Information and Communication Technologies for Development

A case study of Community Information Centers in Assam and Nagaland

A Thesis Submitted to University of Hyderabad
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in Communication
by

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CERTIFICATE

This is to certify that the thesis, **"Information and Communication Technologies for Development: A Case Study of Community Information Centers in Assam and Nagaland"** submitted by **Ms. Joya Chakraborty** for the award of the Degree of Doctor of Philosophy in Communication is bona fide research carried out under my supervision in the Department of Communication, Sarojini Naidu School of Arts and Communication, University of Hyderabad.

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DECLARATION

I hereby declare that this thesis titled **"Information and Communication Technologies for Development: A Case Study of Community Information Centers in Assam and Nagaland"** submitted by me for the award of the Degree of Doctor of Philosophy in Communication is the result of original research carried out by me under the supervision of **Prof. B P Sanjay, Department of Communication, Sarojini Naidu School of Arts and Communication, University of Hyderabad.** This work has not been submitted in part or in full for any other degree or diploma at this or any other University.

Joya Chakraborty

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To

Ma, Baba & Himadri…

…. and all those trying to unravel the role of ICTs in social change.

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LIST OF ABBREVIATIONS & ACRONYMS

ABSU	All Bodo Students' Union
ADC	Additional Deputy Commissioner
AIDS	Acquired Immuno Deficiency Syndrome
AMTRON	Assam Electronics Development Corporation Ltd.
AP	Anchalik Panchayat
BAC	Bodoland Autonomous Council
BDO	Block Development Officer
BdSF	Bodo Security Force
BIS	Bureau of Indian Standard
BLT	Bodo Liberation Tigers
BPR	Business Process Reengineering
BTC	Bodoland Territorial Council
CIC	Community Information Centre
CSC	Common Service Centre
DC	Deputy Commissioner
DDG	Deputy Director General
DIC	Directorate of Industries and Commerce
DIO	District Informatics Officer
DIT	Department of Information Technology
DLCC	District Level Coordination Committee
DOEACC	Department of Electronics Accreditation of Computer Courses
EAC	Extra Assistant Commissioner

ELSA	Evaluation and Learning System for Acacia
FGBIP	Farmer-Government-Bank-Institution & Private
GDI	Gender Development Index
GEM	Gender Empowerment Measure
GNP	Gross National Product
GoA	Government of Assam
GoI	Government of India
GoN	Government of Nagaland
GP	Gaon Panchayat
GPRN	Government of the People's Republic of Nagaland
HDI	Human Development Index
HDR	Human Development Report
HIV	Human Immuno Deficiency Virus
HPI	Human Poverty Index
HS	Higher Secondary
HSLC	High School Leaving Certificate
ICI	Information and Communication Infrastructure
ICT	Information and Communication Technology
ICT4D	Information and Communication Technology for Development
ID	Identity
IDRC	International Development Research Centre
IIIT	Indian Institute of Information Technology
IIM	Indian Institute of Management

IISC	Indian Institute of Science
IIT	Indian Institute of Technology
IL&FS	Infrastructure Licensing and Financial Corporation
IMD	Indian Meteorological Department
IPR	Intellectual Property Rights
ISD	International Subscriber Dialing
IT	Information Technology
MCGP	Matching Cash Grant Program
MCIT	Ministry of Communication and Information Technology
MDG	Millennium Development Goal
MDoNER	Ministry of Development of North Eastern Region
MIS	Management Information System
MNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoU	Memorandum of Understanding
MP	Mahkuma Parishad
NDFB	National Democratic Front of Bodoland
NE	North East
NEC	North East Council
NeGP	National e-Governance Plan
NEIDS	North Eastern Institute of Development Studies
NGO	Non-governmental Organization
NHDR	Nagaland Human Development Report
NIC	National Informatics Centre

NICNET	NIC Network
NRHM	National Rural Health Mission
NSCN	National Socialist Council of Nagaland
NTP	National Telecom Policy
OECD	Organization for Economic Co-operation and Development
PPP	Public Private Partnership
PRC	Permanent Resident Certificate
RGCLP	Rajiv Gandhi Computer Literacy Program
SC	Schedule Caste
SCA	Service Centre Agency
SDA	State Designated Agency
SDC	State Data Centre
SDO	Sub Divisional Officer
SGRY	Sampoorna Grameen Rozgar Yojana
SIO	State Informatics Officer
SMART	Simple Moral Accountable Responsive and Transparent
ST	Schedule Tribe
STD	Subscriber Trunk Dialing
SWAN	State Wide Area Network
TRAI	Telecom Regulatory Authority of India
UN	United Nations
UNCITRAL	United Nations Commission on International Trade Law
UNCSTD	United Nations Commission on Science and Technology for Development

UNDP	United Nations Development Program
APDIP	Asia - Pacific Development Information Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
VDB	Village Development Board
VLE	Village Level Entrepreneur
VPT	Village Public Telephone
VSAT	Very Small Aperture Terminal
WDR	World Development Report
WSIS	World Summit on Information Society

ABSTRACT

The international discourse on development communication and the role of Information and Communication Technologies (ICTs) as facilitators of social change is a subject of continuous debate, engagement and policy interventions shifting from perspectives of 'technological determinism' to 'social shaping of technologies'. In India, following international trends, ICTs have been 'adapted' for social change for alleviating deprivations of poverty, hunger and gender inequality.

Priorities set by policy planners, goaded by the dangling technologies, influence the conceptualization, design and execution of such ICT for Development (ICT4D) projects. How do such initiatives shape the communicative ecology down to the network and delivery channel? Their interface with indigenous communication patterns forms an interesting area of enquiry. The present research project attempts to look into these intervening contexts where an ICT for development project is enshrined in the Community Information Centers (CICs) of Northeast India. Its implementation in a resource crunched region is an institutional process of constant negotiation and conflict with ground realities. Through case studies this thesis unravels CICs within the framework of an ambitious ICT4D initiative. Policy analysis at central and state government levels through interactions with multiple stakeholders and participatory field studies in the selected districts formed the methodology of this study.

CHAPTER ONE

Information Society and Transitional Dynamics

Development in telecommunication and information and communication technologies over the last two decades has triggered exponential growth in communication infrastructure. Through its impact, the present societies are constructed around networks of information sharing, where inclusion or exclusion from it defines opportunities for social and economic benefits. According to Nicholas Negroponte we live in a world that has become digital. The ubiquitous information and communication technology has impacted all aspects of life in manners so as to give rise to new forms of social organizations with newer opportunities in social and economic endeavours. This society where information processing becomes the primary mode of economic production, social interaction and other development has been characterized as 'information society'.

This relationship between growth of information technology and socio-economic change has been a subject of social science investigation with various theorists approaching the subject from multiple disciplines. In journalism, media and communication studies the enquiry is in the larger domain of discourses in communication and development. The definition of what constitutes an information society is also a subject of debate with various scholars propounding different criteria and acronyms for the concept. Some call it post-industrial society; others prefer the term network society; and many more like to go with the more popular phrase of industrial

society and variants thereof. While enthusiasts celebrate the concept and are interested in studying its dynamics, critics are sceptical of the techno-economic paradigm qualifying communication technology as the primary mover of social change. Frank Webster (2002) elaborates on this distinction in information society theory by seeing it as a separation between those who endorse the idea of an information society, and those who regard informatization as a continuation of pre–established relations. Again according to the continuity-discontinuity discourse, there is a split between those who see the information society as a fundamentally new form of social organization, and those who believe that it is only a continuation of previous modes of social organization (Pyati, 2005). But irrespective of their stand all are equivocal in accepting that the overwhelming advances in communication technology has changed the ways in which information was stored, processed and transferred; and the impact of these changes on social organizations and institutions does merit some serious investigation.

This chapter will deal with some of these approaches to the development of information society theory. This will be followed by discussion on key critical perspectives on innovations in communication technologies being employed to leverage directed social change.

Information Society – Growth of a Concept

The concept of 'information society' (*Johoka Shakai*) is said to be a Japanese invention, proposed for the first time in 1963 by Tudao Umesao in an article on an

evolutionary theory of society based on the density of information industries. This article was debated in the 1964 issue of the journal *Hoso Asahi*, whose editors while introducing the debate used the term 'Johoka Shakai' for the first time. The phrase was later popularized by Japanese futurologists like Masuda and Hayashi (Castells, 2000c p. 248).

For an etymological understanding of information society theory we have to go back to World War II following which there was much discussion about information explosion or the exponential growth of publication. But no one looked at it as a collective enterprise with global implications. Fritz Machlup, an economist by profession, was the first to introduce the concept of knowledge industry in his book 'Production and Distribution of Knowledge in the United States' published in 1962. Machlup was interested in studying how monopolistic practices like patents restricted competition in a free society. Linking patents to research expenditure; research to education; and education to national knowledge production, he went on to conduct a quantitative study of the share of information as a component of the gross national product (GNP) of United States. He called the aggregate effort knowledge industry (Crawford, 1983). Malchup's work was followed up with publications by various other authors who got interested in the economy of information industry.

Porat argued that by the mid 1970s information activity accounted for one half of the GNP in United States. He defined information activity as those specific industries and occupations whose primary function was to 'produce, process or transmit economically valuable information' (Porat, 1976 & 1977). Investments in information sector were seen

to bring higher returns compared to agricultural and manufacturing sectors in an information dominated society (Parker, 1973).

This shift from agricultural and manufacturing economy to information economy was elaborately dealt by Daniel Bell (2004) who provided a typology of different societies based on the dominant mode of engagement of labour at any given time. Pre-industrial societies depended on the primary sector - principally extractive industries like mining and agriculture. This society was characterized by a persistent struggle against nature, low productivity and high underemployment. Industrial societies depended on secondary, manufacturing industries. Here the struggle was with fabricated nature and raw muscle power got replaced by machines and energy. Post-industrial societies rely on tertiary production of services. Here the muscle power and machine energy gets replaced by information. There is a shift towards service industry and rise in public sector employment. According to Bell development of industry is marked by concomitant growth in demand and consumption of public utilities and auxiliary services leading to more employment in white-collar jobs as service workers.

Central to Bells theory of post-industrial society is a syllogism. With the rise in national income through industrialization, according to Engel's Law, richer households spend higher proportion of income on luxury and there is a rising demand for services; technological innovations facilitate productivity growth in primary and secondary sector through employment of lesser work force; labour displaced from primary and secondary sectors is absorbed in tertiary service sector leading to growth of service industry and the

service workers becoming the dominant social class. According to Bell this service-society is a post-industrial society where the social unit is community and not the individual.

Bell's critics raise several questions about the validity of what they call an oversimplified aetiology. What marks the transcendence in a society if the continued existence of productive and automated industries remains a prerequisite for the post-industrial society? There are growing service industries—but are these producing final service commodities for consumers, or intermediate services for the manufacturing sector? There are more people in service occupations, more service workers—but are these high- or low-human-capital workers, brain surgeons or supermarket checkout workers? How does the increased presence of professionals reflect the coming of a new-age society? Is this technological determinism whereby technologies are considered the decisive agents of social change, aloof from the social world, though pronouncing enormous social effects? (Bell, 2004; Webster, 2002)

Japanese futurologist Yoneji Masuda (2004) also predicted the information society to be significantly different from the industrial society where the 'production of information values and not material values will be the driving force behind the formation and development of society'. Computer technology will be to information revolution what steam engine was to industrial revolution. Growth in information technology will be the core of this epoch as well as its key causal factor (Masuda, 2004). At the heart of this discourse was another well-established media determinist theory about the relationship

between communication and social structures by Harold Innis who argued that changing forms of communication lead to changes in the nature of society. His theory stressed communication as the primary explanatory variable for socio-economic development; a stand that was later epitomised by McLuhan's 'The medium is the message' (Skouby, 2000).

Moving ahead from the techno-economic paradigm of his predecessors, Manuel Castells talks about a 'new informational, global and networked economy' as distinct from Bell's 'service economy'. Emerging new, powerful and flexible technologies makes it possible for information itself to become the product of the production process. There is growth of informational agriculture, informational manufacturing and different types of other informational services. This new economy according to him is organized around global networks of capital, management and information; whereby access to technological know-how becomes the prime driver for productivity and competitiveness. Castells' 'new society' is based on the development of networks that facilitates information flow and being part of this network is important for growth (Castells, 2000a, 2000c, 2004).

The social transformation induced by new technologies in a 'network society' goes beyond the social and technical spheres of production to affect culture and power (Castells, 2000a). The integration of text, images and sound in the multimedia system changes the character of our communication and communication decisively shapes culture. Castells argues that through the powerful influence of new communication

system, mediated by social interests, government policies and business strategies, a new culture is emerging - the culture of real virtuality. 'It is a system in which reality itself (i.e. people's material/symbolic existence) is entirely captured, fully immersed in a virtual image setting, in the world of make believe, in which appearances are not just on the screen through which experience is communicated, but they become the experience' (Castells, 1996 quoted in Webster, 2002).

Although Castells attempts to retain a notion of human agency and points out the importance and possibility of differing national policy responses for economies and cultures witnessing diverse manifestations of structural changes (like social stratification and local forms of cultural resistance) in the process of transition to new modes of informational development, his critics accuse him of technological determinism (Garnham, 2001; Skouby, 2002).

Most theories of information society exalt the role of ICT as the prime restructuring agent of social, economic and technological systems, but fall short of detailing the nature of these changes within nations. William H Melody attempts to address this deficit by reflecting that advances in telecommunication industry and ICTs (including telegraph, telephone, radio, TV and computing) have facilitated development of new knowledge for economic applications. He calls the resultant economy the 'new knowledge economy' where information and its effective communication determined the efficiency. Melody distinguishes between oral and technologically advanced economies not on the basis of role of information but the way it is processed and communication

networks are institutionalized. Rather than volume of information available, markets and policy environments become central to the restructuring of this knowledge economy (Skouby, 2002; Melody, 2009).

Cautioning against network oligopoly characterized by inefficiency, Melody asserts that governance policies must be appropriately oriented towards the changes required for an inclusive and efficient new knowledge economy through higher investment in human capital to bring about higher levels of human development.

Implications of the Information Society

The main critique of the information society idea is that the development and diffusion of IT did not result in any fundamentally new principle or direction in society. There is no denying the remarkable speed of its diffusion and its potential to bring about radical changes in social arrangements. But the new technology is being applied within a historical, political and economic context that confirms and accentuates existing patterns, rather than giving rise to new ones whereby existing social inequalities are maintained and magnified (Kumar, 2004). In the historical context, application of IT should be seen in the continuum of development of writing, printing and other modern systems of communication. Economically it needs to be understood within the framework whereby systems of transmission and storage of information get commodified through existing patterns of social and economic organization. Politically, this commodified information gets valorised as power for those controlling it and disempowerment for those lacking

access to it. Thus the value of information is not intrinsic to it and gets determined according to its availability and usability to meet economic, social or cultural ends (Feather, 2004).

Herbert Schiller's view is that the contemporary information environment is expressive of the interests and priorities of corporate capitalism as it has developed over time and forms an essential component in sustaining the international capitalist economy. According to him the central question concerning the character of and prospects for the new information technology is the familiar criteria - for whose benefit and under whose control will it be implemented? He discusses about 'commodification of information, class inequalities, and corporate capitalism'. His questions are - who initiates, develops and applies innovative information technologies? What opportunities do particular people have - or have not - to access and apply them? For what reason and with what interests are changes advocated? To what end and with what consequences for others is the information domain expanding (Webster, 2002)?

Patterns of control over information and the channels of communication that facilitate public discussion are indicative of the nature of democracy in society. Thus, the new information society, dependent on networks, posits questions of new kinds of relations of power between participants. The notion of democracy in the internet has been addressed by scholars in relation to the concept of public sphere. Public sphere suggests an autonomous arena of exchange committed to rational debate and open to participation by all citizens whereby public opinion is formed. The central concepts of Habermas'

public sphere like the public nature of communication, participation by rational individuals, symmetrical relations and valid arguments are all debated in relation to the internet which significantly alters most communication and information sharing experiences. Within this context the role of information in democracy is analyzed with reference to issues of gender inclusion, commodification, participation of virtual communities and 're-feudalization' marking a shift from public opinion creation to 'public relation management' by governments. Given the complexities of the emerging political-economy of the information society whereby public service functions of the public sphere is denuded by development of 'information packaging', scholars are suggesting a civil society initiative for a 'network of public spheres' (Poster, 1995; Webster, 2002; Habermas, 2004; Garnham, 2004).

Technology is ethically neutral, but technological innovations impact the lives of different sections of society differently. There is no doubt regarding the potential impact of digital technologies in transforming every aspect of people's lives but the manifestation of the same has been different according to the socio-economic conditions and value systems of the people who plan produce, implement and use it.

How does the networked world riding on new-age information and communication technology get stratified; how do they respond to existing social and economic inequalities; and whether they promote democratic forces or strengthen echelons of centralized power, are some of the queries being raised by analysts of information society.

There are many parameters by which the relationship between ICTs and society can be analyzed. Classifying analysts into sceptics, pragmatists, optimists, pessimists, globalists and localists is one simplified approach. The key issue of concern among policy-makers and international organisations now is ensuring the distribution of the benefits of ICT to all sections of society to achieve a truly global information infrastructure. With the growth of ICTs we have also encountered concepts indicating the skewed growth of ICT across nations and societies.

Digital Divide

The term coined to explain these various inequalities is 'digital divide' and is seen as a multidimensional phenomenon impacting social and political structures globally. The term 'digital divide' refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to both their opportunities to access information and communication technologies and to their use of the internet for a wide variety of activities. The digital divide reflects various differences among and within countries (OECD, 2001). Understood as the gap between ICT 'haves' and 'have-nots', the digital divide has come to represent another criteria in the development index of nations.

Growth of ICT capital is seen to be positively correlated to growth of GDP thus consolidating a strong relationship between new-age communication technology and economic development. By extension of this phenomenon the developed nations are

better equipped to harness the benefits of ICTs and leverage economic development through better internet access. Spread of internet to remote rural areas provides multiple opportunities of socio-economic and democratic development for poorer societies. But the developing nations are usually characterized by poor communication infrastructure and limited scope of investment in research and development for growth of internet technology. This exacerbates the existing inequalities between nations leading to a global divide in terms of differential levels of internet usage.

