO), has set up content creation facility in the area of different disabilities. The content are being telecast through EduSat based channel *'Navshikhar'* regularly for all stakeholders in the disability field. 470 RCI/MSJE recognized Institutions are connected to Navshikhar. Regular transmission of programs is being conducted from Monday to Friday from 10:00 Hrs. to 17:00 Hrs.

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[21] *http://siteresources.worldbank.org/INTEMPOWERMENT/Resources/14654_MSSRF-web.pdf*
[22] *Source: Annual Report 2009-10*

Additionally an interactive Internet portal *'Punabhava.in'* is providing all the relevant information in different disability issues. Portal is being regularly updated and is being made accessible as per W3C guidelines.

2.9 International and Regional Cooperation

ICT can help to enhance the sustainable socio-economic transformation of societies. There are needs to bridge the gap between people with effective access to digital and information technology and those with very limited or no access at all. In this direction, India is helping partner countries to achieve these objectives. Various collaborative efforts have been geared up to encourage sustainable development, enhance investment and address regulatory mechanism, and strengthening partnerships with other countries. In this backdrop, the Indian Government takes an initiative for cooperation in the field of Information Technology and projects on setting up an IT Centre in the following countries has been setup with the technical and financial assistance of India:

2.9.1 Centre of Excellence for Communications and IT at Accra, Ghana

Kofi Annan Centre of Excellence in IT at Accra, Ghana was set up with a cost of US$ 2 million and was inaugurated in December 2003. The Ghanaian Government has provided physical infrastructure for the project like land, building, electricity, water, etc. and the requisite manpower, whereas, the technical infrastructure, course curricula, training of trainers and specialize training programme for quality and standardization through Standardization Testing and Quality Certification (STQC), etc. was provided by the Indian side. The Centre caters to HRD development activities in IT sector. The Centre has the Data Communication and Networking Lab, Hi-Tech Computer Labs with Server, Class Rooms and Distance Learning Lab with Video Conferencing at the Institute using satellite connectivity to organize specialized programmes in IT. More than 5000 students have been trained so far from Kofi Annan Centre. Five Community Information Centres (CICs) were also set up with the Kofi Annan Centre.

2.9.2 Mauritius

Government of India and Government of Mauritius have signed a credit agreement of US$ 100 million in May 2001 and India has developed Ebene Cyber City at Mauritius in April 2005. The Cyber City is operational since then. It is spread across an area of 172 acres of land, office space of over 42,000 Sqm with seven functionally specific zones and cyber village. The Cyber Tower is fully occupied. Many Indian IT companies, like Infosys, Hinduja TMT Ltd, Pentafour Software, Satyam Computers, etc have their presence in the Tower. The project was implemented by Software Technology Parks of India (STPI) from the Indian side. The Cyber Tower was declared as Intelligent Building of the year 2005. Hon'ble Prime Minister of India inaugurated the Cyber City in April 2005.

- Government of India has constituted an Empowered Negotiation Team for Comprehensive Economic Cooperation and Partnership Agreement (CECPA) with Mauritius. The CECPA between India and Mauritius is at advanced stage of negotiation and Mauritius side has shown keen interest to have a joint venture with DIT and its organisations.
- An MoU between CERT-In and National Computer Board of Mauritius was signed for Cooperation in Information Security in March 2007. CERT-In conducted various training programme for Mauritius CERT.
- An MoU for setting up of Mauritius Public Key Infrastructure (PKI) based on the Indian PKI model was signed between Controller of Certifying Authorities (CCA), India and Information Communication Technologies Authority (ICTA), Mauritius in February 2009.
- An MoU between STQC, India and National Computer Board (NCB), Mauritius has been signed in July 2010 in the field of Information Security and IT Service Management. All services provided under the MoU to NCB by STQC will be on cost basis and will create better business opportunities for STQC. STQC has conducted four programmes in Information Security Management Systems for National Computer Board (NCB), an autonomous body under the Ministry of Communication and IT of Mauritius since December 2007 and has earned about USD 10,000 through these training programmes.
- An MoU between National Informatics Centre Services Incorporated (NICSI), India and Ministry of Information and Communication Technology (MICT) of Mauritius was signed in March 2010 to foster cooperation in the area of information technology. In pursuant to the MoU, an India-Mauritius Joint Task Force has been set up under the co-chairmanship of Additional Secretary, DIT to implement the e-Governance projects by NICSI in Mauritius.

2. 9.3 Centre of Excellence for Communications and IT at Dar-es-Salaam, Tanzania

The Centre was inaugurated in July 2010. The basic infrastructure and manpower was provided by the Tanzanian Government, whereas, the technical infrastructure, course curricula and training etc. was provided by the Indian side. The key purpose were to establish:

- capacity development and advanced training in IT sector;
- high performance computing facility;
- data centre; and
- 10 CICs at various locations in Tanzania with Very Small Aperture Terminal (VSAT) facilities to offer citizen centric services like telemedicine, e-Learning

2. 9.4 Centre of Excellence for Communications and Information Technology in Armenia

An India-Armenia Centre of Excellence for teaching information technology is being set up at Yerevan, Armenia. A feasibility study was undertaken to conceptualize the project. The equipments have been delivered to the site at Yerevan in Armenia during the year 2010.

The Centre would be equipped with high performance computing facility, R&D Lab, video conferencing and state-of-the-art training facility. The Armenian Government has provided basic infrastructure and manpower, whereas, the technical infrastructure, course curricula, training, etc. has been provided by the Indian side. The training of master trainers has been completed in two batches during 2010. A Workshop on HPC was also conducted in Armenia during the year 2010.

2.9.5 Digital Learning Centre in Belarus

A Digital Learning Centre at Minsk is being set up to promote HR and skill development in Belarus. A Feasibility Study was undertaken to conceptualize the project.

The Centre will be equipped with Video Conferencing, Distance Education and General Awareness Programme through Digital Learning Centre in ICT, Belarus (DLCICT). The Belarus Government will provide basic infrastructure and the requisite manpower, whereas, the technical infrastructure, course curricula and training, etc. is being provided by the Indian side. The training of Master Trainers has been completed during the year. The equipments have been delivered to the site at Belarus during the year 2010.

2.9.6 Setting up of Centre for Information Technology in Seychelles

A Feasibility Study was undertaken to identify country specific need in IT sector and project conceptualization for setting up of IT Centre in Seychelles. Agreement was signed with Ministry of Economic Affairs (MEA) in March 2010. The procurement of equipment has been completed in 2010. Material has been delivered to the site in December 2010. The selection of master trainers from Seychelles is under process.

2.9.7 Centre for Information Technology in Lesotho

A Feasibility Study was undertaken to identify country specific need in IT sector and project conceptualization for setting up of IT Centre in Lesotho. Agreement was signed with MEA in December 2009. The procurement of equipment has been completed in 2010. Material has been delivered to the site in December 2010.

2. 9.8 Upgradation of Jawaharlal Nehru India-Uzbekistan IT Centre(JNIUCIT) at Tashkent, Uzbekistan

The Jawaharlal Nehru India Uzbekistan Centre for Information Technology was set up with technical and financial support of India. The total cost of the project was ₹ 3 Crore. Indian Prime Minister inaugurated the centre on 26th April 2006 during his visit to Uzbekistan. The project was implemented by C-DAC.

The Uzbek Government has provided physical infrastructure for the project like land, building, electricity, water etc. and the requisite manpower, whereas, the technical infrastructure, course curricula, training of trainers was provided by the Indian side. The Centre caters to HRD development activities in IT sector. The Centre has the Computer Labs, Class Rooms Server and UPS Rooms and Distance Learning Lab with Video Conferencing at the Institute using satellite connectivity to organize specialized programmes in IT. The Centre has already trained about 1000 students.

A Feasibility Study was undertaken in August 2010 for up gradation of Jawaharlal Nehru India-Uzbekistan IT Centre at Tashkent, It was suggested to upgrade JNIUCIT with latest IT infrastructure, training facility, video conferencing facility for on-line teaching, training of ten Uzbek master trainers in India in advance IT courses and deputation of two Indian faculties. The project is under consideration of MEA.

2. 9.9 South Asia Sub-regional Economic Cooperation (SASEC) of Asian Development Bank (ADB)

SASEC Information Highway Project - The project intends to establish SASEC regional exchange. The proposed regional exchange at Siliguri would route the traffic from Nepal, Bangladesh and Bhutan through India. In addition, India could support these countries for HRD and capacity building, etc. The project is designed to build a regional network with fiber optic and data exchange capacity, village network to serve 110 rural communities and research and training network for technical and business skills in ICT. The ADB Board has approved financing of the SASEC Information Highway Project.

2. 9.10 Hole-in-the-Wall (HiWEL) project

The Hole-in-the-Wall (HiWEL) project, developed in India by Nation Institute of Information Technology (NIIT), an IT company, has been deployed in African countries like Namibia, Zambia and Uganda. The projects demonstrate that even uneducated rural children can learn information gathering, knowledge acquisition and skills development.

2.9.11 Commonwealth Connects Programme

Government of India has given a grant of Euro 1 Million for the Commonwealth Connects Programme which is aimed at bridging the digital divide within and among the Commonwealth member countries. India is one of the major contributors to this programme in terms of money and providing technical and managerial expertise.

India has proposed two phased Business Plan for this initiative which is based on Public Private Partnerships (PPP) and self sustainable model. In first phase a pilot project is proposed to be set up in two countries. The access to ICTs shall be provided through the tested model of Multipurpose Service centres (MSCs). These MSCs shall work as community service delivery outlets and in addition to G2C services will also offer host of other services as e-Education, e-Healthcare, special skill development, employment oriented programmes, etc.

It is being examined as to whether these services could be extended from India by using satellite earth stations of Software Technology Parks of India which today have become redundant but have all the technical features and capabilities to provide connectivity from India to many of the African countries. It is proposed to use the cloud computing platforms so as to economize on investments and offer services in quickest manner to many of the countries.

Support of the donor institutions is proposed for this phase. Based on the success of first phase, the same is proposed to be replicated in about 15 countries for which potential investors would be identified.

Countries are being convinced to provide restriction free market to these investors for services like Internet and Mobiles. It would make their investments viable and they would be very happy to provide all other services falling in the category iof ICT4D which actually is the agenda of bridging the digital divide.

2.9.12 Community Multimedia Centres, UNESCO

UNESCO has assisted in the development and reinforcement of Community Multimedia Centres (CMC) in the small towns of Chanderi and neighbouring Pranpur in Madhya Pradesh. The project focuses on building up existing work of the Centres through capacity-building workshops to enhance life skills in areas such as CMC management, local content production, exchange and dissemination, while providing community access to information through appropriate use of media tools.

This project emerged from a former UNIDO women livelihoods project for poor self-help weaver communities of the world famous Chanderi sarees, during which women and adolescent girls expressed their keen desire to use media tools, such as radio and Internet to add value to their weaving profession, and engender better livelihoods through self empowerment. This desire was fulfilled in a partnership with BASIX, a local NGO and One World South Asia (OWSA), in 2005 to introduce two CMCs in Chanderi and Pranpur, with basic training in computer literacy including use of computer applications and Internet, railway bookings etc. A basic course was also undertaken in computer design in collaboration with the National Institute of Fashion Technology (NIFT), New Delhi.

The International Programme for Development of Communications (IPDC) collaboration begun in November 2007 and reinforced the capacities of the young girls and women on various media. Twenty-three girls were trained in radio production and 6 more in website maintenance. This was followed up in February 2008 by intensive radio production training for another 50 girls.

The Chanderi CMC is presently seeking to take advantage of the new Community Radio policy of the Government of India to apply to the Ministry of Information and Broadcasting, for grant of permission to set up a Community Radio Station in this rural environment. In the meantime, training the communities in radio programming, narrowcasting and content creation through Digital Story telling remain ongoing.

This IPDC project appears well on its way to achieving its set objectives of empowering the Chanderi communities to use ICT tools to enhance communities' capacities for design and local content production, market networking, leadership and self management and ensure access to necessary information as main methods of encouraging freedom of expression and democracy.

Notes

- The role of Indian government and
- Cultural Diversity and Identity, Linguistic Diversity and Local Content
- Media
- Ethical Dimensions of the Information Society
- International and Regional Cooperation

Profiles of Progress –

Compendium of Select ICT for Development Projects

- Common Service Centres Network
- National Portal of India
- National Service Delivery Gateway (NSDG)
- Aadhaar: The Unique Identification Project of India
- MCA21
- e-Panchayat
- National Rural Health Mission: A Promising Approach towards better Rural Health
- Social Accountability through Community Scorecards in Bolangir District, Odisha
- Agrisnet - Information Network for Farmers
- AKSHAYA : Innovative Operations and Service Delivery, Kerala
- Integrated Tax Payer Data Management System
- Project Arrow - Redesigning India Post
- Trafficop - An m-Governance Initative in Pune
- Community MGNREGS Programme for Naxalite Affected Areas
- e-Jan Sampark, Chandigarh-IT
- Jaankari - A Call Centre to Implement Right to Information in Bihar
- Lifelines Education Mobile Query System, Rajasthan
- Lifelines Education Mobile Query System, Rajasthan
- Nokia Life Tools, Nokia, India makes innovations in the field of mobiles for Serving Indian Agriculture
- Soochna Se Samadhan: LifeLines India Initiative - Taking ICTs to the Grassroots Community - an example of scalable Public-Private Partnership

Introduction

Included in this section are the projects from Government, industry as well as civil society organisations that have a primary objective of increasing access to information and ICTs, delivering public services at the citizen' doorsteps, innovative use of ICT for development and collaborative actions including Public Private Partnerships. Invariably, there is a strong social dimension to these projects. Most of the presented case studies deal with 'last mile' initiatives, increasing access and capacity building at a local level, and addressing issues such as culture, gender equity, social equity, sustainable community development and benefits to rural areas.

The section 'Profiles of Progress' is a collection of select case studies pertaining to various development issues and is in no way an exhaustive list of all the initiatives that are deployed in various parts of the country. The case studies presented in this section are randomly selected out of a vast database of ICT for development projects available online as well as in print publications that the panel of experts from The Society for Promotion of e-Governance and DIT surveyed in the run up to the preparation of this document. The cases in this section are not organized in a particular fashion as per their scale of implementation or the domain. These are being organized in a fashion so that the practitioners from various developing countries can use the learnings from these projects to their cultural and contextual needs.

3.1 Common Services Centres Network[23]

3.1.1 Defining Parameters of Citizen Satisfaction

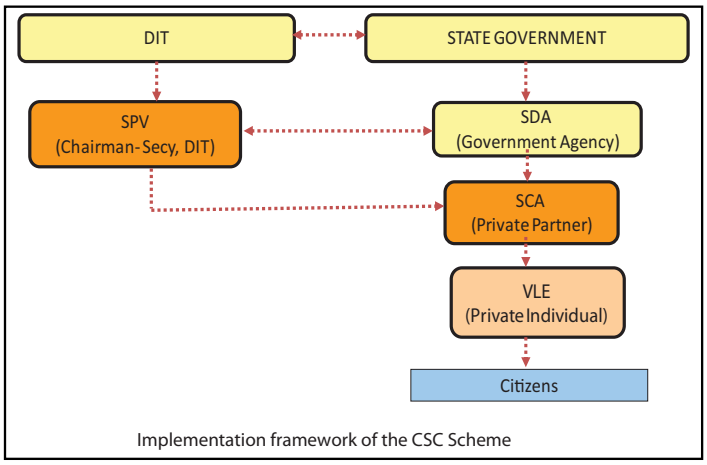
The Government of India's National e-Governance Plan has a clear vision: to deliver, and make accessible all Government, Social and Private Sector services in the areas of agriculture, health, education, entertainment, FMCG products, banking and financial services, utility payments, etc. to the citizen at an affordable cost. With this intent, the Common Services Centres (CSCs) were conceptualized as the front end service delivery outlets enabling smooth and transparent governance at the village level. An unhindered citizen centric leaning makes the CSC Scheme a strategic cornerstone of the NeGP, and one of the key infrastructure pillars. In that respect, not many doubt that the CSC project is a huge opportunity to touch rural India like never before.

Under the Scheme, over 100,000 Internet enabled kiosks are being set up in the rural areas spread across more than 600,000 villages. One Kiosk is intended to serve a cluster of five to six villages. Classified under the integrated MMPs, the Scheme got the approval of Government of India in September 2006 involving a total outlay of ₹ 5742 crore.

The CSCs are not mere service delivery points in rural India. The CSC are positioned as a Change Agent - that will promote rural entrepreneurship, build rural capacities and livelihoods, enable community participation and effect collective action for social change - through a bottom-up model that focuses on the rural citizen. ICT in isolation cannot undertake such monumental socioeconomic change. It is this reason that makes the CSC Scheme a strategic cornerstone of the NeGP. More than 86,000 CSCs have already been set up in over 31 States/Union Territories of India.

[23] *Source: Saaransh – A compendium of Mission Mode Projects under NeGP; and http://www.csc-india.org/*

3.1.2 The 3-Tier Implementation Model



Implementation framework of the CSC Scheme

The CSC project was one of the first MMPs under NeGP to be initiated under the Public Private Partnership (PPP) model. The Scheme creates a conducive environment for the private sector and NGOs to play an active role in implementation of the Scheme, by becoming a partner of theGovernment in the development of rural India.

As part of DIT's implementation strategy for 100,000 CSCs, the deliverables by the private vendors need to be monitored. For programme management of the CSC Scheme, a Special Purpose Vehicle (SPV) has been formed, so that the Government can progressively migrate to an e-Governance platform and enable services through the CSC network. The CSC SPV which is named as 'CSC e-Governance Service India Ltd' has been incorporated under the Companies Act 1956 on 16th July 2009. The Company has also received the Certificate for Commencement of Business on 12th August 2009.

The shareholders of the SPV include Government of India through 1 Golden share, State Governments - up to 44.5 % shares, SCAs - up to 44.5 % shares and Financial Institutions - up to 11 % shares.

The PPP model of the CSC Scheme envisages a 3-tier structure consisting of the CSC operator (called Village Level Entrepreneur or VLE); the Service Centre Agency (SCA), that will be responsible for covering a group of Districts in a State; and a State Designated Agency (SDA) identified by the State Government responsible for managing the implementation over the entire State.

Role of CSC SPV
Incorporated on July 16, 2009 it started operations on July 1, 2010.It is a single point of contact for programme management of the CSC Scheme.

- Aggregating multiple services on a single platform
- Integrating efforts of various State Governments/UTs, numerous Central and State Departments, SCAs and Village Level Entrepreneurs (VLEs)
- Equity participation of GOI, State Government, SCAs, FIs/ Banks

3.1.3 Implementation Framework

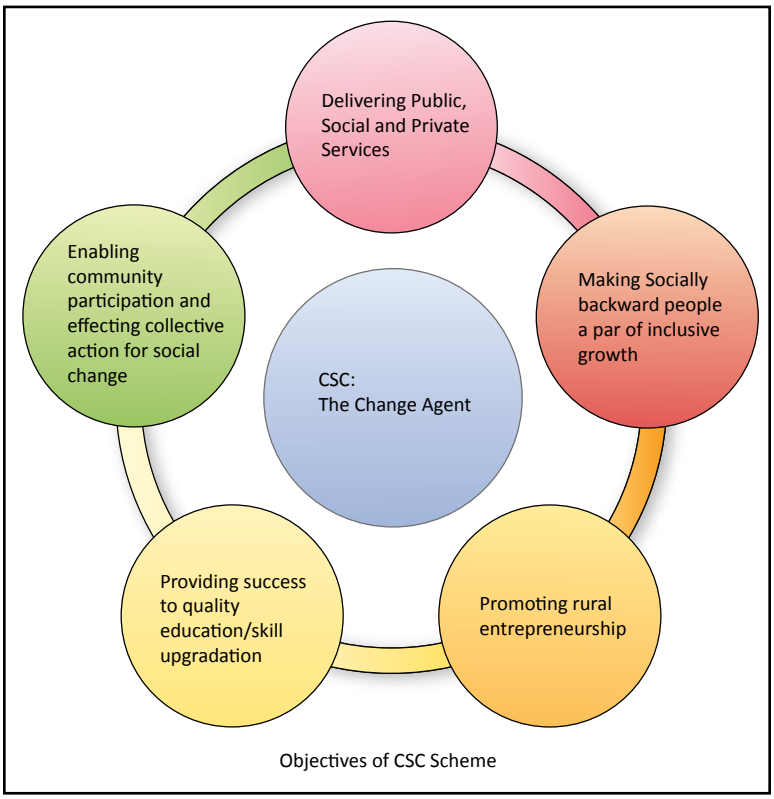
The implementation at three levels:

- Level 1: A village level entrepreneur (VLE - loosely analogous to a franchisee) sets up a CSC in the nodal village to provide service to rural consumers in cluster of 5-6 surrounding villages.
- Level 2: The Service Centre Agency (SCA - loosely analogous to a franchiser) is an operator which manages; trains and builds the VLE network across the District. An SCA can service one or more Districts in a State with one District covering approximately 100-120 CSCs.
- Level 3: The State Designated Agency (SDA) facilitates the implementation of CSC Scheme within the State. It is primarily responsible for providing policy, content, financial and other support to the SCAs in the State.

3.1.4 CSCs as Change Agents

As a matter of fact, the CSCs cannot be seen as mere service delivery points in rural India. The CSCs are positioned as Change Agents - that will promote rural entrepreneurship, build rural capacities and livelihoods, enable community participation and effect collective action for social change - through a bottom-up model that focuses on the rural citizen. ICT in isolation cannot undertake such monumental socio-economic change.

However, Rural Entrepreneurship driven by Government, Private and Social sector agencies, and supported by continuous capacity building and training has the power to dramatically change rural incomes as well as attitudes. The intensity of national goals fueled by local entrepreneurial vigor can act as a powerful catalyst to empower rural India.



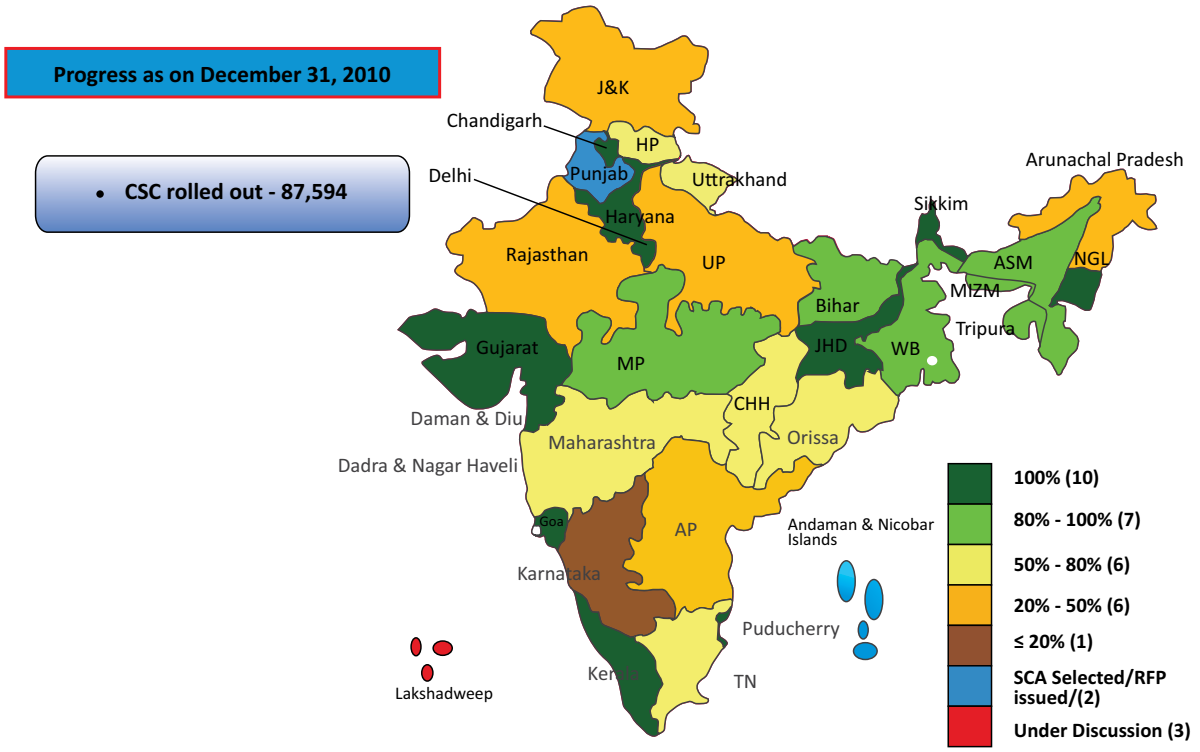
Objectives of CSC Scheme

Both, IT based as well as non-IT based services are offered through CSCs. Some services being delivered or to be delivered include web-enabled e-Governance services in rural areas, including application forms, certificates, and utility payments such as electricity, telephone and water bills.

3.1.5 Progress in CSC Infrastructure

A model CSC is an information communication technology (ICT) kiosk having two computers in place supported by other basic equipments like UPS, printer, fax, scanner, backed by constant broadband connectivity as the backbone and additional equipment for education, entertainment, telemedicine, projection systems, etc.

Both, IT based as well as non-IT based services are offered through these CSCs. Services being delivered or to be delivered through these CSCs include web-enabled e-Governance services in rural areas, including application forms, certificates, and utility payments such as electricity, telephone and water bills.



• Due to termination of SCAs in Andhra Pradesh, Haryana, Maharashtra, Madhya Pradesh, Tamil Nadu, UP and Uttrakhand around 4700 CSCs are reported to be non operational

Power of Services

There are a number of services that are rendered through the CSCs, as suggested below:

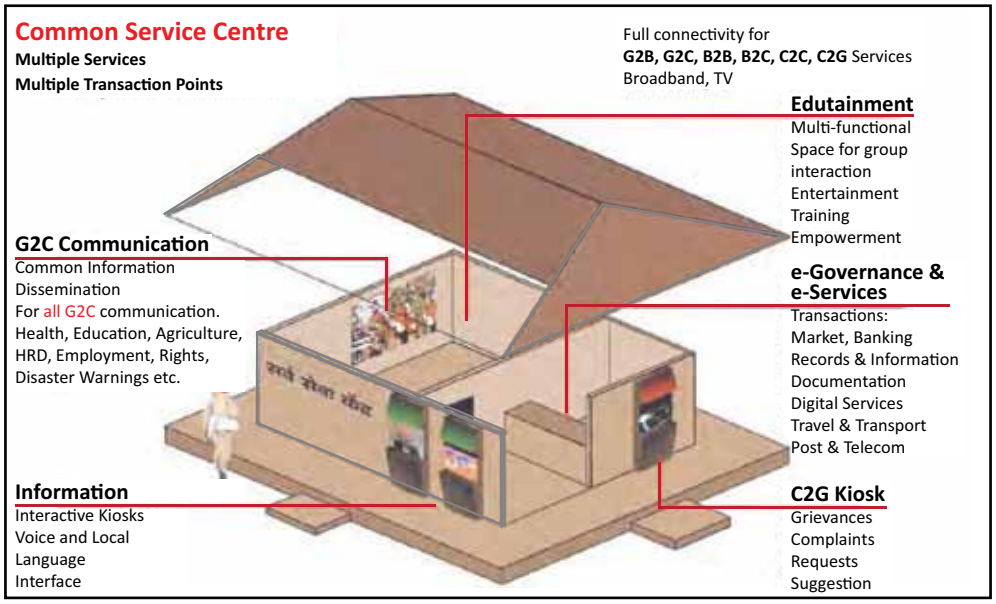
Some Services currently available at the CSCs across various States		
e-District Services	NREGA digitization work	Land records
Utility Services	NREGA MIS Data Entry Service	Agricultural Services
Domicile & Character Certificate	Disbursal of social sector scheme benefits	Birth and Death certificates
Property Tax	Biometric Ration Card Preparation	Electoral Services
Transport	Grievance Redressal	

3.1.6 Adding Value to People's Lives

Sinam Jagdish [Village: Meitei Langol: District: Imphal (West)] always dreamt of starting his own venture. When CSC project was launched in Manipur, he knew by instinct that here is an opportunity that would not only let him start his own work, but also allow him to serve his village. He also got a chance to impart basic computer education through his CSC that caters to a population of about 3500 to 4000 people.

Sinam's CSC has now become a hub for percolation the bebefits of information technology down to the intended recipients. Services that are available at his CSC include: DTP work, Photoshop, Xerox, CD burning, booking air ticketing, recharge for mobile phones, flexi recharge, dish tv recharge, PAN services, making examination results available for Central Board of Secondary Education (CBSE) and COHSEM.

Given below is a graphical representation of the list of proposed services available at a model CSC



3.1.7 Transforming CSCs to Bharat Nirman Kendras

In her address to the joint session of Parliament in 2009, Hon'ble President Pratibha Patil, had said that the CSCs will be transformed into Bharat Nirman Kendras - The Scheme for Common Service Centres or e-Kiosks will be suitably repositioned to be a network of Panchayat level Bharat Nirman Common Service Centres to provide Government services to citizen in rural areas.

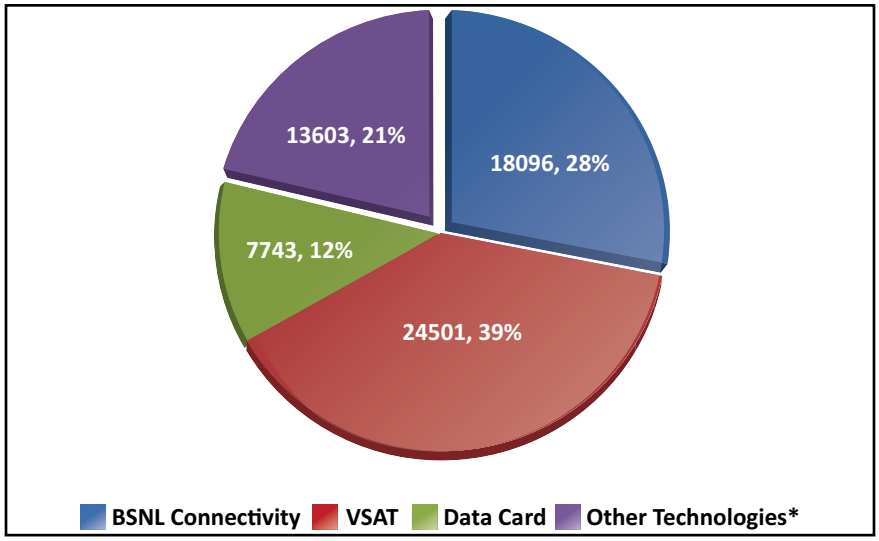
In February-March 2010, PMO/Cabinet Secretariat/Planning Commission directed that CSC Scheme should be extended to cover the remaining 150,000 Panchayats thereby giving Department of Information Technology a mandate to enhance the CSC network to 250,000.

The Governance Structure for the rollout of the Bharat Nirman CSCs is being evolved. Various options for setting up the additional Bharat Nirman CSCs were examined and consultations with the existing SCAs and the State Governments were held. The lessons learnt from implementation of the existing CSC Scheme have also been considered while formulating the strategy and approach.

Akshaya - Leading from the Front with eight years of successful services delivery, the CSCs in the State of Kerala better known as Akshaya, have completely transformed the way services are delivered in the State. They have become a 'One Stop Shop' for all Government-to-Citizen (G2C), social and private Services, Akshaya has been successful in not only understanding the need of the stakeholders but, also at customizing the implementation of the project according to the needs of the common man. Recently, among many feats achieved, registration of 1.9 million Below Poverty Line (BPL) families under Comprehensive Health Insurance Scheme was a major task which is being successfully drawn to its completion by Akshaya. An initiative by Kerala Government, it was done with the objective to ensure better medical treatment to all citizen (under Government of India's Rashtriya Swasthiya Bima Yojana in the State). In a similar way, Akshaya with its deep penetration into the remotest areas of the State, is helping many other projects reach a fine conclusion.

3.1.8 Striking a difference

Manjusha Kumari [Village: Hawan/ Ghumarwin; District: Bilaspur], was a housewife who chose to adopt modern technology in order to set an example for the women who yearned to make a difference to the society. Her CSC is located in the interiors of Bilaspur District in Himachal Pradesh. When she started some five to six months back, she was determined to make the Scheme successful in her Panchayat, which supports on an estimate a population of 3000. Just few months into it, and she has already become a source of inspiration for the surrounding Panchayat VLEs. Manjusha actively participated in the trainings which were organized for women entrepreneurs in Mandi. The services that she is now making available include - mobile recharges, insurance services, providing Government forms, PAN card applications and all other offline services.



Some quick facts on Connectivity (as on December 31, 2010)

3.2 National Portal of India (http://india.gov.in)[24]

There are over 5000 websites on the Internet of various Indian Government entities that include Ministries, Departments, States/Union Territories, District administration and organisations. Citizens have to search and browse several websites to avail a service. The National Portal of India provides a single window unified interface for over 5000 websites thereby reducing a lot of inconvenience to the citizen. This portal acts as a logical front end to the e-Governance initiatives under various Central/State/UT Government Schemes and programmes. The National Portal has a long list of beneficiaries, which besides common citizen also includes Government Departments, the corporate sector, Non-Resident Indians (NRIs), national and international media and the general public across the world.

The National Portal comes with unique features geared up to facilitate smooth access, enhanced quality of services and a convenient single window access for a variety of Government information and services. It is the Central repository of documents, forms, services, acts, announcements, contact directories, Schemes and rules.

[24] *Source: Saaransh – A compendium of Mission Mode Projects under NeGP*

In order to provide seamless access to Government information and services, the Government of India launched the National Portal of India in 2005.

An MMP initiated by the Prime Minister of India, India portal has been evolving and expanding with more content contributions coming from various Ministries/Departments in the Centre and in States.

The portal is universally accessible and compliant to international standards. It has over 1.5 Million hits per month from around all parts of the world and the number seems to be growing.

3.2.1 Objectives

The objectives of the India Portal MMP are:

- To establish a one point source for availability of information about any Government of India constituent, be it the Central Government Ministries, Departments, State/UT Governments, Districts, Panchayats or even organisations and affiliates, for the benefit of the citizen, businesses and other target audience
- To facilitate launch/implementation of various e-Governance initiatives by the Indian Government
- To emerge as a comprehensive one-stop-source of Government information and service delivery through a unified interface
- To define the standards for publishing the information and electronic delivery of Government information and services thus facilitating, unified, seamless and universal access for citizen of India from all walks of life and of various demographic profiles
- To establish a platform for participation by public in the process of governance

3.2.2 Weaving information and services together

An important dimension of the potential of Internet, especially in the context of 'good governance' initiatives, is the possibility of providing Government services anytime and anywhere. However, these services are often provided through a number of different Departments working on different aspects. For making such information and services accessible in a convenient manner, there is a need for a unified interface in the form of a one-stop source for information and service delivery.

3.2.3 Outcomes

The achieved outcomes of the National Portal can be broadly stated as:

- The Portal has turned out to be an effective medium for the participation of common citizen. This has been fulfilled in a number of initiatives as in the case of sixth pay revision of Government employees, RTI Complaints and Appeals, NGO Partnership System etc.
- The National Portal has provided a readily available base infrastructure to the Government Departments/ organisations for launching their new e-Governance services for the benefits of citizen, businesses and other stakeholders
- The National Portal creates Policies and Standards with respect to content, design and technology used in the Indian Government web space, and hosts them on the Portal. The National Portal team has developed the guidelines for Indian Government websites.

- Since *india.gov.in* caters to visitors of all entities, it strongly endorses Universal Accessibility
- Enabled with Principles of Usability, Human Centered Design, easy navigation and consistency in design makes the portal friendly in all and unique ways
- Compliant to National and International Standards
- Platform for promotion of Government initiatives: Many of the Government initiatives leveraged on the National Portal Platform for promotion. Prominent Banners linking these initiatives are placed on the National Portal drawing focus of the citizen
- Portal has 70000 registered users
- Friendly Portal to differently-abled people

3.2.4 Functional Architecture

The state-of-the-art Portal is being hosted at NIC Internet Data Centre with industry standard infrastructure to deliver citizen centric services with primary objectives of high availability,

Salient Features

- A one stop source for all information Comprehensive content on the Government Schemes and plans
- Citizen orientation
- User centered design
- Gateway to over 6700 Government websites
- Bi-lingual content - English and Hindi
- Distributed Content Management System
- ISO Certified and Website Certificate Quality Level 1
- Complies with Priority 2 (level AA) of WCAG2.0 Laid down by W3C
- Since the portal delivers ctizen centric services, which are accessed by millions of users and its Meta contents consumed by various State Government and private portals, its availability for 24x7 is one of the main areas of focus.

scalable, secure accessible and manageable system. Since the Portal delivers citizen centric services, which are accessed by millions of users and its Meta contents are consumed by various State Government and private portals, its availability for 24x7 is one of its main objective.