The growth of internet technology is also found to follow a trajectory similar to earlier communication technologies like television, radio and telecommunication. Thus diffusion of new-age communication tools is representative of existing disparities in international communication flows highlighted earlier by Maitland Commission (1984). Poorer societies at the periphery of information network continue to remain disadvantaged compared to more advantaged societies at the centre of the network even after advent of new technologies.

Studies reveal wide disparities across the globe with regard to distribution of high-end internet facilities –

- There are 459 computers per 1000 people in USA while there are only seven per thousand in Sub-Saharan Africa (Norris, 2001).
- While the developing world has 85% of the world population, it had 39% of the share of internet users in 2003 (Orbicom, 2005).

- The internet penetration rate of the developed world was eight times that of the developing world (Orbicom, 2005).
- Over three quarters of the global population live in 92 economies with below average performance in ICT opportunity index (Orbicom, 2005).

Concerted efforts have been initiated internationally to improve access to ICT for those untouched by this revolution but given the difference in pace of growth between the developed and developing nations, the digital divide between the North and South has only widened over time. Thus the international disparity in access to ICT has evolved as continuity, rather exacerbation, of already existing disparities between rich and poor nations. The developed world of the North has continued to maintain its exponential growth while developing nations in the southern hemisphere struggle to bridge the gap and grapple with other characteristic social and cultural variables.

Another disparity that has contributed to the 'global divide' is what Keniston (2004) calls 'Anglo-Saxon linguistic and cultural hegemony' on the internet. There is a linguistic and cultural barrier on the internet where majority of the content is dominated by one or the other 'northern languages'.

Studies have revealed that more than 80 per cent of the content on the internet is in English, which is a language understood by only one in ten people worldwide. This English speaking minority are representative of the educated elite from developed nations

or those affluent few located in the more prosperous urban pockets of developing nations (Norris, 2001).

Keniston also points out towards another divide that exists within every nation irrespective of its southern or northern alignment – that between those who are rich, powerful and educated, and those who are not. Thus a sizeable population of disadvantaged people within each country remain unaffected by the revolution sweeping their more affluent countrymen. Keniston suggests that these beneficiaries of information and knowledge industry constitute an elite group within each society whom he calls the 'digerati'. This neo-elite group does not derive its superiority from traditional advantages of caste, inherited wealth or family connection but from their ability to manoeuvre knowledge. However, unfortunately the prosperity and wealth generated by the digerati does not get circulated in manners so as to trickle down to the urban or rural poor and only goes on to reinforces a close-knit market economy created and sustained by them.

Norris (2001) through statistical analysis establishes that the digital divide is exemplified by existing social stratifications of household income, gender, age, occupation, education etc. Policy interventions to ameliorate this problem, according to her must go beyond the evident technology implications to address the more subtle social inequalities which run the risk of being exacerbated due to lack of access to new-age IC technologies.

Bridging the Digital Divide – Move towards Knowledge Society

With an evolving understanding about the various aspects of digital divide it was increasingly being realized by scholars that efforts to bridge it needs to go beyond the techno-centric parameters of access and connectivity to address issues of language, culture, knowledge and human rights. Access to information was seen as a basic human right where the emphasis was not only on collection and distribution of information but on the collective ability of the people to affectively use it to build knowledge and improve their quality of living. Illustrating the concept of knowledge societies, Sarvaes and Malikhao (2004) say that knowledge along with the meaning or interpretation of the information includes a lot of intangibles such as the tacit knowledge of experienced people that determines collective organisational competence. Knowledge is the sense that people make of information. Knowledge in society is not objective or static, but is ever changing and infused with the values and realities faced by those who have it.

"The term knowledge society indicates a shift in emphasis from ICTs as drivers of change to a perspective where these technologies are regarded as tools which may provide a new potential for combining the information embedded in ICT systems with the creative potential and knowledge embodied in people" (Sarvaes & Malikhao, 2004, p. 14). ICTs are best considered as tools or facilitators, which may substitute under certain conditions for other means of knowledge creation in innovative societies. These technologies do not create the transformation in societies by themselves; they are designed and implemented by people in their social economic and technological contexts.

A formal association of people with similar interests, who try to make effective use of the vast wealth of knowledge in their area of interest to further nourish the area; and in the process, contribute their new learning back to the knowledge pool.

Knowledge society is one in which knowledge forms major component of any activity, particularly economics where knowledge becomes major product and raw material. Not just economics, but social, cultural, and all other human activities become dependent on huge volume of knowledge and information. In knowledge societies we have open and timely access to information and knowledge, the capacity to absorb and interpret information, avenues and opportunities to use knowledge for informed decision-making and for transformation to higher quality of lives.

Development is hereby fundamental to knowledge societies which encompass an empowering social vision involving plurality, inclusion, solidarity and participation. The popular discourse thus shifted from information societies to talk about knowledge societies and knowledge based economies where apart from ICT infrastructure, intangible assets like innovation, culture and governance not only form its distinguishable features but become key to its sustenance. Knowledge societies are part of knowledge economies with high absorptive capacity; and with structures and cultures facilitating knowledge diffusion and sharing (UNESCO, 2005; Melody, 2007; Sharma, Ng, Dharmawirya & Lee, 2008).

Knowledge societies ideally should be firmly based on commitment to human rights including right to education and cultural rights; and ensure protection of fundamental freedoms including freedom of opinion and expression. It is believed that by ensuring plurality of participation it is possible to improve the quality of information that is made available and uphold ethical standards in the knowledge society.

The triadic relationship between knowledge, freedom and development gets further underscored through the capabilities approach put forth by Amartya Sen. He argues that development is not an end in itself but a means to an end where the sole purpose is to expand human freedom, both constitutive and instrumental. Constitutive freedom according to Sen relates to those substantive freedoms that enrich the quality of life like freedom from hunger, poverty, illiteracy and deprivation. The instrumental freedoms to be achieved through development are political freedoms, economic facilities, social opportunities, transparency guarantees and protective security. Sen also establishes that safeguarding of freedom of expression has significant economic and social implications which go beyond mere political ramification to influence the very process of development. From the standpoint of building knowledge societies the effective promotion of freedom of expression in the global information society can address issues of surveillance, censorship and manipulation of information for political ends; as well as attend to economic concerns of skewed development, poverty and digital divide (Sen, 2000; UNESCO, 2005).

This knowledge based development has an important human dimension where ICTs no doubt give rise to innovative knowledge networks for the creation and sharing of information but they also necessitate building up of a new set of skills and capabilities required to fully integrate ICTs into existing commercial and social life. There is again wide variation between developed and developing nations in terms of availability of these skills. The digital information made available by ICTs will be of little or no use for developing nations unless it can be transformed into knowledge relevant to development through generation and use of tacit knowledge (Crede & Mansell, 1998).

Developing nations that struggle to attend to other basic development needs are now faced with this additional challenge of creating an environment conducive to engagement of ICT into the development process. This requires deployment of human and financial resources for an already resource crunched economy.

Many scholars thus raise concern about prioritizing the development needs of the developing nations – whether they should first concentrate on attending to basic human needs rather than deploying the scarce resources to development of ICT industry and ICT related goods and services. The answer thus arrived at is that ICTs should be employed in the development process only and only if they ensure fulfilment of other basic human needs (Keniston, 2004). That is, developing nations should be employing ICTs to further the process of democratic participation for their citizenry and ameliorate other social deprivations like poverty, hunger, illiteracy, discriminations based on gender and such other factors.

The developing nations are thus required to take it up as a policy initiative to put in place structural changes in their development strategies in order to make effective use of ICT as a catalyst for social change. Following this the techno-centric paradigm of ICT would make way for a more social capabilities and empowerment oriented approach in the quest for a new knowledge society. The theoretical framework that contextualizes ICT within the domain of such development studies is discussed in the following chapter.

CHAPTER TWO

International Perspectives in Information and Communication Technologies for Development: Imperatives of Technology and Intersecting Community Needs

Communication is intrinsic and embedded in the concept of ICT. It is the networking function facilitated by ICT overcoming the restriction of space and time that has opened avenues for its applicability in participatory development practices. Thus it becomes imperative to look at ICT within the broad context of development theories and ideologies; and the role envisaged for communication within such processes. This chapter starts with an overview of development theories that have evolved over time and have also in the process continuously redefined the deployment of various communication media in meeting the set priorities. The discussion that follows, introduces the current philosophies in international development discourse and participatory theories that call for judicious and timely use of new age communication technologies as agents of social change.

Development and the Role of Communication - Modernization Paradigm

Most powerful model of the importance of communications for society and social change was that arising from modernization theories of development. It had a role for communications as a key part of development. Development was defined as economic growth, but required a move to modernity, a transformation that involved changes in

individuals' traditional attitudes and social institutions. To enter the modern world, underdeveloped societies had to overcome traditional norms and structures opening the way for social, economic and political transformations. For some authors modernization was a derivative of greater differentiation of societal functions, institutions and roles along with development of new sources of integration. For others, modernization was based more on the actual transformation of individuals through their assimilation of modern values. There was seen to be a link between modern culture and economic and political development following which it was proposed that changes in ideas would result in transformations in behaviour. Because the problem of underdeveloped regions was believed to be an information problem, communication was presented as the instrument that would solve it (Waisbord, 2001).

The concept of development communication both as theory and practice was thus closely linked with the growth of the 'development industry' and went through a continuous process of defining and redefining based on an evolutionary understanding of the interconnections between communication and society. Thus 'development support communication', 'communication for development' and 'development communication' are few among the various concepts that came to represent the strategic use of communication to persuade people to change and enhance the development processes.

The role of communication in development is rooted in the Dominant Paradigm of Development approach of the 1950s and celebrated by scholars like Max Weber, Wilbur Schramm, Daniel Lerner, Everett Rogers and the like. According to them communication basically meant the transmission of information, and exposure to mass media was one of

the factors among others (e.g. urbanization, literacy) that could bring about modern attitudes. Communications infrastructures and development education was viewed to provide the means for the diffusion of progressive scientific, technical and organizational innovations. Mass media messages were said to lead to innovations in values, attitudes and technology i.e. behaviour leading to development (Marceau, 1972). Expansive mass communication and campaigns directed at specific groups would allow parochial and traditional groups to be exposed to cosmopolitan and modernizing influences. Development communication was thus equated with the massive introduction of media technologies to promote modernization, and the widespread adoption of different mass media was seen as pivotal for the effectiveness of communication interventions. The media were regarded both as channels and indicators of modernization whereby they would serve as agents of diffusion of modern culture as well as suggest the degree of modernization of any society (Waisbord, 2001).

Dependency Theory

A Marxist criticism of the modernization approach of the West was forwarded in the Dependency Perspective arising out of the Latin American Scholars who attempted to explain the underdevelopment of their region vis-à-vis the Western European nations. Dependency theorists while dismissing the modernization approach as being rooted in positivist, behaviourist models maintained that underdevelopment of nations cannot be attributed to internal characteristic of nations alone but results from interconnections between external and internal variables. According to dependency perspective underdevelopment was the result of a complex phenomenon whereby external constraints

on peripheral, newly de-colonized nations within the global structure interplayed with internal variables to reinforce the monopoly of the West. Dependency theory saw development and underdevelopment as interrelated processes and argued that the condition of the underdeveloped nations was not a stage in the process of evolution towards development, but rather the result of extant international structures. It maintained that Western, monopolist, capitalist powers at the centre ensured continued economic dependence of the peripheral nations by reproducing social, economic and political structures in accordance with their own interests. Dependency theory was also critical of the mass media centric approach of the modernization paradigm and asked for more systematic analysis of the patterns of media ownership and control. While on one hand dependency approach championed the cause of socio-economic and political struggle of self-determination by the Non-aligned Nations, on the other hand it put its weight behind demands for equitable flow of information across the globe and initiation of a 'new world information and communication order'.

The Non-aligned Nations' Movement (1960 – 1980), started with the newly formed states of Asia, Africa and socialist countries like Cuba, China etc., was at that time seeking rights of political, economic and cultural self-determination against the imperialist forces. It looked at development as a political process and sought for de-colonization of information from the influence of Western media dominance. These debates compelled the United Nations and its associate agencies to take up the issue of 'free flow' of information across the globe as articulation of the right to 'freedom of expression' enshrined in the Universal Declaration of Human Rights. The International

Commission for the Study of Communication Problems or the MacBride Commission (1977) was formed to enquire into the problems of communication in contemporary society particularly relating to mass media and news, and to suggest a new communication order to solve these problems against the backdrop of technological innovations and raising complexities in international relations so as to further peace and human development. The MacBride Commission Report (1980) titled *Many Voices One World* observed that new technologies no doubt open paths for a new era of communication but they also pose significant threats towards ensuring freedom of expression as harnessing its potential required considerable capital and control over resources. The structures of communication were thus no more neutral than its content and were considered as a force vested with 'absolute and omnipresent powers'. An improvement in the status of communication was inextricably linked with an overall improvement in societal conditions becoming less oppressive, more equal, just and democratic.

The report thus emphasized that communication can no longer be regarded merely as an incidental service and its development left to chance. It recommended institutionalization of national communication policies linked to overall political, economic, social and cultural development of the people; and democratization of communication and strengthening of national media to avoid dependence on external sources. The committee noted that developing countries should end their dependence on external sources of communication and overcome the problems posed by inadequate infrastructure and other resources. It said -

> The critics from the developing countries have found, by experience that the theory of "free flow" is invalidated by the overwhelming preponderance of information circulated from a small number of industrialized countries into the huge areas of the developing world. In order to be really free, information flows have to be two-way, not simply in one direction. The concentration of news agencies, telecommunication facilities, mass media, data resources, manufacturers of communication equipment in a small number of highly developed countries does, in fact, preclude any chance of a free flow between equals, a democratic exchange among free partners. (UNESCO, 1980, p.142)

It recommended that developing countries should plan the installation and development of adequate technologies and infrastructures required to become self-reliant in communications capacity. Communication technologies were to be implemented for satisfying people's 'basic needs' through 'development support communication'. The committee also recommended for extension of media production facilities to rural areas in order to "facilitate production of programmes relevant to community development efforts, stimulate participation and provide opportunity for diversified cultural expression." The commission's report was adopted by UNESCO even while it faced severe criticism of being supportive of government control of media and infringing on journalistic freedom.

Though the debate following MacBride Commission's report did not alter the international communication scenario substantially yet it proved to be a forerunner in highlighting the implications of monopolistic practices on local cultures, people and their economies. By equating the right to communicate, right to participate and form informed decisions with the spirit of democratization, the commission could successfully shift

emphasis from ensuring plurality of sources to ensuring a two-way reciprocal process of communication in the international discourse.

The coming of globalization and liberalization marked a dilution in the framework of three-tier world system of First, Second and Third Worlds, and relegation of the centre-periphery continuum which could now be found in every region. This prompted consideration for a new concept of development emphasizing cultural identity and multidimensionality. The 'global' and 'networked' world of today, characterized by its distinct regional and national entities, now had to confront multifaceted crises. Apart from the obvious economic and financial crisis, there are social, ideological, moral, political, ethnic, ecological and security crises. This made the previously held dependency perspective more difficult to support owing to the growing interdependency of regions, nations and communities. This followed from the assumption that there are no countries or communities that are self-sufficient and function completely autonomously; nor are there any nations whose development is exclusively determined by external factors. A new viewpoint on development and social change thus emerged from this criticism of the dependency approach which proposed for a 'bottom-up', self-development approach from the perspective of the local community whereby both the 'centre' and 'periphery' could be studied independently as well as their inter-relationship. During the period 1987 – 1996 communication research also highlighted the need to conduct more policy studies and institutional analysis of development agency coordination. This was followed by the need to research and develop indigenous models of communication and development through participatory research (Servaes, 1995).

Participatory Communication - An Alternative Ideology for Development

The need for participation of local communities; the need to give due importance to their knowledge and practices; and the need to engage in dialogic communication through decentralized media systems started gaining ground among communication practitioners and development theorists alike. The mass media centric top-down approach to development was thus taken over by the bottom-up, participatory approach to development. The notion of participatory communication dwells on the importance of cultural identity of local communities, and of democratisation and participation at all levels - international, national, local and individual. By this, the concept of participation is considered etymologically to be at the core of the word communication and hence significant for the success of development. According to this philosophy participatory communication is seen as a dialogical process whereby members of the community democratically guide the process of change for their own community, for the benefit of the majority. Unlike the modernization theorists, participatory theorists and practitioners emphasize on sensitivity towards local cultures and contexts for the success of development communication. In the participatory development process the earlier 'subjects' or 'receivers' of the modernization approach would have a larger say in the process of decision-making. (Dagron, 2002; Servaes, 1995).

Participatory theories argued for a redefinition of development communication through abandonment of the persuasion bias inherited from propaganda theories and reorientation towards a model of information exchange. It called for systematic utilization

of communication channels and techniques to increase people's participation in development. The emphasis was no longer to be on creating a need for the information being disseminated but on disseminating the information for which there was already a need. Participatory development communication needed to move away from being media-centric to becoming more people centric so as to inform, motivate and train rural population at the grassroots. (CI, 2010).

Participatory theories evolved from two major theoretical approaches. One credited to the dialogic communication philosophy put forth by Brazilian educationist Paulo Friere in his Pedagogy of the Oppressed (1983); and the other from the self-management and empowerment perspective of UNESCO. Friere argued that subjugated people should be treated as fully human subjects in any political process. He believed that the average citizen was not an empty vessel into which facts could be poured, but he needs to be treated as a knowing being. Every individual has capacities of reflection, conceptualisation, critical thinking, and making decisions for planning and social change. According to him action and reflection are organically interconnected and are dialectic processes that lead to the process of 'conscientization' whereby there is free dialogue prioritizing cultural identity, trust and commitment. His approach has been called "dialogical pedagogy" which defined equity in distribution, empowerment and active grassroots participation as central principles in development and understood it as a process of individual and community self-determination. (CI, 2010; Servaes, 1995; Berrigan, 1979).

UNESCO's discourse on participatory communication stems from right to information section in Article 19 of the Universal Declaration of Human Rights:

> Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

It is based on the concepts of access, participation and self-management with each indicating differential levels of public involvement (Berrigan, 1979) -

i. Access refers to the use of media for public service. It may be defined in terms of the opportunities available to the public to choose varied and relevant programmes, and to have a means of feedback to transmit its reactions and demands to production organizations.

ii. Participation indicates a higher level of involvement of the public in management of communication systems. Here the public are involved in the planning, decision making and production processes of communication enterprises.

iii. Participation may infer no more than representation and consultation of the public in decision-making. On the other hand, self-management is the most advanced form of participation. In this case, the public exercises the power of decision-making within communication enterprises, and is fully involved in the formulation of communication policies and plans.

The Friereian and UNESCO perspectives, though widely accepted as normative theories of participation, have distinct ideologies about the levels of participation that may be allowed and the nature of communication enterprise. While UNESCO advocates

for a progressive process of participation, for Friere there can be nothing short of absolute participation. Again, while Friere looks at communication by the oppressed public, UNESCO looks at an institutional perspective to communication (Servaes, 1995).

The outcomes of participatory communication can be seen either from the social movement perspective or the project-based institutional perspective. From both the perspectives the tangible outcomes can be observed at least at three different levels. Firstly, at the individual psycho-social level it provides the courage of ownership towards problems and the commitment to solve it; secondly, at the skills level it emphasizes the acquirement of competencies and capacities to engage with a developmental problem; and thirdly, at the institutional level or the level of community development to bring about required reform (Tufte & Mefalopulos, 2009).

White (cited in McKee, 1994, p. 215) had summarized ten major reasons for the adoption of participatory approach in development projects:

i. More will be accomplished.
ii. Services can be provided at a lower cost.
iii. Participation has intrinsic values for participants, alleviating feeling of alienation and powerlessness.
iv. Participation is a catalyst for further development efforts.
v. Participation leads to a sense of responsibility for the project.
vi. Participation guarantees that a felt need is involved.
vii. Participation ensures that things are done the right way.

viii. Participation ensures the use of indigenous knowledge and expertise.

ix. Participation brings freedom from dependence on professionals;

x. Participation brings about conscientization, that is, it helps people understand the nature of the constraints which are hindering their escape from poverty.

Arnstein (1969) argues that levels of citizen participation can range from non-participation as a substitute for genuine participation, to mere tokenism where people are allowed to have a voice through information and consultation. A progression of this is where citizen participation leads to citizen power in terms of decision making and management.

Participation and Empowerment as Conduit to Development Effectiveness

The concept of empowerment is closely linked with the discourse and practice of development. Though widely used as an alternative strategy to the traditional way of promoting development, it has been considerably difficult for scholars to come up with an appropriate definition for the same. While some call it "the ability to make decisions", others consider it to be an "improvement in the quality of life of the marginalised". Philosophically it is rooted in Friere's concept of putting an individual in the centre of his own life whereby empowerment involves a transformation in his personal awareness. The World Bank defines empowerment as "the expansion of the assets and capacities of poor people to participate in, negotiate with, influence, control, and hold accountable institutions that affect their lives." In its broadest sense, empowerment is the expansion of

freedom of choice and action. Its long-term objective is to humanise and alter the structures of power within society. However, though closely related to concepts of power and control, empowerment does not necessarily mean mere decentralization or participation. While decentralization may indicate return of power to local communities, it need not necessarily empower the marginalised in the presence of a strong local hierarchy. Again, participation can be an effective tool to bring about empowerment, but is not a goal in itself. Only when the objective is to involve the powerless in the formulation of strategies and development policies and the selection of programmes, and in their monitoring and assessment, an appropriate environment for empowerment is created.

Empowerment is also defined from the rights based perspectives. The rights-based approach is a conceptual framework defining human development based on international standards for human rights. It includes, apart from empowerment, the link with rights, accountability, participation, lack of discrimination and attention to vulnerable groups. By this, the individual is placed at the heart of policies, becomes the owner of his own rights and the driving force behind his own development.

There is also an institutional perspective to empowerment, whereby it necessitates certain structural changes in the unequal institutional relationships. Formal and informal institutions in society are characterized by laws and rules embedded in state, private sector, and civil society organizations at the local, national, and global levels. Social institutions are also bound by norms of kinship, cultural practices and restrictions. Poor

people are generally excluded from participation in institutions that make the decisions and administer the resources that affect their lives. Changing unequal institutional relations depends in part on top-down measures to improve governance—changes in the laws, procedures, regulations, values, ethics, and incentives that guide the behavior of public officials and the private sector. This requires rules and laws and investment of public and private resources to strengthen the demand side of governance. These changes can create the conditions that enable poor women and men to exercise their agency.

The World Bank identifies four characteristics that can change the power relations between the poor people and powerful actors to facilitate empowerment: access to information, inclusion and participation, social accountability, and local organizational capacity. The empowerment perspective to poverty reduction indicates strong linkages between empowerment and development effectiveness at both the societal and grassroots level. Narayan (2005) says -

> Empowerment approaches can strengthen good governance, which in turn enhances growth prospects. When citizens are engaged, exercise voice, and demand accountability, government performance improves and corruption is harder to sustain. Citizen participation can also build consensus in support of difficult reforms needed to create a positive investment climate and induce growth. In addition, the empowerment agenda supports development effectiveness by promoting growth patterns that are pro-poor. (pp. 3 - 4)

For development practitioners there are also strong statistical findings available to indicate a cause-effect relationship between participation and better project performance whereby increasing participation directly causes better project outcomes (Isham, Narayan & Pritchett, 1995).

Indices of Development and Wellbeing

By 1990 an alternative perspective to development was developed by UNDP which shifted the focus from economic development to human development whereby the emphasis was more on enhancing people's capabilities and enriching the quality of their lives rather than relying on the power of the market forces to end poverty. By this, poverty was seen as a multidimensional phenomenon and not simply as lack of material well-being. Poverty also encompassed poor health and education, deprivation of knowledge and communication, inability to exercise human and political rights and the absence of dignity, confidence and self-respect. Human development was seen as a process of eradicating such poverty by enlarging people's choices, building human capabilities and by enabling them to participate in the life of their community and in decisions affecting their lives. Based on the virtues of efficiency, equity and freedom; and moving away from the basic needs approach, human development attempts for:

- Social progress through better access to knowledge and health services
- Growth with equity for all sections of people including women
- Participation and freedom in terms of empowerment, democratic governance, gender equality, civil and political rights and cultural liberty
- Sustainability for future generations in ecological, economic and social terms
- Human security against chronic threats like hunger and abrupt disruptions such as joblessness, famine, conflict, etc

Following this, the Human Development Reports (HDR) compiled for different countries are drawn on four main parameters.

- HDI (Human Development Index) indicates a summary measure of human development,
- GDI (Gender-related Development Index) is HDI adjusted for gender inequality,
- GEM (Gender Empowerment Measure) measures gender equality in economic and political participation and decision making, and
- HPI (Human Poverty Index): captures the level of human poverty.

The overall ranking of a nation in the country HDR is decided after collating data based on all the above indicators (UNESCO, 2000; UNDP, 2010). This created a benchmark to evaluate the progress of nations across different regions of the world. UNDP through its HDRs went on to identify that there were huge disparities in levels of economic progress, education and gender equality among nations. While Latin America, Europe, Central Asia and Middle East accounted for less than 10 percent of the world's poor, the other 90 percent were spread over East and South Asia and Sub-Saharan Africa. There was also high prevalence of infant mortality and other diseases like HIV/AIDS. Experiences were also vastly different at sub-national levels and for ethnic minorities and women (WDR, 2000/2001).

Faced with this picture of global poverty and inequality, the international community set itself several goals for the opening years of the twenty first century, based on discussions at various United Nations conferences. These international development goals, included reducing income poverty and human deprivation, promote democratic

governance and create possibilities for sustainable development. The UN Millennium Summit 2000 identified eradication of extreme poverty as a priority agenda for world development and set specific targets, mostly by the year 2015, to achieve standard measures for protection of human rights, assure democracy and good governance, support the vulnerable, and promote environmental sustainability. The Millennium Development Goals (MDGs) adopted by world leaders as a follow-up to the summit are a set of comprehensive and specific development goals agreed upon for wider cooperation on development agenda. The eight time-bound goals provide concrete, numerical benchmarks for tackling extreme poverty in its many dimensions. They include goals and targets on income poverty, hunger, maternal and child mortality, disease, inadequate shelter, gender inequality, environmental degradation and the global partnership for development. They are –

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a Global Partnership for Development

The signatory nations to the Millennium Declaration have unanimously committed to take up strategies to achieve each of the goals by the target date and initiate various projects following individual national priorities.

Information and Communication Technologies for Development

Various global initiatives for sustainable development prompted the UN agencies to recognize ICTs as key player in the fight against global poverty and as an effective tool in helping the developing countries to achieve the MDGs. UNDP identified some strategic areas for ICT related interventions in development. These include among others, building a national strategy on ICT for Development (ICT4D); undertaking capacity building measures and awareness campaigns; and promote e-governance for better citizen participation and transparency.

In this context it becomes imperative to understand what exactly constitutes 'Information and Communication Technologies'. ICT consists of the hardware, software, networks, and media for the collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. ICT include functions that support both communication in various forms as well as information storage, retrieval, analysis and sharing. It can be split into Information and Communication Infrastructure (ICI) and Information Technology (IT). ICI refers to physical telecommunications systems and networks (cellar, broadcast, cable, satellite, postal) and the services that utilize them (Internet, voice, mail, radio, and television). IT

in turn refers to the hardware and software of information collection, storage, processing, and presentation (World Bank).

In the 1990s expansion of telecommunication network was considered to be the catalyst for economic growth and social development - a strong telecommunication network indicating a vibrant economy. Telecommunications for Development theory focused on the benefits of the use of interactive telecommunication technology for economic growth and social integration over the persuasion and attitude change theory of the modernization approach. The theory emphasized on the state to invest in improving the telecommunications network which would in-turn improve the delivery of public services and would promote economic and social integration. The emphasis was on improving the channels of communication, delivery of public services and reduction in the high transaction cost. The multiplier effect of telecom investment on GDP was likely to be higher because of both the direct and indirect effect that this investment had on production.

Since then information and telecommunication technology innovations have come a long way from telecom, television and radio to the new age technologies of internet and mobile telephony with supposedly higher potential of fostering economic and social growth by providing better interconnectivity within and among nations, societies and communities. ICTs have an enormously important role to play in building the social capability to generate information and to apply knowledge for sustainable development. A well-developed information and communication network infrastructure that is adapted

to regional, national and local conditions, and rendered accessible and affordable, can accelerate the social and economic progress of countries, and the well-being of all individuals, communities and peoples (WSIS, 2003).

Many developing nations are considering harnessing ICT as the means to transcend existing structural and historical weaknesses in the economic, political and social spheres. ICT is also seen to have the potential to leverage human development, whereby technological change is intrinsically linked with economic growth and improvement in human capabilities. Advances in digital technology and the concomitant 'digital revolution' can usher unprecedented changes in production processes, commerce, government and education and create new forms of economic growth to benefit all sections of the population.

> Advances in medicine, agriculture, energy, communications, etc. can directly build human capabilities through improvement in health, longevity, knowledge and greater participation in social, economic and political life. It can also expand human choices through productivity gains and increase in income. Human capabilities in turn, through creative application of education, can trigger further technological change which can be harnessed for building human capabilities and expanding choices. (UNDP, 2004, p.17)

ICT is seen to impact development in multifaceted ways ranging from increasing economic opportunities to facilitating human development. Some of the areas where implementation of ICT can lead to positive development and contribute towards achieving the MDG were analysed by UNDP through indicator based analysis. While the supply side indicators would pertain to availability of personal computers, internet

facility, density of telephones and the like; the development potential of ICT was analysed through its impact on different sections of the society including the vulnerable sections and its potential to improve efficiency and speed in institutional operations. The deployment of ICT for development necessitates creation of a supportive governance and appropriate legal framework. ICT in governance can improve opportunities for various vulnerable groups to have access to and participate in the process of human development. If poverty reduction is the most important economic application of ICT, providing access to better governance practices is the most significant action for ICT within a democratic society. Growth of ICT, protection of human rights, sustenance of democracy and good governance are all connected into a virtuous spiral where each concomitantly help in the propagation of the other.

e-Governance as Good Governance

Governance refers to the coordination and use of various forms of formal or informal types of interaction and institutional arrangements in the policy-making, development, and service processes to pursue collective interest. It is the societal synthesis of politics, policies and programmes. Government, as distinct from governance, indicates the institutions and agents that perform the governmental function and acts with authority to create formal obligations. Governance need not always be performed by governments alone. Private firms and associations, or non-governmental organizations (NGOs) can also engage in governance, sometimes in association with government

bodies, with or without governmental authority (UNESCO & NIC, 2005; Anttiroiko, 2004).

Similarly, the concepts of e-government and e-governance are also distinct from each other. E-government is the carrying out of government business transactions electronically, usually over the internet, but including all the related real-world processes. It is understood as the use of ICT like internet, World Wide Web, and mobile phones to deliver information and services to citizen and businesses. E-government indicates a process of reform in the way governments work, share information and deliver services to external and internal clients for the benefit of both the government and the citizens, and the business that they serve. In e-government, ICTs are employed to promote more efficient and effective government, by making it more accessible, cost effective and accountable to the citizen. E-governance on the other hand means the application of ICT to the system of governance to ensure a wider participation and deeper involvement of citizen in the decision making process (UNESCO & NIC, 2005; Bhatnagar, 2004; Prabhu, 2004; O'Neill, Undated).

Though the concept of democracy is not intrinsic to the concept of governance, yet democratic governance is usually conceptualised as the dominant political norm and ideal (Anttiroiko, 2004; Poster, 1995). Thus e-democracy or digital democracy becomes a natural follow-up from e-governance. It serves to bring back the citizenry into the political process and facilitates increased participation. Democratic e-governance is defined as –

> Technologically mediated interaction in transparent policy-making, development, and service processes in which political institutions can exercise effective democratic control within a representative system of government and, more importantly, in which citizens have a chance to participate and effectively influence relevant issues through various institutionally organized and legitimate modes of participation. (Anttiroiko, 2004, p. 40)

E-governance can be employed at three hierarchical levels of maturity, to be introduced sequentially based on the preparedness of the government and the level of interactivity or participation allowed. The first and the most basic level is the informational level whereby ICT is employed to provide access to static government information. The second is the interaction and transactional level which pertains to enhancing public involvement by allowing citizens to interact and provide feedback to government officials. At this level citizen are allowed to submit forms, apply for licences, register vital records like birth and death, and make payments online. The third and ultimate transformational level is whereby all citizen services are being delivered online and the citizen can vote and express opinion on public decisions online.

E-governance is recognized as the means to provide SMART governance – SMART being the acronym for Simple, Moral, Accountable, Responsive and Transparent governance. By employing ICT in the process of governance coupled with other institutional reforms, governments are expected to overcome corruption and achieve 'disintermediation' or elimination of middle-man between the government and the people (Prabhu, 2004). According to UNESCO documents the benefits of employing ICT in governments include –

- Improved and enhanced delivery of government services
- Empowerment of citizens through greater access to government information and ability to interact and participate
- Enhanced transparency and increased accountability of the government
- Increasing the internal efficiency and revenue generation by the government
- Improving the relationship between the government and the citizen

ICTs thus can help improve the economic status directly through e-commerce applications and indirectly through access to varied kind of business information. It can empower people by inducing transparency and accountability in the system and also building a smooth interface with the government.

Towards a Communitarian Perspective -Social Capital, Development and Community Informatics

Though technology was seen as a vehicle of social change, its diffusion was neither universal nor uniform. The disparate diffusion of technologies among the underdeveloped nations, societies and communities was consistently being highlighted by *'The Missing Link Report'* (1985), UNCSTD Working Group on IT & Development (1995), and World Summit on the Information Society (Geneva 2003 - Tunis 2005). While the international community committed to build a 'people-centred, inclusive and development-oriented Information Society' (WSIS, 2005), the gap in 'tele-density' of the 1980's was being reconstructed in the next decade as digital divide, threatening to exacerbate the existing informational inequalities. It was acknowledged that ICTs would

have differential impact when diffused differentially across nations and social groups and there was a need to integrate national and regional ICT strategies into a process of participatory and interactive learning and planning. The commentaries proposed a shift from top down to participatory, global to local, technological to social solutions to development problems. It was required of developing countries to combine indigenous and external capabilities to foster a knowledge-based development involving combinations of tacit knowledge, electronic information, access to networks, and other social, cultural, and economic resources. Grassroot intermediaries and the involvement of the community was identified as the key factors to ensure local ownership and the availability of content and services that respond to the most pressing needs of the communities.

Woolcock & Narayan (2000) argue that social interactions between communities and institutions shape their economic performance. They call for the incorporation of the concept of social capital, defined as the norms and networks that enable people to act collectively, into development policy alongside other technical and financial considerations. They propose that development interventions in all sectors and at all levels should undertake social institutional analysis to identify various stakeholders and their interrelations within the project continuum; and facilitate consensus-building and social interaction among stakeholders with diverse interests and resources. According to Woolcock & Narayan, development interventions should be assessed based on their impact on the social capital of poor communities and efforts should be made to improve

social interactions and information exchange between social groups by supplementing face-to-face communication with modern communication technologies.

Mark Poster (1995) argues that by its very nature, internet and the form of politics and democracy facilitated by electronic communication is incongruent with the conceptualization of Habermas' public sphere. He argues that in electronic communication, and more specifically the internet, virtual communities, comprising of people in remote locations who will probably never meet face to face, engage in discussion by sharing electronic signals or pixels over virtual networks. This has blurred the concepts between 'public' and 'private' communication and hence in contravention with the philosophy of public sphere. There are however other studies (Ubayasiri, undated) to emphasize that internet creates opportunities of participation for large number of people in public discussion thus giving rise to a new form of public sphere – a forum where public opinion is shaped. Pigg and Crank (2004) emphasize community, both as a setting and outcome of social action, as constructed in cyberspace. Following social constructivist theories of communication technology they deconstruct the concept of social capital to understand the potential of ICT in its development. They suggest that "ICT has the capability to contribute to enhancing and extending social networks, providing access to resources that can be mobilized for action, enhancing solidarity in social groups, and supporting mechanisms of enforceable trust and reciprocity in transactions." Their analysis distinguishes between information and communication as two distinct functions of ICT where the former helps in increasing bridging social capital and the later helps in bonding social capital. Pigg and Crank emphasize that ICTs can

have a positive role in strengthening social networks among communities and developing facilities for storage, retrieval and sharing of local knowledge.

McIver (2003) highlights that communities need to have a specialized informatics distinct from organizational informatics engaged by governments. The characteristics of communities are highly unique compared to organizations which warrant a special focus while developing ICTs for communities. Community informatics is the specialized field concerned with the development, deployment and management of information systems designed with and by communities to solve their own problems. It considers the interrelationship between technology and society as a fully democratic and participatory process.