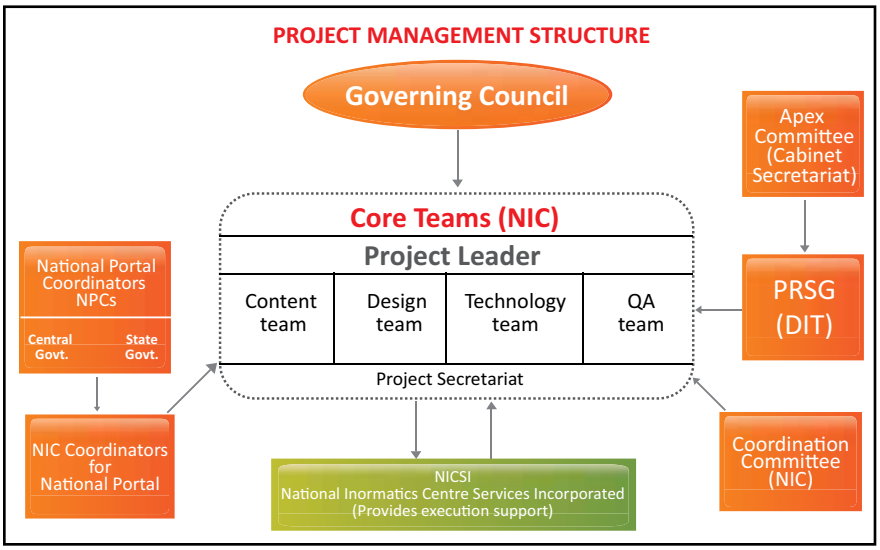
The following are the deployed state-of-the-art technology infrastructure, and its managerial policy of National portal India to meet the above mentioned objectives.

- **Multi-layered architecture:** The presentation, application and data layers of the portal are independent of each othre. Therefore change in any of the layers doesn't effect the other layers. This makes the portal software highly customizable and agile to visitor's requirements
- **Clustered server components:** In order to facilitate millions of users accessing the portal, and to deliver meta contents to various State portals, multiple server nodes are clustered for processing the user request simultaneously. Also the clustered system ensures the availability of the portal during any node failure. The state-of-the-art load balancing at network level distributes the users request to the cluster nodes to decrease the system response time and increase its availability

- **Storage area network (SAN):** To meet the exponential data growth of India portal, all server nodes are equipped with SAN storage system which is accessible through high speed up to 1 Gbps Network ensuring that the system is highly scalable in terms of storage to meet additional requirements
- **Pre and post production auditing:** The processing of auditing the application modules of India portal before and after production includes, testing security, performance, usability and accessibility thereby ensuring the portals security and performance. Similarly, any new hardware component which needs to be added are also tested and tuned before integrating them in production environment
- **Data backup and recovery:** The Disaster Recovery System located at Hyderabad ensures the portals availability and data security. The portal data is replicated asynchronously over WAN using FC-IP protocol

3.2.5 Governance Structure

The management structure of the National Portal involves multi-level committees to provide guidance and direction on various aspects of the project right from advisory to administrative to financial and technical details in order to achieve sustained implementation of the project objectives. These committees have been set up at both administrative and functional level.



Financial Outlay for National Portal Project was ₹ 23.35 crore for three years

3.2.6 Advisory and Administrative Committees

- **Project Review and Steering Group (PRSG):** The PRSG, under Secretary, DIT, periodically reviews and monitors the progress of the project and sanctions its financial support. It has representatives from the States, DIT and NIC
- **Content Advisory Committee:** This Committee, comprising of senior officers from different Government Departments and State/UTs, advises and provides policy level guidance on the content related matters of the National Portal. Guidelines and frameworks pertaining to the content contribution developed by the India Portal are approved by this Committee

- **Co-ordination Committee:** The Co-ordination Committee administers the progress of the project on a day-to-day basis and deals with the administrative matters related to the project

3.2.7 Core Project Team

The core project team with experts from NIC handles the overall design, content compilation, packaging, development and implementation including the promotion of the Portals. All important dimensions of the portal such as content, design, technology and quality assurance are handled by this team. A Project Secretariat has been instituted at the National Portal at NIC Headquarters (Delhi) which takes care of the communication, administrative and logistic matters of the Project.

3.2.8 Content Contribution Group

- **National Portal Coordinators:** National Portal Coordinators are Senior level officers nominated at the Central as well as State levels, who are responsible for contributing and vetting the content pertaining to their respective sector/State before it is published on the India portal
- **NIC Coordinators for National Portal:** For each Ministry/ Department/State Government, NIC Coordinators for the National Portal (NCNPs) have been nominated to provide complete technical support in terms of content, technology to the respective National Portal Coordinators
- **Content Service Providers:** For each State Government one Content Service Provider has been identified through the RFP mode to provide complete support in terms of content acquisition and contribution using the content management system of the portal

Awards

eIndia 2009

1st Prize for System Demonstration of MPI, Montreal, 2008

Best e-Content Award- Manthan Award, 2007

Finalist at Stockholm Challenge 2008

3.3 National Service Delivery Gateway (NSDG)[25]

Under the National e-Governance Plan (NeGP), various e-Governance applications are being implemented in order to provide speedy delivery of Government services to the citizen at affordable costs.

In order to realize the NeGP vision, it is imperative that the different Departments in the Centre, States and Local Government cooperate, collaborate and integrate information across the various levels, domains and geographies. The National e-Governance Service Delivery Gateway (NSDG), a standards based (IIP/IIS/IGIS) messaging switch, will enable this by providing seamless interoperability and exchange of data across heterogeneous applications of geographically dispersed Departments.

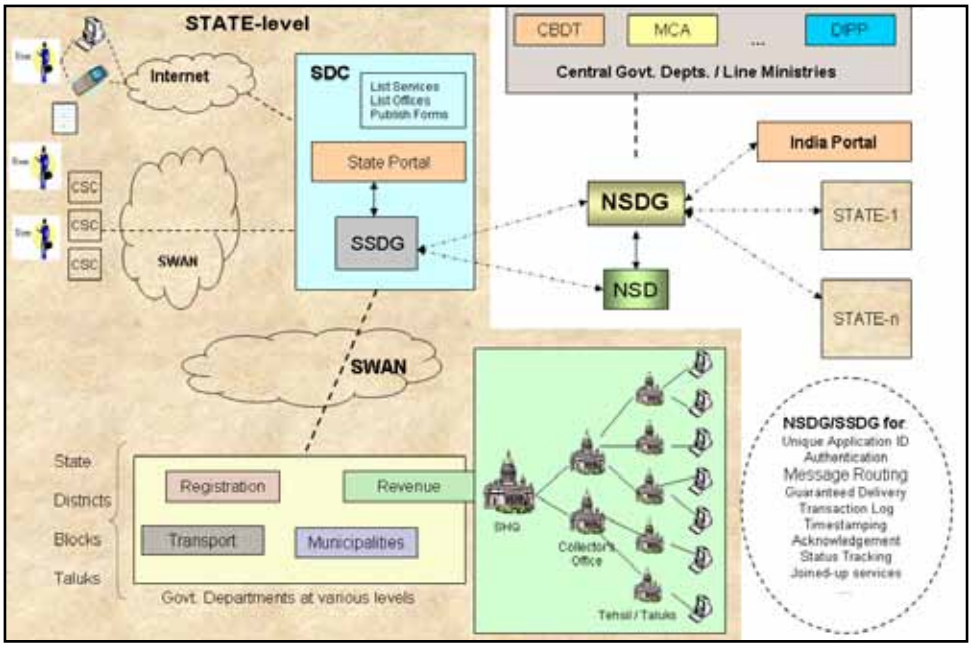
3.3.1 Objectives

The objectives of the NSDG are

- To act as a core infrastructure for achieving standards-based interoperability (IIP/IIS) between various e-Government applications implemented at various levels and geographically dispersed locations
- To evolve Gateway messaging standards and build a Government owned Central Gateway based on these standards

[25] *Source: Saaransh – A compendium of Mission Mode Projects under NeGP*

- To act as a catalyst in enabling the building of Standards based e-Governance applications with Gateway as the middleware to ensure interoperability
- To enable integration across Centre, State or Local Governments there by enabling Integrated Service Delivery and a Service Oriented Architecture (SOA) leading to joined up Government
- To help protect the legacy investments in software and hardware by easily integrating them with other technology platforms and software implementations
- De-link the back-end Departments/Service Providers (SP) from the front-end Service Access Providers thereby
  - Ensuring separation of concerns of service access from the service implementation i.e. separates the Portal, CSC, Kiosks, etc. from the Government services which reside in the backend Departments
  - Encouraging competition at the front-end by allowing independent service access providers to provide services with varying levels of complexity, cost and service quality levels
- Enable adding of shared services on to the core services as and when required, as special common services of the Gateway without affecting the core functionality of the Gateway, thereby providing flexibility and modularity
  - Encourage back-end services to be plugged into the infrastructure as and when they are ready
- Reduce the cost of e-Governance Projects by rationalizing, distributing and optimizing the services framework
- Use PKI infrastructure for secure transactions. Provision exists for encryption of Department payload to ensure confidentiality of Department data. The gateway provides digital signature and certificates to all stakeholders interacting with the gateway for identification, authentication and authorization. Transaction and audit logs help track Government data
- Enable transaction logging and time stamping for tracking of transactions and centralized control
- Help the Departments backend workflow evolve gradually as the Gateway acts as a middleware delinking the backend from the front end.



3.3.2 Outcomes

The following are the outcomes of this MMP

- **Creation of Standards based Middleware Infrastructure**

  As part of the project deliverables, NSDG provides a standardized interfacing, messaging and routing switch through which various players such as Departments, front-end service access providers and back-end service providers can make their applications and data inter-operable. This results in a high order of interoperability amongst autonomous and heterogeneous entities of the Government (in the Centre, States or Local bodies) based on a framework of e-Governance Standards. NSDG thus helps the Departments to provide integrated services and joined up services to the citizen via a single window

- **NSDG has been productized as SSDG (State e-Governance Service Delivery Gateway)**

  SSDGs' are being installed in all the States. Thus, this middleware infrastructure is available at boththe Centre and the State levels. These gateways are connected to one another in the Gateway constellation via a National Services Directory (NSD) which in turn can be leveraged to connect Departments across the country

- **Integration with other MMPs**

  Integration with UP e-District application has been completed. The MCA21 Domain Gateway is based on the IIP/IIS/IGIS and has been operational since 2006. The integration with eBiz, Passport Seva, Trademarks , J&K e-forms and TN e-District applications has been completed in the test environments as on December 2010.

> The National e-Governance Service Delivery Gateway (NSDG), a standards based (IIP/IIS/IGIS) messaging switch, addresses this challenge by providing seamless interoperability and exchange of data across heterogeneous applications.

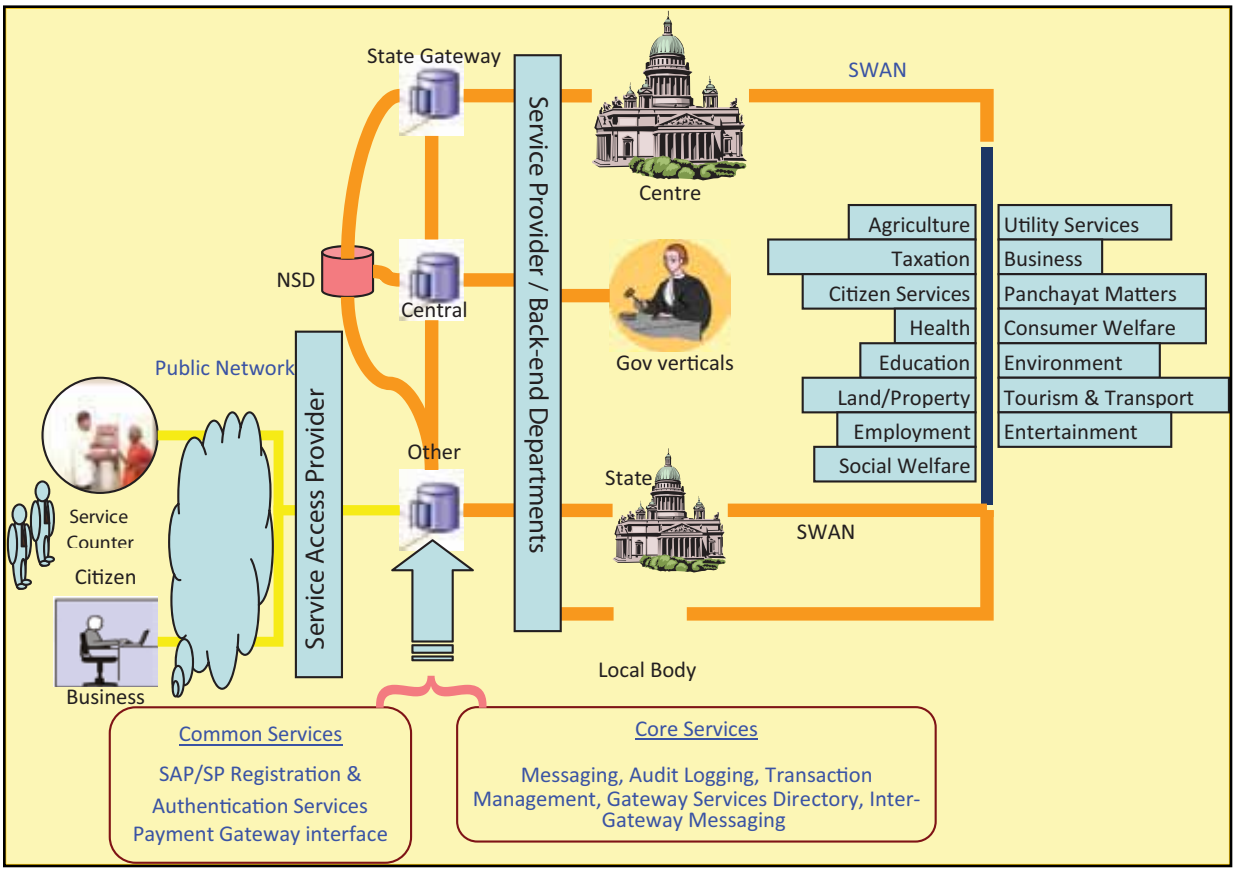
3.3.3 Services

These services provided by this MMP are for the Departments (SP) and for the front end portals (SAP) and not for direct consumption of the citizen. This MMP will deliver the following services

Services	
Messaging	Audit Logging
Gateway Services Directory	National Services Directory
Registration	Reporting

3.3.4 Functional Architecture

The following figure details the overall functional architecture for NSDG



Gateway infrastructure operating at the Centre and States in e-Governance service delivery.

The Gateway will link four major entities:

- **Service Providers (SP)**

  The back-end Government Departments or any other third-party agencies offering e-Services to citizen and businesses, and to other Government Departments, are collectively referred to as Service Providers (SP). Third-party SPs may offer specialized services such as authentication, payment gateway services, or joined-up services

- **Service Access Providers (SAP)**

  A Service Access Provider is an entity, which facilitates Government service access by Service Seekers, by providing a front-end infrastructure. Linked to the Service Access Providers will be the Delivery Channels, which would be the access mechanism for the citizen and businesses to avail the e-Governance services

- **Gateways (NSDG, SSDG, Domain Gateways)**

  The future e-Governance space of India would see many Government Departments, SPs, and SAPs offering e-Services to citizen and businesses. These may not necessarily be directly connected with one Gateway but may be distributed among more than one Gateway across the Centre and State including Gateways in the Departmental applications like MCA21, Passport called Domain Gateways

- **National Services Directory (NSD)**

  The primary function of the National Services Directory (NSD) is to provide a registry, which acts as a service resolution point for all the services in the Gateway constellation. NSD has information about services hosted in all the Gateways of the constellation (i.e NSDG and all SSDGs). All the Gateways that need to resolve services, which are not registered with them, need to resolve it at the NSD. The Gateways need to register with the NSD before they can attempt to resolve a service from the directory.

3.3.5 Success Stories

UP - e-District Integration with NSDG The Income and Caste Certificate services of UP e-District application have been successfully integrated with NSDG. This integration went Live in September 2010 and so far 25,000 transactions have been processed in NSDG (January 2011).

3.3.6 MCA21 Domain Gateway

The Domain Gateway in the MCA21 application has been implemented based on the Gateway standards (IIP/IIS/IGIS). This Gateway has been operational in production since 2006.

3.3.7 Key Milestones

- NSDG 1.0 was launched on 14th August, 2008
- NSDG has been successfully integrated with UP - e-District
- MCA21 Domain Gateway based on IIP/IIS/IGIS standards has been operational since 2006
- NSDG has been successfully integrated with e-Biz, Passport Seva, J&K eforms
- application, TN - e-District and Trademarks in the test environment

3.4 Aadhaar: The Unique Identification Project of India[26]

The Unique identification project was conceived as an initiative that would provide identification for each resident across the country and would be used primarily as the basis for efficient delivery of welfare services. It would also act as a tool for effective monitoring of various programmes and Schemes of the Government.

The concept of a unique identification was first discussed and worked upon in 2006 when administrative approval for the project Unique ID for BPL families' was given on March 3, 2006 by the Department of Information Technology, Ministry of Communications and Information Technology. This project was to be implemented by the NIC over a period of 12 months. After several rounds of discussions by various stakeholders and on the recommendation of the Empowered Group of Ministers (EGoM) for collation of the two Schemes - the National Population Register (NPR)/MNIC under the Citizenship Act, 1955 and the Unique Identification Number (UID) of the Department of Information Technology, the Unique Identification Authority of India (UIDAI) was constituted and notified

[26] *Source: Saaransh – A compendium of Mission Mode Projects under NeGP*

by the Planning Commission on 28th January, 2009 (vide notification no A-43011/02/2009- Admn -I) as an attached office under the aegis of the Planning Commission. The UIDAI was given the responsibility of laying down the plan and policies to implement the UID Scheme, to own and operate the UID database and be responsible for its update and maintenance on an ongoing basis.

3.4.1 Objectives

Unique Identification Number (called *Aadhaar*) would help in better targeting of beneficiary oriented Schemes like NREGA, Sarva Shiksha Abhiyan, Indira Awaas Yojana and various State specific beneficiary oriented Schemes by uniquely identifying the residents/beneficiaries. It would significantly reduce identity frauds and thereby help in efficient utilization of funds allocated to these Schemes. Over a period of time, this may help in reducing the total outlay under these Schemes by preventing duplicates both under the same Scheme and across various Schemes.

3.4.2 The benefits of the Scheme would be

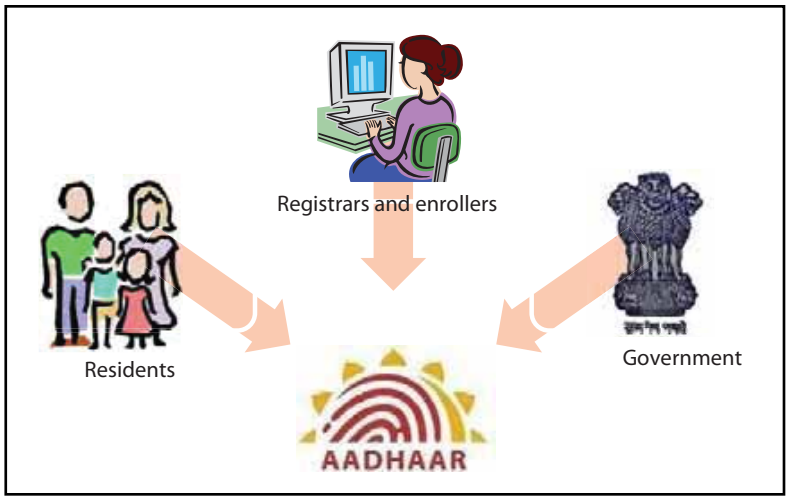
a. A single repository of resident data with identity information which would obviate the need to undertake a de-novo survey for building resident database by individual Departments frequently, thereby reducing the overall Government outlay in building separate identity related databases. It would effectively enable shift from *de-novo* approach to incremental updation of database in a collaborative manner
b. Better monitoring and targeting of social benefits to the beneficiaries
c. Eliminating the need for multiple identification mechanisms prevalent across Government Departments
d. Help in preventing and controlling pilferage, and fraudulent siphoning off of Government benefits
e. Help in inclusive banking and financial services
f. Important from the national security perspective

3.4.3 Expected Outcomes

The following are the outcomes expected from the project:

- **For residents:** The UID will become the single source of identity verification. The Scheme will generate and issue Unique Identity numbers to all the residents of India and will provide authentication services. UIDAI expects to issue UID numbers to 600 million (60 Crore) residents by the end of five years of its operations. It has adopted a multi-registrar approach to achieve this objective. Once residents enrol, they can use the number multiple times - they would be spared the hassle of repeatedly providing supporting identity documents each time they wish to access services such as obtaining a bank account, passport, driving license, and so on. By providing a clear proof of identity, the UID will also facilitate entry for poor and underprivileged residents into the formal banking system, and the opportunity to avail services provided by the Government and the private sector. The UID will also give migrants mobility of identity
- **For Registrars and enrollers:** The UIDAI will only enrol residents after de-duplicating records. This will help Registrars clean out duplicates from their databases, enabling significant saving. For registrars focused on cost, the UIDAI's verification processes will ensure lower Know

Your Resident (KYR) costs. For Registrars focused on social goals, a reliable identification number will enable them to broaden their reach into groups that have until now been difficult to authenticate. The strong authentication that the UID number offers will improve services, leading to better resident satisfaction

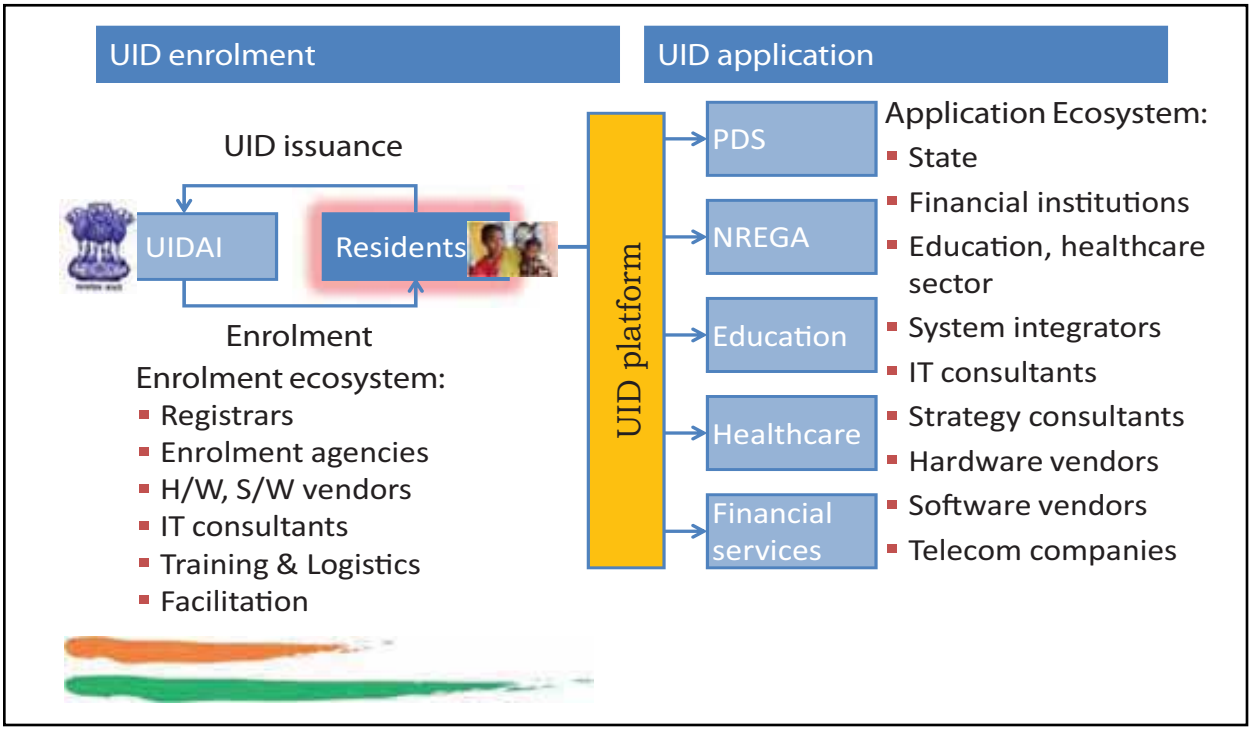


- **For Governments:** Eliminating duplication under various Schemes is expected to save the Government exchequer upwards of ₹ 20,000 crore a year. It will also provide Governments with accurate data on residents, enable direct benefit programmes, and allow Government Departments to coordinate investments and share information

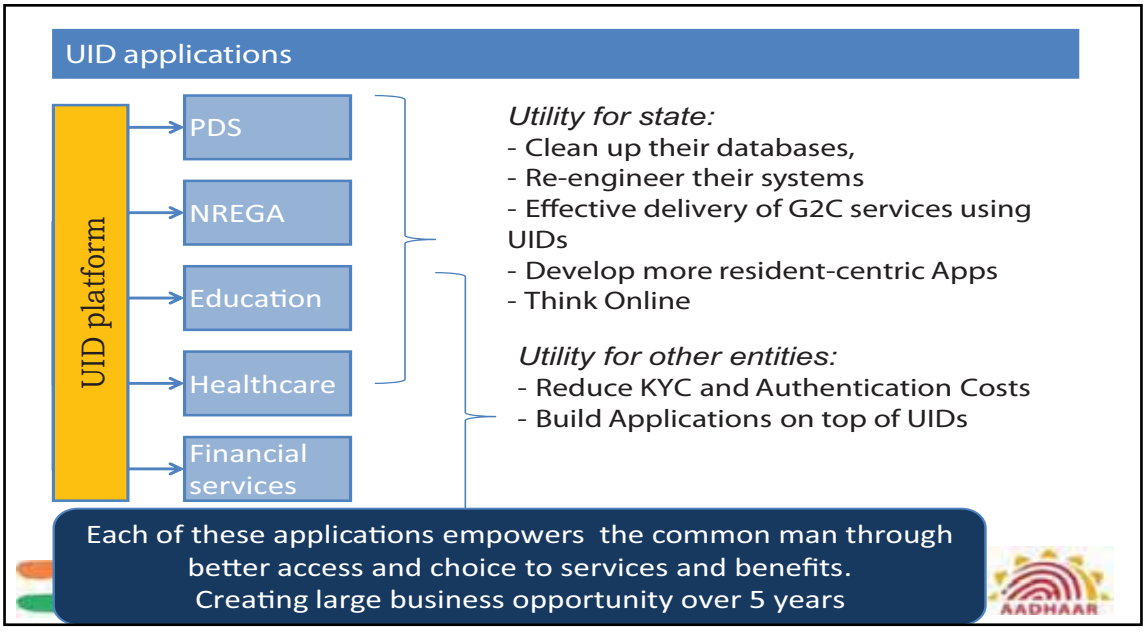
3.4.4 Services

UIDAI will only collect the basic demographic and biometric information of the resident and issue a unique identification number. The Registrar that the UIDAI plans to partner with - the MNREGA, RSBY, PDS - will help bring a large number of poor and underprivileged into the UID system.

3.4.5 UID Mission Led Ecosystem

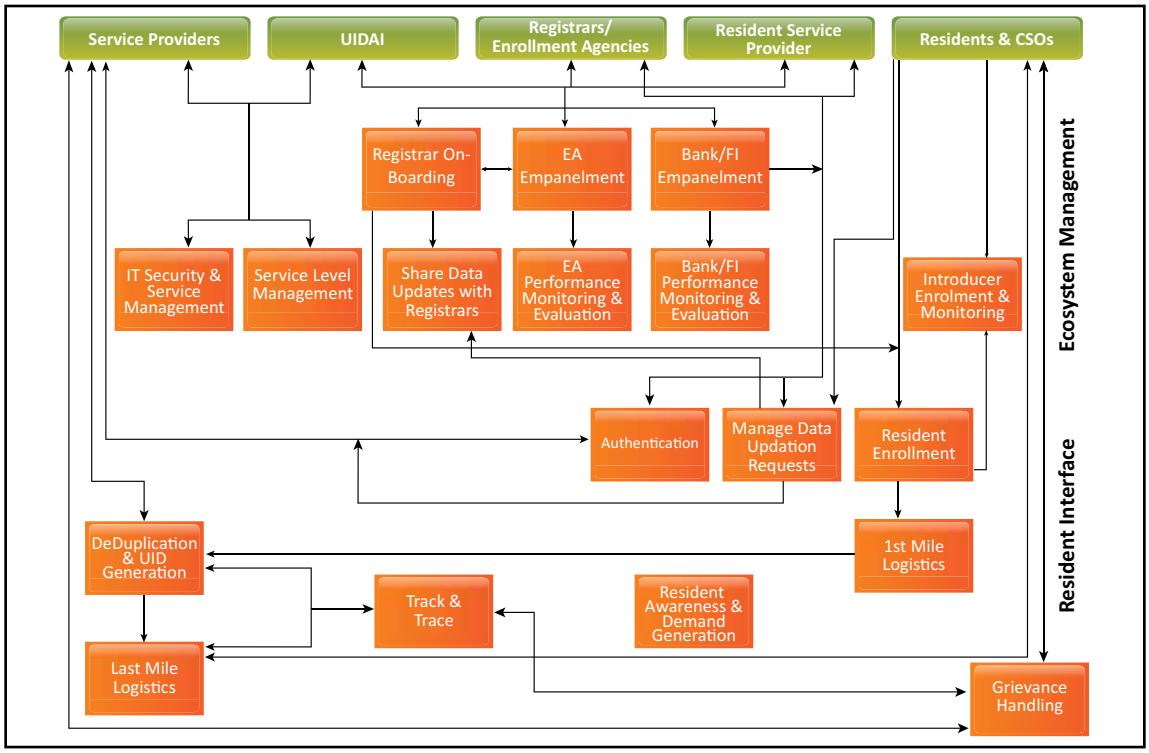


The UIDAI will offer a strong form of online authentication, where agencies can compare demographic and biometric information of the resident with the records stored in the central database. The Authority will support registrars and agencies in adopting the UID authentication process, and will help define the infrastructure and processes they need.

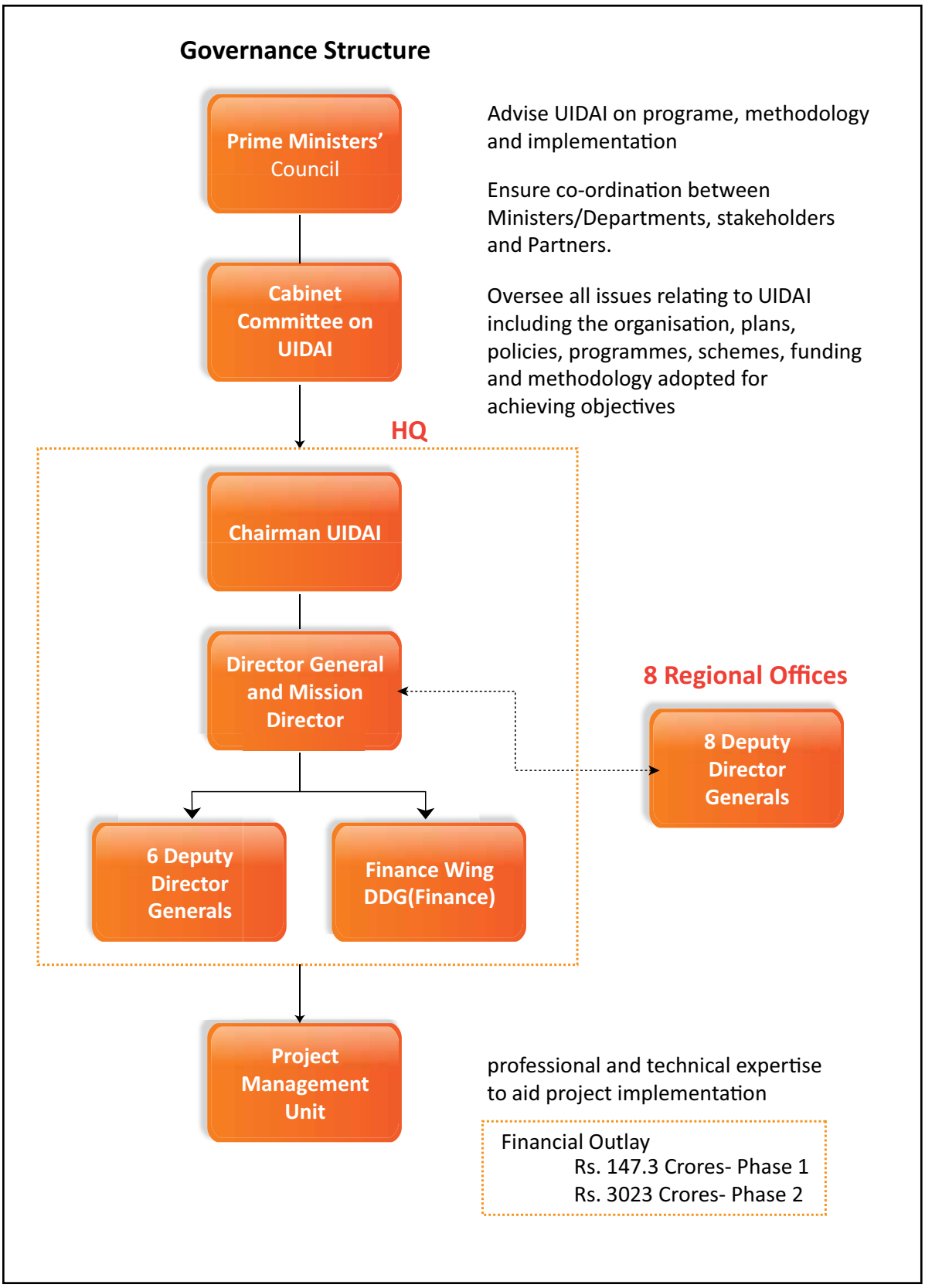


Ecosystems related to UID

3.4.6 As Is Process



3.4.7 Governance Structure



3.4.8 Status

Phase I of the project involved setting up an office, hiring professional consulting agencies, setting up a Project Management Unit (PMU) to build internal capacities, conducting Proof of Concept /Pilot studies, creating an organisation structure and filling the posts. A Project Management Consultant has been engaged for designing a programme management strategy, preparing the DPR for implementation of the Central ID Data Repository (CIDR), selecting a Managed Service Provider (MSP) to implement and manage the CIDR and providing project management services.

The project has since been launched by the Prime Minister on 29th September, 2010 in Tembhali village in Nandurbar, Maharashtra with the first set of numbers being given to the residents.

- Proof of concept studies has been conducted in Andhra Pradesh, Bihar and Karnataka
- Logo and the name Aadhaar have been finalized
- The Application Development, Maintenance, Support Services Agency (ASDMSA) and the Biometric Device Certification Agency have been appointed
- Contact Centre of the Authority is functional
- Enrolling agencies and training agencies empanelled
- Cabinet Committee on UIDAI has approved the Budget for Phase II of the project
- Biometric Service Providers appointed

3.5 MCA21 (http://mca.gov.in)[27]

The vision of the MCA21 project implemented by the Ministry of Corporate Affairs (MCA), Government of India, was 'to introduce a service-oriented approach in the design and delivery of Government Services'

Its mission was 'to build up a secure portal that offers availability of all registry related services including filing of documents, registration of companies and public access to corporate information. The portal services can be accessed/ availed from anywhere, at any time that best suits the corporate entities, professionals and public at large'.

The project will be integrated with the National e-Governance Services Delivery Gateway (NSDG), which will help extend MCA services to businesses via multiple front-end delivery channels, and which will also help provide other value-added services over and above the base services offered by MCA21.

There are more than 100 services covered within the scope of MCA21.

Among these, the major services are as follows:

- Name approval
- Incorporation of new companies
- Filing of Annual Statutory Returns
- Filing of forms for change of names/address/Director's details
- Creation/Modification/Satisfaction and verification of charges

[27] *Source: Saaransh – A compendium of Mission Mode Projects under NeGP*

- Filings for various statutory services required under the Companies Act
- Inspection of company documents (public records)
- Investor grievance Redressal
- Improve speed and certainty in the delivery of MCA services Provide a harmonious blend between facilitation and control

MCA21 has changed the way citizen and companies interact with Government now.

The companies can now interact 'online' with MCA instead of 'in-line' with serpentine queues especially during the peak filing season (October - December every year).

MCA21 has created an overall positive environment amongst stakeholders and its adoption can be gauged from the fact that MCA21 portal is getting 4 million hits per day.

3.5.1 How was the past experience ?

Under the previous process which was based on manual work and physical interaction, the stakeholder or his representative had to appear in person either to do a statutory filing or to reference the public records of a company maintained in the registry. This could be done only on working days and used to cause immense problems during the seasonal peaks, when it used to be excessively crowded. Payments were accepted in the Registrar of Companies (ROC) office cash counter and higher amounts could be paid only at one select branch of Punjab National Bank in the city where ROC office was located. Sometimes it took as much as three to six months to process some types of the documents, given the sheer volumes of document that were filed.

Consequently, there was no time left to focus on value based, core tasks that centered on new company incorporation, according approvals and carrying out compliance monitoring tasks, including scrutiny and inspections.

Service Maturity and Efficiency through Transformation

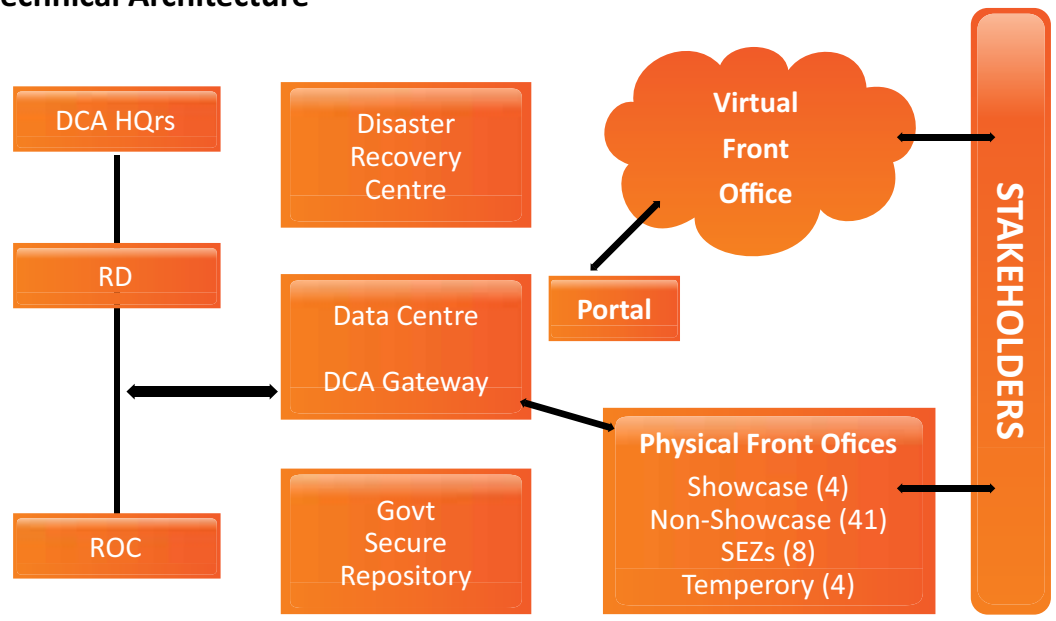
Service Metrics

Type of Service	Prior to MCA21	After MCA21
Name Approval	7 days	1-2 days
Company Incorporation	15 days	1-3 days
Change of Name	15 days	3 days
Charge creation/modification	10-15 days	2 days
Certified Copy	10 days	2 days

Registration of Other Documents

Type of Service	Prior to MCA21	After MCA21
Annual Return	60 days	Instantneous
Balance-sheet	60 days	Instantneous
Change of Directors	60 days	1-3 days
Change in Regd. Office Address	60 days	1-3 days
Increase in Authorized Capital	60 days	1-3 days
Inspection of Public Documents	Physical appearance	On-line

Technical Architecture



RD- Regional Directors
ROC- Registrar of Companies

3.5.2 The new process

The following are the features of the new IT-enabled MCA process:

- Anywhere, anytime secure electronic filing for MCA transactions through adaptation of all statutory forms to eforms, suitable for electronic filing
- Automated scrutiny of e-forms at the MCA portal available, that can substantially reduce the commonly associated mistakes encountered in form-filling by the applicant

- Use of Digital Signatures to ensure the security of electronic forms and documents in conformance with the Information Technology Act, 2000
- Verification of the credentials of the authorized signatory (Director, Company Secretary or Manager and Practicing professional) through an additional 'role check' function, with another established identification such as DIN, and/or Professional Membership number provided by the Institute.
- PAN verification through system is also being considered in collaboration with Income Tax Department
- Convenient multi-modal methods of payment encompassing existing payment mechanism and electronic payment options using credit cards and Internet banking, including an expanded nationwide network of Bank branches for challan payments
- Access to the MCA services optimized for use from a typical home Internet connection, with freely available software, with no additional costs for the end user
- Best-in-class information technology solution, including electronic workflows and sophisticated document storage and retrieval systems, that can significantly reduce paper usage at the MCA Offices
- Introduction of Hassle free stamp duty payment through MCA21 portal
- Nearly 50 million pages of legacy corporate paper documents digitized for ready electronic access through Internet to the investors and general public
- Easy and comprehensive reporting of grievances by investors through MCA portal, for facilitating speedy redressal
- An architectural approach that allows easy adaptation of evolving technologies and platforms, while providing the robustness and scalability to the MCA21 solution
- National Data Centre located at New Delhi that provides uninterrupted 24 x 7 operations
- High bandwidth connectivity across all nationwide offices of MCA and facility for access by several thousand users at the same time
- Total transparency whereby citizen can themselves find out the status of their transactions. It has become so convenient for the citizen that the relevant certificates and letters are auto generated and delivered through electronic Mail. These certificates and letters are also made available to them on the portal in a secure manner

'Straight-through-Process'

Fully automated, secure and takes record of some of the statutory filings without any human intervention. This move has enabled re-focusing of effort on core tasks that help quicker turnaround of critical business service requests

'Disaster Recovery Centre'

at Chennai, with the facility to restart operations within 12 hours in the event of a natural or manmade disaster

'Active Certified Filing Centres',

Nearly 200 centres operated by practicing professionals from the Institutes of Company Secretaries, Chartered Accountants and Cost Accountants, who provide MCA services for a nominal, prescribed fee

4 Showcase Front offices at 4 Metros' - Mumbai, Kolkata, Delhi and Chennai and supplemented by Help Desk at 16 ROC locations that provide facilitation services for electronic filing, free of charge

MCA21 has achieved the distinction of becoming the first project that has a demonstrable track record of paper reduction.

3.5.3 Implementation Strategy

Given the unique nature of requirements and the outcomes targeted, a 'big-bang' strategy was adopted to migrate to a near complete paperless system. A hybrid system would have only added to complexities of reconciling paper and electronic transactions. The back office operations have been made completely paperless with the use of electronic workflows and secure digital document repositories.

3.5.4 Business Model

The MCA21 is implemented on Build, Own, Operate and Transfer (BOOT) Model under Public-Private Partnership (PPP) framework. The project cost includes the costs towards solution development, digitization and data migration, implementation and change management, operating the solution for a period of six years after implementation and establishment of institutional frameworks such as the Project Monitoring Unit to enable effective service delivery. The payments to the operator for the software solution and digitization were made upon provisional certification, while all other costs are amortized and paid on an equated quarterly basis to ensure effective service delivery. A system of incentives and penalties has been built in so as to enforce adherence to service levels by the Operator.

- The massive transition has been achieved within a 7 month period
- BOOT Build, Own, Operate, Transfer
- An average of 4 million portal hits per day is registered and about 102 lakh documents have been filed electronically so far.

3.5.5 Current Status

The Project was launched on 18 Feb 2006 at ROC Coimbatore, the first pilot location, and a second major pilot was launched at ROC Delhi on 18 Mar 2006. Progressive rollout was completed at all other ROC offices in the country by 04 Sep 2006, almost coterminus with the mandating of electronic filing from 16 Sep 2006 enabled through the amendments introduced in the Companies Act, 1956. Subsequently, the MCA21 system has been serving as the operational backbone to the process of MCA service delivery at the ROC offices. About 260,560 new companies have been registered using the newly introduced secure electronic services and 1.275 million users have viewed company documents online from the registry. Approximately, 93% of all filings are done directly at the MCA portal while the balance is filed through facilitation centres (both MCA established and those established by practicing professionals).

3.6 e-Panchayat[28]

The Panchayati Raj Institutions (PRIs) are saddled with the problems of inadequate physical and financial resources, technical capabilities and extremely limited computerization. As a result, the potential of PRIs as the preferred delivery channel for the Schemes of State and Centre as well as for citizen services has not been fully realised. While some computerization efforts for PRIs have been made by NIC over the years, the e-Governance revolution sweeping the country has not touched the PRIs yet in significant measure. The Ministry of Panchayati Raj, Government of India has therefore decided to take up the computerization of PRIs on a mission mode basis.

3.6.1 Objectives

Objective of e-PRI MMP are

- Enabling Panchayats to better deliver its mandated services to the Citizens through IT
- Enabling PRIs to use IT as a tool for transparency, disclosure of services to Citizens and social audit
- Improving internal management processes and decision making in Panchayats
- Enabling PRIs to use IT for electronic tagging and tracking of funds transferred to Panchayats, including rapid bank transfer of funds, tracking the expenditure of the Panchayats

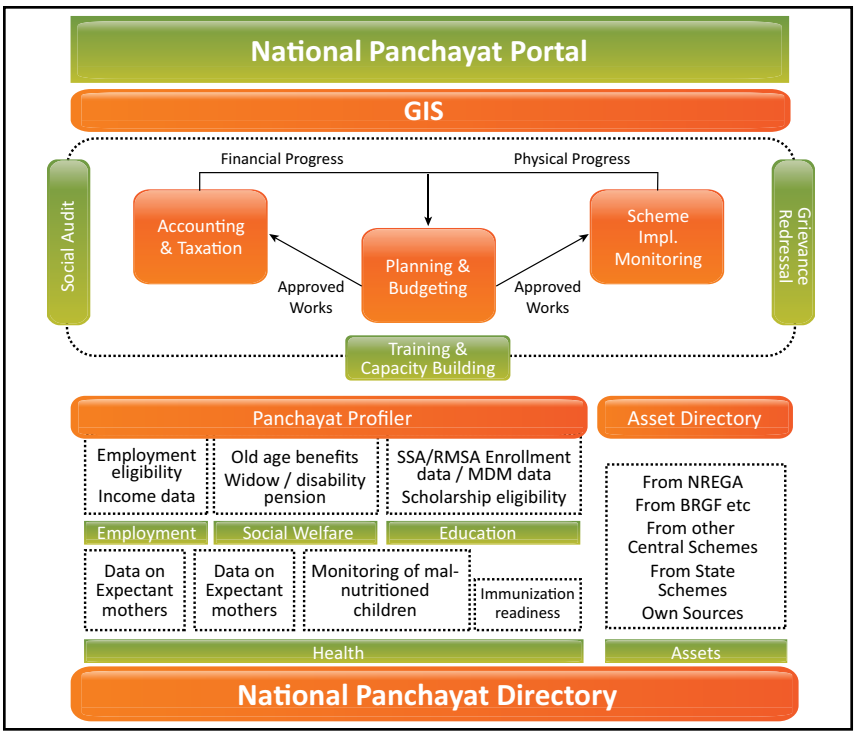
3.6.2 e-Panchayat MMP Components

- Information and Service Need Assessment
- Business Proces Re-engineering
- Computing Infrastructure
- Connectivity
- Capacity Building
- Content Management
- Programme and Project Management

- Panchayati Raj Institutions (PRIs) in India is a concept of local self governance, which promotes decentralized governance by participation of the ordinary public in their own governance.
- PRIs function at the village, intermediate (Block) and District level.
- There are approximately 2,34,030 Gram Panchayats at the Village level, 6,053 Janpad Panchayats at the Block level and 535 Zilla Panchayats at the District level.
- There are more than 31 lakh elected representatives at all three tiers.
- 1 PC/Laptop and minimum peripherals (printer, scanner, power supply etc.) would be provided at each Gram Panchayat

[28] *http://panchayat.nic.in*

3.6.3 National Panchayat Portal



Applications

- Unique Code to Panchayats
- Panchayat Portals
- Panchayat Profiler
- Planning and Budgeting
- Accounting
- Scheme Implementation and Monitoring
- Social Audit
- Unique Codes to Assets and Utilities
- Citizen centric services
- Grievance redressal
- Basic GIS Applications
- Training Management

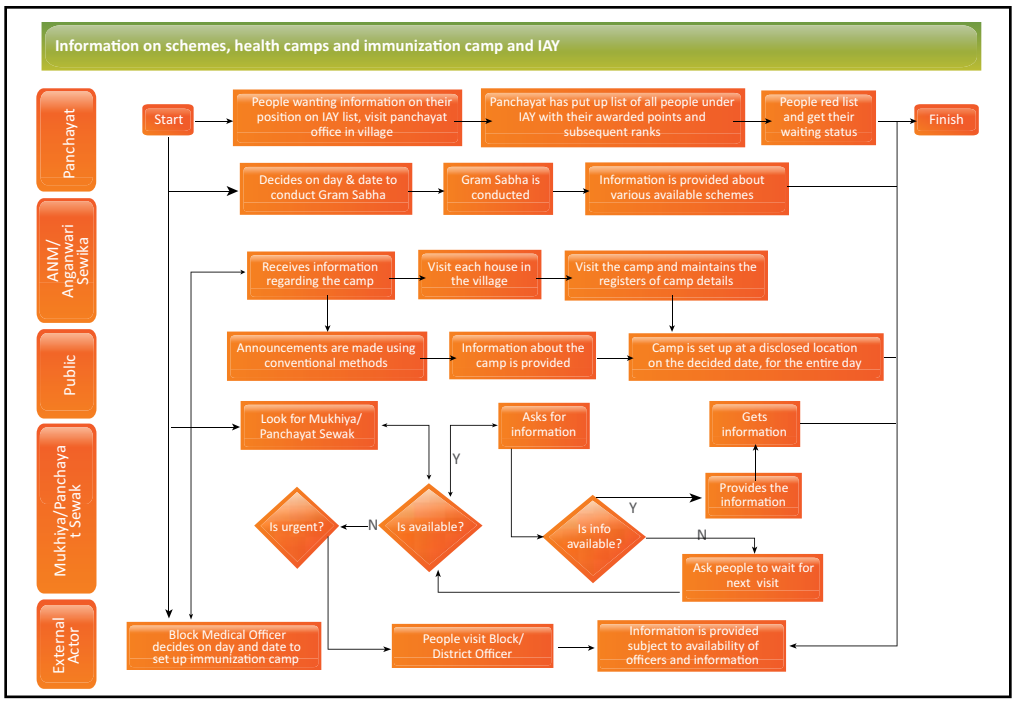
3.6.4 Business Process Reengineering

Through a wide-base consultative approach, information and services needs assessment (ISNA) was conducted in 34 States /UTs spanning 45 Districts and 128 Panchayats /Local Bodies. During the study phase 11 Central Ministries and State Line Departments, 23 Central Schemes were studied. Information and Services Needs Assessment (ISNA) report, Business Process Reengineering Report and Detailed Project Report were prepared for each of the 34 States/ UTs. Finally the reports were summarized as National Reports- National ISNA, National BPR and National DPR. Based on the inputs provided by different stake holders, umbrella lists of services that are currently being provided by PRIs were identified. Subsequent to this, the services to be re-engineered were shortlisted from the identified umbrella list of services on the basis of volume of transaction; extend of demand for improvement, and PRI's involvement to deliver the service.

Solution Intervention Areas

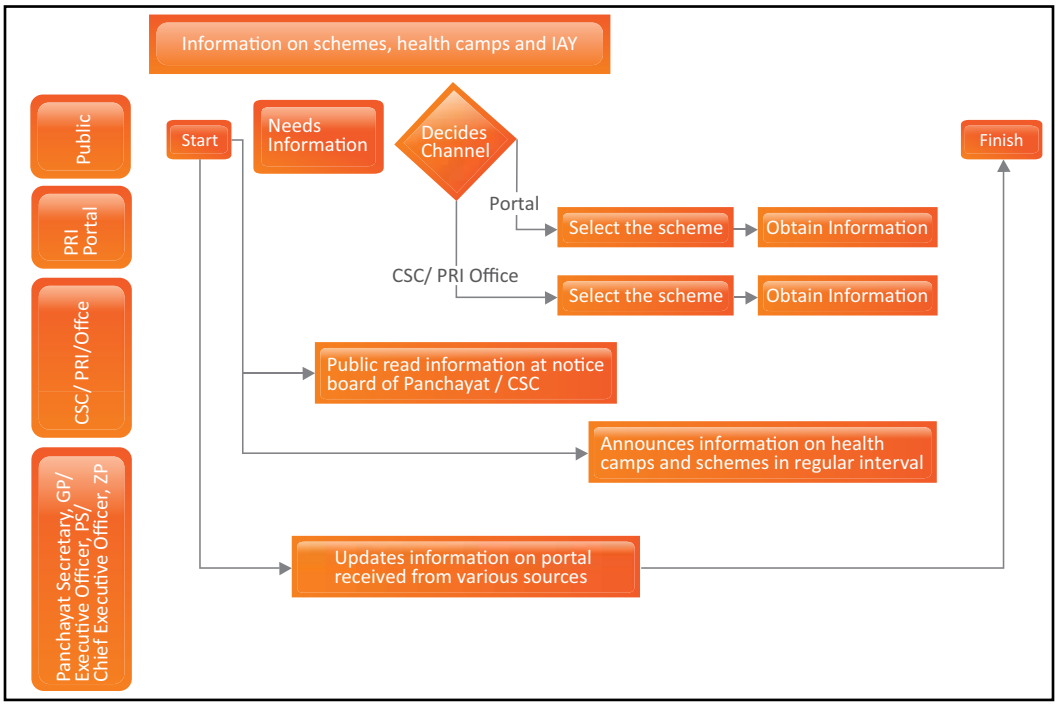
- Process Improvement
- Capacity Building
- Automation
- Policy Change/ Enforcement

3.6.5 AS-IS Process



How Information on Schemes, Health and Immunization Camp and IAY will change in Bihar

3.6.6 To-Be Process

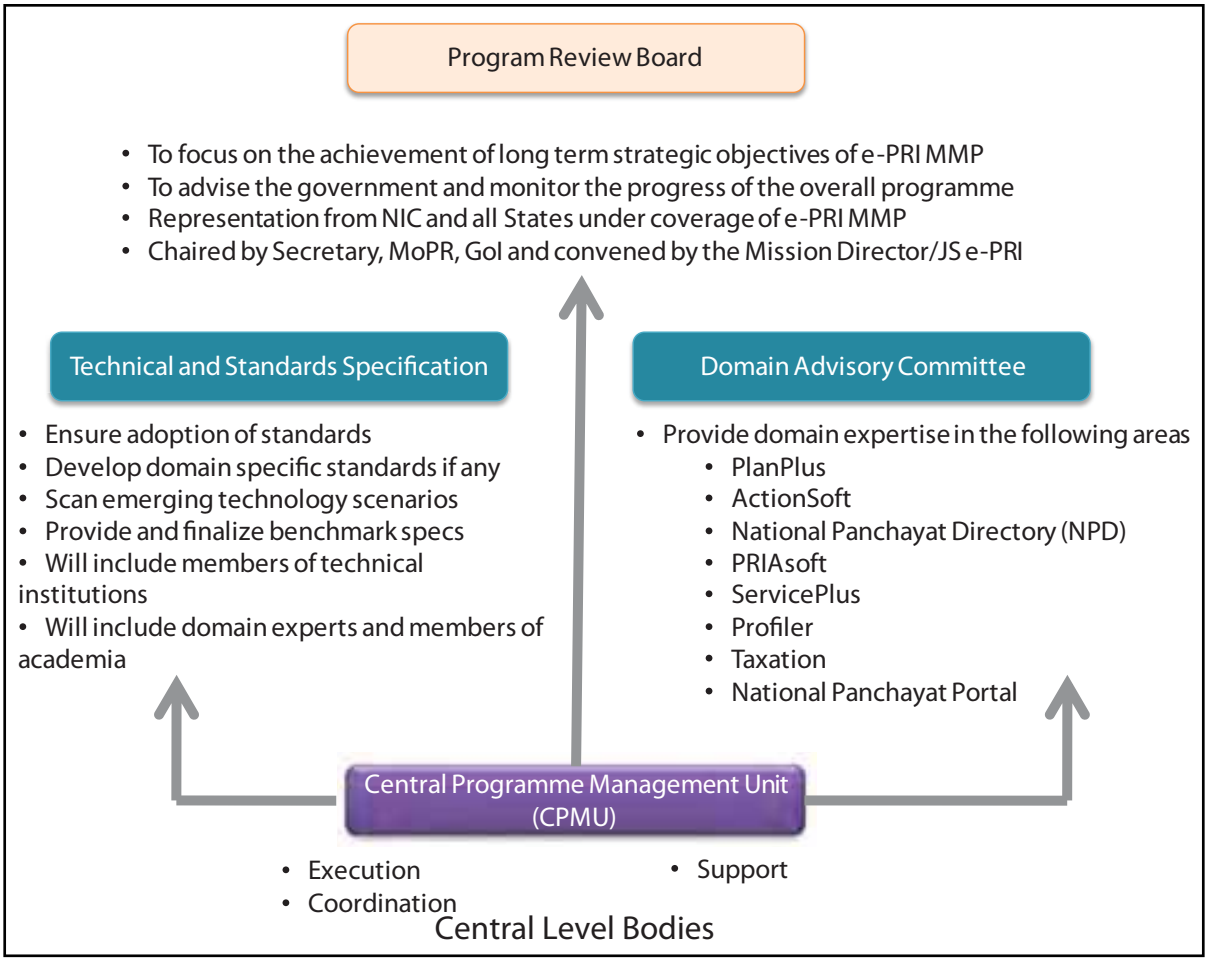


The new service will have a smoother process flow and ease of usage for citizen and others

3.6.7 Governance Structure

The project will be led by the Centre and implemented by States. Hence a three-tier structure is proposed for programme governance of e-Panchayat MMP implementation:

- Central Level Bodies - Headed by Programme Review Board (PRB). The second layer would consist of key committees to act as advisory committees to the PRB on various aspects such as Technical, Functional, e-Governance Standards and Change management and the third one will be the Central Programme Management Unit (CPMU)
- State Level Bodies - Headed by State Apex Programme Management Committee. The second layer will be the State Programme Management Unit (SPMU)
- District Level Bodies - District Programme Management Committee and will be headed by CEO ZP of the District



3.6.8 Implementation Strategy

Implementation of the e-Panchayat MMP in all States/UTs is proposed to be done on a Service Procurement Model (SPM) whereby a Service Procurement Agency (SPA) would be selected through a competitive and transparent bidding process at State level. It is proposed that the SPA would provide the required ICT Infrastructure as well as provide trained computer literate manpower. It iss further proposed that the SPA would be provided adequate monthly service charges, as may be determined through a bidding process, to carry out the desired tasks.

The implementation would be spread over a period of 3 years and would comprise of the following phases:

3.6.9 Financial Estimates

Sl No.	Cost Head	Totals (In ₹ Cr.)
1	State site ICT + National ICT	2872.02
2	Payout (PRIs ICT + Manpower)	2939.04
3	Training	562.32
4	Block Support Group	320.42
5	PMU (CPMU and SPMUs)	243.92
6	IEC	51.67

Financial Outlay Expected to be ₹ 6989 crore over 5 years

3.6.10 Current Status

The Information and Service Needs Assessment (ISNA), Business Process Reengineering (BPR) and Detailed Project Report (DPR) study has been completed in 34 States/UTs. ISNA and BPR reports have been submitted by 27 States/UTs. DPRs have been received from 34 States/UTs. PlanPlus, PRIASoft, National Panchayat Portal have been developed and deployed. Remaining applications are under development.

PlanPlus, PRIASoft and National Panchayat Portal have been developed and Deployed

3.7 National Rural Health Mission: A Promising Approach towards better Rural Health[29]

3.7.1 Summary

The National Rural Health Mission (NRHM) was launched in 2005 to provide equitable, affordable and quality health care to the poor residing in rural and remote areas of the country. NRHM has paved the way for a holistic approach in concentrating on the services provided by the primary healthcare institutions. It has allowed 18 States to innovate themselves in how to provide better health standards and services to its vast majority. This has resulted in an unbelievable 150 innovative Schemes that have been implemented in different States. The focus has now changed from inputs like providing drugs, equipment and doctors to hospitals to outputs that have to be produced. The local community has not just become active in monitoring but has become empowered through this rights based approach.

3.7.2 Introduction

The National Rural Health Mission (NRHM) was launched by the Hon'ble Prime Minister Mr. Manmohan Singh on 12th April 2005, to provide accessible, affordable, equitable and quality health services to the poorest households in the remotest and rural regions of the country. The NRHM covers the entire country, with special focus on 18 States where the challenge of strengthening poor public health systems and thereby improving key health indicators is the greatest. The States of Uttar Pradesh, Uttaranchal, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Orissa, Rajasthan, Himachal Pradesh, Jammu and Kashmir, Assam, Arunachal Pradesh, Manipur, Meghalaya, Nagaland, Mizoram, Sikkim and Tripura are covered under NRHM.

3.7.3 Situation Description

The NRHM was launched as a framework of partnership among Government of India, related Departments of the Government, especially Departments of Women and Child Development, Drinking Water Supply, Panchayati Raj and Development of North Eastern Region State Governments, Panchayat Raj Institutions, NGOs and private health providers. The Mission Steering Group under the Chairmanship of the Union Minister for Health and Family Welfare provides policy guidance and operational oversight at the National level. The State Governments have been part of the Stakeholder Consultations for finalization of the strategy of the Mission. The thrust of the Mission was on establishing a fully functional, community owned, decentralized health

[29] *Source: Governance Knowledge Centre (GKC), DARPG, http://indiagovernance.gov.in*

delivery system with inter sectoral convergence at all levels, to ensure action on a wide range of determinants of health such as water, sanitation, education, nutrition, social and with gender equality.

The Mission was started to achieve the following goals set under the National Health Policy (2002) and the Millennium Development Goals:

- To facilitate the access and utilisation of quality health services by all
- To forge a partnership between the three tiers of Government
- To set up a platform for involving the Panchayati Raj institutions and community in the management of primary health programmes and infrastructure
- To provide an opportunity for promoting equity and social justice
- To establish a mechanism to provide flexibility to the States and the community to promote local initiatives
- To develop a framework for promoting inter-sectoral convergence for promotive and preventive health care

3.7.4 Situation Analysis

The Indian public health system suffers from serious regional and social inequities. The Curative services favour the non-poor i.e. for every ₹ 1 spent on the poorest 20% population, ₹ 3 is spent on the richest quintile. There is a lack of community ownership of public health programmes which impacts the levels of efficiency, accountability and effectiveness. There is no integration of sanitation, hygiene, nutrition and drinking water issues which have a great impact on primary health. Only 10% Indians have some form of health insurance, which is mostly inadequate. Over 25% of hospitalized Indians fall below poverty line because of hospital expenses.

To overcome the lapses in public health system and recognizing the importance of health in the process of economic and social development and improving the quality of life of our citizen, the Government of India has launched the National Rural Health Mission. The Mission will make the Government to raise public spending on Health from 0.9% of GDP to 2-3% of GDP. It aims to undertake architectural correction of the health system to enable it to effectively handle increased allocations and promote policies that strengthen public health management and service delivery in the country.

The National Rural health Mission is different from its preceding Schemes as the focus was on holistic health system at all levels, from the village to the District with active Panchayati Raj

Institutions and community ownership and participation. NRHM also subsumes the key national programmes, namely, the Reproductive and Child Health II Project (RCH II), the National Disease Control Programmes (NDCP) and the Integrated Disease Surveillance Project (IDSP) thus making it an umbrella initiative of the Government.

3.7.5 Solution

The core strategies of NRHM include, decentralized village and District level health planning and management, appointment of Accredited Social Health Activist (ASHA) to facilitate access to health services, strengthening the public health service delivery infrastructure, particularly at village, primary and secondary levels, mainstreaming AYUSH, improved management capacity to organize health systems and services in public health, emphasizing evidence based planning and implementation through improved capacity and infrastructure, promoting the non-profit sector to increase social participation and community empowerment, promoting healthy behaviours and improving intersectoral convergence.

One of the key components of the National Rural Health Mission is to provide every village in the country with a trained female community health activist – 'ASHA' or Accredited Social Health Activist. Selected from the village itself and accountable to it, the ASHA will be trained to work as an interface between the community and the public health system.

Community-based Monitoring of Health Services is another key strategy of NRHM to ensure that the services reach those for whom they are meant, especially for those residing in rural areas, the poor, women and children. Community Monitoring is also seen as an important aspect of promoting community led action in the field of health.

Rogi Kalyan Samiti (Patient Welfare Committee)/Hospital Management Society are to be formed which are a registered society will act as a group of trustees for the hospitals to manage the affairs of the hospital. It consists of members from local Panchayati Raj Institutions (PRIs), NGOs, local elected representatives and officials from Government sector who are responsible for proper functioning and management of the hospital/Community Health Centre.

The supplementary strategies of NRHM include regulation of the private sector to improve equity and reduce out of pocket expenses, foster public-private partnerships to meet national public health goals, reorienting medical education, introduction of effective risk pooling mechanisms, involvement of NGOs and social insurance to raise the health security of the poor and taking full advantage of local health traditions.

3.7.6 Ease in Service Delivery

There is significant increase in institutional delivery, outpatient care, availability of medicine, better access through mobile Medical unit.

Chiranjeevi Yojna (CY) was initiated as a Scheme to increase institutional deliveries and to encourage private practitioner to provide maternity services in remote areas that record the highest infant mortality and maternal mortality rates in Gujarat

PANCHAMRIT was launched in Rajasthan in to reach the left out and hard to reach area i.e. to promote over all health of the mother and child living in far-flung and vulnerable areas by concentrating efforts and resources; in reaching inaccessible and un-approached areas and improving coverage of health services. Vaccine for Preventable Diseases, Elimination of Micronutrient Deficiency, Family Welfare, Safe Motherhood and Ensuring Healthy New Born were the 5 main focus areas.

In Orissa, few local NGOs with partnership with Interact Worldwide have been managing Public Health Centres. This is being done using various participatory techniques to understand community needs, developing local resources and meeting the health needs of the unmet. As a result health centres lying defunct have become vibrant dispensing basic health needs to the poor and marginalized.

3.7.7 Capacity Building

There are more than 1200 Programme Management, Finance Management and Data Management professionals who have joined the system at State and District levels. The introduction of these skills has improved programme management, monitoring and evaluation, financial reporting and record keeping. IMNCI training for management of neonatal and childhood illnesses has been in more than 25 States. Skilled Birth Attendant Training of MOs and ANMs, Training of MOs for Anaesthesia for emergency Obstetric Care, Training of MOs for Obstetric Care, professional development programmes for MOs, District Planning and Appraisal programmes for NRHM State level teams, have been taken up on a large scale.

Assam Governmnet has initiated a radio programme for ASHAs with All India Radio (AIR), Assam to develop their knowledge and skills

3.7.8 Evaluation

NRHM has set up effective systems of monitoring and evaluation. A detailed MIS that provides disaggregated information about performance with respect to vulnerable groups like SCs and STs, has been operationalized. An effective Financial Management Reporting System has become functional with quarterly, activity wise reports from States. A pilot initiative on community monitoring is being initiated in partnership with NGOs. The Institute of Public Auditors of India are working in five States (Bihar, Assam, UP, Tamil Nadu and Kerala). The assessment of ASHA programme in MP, Rajasthan, Orissa, UP, Bihar is under way with the support of UNFPA/Unicef. A system of independent assessment of performance of States by institutions of excellence is in the

process of finalization. An intensive field based joint review mechanism is in place for the RCH – II that covers core areas of NRHM as well. Three such reviews have already been conducted.

3.7.9 Sustainability

The time period of NRHM is seven years. But it has already made commendable achievements. Lots of local initiatives are enjoying good success both in terms of popularity and effectiveness thus making NRHM a sustainable practice of the Government.

Moreover, not all Schemes have budgetary implications tied to them thus making health centres relatively free of financial constraints.

3.7.10 Is it a best practice?

It is a best practice because plan provided for making the community and the peripheral health staff partners in the path to achieving positive changes in the health system. This attempt to make the community partners in monitoring the health posts was the real innovation in the NRHM.

As better public health system is the priority concern for policy makers as well as implementers, to devise a mechanism that reaches to the socio economically weaker section, especially in rural area has become a challenge for the nation. In such scenario, NRHM can be adopted with regional specification to make it more successful and effective.

3.7.11 Replicability

The Scheme has high replicabilty value. It is already being implemented in 18 States. The National Urban Health Mission on the lines of National rural Health Mission is already underway. Lots of local initiatives like Chiranjeevi Scheme in Gujarat, Delivery huts in Haryana, etc. have got lot of success and recognition are being implemented in other States and Districts of the country. The mission is a viable option for other States and Districts where health indicators are very poor.

3.7.12 Lessons learnt

The NRHM is implemented through decentralized administrative system in which local bodies have full say in designing and implementation of health Schemes according to the local needs. Thus making it locally popular and effective as community has huge say in both planning and implementation. It has also been observed that linking health services to community participation and to some extent defining roles for community participants facilitates accountability of key providers. This not only improves accessibility of services to ordinary people but at the same time strengthens entrepreneurial energy of people in creative outcomes. It strengthens democracy and people's consciousness for a healthy community.

3.8 Social Accountability through Community Scorecards in Bolangir District, Odisha[30]

3.8.1 Executive Summary

ADHAR is a grassroots, rights-based organisation. Through a grant from the Affiliated Networks for Social Accountability (ANSA), a World Bank Institute organisation, ADHAR launched a social accountability initiative in Bolangir District, Odisha. It focuses on assessing the National Rural Employment Guarantee Act (NREGA), the Public Distribution System (PDS), and the Integrated Child Development System (ICDS).

The programme strengthens accountability by scoring of Scheme functioning and digitised input tracking at a budgetary and outcome level. The process involves qualitative assessment of Schemes to design scorecards, followed by scoring by both beneficiaries and service providers, and finally, discussion between the two groups to determine an action plan for addressing problems in Scheme operations.

As of February 2011, four interface meetings between village beneficiaries and Local Government officials were held – three evaluating MGNREGA and one for ICDS. There are plans for assessing PDS in the near future.

The localised process not only makes transparent the entitlements of Government Schemes, but also encourages beneficiaries to demand that they reach them in the way that they are intended. ADHAR's community score card programme educates beneficiaries and providers in each other's needs and capacities, streamlining democratic processes in an effective manner.

3.8.2 Background

Bolangir District, Odisha is said to be one of the most impoverished Districts in India. Nationwide Government Schemes have reached rural communities in Bolangir, but often only function at a very basic level. As such, there is a need to ensure that the intended beneficiaries of these programmes are accessing them in a way that meets their needs.

In 2010, ADHAR received a grant from the Affiliated Networks for Social Accountability (ANSA), a World Bank Institute organisation, for the promotion of social accountability through community efforts in the areas of the National Rural Employment Guarantee Act (NREGA), the Public Distribution System (PDS), and the Integrated Child Development System (ICDS). Under this grant, ADHAR implemented a social accountability tool whereby the local community and Government score the functioning of Government programmes.

The initiative is based on the use of community score cards (CSC), a social methodology that was borne out of the citizen report card. The Public Affairs Centre in Bangalore, India designed the

[30] *Source: Governance Knowledge Centre (GKC), DARPG, http://indiagovernance.gov.in*

original citizen report card which was picked up and promoted across the Global South by the World Bank. Citizen report cards are 'participatory surveys that provide quantitative feedback on user perceptions on the quality, adequacy and efficiency of public services.' Beyond data collection, the report cards act as a tool for macro-level public accountability through media content and civil society advocacy analysis. Community scorecards, as used through the ADHAR programme in Bolangir, differ from citizen report cards because they operate at the micro-level and typically, encourage qualitative measurement. The CSC process is a 'hybrid of the techniques of social audit, community monitoring and citizen report cards.' Key to the process is an interface meeting between the service providers and the community, which ensures timely exchange of information and action towards filling gaps in service.

In the case of ADHAR's programme, rural committees assess a Government Scheme according to their expectations and desires from it, as developed through their understanding of the purpose it serves and the capacities of the Government. Simultaneously, Local Government officials carry out their own scoring according to how well they feel Scheme benefits have been delivered. This is followed by an interface meeting between the two parties, who in comparing the scores, develop an action plan for addressing gaps.