> Community informatics must allow people to share control of the decision making around the economic, cultural, environmental and other issues regarding ICT-based projects. More fundamentally, community informatics must empower communities who contemplate ICT-based solutions to develop their own productive forces within the information society so that they can control the modes of production that evolve within it and, thereby, have the possibility of preventing and responding to its threats. The open source and free software movements as modes of production are prime examples of the necessary elements of a community informatics that can enable communities to develop their own productive forces (McIver, 2003, p. 35).

The viability of ICT projects in developing nations must be sensitive to social, economic and cultural facets of the community where it is being experimented and aim at sustainability considerations which look at group based solutions rather than individual ones. Communities must be properly involved in the development and sustenance of their

own ICT systems which are to be designed in an innovative and flexible manner appropriate for remote locations.

It becomes imperative from the discussion in this chapter that the international discourse on development communication and the role of communication technologies as facilitators of social change has been a veritable evolutionary process shifting from perspectives of 'technological determinism' to 'social shaping of technologies'. The underlying consideration that has emerged from this process impinges on the need for bringing about associated changes in institutional structures and approaches towards democratic participation in societies. This not ascertained would mean celebrating technologies for their own sake and not realising that their potential can only be harnessed with appropriate inputs and changes in the way we produce, store, distribute and retrieve information and the way people use them.

CHAPTER THREE

Methodology

While there are many success stories of ICT4D initiatives to boost enthusiasts, sceptics are wary of the actual benefits being accrued by the end-of-line user and call for cautious evaluation of whether ICTs have narrowed or further exacerbated the 'digital divide' – whether a skill intensive technology can facilitate informed grass-root participation of a socially disadvantaged community and what development needs of the citizenry have been addressed through these ICT4D initiatives.

This debate calls for an enquiry into how do communities perceive, access and use these communication technologies, what development goals are identified in such ICT4D projects and how they are achieved. While priorities of the policy planners significantly impinge on how such projects are conceptualized, designed and executed, it will be interesting to study how new age ICTs influence the communicative ecology down the delivery channel and their interface with the indigenous communication patterns within a culture and society. How do ethnic communities respond to such institutionalization of ICT usage in community development and decentralized governance which are initiated with the objective of including the periphery into the core of political development process? With information becoming the currency for development how do ICTs address the existing dichotomies of language, culture, region and identity among indigenous communities? Can ICTs serve as social levelers through democratization of information access? It is not possible to address all these queries

within the scope of a single study. However they form the backdrop for the present project which is initiated with the following two broad objectives –

- Whether and how ICTs influence society and recast patterns of community interaction?
- Whether and how technology mediated communication deals with socio-cultural variables and affects delivery and utility of e-services?

The above queries are also broad enough to insinuate multiple research interests. Hence the scope of the present project has been narrowed down to tangible outcomes in terms of specific objectives and the location of the study limited to geographical areas that would provide access to multiple ethnic communities required to lend the much needed veracity to the analysis. Also a specific ICT project implemented in the region is taken up for the study as this would lend focus to the discussion.

The Community Information Centre Project

The Community Information Centre (CIC) project of the central government rolled out in collaboration with National Informatics Centre (NIC) a unit of Department of Information Technology (DIT), Government of India, and respective state governments in the northeast (comprising eight states Assam, Nagaland, Mizoram, Tripura, Arunachal Pradesh, Manipur, Meghalaya and Sikkim) is taken up as a case study. This is the first broad-based e-governance project that was introduced in the region. NIC in collaboration with the state governments took up the project of

establishing 487 CICs at the block level of each of these states with an objective to address the basic needs of citizens such as information, education, entertainment and health services through the CICs. It was envisaged that the CICs would serve as a platform for e-governance; e-learning and other IT enabled services in the states. The major objectives for establishment of CICs were bridging the digital divide and extending e-governance services to areas at the periphery of a particular state. The institutional dynamics of the project is discussed in detail in Chapter Four.

Study Area for Research

The present project takes up northeast India as the field of enquiry because it provides the right milieu to examine the ICT mediated development initiatives in a traditionally disadvantaged area due to geographical and political reasons. The northeastern (NE) states of India characterized by isolation from the mainstream, hostile terrain, poor availability of power and a long political history of insurgency pose a challenge to any development effort, including those related to ICTs.

The landlocked region shares one percent of its territory with India and the remaining 99 percent is international border with Nepal, China, Bhutan, Myanmar and Bangladesh. Restricted access to infrastructure and resources has made economic development difficult but the location remains strategically significant in terms of politics and national security. The NE region geologically is marked as seismic zone five[1],

[1] Depending on the intensity of ground movement during an earthquake India has been divided into four zones, viz zone II, zone III, zone IV and zone V. Demarcation of these zones are done with respect to a

susceptible to frequent earthquakes and hence requiring special standards for infrastructure development (BIS, 2010). The region also receives highest rainfall per annum in the country (IMD, 2010).

The region is home to multiple tribal communities with vibrant indigenous communication and administrative practices. Of the 635 tribal communities in India 200 are found in the northeast. The tribes of this region are different from their counterparts in middle India in many respects. Most of these communities have their roots outside India and speak languages of Tibeto-Burmese and Austro-Asiatic strain. They constitute local majorities with recognized territories and have survived in relative isolation for long periods. The eight northeastern states together boast of an average literacy rate (68.77%) higher than the national average (65.38%) and many use English as the official language and the roman script for their own languages, giving them better access to resources and higher communication skills rarely evidenced among other tribal communities (Verghese, 1996; Census, 2001).

Each community with a distinct cultural and political identity subsists in an environment where they constantly have to negotiate on issues of 'space' and 'sub-national aspirations'. Every generic identity, including minorities within that, proclaims their cultural and social differences. They speak in different voices and ask for a culture

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ground shaking intensity scale called Modified Mercalli Scale or MSK 64(Medvedev- Sponhener- Karnik) intensity scale. According to MSK 64 intensity scale the severity of earthquake or destruction is divided into a scale of 1 to 12 in the increasing order, scale 1 being the lowest while scale 12 represents the severest. Zone V covers those regions of our country where the earthquake intensity is 9 or higher as per MSK 64 intensity scale – Source BIS, GoI

and group specific liberation. There is a constant effort towards differentiation from 'the other' (ex-region mainlanders) and resistance towards being overwhelmed culturally, demographically and in terms of land rights and economic opportunities by 'them'. Such claims of identity in the context of the northeastern region play a different politics of recognition by way of a negative dialectic that is not based on reciprocity, but based on counterfactual responses. This politics of ethnic identity, according to many, has largely failed to include the discourse of development and empowerment of the local people who remain sceptical of the state sponsored development paradigm and interrogate it as pro-displacement developmental aggression (Verghese, 1996; Biswas & Suklabaidya, 2008; Hussain, 2008).

Development ideologies within the region thus get constantly repositioned to negotiate and accommodate the sometimes conflicting positions of its people. Free and equitable access to information and control over its concurrent resources, the dialogic relation facilitated by it with the state, the politics of information, identity and representation, - all play a significant role in determining whose development ideology and whose voice gets heard in a socio-cultural and political context wherein divergent opinions and ideologies demand space. Can ICTs which are credited to facilitate better and more equitable information flow and sharing of ideas ameliorate the dialogue process to arrive at a consensual developmental doctrine? What role do institutions such as the CICs play in this complex mosaic of information flow? All these issues find relevance in the present empirical study undertaken in the northeaster region.

Identification of States for Study in NE

Two contiguous states of Assam and Nagaland are selected to represent the expanse of cultural variation, development dichotomies and ICT penetration rates in the region. Both these states have articulated their development focus and challenges through Human Development Reports. Thus their sensitivity towards development and efforts to concretize and conceptualize priority areas of development makes them amenable for conducting a comparative study situated in the context of ICT4D approach within the region. Nagaland is also the first state to be curved out of the province of Assam after independence starting the process of reorganization within the northeast region which today is a constellation of eight states. The two states are selected so as to also represent the diversity within the region in terms of governance structures and cultural identities. The following overview of demographic details of Assam and Nagaland will provide an introduction to its people and the veracity of their contrasting features.

Assam:

Assam shares its border with two foreign countries Bhutan and Bangladesh and is connected to the rest of India via West Bengal by a narrow strip of land of about 25 km popularly called the 'chicken's neck'. The state was reorganised till recently with the formation of separate states of Nagaland in 1963, Meghalaya in 1972, Mizoram and Arunachal Pradesh in 1987. Assam according to 2001 census covers an area of 78,438 sq. km. with a population of 2,66,38,407. The percentage shares of area and population of the state to that of the country are 2.4 and 2.6 respectively. Tribals comprise 12.89 % of

Assam's population and there are more than 14 major tribes recognized in the plain areas of the state and another 14 including 37 sub-tribes recognized in the tribal majority autonomous district councils. According to Sixth Schedule of the Indian constitution Assam has three tribal areas with autonomous district councils - North Cachar Hills District., Karbi Anglong District and Bodoland Territorial Areas District.

The 27 districts of the state can be divided into three distinct natural regions –

(1) The Brahmaputra Valley comprising 22 plain districts

(2) The Hills areas consisting of Karbi Anglong district and N.C. Hills district and

(3) The Barak Valley covering three districts of Cachar, Karimganj and Hylakandi

The hill areas separate the plains settled along the two primary rivers of Assam - the Brahmaputra and the Barak.

According to the Assam Official Language Act (1960), Assamese, Hindi and English are recognized as official languages of the state along with Bengali which is also recognized as an official language for the Barak Valley region. The autonomous district and area councils are allowed to use their own language for official purposes within their jurisdiction. The overall literacy of the state is 52.55 % (Male: 61.9%, Female: 42.65%) according to 2001 census.

In Assam 59.43 % of rural population live below the poverty line with the highest percentage of BPL in Goalpara district (75.25%) and the lowest in Jorhat district (41%).

Nagaland:

Nagaland was created out of Assam in 1963 and shares its borders with Assam, Arunachal Pradesh and Manipur nationally; and international border with Myanmar. The state is divided into 11 districts distributed over an area of 16578 sq. km.

Nagaland is a predominantly tribal state with tribal people constituting 89.1 % of the total population of 19,90,036. Of the five communities notified as scheduled tribes in Nagaland (namely Naga, Kuki, Kachari, Garo and Mikir), the Naga constitutes the majority of 98.2 %. The census of India again recognizes 16 major tribes among the Naga. Apart from that there are a number of other sub-tribes within them identified locally. Each tribe is distinct and unique in character from the others in terms of customs, language and attire.

The official language of the state is English, and Nagamese- a pidgin Assamese, is used as the common language of communication between tribes who speak different languages and dialects which are mutually unintelligible. The literacy percentage of the state is 67.11% (Male: 71.77 %, Female: 61.92 %) which is above the national average of 64.8 % (Male: 75.3 %, Female: 53.7 %). However, wide disparity is discerned among the various Naga sub-tribes in terms of literacy with the Ao at the top with literacy rate of 85.9 % and Konyak at the bottom with literacy rate of 40.2 %. Approximately 33 % of the state's population lives below the poverty line. The majority of the ST population of Nagaland, 98.5 %, is Christian (Census, 2001).

Identification of Districts within States for Study

The field of study is adequately distributed over both Assam and Nagaland where three districts in each state is selected on the basis of (a) differential levels of e-readiness, HDI and success in CIC operation (b) the districts being representative of the cultural diversity and geographical expanse of their respective states and (c) a border district in each state is selected in order to enable study of cross-border dynamics.

Based on the above criteria the districts selected in Assam and Nagaland is as follows-

Assam: Kokrajhar , Hylakandi , Jorhat

Nagaland: Mon, Mokokchung, Dimapur

As the CICs form the ultimate unit of analysis, within each of these districts one CIC is identified for analysis with respect to operational structure, service delivery & participation, and usage by community members. One village located at considerable distance from the CIC is selected for interaction with the community members and key functionaries within the locality. Table 1 provides an overview of the demographic profile of the selected districts for the present study.

Table 1: Profile of Selected Districts:

	Districts	Population			Percentage of Tribal Population	Largest Tribe	Major Religion	Literacy Rate			Sex Ratio	HDI Score according to State HDR	HDI Rank
		Male	Female	Total				Male	Female	Total			
ASSAM	Kokrajhar	4,66,191	4,39,573	9,05,764	33.67	Boro	Hindu	60.32	40.40	51.63	943	0.354	15
	Hylakandi	2,80,513	2,62,359	5,42,872	0.15	Barman	Muslim	68.24	50.46	59.64	935	0.363	11
	Jorhat	5,17,015	4,82,206	9,99,221	12.32	Miri	Hindu	83.62	68.49	76.34	933	0.650	1
NAGALAND	Mon	1,38,753	1,21,899	2,60,652	93.93	Naga*	Christian	46.56	36.35	41.83	879	0.450	8
	Mokokchung	1,20,929	1,11,156	2,32,085	93.78	Naga*	Christian	86.03	81.61	83.92	919	0.705	2
	Dimapur	1,66,663	1,42,361	3,09,024	60.70	Naga*	Christian	81.05	71.76	76.82	854	0.733	1

***** This category of 'Naga' is not exclusive of other tribes of Nagaland and indicates census responses by people who did not mention their sub-tribes within the broad category of 'Naga'. The second largest tribe recorded in the districts of Mon, Mokokchung and Dimapur are Konyak, Ao and Sema respectively who are traditionally recognized to be aboriginals of the regions and constitute local majorities.

Source: Census of India 2001 and State Human Development Reports of Assam and Nagaland

Assam (0.407) and Nagaland (0.623) have differential human development index drawn according to United Nations parameters. Also the states are at different levels of e-readiness and performance according to national e-readiness index. While Assam is a below average achiever, Nagaland is among the least achiever states. Again as far as performance in CIC sector is considered Assam reported to be the best performer in the region and Nagaland a lower run state (NIC, 2006). However according to other social variables like literacy, gender-sensitivity etc. Nagaland is a better performer than Assam. Thus it becomes interesting to evaluate the interface of social variables with levels of e-readiness in the region and see whether ICT can be a social enabler for multi-cultural, multi-lingual societies. Again Nagaland is a predominantly tribal state with tribal kinship and administration retaining its foray in all spheres of public life in urban and rural set-up alike. Adaptability of traditional administrative systems to new patterns of e-governance and whether or not new communication patterns recast the traditional fabric, posits an interesting research question that could be evaluated in Nagaland.

Objectives for the Present Study

The specific objectives outlined for the study are -

- To examine the process of policy formation and implementation of the CICs in northeast as a mechanism for ICT4D intervention;
- To examine the CICs and their working in the northeast with respect to -
    a. Institutional relations that formulated and implemented CICs in the northeast in general and Assam and Nagaland in particular;

b. Expected outcomes of the goals of CIC in the northeast towards development and governance;
c. Community dimensions and perception of CICs with respect to the jurisdiction of selected CICs in Assam and Nagaland;
d. Influence on existing mode of communication and information flow in select districts of Assam and Nagaland;
e. Compatibility with the information and communication needs of the select communities in Assam and Nagaland;

- To critically examine the CICs in selected districts of Assam and Nagaland with a view to comparing their contextual differences and similarities if any.

Research Design - Qualitative Case Study

The catalytic role of information and communication technology for development gets consolidated in various international efforts throughout the developing world in the form of e-governance kiosks, tele-centres, community information centres etc. Though the experiences of tele-centres projects around the world are varied, considerable work needs to be done to evaluate their impact on communities. Proliferation of ICT intervention and with it the coming of tele-centre projects is a very recent phenomenon and most of these projects are currently either entrepreneurial ventures or development projects. Both requiring multi-method analysis approach (Aalami & Pal, 2005).

The purpose of the present study is to gain insights into the policy planning, implementation and usage of information and communication technologies for development in northeast India by using appropriate research strategies. A qualitative case study approach is adopted to study the CIC project which was the only major centrally sponsored ICT4D initiative designed specifically to be made operational all over northeast[2].

The case study approach is found to be appropriate for the problem under the present study as following Yin (1981) it is an empirical inquiry that investigates a contemporary phenomenon within its real life context using multiple sources of evidence. The approach is further validated as many earlier studies have also used case study as a common methodology for the impact analysis of ICT4D projects (Xavier & Gupta, 2003; Aalami & Pal, 2005; DIT, 2006; Roger & Rajesh, 2006) employing different parameters of analysis. Within the present project, six CICs - one in each selected district, are taken as units of analysis for pattern-matching to arrive at an exploratory understanding of their operational context within the region and beyond.

Again, realizing the multi-level implementation of the CIC project and its projected role as a change agent for local communities, a multi-method approach involving, policy analysis, institutional analysis and ethnography is found appropriate for the present study.

[2] The project was later extended to Jammu & Kashmir and Andaman & Nicobar Islands.

Institutional Analysis:

Melody (1987) emphasizes that information, and the means for its communication, have a fundamental and pervasive influence upon all institutions. He maintains that –

> "Institutions reflect the patterns of interaction between and among individuals, acting within or between groups, or through formal organizations…It is the patterns of interaction that maintain an institution, and changes in patterns of interaction bring about changes in institutions."

Following him, the dynamics of communication within any institutional framework needs to be understood in order to analyze how the objectives of the policy design gets translated into an operational project and how different players influence the delivery mechanism. Starting from policy planning to project design, execution, operationalization and ultimate usage by the local communities of northeast, the CIC project has an intricate matrix of stakeholders with differential degrees of control, jurisdiction and participation.

The first phase of the present study is thus institutional analysis of CIC project planning and implementation in India. The CIC project is analyzed at three levels of formulation, implementation and operation based on the theoretical framework of ICT4D approach. This involves primary documentary analysis of policy papers along with secondary analysis based on reports and other documents. Discussion with policy planners, strategists and officials provide insight into the development imperative of using ICTs in the country.

When the international discourse is replete with concepts of ICTs improving the opportunities for individuals and societies, developing nations like India have responded by formulating visions of incorporating new age technologies in their development agenda through projects such as the CIC. While it may be partially motivated by the need to consolidate international support and sanction for its development strategies, it also requires careful planning in allocation of already sparse infrastructure and financial resources. Thus within the scope of the present study it becomes imperative not only to understand the CIC policy formulation in particular but to also see how it fits into the larger ICT4D policy framework of the country in terms of articulating specific targets to be achieved and parameters identified to map the growth trajectory.