Basic Elements of Community Score Cards

Community Score Card
Unit - Community Meant for local level Emphasis on immediate feedback and accountability, less on actual data Implementation time short (3-6 weeks) Information collected through focus group discussions

Source: World Bank

3.8.3 Objective

Facilitate the use of a social accountability tool at the local level to:

- Streamline governance systems – deal with mismanagement/irregularities in Scheme operations and knowledge gaps between providers and beneficiaries;
- Sensitise people and Government functionaries to each other's needs and capacities;
- Organise and empower rural communities – by increasing participation at the local level;

3.8.4 Working Design

The social accountability tool process begins with local (community and Government) monitoring through community scorecards, followed by engagement of community and Government through interface meetings, and finally, input tracking which involves comparing budget/given with utilised/actual funds. ADHAR's goal is to facilitate the scoring, interface, and input tracking process in 37 villages across five Gram panchayats by March 2011. Currently, the focus is on three Schemes: PDS, ICDS, and MGNREGS.

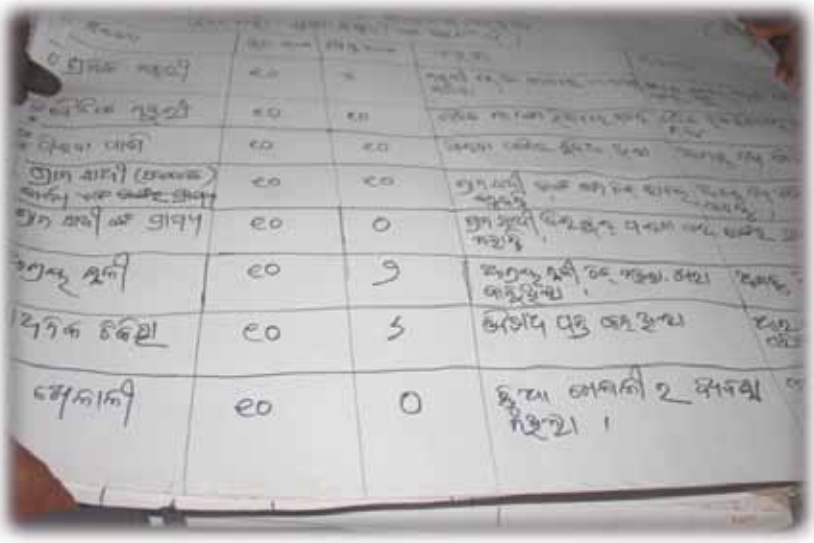
Bolangir District was chosen for implementation because it is one of the 100 poorest Districts in the country and suffers from acute poverty. In the last 1.5 years, there have been 70 starvation deaths in the District. There has also been news of corrupt practices in Scheme operations. Therefore, the Schemes chosen for tracking either deal directly with food insecurity or are those that have been associated with corruption.

3.8.5 Facilitating Community Engagement

ADHAR facilitates the formation of Village Development Action Committees (VDAC). From each VDAC, a village facilitator is chosen to lead in interface meetings and perform data entry for Scheme monitoring. The sarpanch is in-charge of the Government (service provider) scoring process, and other local officials including the *Gram Rozgar Sevak* (GRS), *Gram Sathi*, and the executive officer play supporting roles.

3.8.6 Scoring

The VDAC meets to design the score card for which indicators are chosen according to basic Scheme guidelines. For example, since MGNREGS requires each village to employ a *Gram Sathi*, who is paid for leading worksite activities, a MGNREGS indicator is the wage payment to the *Gram Sathi*. After designing the score card, VDACs hold village meetings to assess Scheme functioning. The villagers determine a number 0 to 10 (0 indicates no provision, and 10 represents full provision) to associate with each indicator. Simultaneous to village scoring, local officials rate Scheme functioning across the same indicators.



3.8.7 Engaging with Government Systems

Interface meetings take place after every round of scoring, which typically occurs every six months. To date, there have been three interface meetings on MGNREGS, one that took place in December 2010 and two in January 2011, and one for ICDS in November 2010. Each side shares their scores and discusses the reasons for them. Discussion proceeds to identifying discrepancies and determining ways to deal with them.

Meetings are carried out in a professional manner and kept under control by VDAC facilitators. There is a mutual understanding of meeting goals and how it benefits all involved to reach them, therefore participants tend to respect the platform for sharing.

3.8.8 Action Plan

Interface meetings conclude when agreements are made on how to move forward. This is translated into a formal action plan, which is finalised within one to two days.

Below is an example of a community score card:

MGNREGS Project: Road Construction

Location: Ghusuradungri Village, Bodipali Panchayat

	Community	Government
Labor Payment	4/10	10/10
Daily Payment	10/10	10/10
Drinking Water	10/10	10/10
Gram Sathi's Wage	10/10	10/10
Shelter (i.e. dhurri, tent etc.)	2/10	0/10
First Aid	6/10	10/10
Creche (area for children)	0/10	10/10

In this instance, there were two immediate outcomes from comparing the beneficiary's score card to the provider's. The villagers noted that the *Gram Sathi* had not been paid; upon this news, the officials in charge gave him a pay check at the time of the interface meeting. A crèche was deemed unnecessary by the Government, after discussion however, the villagers clarified that there is not only a need for this facility, but a larger number of female workers would take advantage of MGNREGA if there were a place for their children at the worksite.

Key Stakeholders

ADHAR - a grassroots-level development organisation, operational since 1992, primarily in Loisingha Block of Bolangir district in Orissa, India. It aims to ensure the food and livelihood security of 10,000 targeted families from 70 villages of 10 Gram Panchayats under 5 Blocks of Bolangir district in Orissa state.

Donors - ANSA, Partnership for Transparency Fund, Child Rights and Youth (CRY)

CUTS International – designed manual for trainers on community scorecards

Rural Community and Local Government

3.8.9 Lessons Learned

Enhancing Transparency at all Levels

In the decentralised context of India, democratic governance structures function at all levels of public administration – Centre, State, District and Village. In order to strengthen the entire system, as efforts are undertaken to enhance transparency at the grassroots, it is beneficial to see how higher levels may be changed to contribute to the process.

There are a number of ways in which the community score card procedure can be expanded to pursue a transparent public welfare system at all levels of public administration. At present, scoring occurs at the Village level – the programme mobilises the villagers, enables their 'voice' and encourages them to use it to connect them to their Local Government. Social audits are another way of creating transparency at the village level; through this process, a third party like ADHAR will evaluate the efficacy of a development programme on the ground. ADHAR has performed a social audit for ICDS once before. As a result, ADHAR plans to perform more social audits, which will support the score card effort in strengthening Local Government accountability.

There are a number of additional social accountability tools that have proven to be beneficial to the democratic process. Utilising some of these, and moving to the District level for implementation, is part of ADHAR's future plan. Currently, the preparatory work for budget tracking and citizen report cards is underway.

Building Relationships

ADHAR has faced a number of challenges in their efforts. It is the rapport that ADHAR has built with the local community, as well as their ability to convince much of the Local Government of the benefits that would come from their efforts, that have allowed the organisation to overcome such challenges. Moreover, ADHAR has succeeded in making stakeholders understand that it takes time for changes to occur; the result has been the formation of trust between the organisation and those they aim to benefit.

Interest and Will of Central Stakeholders

Programmes that aim to increase accountability often face resistance due to vested interests and a fear of being exposed for corrupt practices. In this context, programme implementors must focus on winning the interest and will of those that pose to benefit from the efforts the most.

Simple, Transferable Programme Design

A development 'intervention' is appropriately titled as such because it is a transitory programme that may be introduced by an outside actor but aims to create change that is sustainable through its uptake by the community affected. With this goal in mind, an intervention must be simplistic and sufficiently explained to its beneficiaries. In the case of ADHAR's score card process, both of these prerequisites were executed well – scoring is not time-consuming nor elaborate, and procedures are systematic and easily conveyed.

3.9 AGRISNET - Information Network for Farmers[31]

3.9.1 Executive Summary

The Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India has taken measures to promote the use of technology to enhance the agricultural sector. In this regard, various technology promotion Schemes have been introduced by the Government under the Tenth Five-Year Plan. Agriculture Resources Information System Network (AGRISNET) is one such Mission Mode Project (MMP) envisaged to be a comprehensive knowledge portal to disseminate relevant information to farmers. The goal is to follow an all-inclusive approach in terms of ensuring technological connectivity, development of system software and provision of hardware at agriculture Department offices up to the Block level in all States and Union Territories.

Various States have implemented AGRISNET, but this best practice documentation highlights the State of Tamil Nadu for its success achieved in a short period of time. By leveraging existing resources, the Department of Agriculture was able to overcome the financial and technological complexities of implementing the project. Funds from multiple Government Schemes were used to set up basic infrastructure in agricultural offices. A separate technical team of officers was also established to avoid bureaucratic delays.

Despite a large proportion of farmers with low literacy levels and minimal IT skills, 33 percent of 8 million farmers in the State are using the content available on the portal. The Government has been able to accomplish this by following an inclusive and demand based approach.

3.9.2 Background

AGRISNET was launched in Tamil Nadu on July 29, 2010 through a collaborative effort by various stakeholders. Under this Centrally Sponsored Scheme (CSS), State Governments can independently determine the outputs and deliverables for AGRISNET for G2C services offered through the portal. The objective is to offer needs-based and localised information to farmers through the web. The overall mission of the project is to create technical agricultural awareness amongst farming communities. It aims to be 'a system for reliable and faster information retrieval, anytime in relation to cropping or crop cultivation.'

The project in Tamil Nadu has been successfully implemented within a year of conceptualisation largely because of resource convergence. The State ensured that there was access to sufficient hardware as well as connectivity to link agricultural offices. This required a considerable amount of funding, and financial limitations forced the Government to take a creative approach. The initial proposed cost of the project was ₹ 8.31 crores (1 crore = 10 million), however, only ₹ 3.02 crore was released by the Government of India in Phase I. As a result, the Agriculture Department decided to utilise funding from three other Government Schemes: the Agriculture Technology Management Agency, National Agricultural Development Programme and AGRISNET.

[31] *www.tnagrisnet.tn.gov.in*

The website, is a powerful information tool for the Government and the farmers. Relevant information is gathered through Block level offices/Agriculture Extension Centres and used for planning and monitoring. Information is used for external information provision; for example, giving farmers alerts about weather conditions. Agriculture Department offices are in 30 Districts; 385 of the Block extension centres have been computerised and provided with a web connection.

3.9.3 Objective

The Agriculture Department in Tamil Nadu determined the following goals for AGRISNET:

- Encourage farmers to seek answers through the web rather than physically travel to offices for information required
- Provide historical data for micro level planning
- Create learning opportunities
- Provide an efficient and accurate forecasting mechanism
- Provide information on market trends for farmers to analyze
- Provide information on input prices, quality parameters, departmental policy declaration, farmer rights and eligibility for availing benefits offered by the Government
- Provide a user-friendly and conducive discursive platform
- Offer agricultural extension services (i.e. marketing) to ensure farmer long-term security

3.9.4 Working Design

AGRISNET has two major components: first, it is a user-friendly frontend portal that can be accessed through the web by relevant stakeholders and second, it has backend linkages that ensure efficient information processing. While the Department of Agriculture is the key implementing agency, Electronics Corporation of Tamil Nadu (ELCOT) and PERI India are responsible for operative aspects of procuring hardware and developing software, respectively.

3.9.4.1 Hardware

Although the project's scope is to cover the entire State, Government of India recommended implementing the project first in Districts covered under the Agricultural Technology Management Agency (ATMA) programme, as availability of computers and basic infrastructure was ensured in these areas. Since the aim of the Tamil Nadu Government was to computerise all agriculture offices but only nine ATMA offices were computerised, the Agriculture Department leveraged funds from other Government initiatives such as the e-Extension Scheme under the National Agricultural Development Programme. This approach allowed for the installation of hardware in all 30 Districts headquarters and 383 Blocks. At present, each Agriculture Block headquarters is equipped with two computers - one provided by Agriculture Department and one by Horticulture Department.

3.9.4.2 Connectivity

The State of Tamil Nadu, under National e-Governance Plan, has established a State-Wide Area Network known as TNSWAN, to provide vertical connectivity between a Department's State headquarters, District headquarters and Block headquarters. The Department of Agriculture has used this network to create its own linkages, and in addition, develop horizontal linkages between Departments in 47 offices. The remainder of departmental connectivity was established through BSNL broadband for 363 Block offices.

3.9.4.3 Software

Designing, developing and maintaining the portal is fundamental to the existence of the project. The software programme includes the AGRISNET website and various application modules. The modules were developed after the main portal was deployed, as per a thorough analysis of the requirements at the ground level. The initial five modules that were identified for the portal included Seeds, Soil Health, Fertiliser, Crop Coverage and Plant Protection. These were prioritised based on the experience of Departmental field offices which farmers frequently visited to discuss their problems with experts. Through these interactions, officers recognised that good quality seeds, fertilizer and soil are critical components of higher crop yield.

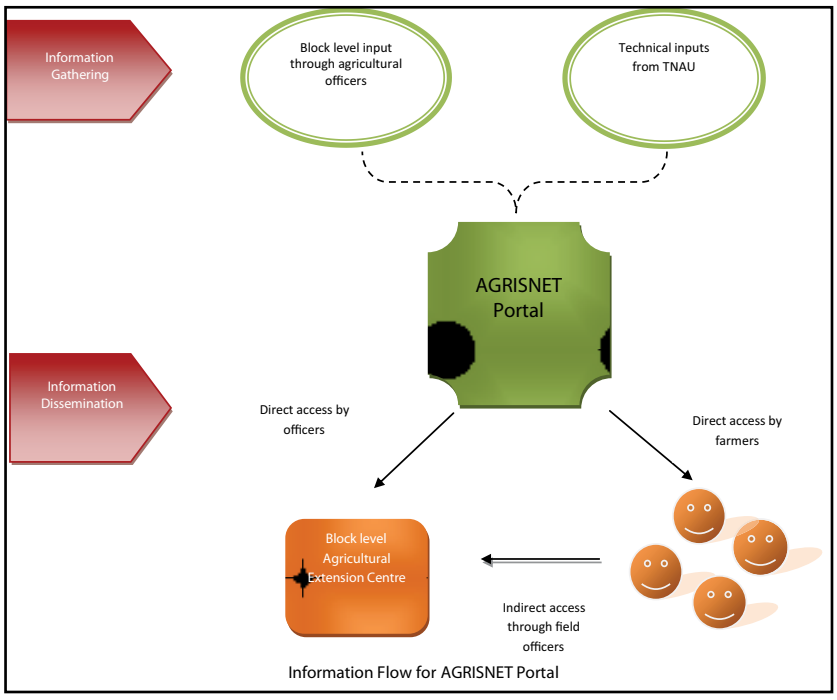
ELCOT is the head of technology for the project. In mid-2009, it awarded a ₹ 0.5 million contract for software development to PERI India. The integrated web portal was executed in a phased manner: Phase I included creation of the website, and development, customisation and deployment of five prioritised modules; Phase II extended the provision to eight new modules including weather, soil fertility index, and information on Government Schemes. There are also plans to send SMS based updates from the Department on weather and seed availability.

3.9.4.4 Information Processing

As mentioned, the portal was developed and has been managed by PERI since January 2010; however backend information gathering and processing is carried out at various levels. The primary actors in data collection are the Department of Agriculture and Tamil Nadu Agricultural University (TNAU).

1) Department of Agriculture

The Department of Agriculture has a State, District and Block headquarters. The Block level, usually responsible for data collection, is run by the Assistant Director of Agriculture, one Agricultural Officer, one Deputy Agricultural Officer, one Assistant Seed Officer, and 5 to 6 Assistant Agricultural Officers in the extension wing. Information regarding the crop coverage, yield monitoring, and soil fertility is collected at the village level by Assistant Agricultural Officer. This information is then entered into a central database that can be accessed by the appropriate authorities to compile reports that assist in planning and monitoring of agricultural programmes in the State. Furthermore, the agricultural information reflected on the AGRISNET portal is based on these inputs stored in the database. More than 500 backend users input data on a daily basis to generate daily updates and reports from the portal.



Information Flow for AGRISNET Portal

2) Tamil Nadu Agricultural University

Tamil Nadu Agricultural University (TNAU), as an educational and research institute, provides expert advise on agricultural issues. It is involved in the AGRISNET project through its AGRITECH Portal, also created for improving the lives of farmers through ICT. Information for two important application modules, weather and market price, for AGRISNET is supported by the University resources.

TNAU's Weather Network has an automatic weather record station in each Block to capture relevant information for farmers. It records essential parameters for farming including the temperature, humidity, rainfall and wind speed. In addition, the Domestic and Export Market Intelligence Cell (DEMIC) forecasts price of commodities in Tamil Nadu, which is used in providing market prices to farmers through the portal.

3.9.5 Information Dissemination

Critical to the project's success is the assurance of easy access to accurate information by the beneficiaries. The portal was originally designed for farmers to directly access information but given the lack of penetration of computers at the village level, coupled with the prevalence of illiteracy, the majority of farmers seek help from the Agriculture Extension Centre to get relevant updates.

Farmers are made aware of the portal by Agriculture Department's field officer who makes frequent trips to the village. Information is then passed to other farmers through word of mouth. Thirty percent of 8 million farmers in the State access the website with the help of the Agriculture Extension Centre. However, approximately 3 percent of farmers are progressive and access the information directly through the website.

MARKET INFORMATION: The market information provided on the website is linked to India Development Gateway portal, from where daily updates on crop price can be determined.
RAINFALL: The website displays weather conditions for all blocks in the state as captured through 'Automatic Record Station'. Weather forecasting helps farmers to plan their harvest.
SOIL HEALTH CARD: The application is designed such that if a farmer enters the sample number of soil and crop, it will give the relevant details of its characteristics, water, biological properties. Based on this information, the agricultural officer can recommend the inputs to enhance the value of the soil.
VILLAGE LEVEL FERTILITY INDEX: Approximately 4500 villages mapped to the report can be used to study the nutrient value of the soil. Since farmers often approach the Agricultural Extension Centre for advice on fertilizer, the officers can now have data ready to recommend fertilizer input.
SEED AVAILABILITY: Through the portal, a farmer can get updates on availability of specific variety of seeds at government, private, quasi-government and consolidated agencies at the block level.
FERTILISER CALCULATOR: The data gathered through Soil Health Cards and Village Level Fertility Index (VLFI) are used to calculate fertiliser composition.
FERTILISER AVAILABILITY: Farmers can find details regarding the availability of fertilizer in the village
FERTILISER PRICE DETAILS: Daily price updates are displayed according to the fertilizer and manufacturer.
SCHEMES: AGRISNET provides information on various central and state government schemes.
TNAU AGRI PORTAL: Users can access the external website to get expert information on agriculture

Information Currently Available on the Portal

3.9.6 Lessons Learned

The Tamil Nadu AGRISNET portal caters to 8 million farmers, providing them with information on agriculture related information, including availability of seeds and fertilisers across 27,000 dealers and distributors in the State. Thus far, 33 percent of the farmers have utilised the services offered through AGRISNET, and this has been achieved within a year of launching the portal. Additionally noteworthy are the G2G services that have been incorporated into the back-end network. The Government uses this feature to generate customisable reports to improve their service delivery to farmers.

The following distinct features of this project can be replicated with AGRISNET portals in other States.

3.9.6.1 Need Based Information

Instead of deluging the portal with information, the Department first examined the requirements of the farmers and then only offered information that matched. The Block Level officers interact with farmers on a daily basis, and hence, became aware of the information farmers sought out most. The Department considered these interactions to offer detailed information on the crucial components of seeds, soil, weather and fertiliser.


Michael Foley

The portal was additionally made interactive to customise information provision. For example, the quality of soil is most important for productivity so multiple modules are developed to give information on soil and ancillary topics such as fertilisers, its availability and a calculator to know the required inputs. A farmer can provide the information or use a drop-down menu to locate his/her village to determine localised details.

3.9.6.2 Improved Planning and Monitoring

AGRISNET not only fulfills the vision of providing G2C services, it was also designed in such a way that it helps in aggregating data for improved planning at the State level. For instance, data recorded under 'Yield Monitoring' and 'Crop Coverage' assist in future planning; through 'Crop Coverage', the Department is able to compile an Area Level Report that indicates the relevant crop growing area, which is then used to study whether a sufficient amount of essential crops are grown or need to be procured, and also whether there are enough seeds available. Similarly, 'Yield Monitoring' assists the Department in forecasting the agricultural output in the State, and identifying if there is need to procure commodities from other sources to fulfill the needs of the local population.

Increased Transparency

AGRISNET promotes transparency in public service delivery through the publication of details about the availability of seeds and fertilisers from various Government stores across the State. It also offers credible and current information on market price of inputs, which otherwise farmers may not be able to access. In order to increase transparency, there are plans to publish the list of beneficiaries under various Government Schemes in the public domain.

3.9.7 Future Plans

Currently, the AGRISNET portal is being modified to incorporate additional interactive modules. The Department is in the process of collecting farm-related information of all the farmers in the State to facilitate planning at the State level and to introduce customised SMS updates to farmers. So far, nearly 2.1 million farmers' details have already been collected by the Government.

Furthermore, the licensing module has been introduced on the portal. The objective of this G2B service is to electronically issue and renew licenses for business entities that sell seeds and fertilisers in the State. In this way, small business can be promoted through convenient start-up processes.

3.10 AKSHAYA : Innovative Operations and Service Delivery, Kerala[32]

3.10.1 Background

3.10.1.1 Public-Private-Partnership

Akshaya has set out a unique PPP experiment to bridge the digital divide and to usher in ICT as a tool for the development of community. The Akshaya e-Centres are being set up under the sole initiatives of selected entrepreneurs, who have come forward from among the local community. The project has successfully completed its pilot phase in Malappuram District in the State. In Kerala, Local Self Government Institutions (LSGIs) have been meaningfully empowered through massive transfer of resources as well as administrative powers. The Local Self Government Institutions have funded the e-Literacy training programme The funding is shared by the three tiers of the Local Self Governing Institutions namely Grama Panchayat, Block Panchayat and the District Panchayat. The active participation of the LSGIs have brought in the facilitating environment for delivery services at the grassroot level, using ICT as a powerful tool.

3.10.1.2 Focus on Capacity Building

A distinct feature of the project has been that there has been a constant effort for continuous capacity building of the stakeholders namely the citizen, entrepreneurs and the representative and the local bodies ie the Government. The common man who otherwise could not access technology has been provided with ease of access and functional e-Literacy training. e-Literacy training has been imparted through the Akshaya centres under the initiative of the LSGIs. The skill thus acquired by the individuals help them to use the infrastructure provided by the Akshaya centres for community development and standard of living of individuals and families largely. The selection of entrepreneurs was done by the Local Bodies based on a rating scale and on a Block level. A 2-day multi-media Entrepreneur Orientation Programme (EOP), a compulsory programme, was conducted for the selected entrepreneur to acquaint him/her with the Objectives and Methodologies of running an Akshaya centre. The business model of the Akshaya centre was discussed in detail at the EOP to enable them to run a commercially viable centre. Continuous training programme in enterprise management, marketing skills, technology, data digitisation, quality management etc., are being provided to the entrepreneurs on a frequent basis.

[32] *Source: Governance Knowledge Centre (GKC)*

3.10.1.3 Development of Locally Relevant Content

The content set is being developed through handholding of domain expert and technologists. The content are structured in a manner that could empower the users with information that will affect their lives positively. A wide range of topics including that of education, career development, agriculture, health, Information Technology, biotechnology, law and justice are being developed. In addition, self development modules covering spoken English, vocational training, personality development, career planning, accounting for small businesses are being developed. A distinct feature of this project is that all the content in the local language, Malyalam.

3.10.1.4 ICT for Development

Development of socially relevant ICT applications is one of the unique features of the project. Each family has a symbiotic relatinship with the Akshaya centre, which will enable creation of a data warehouse for the State. Interventions in the three major sectors namely Agriculture, Education and Health and applications which supplement the growth of these sectors can be developed, by utilizing the resources of Akshaya centres in conducting surveys, etc.

3.10.1.5 Akshaya in e-Governance

The Akshaya ICT access points provide G2C, G2G, C2C and G2B information interchange and dissemination. These centres are being connected through high speed broad band Wireless Network. These centres cater to citizen needs in terms of offering services in communication, e-Education, e-Governance and other services. Akshaya centres function as decentralized information access hubs that cater to a range of citizen needs that has an inbuilt integrated front end. All Government information, and application forms are provided in the Akshaya centres.

One of the most significant steps in the e-Service delivery phase is the launching of e-Pay services. The existing ICT enabled single window payment facility of all payables to Government by citizen can be paid through the Akshaya centres. The leading nationalised bank, SBIonline, Friends (NGO) and the Akshaya centres are the partners in the project. Akshaya with the integration of Friends Services, enables easy and hassle free bill payment. With the launch of these services, Akshaya shall virtually bring to the doorsteps of the citizen, the most needed.

Government interface for payment related transactions. Akshaya entrepreneurs were engaged in data digitisation of over 3 million birth and death records in Malappuram. A proposal to issue birth and death certificates through Akshaya centres is under consideration.

e-Cop the interactive Police portal of Malappuram Police will have smooth interface between the law enforcers and the public. The networking of the Police Stations in Malappuram is also progressing.

eNRICH the community network interactive platform exclusively designed for Akshaya, with support from NIC is an added facility for citizen to interact with Government and access they key information resources. e-Parathi, Collector's Online Greivance Redressal is also being initiated through Akshaya Centres .

3.10.2 Akshaya's Impacts

3.10.2.1 Akshaya in e-Learning

The Akshaya centres offer quality training programmes at affordable rates for the public in their locality. Second level Computer Courses, language training including spoken English, Arabic, Grammar classes, Designing courses from National Institute of Design, courses from CDIT, STED, etc. are some of the training programmes to be implemented soon in Akshaya centres. In addition, self-development modules covering spoken English, vocational training, personality development, career planning, accounting for small businesses are being developed. Intel Community Training Programme offered through Akshaya centres is attracting students in large numbers.

3.10.2.2 Akshaya in e-Knowledge

Akshaya centres serves as an information hub by providing relevant information to the public. A well-managed e-Library is a specialty of Akshaya centres. And most of them are exclusive and custom designed for Akshaya. Exhaustive information-base on five core areas as Health, Agriculture, Career, Education and Laws and regulations is available in the centres. It's interactive design enables easy navigation. In addition, a wide range of topics including that of e-Career development, Information Technology, and Biotechnology are being developed.

3.10.2.3 Akshaya in e-Communication

The e-Kendras are equipped with the most advanced wireless technology enabled communication facilities. In the context of Malappuram, the scope of Akshaya centres in this arena is tremendous as more than 60% of the families have at least one NRI member. Akshaya so far, has been widely appreciated by the households which have members working in the Gulf. Using sophisticated Internet applications for communication, email, chat, video conferencing, net meeting, video phone, Internet fax, etc. are offered by Akshaya centres.

3.10.2.4 Akshaya in e-Business

Akshaya is all set towards progress of entrepreneurs. Each of the Akshaya centres has direct and firm access to all the households of the District. They are in close connection with the community.The business development activities in the industrial sector are mainly classified under 8 core areas. They are

1 Digitisation and Data Management

2 Akshaya Hardware

3 Insurance and Financial Services

4 Tourism and Event Management

5 Design and Development

6 IT enabled Productive Sector Intervention

7 Health Care

8 Product Selling Division and Market Research

Poster Before Akshaya-Smart Card Renewal

An enterprise group has been constituted for this sector, which comprises of a representative from the entrepreneurs of each Block who are specialized in this segment. This enterprise group is headed by a Coordinator. Each group contains 105 or more entrepreneurs who coordinate all the activities of the particular sector in the Panchayat.

Major corporate Houses and businesses which have come forward for tie-up with Akshaya are ICICI, Geojith, Malaya Manorama, Mathrubhoomi, Silver Storm, Akbar Travels, etc.

3.10.2.5 Akshaya in e-Agriculture

The Akshaya network provides a transaction platform for the agriculturists, small and medium traders of agriculture produces and large corporate which procure agriculture produces on large volumes as their raw materials. This platform shall be an enabling interface of the three important stakeholders to uphold their priorities like best price for farmers, quality and quantity assurance for the traders and the corporates. A community of farmers and their network, which share their best practices shall emerge from this initiative.

3.10.2.6 Akshaya in e-Health

A unique Health mapping exercise was conducted in two Panchayats in Malappuram, under the initiative of the Akshaya centres. Efforts are now being taken to translate the data thus collected to workable health solutions and enhancement of existing facilities, for the target people. A telemedicine initiative with CDAC, named Cancernet is now being launched.

3.10.3 Results Achieved

1. Imparted basic computer skills to nearly 600,000 people, i.e., one person from each family

2 The project could provide 2500 direct employment opportunities by way of employment in the Akshaya centres, run by entrepreneurs. In the Statewide roll out over 25,000 direct employment opportunities are created

Malyalam Computing Road Show

3 Latest state-of-the-art WiFi Internet connectivity to 3 million population at affordable rates

4 Investment of over ₹ 30 million in ICT in Malappuram. Over ₹ 300 million investment for State wide rollout

5 The beneficiaries comprise about 60% women and 11% of the entrepreneurs are women

6 From less than one percent of e-Literacy to 100% household computer literacy achieved by a community comprising nearly 3 million people

7 As a result of the project, over 100,000 pages of the content have been created in local language, in the core sectors namely Agriculture, Health, Education and Citizen Laws

8 Efficient and transparent service delivery by Government (60% of Government citizen transactions can be made through the centres)

9 Commercial transaction and business knowledge repository network is being developed

3.10.4 Other Benefits

- From less than one percent of e-Literacy to 100% household computer literacy achieved by a community. A large majority of the population being the deprived sections, women, tribals and fishermen. The IT literacy rate in India now stands at 5%
- As a result of the e-Literacy campaign to be conducted through Akshaya roll out, Kerala would be the first State to achieve nearly 100% household e-Literacy through primary and secondary access. Again, Kerala shall be the first State in India, which would achieve the MDG envisioned to be achieved by 2015
- Cheaper communications through Internet telephony, e-mail, chat etc.
- Unique entrepreneurship opportunities for 620 entrepreneurs and sustainable revenue streams from community ervicing
- Locally relevant content made available for the common man, which is otherwise not available in the Internet

3.10.5 Sustainability in Economic, Social and Ecological Terms

In Kerala, LSGIs have been meaningfully empowered through massive transfer of resources as well as administrative powers. The elected bodies of the LSGIs in the Malappuram District are actively involved in driving the project. The Akshaya centres were able to garner wide stakeholder support namely the Government, community and the local body. As a result of its social; commitment and the stakeholder support, these centres could emerge as a distinct brand. As there is a strong emphasis on the capacity building of the entrepreneurs, they are equipped to initiate innovative ICT based applications for the society. The Akshaya centres are evolving as sustainable micro ICT enterprises.

Computer penetration is increased from 0.5% to 50% as a result of the project. Self esteem of the young entrepreneurs have risen significantly, which is relevant to a society like that of Kerala where unemployment is a critical social challenge. The e-Literacy programme could trigger the self esteem of the women, tribals and the fishermen community.

The project has enabled remarkable interventions in the core sectors such as Agriculture, Water Resources, Health and Education through network offered by Akshaya centres. The return on investment made by the entrepreneurs where ensured partly through the e-Literacy phase. Approx. 50% of their investment were paid back as a result of the remuneration granted for conducting e-Literacy. All the entrepreneurs are provided with a basic set of training packages and communication facilities, which would provide them with a regular income stream. In addition, e-Payment services introduced in these centres been an attractive revenue earner for them.

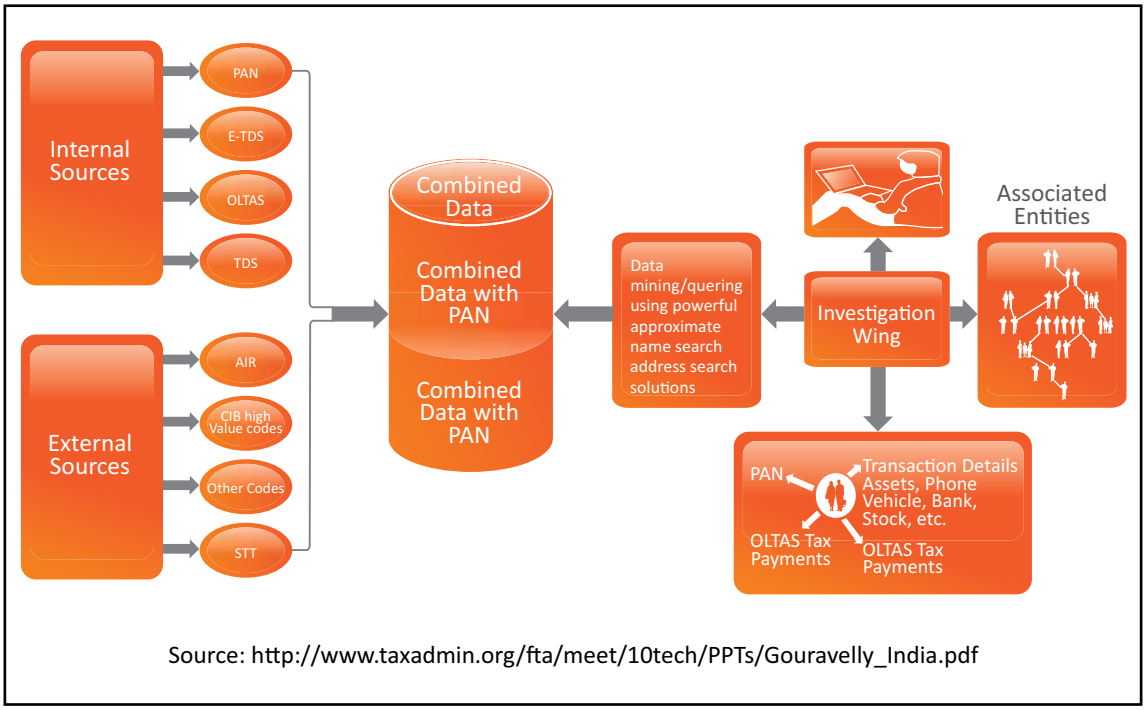
3.10.6 Replicability

As the project is on a PPP mode, this can be easily replicated in other places. The entire sequence of activities is fully decentralized and hence, the logistics connected with implementation is minimal.

3.11 Integrated Tax Payer Data Management System[33]

3.11.1 Background

The Income Tax Department is responsible for collection of taxes and distributing returns. For this purpose, they receive enormous amount of data from internal and external sources that help perform their duties. However, these data are stored in different forms such as excel, databases, delimited text files and fixed length text files at different divisions of IT Department. Prior, to implementing ITDMS, there was no mechanism in place that would allow the IT Department to conduct search for evasion of taxes. There is also lack of single parameter search between the data stored in various Directorate General of Income Tax. Existence of multiple databases with different Departments made the enforcement work of IT Department difficult.



Source: http://www.taxadmin.org/fta/meet/10tech/PPTs/Gouravelly_India.pdf

The Directorate General of Income Tax (Investigation), which is responsible for undertaking investigations to check for evasion of taxes and circulation of black money, refers to the databases to regularly track income of high net worth individuals and companies to ensure all appropriate tax payments are made by them. It was a challenge for the Department to successfully leverage the data to 'analyse and build integrated view of a tax payer's data to carry out its various statutory activities'. Moreover, there was no single parameter that would enable the search activities. There was lack of standard format for storage of names and addresses of individual in multiple large databases with volume of records between 20-50 million.

Therefore, to enhance the performance of the IT deparment, as well as increase the revenue of the Government, IT Department envisaged an integrated data mining tool that would allow them to search for tax information across different internal and external sources. The Integrated Tax Payer Data Management System (ITDMS) assists in generating the 360 degree profile of an entity by compiling information from all data sources that helps the Government to track tax payments of individuals. In case of an individual, the family tree of the person is also created and it also links the information to all the related entities in which person is being investigated has interest.

[33] *Source: Governance Knowledge Centre (GKC)*

3.11.2 Objective

To develop a system that will build a 'data bank of millions of records, trace relations/associations (family tree) between the data and entities, and track transactions of each entity using identity search technologies in general and approximate name search and address matching technologies in particular with specific reference to the Indian names and addresses.'