Starting with mapping the notion of 'development' among stakeholders of the CIC project, the present study goes on to make a development need assessment among policy planners, facilitators and last-mile users at the community level. This facilitates contextualizing development within the broad framework of ICT4D approach specifically in northeast. A further mapping of ICT resources and patterns of access and usage among community members provides insights into the adequacy of the project objectives in meeting community aspirations.

Aspirations of people are culture specific and the projected needs vis-à-vis their facilitation by ICT mediated service delivery channels is an area of enquiry that requires engagement with people and their cultures which is possible only through an ethnographic study.

Ethnography:

An ethnographer's traditional emphasis is on emic issues, those concerns and values recognized in the language and behaviour of the people being studied. A qualitative researcher according to Stake (1995) has to encourage experiential learning so as to facilitate 'naturalistic generalization' which stimulates further reflection and optimizes the opportunity to learn rather than just provide objective description of complexities. An ongoing interpretative role of the researcher is prominent in qualitative case study.

In the present study, an ethnographic analysis of the local communities, their tacit knowledge and traditional communication patterns is juxtaposed against the technology mediated communication systems to test the compatibility of indigenous administrative practices with the e-governance framework. For the purpose of the present study CIC community is understood to include multiple stakeholders - those responsible for implementation and facilitation of the project, service mediators and the end user or target beneficiary. Representatives of civil-society organizations who regularly operate within the local communities and are better abreast of their social realities and concerns were also consulted to get an overview of the etic perspectives. The present study puts special emphasis on women and youth to analyze the empowerment function of ICT and what opportunities are created for them for increased participation in social life, self development and governance.

Following ethnographic approach to study ICT4D projects (Tachi, Slater & Hearn, 2003), an attempt is made to make sense of the complete range of social relationships and processes within which the CIC project is doing its work.

This includes –

- The immediate circle of workers and active participants – how they manage the CIC project and how it fits into their lives;
- Users – their lives and priorities both within the project context and also within their local social networks;
- The wider social context of the project – social divisions within the community, language issues, local economy, social and cultural resources, power and institutions in the community; and
- The existing communicative ecology with a scope for the CIC project to fit into it.

While identifying the foci of analysis some earlier experiences of evaluation of ICT4D projects are referred which provide insights into national and international evaluation perspectives. These however do not form the core of the analysis planned for the present study but would provide support towards validation of the method adopted.

The Acacia Initiative of the International Development Research Centre (IDRC) Canada and its partners are carrying out such research on tele-centres in Africa, using multi-method approach in recognition of the complexity of assessing changing information and communications environments, and the need for interpretative understandings of their role in development processes. They have developed an

Evaluation and Learning System for Acacia (ELSA) which is based on creating an evaluation and learning loop between various stakeholders of the project at different levels whereby the research, evaluation and monitoring teams regularly provide feedback to all stakeholders including policymakers who can implement the learning into internal project management as well as apply the results to further projects and programmes. The evaluation deals with the political economy of knowledge for local African communities in terms of maintaining a critical balance between the exogenous and endogenous sources of information and the relation between its suppliers that is affected by the tele-centres. The Acacia initiative recognizes that the role of ICTs in development needs to be analyzed within the social and cultural context of the local communities (Whyte, 2000).

An UNDP-APDIP study (2006) of 18 rural development projects in India using ICTs for governance and poverty reduction analyzes them in terms of project design parameters, successfulness in eliciting community participation, project outcomes and political economy of operational dynamics.

Centre for Electronic Governance, IIM Ahmedabad and National Institute for Smart Government, Hyderabad have developed another e-government assessment framework and identified five attributes to be assessed - service orientation, technology, sustainability, cost effectiveness and replicability.

Thus there are no standard methodologies for evaluation of ICT4D projects but an overview of various studies indicates certain common areas of interest which can be

divided into three phases of planning, execution and impact assessment/feedback. However most of these studies have used quantitative data analysis techniques. In the current qualitative enquiry the research questions are experientially defined and the analysis is drawn by observing them within the context of local socio-political cultures.

The different sources of evaluation mentioned above and the objectives allow me to construct a typology or formulation where the foci of research and research questions can be delineated as follows –

Research foci	**Research questions**
Information and communication infrastructure	○ What communication networks are used by the local communities? ○ What ICT infrastructure is available and accessed by the community?
Defining development	○ How do stakeholders define development and whether it has been institutionalized?
ICT4D approach and implementation	○ What policy initiatives have been made to implement ICT for development? ○ Who sets the agenda, implements, participates and uses ICT initiatives for/in the community? ○ What are the motivations/reservations in using ICTs for development among the community?
e-Governance through CICs	○ What are the stakeholder perceptions of good governance and how is it perceived to be achieved through CICs? ○ What services are made available through CICs and utilities thereof? ○ Has the e-governance system altered the control and power dynamics in the administration?

Community Participation	○ What are the formal and informal structures of community participation available in practice? ○ How do institutions of Local Self Governance operate during social/community decision making? ○ How have these structures influenced CIC project management?

Tools of Data Collection

Multiple tools of data collection including in-depth interview, focus group discussion and self administered questionnaire have been used according to appropriate locale and respondent profile. Participatory observation formed an important means of data gathering at the point of usage i.e. at the CICs to evaluate user behaviour, patterns of usage and user satisfaction.

Focus group discussions are conducted both at the institutional and community level. At the institutional level it is conducted for the CIC operators who are the ultimate agents of service delivery and facilitators for the user communities. Discussions at the community level were organized with village residents, functionaries of local governance institutions, women, students and members of civil society organizations operational in the area.

In-depth interviews conducted with key functionaries within the village communities like school teachers, women's self-help group members, village council and panchayat members, pastors and sometimes ordinary people facilitate need assessment

within the communities. Such discussions provide an insight into people's perspective on ICT mediated services. This also throws light on how problems and opportunities defined by users can help ICT projects such as CICs to creatively adapt to local needs.

As a sociological-ethnographic communication research, this study is drawn with the interest to understand the scheme with which ICT is operating within a remote, multi-lingual, multi-cultural region like northeast India. It is assumed that such a complex society like that in northeast India is likely to have its unique response to advances in ICT. In this context it is important to understand ICT with a sociological perspective in order to attend to the debate of technological determinism. Without putting the onus of social transformation on technology, it needs to be understood how it can create an enabling environment for various socially disadvantaged groups of the region.

Thus the study while adopting the framework of institutional analysis to analyse the relationships between the various institutions and stakeholders involved with the CIC project and approaching ethnography at the field, helps to understand the CICs in terms of policy formulation, planning and implementation.

CHAPTER FOUR

Information and Communication Technology Policy in India

The last quarter of the twentieth century witnessed the growth of a new informational, global and networked economy where the generation, processing and application of information based knowledge over an efficient and inclusive global network of linkages defines the productivity and competitiveness of the various social units of economic production. Inclusion in the network becomes a precondition for being a part of this global economy. Castells (2000a.) argues that "the penalty for being outside the network increases with the network's growth because of the declining number of opportunities in reaching other elements outside the network." Control over and access to modes of production and dissemination of information becomes the force behind economic change and along with it is observed the emergence of information-based economies where the action of knowledge upon knowledge itself becomes the main source of productivity. Concomitant technological advances further engendering this informational mode of production where all nation states have to gear up their resources to tap the potential of these emerging opportunities.

Governments in developing countries have responded to the need of this situation and taken up initiatives to harness the ICT boom to leverage economic growth. Huge investments are committed towards growth of the sector in the hope that ICT can enable the poorest of developing nations to leapfrog traditional problems of development like poverty, illiteracy, disease, hunger, unemployment, corruption, and social inequalities so as to move rapidly into the modern information age.

This chapter first provides an introduction to the evolution of IT policy in India as a process whereby the priority areas of development get identified under influence of market forces and concerns of welfare dynamics. The CIC project is then discussed in the context of these developments as a special policy initiative taken up for the northeastern region of the country. The last section of the chapter provides a description of the operational structure of the CIC and the institutional mechanisms that govern its functioning in the two states of Assam and Nagaland.

ICT Mission India – An Overview to the Shaping of Indian IT Policy

In India the basic hope is that ICT can be used in a double capacity (Kenniston, 2002):

- First, to enhance India's international economic position by building further on the success of the Indian software industry.
- Second, to develop programs of 'IT for the Masses' that would play a critical role in solving the problems of development that affect large sections of the Indian population.

The second concern is of wider consequence and interest for the common masses as it calls for greater public interface.

Government of India has been very enthusiastic about the growth of the IT industry given its marked success in terms of wealth and employment generation starting from the early 90's. During the last two decades the Indian IT industry has developed as a major and credible source for global outsourcing. As projected in the tenth five year

plan (2002-2007) the IT sector has been one of the fastest growing segments of Indian industry, growing from Rs. 13,200 crore in 1992-93 to Rs. 80,884 crore in 2001-02. Majority of the earning (almost 86% ~ Rs. 36,500 crore) coming from software export. Indian IT industry was expected to become an engine of growth and productivity improvement for all sectors of national economy.

The government took up IT as a thrust area of development in its tenth five year plan[3] and put forth strategies to consolidate its position in the global IT market while sustaining its efforts to expand the domestic market which provided newer opportunities for growth. The rise of the industry also necessitated putting in place a policy framework and regulatory structures for the emerging IT hardware manufacturing sector. In India, where 70% of the population resides in rural areas and 40% are below the poverty line the government considered IT as an agent of transformation of every facet of human life to bring about a knowledge based society in the twenty-first century. Towards the goal of IT for all by 2008, policies were provided for setting the base for a rapid spread of IT awareness among the citizens (IT Action Plan, GOI).

The government had come to recognize new age information technology as a set of media, devices and services that can facilitate information transparency, good governance, empowerment, participative management and grass root democracy. It committed itself to bridging the digital divide; promoting the development of software in

[3] Since 1951 the Planning Commission of India has been entrusted with the responsibility of formulating five year plans for effective and balanced utilization of resources and determining priorities for development. The country is currently executing its eleventh five year plan for the period 2007-2011.

Indian languages; and improving the quality of manpower in IT sector as part of the plan strategy.

With a view to facilitate fast paced growth of IT industry in the country a National Task Force on Information Technology and Software Development was set up by the Prime Minister's Office on May 22, 1998, under the Chairmanship of Jaswant Singh the then Deputy Chairman of Planning Commission. Former Andhra Pradesh Chief Minister, Chandrababu Naidu and Union Minister for Science and Technology, M.G.K. Menon were co-chairpersons while the then Director General of NIC, Dr. N. Seshagiri was the Member-Convener of the Task Force. Comprising of a sixteen member expert panel and five co-opted members this taskforce had a mandate to formulate the draft National Informatics Policy after active consultation with industry and academia. It was also supposed to suggest a strategy to instil public faith in the benefits of an IT driven social structure and prepare the citizenry to adapt to the needs of the emerging knowledge-driven global civilization.

The terms of reference for the Task Force provides an indication about the priorities set by the government towards use of IT for national development. Along with the vision to harness the power of IT towards development of e-commerce and other business initiatives, there was the mandate to make this technology accessible to the common masses through IT training for all and internet connectivity for rural people with improved PC density, e-governance and developing Indian web-content in regional languages. This was coupled with an understanding of the dynamic nature of this

emerging technology in terms of the opportunities created through convergence of telecommunications, computers, consumer electronics and the media infrastructure. It was hoped that IT would prove immensely useful in all areas of national economy - agriculture, industry, trade and services - and would contribute significantly in making India a global economic power.

The Task Force submitted its report in three parts in 1998-1999 as the Information Technology Action Plan Part I, II and III. The (108) Recommendations of the IT Action Plan Part-I emphasized the policy framework required for creating an ambience for the accelerated flow of investment into the IT sector, with specific orientation towards the software industry. It included recommendations related to telecommunication policies and procedures, cyber laws, labour laws for IT industry, fiscal incentives and financial matters, promotion of IT in schools and rural areas, increase in computer literacy and computer penetration in the country. Part-II furnished 84 policy instruments for the development, manufacture and export of IT Hardware. The Task Force advocated that the software industry and the hardware industry are two sides of the gold coin representing India emerging as a global IT super power. The success of one, whether it is export of software of $ 50 billion by the year 2008 or IT penetration drive for realizing IT for all by 2008, depends on the concomitant success of the other. Part III of the Action Plan provided the framework for a Long Term National IT policy. This section highlighted on strategic policies for the IT industry, IT research, design and development, IT human resource development, citizen-IT interface, content creation and content industry, micro electronics, mission mode creation of fibre-optic infrastructure (Project Sankhya Vahini),

working capital financing for the IT sector and organizational structure instrumentalities for operationalization of the recommendations. As many of these recommendations in Part I, II and III were overlapping, five different expert groups were constituted to look into them and ensure speedy implementation.

A new Ministry of Information Technology was set up in October 1999 "to be the nodal institutional mechanism, for facilitating all the initiative in the Central Government, the State governments, academia, the private sector and successful Indian IT professionals abroad" (PIB, 2000). It was re-christened as Ministry of Communication and Information Technology in September 2001 given the increasing convergence between communication and IT. The ministry today has under its ambit the Department of Information Technology, Department of Posts and Department of Telecom.

The Information Technology Act was passed by the Indian Parliament in 2000 to provide legal recognition to electronic communication, storage and transaction of information both for government agencies and business enterprises thus providing a regulatory mechanism for e-commerce and e-government. The act was amended in 2008 following recommendations of an expert committee to make it technology neutral (by replacing 'digital signatures' with 'electronic signatures') and more flexible in terms of applicability. Section 48 of the act also provides for the establishment of a Cyber Regulation Appellate Tribunal to adjudicate matters relating to all cyber contraventions falling under the provisions of this act. The tribunal has been established in 2009 at New Delhi.

India is the first country in South Asia region to frame a comprehensive IT act following the Model Law on Electronic Commerce adopted by the United Nations Commission on International Trade Law (UNCITRAL) in 1996. This model law suggests a pattern for law-makers to consider adoption as part of their domestic legislation. By providing functional equivalent in electronic media for paper-based concepts such as "writing", "signature" and "original" the Model Law provides standards by which the legal value of electronic messages can be assessed. States enacting legislation based upon the model law have the flexibility to depart from the text. The Model Law also contains rules for electronic commerce in specific areas.

With the stated commitment of extending the benefits of IT driven development to all sections of the society especially to the disadvantaged, the Government constituted a Working Group on Information Technology for Masses on May 10, 2000 as a follow up to the Task Force recommendations. This working group had the mandate to evaluate existing schemes of various government departments and suggest comprehensive plans for citizen participation for taking IT to masses.

According to the working group, the internet could serve as a binding force for people of different cultures and traditions and serve as a means of 'Digital Unite' rather than 'Digital Divide' in India. With the vision towards IT for all by 2008, the working group recommended large scale setting up of internet kiosks (~ one million) to make IT accessible to those unable to afford a personal internet connection. The second strategy suggested by the group towards making IT an agent of inclusive growth was to empower

the people to demand for transparent and accountable governance from the State and better services from the private sector. It emphasized on infrastructure development in IT sector, education, e-governance and a country-wide awareness campaign about the benefits of IT in everyday life.

The subsequently framed tenth five year plan saw the culmination of these developments wherein IT was taken as a thrust area of development. The Tenth Plan Working Group on IT projected that IT-enabled services would generate revenues of Rs. 81,000 crore and provide employment for 11,00,000 people in India in the next eight years. The vision and the corresponding actions planned can be enumerated as under-

Table 2: Vision and actions taken up in Tenth Plan for growth of IT

Vision	**Action**
To evolve as market leaders in software development and exports of IT-enabled services	Setting up Software Technology Parks by the government and the private sector
To promote e-governance, development of software in Indian languages, IT for masses, distance education	• Community Information Centre project in 487 blocks in northeast • Support for Multi-functional Application Community Centres • National Institute of SMART Governance • Creating Citizen Databases through ID/SMART Cards and • Development of Local Language Tools and Content

To encourage Human resource development in IT	• Vidya Vahini and Gyan Vahini for providing connectivity to Government Senior Secondary Schools (Vidya Vahini) and up-gradation of IT infrastructure in the higher learning institutions (Gyan Vahini) • Ensure quality standards in technical education in the country
To ensure cyber security in electronic communication	• IT Act 2000 amended in 2008 to make it responsive and inclusive to technological innovations and convergence • Promoting research in cryptography
To encourage research in emerging areas of Bluetooth technology, e-commerce, nano-technology and bioinformatics solutions	Some critical electronic materials identified for indigenous production

The CIC project was thus one of the various initiatives planned for expansion of IT to the far flung areas of the country, especially northeast to ensure IT access for the masses. The only distinction for this project when compared to various other government initiatives was that it was meant specifically for the geographic area of northeast.

The CIC project which forms the special focus of the present study is located broadly within the ICT4D vision of the government whereby efficient governance through improved citizen interface, localization of information and content, and support for educational development form the focus area of the project. Together it also highlights the special regional focus that the government accorded to northeast in terms of its strategic geographical and political location that prompted the CIC project to be

launched there. The project was replicated later in Jammu and Kashmir, another region of strategic significance, after launching in eight states of the northeast. Thus it becomes imperative to note that CICs were projected to serve a significant purpose of connectivity and development for special locations.

Northeast Development: Special Policy Focus

Many of the states in northeast were latecomers to the process of planned development as they were constituted very recently through reorganization of the larger province of Assam. Some states like Nagaland and Mizoram entered after the fifth and sixth Five Year Plans. Government of India has given special focus to the development of the region which is reflected in plan allocations where all the states in the region are given special category status. The development funding pattern for the special category states accords them built- in preferential treatment wherein development plans are almost entirely centrally financed on the basis of 90 per cent grant and 10 per cent loan. The region has a central ministry to look into its planned economic development. The Department of Development of North Eastern Region (DoNER) was created in 2001 and granted the status of a fully-fledged ministry in 2004. DoNER was created for the purpose of facilitating the relations and coordination between the Central Ministries and Departments and the State Governments of the region. Its mandate included improving the functionality of the infrastructure and creation of an investment friendly environment.

The North East Council (NEC) is another important body engaged in development planning in the region. It was created by an Act of Parliament in 1971 to act as an advisory body in respect of balanced socio-economic development of the North Eastern Areas. The council now functions in association with MDoNER and acts as the Regional Planning Body for the North Eastern Region to formulate specific projects and schemes, which will benefit two or more states. In addition, the NEC reviews the implementation of projects and schemes and recommends measures for effecting coordination in the matter of implementation of such projects and schemes. All the Governors and Chief Ministers of the constituent states are members of the council apart from the Chairman and three other members nominated by the President.

Creation of such specialized institutions to plan, monitor and manage the development process of the northeastern region through diverse funding mechanisms clearly puts into focus the special emphasis that is accorded to the region and in addressing its issues by the federal government of India. There is undisputed recognition of the fact that the region lags behind on certain developmental parameters compared to rest of India and hence deserves tailor-made solutions to mitigate the problems.

The development and underdevelopment paradigm in northeast:

The development planning for the region has been responsive to certain factors accepted as raison d'être for its underdevelopment. A troubled geo-political history, remoteness from mainland, poor infrastructure and governance combined with low

productivity and market access are understood to be the reason behind its beleaguered development since independence.

The Shukla Commission Report (1997) indicates four deficits that confront the Northeast - a basic needs deficit; an infrastructural deficit; a resource deficit, and most importantly a two-way deficit of understanding with the rest of the country which compounds the others. In addition to these, the region also suffers from a governance deficit. The Northeast Vision 2020 document developed by NEC suggests a six pronged strategy to overcome these deficits and promote inclusive development –

1. Empowerment of people by maximizing self-governance and participatory development through grass-roots planning;
2. Creation of development opportunities for majority of the people living in villages through rural development initiatives and by strengthening the agricultural sector;
3. Developing indigenous sectors with comparative advantage so as to utilize the resources of the region productively e.g. by boosting tourism, power generation, horticulture, floriculture etc.;
4. Capacity building for indigenous people and institutions;
5. Need for significant public investment for augmentation of transport and communication networks especially ensuring connectivity both within the region and with the rest of the country, translation of the Look East Policy to promote

economic relationships with East Asian and Southeast Asian economies and beyond, and ensuring proactive governance;

6. Creating an enabling and hospitable climate for flow of private investment in the region to harness the physical resources of the region for the welfare of the people.

Development strategies for the region thus clearly recognized the need for decentralized and participatory planning which would be sensitive towards indigenous people, their customs and institutions. Improving the connectivity with the region and its people both emotionally and physically always remained a cornerstone of development strategy for the northeast. Starting with recommendation for better telecom connectivity by the Shukla Committee report in 1997, to the emphasis on developing a robust optical fiber networking in the NE vision document there has been constant recognition of the need to strengthen the communication network of the region to surmount its geographic isolation.

It is in this continuum that the CIC project was conceived to attend to the multi-pronged strategy of extending connectivity, good governance and delivery of IT enabled citizen-centric services to the people of the region.

The Community Information Centre Project: As a Policy Imperative

The CIC project was designed with a vision to solve the connectivity problem of the northeast region. The project is intended to achieve 'freedom from distance and reduce the digital divide' by providing internet access and connectivity to the community at block headquarters so as to bring the benefits of information technology to the hitherto remote and relatively inaccessible areas of the region. The difficult hilly terrain of the region made establishment and maintenance of communication equipment difficult as well as very expensive. The CICs were expected to solve this problem and facilitate easy communication among villages or communities as well as create an access point for government information. Following the international recognition of IT as a harbinger of economic change, the CIC project was envisioned to bring the eight remote and disconnected states within the fold of development. Equipped with internet facilities the CICs provided access to citizen-centric services of the government, entertainment, IT training for local youth and facilities to browse for information and tele-consult doctors. They provided a platform to 'exchange knowledge and information with people from far-flung communities'. The stated objectives of the CIC project were –

- To provide ICT infrastructure at the block level
- To provide Web Access and Internet Services
- To create IT awareness among locals
- To provide computer training programmes
- To provide E-learning (Computer-Aided Learning Processes) and E-education

- To provide E-governance Applications
- To provide access to Socio-Economic Databases
- To provide E-medicine and E-consulting
- To provide Market Access and E-commerce
- To provide Weather Information
- To provide access to Tender Notification
- To provide E-employment Notification
- To provide Edutainment

The CIC project was thus planned to make interventions in the areas of IT awareness, education, health, agriculture, employment and governance through its service delivery platform. The CIC was expected to emerge as the hub of interconnectivity for the rural population with the government and its welfare agencies operational at the rural level.

CIC Project Structure and Organization in Assam and Nagaland

National Informatics Centre (NIC)[4] is a premiere Science and Technology institution of the Government of India, established in 1976 with the financial assistance of the United Nations Development Programme (UNDP). It was set up to assist the government in introducing computer based decision support system for development planning. Given its long experience in development of information systems and

[4] http://www.home.nic.in/

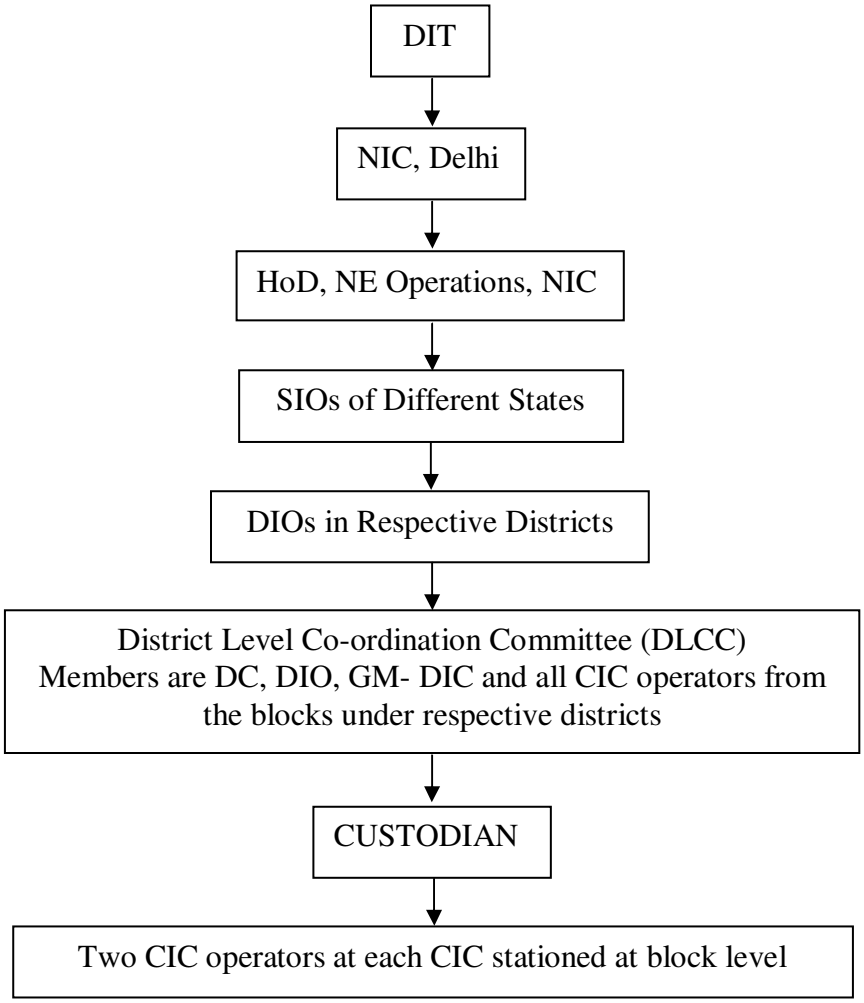
utilization of information resources, NIC was given the responsibility of executing the Rs. 242 crore worth CIC project in the eight northeastern states. It was to be a joint effort of the Department of Information Technology (DIT) under the Ministry of Communication and Information Technology (MCIT), NIC and the state governments. DIT was responsible to meet all expenses towards the capital cost of the equipment, software, peripherals and expenses towards their annual maintenance and operation charges (including satellite and transponder charges) and training of manpower required for running the centres. The understanding between DIT and the respective state governments was that NIC will have sole control over management and operation of the CICs for five years after which they will be transferred to the state government. Till then the state governments will be the custodian of the centre's property and ensure security and smooth functioning of the CICs.

While NIC would provide all hardware & software solutions and internet connectivity, the states had the responsibility of making available to the CICs locally relevant social content and ensure incorporation of e-governance applications within a stipulated time frame. The existing NIC network (NICNET) with nodes at central government departments, 35 State/Union Territory Secretariats and all District collectorates already provided the required backbone for nation-wide connectivity from the CICs through VSATs. The state governments were required to provide connectivity between their state secretariat and other public offices and the ClCs to facilitate citizens' interface with the government and implementation of e-governance initiatives.

Each state government was to designate one of its departments, preferably headed by IT Secretary of the state as the nodal department to oversee implementation of the CIC project in the state. In both Assam and Nagaland due to the absence of IT Department till 2003, the Directorate of Industries and Commerce (DIC) was given the responsibility of being the state nodal agency during the launch of the project. Each CIC would also have a custodian, located close to the CIC site who would be responsible for ensuring the security and safety of the site. The custodian will also monitor the work of the two CIC operators and take stock of other day to day affairs of the CIC including services rendered and submit periodic report to the nodal agency designated by the state for supervision of CIC and disbursement of the salary of the two operators. The custodian can be the Block Development Officer (BDO), Additional Deputy Commissioner (ADC), the principal of a government school or any such other person holding a respectable public office at the block level.

The planning and execution of the CIC at the district level was coordinated by the District Level Coordination Committee (DLCC). Its role was to formulate plans, in consultation with the district administration, regarding the services that can be possibly offered through the CIC to make it financially sustainable. NIC would manage the operation and maintenance of the CICs through its existing personnel located at the state and district level viz. the State Informatics Officer (SIO) and District Informatics Officer (DIO).

Fig. 1: Organizational structure for CIC project management in Northeast



After announcement of the project in February 2000 by the Prime Minister of India the project was implemented on a fast track basis surmounting the inclement weather, tough terrain and lack of transport facilities to some remote locations. The project was completed in two phases. In the pilot phase 30 CICs were set up in different states with the first two CICs at Umsning and Mylliem in Meghalaya inaugurated by August same year. The rest of the pilot project was completed by August 2001. Except Meghalaya and Sikkim the pilot projects were launched in only one of the districts in each state. Nagaon district of Assam had the highest share of 15 pilot CICs.

Table 3: CIC pilot project locations

	State	**District(s)**	**No. of CICs in pilot project**
1	Arunachal Pradesh	Papumpare	2
2	Assam	Nagaon	15
3	Manipur	Imphal East	2
4.	Meghalaya	Ri Bhoi & East Khasi Hills	2
5	Mizoram	Aizawl District	2
6	Nagaland	Kohima	2
7	Sikkim	East District & South District	2
8	Tripura	West Tripura District	3
Total		**10**	**30**

By August 2002 all the 487 CICs in the eight states were fully operational and the CIC project was launched well ahead of the target date set for August 2003. Assam having the highest number of 219 CICs was also the nodal centre for operational management for the project through NIC regional headquarter in Guwahati. SIO Assam

who was also the Technical Director for northeast operations was the overall in-charge of the project in the region.

Table 4: Spread of CICs across eight states

	State	Districts	Blocks	Pilot	Main
1	Arunachal Pradesh	15	56	2	54
2	*Assam*	23	219	15	204
3	Manipur	9	33	2	31
4	Meghalaya	7	32	2	30
5	Mizoram	8	26	2	24
6	Nagaland	11	52	2	50
7	Sikkim	4	40	2	38
8	Tripura	4	29	3	26
Total		**81**	**487**	**30**	**457**

Thus at the completion of the second phase Assam had the highest share of 219 CICs and Nagaland had the second highest number among the other states with 52 CICs located in the state.

CIC infrastructure and location:

NIC assured to provide CICs with all the equipment required to serve as nodal centres for IT training and delivery of e-governance services at the rural level. A set of vendors were identified through tendering process to supply and install the equipment. These vendors also remained responsible for regular up-keep and maintenance of the equipment throughout the project period of five years. Every CIC was equipped with one server machine and five client systems loaded with all necessary software (Window 2000 Server, XP BackOffice, Windows Me, MS Office XP), VSAT connectivity , two UPS

(1KVA & 2KVA), one Laser Printer, one Dot Matrix Printer, one Web Camera, one TV with IRU (for video broadcasting). The CICs were also provided with one generator set each (2KVA) recognizing the power shortage scenario in most northeastern states.

The CICs were to be located at the block headquarters of each district of the eight states. The location of the CICs was to be such so as to facilitate easy access for common people. According to the plan strategy the state governments were to identify the location for the CIC which met certain set criteria specified by NIC. Apart from being easily accessible the CIC location was to be appropriate in terms of security of the expensive equipment, installation of air conditioning, VSAT antenna, requisite electrical works and protection from flooding and seepage. Each site was to be built with an estimated expenditure of 3.75 lakhs.

In both Assam and Nagaland CICs were mostly located near government offices at the block level in order to facilitate better coordination between the two in terms of development and execution of citizen centric services. Moreover, by being located close to the development functionaries at the block level, the CIC could gain better visibility and create awareness about the benefits of ICT among the people who regularly visit these offices for their personal work.

Table 5: Location of CICs in Assam and Nagaland

	Education	**BDO**	**SDO**	**Circle**	**EAC**	**ADC**	**Others**	**Total**
Assam	75	115	6	14	0	0	9	**219**
Nagaland	1	8	18	0	14	10	1	**52**
Total	**76**	**123**	**24**	**14**	**14**	**10**	**10**	**271**

When the CICs were not located near a government office the next priority was given to educational institutes, mostly government high schools, so that IT training could be made accessible to the younger generation of rural northeast. In Assam of the 219 CICs, 115 were located at the BDO's office and 75 at educational institutions. Of the remaining 29 four were located at community owned buildings like club houses etc. while the rest were attached to other government offices like Sub Divisional Officer, Circle Officer and District Industries and Commerce Centre (DICC). In Nagaland all of the 52 CICs, except one in Tuensang District which was located in an educational institute, were under the custodianship of government officers like the Sub Divisional Officer (18), Extra Assistant Commissioner (15), BDO (8), ADC (10) and Youth Resources Officer (1). Visibility of the CICs was insured by the public locations selected and it was expected that it will improve the possibilities for the common people to become interested in its services.

CIC stakeholders:

In the field of information systems a stakeholder is a person or group who is able to have an impact on the eventual system in a practical sense (Coakes, 1999). Any e-governance project involves many stakeholders who span across from the implementing agency, which is either the government or a private organization, to the intended user of the module. De` (2005) categorizes these stakeholders as demand-side stakeholders i.e. those who consume the services of the system, and the supply-side stakeholders i.e. those who fund, design, implement and maintain the system. These categories are not watertight and there are myriad intermediaries between these two primary categories with

different role assignments within the project plan. While some of these roles may be structured and institutionalised others may be self assumed due to interest or expected impact. These stakeholders have differential levels of power and there emerges a hierarchy of roles among them. This hierarchy is either influenced by or influences the nature and scope of the project. The intermediary stakeholders thus subsume huge significance in the entire chain of operations as their articulation, initiation, involvement and execution greatly affects the implementation and ultimate success of the initiative.

In the entire scheme of CIC project, staring from implementing agency till the intended user community, the various stakeholders that can be identified for the CIC project are policy planners, project facilitators, state government functionaries at state headquarters, district and block level, village administrative bodies, social, tribal and civil society organizations and different sections of the public directly or indirectly coming under the span of target citizenry. A skeletal map of the stakeholders of the CIC project would indicate the following -

- DIT official at New Delhi
- NIC official at New Delhi
- NIC official at state headquarter (Assam and Nagaland), SIO and the like
- Members of State IT department/nodal agency in-charge of state operation
- DIOs in respective districts as last mile implementing official
- Deputy Commissioners at district headquarters
- Administrative officials at block level like BDO, SDO or Circle Officer
- CIC operator(s)

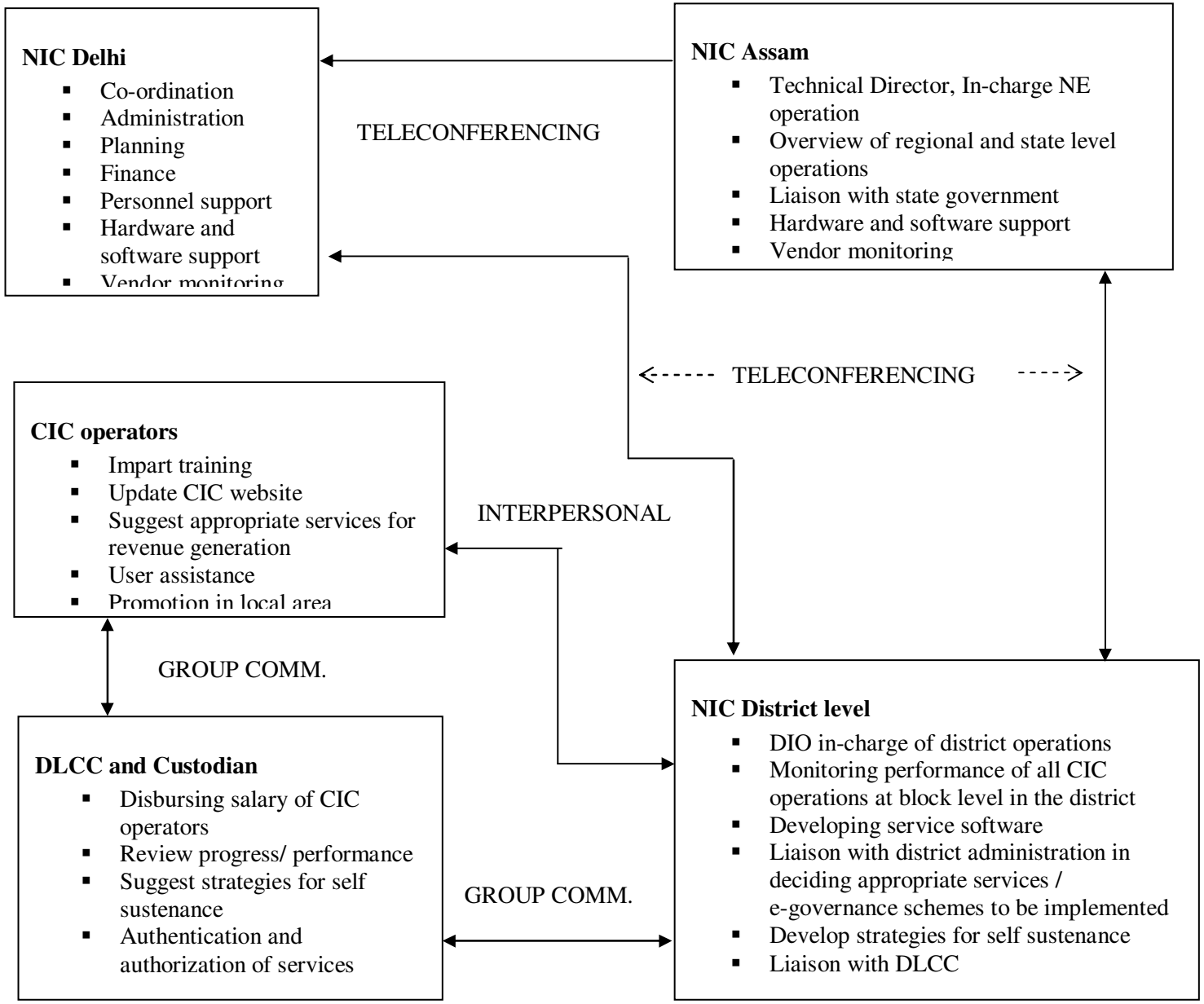
- Members of Village Panchayet / Village Council within blocks
- Members of other community based organizations within villages
- Visitors/Users of CIC – students, professionals, tourists, journalists, farmers
- Villagers (potential users) including women and youth

For the CICs the officials employed by DIT and the state government including the CIC operators formed the supply side stakeholders while the members of the local rural communities formed the demand side stakeholders. The respective roles of these stakeholders in the hierarchy chain are indicative of the level of their participation in the management and control over decision making.