3.11.3 Working Design

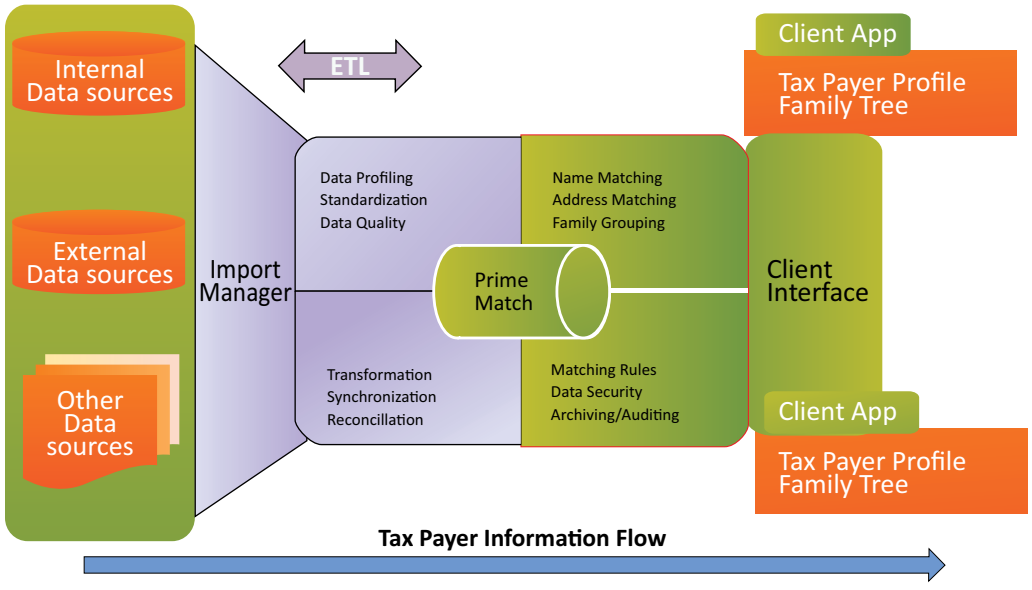
A Request for Proposal was advertised by the Income Tax Department to invite software developing firms to build the technology architecture and Posidex Technologies was identified as the vendor for this system.

According to Posidex, designing the data mining project was a challenge because

- There was no unique identifier across that data sources
- No defined standards for writing name and address
- Poor and uneven quality of information available
- Very large data volume for querying and matching

The application utilises ICT to reduce interface between the public and the Income Tax Department. It is designed as a non-intrusive investigation tool that can access/handle very large data to profile an individual or company for tax scrutiny. The software generates a complete profile of a person's financial information and tax payments and information is then used by the Government to trace unaccounted income. Earlier, it used to take up to two weeks to create a complete profile of an individual but now it takes only couple of hours to generate the query. The key stakeholders are the Income Tax Department and Directorate General of Income Tax (Investigation).

Information Flow in ITDMS



Source: http://www.taxadmin.org/fta/meet/10tech/PPTs/Gouravelly_India.pdf

3.12 Project Arrow - Redesigning India Post[34]

3.12.1 Executive Summary

Today, a post office (PO) is not limited to simple mail transactions; the range of services has expanded to a multitude of postal and financial related services including e-Post, e-Billing, retail post, logistic post, media post, mutual funds, and money transfers. In a time when technology is rapidly changing the landscape of these services, customers are approaching competitors of traditional post such as Internet service providers, courier companies, private sector banks, insurance companies, and mutual funds. It is in this context that traditional post needed to change its age-old working procedures. Conceived in April 2008 as a pilot, Project Arrow, used an integrated approach with select POs to enhance the quality of service in core areas and upgrade the look and feel of POs. Core areas include mail delivery, remittances, savings bank and office service levels. The focus on updating the frontend is in terms of branding, IT, human resource and infrastructure.

The project underwent three phases and is currently in the fourth phase. Department of Posts has embarked on a comprehensive automation of all services and eight Requests for Proposals (RFPs) have been issued. These are under technical evaluation for identification of implementing agencies and System Integrators. Phase one included upgradation of 50 POs from 10 selected Circles. In phase two, 450 POs from 12 Circles were revamped and 500 POs under phase three. At present, 525 POs are being renovated and an additional 87001 POs will be reached.

The project aims to make POs, especially in the rural areas, a convenient platform for availing a number of public services. It will enable POs to play a larger role in the social and economic transformation of the country by taking up new roles and challenges and transforming the large level of manpower into a committed and professional human resource. The initiative has also won the Prime Minister's award for Excellence in Public Administration for the year 2008-09.

3.12.2 Background

Project Arrow was conceptualised and implemented by the Department of Posts, under the Ministry of Telecommunications to make postal services 'sharp, straight and sure'. The project aims to improve the quality of postal services through ICT.

It is also a green initiative because it aims to minimise the use of paper, helping to preserve trees and green cover, by making all internal correspondence through email.

Another important aspect of Project Arrow is that it allows for independent assessment of the quality of the programme. For this purpose, an independent rating agency has been authorised to rate the services of the Project Arrow using a five star rating formula.

[34] *Source: Governance Knowledge Centre (GKC)*

3.12.3 Objective

The Department of Posts launched Project Arrow with the objective of providing fast, reliable and efficient postal services to all customers.

3.12.4 Working Design

Prior to the implementation of Project Arrow, the Indian Postal Service faced shortcomings in four core areas – mail delivery, banking operations and saving services, remittances and customer satisfaction. In the pre-operative stage, timelines and strategies to address each area of concern were discussed and Key Performance Indicators (KPIs) were formulated. This included training of all the staff of the project office, completion of basic documentation in each post office, improvement of infrastructure, public area and supply of hardware within a given timeframe. To enhance the core areas, action areas were identified including process mapping, fixing weak points, using remedial strategies, retraining of staff and constant watching of performance.

In the post-operative stage, monitoring is carried out through data extraction from day-to-day-operations.

POSTAL FACTS

- With 1,55,035 POs, 1,39,173 rural and 15,862 urban (as on 31/3/2008), India Post is the largest postal network in the world
- One Post Office serves approximately 7,174 people
- DOP has spent Rs 235 Crore (through phase IV) to modernise and upgrade POs
- 23% rise in the revenue of POs in 3rd quarter of the current financial year
- 49% revenue comes from mail operations, 47% from banking operations and the rest from retail and insurance services
- There are 24 crore PO savings bank account holders at present; largest in the country

3.12.5 The key problems experienced in each core area and the respective solutions are:

Mail delivery: Mail operations suffered due to improper mail arrangement, lack of supervision and inefficient sorting processes. Mail was not delivered on the day of arrival and letter boxes were not cleared every day. Mis-sorting made for dispatch delays. A lack of monitoring of mail arrival resulted in late, unrecorded and unreported mail. Electronic management of mails and strict monitoring of mail collection and dispatch has mitigated these problems.

Savings banking operations: Delays occurred in opening accounts at the savings banks. The average transaction time was very high for regular transactions. Savings bank is an important function for India Post as it provides financial inclusion for the un-banked masses. Previously, savings bank processes were manual and the service was dissatisfactory. To address this problem and ensure cash availability on demand at any given PO, all operations in the savings bank were re-engineered and an electronic savings bank database was created.

Remittances: Customers found it difficult to transfer money because there was no existing efficient mechanism to deliver it instantaneously. Today, remittances can be completed electronically.

Key Performance Indicators:

For Mail and Money Order Delivery

Percent mail not sent for delivery (Money Order)
Percent mail not sent for delivery (Registration)
Percent mail not sent for delivery (Speed Post)
Percent mail not sent for delivery (Money Order)
Percent mail not sent for delivery (Electronic Money Order)
Percent mail not sent for delivery (Registered Parcel)
Percent mail not delivered same day (Money Order)
Percent mail not delivered same day (Registration)
Percent mail not delivered same day (Speed Post)
Percent MO not delivered same day (Money Order)
Percent MO not delivered same day (electronic Money Order)
Percent MO not delivered same day (Registered Parcel)
Percent of eMO booked (out of total Money Order booked)

For Mail booked and dispatched

Percent of mail booked and dispatched (Registration)
Percent of mail booked and dispatched (Speed Post)
Percent of mail booked and dispatched (Express Parcel Post)

For Saving Bank performance

Number of Pending deceased claim cases
Number of account Transfer Request
Percent of Savings Bank account where signature scanning is completed

New Mail Paradigm

The profile of India Post has changed substantially with the increase in mail volume in business-to-customer (B2C) and business-to-business (B2B) segments. In line with this, India Post has designed a new mail paradigm whereby technology is leveraged to create focal points for expedited delivery of mail. Mail Business Centres (MBCs) with state-of-the-art technology/modern mailing tools are being designed as an integrated mail business hub for collection, processing and delivery of (bulk) mail. By March 2009, 161 Business Posts had been built across the country. To setup automatic mail processing in Delhi and Kolkata a global tender was drafted to invite installation and maintenance operators for bidding. The dedicated freighter aircraft (of India Post), wet leased in August 2007, for carriage of mail to and from the Northeastern region (Kolkata -Guwahati-Imphal-Agartala-Kolkata), is now carrying a payload of approximately 14 tonnes. The proposal to wet lease two more freighter aircrafts has been approved.

Computerisation and Networking

From 2008 to 2010, a total of 9,693 POs were computerised. 1233 offices have been networked with the National Data Centre. A range of services have been e-Enabled. The online domestic money transmission service, iMO5, launched in 2006, that enables customers to receive money in minutes from the PO, was made functional in over 1,000 locations. Electronic Clearance Service (ECS) is offered in all 15 locations of Reserve Bank of India (RBI) and 21 locations of the Reserve Bank of India (RBI) for payment of monthly interest under Monthly Income Scheme. The electronic money order (eMO), launched in October 2008, facilitates transmission of ordinary money orders through electronic media in the same tariff structure as the existing money order service. e-Payment, under which different bills are paid by customers in post offices and are then electronically consolidated and paid to the service provider, is now available in about 5,700 POs and will soon be extended to all 9,693 computerised POs.

Under the e-Post service, started in 2004 to bridge the digital divide, physical messages are transmitted through an electronic system as e-mail and the message is printed and delivered anywhere in India as a letter.

Modernisation of Post Office	Upgrading the core areas
Branding - Ensure uniform brand hierarchy as well as consistency I all products and services	Mail delivery - ensure same day delivery of mail received and same day dispatch of mail collected
Technology - Decide on required hardware, software and connectivity to enable PO to provide all IT services including in rural areas	Saving Bank - Reduce transaction time at counters, account transfer/closure and settlement of deceased claim cases
Human Resources - Identify roles and job descriptions for employees and design suitable training packages to enhance operational and soft skills of staff	Remittances - Delivery of money orders on the day of receipt and provision of web enabled remittance services
Infrastructure - Develop standardied and consistent interior and exterior blueprint and ensure uniform implementation	Office service level - Improve customer satisfaction along all parameters from appearance to operations

Adapted from indiapost.gov.in

Leveraging the Postal Network

- The payment of wages to National Rural Employment Guarantee Scheme (NREGS) beneficiaries is currently operational in 19 postal circles of 21 States through 90,000 post offices. Nearly 47.5 million NREGS accounts have been opened since 31 March, 2009 and approximately ₹ 9.5 billion disbursed
- India Post has tied up with the State Bank of India to sell its products through identified post offices. Starting in five States of Tamil Nadu, Andhra Pradesh, Karnataka, Maharashtra and Jharkhand, the Scheme was later extended to 10 States on a pilot basis. Nearly 2.4 million accounts have been opened under the liability products. The total asset products sold so far amounts to ₹ 103 million
- National Bank for Agriculture and Rural Development (NABARD) in collaboration with the Department of Posts is providing micro-credit to self-help groups (SHGs) through identified post offices

- The DOP has signed an agreement with ICICI7 Prudential Life Insurance Company Ltd. in September 2008 to retail their pension products through select post offices on a referral basis. The company has equipped the postal staff and identified the post offices for the Scheme. To date, about 90 head offices have started distributing the pension products of ICICIs
- Sale of gold coins has been launched in October 2008 by tying up with the Reliance Money Limited. The Scheme is available in 262 post offices. Revenue earned as commission up to March 2009 is 5.78 million
- Old-age pension is being paid through post office savings accounts in Bihar, Chhattisgarh, Jharkhand and Madhya Pradesh, and through money order in Himachal Pradesh, Gujarat, Rajasthan and Tamil Nadu
- Posts have been assisting the Central Government public authorities in implementing the Right to Information (RTI) Act by providing services of its designated Central Assistant Public Information Officers (CAPIOs). For this, sub post masters at Tehsil level act as the CAPIO for accepting RTI requests and appeals. The Department has designated 4,000 post offices as receipt points. During October-December 2008, 2,270 applications were received and forwarded
- A MoU was signed between India Post and the Ministry of Railways for sale of railway tickets through post offices. The Scheme is presently operative at 34 locations, and will be extended to rural areas also
- Retail services: The India Post has tied up with HDFC for sale of foreign exchange. Due to its extensive reach and network, the State Public Service Commission (SPSC) recruitment and examination forms are collected and disbursed from POs
- The India Post will also be delivering Unique Identification Cards through mail to all citizen

The project has also focused on the 'look and feel' aspects of POs and has enhanced its image through branding, installing computers and other hardware, building infrastructure and giving training to the postal staff.

Under the branding exercise, the India Post logo was changed to indicate the free flowing spirit and flexible approach of the project. All POs, including basic infrastructure and colour Scheme, was standardised. The staff was trained in two areas: software application and soft skills training such as handling customers, transparency at work, etc. in six training centres: Saharanpur, Mysore, Madurai,

Guwahati, Darbanga and Vadodara. External training support was provided by Xavier Institute of Management (XIM) and Indian Institute of Management (IIM).

A major challenge faced during implementation was changing the staff's mindset to accept the latest IT services and training for proper use of the new technology under Project Arrow. In due course of time, staff members overcame their fears and could handle new operations efficiently.

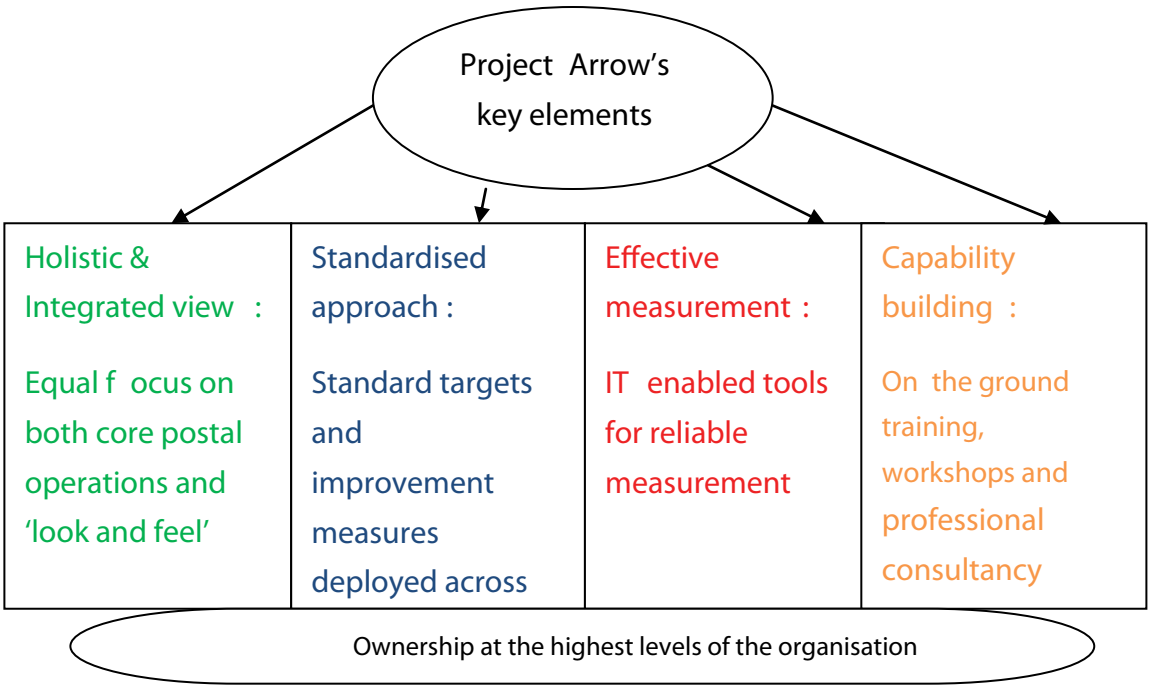
3.12.6 Monitoring

Project Arrow is the first integrated approach that looks into all the operational aspects of a PO. The Department of Posts identified 16 key performance indicators (KPIs) to monitor POs' performance. These indicators are used by the management to meet operational targets.

The targets are very simple. For example, received mails must be disposed off within the the same day. However, there are many factors that determine 100 percent mail delivery such as is there adequate manpower to get all mails to the PO because if not, there would be delays and more officials would be required to handle mail delivery. Thus, Project Arrow aims to mend such gaps.

With an additional 8700 POs to be revamped under phase V, a total of 10,000 POs are being monitored on a daily basis. These computerised POs communicate their daily business transactions to Postal Training Centres in Mysore at the end of each business day. This data is then downloaded for monitoring purposes at the New Delhi Head office called *Dak Bhavan*. Ninety five performance indicators are monitored, of which 16 are KPIs. This is followed by video conference meetings every fortnight. To date, 50 meetings have been held. The OSD to the Secretary has said that the monitoring aspect of Project Arrow is a key reason for the project's success.

An independent external audit was performed during phase I on three separate occasions in three months and all POs were visited. A detailed questionnaire was prepared for the entire management. In both cases, results revealed 95 percent of customers and staff were benefitting from Postal Services since the induction of Project Arrow.



3.12.7 Key Stakeholders

- Department of Posts, Ministry of Communications and Information Technology, Government of India
- Customers
- Partner Banks (i.e. ICICI)
- Partner Government Ministries (i.e. Ministry of Rural Development – MGNREGA)

3.12.8 Lessons Learned

Project Arrow has transformed communication infrastructure in India. The key lessons derived from this project are listed below:

- **Improved communication structure:** The project upgraded the core functions of POs-mail delivery, savings, remittances and overall customer service. With technical inputs, more manpower and specific targets, the revamped POs have improved countrywide communications.
- **Holistic implementation:** The Government allotted funds for the enhancement of the Department through branding exercises, provided management training from professional experts and developed infrastructure. Through these convergent efforts, POs have become self-sufficient, credible, efficient, quick and cost–effective provider of services.
- **Better service delivery:** The Project is dedicated to understanding and fulfilling customers' needs. With improved mail service delivery and effective modes of electronic money transmission, such changes have benefited all customers. With technical inputs, India Post aims to become the fastest tool of communication.
- **Target oriented:** The key performance indicators (KPI) are used for keeping track of all postal operations, ensuring targets are reached. There is no room for slack because all deliverables are checked as per specific targets and if they are not achieved, the management is held accountable. Indicates high performance through effective monitoring tools: Video conferences are used for discussing individual PO performance, address reaching of targets and redress customer complaints. They are attended by chief post master officials from 22 circles. This is followed by implementation discussions which are carried out on a continual basis.

3.12.9 Conclusion

The Department of Post launched Project Arrow to transform India Post into a vibrant and responsive organisation and make a visible and positive difference in postal operations to benefit customers across the country. The pains and pressures of bringing in a change have been felt and dealt with as strategies were successfully redefined, trainings organised and many initiatives reworked.

The project has brought the rural populace in direct communication with the outside world and has provided development benefits to their doorsteps. The Department aims to act as a one-stop shop for retail products and offer a single window facility for banking, remittances and other financial products and services including social and civic initiatives such as MGNREGS and the National Old Age Pension Scheme.

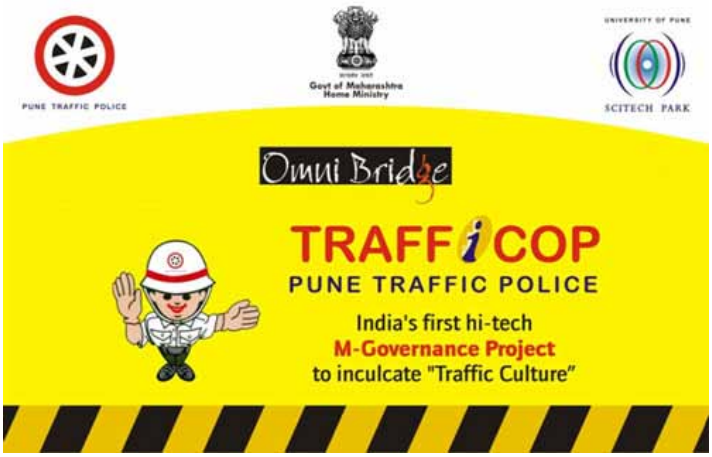
The project also aims at strengthening its business development and marketing division. The POs have undergone a makeover with IT-enabled upgradation of services. The Project Arrow experience is a working model for ushering in an integrated and lasting improvement in the postal system and to extend it for complete automation.

3.13 Trafficop - An m-Governance Initative in Pune[35]

3.13.1 Executive Summary

In India, there are several examples of citizen and even law enforcers taking the issue of traffic violations lightly - using bribes to cover up any and all inconsistencies. Trafficop - an initiative of the Pune Traffic Police – is a promising start for changing the existing mindset.

Trafficop enables the police to record on-the-spot violations. The programme consists of a software application that currently runs on Blackberry mobile devices linked to a server that stores all customised vehicle and license holder data. When the traffic officer logs in to his/her device, he/she can enter the vehicle and license details of the offender and will automatically obtain a record of the offenders' past history. In this way, every offence becomes like a red mark on a report card and the officer can fine the commuter according to the number of offences committed.



A commuter's license can be suspended after a certain number of offences committed and he/she is required to present himself at the Regional Transport Office (RTO) for further hearing. After four offenses the offender is liable to have his/her license cancelled.

Maintaining an up-to-date transparent record of offences helps to create a sense of respect for the law amongst citizen as they do not want to be caught on the wrong side of it. The readily available data helps police to carry out their duties efficiently and also holds them accountable to do so fairly. A web interface is used to monitor the system by higher authorities who leverage the data gathered on the number, kind and area of offences to determine traffic pattern and plan for the future.

To date, the initiative has succeeded in identifying approximately 950 regular offenders, tracing 200 stolen vehicles, suspending 2400 licenses and registering 836,000 offences in total. It has drastically reduced the effort required to complete administrative work. With plans to introduce smart card technology into the software, whereby driving licenses can be swiped for identity authentication and fine payments can be made electronically, the system has the potential to boast even greater results in the future.

3.13.2 Background

Violating traffic rules in India for most citizen hardly means breaking the law. It is more often than not something that one can get away with. One may obey these rules solely out of safety concerns, but not typically due to fear of the law. Such attitudes indicate a need for a stringent punishment system by which people will view traffic violations seriously. This calls for a revamping of the current traffic violations management system - Trafficop is an initiative of the Pune Traffic Police that does just that.

[35] *Source: Governance Knowledge Centre (GKC)*

3.13.3 Trafficop in Pune

Resulting from the boom in the IT industry, the city of Pune has grown a great deal in the past decade; unsurprisingly, traffic and traffic violations have grown along with it. With the number of both public and private vehicles on the rise, it has become crucial to develop a new system by which serious action can be taken in response to road violations to inculcate a positive 'traffic culture' in Pune and to input sustainable safety measures.

Prior to Trafficop, there was no record of offences committed by commuters. The only data was available to the Regional Transport Office (RTO) and included vehicle and license details. Under such a system, commuters could repeatedly commit offences without any record of their past.

To tackle such a situation, the Pune Traffic Police Department along with Omni Bridge Systems Pvt. Ltd, a company of the Science and Technology Park, Pune, designed a programme called 'Trafficop'. Under this m-Governance project, the traffic police in Pune are given a Blackberry mobile handset through which they are able to record traffic violations on the spot. This handset is connected to a server that stores vehicle, driver and violation information. When an offender is caught, the in charge traffic officer can enter the vehicle and license details into the Blackberry to see the number and kind of offences committed by the commuter, allowing him to penalize the offender appropriately.

The pilot was launched in Pune on 20 November 2009. Existing data was gathered from the RTO and converted into the required format to be uploaded to the Trafficop server. The data was uploaded into a central database managed in the Software Technology Park, Pune. The Trafficop application was then installed on 50 Blackberry devices and handed over to traffic police officers. In just one year, 65 officers have begun to use the device, from which there is evidence showing that traffic culture in Pune is undergoing dramatic changes.

3.13.4 Objective

Trafficop aims to:

- Ensure respect for traffic rules by commuters
- Hold traffic police accountable to law enforcement
- Help traffic police access vehicle and commuter information
- Ensure traffic discipline - enforce traffic laws and guarantee a safe and secure road environment

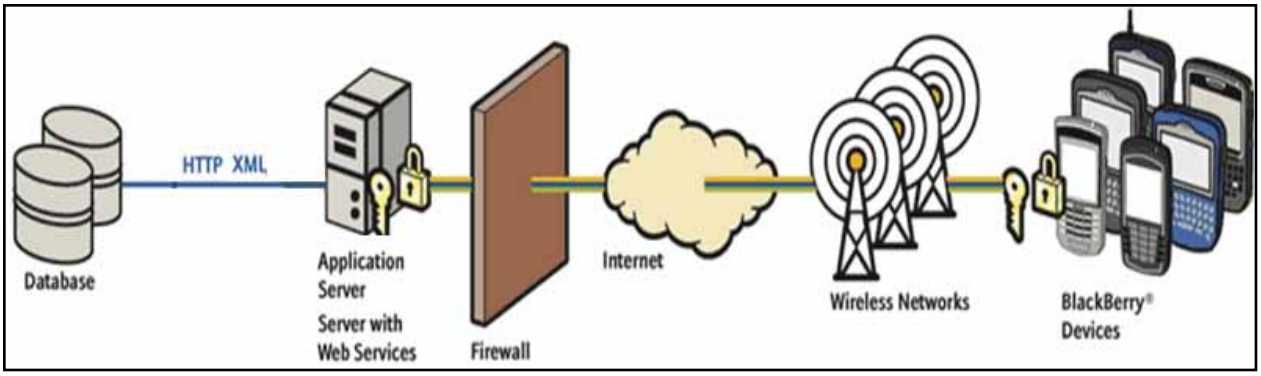
3.13.5 Working Design

The Trafficop software is installed on a Blackberry device and connected to a backend server which stores a customised database of vehicle and driver license details.

Process Flow

Trafficop works as follows:

- When the traffic police catch an offender, he/she logs onto the device by entering his/her username, password and area code
- He/she then enters the vehicle information and license details
- The device displays a record of offence history committed by the commuter and basic details of the vehicle as well as the name and address of the license holder
- The officer registers the new offence. On the basis of the history, the traffic officer will penalize the offender. The penalty for a first offence differs from the penalty incurred in case of repeat offences. When a fourth offence is registered under a commuter's name, his/her license is suspended
- The Blackberry is paired with a portable bluetooth printer to issue an on-thes-pot receipt to offenders. This transaction is uploaded in real time to the server



Process flow diagram

A web based interface allows senior officers and administrators to monitor offence information collected by the traffic police in the field.

3.13.6 Key Stakeholders

Pune Traffic Police: The Traffic Branch is responsible for maintaining traffic discipline and punishing offenders.

Omni-Bridge Systems Pvt. Ltd: Omni-bridge is a company from the Science and Technology Park in India which is promoted by the Department of Science and Technology, Government of India. It has designed the Trafficop software and is a leading force in mobile software development.

3.13.7 Lessons Learned

It's been a year since the launch of Trafficop and the initiative has begun to leave a mark.

Maintaining Traffic Discipline

a) Registering offences: Using the Trafficop application, the traffic police have registered 8.36 lakh offences in the past year, with an average of 1950 offences registered per day.

b) License suspension: The traffic policemen have caught hold of over 950 habitual traffic offenders and suspended their licenses as they have been caught violating traffic norms for the fourth time.

Their licenses have been confiscated and handed over to the Pune RTO for further inquiry. The offenders are required to visit the RTO's office within 15 days and attend a hearing on the basis of which their licenses will either be returned or cancelled.

c) Tracing stolen vehicles: With vehicle registration and license details at the tip of their fingers, the traffic police have been able to identify stolen vehicles and owners of unclaimed vehicles. Over the past year, 200 stolen vehicles have been traced.

Efficient Technology

Trafficop leverages simple technology. Anyone familiar with a mobile can operate the system. After evaluating various mobile devices, it was found that the Blackberry best complemented the software in terms of usability, connectivity and security. Blackberry hardware is user friendly, so minimal training was required. With the new hardware and software in place, traffic police showed a deep commitment to using Trafficop in order to improve the traffic conditions across the city.

Reduction in Administrative Work

Overcoming the challenges of digitising vehicle and license data, a process has now been put in place to feed all information onto the web. This saves time and manpower resources, cutting down the scope for any malpractice, duplication and other mistakes in data entry.

A Secure and Sound System

To ensure data security, only authorised and authentic users can operate the given application. The system has an inbuilt facility to change the password at regular intervals. In case of connectivity problems or weak signals, the obile application has a large offline storage capacity.

Building Citizen Accountability

With Trafficop, the image of a traffic officer as someone who can be easily bribed is changing. Today, citizen are aware that the traffic police hold the digital tool that links a single offence to a sophisticated system in order to maintain law and order. Offenders are no longer let off easily; in this way, out of fear and respect for the law, citizen are increasingly obeying traffic rules.

Constant Monitoring

GPS provides higher authorities with the necessary facilities to track the movement of policemen and check whether he/she is at his appointed position. As soon as an inquiry is sent by the traffic policeman, an entry is made into the web interface about the inquiry, therefore it becomes compulsory for the traffic police to follow up on their inquiry and take action.

Studying Traffic Trends

Periodically generated reports help to identify the pattern of offences - areas where maximum offences are committed and types of vehicles used. This helps in understanding traffic trends and in turn, assists in future planning. This data also helps to respond to queries made under the Right to Information Act.

Overcoming Challenges and Moving Ahead

The biggest challenge has been to implement the project at multiple levels where buy-in of stakeholders at each step was required. Challenges were overcome through a sincere effort to build a robust system.

Below is a list of enhancements that have been envisioned as next steps:

- Smart card driver's licences
- Biometric thumb impressions to be made compatible with the national Unique Identification (UID) Scheme
- 3G technology to improve connectivity
- On-the-spot photographs/video and real time upload
- Partnerships with insurance companies to make insurance rates subject to the number of offences committed. The higher the number of offences, the lesser the insurance provided. If this succeeds, there will be added pressure on citizen to obey the rules
- A small service charge, in addition to the fine amount, so as to make Trafficop financially feasible. This amount can be used in the upgrading of the system

Sustainability and Scalability

This has been a year of achievements for Trafficop; it is efficiently serving the purpose for which it was designed with additional facilities planned for the future. The system will gradually be implemented throughout Maharashtra and there are plans to replicate it in Gujarat, Goa and Rajasthan within the next five years.

3.14 Community MGNREGS Programme for Naxalite Affected Areas[36]

3.14.1 Executive Summary

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) is a progressive rights based approach to development which legally entitles 100 days of minimum wage employment to rural households. The act, launched by the Prime Minister Manmohan Singh in 2006, is the first step towards realising the right to work that is included in the constitution as one of the directive principles of State policy. MGNREGS seeks to provide 'at least one hundred days of guaranteed employment at the statutory minimum wage' to adult members of every rural household who volunteer to do casual manual work.

The act has the scope to reach every nook and corner of the country, and if properly implemented, to transform the socio-political and economic environment of rural, as well as urban, India.

By demanding certain provisions, the Act has the potential to spur development in even the most underdeveloped and backward areas of the country. The Payment of Wages Act checks delays in the payment of wages to workers. There are provisions for compensation and treatment in case of injury during work, for on-site safe drinking water, and for care of small children. The act also forbids the use of contractors and labour displacing machines. Another important provision says that at least fifty percent of the projects, in terms of value, are to be implemented through the Gram Panchayats; this keeps Scheme functioning closely linked to local level needs. Each Gram Panchayat is to prepare a development plan and maintain a list of possible works to be taken up under the programme. As and when demand for work arises, the recommendations of the Gram Sabha are considered. The great number of provisions to ensure a functioning Scheme is crucial for inclusive and people-centric development of backwards places like Balaghat.

[36] *Source: Governance Knowledge Centre (GKC)*

Balaghat is a Naxal affected area of Madhya Pradesh where unskilled workers are abundant. The District administration of Balaghat envisaged development in the region through implementation of MGNREGS with a participatory approach. The primary objectives of the programme were to create wage employment through successful implementation of MGNREGS and to involve the community in all levels of implementation. The programme, however, went beyond the creation of wage employment and managed to wean off the local community from the influence of Naxals.

The administration took the alternative development approach to identify the needs and desires of the people. MGNREGS brought in the desired funds for catalysing the development initiatives to foster activities promoting priority areas as identified by the local community, including agricultural irrigation, road connectivity, health, and education. 693 Gram Panchayats, 500 Joint Forest Management Committees, 11,515 Self Help Groups and Water User Associations were selected as implementation agencies, in addition to existing line Departments, to facilitate effective implementation and transparency in consumption of funds.

The administrator also integrated funds from additional Central Schemes such as rural road building, backward regions grant fund, MP and MLA local area development fund, State Government's watershed programme to support MGNREGS projects.

In 2008-2009, the administration generated wage employment for 227,000 individuals. Road construction, particularly a 90 kilometre stretch connecting Ukwa to Lanji, is one of the major successes. Within three years, about 28,000 hectares of new land was irrigated. Tendu leaf collection and bamboo cutting started in forested areas. Migration dropped significantly as locals found work in their region. The number of Naxal attacks fell from 21 in 2005 to none in 2009. The Scheme has also resulted in capacity building of the local public administration.

The success that the Scheme has seen through effective planning and participatory implementation provides a model for other underdeveloped and Naxal affected areas of India to replicate. In acknowledgement of this accomplishment, the Balaghat District MGNREGA team has been given the Award for Excellence in NREGA Administration, 2007-08 and 2008-09 by the Ministry of Rural Development, Government of India and Prime Minister's Award for Excellence in Public Administration, 2007-08 by the Ministry of Personnel, Public Grievances and Pensions, Government of India.

3.14.2 Background

Balaghat District is one of the 33 Districts of India that has been affected by Naxalites the greatest. Around 30 percent of the District was considered unapproachable by the administration up until a few years ago, and hence the Naxal influence is pinpointed as a reason for the region's underdevelopment and unemployment.

Balaghat District has dense forests on its east, difficult mountain terrain in the central part and the west is mostly divided into paddy growing agricultural fields. The District had a host of problems ranging from mono-cropped agriculture production, scarcity of industries, low wages, and lack of alternative employment opportunities. Poverty stemming mainly from the lack of employment opportunities pushed many youth to join the Maoist insurgent group. The difficult terrain and District's location at the tri-junction of three States makes it a prime breeding ground for Naxalism.

The District administration of Balaghat geared up to catalyse development in the region with a population of about 1.5 million through the implementation of MGNREGS in 2006.

Prior to MGNREGS implementation in the District, the administration was not effective in providing for public welfare. Overall lack of administrative pursuit of development efforts and the absence of trust in the Government by the local community were the main reasons for strong Naxal influence.

At the time, Naxalites were taking measures to gain the trust of the villagers. The Naxalites regularly helped the villagers with food and medicines.

Taking a cue from the Naxalites, the District administration began to replicate welfare service delivery as the Naxalites had been doing for some time.

Efforts were also undertaken to mitigate food constraints in the village through implementation of the Public Distribution system (PDS). Through PDS, the administration issued green and yellow ration cards - green cards for up to 20 kilogrammes of rice or wheat in a month and yellow ration cards for up to 35 kilogrammes of food grains at subsidised rates per family as per scale of food grains fixed by the Government of India.

Landless Labourer in Balaghat, MP

The administration undertook a 'People's Perception Management' strategy through which measures such as community policing for facilitating Government interaction with the community were pursued. The locals shared their aspirations, problems and expectations with the officials which brought about new opportunities for both parties.

The District administration, through the camps and meetings organised in the weekly markets, identified the needs of the community. Meetings were comprehensive and participatory in nature. Thirteen Government Departments (revenue, police, forest, rural development, health,

education, tribal development, rural engineering Departments, PWD, electricity Department, and food) participated in meetings with all representatives. These inclusive meetings carved out the main priority areas of the community which needed to be addressed through the MGNREGS.

3.14.3 Objective

- To implement the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) in Balaghat District, Madhya Pradesh, a Naxal affected area, including creation of a minimum of 100 days wage employment on demand and provision of unemployment allowance if employment is not provided within 15 days of demand for wage employment
- To involve the local community in all aspects of implementation
- To wean away the locals from Naxal influence
- To ensure overall development of the region

3.14.4 Working Design

In 2006, the District administration began a process of learning the needs and priorities of the local people through first-hand interactions. One hundred and fifteen meetings were held with common villagers, *sarpanches*, *upsurpanches*, Panchayat secretaries, office bearers of Joint Forest Management Committees and related Government officials to identify priority areas of the community such as livelihood generation programmes, health, education, road connectivity, land development and irrigation facilities, plantation and watershed management.

The high number of works pursued under the Scheme necessitated a cooperative effort; hence, the administration sought out 693 Gram Panchayats, 500 Forest Committees and 11515 Self Help Groups to communally discuss the direction of the Scheme. The line Departments gave technical guidance for large projects and assisted grassroots agencies in recordkeeping.