Organizational Flow of CIC:

Being a multi-stakeholder project, all members did not have equal role in the organizational management structure specified for the operation of the project. The channels of interaction and role division between different stakeholder units are represented in Fig.2. Major ownership, control and decision making power for project planning and execution was concentrated either with NIC Delhi or their regional headquarter at Guwahati. NIC officials at district level were vested with supervisory powers while state officials at most levels had token involvement in terms of ensuring proper site construction and logistic support during installation.

Fig. 2: Scheme of communication and role division for CIC project implementation and monitoring



The memorandum of understandings that were signed between the DIT and different state governments clearly specifies the role division between their respective functionaries. The sole ownership, control and management of the CICs was vested with NIC and its officials for the five year period since installation following which the state governments would be handed over the charge of the CICs. Following this the stake of the state governments during the term period was in terms of ensuring development and delivery of citizen centric services.

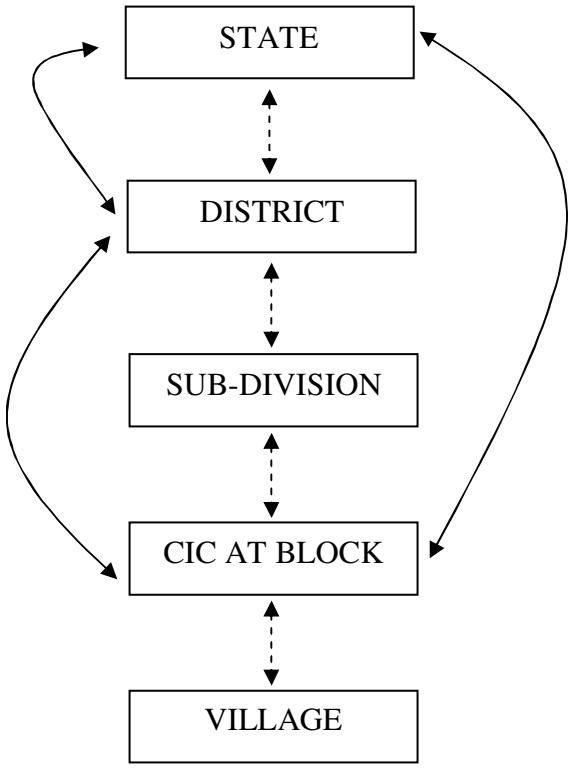
The main triad that was involved with the operation of the CICs was the CIC operators, vendors and NIC officials. Every Thursday NIC officials at district, state and Delhi office would meet the vendors through teleconferencing to discuss maintenance and management issues.

At the operational level the role of the custodian and DLCC got limited to customary forwarding of performance reports for processing the salary of the operators. The CICs though situated at the block headquarters mostly within the premises of the BDO or other government official, owing to the absence of any official directive, there was no sharing of information on development schemes undertaken at the block level for updating into the CIC web-portals. Local data available at block level was not digitized to be made available to the public through CICs. The facilities at the CIC and services of the operators were however used extensively by the district and block administration for digitization of land records and other work related to election and implementation of Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS).

In the Administrative hierarchy, the CICs are placed at the Block level in between the Gram Panchayat level at the grassroots and the Sub-divisional level. A structural diagram (Fig. 3) makes the positions of the CICs clear. The figure identifies communication gaps between the administrative and networking chains of the CICs. Though there is connectivity between the CIC and the district on one hand and between the CIC and the State on the other, there is no connectivity between the CIC and the sub-division. This acted as a break in the administrative chain, and hampered the delivery of digital citizen-centric services. It is even more so, because the Sub-divisions are vested with a great degree of authority and power in matters of dispensation of information to the citizens.

Located at the Block level, they did not have scope for any formal interaction with village level administrative bodies like panchayets and village councils; they did not also have any administrative link-up with Block offices; and at the district level they reported only to the respective DIO who was an NIC official. In terms of networking, the CICs were connected through NICNET with all levels of NIC. But in the absence of State Wide Area Network (SWAN) they lacked the vital linkage with the state government departments. The networking link for the CICs did not match the administrative chain of hierarchy. While disconnect with the sub-division hampered its assimilation into the governance system, distance from the village level reduced its chances of building a community support.

Fig.3: Location of CIC in administrative hierarchy



Indicates network connectivity

Indicates administrative interactions

It is evidenced from the above illustration that the structural formation of the CIC did not allow it to garner a sense of community ownership or participation. Participation of the local community was limited to user role in this centrally funded project. The operation and management of the project was largely centralized in the hands of NIC officials. There existed an intricate mosaic for communication among those responsible for managing the project but the system of feedback from user community was not built into the scheme at the design stage.

Services provided by CICs:

The primary activity of the CICs was to provide computer training to interested sections of the community. The focus of this service was young students who used the opportunity gain basic training in information technology. The CICs in most locations was the sole provider of internet facilities. In remote locations of the northeastern region the CICs were the first to introduce the people to this new technology and make them aware about the benefits of internet. The CICs offered browsing facility at subsidized rates for visitors.

Most CICs offered basic level computer training programme certified by Department of Electronics Accreditation of Computer Courses (DOEACC). In addition to this some CICs also ran internet awareness programs where people could learn to use web browsing, search for relevant information on the net, read newspapers, look for employment opportunities.

The CICs allowed students to look for Board examination results on the internet free of cost. This was important for students of remote locations who would otherwise get to know their results only a day or two after they are declared at state headquarters.
The CICs also organized multiple awareness camps to inform the public about the benefits of information technology training and the new possibilities opened by the establishment of the CICs.

The CICs did not provide any e-governance services apart from selling some government forms as and when they were designated to do so by the district administration. Each of the CICs had a block portal in which they could upload information relevant to the block, various welfare schemes available for the public and other relevant citizen data. This flow of information was not regularized institutionally at the block level and hence was not updated regularly at the block portal making the delivery of e-governance services practically non-existent.

The primary mode of revenue generation for the CICs was from computer training and browsing fees where both the services were being provided at subsidized rates keeping in mind the economic condition of the rural population. The following table illustrates a pattern of revenue and expenditure statement for the CICs operational in northeast.

Table 6: Activity Status in terms of revenue earnings and expenditure from August 17, 2002 to July 05, 2006

S.No	STATE	No.of Visitors	No.of Persons Trained	Revenue Generated (In Rs.)	Expenditure (In Rs.)	Saving (In Rs.)
1	Arunachal Pradesh	59140	14298	12,10,066	4,92,457	7,17,609
2	**Assam**	**668670**	**132894**	**2,04,19,116**	**88,23,718**	**1,15,95,398**
3	Manipur	183166	19414	15,66,291	8,84,791	6,81,500
4	Meghalaya	19757	4733	3,81,146	1,44,877	2,36,269
5	Mizoram	25140	1591	3,81,524	2,09,448	1,72,076
6	**Nagaland**	**26519**	**3049**	**4,57,775**	**2,13,309**	**2,44,466**
7	Sikkim	38881	13125	8,70,628	4,28,931	4,41,697
8	Tripura	59343	15603	8,62,227	92,846	7,69,381
TOTAL		**1080616**	**204707**	**2,61,48,773**	**1,12,90,377**	**1,48,58,396**

It is evident from the table that there were marked disparities in the revenue generated by the CICs across states. Assam being one of the larger and more densely populated states was recording better performance compared to its other regional counterparts. But this highest revenue generated was still not sufficient to keep its operations afloat after the withdrawal of central support. The CICs were expected to become self-sustaining by the end of five year period before they were to be handed over to the respective state governments. During the project period the average revenue earned by the CICs was Rs. 1500/- per month which was far below the break-even point of Rs. 25,000 per month required to sustain the CICs as a profitable venture (NIC, 2006). This threatened the future of the CICs after the completion of the project period as the state

governments were unwilling to take the burden of maintaining the CICs which involved payment of salary of 500 odd CIC operators at the rate of Rs. 5500/- per month in addition to other logistic expenditures. This was a huge burden for the finance crunch states of northeastern region who were constantly required to prioritize their development expenditures from within what they claim to be a limited budget.

Thus it follows from the structural analysis of the CIC project implementation in this chapter that the CICs were planned with a robust technological framework with strong institutional collaborations for maintenance and upkeep of the facilities. From the organizational hierarchy it is evident that the chain of authority lent itself to centralized control within a generic organizational structure across states which left little scope for innovation or appropriation at local level. Starting from selection of equipment, infrastructure and location to operation and maintenance of the project everything was controlled by NIC from New Delhi.

For the state government, who were expected to take up the project at the end of five years, it was an investment in the state by the central government with limited scope for partnership as far as execution and sustenance during the initial phase of the project was concerned. The memorandum of understanding (MoU) drawn between the state governments and DIT gave a tone that the state should wait and watch from distance while NIC demonstrated its skills in executing the mammoth project in record time in a rough terrain overcoming all odds. The states were then just supposed to adopt the baby which had by then learned to sustain on its own. The back-end digitization, business

process re-engineering (BPR) and framing of technology neutral laws and regulatory framework required for validation of e-transactions were not in place during the project implementation period. This was not factored as a time-lined responsibility of the state governments while drawing the MoU. Thus the CIC's failure to become self-sustaining during the project period prompted the state governments to demand that DIT should continue funding the project beyond the stipulated five years.

Moreover, the CICs were not intended to be built on a fully participatory management framework with active participation of the community and hence functioned solely as a government welfare intervention. This led to a further disconnect between the last-mile delivery node and the user community.

However, the structural limitations of the project which led to the gaps in connectivity do not necessarily limit its potential to emerge as a facilitator in the process of decentralized development by making useful connections with the institutions of governance at the local level. The next chapter takes up an enquiry to that effect whereby the CICs are seen to be situated within the context of a larger developmental framework.

CHAPTER FIVE

Local Self Governance and ICT

The informational services planned to be delivered through the CICs and commitment towards introduction of e-governance as part of its stated objectives clearly situates the CICs as an ICT4D exercise by the government. Again, within a democratic political framework, this initiative towards delivery of citizen-centric services and institutionalization of the allied ICT infrastructure necessarily needs to be seen from the perspective of decentralized governance. The role of ICT in governance and the associated objectives of e-governance are already discussed in chapter two. Following this, an inquiry into the interactions between a centralized information delivery system and systems of local organized-communication will provide insights into the possibilities that they hold in an ICT enabled communication environment.

This is what is attempted in this chapter where firstly the existing patterns of self governance in Assam and Nagaland are discussed in detail to identify the structures that institutionalize the objective of decentralized development in the two states. By identifying the similarities and dissimilarities of such existing structures between the two states, it is attempted to understand how they lend themselves to a centralized e-governance module such as that planned through CICs.

This is followed by a descriptive case study of the select CICs in three districts each of Assam and Nagaland so as to identify what set goals have been achieved by them

during the project period. Lastly the operational framework of the CICs is critically analysed to identify the concordance and discordance with the stated policy and community articulation of communication needs.

Local Self Governance as Democratic Participation

The concept of decentralised development management is neither new nor alien to Indian experience. In ancient India, there were various traditional modes of managing resources and implementing development programmes through local involvement (Maithani & Rizwana, 1991). These had different degrees of authority and approval and operated with varied structures with the aim of promoting 'social welfare' through 'public participation'. Institutionalising this practice and giving it constitutional recognition as the Panchayati Raj Act 1992 was a process that went through a number of reviews and reorganizations.

The Gandhian ideology of 'Gram Swaraj' had been an integral part in formulating national policy for the revival of village panchayats. The Directive Principles of State Policy under Article 40 of the Indian Constitution enshrining this philosophy and recognizing the aspirations of local self governance mandated: "the State shall take steps to organize Village Panchayats and endow them with such power and authority as may be necessary to enable them to function as units of self governance." The ground for development through decentralized governance was set by the first Prime Minister of India, Jawaharlal Nehru when he introduced the Community Development Programme in

1947. This was followed by the National Extension Service in 1953. The bureaucratization of both these programmes and their subsequent failure prompted the government to set up a review committee headed by Balwant Ray Mehta in 1957. The committee recommended the three-tier Panchayati Raj System at the village – block – district levels. The recommendations of the committee were adopted and Panchayati Raj Institutions (PRIs) were set up in some states like Rajasthan and Andhra Pradesh, but the centralization of governance could not be overcome through these measures.

Subsequently various other committees were constituted to look into the prospect and scope of PRIs, namely Ashok Mehta Committee (1977), G V K Rao Committee (1985) and L M Singvi Committee (1986). But the lack of constitutional status never allowed PRIs to become effective institutions of decentralized governance. Attempts by subsequent governments to streamline the Bill giving recognition to Panchayats were defeated. Finally the 73rd Constitutional Amendment which accorded constitutional status to PRIs was passed by Parliament on December 23, 1992 and became effective from April 24, 1993 under the aegis of Narasimha Rao government. This Act entitled 'The Panchayats' consisted provisions from articles 243 to 243-O and added Part - IX to the Constitution of India giving a practical shape to the bottom-up approach of planning and governance and ensuring “genuine transfer of power” to the people.

A Panchayat according to this act is an institution of self-government for rural areas. The act provides for three tier system of governance at village, intermediate and district level for states with population above 20 lakh and two-tier (village and district)

for other less populated states. Article 243G of the Act says that the State may endow the Panchayats with such powers and authority as may be necessary to enable them to function as institutions of self-government for -

a) the preparation of plans for economic development and social justice;
b) the implementation of schemes for economic development and social justice as may be entrusted to them including those in relation to the matters listed in the Eleventh Schedule of Indian Constitution.

The provision of Panchayati Raj Act that is significant for the context of this present study is clause 243M which exempts the states of Meghalaya, Mizoram, Nagaland and tribal areas of Assam, Manipur and Tripura from the jurisdiction of the Act and allows these states/areas to continue with their existing traditional institutions of local self governance. Taking advantage of such Constitutional provisions which empowers the State Legislatures to endow Panchayats with varying powers and functions, the Northeastern region has pioneered some institutions of decentralized development, like the Village Development Boards in Nagaland.

This is in further consonance with the Sixth Schedule of the Indian Constitution which gives special status to administration of tribal areas of Northeast India through formation of Autonomous District and Regional Councils. The emphasis in the Sixth Schedule is on self-rule as many of the communities inhabiting the northeastern region had ruled themselves until the British subjugated them in the 19th Century. The architect of Indian Constitution, B R Ambedkar, had provided the rationale behind the Sixth

Schedule saying that the tribes of Assam[5] were "different" as unlike their counterparts in rest of the country who were Hinduised and had assimilated with the culture and civilization of the people around them; the tribes in 'Assam' had not adopted the modes and manners of the Hindus around them and continued to practice their own laws of inheritance, marriage and other customs. This distinction prompted the makers of the Constitution to have a "different sort of scheme for Assam" from the one provided for other tribal territories and gave them considerable local autonomy. The other regions in India outside northeast which also have large tribal population are covered by the Fifth Schedule of the Constitution and there the emphasis is on "welfare and advancement" of the tribal people.

Again, article 371A of the Constitution makes exclusive provisions for religious or social practices of the Nagas, Naga customary law and procedure, administration of civil and criminal justice involving decisions according to Naga customary law, ownership and transfer of land and its resources within the state of Nagaland. This act while giving recognition to the traditional practices of the Naga people also validates the uniqueness of their culture when compared to other states of India as well as in northeast.

[5] Assam as defined during Independence including North East Frontier Province, currently the states of Assam, Nagaland, Meghalaya, Mizoram, Tripura. Assam territory is currently defined in the Indian Constitution as -The territories which immediately before the commencement of this Constitution were comprised in the Province of Assam, the Khasi States and the Assam Tribal Areas, but excluding the territories specified in the Schedule to the Assam (Alteration of Boundaries) Act, 1951 and the territories specified in sub-section (1) of section 3 of the State of Nagaland Act, 1962 and the territories specified in sections 5, 6 and 7 of the North-Eastern Areas (Reorganisation) Act, 1971.

Nagaland – People and Customs

The Naga[6] people are bound by strong ties of loyalty to their village and clan which define their identity within specific boundaries of ethnic and linguistic space. Traditionally the family, clan, *Khel* and village represented the extent of a Naga's concern, and there was very little inter-village, and even less, inter-tribe interaction. The village was the highest political unit and the similarity in culture and shared concerns for security gave a broad common framework of meaning that loosely held the members together (GoN, 2004b). Each Naga village was a self-contained politically autonomous unit from whence the notion of "village-states" came into being. Though these villages were autonomous in their functioning, they all were organized on more or less similar structural principles. The clusters of villages speaking the same language and ingrained in common culture were concretized as tribal entities during the colonial times and these solidified with the passage of time (Aier, 2008).