Activities undertaken as part of MGNREGS implementation are linked with Government missions. For example, *haryali mission*, involves people in environmental protection and water conservation through large scale afforestation activities in the rainy season. Additionally, the *jal-abhisheka mission*, promotes participatory excavation of old water tanks. By integrating MGNREGS with State priorities, a sense of urgency was instilled in work implementation and therefore, it helped to move the Scheme in the right direction.

To address specific local development issues along with security concerns, the administration leveraged funds from Central Schemes such as rural road building, backward regions grant fund, MP and MLA local area development fund, State Government's watershed programme, for projects pursued under MGNREGS. Scheme efforts were integrated; for example, the Water Bound Macadam under MGNREGS and blacktopping from PWD funds, and well construction under MGNREGS and pump provision under *Swaranjayanti Gram Swarojgar Yojana* came together. Thus,

the conversion of funds and Schemes allowed for not only generation of more employment opportunities but also enhancement in infrastructure and other assets.

To expand the annual employment cycle beyond 100 days, the administration planned a range of income generating forest activities like bamboo felling and *tendu patta* collection. The step was taken to check distressed migration in the region.

An awareness campaign was initiated for the workers to access their rights under the *Act*. The campaign focused on generating awareness on the rights of workers, registration in work sites, work allocation, wages, obligations of work output and submission of complaints and grievances. Awareness campaigns also targeted Government officials, representatives and various other implementing agencies to help them in meeting the expectations of workers. A media cell was launched for wider publicity of the Scheme. To keep all stakeholders updated on the Scheme, a radio programme named *Namaskar Balaghat* was broadcasted in the mornings.

Training of officials and locals was crucial to the success of participatory development. Training workshops were held regularly at all the three tiers of the Panchayati Raj. The training sessions were carried out by the District administration to impart knowledge and skills to the implementing agencies for addressing problems encountered in planning and execution of the programmes.

The Superintendent of Police also took on the responsibility of carrying out training sessions to sensitise the police personnel in the handling of locals, specifically in regards to naxal-related issues.

In sum, the implementing agencies were first made aware of their rights and obligations, and then were trained to carry them out effectively.

Panchayats were directed to make five year perspective plans. The Gram Panchayats were trained to demand funds under the Scheme by using a simple method of calculation. This allowed Panchayats to put pressure on the District administration to expedite fund transfers for development activities.

Field and table monitoring were extremely important for ensuring a high quality of work. MIS software was employed to ensure table monitoring. Regular meetings were also helpful in bringing out grievances. Regular inspections by Block officials and the prompt responses to feedback made for transparent and improved quality of works.

Gram Sabha involvement was also crucial to policy formation and implementation. Regular meetings were held at the Gram Sabha level which determined the beneficiaries, selection of work, progress of the project and social audit of completed works.

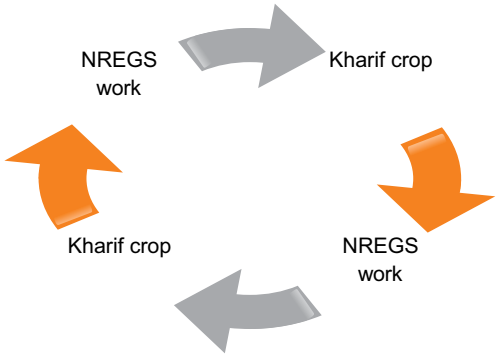
Social audits were carried out in the presence of villagers so that any objections that arose could be physically verified on the spot. The major part of the social audit report is published on the web, making it easily accessible for anyone and everyone to investigate.

To ensure transparency, Vigilance and Monitoring Committees are formed at the District, Block and Village level. The District level committee is headed by the MP, the Block level by a MLA and a leader other than the *Sarpanch* heads the Village Level Committee. The Committee meetings address all issues pertaining to transparency and accountability of the programme. The issues raised in the Committees were redressed with vigour. Thus the Committees not only ensured accountability but also redressed public grievances. Complaint boxes were also provided to Panchayats for quick disposal of grievances.

To avoid complaints and possibilities of leakages of funds and exploitation by vested interests, wage payments were only made through bank or post offices. This also helped in increasing the savings of the workers. Zero balance accounts were created for all workers by organising camps in coordination with the bank officials.

3.14.5 Key Stakeholders

- The District Administration, Balaghat, Madhya Pradesh
- Major administrative Departments of the District- 13 Government Departments - Revenue Department, Police Department, Forest Department, Rural development, Health, Education, Tribal Development, Rural Engineering Departments, PWD, Electricity Department, Food Department
- Panchayati Raj Institutions (PRIs)
- Joint Forest Management Committees
- Self Help Groups
- MGNREGS workers



3.14.6 Lessons Learned

MGNREGS in Naxal affected Balaghat and its successful implementation in the District through a people centric and participatory approach to development planning, not only generated ample employment avenues for the locals, but also helped in developing infrastructure, social security measures and good governance practices in the region. The indicators of success are many which are reflected not only in numbers, but also in the attitudes of the local inhabitants. Scheme implementation went beyond creating wage employment to encompass long term and effective community building measures, infrastructure and people's perception management towards Government administration.

3.14.7 Focus on Holistic Poverty Reduction

Prior to the Scheme, only limited employment opportunities existed in Balaghat District which is heavily marked by the large unskilled population. For a few months out of the year, locals engaged in agriculture production; there was little work except during the *kharif* season (July through October). With the implementation of the Annual Employment Cycle in convergence with various existing Schemes in the District, those seeking work could be employed throughout the year in their own village.

In 2008-09, a total of ₹ 179.80 crores was effectively used in the District, giving wage employment to 227,000 people. A total of 13.55 million of man-days were generated out of which 8.11 million (60%) were for women, 1.50 million (11%) Schedule Castes and 4.02 million (30%) Schedules Tribes. The percentage of SCs and STs in the District is 8% and 22% respectively.

*Comparative analysis of expenditure and employment generated in Balaghat district compared to the district averages of MP and all India**

Year	Balaghat		Madhya Pradesh			India		
	Expenditure (Crore)	No. of households provided employment (Lakhs)	No of Districts*	Average District Expenditure (Crore)	No. of households provided employment (Lakhs)	No of Districts*	Average District Expenditure (Crore)	No. of households provided employment (Lakhs)
2006-07	133.90	2.48	18	103.48	1.59	200	45.31	1.05
2007-08	131.36	2.08	31	93.28	1.40	330	48.48	1.03
2008-09	179.80	2.27	48	74.06	1.08	619	43.91	0.73

Source: *nrega.nic.in*

Year	Wage Rate
2004-2005	Rupees 30.00
2005-2006	Rupees 35.00
2006-2007	Rupees 40.00
2007-2008	Rupees 59.00
2008-2009	Rupees 70.00

INCREASE IN WAGES

There has been an increase in the wage negotiation capacity of workers as well as of the wage rate. At prevailing wage rates from 100 days employment a worker earned up to ₹ 8500 a year. Prior to NREGS the wage rates in the region were extremely low as shown in the table. With the wide implementation of the Scheme and its fixed and widely publicised wage rates, the market wage rates increased to a great extent. Even agricultural and industrial labourers witnessed a hike in salaries.

Reduced Distressed Migration

Overall work opportunities curbed the migration rate in Balaghat. The village migration register exposes the following data:

Year	Migration	
	Family	Population
2005-2006	1452	4217
2006-2007	1284	3664
2007-2008	1140	3284
2008-2009	1008	2840

Improved Road Connectivity

The District had poor road connectivity which was one of the major reasons of the area remained underdeveloped. Poor road connectivity triggered an administrative stalemate especially during the rainy season, thus making it a safe haven for Naxalites. In implementing the Scheme by converging it with other Central programmes, it was possible to build long thorough roads that cut across the Naxal affected areas. The PWD and Rural Engineering Department were responsible for the construction of these roads. Under the technical guidance of Rural Engineering Services, Panchayats constructed link and approach roads connecting the long thorough roads in the region. The newly developed road connectivity allowed the people to access and explore new markets for their agriculture and forest products. Education and health opportunities were also enhanced. Administrative operations were streamlined as well.

Appropriate Communication Strategies

Distribution Of Funds According To Community Needs

The distribution of funds was according to priority areas identified by the community. This effective distribution led to balanced growth in all the priority areas.

	Expenses on completed work (Crore)	Percentage
Irrigation	54.63	42.11
Road connectivity	26.26	20.24
Water conservation	27.19	20.96
Aforestation	21.66	16.9p
Total	129.74	100.00

Naxal Influence

Baihar, Paraswada, Lanji, Birsa and Kimapur were considered inaccessible areas due to their association with Naxalism. Through articulate measures of People's Perception Management such

as community policing the Government built up informal networks in the village. Many villagers who were earlier Naxalite sympathisers began to help the police.

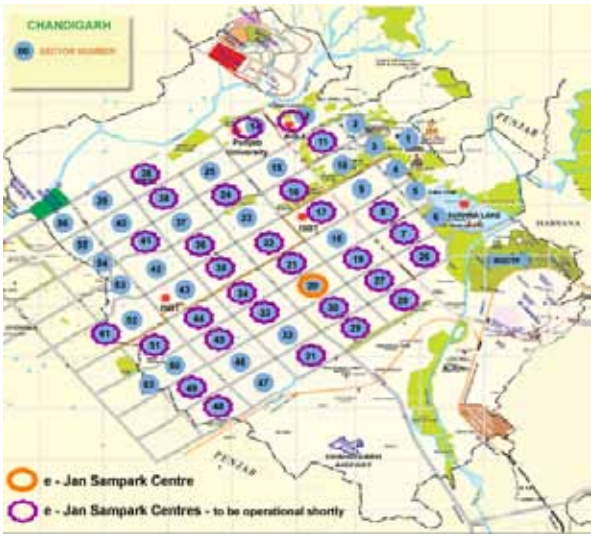
Conclusions

Through Citizen-centric Governance and integration of various development Schemes, the District Administration brought about a paradigmatic shift in the development scenario of Balaghat District of MP. The National Rural Employment Guarantee Scheme (NREGS) has been instrumental in reducing Naxal attacks in the region.

In acknowledgement of this accomplishment the Balaghat District NREGA team has been given the Award for Excellence in NREGA Administration for the year 2007-08 and 2008-09 by the Ministry of Rural Development, Government of India and Prime Minister's Award for Excellence in Public Administration for the year 2007-08 by the Ministry of Personnel, Public Grievances and Pensions, Government of India.

3.15 e-Jan Sampark, Chandigarh-IT[37]

3.15.1 Background



The project e-Jan Samprak was lunched in August 2006 by Chandigarh Administration (Union Territory) as another further step to fulfill its commitment to bridge the digital divide by extending the application of IT for the benefit of the common man. After the successful launch of the e-Sampark Centres, which have brought together 24 basic citizen services of different Departments under one roof, in the second phase of the e-Governance initiative, the Administration decided to provide the citizen with the information about its services under various Departments, private services and other Government of India services.

e-Jan Sampark project specially targeted underprivileged citizen, who are without IT connectivity, by providing them with easy dissemination of information services and delivery of useful non transactional services without cost from easily accessible common places. In other words, the objectives of e-Jan Sarmpark project was to provide a single, efficient information dissemination system to the citizen for availing Government services by minimizing multiple interaction points and hence reduce the wastage of valuable time.

The Administration, therefore, sets up e-Jan-Sampark Centres, which support multi service delivery (information delivery and non-transactional services) which is a judicious mix of all the possible Government services and information and other localized services which are needed by a citizen.

Presently 21 such e-Jan Sampark Centres have been serving the citizen of Chandigarh. Among this 21 Centres, only 2 centres run as entirely separate Centre or kiosk, the rest work in and alongside other e-Sampark or Gram Sampark Centres. In each e-Samapark Centre and Gram Sampark Centre there is a separate desk or counter only for e-Jan Sampark.

[37] *Source: Governance Knowledge Centre (GKC)*

Governor inaugurates e-Jan Sampark Centre in Chandigarh

An e-Jan Sampark centre. Photo collected from e-Jan Sampark website.

About the project's functions

An e-Jan Sampark centre provides the following information services:

- All procedures and forms for all Departments, which are frequently used by a common man, for example, how to apply for a birth/death certificate including procedure for late entry, how to lodge a First Information Report (FIR), various forms and procedures concerning public offices such as RLA, Estate Office, DC Office, Municipal Corporation, Engineering Wing, etc.
- Education and health related information services, for example, daily updated information regarding availability of blood in blood bank of Government medical hospitals, exam results, information about availability of educational and health related facilities in each sector etc.
- Transport and tourism related inquiries, for example, bus routes, information relating to tourism activities etc.
- Inquiries relating to passport status; railway booking status,train timings etc.
- Providing access to all Government websites
- Other information like utility services available in each sector etc.

These services are provided free of cost except when the citizen needs any print out, the same is available at a nominal cost per page of print out.

An important aspect of this project is that the citizen can submit their grievances relating to any Department at these Centres. National Informatics Centre (NIC) has created a Grievance Monitoring System under which, whenever any grievance is received at the e-Jan Sampark Centre, the same is scanned and forwarded via email immediately to the Nodal Officer of every Department who has been specially appointed for the e-Jan Sampark services. The hard copy of the grievance submitted by the citizen is also sent to the Nodal Officer of the concerned Department. A time line is given to the concerned Nodal Officer for the redressal of the grievance. Under this Grievance Monitoring System, the Head of Department is also able to monitor the redressal of grievances online.

There is also provision for the submission of applications under the Right to Information (RTI) Act at the e-Jan Sampark Centres along with the statutory fee. All received applications are delivered to the Central Public Information Officer (CPIO) of the concerned Department on the same day. Then it is the duty of that information officer to reply directly to the citizen along with the desired information as per law. If any further fee needs to be paid by the

applicant, CPIO requests for additional fee from the applicant directly and reply to the applicant directly. Simply put, an e-Jan Sampark Centre only provides the facilitation services for the receipt of RTI applications so that a common man does not need to visit each and every office.

As a recent add to the services at e-Jan Sampark Centres, now patients can get appointments for Government Multi Specialty Hospital Sector 16 and Government Medical Hospital, Sector 32 at e-Jan Sampark centres of Chandigarh. A patient desirous of visiting these hospitals can seek a prior appointment, which can be from a day to a fortnight, from the nearest e-Jan Sampark / e-Gram Sampark Centres and on stipulated date and time they can visit the hospital and go to the doctors directly.

3.15.2 Why can the project be called a best practice?

Transparency

Only a single counter works in each Centre, but there is no irregularity because service is provided on first come first serve basis. Everyday online status report of each Centre is made. The status reports contain total statistics of transactions in each Centre which the coordinator of project or other superior authority can monitor online. Moreover, each Centre keeps a visitors book, where the users can write their comment about irregularities in service, if they find, grievances, suggestions etc. All these ensure transparency in the functioning of the project.

S. NO.	DATE	CHECK IN TIME	NAME, ADDRESS & PHONE OF THE VISITOR	CHECK OUT TIME	COMMENTS / SUGGESTIONS
1.	24-8-06	10:30.	Y. Satyanarayana #388, Kailash Colony, New Delhi		Good Initiative. Hope to have the Some professional approach as the Public gets at e-Sampark Centres. Satya
2	8.9.06	1:20 PM	Dr. H.K. Verma Dy. Director, IIT Roorkee		Very good initiative to serve the citizen using IT for serving his information needs. Wish it all the success.
3	4-10-06	12:35	Teena		Good Public dealing Keep it up
4	12-10-06	12:50	ASHOK WAHI		Phenomenal work. Others need to copy this.
5.	12.10.06	12.55.	I. K. Khanna 453/20-A, Chd.		Very good public dealing but Estate-office work is not being cleared for long.
6	20-10-06	12:00	GAURAV BHATIA 162/20-A Chandigarh		I appreciate IT department of Chandigarh and hope will serve same services throughout. One Word (Awsome).

A page from the visitor's book from e-Jan Sampark Centre.

Participation

It is a project implemented with Government's interdepartmental direct participation and collaboration. However, the location, setup and infrastructures of the centres have been developed with public private partnership (present partners are UTI Bank and SQL STAR International Limited). The officers (information providers) in the centres are not Government employees. They are appointed contractually by the partner organisations of the project. People's participation in making decision regarding service delivery and improvement of quality of service is ensured in various ways.

Accountability

Alongside the regular official monitoring various surveys are conducted by the authority as to the performance of the centres and officials. The visitor book of each centre where users can write their complaints and comments are regularly checked to understand public reactions, demands or opinions. People are asked what type of problems they face in the existing system and how it can be improved, what more services can be included, etc. The results of these surveys are taken into account to track performance of staff.

Speed and Ease to Service Delivery

e-Jan Sampark Centres give 12 hours service from 8 am to 8 pm everyday except Sunday. This is a great opportunity for the office going or busy persons who can get their services after office time in the evening. Each e-Jan Sampark Centre is run by two trained IT officers. Each officer works for one shift of the two shifts a day. Each of these Centres is located in public places or other suitable places where people can easily visit. All these factors ensure speed and east to its service delivery.

Social wellbeing

This project has made the Government services closer to the citizen. It has enabled the common people to get the benefit of Right to Information. Its information dissemination has created scopes for generating transparency and efficiency in Government-citizen interface. And as a result increasing number of citizen are availing the benefits from the Centre.

Sustainability

This project was an innovation of Chandigarh Administration to make useful information available near common citizen's reach. Citizens have warmly accepted the innovation and supported it. Presently 21 e-Jan Sampark centre have been functioning, yet people's demands are on an increasing graph and also very diverse. All expenses of maintenance of the Centres, salaries of the officer, etc. are borne by the Administration. In contrast, all services are free of cost, and the Centres do not have any income generating source. Hence, its financial sustainability is dependent upon Government.

Replicability

The information services e-Jan Sampark has been offering to the Citizens of Chandigarh are useful and necessary for the people of any place, city or village. Hence, it has a great potential to be replicated other States of the country.

3.16 Jaankari - A Call Centre to Implement Right to Information in Bihar[38]

3.16.1 Background

Right to Information Act

The Right to Information Act was implemented by the Government of India on 15 June 2005. It allows for the retrieval by citizenry of information held by all levels of Government – Centre, State and Local. Furthermore, RTI encourages Government Departments to release information at their own will, as opposed to waiting for a Citizen's request.

The subject of RTI requests varies from road construction to restoration of electricity to delivery of rationed food to the poor. The Act outlines a proper format for requests, as well as areas that are exempt from disclosure.

Jaankari

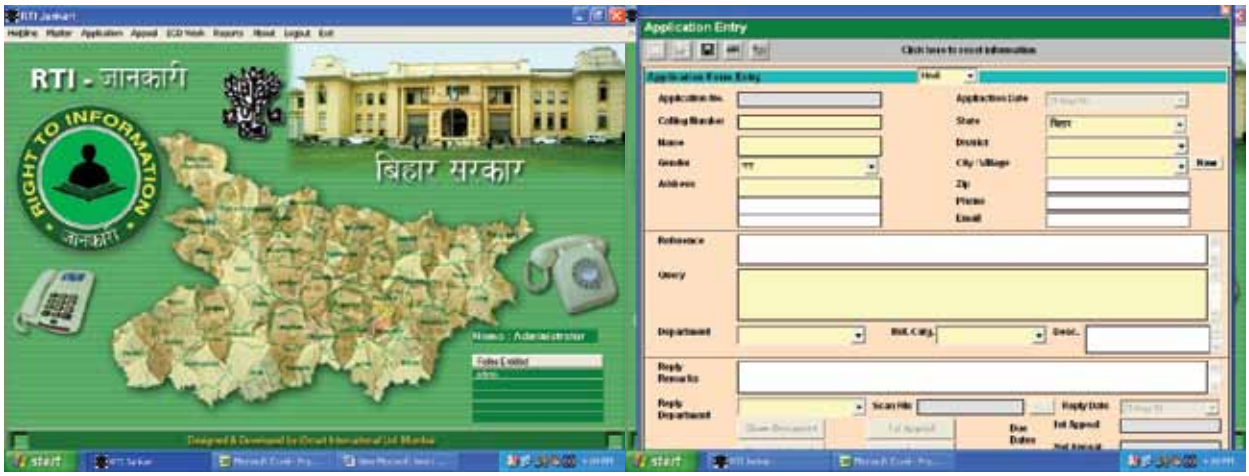
The Government of Bihar (GoB) launched Jaankaari in January 2007. Today, the project falls under the directive of the General Administration Department (GAD). It was originally conceived by the Bihar State Electronics Development Corporation Limited (BELTRON); however, at the outset of the project, BELTRON outsourced Jaankari operations to the private firm, Call2Connect (C2C). Henceforth, C2C has been in charge of recruiting operators, managing software, and maintaining records, amongst the numerous other duties it holds as head of operations. Today, Jaankari services all Citizens in the State of Bihar - 38 Districts and over 83 million people.

Jaankari operates three telephone numbers: one is a helpline for RTI related queries; another is a grievance redressal line for those who have had a bad experience while filing a request inperson; and the third is dedicated to the filing of RTI applications. Citizens can dial RTI 155311 to file a request, dial 155310 to ask make queries, or dial 2219435 to file a harassment-related grievance

[38] *Source: Governance Knowledge Centre (GKC)*

to be sent to the Department of Home. The telecom service provider for this project is the Government owned, Bharat Sanchar Nigam Limited (BSNL). Application fees for Citizens are ₹ 10 of which ₹ 1.4 goes to BSNL and the reminder to BELTRON. There is no fee for the helpline which means that when callers are making queries, they are only charged regular phone call prices.

Operators manage all incoming calls, during which they guide Citizens on how to identify and frame their questions. They then input questions and relevant demographic data pertaining to callers into the Jaankari software. A unique reference number is attached to the query received or application filed, and the result is pushed to a formal letter template. This is sent as an email and a hard copy to the PIO of the concerned Department, who is responsible for the information reaching the Citizen within 35 days. An additional copy is sent to the requester as a form of receipt.



In the case of no response received or requester dissatisfaction with the response, the applicant can file an appeal through Jaankari, which is then forwarded to the appellate authority. In case of no response to the first appeal, a second appeal can be filed in a similar manner and is sent to the State Information Commission.

One group leader and one team leader, supplemented occasionally by a retired Government officer, are on-site to assist operators with any questions that may arise while taking calls from Citizens.

3.16.2 Objective

Broadly, Jaankari aims to support the creation of an efficient and effective Right to Information Act through the use of information technology.

Jaankari supports the two main objectives of RTI: one, the promotion of transparency in public bodies; and two, the enhancement of public accountability mechanisms in an effort to contain corruption.

3.16.3 Salient Features

- Hardware - 10 computers and 10 telephones equipped with headsets
- Software –SQL, visual basic; proprietary; C2C designed and donated
- Seven operators, one group leader, one team leader - employed by C2C
- One Government on-site monitor

- Three phone lines – RTI helpline, harassment helpline, application line
- BSNL (Government telecom operator) - revenue sharing model with BELTRON (₹ 1.40 per ₹ 10 application fee is given to BSNL)
- Operations cost – Government allocates ₹ 22,000 per operator seat

3.16.4 Potential Impact

Barriers to RTI success

Studies have identified a number of barriers to the successful functioning of the Right to Information Act. Barriers can be classified into those relating to requesters and those relating to administrators. Requester-based problems include lack of awareness about the Act, lack of literacy, differences in language, lack of understanding on how to file requests, high fees for requests, inconvenience caused by required in-person filing (follow-up visits are common as well), difficulties in interacting with public officials, and preconceived beliefs that requests will not be fulfilled. Administrative problems include the following: first, the job of PIO is demanding due to the large influx of requests, but also as a result of it being just one out of the many responsibilities that the officer's post demands. Additionally, there is often a lack of readily available information to fulfill requests. A possible result of this has been inappropriate PIO behaviour towards Citizen requesters.

Perceived Benefits of Jaankari

Jaankaari directly tackles a number of requester and administrative barriers to success. The following is a list of measurable and/or observable outcomes which Jaankaari would potentially impact:

- Eliminates transportation time and cost by creating over-the-phone processes
- Eliminates possibility of encountering hostile public officials from bypassing human interactions
- Improves likelihood of properly formulated requests through the guidance of Citizens by call centre operators
- Allows for non-literates and physically challenged to file RTI requests through the outsourcing of application processing to call centre operators

3.16.5 Results

Key Stakeholders

The General Administration Department (GAD) of the Government of Bihar, BELTRON, C2C Public Information Officers, and call centre leaders and operators were identified as the key stakeholders who are together responsible for the effective implementation and upkeep of Jaankari. The GKC research team interviewed stakeholders on the functioning of the project since its inception. The following is a summary of findings.

BELTRON

The Bihar State Electronics Development Corporation Limited (BELTRON) was originally entrusted with the responsibility of operationalizing Jaankari. On January 29 2007, BELTRON outsourced Jaankari operations to the private firm, C2C. Today, BELTRON is the programme manager of Jaankari; specifically, it facilitates the transfer of funds from the GAD to C2C and provides technical expertise as needed. As it was an important player in the pioneering of the call centre, BELTRON holds a deep level of knowledge regarding the context in which Jaankari was conceptualized.

Call2Connect

Call2Connect (C2C) is the present controller of Jaankari operations. According to General Manager (East) C2C, Mr. Rajeev Kumar, private firms competing through a bidding process were given the opportunity to take over this role for two reasons. One, a private firm like C2C would be able to create efficiencies within the programme, stemming from previous experience with software and telecom companies. Secondly, as a third party, C2C would act in an unbiased manner, which was deemed important when dealing with RTI. A detailed list of C2C's current role is as follows:

- Provide software and RTI training to call centre operators. New recruits are to receive 15 days of training held at the C2C office in Patna and the call centre
- Updation and management of Jaankari software (Original Jaankari software was designed and implemented by C2C)
- Allocation of budget received from BELTRON (₹ 22,000 rupees per phone operator seat is transferred from BELTRON to C2C)
- Monitoring of Jaankari services (beyond retired Government official who is an overseer and monitor of operations)

Jaankari software was updated a number of times since rollout; a complete backup system was installed in case of any serious errors occurring. The monitoring workflow of Jaankari starts with the provision by the GAD of one retired official to frequent the call centre.

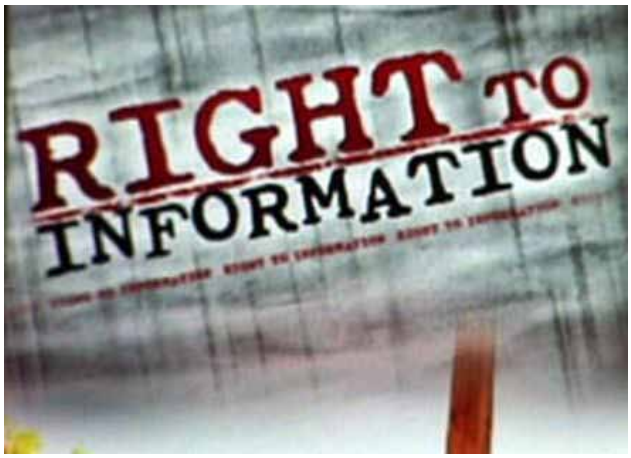
Despite the initiative's success, C2C faces a few challenges. For one, connectivity is low due to dependence on one service provider - BSNL; the result has been unsatisfied Citizens who are unable to file their requests because their calls are dropped. Expansion to other providers is however also proving to be difficult. The second challenge is Citizens are either unaware of Jaankari, or for those who are aware, they do not know the nature of the service it provides; as a result, the call centre is inundated with inappropriate requests. Lastly, Jaankari does not deal with the actual provision of information by PIO to Citizen. As such, realising the ultimate goal of accountability through transparency is only indirectly promoted through Jaankari and hence, concrete outcomes are uncertain.

C2C is currently moving onto 'phase two' of Jaankari. It proposes two major enhancements to the programme: one, filing of an application through Jaankari's online website and payment of the application fee by credit card directly through the site. The second enhancement is RTI confirmation via sms and sent directly to the applicant's mobile.

Call Centre Executives/Operators

The call centre team consists of a senior administrative officer (retired Government official) who monitors operations, a team leader who is responsible for daily management, a group leader who assists operators and executes duties pertaining to programme management, and seven operators who answer Citizen phone calls, send emails and hard copies by post/fax to PIOs and applicants, and maintain individual daily records of calls.

According to the team leader, Mr. Ratish Kumar, all operators are recruited by Call2Connect and immediately trained on RTI guidelines and software management for a period of 15 days. It is important to note however that answers varied amongst operators when asked about training - some said informal training was given by call centre leaders, while others confirmed the C2C formal training sessions. A sufficient amount of information gathered through further discussions indicated that it may have taken some time before formalized training was in place and hence, only later hires went through this process.



When asked about typical calls received, nearly all operators mentioned that the maximum number of requests comes from Sitamarhi District, and that the most common topic of request relates to Government Schemes such as NREGA and *Indira Awaas Yojana*.

The two most commonly mentioned challenges faced by operators were call drops due to poor connectivity, and uncertainty or confusion about how/where to direct requests. All operators expressed an interest in joining Jaankari and/or an ongoing job satisfaction because of the organisation's altruistic objectives.

Public Information Officers (PIO)

The role of Public Information Officer is to provide Citizens with information in response to their requests as permitted under the RTI Act. The Bihar Public Service Commission trains PIOs on how to fulfill their responsibilities. However, the task of PIO is just one of the many that the officer is responsible for; as a result, PIOs are often crunched for time and responses may exceed the required 35 days, which can often lead to appeals.

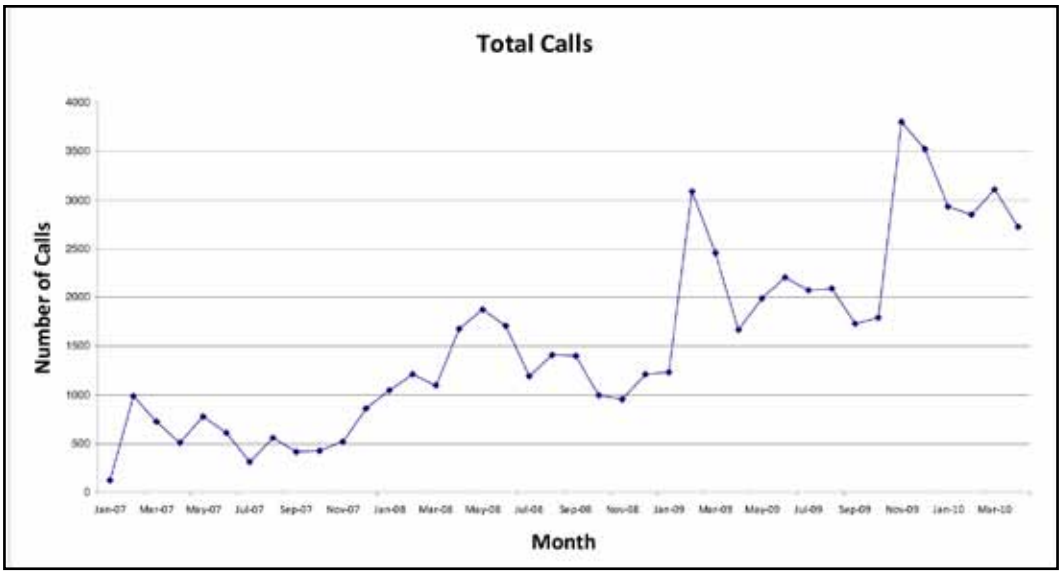
Jaankari digitizes applications and sends hard copies by post and soft copies (whenever possible) by email to PIOs. Forwarding a digital copy of the application helps to streamline the RTI application process. PIOs benefit from this service in terms of clarity of request and central depository (email inbox) for applications.

3.16.6 Data Analysis

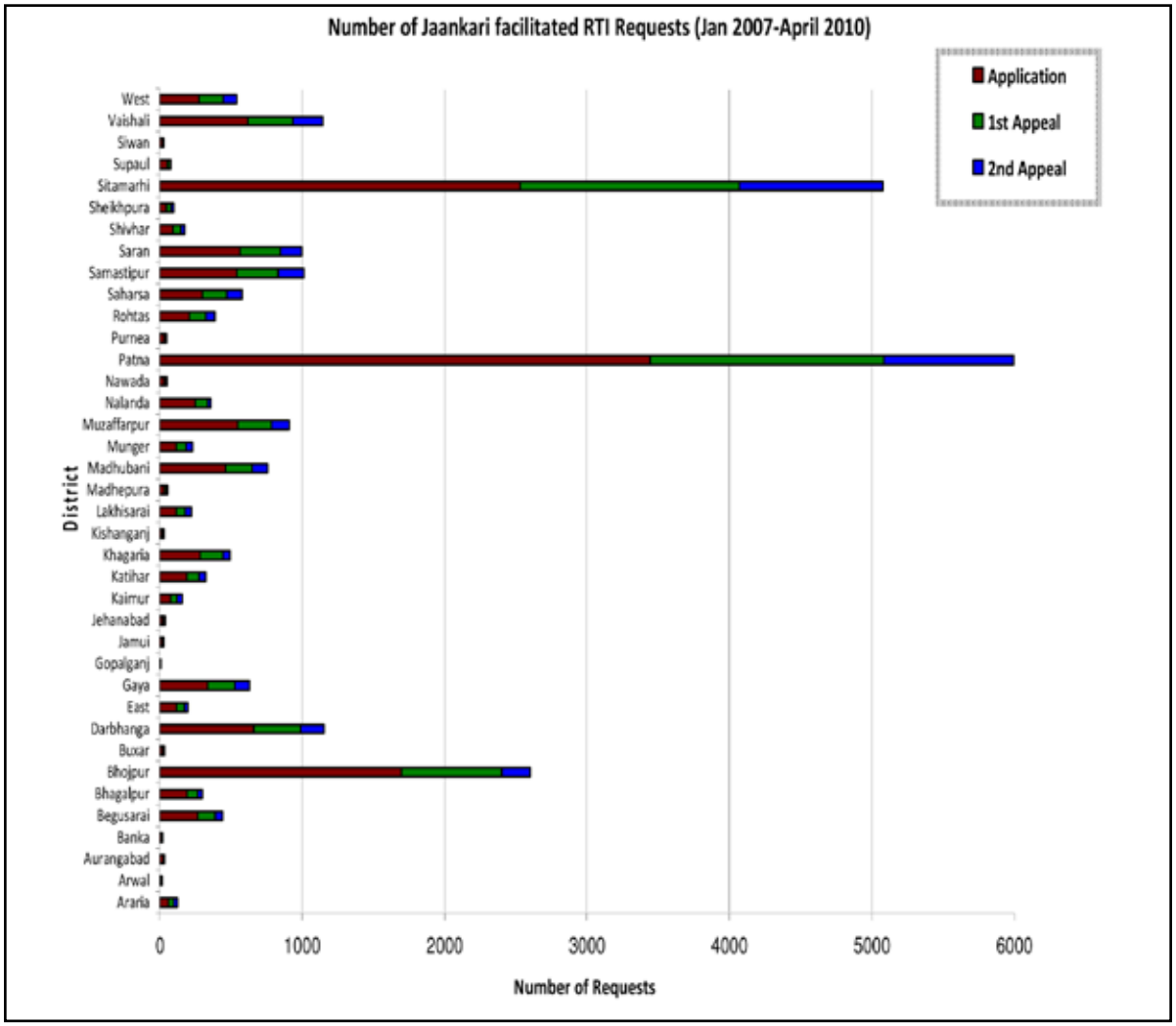
Jaankari receives an average of 1546 calls – applications, first and second appeals, queries, and grievance reports - per month and 560 of these are specifically RTI applications. Since the addition of the victim's hotline in November 2009, an average of 13 formal grievances have been filed through the call centre per month.

The graph on the next page shows number of Jaankari calls since its inception in January 2007. It indicates that number of calls have nearly tripled over a two year span.

As illustrated in the graph, 100 percent of Districts in Bihar have utilized Jaankari services. Furthermore, seven Districts have filed over 1000 requests for either initial, first appeal or second appeal applications. Two Districts, Patna and Sitamarhi, have filed over 5000 requests each. The average number of requests per District over approximately a two and a half year span is 559. Using the most recent full month of data, an average number of calls per month per District is 22.



Total Calls Received by Jaankari from January 2007 - March 2010



Are remote areas accessing Jaankari services?

During visits to Patna and interactions with key stakeholders, anecdotal evidence revealed that many Jaankari users live in remote locations. The graph below suggests that people in remote areas are accessing Jaankari services. Here, remoteness is measured by distance to the capital city of Patna (in kilometres). Currently, there are three Districts that lie at or above the average distance to Patna, and simultaneously have made an average or above average number of calls to the call centre; these Districts are Madhubani, Munger, and Saharsa.

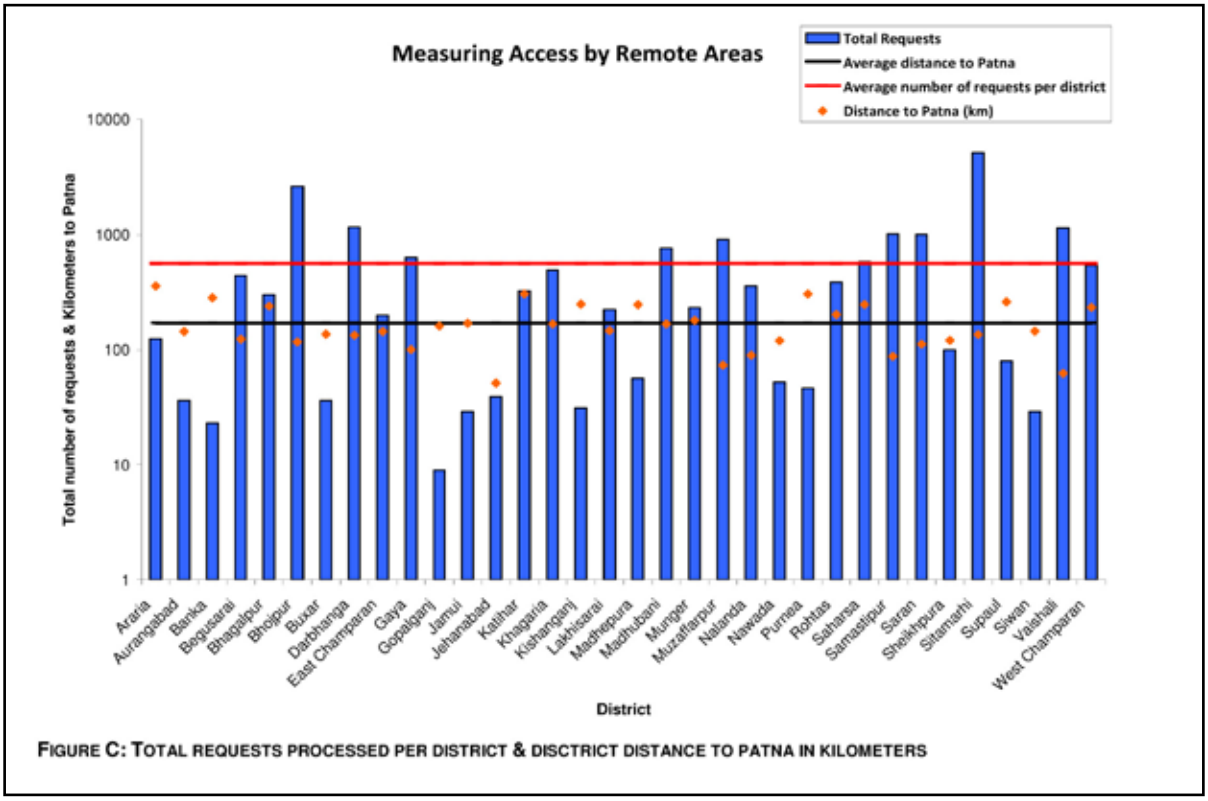


FIGURE C: TOTAL REQUESTS PROCESSED PER DISTRICT & DISCTRICT DISTANCE TO PATNA IN KILOMETERS

Who is accessing Jaankari services?

While conducting primary research, anecdotal evidence was collected regarding the significant use of Jaankari services by minorities, particularly women and physically challenged persons.

Jaankari software requires operators to collect callers' gender and allows for miscellaneous observations where 'physically challenged' can be noted. Unfortunately, this data, as it stands today, is inaccessible at the call centre level and therefore, could not be used for verification.

3.16.7 Lessons Learned

Key Achievements

1. Provides guidance to Citizens on formulation of requests and RTI in general Citizens often know the problems they face, however formulating related questions that will lead to resolutions is not an easy task. For example, a Citizen may know that they desire a road that connects their house to their farm land, but stating the problem in an RTI application will not result in an explanation of why the road has not been built or if it is on the agenda to be built. Jaankari operators are critical for this purpose; they are able to guide requesters to frame questions related to their problems.

Furthermore, considering that the literacy rate in Bihar is 47.5 percent (Census of India, 2001), the written Act is not legible by over half the population and likely not comprehensible, due to language barriers or difficult to understand Government jargon, to many more; the RTI helpline that Jaankari operates allows for this population to develop a real understanding of the Act.

2. Provides access to underdeveloped areas

Data collected from Jaankari indicates that many Citizens utilizing Jaankari services hail from what appears to be underdeveloped localities. Although the data may not show large variances in development indicators across Districts in the State of Bihar, anecdotal evidence suggests a general consensus of underdeveloped areas in the State, thus it is reasonable to assume that differences are noticeable to a larger degree on the ground. It is also then reasonable to say that the correlation between low development indicators in certain Districts, and high use of Jaankari services in the same localities, illustrates the ability of the call centre to attract Citizens from the most disadvantaged areas.

3. Provides access to remote areas

As a telephone-based initiative and hence an eliminator of travel, it is expected that remote localities would reap the largest benefits from Jaankari. The data confirms that those who are aware of the initiative and living in remote areas, are making RTI requests through the ICT mechanism made available to them.

4. Eliminates possibility of Citizen harassment by public officials and provides outlet for harassment grievances

Stakeholder interviews indicated harassment of Citizens by public officials as a major problem in the RTI application process. Through the use of ICTs, Jaankari not only eliminates this possibility, but also provides a grievance redressal outlet for those who have used the face-toface method and have had a poor experience. To date, 98 grievances have been filed through Jaankari.

5. Services the disadvantaged populations (differently abled, women, and non-literate) According to interviews with call centre operators and leaders, approximately 10 percent of Jaankari callers are differently abled in some way. Stakeholders also noted that there are women and non-literate users of Jaankari services. When using the randomized sample of 10 interviews as an indicator of approximate participation levels, we can confirm that 10 percent of users are differently abled and also say that 10 percent are females.

3.16.8 Challenges

Each group of Jaankari stakeholders has faced or continues to face a different set of challenges. Replicating the Jaankari model would require extra attention be paid to the issues highlighted below:

1. Jaankari Operators

- Not able to attend to calls due to insufficient number of operators
- Difficulty guiding callers – time-consuming to make callers understand RTI process (Currently, a 10 minute call limit acts as a guideline, but it is not an enforced reality)
- Poor connectivity – not able to hear callers; interrupted calls

2. PIOs

- High influx of requests; have more than PIO responsibilities so insufficient time for responses
- Lack of readily available information
- Not protected by law; possibility of receiving threats from Citizens

3. BELTRON and Call2Connect

- Not able to attract/pursue additional telecom providers

3.16.9 Next Steps

Evidence from the field suggests that Jaankari has improved RTI processes in the State of Bihar. From a Citizens' perspective, through the use of telephone it has made the application process efficient. From a Government perspective, through the use of computers – application software and email - it has made the production of requests and transfer of them from Citizen to PIO more effective.

The question that remains is if Jaankari is contributing to improved transparency and public accountability. This can only be evaluated if a mechanism exists to measure the final segment of the RTI cycle - in other words, what happens after the PIO receives the request? Is information sent to the Citizen and if so, is there something specific to Jaankari that helps in the retrieval of satisfactory information? This question can be answered through a few simple enhancements to the Jaankari model. In many cases, recommendations deal with the implementation of a monitoring system which would directly allow for a better understanding of Jaankari impact on RTI objectives.

Enhancements

The following is a list of recommended enhancements and explanations for their inclusion.

1. Requester registration/login ID – Attaching a unique reference number to the individual requester would allow for the tracking of unique callers. This would help in tracking the use of Jaankari services over time. Furthermore, it allow for the tracking of requests made by individual requester, assisting in the monitoring of individual behavior, needs, etc.; this would give operators a consolidated background of the caller's requests, helping them to understand a caller's needs and hence, give guidance accordingly.

2. Digitization of reporting – Field research revealed that call centre operators have access to the data they put into the software, however not in a consolidated format or one that can be manipulated. As a result, operators spend time everyday manually recording daily call information into a spreadsheet. A simple digitization of reporting – data push from the software into a spreadsheet over a period of time – would free up operator time to instead attend to calls. Furthermore, as mentioned earlier, valuable data, such as gender and physical health status, is currently gathered but not accessible – a reporting system would allow for the analysis of these demographic aspects.

3. Addition of demographic fields in software – Currently, gender is the only demographic field required for collection. Additional demographic fields such as handicapped and literacy can be added to make data richer and used to further understand who is using Jaankari services.

4. Standardization of call centre training – Well-trained operators will contribute to the efficiency of request processing. Field research revealed that intended training processes are not being executed uniformly; in other words, some operators may have received formal training but others have not. Standardization of a proper training programme, both on RTI and technical aspects of the work, would result in quicker and more accurate processing of applications and answering of queries.

5. Partner with civil society organisations – Field research revealed that active civil society members/organisations are contributing to the promotion and utilization of Jaankari services. Future coordination with these local actors, or at minimum an understanding of their operations, will prove vital to the penetration of the programme to all Citizens.

3.16.10 Keys to Success

When looking to replicate the Jaankari model, perhaps more important than considering enhancements, is determining key factors that have contributed to successes Jaankari has experienced to date.

1. **Political will** - The Chief Minister of Bihar led the charge in this effort which is both significant and necessary. Without motivation and direction from the top, it is difficult to make strides forward in the implementation of a highly sensitive policy like the Right to Information Act. Beyond the Chief Minister, a number of Government officials in Bihar were advocates of Jaankari because of a shared desire to show the rest of the nation that the State could rise from its past setbacks

2. **Partnerships** – The outsourcing of Jaankari to an unbiased third party has likely kept call centre operations clean and transparent.

3. **Citizen's interest** – In a democracy like India, Citizens are not only entitled to information but also desire to have it. As such, active engagement by Citizens with the call centre has made for the realization of efforts

4. **Understanding users and proper assessment of their needs** – Jaankari has directly addressed barriers encountered by Citizens trying to file RTI requests; some of these barriers include non-literacy, immobility, and an apprehensive nature due to socioeconomic status

3.17 Lifelines Education Mobile Query System, Rajasthan[39]

3.17.1 Background

The present-day communications revolution has boosted the Education sector in India in a great way. Internet and multimedia-aided teaching, tele-classrooms, and fast emerging online learning platforms, serve as examples of the changes.

However, this bright picture primarily pertains to urban areas, and rapidly fades as the focus shifts to rural India.

The pace of change in rural areas of India has been faltering, primarily due to inadequate infrastructure, poverty, and lack of support, rural education is far behind. Nevertheless, it is

[39] *Source: Governance Knowledge Centre (GKC)*

from the rural communities that some of the country's brightest students hail from.

The credit for this achievement, in spite of the limitations, goes to a nondescript community – that of the village school teachers - who work sincerely behind the scenes to support the country's education system directly from the roots.

Supporting these rural teachers as the archetypal backbone of education, has been the focus of many Government programmes, including Sarva Shiksha Abhiyan (SSA), the flagship mission for achievement of Universalisation of Elementary Education (UEE) in India.

Under SSA, the capacity of rural teachers is strengthened through knowledge exchange and skill training, through grants for enriching teaching-learning materials, and by developing academic support structures at the cluster, Block and District levels in all States across the country.

Bridging the digital divide in education is one of the major goals of SSA. In pursuance of this goal, the Government of Rajasthan is driving the Rajasthan Education Initiative (REI).

Launched in 2005, as a showcase of the public-private partnership potential in public education, the REI focuses on ICT interventions to modernise educational service delivery, to develop teachers' skills for quality learning, and to provide an enabling environment for realising objectives of the SSA.

The LifeLines Education programme was launched by Government of Rajasthan under REI objectives, focusing principally on teacher development and curricular support in rural areas as mediated through the phone.

Life Lines Education, launched in 2008, was created by ICT4d agency OneWorld, towards the larger goal of digital and knowledge inclusion of rural communities in India. UNICEF supports its implementation in Rajasthan, while OneWorld anchors the programme delivery, technology, and knowledge management of the service.

Today, LifeLines Education boasts a successful track record in enabling a knowledge platform for rural schools – expanding teachers' access to quality academic support on a sustained basis, promoting efficient teaching skills in classrooms, and thereby helping to enhance the quality of learning for children. The milestones achieved have encouraged the scale up of the service from a modest pilot to expanded deployment, toll-free, across all 33 Districts of Rajasthan.

3.17.2 Objective

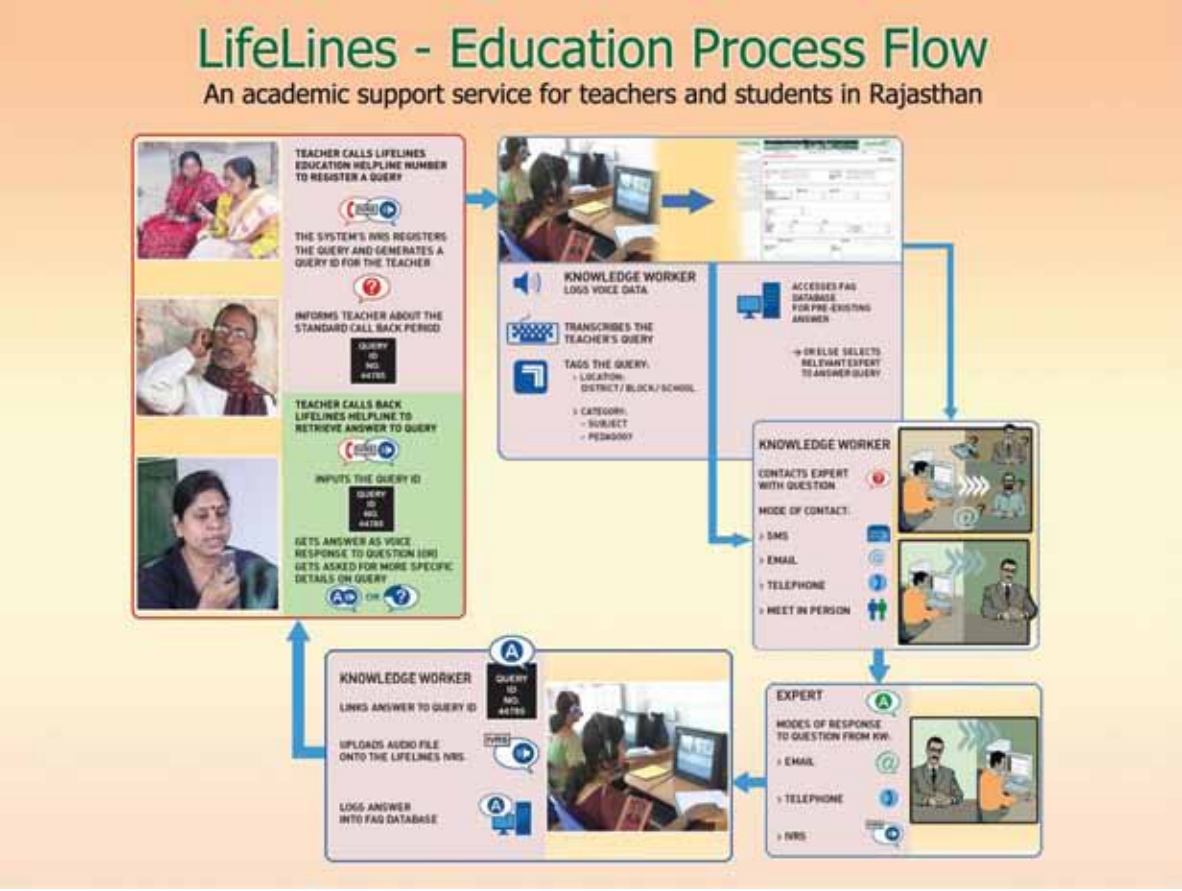
The LifeLines Education service facilitates a convenient and accessible support mechanism for school teachers to enable continued and quality academic-pedagogic guidance and advisory on their curriculum. It aims to assist teachers in their day-to-day transactions with students and thereby bring qualitative improvement to the overall teaching-learning processes in village classrooms.

By leveraging the reach and accessibility of ICTs and the benefits of the communications revolution, this innovation seeks to reach teachers even in remote, rural areas, and bridge the rural-urban knowledge divide.

The overall intent of LifeLines Education is to contribute to the larger goals of the Sarva Shiksha Abhiyan towards enhancing skills and capacities of school teachers in India, and improving delivery of educational services across the country. In line with this, LifeLines is furthering the mandate of the Government of Rajasthan to bring quality education support to teachers, through ICTs, with a longer term aim to enhance retention, improve access, better learning outcomes in school subjects like English, Mathematics and Science, assist teachers' training, and improve school curriculums.

3.17.3 Working Design

The LifeLines Education service brings about an innovative ICT platform – using the telephone and Internet – that reaches to teachers in remote, rural regions of Rajasthan, and helps them with routine academic guidance and pedagogic instruction on an on-demand basis.



The service is mediated in the local language and is accessible through any phone – mobile or landline. This is not a real-time, but an IVRS based service, meaning there is a time lag of 24-48 hours in completing one consulting cycle.

The telephone serves as the medium of user interface in LifeLines, while high-end communication technology and custom-made computing applications are configured at the back-end to support integrated call handling and management of a very large audio and text database.

How it works?

The teacher dials the designated LifeLines Education number and is guided by its local language Interactive Voice Response System (IVRS) to record his/her query on academic and/or curricular aspects. The LifeLines Education system then generates a unique ID to acknowledge the posted query. This ID is used by the teacher to retrieve the answer when s/he calls back the service in the next 24-48 hours.

At the backend, during this same period, knowledge workers at the LifeLines Hub access the posted queries using a secure web application. They respond to the queries by referencing a pre-existing set of similar queries and answers, which form the LifeLines Education knowledge database. If the answer is not available in the database, the posted query is tagged and sent to relevant education experts for appropriate response by email or phone.

A panel of academic and pedagogic experts, notified by the Government of Rajasthan, liaises with the knowledge workers' team to respond to the incoming queries from teachers on an ongoing basis. After the experts respond to the query, the knowledge worker readies the answer as a voice clip, and using the web application again, tags the answer to its relevant query for the teacher to retrieve it over phone by the stipulated time.

Every incoming query and corresponding response contributes to the LifeLines Education knowledge database, enriching the knowledge content and aiding in future reference. The knowledge database is presently comprised of more than 24,000 queries in the areas of academic, pedagogic, classroom management, and curriculum/subject topics.

3.17.4 Key Stakeholders

Key stakeholders in the LifeLines Education programme are the Government of Rajasthan, OneWorld, and UNICEF, collaborating in a tri-partnership under the Rajasthan Education Initiative. Together this partnership anchors the LifeLines service's delivery to its target audience of over 450,000 teachers in more than 100,000 primary and upper primary schools across the State.

Under this collaboration, Government of Rajasthan leads delivery of the service toll-free throughout Rajasthan, and enables its appropriate initiation into and uptake by the teaching community. UNICEF enables the domain knowledge through experts, and the resource support to the programme.

OneWorld anchors the innovative technology platform of this programme, and manages its overall implementation and knowledge delivery across Rajasthan.

The domain experts in LifeLines are a panel of leading academic and pedagogy specialists affiliated with the Government of Rajasthan and UNICEF. They provide the specific knowledge advisory and academic guidance to queries coming from teachers.

These domain experts are in close consultation with a team of knowledge workers, based at the LifeLines Education backend hub managed by OneWorld. Knowledge workers serve as the primary contact point, communicating expert instruction and advisory to teachers via the voice-mode.

3.17.5 Lessons Learned

The LifeLines Education service was launched first in Udaipur District to reach nearly 12,000 teachers in 4691 primary and upper primary schools. This was on a pilot basis to explore the efficacy of a phone-mediated service for rural academics in Rajasthan.

The service has demonstrated how ICTs can be used to effectively benefit the information needs of a significant section of the rural population - the village school teachers - that was earlier unaddressed.

Enabling continued academic guidance and didactic advisory to teachers, via phone and in their local language, LifeLines has established itself as an effective support platform in rural Rajasthan.

Teachers today recognise LifeLines-Education for providing them with access to curricular instruction and teaching guidance from experts, which they acknowledge is having a positive impact on the standard of qualitative learning.

This recognition of LifeLines is reflected in its increasing demand and usage by teachers, and is the cornerstone on which the LifeLines service bases it success.

In view of such popularity and uptake, the Government of Rajasthan in 2010 scaled LifeLines up as a toll-free service, making it accessible free of cost across all the 33 Districts of Rajasthan. This was a big step forward in enabling equitable knowledge delivery, especially in remote, rural areas in the State, where regular academic-support is otherwise hard to come by.

The teachers' response to LifeLines Education toll-free has been enthusiastic, as in evident in a high number of calls coming from across all regions of Rajasthan.

The large call volume indicates the multiplier effect LifeLines has generated in the academic community, while the noticeable variety and depth in the range of questions received indicate that both teachers and students are keen to extend the frontiers of their knowledge beyond conventional learning.

Teachers have posted a variety of queries on the service – these range from subject/curriculum and pedagogy-related queries, to child psychology, classroom management, and teaching learning methods.

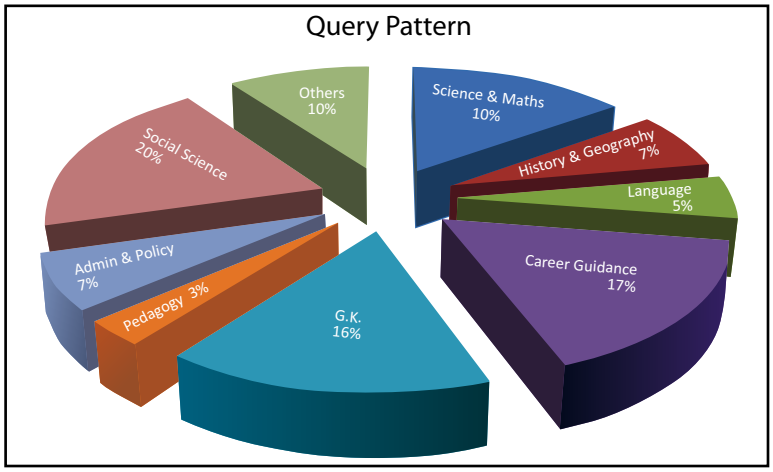
Query types: Queries vary from vocabulary enrichment and writing skills for children to use of TLM, career counseling, and miscellaneous topics like popular science, polity, general knowledge and current affairs.

An average monthly query pattern is depicted in the graph below.

The highest concentration of queries is in the area of Social Science - 20 percent of queries are under this subject.

An increasing number of queries have also been registered on career guidance and counseling, which are posted mostly by students.

General Knowledge questions, another large component, have been asked by both teachers and students. Parents also post questions on LifeLines. Science, Mathematics, History and Geography are the other subjects on which many questions have been received in LifeLines.



Use of LifeLines' advisory: The pedagogic information and didactic advisory from LifeLines are being employed to clarify curricular and lesson-related doubts, and to aid in self study and knowledge improvement by teachers.

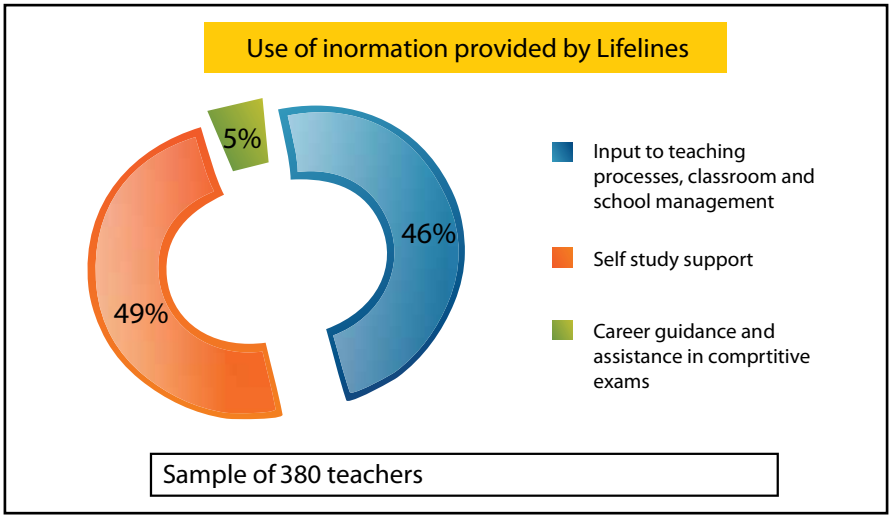
Nearly half of the teachers in the primary survey mentioned above have stated that they refer to LifeLines from time to time for subject and general knowledge guidance.

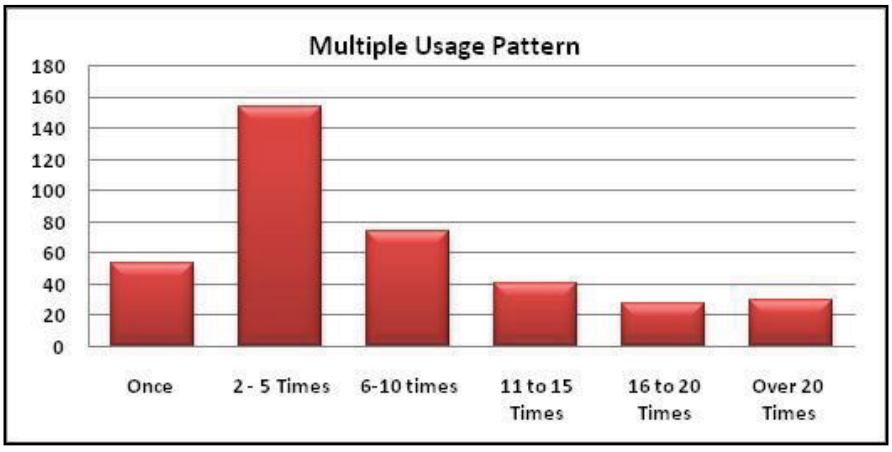
This is on occasion, over and above what they teach and conduct in their classrooms.

Forty four percent of teachers have said that they are using LifeLines' advisory as an input to the teaching processes in their classrooms. The advisory has also been applied for classroom and school management procedures, and to formulate lesson plans for students. The academic support from the service has been employed by 5 percent of users to help in preparation for competitive exams.

Repeat usage: The effective uptake of the LifeLines service in the community is depicted by the pattern of repeat callers to the service.

The primary research with 400 respondents, mentioned above, provides the statistics on teachers accessing the service on a sustained basis. It indicates that 40 percent of teacher Lifeline users have used the service at least twice and up to five times; 19 percent have used it over five times and 8% percent are regular users who have accessed the service over 20 times.





An emerging value proposition for the differently-abled:

A less expected yet positive outcome of LifeLines Education has been the benefits it is bringing to students who are differently-abled.

In the Government Pragya Chaksu Blind School in Udaipur, a group of around 50 students regularly refer to LifeLines to aid in their daily studies. They say that instruction in voice mode is easier to follow; it also saves them time in looking for information.

Virendra Arya, the Principal of the school, says, "Our students often use the LifeLines Education service and I think this is an immensely helpful service. Since this provides information in voice mode, it makes knowledge retention easier for students. Further, Braille language is not always available for all kinds of subject-related queries, and it is time consuming for visually impaired students to gather information from different sources. LifeLines Education has been a valuable service in this regard."

3.17.6 Looking ahead

The standard of questions in LifeLines Education is also rising exponentially as more incisive and elaborate queries are being received. Teachers have posted queries on how to reduce dropout rates of girl children, manage slow learners, and carry out multi-grade teaching in a single classroom. Students from Open Schools are also discovering Lifelines as a good reference source.

The educational knowledge database built from the queries and responses of LifeLines Education, comprising over 24,000 elements, reflects rich topical diversity and offers valuable insights that are directly relevant to the teaching-learning processes in school classrooms, and the real time challenges faced by rural teachers.

The Government of Rajasthan is looking to employ the key outputs from a pattern analysis of this knowledge database to generate pedagogic and subject-specific inputs and supplementary educational resources for teachers, renovate and revise the pedagogy and curriculum, and improve teacher training and capacity building programmes under SSA.

Today, LifeLines Education is poised to be deployed in further innovative ways to enable equitable and quality educational service delivery across Rajasthan, and develop a fresh perspective towards education reforms in the State.

3.18 Right to Service in Madhya Pradesh[40]

3.18.1 Executive Summary

In response to the inability of Citizens' Charters to fully succeed in enabling efficient and effective public service delivery, the Government of Madhya Pradesh designed the Right to Service. Today, this Scheme includes 19 services for which there are legal consequences if they are not delivered within a stipulated time frame to Citizens who demand them. Penalties and compensation for service delays have been outlined clearly within the Scheme.

3.18.2 Background

In 1991, the UK Government first articulated and implemented a Citizens' Charter to provide quality services within specified time frames to its Citizens. On 24 May, 1997, a conference was held by Chief Ministers from various States of India and chaired by the country's Prime Minister, during which an 'Action Plan for Effective and Responsive Government' was adopted at the

[40] *Source: Governance Knowledge Centre (GKC)*

Centre and State levels. The Central Department of Administrative Reforms and Public Grievances (DARPG) took on the whereby there neglect in quality service delivery is a punishable offense.

There are 19 services provided by 7 Departments under this Scheme. They include new electricity connections, temporary electricity connections, increase in sanctioned loads, complaints regarding meter repair/replacement, new water connections, repair of hand pumps, financial assistance after natural disasters, provision of copies of *Khasara/Khatoni*, domicile certificate, social security pension, new APL/BPL cards, duplicates of *'Bhu Adhikar'* and loan books, copies of maps, benefits under *Prasuti Sahayta Yojana*, benefits under *Vivah Sahayta Yojana*, *Indira Gandhi Rastriya Bradhawastha Pension, Indira Gandhi Rastriya Vidhwa Pension, Indira gandhi Rastriya Nishakt Pension*, disposal of applications under *MP SC/ST Akasmik Yojna Niyam*.

Despite the achievement of framing a Charter, the Government of Madhya Pradesh realised that the Charter alone would not serve the objective of effective and efficient service delivery without a support mechanism that would operationalise the commitment. As such, the Government enacted Lok Sewaon Ke Pradan Ki Guarantee Adhiniyam on 18 August 2010 to give its Citizens the 'Right to Service' in a timely manner.

The procedure outlined in the working design explains how to uphold the right to service, specifically announcing a legal process of an initial application, first appeal and second appeal.

3.18.3 Why is it a Path-Breaking Law?

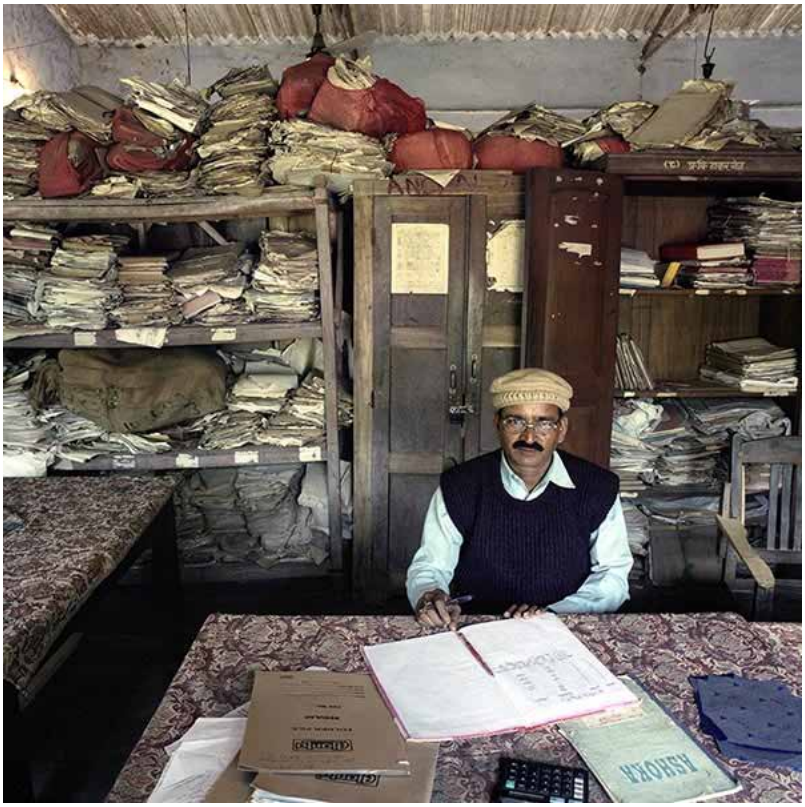
It has been recognised in the world that good governance is essential for sustainable development, both economic and social. The three essential aspects emphasised in good governance are transparency, accountability and responsiveness of the administration. Citizens' Charters are an effort to address these issues by focusing on solving the problems which Citizens encounter while dealing with the organisations providing public services.

The MP Government has described the Bill as historic and a reflection of the State's commitment to achieving good governance. The Madhya Pradesh Public Services Guarantee Bill 2010 guarantees the delivery of basic public services to Citizens within a stipulated time frame and sets in place accountability mechanisms for non-delivery of services. Under the Bill, key public services like issuing caste, birth, marriage and domicile certificates, drinking water connections, ration cards, copies of land records will be notified.

A time period will be fixed for the delivery of each service. If officials fail to perform their duties and provide these services on time, they will have to pay a fine starting from ₹ 250 per day to a maximum of ₹ 5000. This will check delays in the provisioning of services and remove inordinate pendency.

The Bill provides for a two stage appeals process: In the event that Citizens do not receive notified services in time, they can make an appeal to the first appellate authority. If the first appellate authority is negligent or if Citizens are dissatisfied with the ruling, they can file an appeal with the second appellate authority, which can direct the subordinate authorities to deliver services.

The second appellate authority also has the power to impose fines and order disciplinary action against officials. The new legislation also stipulates the number of days a particular file related to the delivery of a service can be kept with the officer concerned. The fine received from delinquent officers will go to the applicants to compensate them for the inconvenience caused to them. It is envisaged that the offices of the Chief Minister and other Ministers will also be brought under the purview of the law in the future.



The path-breaking law seeks to operationalise the system of Citizens' Charters that have been in place for some time but have been quite ineffective. While previous Governments in Madhya Pradesh have implemented the Citizens' Charter arrangement, their efforts have largely been ineffective. This can be attributed to the parochial set-up of the bureaucracy, the absence of a consultative process in the formulation of the Citizens' Charter and the lack of training and capacity building of officers and service seekers about the Charter and its potential.

The new law provides an effective instrument for realizing the concept of Citizens' Charter while ensuring services to people in an assured manner. It will also prove an effective check on the corruption.

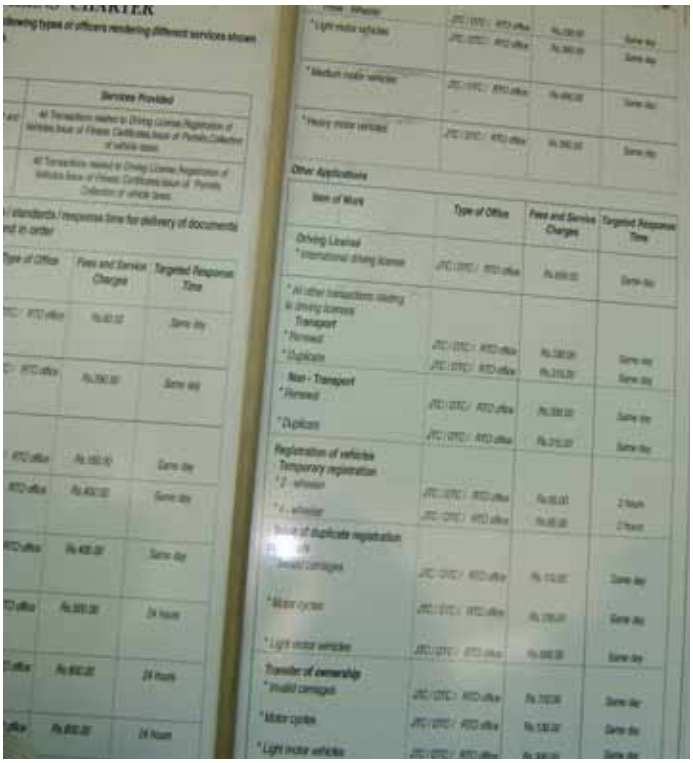
The new law provides an effective instrument for realizing the concept of Citizens' Charter while ensuring services to people in an assured manner. It will also prove an effective check on corruption.

3.18.4 Objective

The aim of the programme is to create a Government mechanism by which the response to Citizens' questions and concerns is given in a timely and effective manner.

3.18.5 Working Design

The Right to Service process consists of three stages – submission of initial application, first appeal and second appeal. There are designated Government officers for each stage. Designated Officers (DO) receive new applications and are required to either provide the service in a prescribed time limit or reject the application with proper justification.



Charters describing guarantee of services such as this will be emulated in all MP Government offices in MP

To receive first appeal within 30 days from the date of rejection of initial application or on expiry of the prescribed time limit, Citizens must contact the First Appellant Officers (FAO) to file a first appeal within thirty days of the rejected application or expiry of the prescribed time limit. The FAO will either confirm the DO's rejection or order him/her to extend the service. A second appeal can be made with the Second Appellant Authority (SAT) within sixty days from the date of the FAO's decision. The Second Appellant Authority holds the rights to punishing any designation officer who fails to provide a service with insufficient reason.

For every service under the Scheme, the stipulated time limit to deliver starts from the date when the required application for notified service is submitted to the DO. Additionally, there is a set format for supplying a detailed receipt to the applicant and there is no court fee for appeal or review. Lastly, applicants are to be informed regarding the date of hearing at least seven days before the date of hearing.

Below is an example of timelines/procedures for service delivery:

S.No.	Name of Service	Designated Officer	Time limit for service	First appeal officer	Time limit for disposal of first appeal	Second appellant authority
1	Domicile Certificate	Tahsildar / Nayab Tahsildar	7 working days	SDO (Revenue)	15 working days	Collector
2	New Water Connection	CEO Nagar Palika/Nagar Panchayat	30 working days	SDO (Revenue)	30 working days	Collector
3	Copies of Khasra & Khatoni	Tahsildar or Revenue Officer authorized by Tahsildar	5 working days	SDO (Revenue)	30 working days	Collector
4	New Electricity Connection	Zonal / Distribution Centre In-charge	10 working days	Executive Engineer	30 working days	Superintendent Engineer
5	Financial Help - National Calamities (As per Revenue Book Circular part – 6)	SDO (Revenue)	30 working days	Collector	30 working days	Commissioner

Five months after its implementation, the Public Service Guarantee Act 2010 there are already around 8500 aggrieved cases. This figure of cases were discovered when Chief Minister of the State called for a review meet on the said Act. Nine Departments have already rendered around 26 kinds of services to 217,445 applications out of the 226,061 received since September 25 2010. Details were being sought for the applications for which services have been denied within the deadline. Chief Minister further stressed on the importance of the success of the Act in the review meet.

Furthermore orders have been issued to appoint one of the Deputy Collectors for each District to address the timely delivery of the services under the Act till point persons are recruited. Public Service Guarantee Act 2010 is the first-of-its-kind in the country and Madhya Pradesh is the first State to implement an Act like this. The Act guarantees delivery of time bound services to common people, failing which officials will have to pay a fine.

3.18.6 Lessons Learned

Madhya Pradesh Public Services Guarantee Act 2010 is the first ever law in the country which guarantees delivery of public services to common people in a stipulated time frame. This legislation will further improve Citizens' Charter arrangement. It is well-considered and solely aims at guaranteeing effective delivery of public services to the people in a stipulated time limit.

The bill is a beginning and provision would be made whenever needed. It has become imperative to ascertain accountability of the public servants. There are many public servants working with commitment but those not performing their assigned duties in fixed time limit should face action.

The law intends to fix accountability and will provide legal teeth to the Citizens' Charter system. The common people will be benefited immensely. He said that transparency and accountability are the integral part of democracy. The delay in timely delivery of services leads to corruption and this legislation would also check corruption.

- **Operationalising Citizens' Charter:** The main objective of Citizens' Charter is to improve the quality of public services. This is to inform Citizens about the mandate of the concerned Ministry/Department/ Organisation, how one can get in touch with its officials, what to expect by way of services and how to seek a remedy if something goes wrong. The Citizens' Charter does not by itself create new legal rights, but it surely helps in enforcing existing rights. The concept of Citizens' Charter enshrines the trust between the service provider and its users. It is to empower the Citizen in relation to public service delivery.
- **Indicates Government's firm commitment to deliver public services on time:** With the enactment of the public services bill, the Government of MP has set a standard process of providing services to Citizens. The 3 stages- sending of application to designated officers, if no response then leading to first appeal and then finally second appeal. A delayed/no response will lead to fine. This enforces Government's dedication to deliver public services on time.
- **Builds Citizens' trust on the Government:** When Citizens get a positive response from the Government officials, they start to repose their faith and confidence on the Government. The bond between the Government and governed is re-inforced. The law is non-discriminatory, an individual regardless of their sex, race and language can benefit from this initiative.

- **Checks delays in providing services to Citizens and corruption in Government functionaries:** The right to information and right to service are legitimate rights of every individual. Inaccessibility to information or service is a drawback on good governance. The right to public service has streamlined Governmental activities by checking inefficiencies, preventing delays and lack of coordination across various Departments. The Citizen is directed to submit his/her application and is ensured of getting a response within a stipulated timeframe. This practice aims towards good governance.

3.18.7 Conclusion

For the first time, a Government has realised the requirements of the common man. Credit of launching this Act for the first time in the country goes to the Chief Minister who got the Act passed by the *Vidhan Sabha* (Legislative Assembly). The Government is striving to convey the benefit of welfare Schemes to the last man in the last row of the society. *Lok Sewaon Ke Pradan Ki Guarantee Adhiniyam* is an Act which understands people's sentiments and it is a medium through which people are connected with their concerns. The Government is committed to taking such steps for ensuring good governance.

3.19 Nokia Life Tools, Nokia, India makes innovations in the field of mobiles for Serving Indian Agriculture[41]

According to Jan Blom, Research Leader, Nokia Research Centre, the thought process behind one of Nokia's innovative application will, among other things, give farmers access to localised and timely information without depending on GPRS.

Despite constituting a major source of income and an important area of export, several challenges characterise the farming practices of today's India. Reaching the last mile continues to pose a challenge for various Government led extension and agriculture information services to reach the teeming millions who need it the most. Despite having dedicated radio and television as sources for extension, mobiles are only now beginning to be explored, as penetration has extended faster than other infrastructure. The key challenge is that India is multilingual and divided into nearly three hundred agro-climatic zones. The market prices are not readily accessible to the farmers and further, the middle man is perceived to take a marked cut of the profits generated by sale of the agricultural produce.

In several cases, the crux of the problem lies in how to connect an individual farmer to other parties for better access to information or increased possibility to co-operate, be it other farmers, the local co-operative, the market place, or the Government. Information should flow between the relevant stakeholders so as to make effective the production process. With the mobile phone penetration increasing at a phenomenal rate in India, several players have turned to mobile technology as an answer to some of the challenges faced by the farmers. The national tele-density is reaching a very high level and the rural consumers are taking up mobile telephony at a fast pace.

Hence, an increasing proportion of individuals in the agricultural ecosystem have lately become users of information and communication technology (ICT). While the uptake of the PC and fixed Internet has been sluggish, the exponential growth of the mobile phone user base has led to a situation in which mobile Internet based information can reach the urban and rural masses and provide unforeseen utility across a range of verticals, including farming.

There are many recent examples of delivering information residing in the 'cloud' to farmers via mobile phone. Companies including IFFCO, Airtel, Reliance Communications, as well as Reuters have generated services delivering e.g. mandi prices to an individual farmer. Nokia is launching a global service in the first half of 2009 titled Life Tools, and one of its aims is to provide information and tips to the farmers. Life Tools provides information to the farmer that is relevant across the whole farming cycle, ranging from sowing to growing to harvesting to selling the produce. Nokia Life Tools has an icon-led, graphically rich interface. Presentation of information in tabular formats and the capability to display two different languages simultaneously on the same screen enhance usability. This service is designed to work wherever you can use a mobile phone without any hassles for settings or the need for GPRS. Behind the intuitive, rich Nokia Life Tools interface, updates are sent over SMS without the consumers even realising it.

[41] *http://www.nokia.com/NOKIA_COM_1/Microsites/Entry_Event/phones/Nokia_Life_Tools_datasheet.pdf*

3.19.1 Identifying long-term opportunities in agricultural mobile services

While several companies, including Nokia, are launching commercial products in the area of agricultural mobile Internet services, it is also important to adopt a long term perspective so as to be able to identify new opportunities in this area. Nokia Research Centre (NRC) is a globally distributed research organisation conducting exploratory research focusing on what might be viable 5-10 years from now. The focus of its Bangalore-based unit is to investigate mobile growth opportunities concerning India and emerging markets in general. The setup is multidisciplinary, consisting of social scientists, designers and technologists. The mission of the research group is to investigate the extent to which mobile technology can improve the wellbeing of Indian consumers and communities. Nokia designs concepts that are grounded on understanding of user needs and we aim to take the concepts to the prototype level, so as to assess the impact of the technologies on the communities.

Stage	Information needs
Planning	Weather patterns - monitoring and early warnings of upcoming changes. Availability (and pre-booking) of labour. Market Trends that help plan the next crop/s.
Growing	Information on current agri-technologies and best practices for optimising produce. Location-specific advice for precision farming. Pest alerts and information - early warnings and detection; advice and recommendations on preventive measures, damage control. Tracking and managing resources (individual and collaborative).
Selling	Access to market prices and trends for local, national and international markets. Transportation logistics. Storage and warehousing possibilities.

A project titled **Kisan** investigates the role of mobile technology in empowering farmers in an emerging market context such as India. During an initial phase of the project, our researchers set out to Karnataka and Maharashtra to study the everyday agricultural practices. One of the research questions was related to what kind of information is relevant to the farmers across the various stages of the farming cycle. The following table describes the summary of the information needs, as discovered by our researchers with the help of interviews and observations.

As can be noted, the type of information needed ranges from binary (e.g. weather forecasts) to highly complex (communicating about global trends in agricultural trade) and the source of the

information vary from local to global. The long term research challenge is to create services that are highly personalised and location specific, taking into account the agro-climatic conditions, crop portfolio and aspirations of the particular farmer.

3.19.2 From competition to co-production

One of the main findings of the Kisan user study was the underlined importance of locally based collaborations. The most significant form of information dissemination among those studied was day-to-day social interaction among local farmers. Information and tips were exchanged as part of casual social encounters and the trust placed in connections concerning one's social network played an important role. A piece of information stemming from a local acquaintance was often valued more than that received from a Government run agro-advice centre.

Another factor that emphasised the importance of locally based social interaction was that local farming communities are highly co-operative, up until the point when the produce is sold. Information is exchanged freely during the sowing and growing phases and recommendations are provided without hesitations. A term that describes this behavioural pattern well is co-production. The weather conditions, soil type and types of crops grown are to great extent the same between members of the local farming communities. Hence, the information received from a local colleague is relevant and it makes a lot of sense to co-produce rather than compete. The opportunity, when it comes to designing novel types of services for this context, is related to harnessing this locally based social capital. Could we design mobile applications that disseminate information between users' mobile devices, during face-to-face encounters? Could we design communication solutions where local farmers can exchange tips, share resources and even collaborate when it comes to selling the produce?

3.19.3 Challenges in the design of agricultural services

The above sections have been concerned with highlighting the opportunities associated with using mobile forms of ICT to empower Indian farmers. The main argument is simple – since the mobile phone has become ubiquitous, even in the rural parts of this country, why not disseminate information and enable new forms of communication within the agricultural ecosystem with the help of mobile services? The challenges lying ahead are significant, however. From the perspective of the farmer, the user interface needs to be intuitive and support the local language.

India is characterised by low literacy levels - is it possible to move toward less textual user interface solutions, such as voice based interactions? From the point of view of the farming practices, will mobile technology be accepted as a new source of information, alongside the age-old practice of social exchange and face-to-face interaction? Will it only be the progressive farmers who adopt these new types of services or will we witness a wide scale adoption of agricultural mobile systems, across socio economic categories and geographic regions of India?

Regardless of the answers to these questions, it is clear that wireless communication has an advantage over the PC based systems. The wireless infrastructure is well developed across India (as opposed to the infrastructure supporting fixed Internet) and mobile telephony has been widely accepted by the rural population. These factors act as important enablers in the mission of empowering rural India with affordable and relevant mobile services.

3.20 *Soochna Se Samadhan*: LifeLines India Initiative - Taking ICTs to the Grassroots Community - an example of scalable Public-Private Partnership[42]

The LifeLine India Initiative launched by OneWorld International in collaboration with British Telecom (BT) and CISCO is responsible for promoting digital inclusion and supporting the realisation of the United Nations (UN) Millennium Development Goals in India. The project was originally designed to deliver critical information pertaining to agriculture and animal husbandry to farmers in rural India via a digital platform, using the telephone as a primary medium for information access and use. Successes in this area have led to the project being extended to the field of education also. Its replication in Nepal and Sri Lanka is also being explored.

3.20.1 Digital Inclusion-BT-OneWorld International Collaboration for Indian Farmers

LifeLines India was conceived by British Telecom (BT) and OneWorld as a digital inclusion programme. The overarching objective of LifeLines India was to increase livelihood and income opportunities for Indian farmers with access to technology and critical information, and take a step forward in the realization of the Millennium Development Goals. Anusha Lall and Swati Sahi who have been actively involved with the implementation of the project from One World have documented a detailed case study for Indian Institute of Management, Ahmedabad.

The context in which the project has been conceptualized and is being implemented can be substantiated with some facts and figures. India's population is estimated at 1.13 billion in 2005, projected to cross 1.5 billion in 2015. With a per capita GDP of US$ 3,452 (in terms of purchasing power parity in 2005), the percentage of population living below $1 and $2 in the period 1990-2005 has been assessed at 34.3 per cent and 80.4 per cent respectively, and percentage of population living below the national poverty line over 1990-2004 estimated at 28.6 per cent. The national adult literacy rate (as a percentage of persons aged 15 years and above) 1995-2005 has been estimated at 61 per cent.

The percentage of urban Indian population had been estimated at 28.7 per cent in 2005 and is projected to rise to 32 per cent by 2015. However, rural India remains home to the majority of the Indian populace, and rural livelihoods retain primacy in terms of focus. Employment in agriculture as percentage of total employment during 1996-2005 has been pegged at 67 per cent (not including the informal agriculture-related sectors).

Access to technology has been on a rise with telephone mainlines per 1,000 people having risen from 6 to 45; the number of cellular subscribers from 0 to 82 per thousand; and Internet users from 0 to 55 per thousand during the period 1990-2005. Despite the rise these statistics pale against the demographic realities of India.

[42] *http://lifelines-india.net*

3.20.2 Project Overview

LifeLines India served as BT's first Corporate Social Responsibility (CSR) programme based on digital inclusion. OneWorld South Asia one of the 13 centres of OneWorld International, was chosen to implement the project in the agricultural sector in India (in terms of the technical, marketing and operational deployment of the project). CISCO joined as co-sponsor and partner while TARAhaat, ISAP and Datamation Foundation have been involved in field implementation.

Keeping with its aim of using Information and Communication Technologies (ICTs) to promote sustainable development and human rights, OneWorld South Asia has worked towards strategically positioning ICT tools to a) develop knowledge connectivity; b) create ICT based communication opportunities; and c) build ICT toolsets and capacities to amplify voices of the poor and vulnerable and for the realization of the Millennium Development Goals. The LifeLines India project has been an endeavour in this direction.

The project was designed to deliver critical information to farmers in rural India in terms of expert guidance on maximizing crop efficiency and life-enhancing advice on animal husbandry, via a digital platform that uses the telephone as primary medium of information access. The strategic objectives were two-fold: to increase livelihood and income opportunities for Indian farmers through key decisive information having direct positive impact on their lives; and concurrently create an agro-business knowledge base as farmers' queries get answered.

LifeLines India was launched in September 2006 as an information delivery service at the grassroots – *Soochna Se Samadhan* (Solutions through Information). It was started in 700 villages in north and Central India in the States of Uttar Pradesh, Madhya Pradesh and Himachal Pradesh, with Haryana joining in later.

In India most villages ail from limited communication facilities that often hinder farmers from seeking timely help and saving their crops and cattle. LifeLines India has filled this information gap through the simplest and most accessible means of communication - the telephone - by providing timely advice and guidance on sustainable and efficient farming methods, by integrating them with global markets, and ultimately, improving the quality of their lives.

3.20.3 The Operational Model

While the telephone serves as the medium of user interface in LifeLines, highly advanced communication technology and customized computing applications have also been configured at the back-end platform to support integrated call handling and management of very large audio

and text database.

3.20.4 A field worker with a farmer using the LifeLines service

The LifeLines India service as offered in the agri-business sector entails the farmer calling a designated number to register his/her agriculture-related queries using an Interactive Voice Response System (IVRS). The farmer is then given a query ID and prompted to call back 24 hours later for an answer. Farmers pay a nominal fee of ₹ 10 for this service. Revenue earned from call charges is being used to offset part of the operating expenses of the service. Querying through the IVRS involves the following steps:

1. Once a farmer has dialed the designated number from a mobile or landline, s/he is greeted with a pre-recorded message (the interactive voice response) that guides and prompts the caller to record the query in a local language on an automated voicemail system and also generates an acknowledgement or query-id.

2. The query registered by the user is stored as a voice clip in the LifeLines' database server. LifeLines knowledge workers are responsible for processing the queries, which are accessed by logging into the application through a web interface.

Knowledge Workers processing a call

Answers to the queries are sourced from a panel of agriculture and animal husbandry experts, or from the compilation of earlier responses to similar queries that constitute the system's Frequently Asked Questions (FAQs) database (now used as first reference before the query is forwarded to the relevant expert).

3.20.5 Illustration of an agriculture-related FAQ

Query: I am Vinita speaking from Haroli (Jhansi). I want to know about the bio-diesel plant and when and how can it be sown? How fertile should the soil be?

Answer: Hello! Ratanjot is known as Jatropha in English; a dry and warm environment is good for it. It can grow in any type of soil. Jatropha is sown during May-June either through seeds or cuttings by keeping it in polythene bags. Before that the polythene bag is filled with a mixture of sand, soil and curding. The seeds can be grown within a space of 5 X 8 ft. It requires almost 1,000 plants for one acre of land.

3. Once the query has been answered by an expert, the LifeLines application alerts the knowledge worker. The answer is saved as a voice clip in the FAQ database and is attached or tagged to the specific question for the farmer to retrieve through the same service after 24 hours.

Farmers can also avail LifeLines online service by visiting the nearest information kiosks. The web interface enables the farmer to access the database online, listen to audio clips of frequently asked questions, and send digital images of diseased crops for remote diagnosis and advice by experts. The user can also retrieve the answer in text format from his/her village information centre.

Personal interface with farmers in the field is undertaken by a network of OneWorld field workers. Armed with mobile phones, they work in project villages, encouraging and facilitating the use of LifeLines service by the rural farming communities.

3.20.6 Implementation Process and Challenges

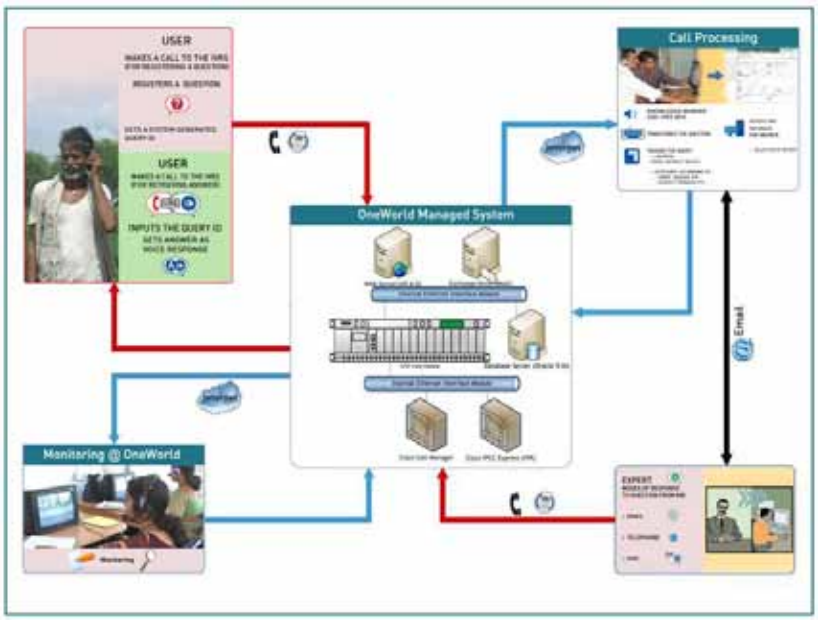
The pre-implementation stage of LifeLines India initiative in the agri-business sector includes identifying local partners and regions of operation, and chalking out the follow-up partnership strategy and processes. The information needs of the target population are mapped and content of the service Customised as per these needs.

Training and orientation programmes for implementation partners and local field coordinators are undertaken on a regular basis, along with targeted marketing, communication and promotion efforts to popularize the LifeLines India service among farming communities and other key audiences.

The dialogue between the experts, fellows and farmers is upheld by the close monitoring of call generation rates and the quality of responses to ensure quality of service standards, as well as regular feedback from partners, fellows and end-users. The implementation process of the LifeLines India initiative was faced with initial challenges that appear common to the range of ICT4D (Information and Communication Technologies for Development) projects.

Complexities of a rural e-services delivery framework had impacted the initial project implementation schedule and delayed its formal launch. Challenges included the need to demystify information and also technology, as well as address constraints of access to technology. The need for handholding or capacity building of communities to enable them to effectively use technological tools required close attention, and continue to do so. Field workers play a critical bridging role in completing the information cycle for the farmer on the ground. The relevance of simplified and local language content also gets highlighted here.

Feedback from the field in the early stages of implementation also led to a reconfiguration of technology to enable the application to be more responsive to farmers' needs. Field tests with farmers brought out the dire need for information services and direct service feedback from farmers helped to incorporate their needs and suggestions for effective implementation. Options for the operational sustainability of the service were worked upon further, based on preliminary financial analyses and demand forecasts.



3.20.7 Current Status and Impact

The LifeLines India initiative is currently underway in four States – Himachal Pradesh, Uttar Pradesh, Madhya Pradesh and Haryana – covering around 2,000 villages across 23 Districts. It is being implemented through implementation partners in the various Districts, including TARAhaat, ISAP and Datamation Foundation. The number of field coordinators involved in the project stands at 61.

LifeLines India attempts to cover the complete chain of information from production to consumption, including information on farm inputs like insect, pest and disease management; seeds and fertilizers; available funding and Government Schemes on loans and subsidies; banking and insurance; market prices and region specific market information; watershed management and micro-irrigation; livestock and organic farming. The expert advice offered and collated so far extends to more than 50 different fields of agriculture and allied activities.

The service receives an average of 450 calls daily contributing to the development of a database of more than 180,000 'frequently asked questions'. Productivity and incomes have grown tremendously – ranging from 25 to 150 percent in some cases. A survey conducted by TARAhaat among farmers in target Districts to gauge satisfaction levels shows an amazing increase in the number of satisfied farmers from an approximate 6% in October 2006 to around 69% in March 2007. Farmers have accepted the LifeLines India service as a valuable tool for information exchange, and there is substantial evidence of its contribution to improved crop productivity and sustainable farming practices.

3.20.8 Conclusions and the Way Ahead

LifeLines India has demonstrated the power of digitally engineered information and knowledge systems for people in remote rural locations with limited communication facilities. The service has been successful in delivering desired benefits to farmers as originally envisaged in the project objectives.

On a different ground, One World South Asia is now set to repeat the success of Life Lines in the field of education – in partnership with USAID, QUEST Alliance and Vikramshila Education Resource Society. LifeLines-Education uses the same technology platform with appropriate adaptation to provide critical academic and pedagogic support to teachers working in rural areas. Officially launched at Kolkata on February 29, 2008, the programme is already benefiting 2,000 teachers in 571 schools across 164 villages in Bardhaman District of West Bengal. Since its pilot roll-out in January 2008, the service has received over 9,000 queries from teachers – a reflection of the enthusiasm that the service has generated.

This has been followed by a pilot in Rajasthan's Udaipur District, where the service reaches about 12,000 teachers in 4,691 schools across 11 Blocks, in partnership with the Education Department of the State and UNICEF.

LifeLines - India's versatile and dynamic application can be customized and adapted locally for information sharing in other sectors, such as health and employment as well. One World South Asia now plans to extend the service to new domains and new locations. Outside India, the Governments of Nepal and Sri Lanka have requested to replicate the service in their countries. As LifeLines India gets a new avatar, there remains the challenge to create new ways to bridge the digital and information divide, in India and beyond.

NOTES

The Way **Forward**

The use of Information and Communication Technologies (ICTs) for mainstreaming the marginalized and rise of e-Government has been one of the most striking developments of the web over the past decade. As the Internet supported digital communities evolved and indeed grew to include individuals around the country (and globe), the Government agencies in developing as well as developed countries formulated a number of initiatives in order to keep pace with the aspirations of the citizen and be competitive globally.

In India, the concept of e-Governance had its origin during the seventies with a focus on development of in-house Government applications in the areas of defence, economic monitoring, planning and the deployment of IT to manage data intensive functions related to elections, census, tax administration, etc. The efforts of the National Informatics Centre (NIC) to connect all the District headquarters during the eighties was a very significant development. From the early nineties, IT technologies were supplemented by communication technologies to extend its use for wider sectoral applications with policy emphasis on reaching out to rural areas and taking in greater inputs from NGOs and private sector as well. There has been increasing involvement of multilateral agencies under the framework of e-Governance for development to catalyze the development of e-Governance laws and technologies in developing countries.

While the emphasis has been primarily on automation and computerization, State Governments have also endeavoured to use ICT tools for connectivity, networking, setting up systems for processing information and delivering services. At a micro level, this has ranged from IT automation in individual departments, electronic file handling and workflow systems, access to entitlements, public grievance systems, service delivery for high volume routine transactions such as payment of bills, tax dues for meeting poverty alleviation goals through the promotion of entrepreneurial models and provision of market information. The thrust has varied across initiatives, with some focusing on enabling the Citizen-State interface for various Government services, and others focusing on enhancing livelihoods. Every State Government has taken the initiative to form an IT Task Force to outline IT policy document for the State and the Citizen Charters have started appearing on Government websites.

For Governments, the more overt motivation to shift from manual processes to IT-enabled processes may be increased efficiency in administration and service delivery, but this shift can be conceived as a worthwhile investment with potential for high returns. Government leaders in India have realized that e-Governance and innovative use of Communication and Information Technologies is the key to drive today's economy with an increased participation from citizen. Providing services online is no longer going to remain optional for local and Central Government as demand from citizen for providing public services @24/7 as well as e-Participation will soon become the hallmark of Government Citizen relationship.

In this era of accountability and performance measurement, Government agencies in India are facing increasing pressure to make the services more accessible to their citizen. The pressure not only comes directly from the legislature and Government policies to implement high-end technologies in governing the nation, but also indirectly and perhaps more intensely, from citizen. The citizen in present era are not using Government services in isolation, but are simultaneously making transactions and interacting with the corporate world. In addition to this direct or indirect pressure, Government agencies in India have themselves studied and realized the cost saving benefits e-Governance techniques produce With this rise in demand for e-Services, it has become a mandatory requirement for Government budget writers that the efficiency enhancement and cost saving potential of providing online services and information be mastered.

Using ICTs and new media technologies and e-Governance is more than streamlining processes and improving services. It's about transforming Governments and renovating the way citizen participate in democracy. Additionally, the phenomenal rise in the number of mobile subscribers, the advent of cloud , social media platforms and web 2.0 tools /technologies have provided a plethora of new opportunities to transform Government – citizen relationship. If the Government Waits, it is perceived as being out of touch with the citizen needs and loses an opportunity to realize the tremendous benefits of online service delivery and larger citizen participation in overall service delivery. Yet if the e-Governance initiatives are started and implemented in haste, they are bound to fail.

The real challenges for Government of India have been to develop and sustain successful ICT for Development and e-Governance projects and deliver state of the art e-services to citizen. Unfortunately it's not as easy as adding 'e' in front of existing service delivery mechanism. Successful e-Governance initiatives can never be taken in haste. Particularly for the democratic nation of the billion people like India, e-Governance should enable seamless access to information and seamless flow of information across the State and Central Government in the federal setup. No country has so far implemented an e-Governance system for one billion people.

Some of the requirements for implementing successful e-Governance across the nation have been identified as:

- e-Governance framework across the nation with enough bandwidth to service a population of one billion
- Connectivity framework for making the services reach rural areas of the country or development of alternative means of services such as e-Governance kiosks in regional languages and mobile based service delivery mechanisms
- National Resident database which is the primary unit of data for all governance vertical and horizontal applications across the State and Central Governments
- e-Governance and interoperability standards for the exchange of secure information with non-repudiation, across the State and Central Government departments seamlessly
- A secure delivery framework by means of virtual private network connecting across the State and Central Government Departments
- Data Centres in Centre and States to handle the departmental workflow automation, collaboration, interaction, exchange of information with authentication.

As described in detail in Section I, II and III, the Government of India has already initiated Mission Mode Projects for all the above mentioned requirements and is on the verge of completing the roll out for many of these projects. Several of these initiatives bring in expertise from the corporate sector through the Public Private Partnership model. In order to benefit from the mobile revolution and availability of social media and web 2.0 tools/technologies, Government of India has initiated a number of new policy measures that are aimed to reduce the gap between the policy formulation and the technology development. The key initiatives that are aimed to deliver next generation public services to the Citizens of India are being briefly mentioned as below:

4.1 Mobile Governance Roadmap for India

Explosive is the only way to describe the growth of mobile phone subscribers in developing countries. India, with its more than 800 million subscribers offers unique proposition to develop into world's first truly mobile digital society. In relation to the delivery of public services to the rural citizen, there is a rapidly growing interest in the concept of mobility and the various issues that arise from 'being mobile', both for the individual and the organisation. Therefore after rapidly evolving to e-Governance through the National e-Governance Plan (NeGP), Government of India is planning a move towards m-Governance. While e-Government is the conventional Government services made available for Citizens through electronic means such as Internet connected computers and other devices. M-Government is defined as the strategy and its implementation involving the utilization of all kinds of wireless and mobile technology, new media services, applications and devices for improving benefits for citizen, business and all Government units.

Vision

The m-Governance Policy of Government of India aims at provisioning 'Government services @ 24/7' to the citizen of the country, especially in the rural areas by utilizing the reach of mobile phones and the innovative potential of mobile applications and leading India's move to become world's first truly mobile and inclusive digital society.

Mission

Transforming the delivery of public services by devising enabling environment, catalysing innovation, supporting and sustaining requisite infrastructure for mobile governance and fostering multi stakeholder partnership models (MSPs) in order to provide multi channel and ubiquitous access to Government services at anytime anywhere basis to the Citizens of the country.

Policy Goals

In order to achieve the vision and mission as stated above, the m-Governance policy of Government of India aims to:

a) Build an enabling mobile governance service delivery infrastructure integrated with and as an extension of the existing infrastructure created under the national e-Governance plan (NeGP) and UID initiative. Additionally a suitable mechanism to pay for public services through mobile phones will also be developed

b) Identify key services for delivery though mobile governance based upon the demand survey through stakeholder consultations, develop and test POCs for the same by commissioning pilot projects before the national role out of the services

c) Formulate and notify the standards for mobile governance in order to ensure interoperability of services across multiple service providers and multiple Government Departments

d) Formulate and apply a project assessment framework for the Government agencies to ensure compliance of services planned under the mobile governance policy with an aim to have at least 5 mobile based services in each of the mission mode projects of NeGP

e) Create a state of the art knowledge portal as well as various toolkits for deployment of mobile governance. The aim will be to make India a thought leader as well as a global role model in the domain of mobile governance

f) Develop and deploy innovative PPP and MSP models for design and delivery of mobile governance services as well as encouraging development of cloud based implementation models and use of light technologies. This will ensure replication of innovative services across states without having to spend the public money on reinvention

g) Create an Innovation Fund to encourage and incentivise development of next generation public services by participation of all the stakeholder groups in nation building

h) Deploy an appropriate capacity building framework to enhance both delivery and absorption capacity for m-Governance services.

The detailed approach paper on the mobile governance policy is currently available at the DIT website http://www.mit.gov.in for public consultation.

4.2 Electronic Service Delivery Bill

The proposed Bill titled Electronic Service Delivery Bill 2011 is aimed at provisioning a legal framework to promote efficient electronic delivery of Government services. The key provisions of the bill are highlighted below:

1) Every competent authority of the appropriate Government shall publish as prescribed within one hundred and eighty days from the commencement of this bill
   - the public services which are to be delivered through electronic mode;
   - the date by which each such service shall be made available through electronic mode;
   - the manner of delivery of such services and their service levels;
   - the grievance redressal mechanism available to any person aggrieved about the outcome of any request made by him for such service through electronic mode;
   - any other information as may be prescribed; and, thereafter, review and update these publications every year.
2) Notwithstanding anything stated above, all public services shall be delivered in electronic mode within 5 years from the commencement of this Bill;
3) Provided that this period may, for reasons to be recorded, be extended for a further period not exceeding and years by the appropriate Government; Provided further that if it is not feasible to render a public service through electronic mode, then the appropriate Government shall issue a notification to that effect.
4) The competent authority, while introducing electronic services, shall ensure that:
   - the processes and forms relating to such services are simplified initially and periodically thereafter; and
   - assisted access to such electronic services is also made available.
5) The Central Government may, from time to time, prescribe electronic governance standards as may be necessary for ensuring interoperability and security.
6) The detailed text of the bill is currently available for the public consultation at the DIT website www.mit.gov.in

4.3 Framework for Citizen Engagement in National e-Governance Plan

The need for Citizen engagement is clearly highlighted in the findings of the various impact assessments of e-Government projects undertaken by DIT. The assessments show that the impact of the projects is determined by the level of consultation with service seekers because it is only after such a process of consultation that the project design can yield optimal results. Public engagement is also a process for educating decision makers (in Parliament and Government) about important social issues and Citizen's pressing needs that Parliaments and Governments must address. Public participation also enhances citizen ownership of development processes, increases the sense of citizenship, and results in better implementation of development programmes.

In an ideal scenario, the Citizens may collaborate from conceptualisation to implementation of

the project and may even be empowered to reject or alter the project design at a later stage of the project. However, in real life, project managers must define the intervention points and degree of engagement. The document proposes the process and recommends points of interventions and methodologies that may be used for such engagements. The document recommends the following policy measures:

- Wider Stakeholder Consultation for Refinement of Framework
- Creation of Citizen Engagement Fund
- Creation of Citizen Engagement Toolkit for e-Government projects; and
- Piloting of the Proposed Framework in NeGP MMPs

Use of web2.0 tools and social media are an integral part of the Citizen Engagement Framework. DIT is currently holding multi-stakeholder consultation to draft a policy for use of social media for government agencies

The detailed document is available for public consultation at the DIT website www.mit.gov.in .

Conclusion

India's progress documented in the Sections II and III spanning several Government Initiatives including creating the necessary conducive policy environment, focused on bridging the infrastructure gaps for ubiquitous access to all citizen to participate in the Knowledge Economy, and to be a driving force for improving citizen-centric governance led by ICT have created a new wave of initiatives. Other key stakeholders including civil society organisations, private sectors, and industry associations have lent a hand in this transformation process. Various initiatives of ICTs which provide indicators of success for a large-scale, and scalable implementation cutting across different geographies, peoples, cultures, languages and state of readiness show the dynamism of Government of India's leadership role that can be emulated by several countries. India has also forged cooperative linkages with several developing countries to provide a Unique Model of Knowledge Transfer through financial assistance, capacity building programmes, quality assurance services and infrastructure development besides technical assistance.

The following indicators of WSIS Action Lines have been followed carefully by Government of India, and case studies have been shared across the following areas.

1. Connecting villages with ICTs and establishing community access points
2. Connecting universities, colleges, secondary schools and primary schools with ICTs
3. Connecting scientific and research centres with ICTs
4. Connecting public libraries, cultural centres, museums, post offices and archives with ICTs
5. Connecting health centres and hospitals with ICTs
6. Connecting all local and central government departments and establishing websites and e-mail addresses
7. Adapting all primary and secondary school curricula to meet the challenges of the information society, taking into account national circumstances
8. Ensuring that all of the world's population have access to television and radio services
9. Encouraging the development of content and putting in place technical conditions in order

to facilitate the presence and use of all world languages on the Internet

10. Ensuring that more than half the world's inhabitants have access to ICTs within their reach

It is evident from above that the objectives of e-Governance and transforming India into an Information Society go far beyond mere computerization of stand alone back office operations. The endeavour of the Government is to fundamentally change how the Government operates, and this implies a new set of responsibilities for the executive and politicians. It will require basic change in work culture and goal orientation, and simultaneous change in the existing processes. Foremost of them is to create a culture of maintaining, processing and retrieving the information through an electronic system and use that information for decision making. It will require skilled navigation to ensure a smooth transition from old processes and manual operations to new automated services without hampering the existing services. This is being attempted by initially moving ahead in smaller informed initiatives in a time bound manner and avoiding large and expensive steps without understanding the full social implications. Every small step thus taken is being used to learn about hurdles and improve upon the next steps, both in terms of direction and magnitude. It is hoped that the proposed changes will help us transform India into world's first truly digital economy and an inclusive information society with Citizens in the driving seat.

NOTES

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