Even today the kinship of a particular tribe forms the primary identity of an individual which is reflected and interpreted in one's social activities. The assimilation of these distinctive identities into larger kinship groups forming the common Naga identity is a more recent phenomenon forged by the spread of Christianity, rise in inter-tribal interaction and emerging political dynamics. This proto-nationalism and ethnic

[6] Naga itself is a generic term which represents the complex mosaic of 16 tribes of Indo-Mongoloid race who speak different dialects of Tibeto-Burmese strain. The origin of the term 'Naga' is obscure (some say its origin is the Burmese word '*Naka*' which means 'people with pierced ears' – a common practice among the tribes).

consolidation usually gets manifested whenever confronted with issues of region, culture and autonomy from "outsiders" [7].

The Nagas traditionally are organized into strongly regimented village governments with both regulatory and judicial functions. Commenting on the unusual nature of the tribes, Verrier Elwin[8] had said, "Naga society presented a varied pattern of near-dictatorship and extreme democracy." The notion of electing leaders is alien; leaders are recognized and accepted for their qualities and abilities through an informal but stringent process.The village is administered through the Village Council headed by chiefs (hereditary heads) or village elders (*Gaon Burah*) who are chosen on consensus based on their *Khel* or clan membership.

Khel is a distinct Naga institution that brings together several clans within the village community. A village usually has two or three *Khel*s. Membership of a *Khel* is decided by birth/heredity. Though informally organized, the *Khel* is the most important and effective unit of governance in a village. No village decision would be taken without the inclusion and approval of all the *Khel*s in the village.

The other important institution of Naga tribes is the *Morung* – a communal dormitory of the village, separate for young men and women. Every *Khel* in a village

[7] The fight for autonomy and struggle in Nagaland, or for that matter in other states in Northeast, defines much of the socio-political-economic condition of the region and is a discourse in itself requiring considerable anthropological and ethnographic research which is beyond the scope of the present study.
[8] Verrier Elwin (1902–1964) Anthropologist, poet, and activist from England, is well known for his seminal work on the tribal culture of India. He also served as the chief of the Anthropological Survey of India.

would have its own *Morung* which would be the hub of all activities of the young. The allegiance to this institution is currently on the decline among Naga villages due to coming of urbanization, but continues to be revered by the people. Traditionally *Morungs* served as the primary educational institution that nurtured and prepared the young of every clan for life and living. These *Morung*s provided the meeting ground for youth, prepared them with essential skills of citizenship and served as the breeding ground for intellectual and cultural accretion. All the clan/*khel*/village history, folklores and legends, songs, traditional practices, including the laws governing community living, were taught here. The *Morung*s slowly lost relevance in Naga community with the end of the 'head-hunting'[9] practice though some *Morung*s still exist in the Naga villages (GoN, 2004b).

Another important practice of the Naga tribes is their custom of community land ownership. Apart from land owned by a family there would be village and clan land with common ownership and under the supervision of village elders or leaders of the village. Every villager would have access to such land and its resources. The exact norms of ownership and rules for sharing of resources vary from community to community and are formed according to customary law.

Traditionally Nagas did not have formal courts. The judicial practice among Naga people was the responsibility of village elders/leaders and the procedure of law was not

[9] Head-hunting is a traditional Naga practice as exhibition of valor to uphold the honor of the village/tribes man and pre-requisite to ask for the hand of any female in marriage. It was banned during British rule though the most recent incident reported was in 1960's when a group of head-hunters from Tuensang district of Nagaland raided a Makware village in Burma (Myanmar) and carried off 14 heads. This was in retaliation to the Makware having earlier taken nine Naga heads. Headhunting was also practiced by few other tribes in northeast like the Wanchos of Arunachal Pradesh.

codified. Decision was taken based on consensus of the whole community in a way so as to uphold the honour of both the aggrieved and the offender. The judgement would vary according to the severity of crime, context and social position of the parties involved. Punishment was mostly in terms of levying a penalty and in cases of severe crime like murder, exile from village for seven years would be pronounced. Considering the significance of the village and land in the life of any Naga, this was the most severe punishment that could be given to anyone and was most deleterious to his pride.

Later, with the advent of the British rule, tribal courts were set up and judges were appointed from among reputed persons within the tribal community to decide cases. Thus, the first regular courts were started. The British also created the posts of *'Gaonburas'* (village elders) and *'Dobashis'* (interpreters) to assist them in the administration. *Gaonburas* were charged with the responsibility of assuring good behaviour by their villagers and they later became the spokesmen of the village community. Similarly the *Dobashis* in the course of interpreting for British administrators also served as liaisons between the British Government and the local people. Having been accredited with the authority of the Government, the *Dobashis* enjoyed the respect of the native people. Being knowledgeable about customary laws, the *Dobashis* advised the British officers in the settlement of cases. Subsequently, the *Dobashi* courts evolved to decide cases according to Naga customary laws. However, the British administrator remained the Sessions Judge, thus combining the executive and judiciary responsibilities in one person. This system was followed till recently, with the Deputy Commissioner being empowered with both executive and judicial responsibilities (GoN, 2004b). The

customary law courts are thriving and functional even today as provided in article 371A as a mark of continuity and respect for traditional practices parallel to the adoption of the Indian Penal Code.

During pre-independence era traditional institutions were sought to be integrated into the larger colonial political framework. In the process, the effective independence of the Naga village-states and traditional leadership began to disappear. The social and cultural adaptation of the Naga people from a rural-based traditional set-up to a modernist urban-based structure went deeper than the visible external structure. According to Anungla Aier, an anthropologist, "though the British spoke about a policy of non-interference and allowing village autonomy and traditional customs, in effect, they had a strong presence and were instrumental in breaking down the customary powers of the traditional elites such as the chiefs and village elders by introducing a higher authority over the village" (Aier, 2008).

The Nagas were ferocious people and many parts of the Naga territory remained outside the British administration, being called the 'excluded' or 'un-administered' areas though they were under British control. Primary among them were the Mon and Tuensang districts of present day Nagaland. The British preferred not to disturb them unless these hill people were creating trouble for the plains people in the adjoining areas through head-hunting raids. For these vast un-administered areas they encouraged Christian missionary efforts to spread 'enlightenment'. These Christian Missionaries not only proselyted among the various tribes but also undertook many social welfare

activities. Christianity was thus instrumental in spreading education and promoting group identity among the Nagas (Gokhale, 1961). Today Nagaland along with Meghalaya and Mizoram in northeastern region of India are Christian majority states (Census, 2001).

The political restructuring initiated by the British was subsequently reaffirmed in the wake of Indian independence and formation of the Nagaland State. Thus, urban-based centralized political and economic structures introduced completely non-traditional modes of achievements and opportunities (GoN, 2004b). At a broader level, traditional systems of land ownership, barter and social and political organization have yielded to modernization, with a cash economy and commodification of goods and services formerly bartered in simple exchange. Chiefs, traditional headman and *Gaon Burahs* or village elders have been edged out by younger elites composed of bureaucrats, politicians and business contractors with all together new mores (Verghese, 1996).

Today Nagaland has come to represent a context where traditional social institutions have maintained their ground, though with certain modifications and varied degrees of prominence, along with the emergence and validation of nationalised institutions. According to Aier (2008) this process of change from a close-circuit tribal autonomy and isolated social system to a highly monetized economy and complex social system has resulted in distressing situations. The severity of the distress cannot be measured only in material or instrumental terms. More distressing are the cultural and social degradation. One of the glaring evidence of such social transformation is the increasing number of people who are disconnected, lacking in the skill and resources to

earn a livelihood with self-respect, particularly among the young people. The culture of hard work, traditional exchange of services and competitiveness symbolized by the feasts of merit has become a thing of bygone days. The obvious question that comes up here is whether this was a process of transition, assimilation or extinction of traditional institutions?

Nagaland – Local Governance:

Nagaland had institutionalised its traditional modes of local governance well before the commencement of the Panchayati Raj Act through the Nagaland Village and Area Council Act 1978. Today the Village Councils and their subsidiary Village Development Boards (VDBs) are established modes of decentralised governance all over Nagaland. These institutions have evolved from indigenous practices of the Naga tribes and later regularised through legislation, facilitating their easy assimilation with existing village system.

Every recognized village in Nagaland has a Village Council and its development wing the Village Development Board. Nagaland has 1278 villages in its area of 16.6 sq. km. spread over 11 districts and 52 blocks. There is specific distribution of duties and power between the Village Council and the VDB. The Council has administrative and judicial duties whereas the VDB has financial and development functions.

(a) Village Councils – composition, powers and duties:

Village Councils have administrative, executive and judicial powers and duties vested in them vide the Nagaland Village and Area Councils Act. Anyone above 25 years can become a member after being chosen based on consensus following Naga customary law. Traditional village chiefs like *Gaon Burahs* and *Angs*[10] are ex-officio members of the council with voting rights. The council is responsible for planning the development of the village and ensuring maintenance of basic amenities like water, roads, forest, education and carrying out other welfare activities. It is also the custodian of all the community land and resources within the village. No land within the jurisdiction of the village can be transferred for any purpose without the approval of the council.

The council also has to execute justice according to customary law of the tribe for any dispute arising within the village limits. The council can hear and settle both civil and criminal cases according to customary law. There are instances where Village Councils have settled murder cases also. In case of disputes between villages the respective Village Councils can settle the matter over a joint meeting or refer it to the Area Council or other appropriate authority.

(b) Area Councils:

An Area Council has jurisdiction over villages lying within a mountain range as notified by the state government. Each mountain range has some villages and a particular tribe usually occupies area covered by several ranges. These ranges have special

[10] Naga kings who have jurisdiction over a cluster of villages. The practice is prominent among the Konyak tribe of the Nagas.

significance for people as land, forest and other resources within the village are common property of the villages lying within the range. The Area Council adjudicates disputes arising out of sharing of this common property.

The members of the Area Council are elected representatives from the Village Councils in the proportion of one member for a population of 500 and part thereof not below 250. So, bigger villages have more than one representative in the Area Council.

(c) Village Development Boards:

Village Development Boards (VDBs) are subsidiaries of the Village Councils. Being the development wing of the Village Council, it is responsible for planning and implementing various development schemes in the village in consultation with the Council. Every resident of the village is a member of the general body of VDB. The Village Council constitutes a management committee of the VDB for a term of three years from among its own members and others villagers who otherwise according to customary law or by virtue of their age are ineligible to become members of Village Council. One fourth of the seats in the management committee of the VDB are reserved for women who according to customary law and tradition are not allowed to be members of Village Councils[11].

The VDBs receive grant from the government through three schemes – Grant-in-aid Programme, Matching Cash Grant Programme (MCGP) and Sampoorna Grameen

[11] The Village Council has judicial powers and according to customary law the president pronounces judgment. Women are not allowed to 'hold the spear' and pronounce judgment. So they cannot be members of Village Council.

Rozgar Yojana (SGRY). The first two are state sponsored schemes while SGRY is a central assistance. In parts of Nagaland SGRY has been replaced by the Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS)[12] and soon it will be implemented in all districts of the state as per its national expansion plan.

The two state sponsored financial aid programmes are designed specifically for Nagaland. Under the matching cash grants programme the state government provides financial grant to the VDB which is equal to the common fund generated by the VDB through community contribution or from its internal resources and kept as a fixed deposit in bank for five years initially and then renewed periodically. In order to have a balance in the distribution of resources among different villages, a maximum ceiling of Rs. 2.5 lacks has been fixed for state investment in each village. This fund is utilized as security for the VDB to obtain loans from financial institutions or taking up further development programmes.

Table 7: Matching Cash Grant Programme in three districts of Nagaland

Districts	**No. of Blocks**	**No. of VDBs**	**Amount deposited in bank under MCGP (Rs. in Lakh) as on 31.03.04**
Dimapur	4	189	151.6
Mokokchung	6	75	157.3
Mon	6	94	62.4

[12] The Mahatma Gandhi National Rural Employment Guarantee Scheme of the government ensures 100 days of employment to every rural unemployed below the poverty line.

It is evident for the table that all BDBs are not equally efficient in generating funds and hence the financial support generated from the state government will be commensurate to the efficiency in management demonstrated by the VDB members.

Under the Grant-in-aid programme part of the state government's annual plan fund is allocated to the VDB for grass-root development. The fund under this programme is allocated to all the recognized villages on the basis of tax-paying households for implementation of development schemes according to the priority and choice of the villagers. Assistance under this plan is fixed at the rate of Rs. 53,000/- to VDBs with up to 66 households and at the rate of Rs. 800/- per household for VDBs with 67 and more households. This ensures the VDBs about the fund available with them as recurring sources and enables them to pre-plan development works to be undertaken at the village.

Communitisation Project in Nagaland:

The communitisation project in Nagaland involves the mechanism of transfer of ownership and management responsibilities of public utilities and services to the local communities. The Nagaland Communitisation of Public Institutions and Services Act 2002 has paved the way for introduction of this concept to three government sectors of elementary education, grass-root health services and power utilities. Conceived with the motive to improve the grass-root service delivery network and reinstate trust in the government machinery, this approach builds on rejuvenating the dormant Naga social capital. The process also involves training the local communities to efficiently manage

the new-found control and discharge their responsibilities effectively. Communitisation thus involves (GoN, 2004a) –

- Transfer of government assets to the community;
- Empowerment of community through delegation of governmental powers of management and supervision in the day-to-day functioning of employees to village communities;
- Ensuring accountability of government employees posted in the villages at service delivery level to local communities through resource devolution to village communities for payment of salaries to the employees; and
- Control of government assets by village committees including the responsibility of maintenance, amelioration and augmentation of assets.

An external impact assessment study of the Communitisation approach commissioned by the Nagaland government with support from UNICEF identifies specific improvements in service delivery in all the three sectors while reporting some conflicts between community institutions and government functionaries at decision making levels. The partnership developed between citizens and state agencies in the process is however found to be instrumental in devising innovative solutions at local levels and enabling communities to act with a sense of involvement in the dynamics of governance.

Three primary conclusions about the communication and governance practices of the Naga society can be drawn from the above discussion. Firstly, consolidation of the

Naga identity and its developmental philosophy has been the result of a religious and political process initiated by the spread of Christianity in the pre-independence era on one hand, and contoured by the struggle and attainment of statehood after independence on the other. Christianity in terms of its missionary activities was not only engaged in evangelical endeavour of preaching its religious faith but also effectively spread its own developmental articulation in terms of education, health care and other cultural practices. It was instrumental in assuring both continuity and change within the Naga society. The political struggle for statehood and autonomy which had come to represent an integral part of Naga identity also had significant ramifications in articulation of the developmental paradigm both by those within and outside the mainstream political process.

Secondly, there is incidence of a strong social capital among the Naga communities that is evidenced from their various traditions of local governance like the *Morung*s and Village Councils, and practice of Naga customary law. This is also indicative of a vibrant oral tradition and well-networked indigenous communication institutions.

Thirdly, the traditional practices of governance and social networking in Nagaland have been successfully institutionalised within a modern framework both in national and state policy. Various constitutional provisions and state policies have taken cognizance of these unique Naga traditions and assimilated them with modern governance philosophies.

Assam – People and Customs

Assam has been the home to multiple communities and cultures since prehistoric days. Reference to 'Pragjyotisha kingdom'[13], can be found in mythological texts like Mahabharata and Ramayana. The name 'Asham' also finds mention in early Mughal and Buddhist documents. A comprehensive chronological history of ancient Assam is difficult to be enumerated as the region mostly remained beyond the purview of more documented concurrent dynasties like Moghul or Gupta dynasties. Kiratas/Bodo Kacharis were the original dwellers of the region. Their influence spread from Cooch Bihar (in present day North Bengal) to Jia Bharali (Kameng) river near Tezpur, until the Tai Ahoms, a mongoloid race from China, entered Assam through Burma (now Myanmar) crossing the Patkai Range of the Naga hills to consolidate their kingdom in Upper Assam/Brahmaputra valley under the leadership of Sukapha (Verghese, 1996).

The Bodo Kacharis held fort against the Ahoms and extended their Koch Kingdom to areas in Dimapur, Tripura and Bengal. But soon the two had to join hands to fight the common battle against Moghul excursion. Together they defeated Aurangzeb's army at Saraighat with the valour of two great heroes of the two dynasties Chilarai and Lachit Borphukan. The Ahoms ruled Assam for over six centuries from 1228 till they lost ground to the Burmese and later had to give way to the British in 1826. The *Buranjis* or chronicles of the Ahom kings elaborately document the practices of governance and history of the region during their rule.

[13] The ancient name of Assam, also called Kamrup.

The Ahoms spoke Tai language and brought with them their administrative and agricultural practices while entering the Brahmaputra valley. They introduced wet rice cultivation system to a region practicing *jhoom* and shifting cultivation. The Ahoms administered their kingdom through a system of officers placed specifically to assist the king in administrative, revenue, military and judicial services. These categories of high officers were called *Burhagohain, Borgohain, Borpatragohain, Borbarua* and *Borphukan*. They in turn were assisted by *Phukans* who had under their supervision the *Bora, Saikia* and the *Hazarika* who held the command of 20, 100 and 1000 *Paiks* respectively. The Ahom revenue system was based on *Paiks* which was a form of corvee labour wherein every male subject of the state belonging to the age group 15-60, except the nobility and priests, was a *Paik*. Four *Paiks* formed a *Got* and at any point of time one member from the *Got* had to render his service directly to the king. At times of war or other emergency this number could go up to three. Rest of the members of the *Got* could continue cultivation on their tax free ancestral land and the non-transferable, non-hereditary land received from the king on behalf of being a *Paik*. No land tax was collected from cultivators (Guha, 1983).

As the empire expanded, the Ahoms were exposed to Brahmanical and Aryan influences in language and cultural practices. The Ahoms were assimilative towards local cultures and practices, and accommodative of other tribal people existing in the Brahmaputra valley and surrounding regions. They assimilated some of their Naga, Moran and Barahi neighbours and later, also large sections of the Chutiya and Kachari tribes. This 'Ahomisation' process went on until the expanded Ahom society itself began

to be Hinduised from the mid-16th century onwards, so much so that Assamese replaced Tai as official language both on and off Ahom courts (Guha, 1983).

The advent of British Raj in Assam marked the beginning of a new cultural formation as Bengalis and Adivasis[14] from central India were brought in to meet the requirement of administrative and labour forces. The Bengali Babus[15] well versed with the British revenue and government rules were required to run the system in the newly acquired province of Assam while cheap labour of the Adivasis was instrumental in the expansion of tea gardens, rail, road and inland-water network, saw mills, coal mines and oil exploration installations. Marwari merchants, Bengali agriculturists, Punjabi handyman and Nepalese graziers all added to the demographic diversity of Assam. This no doubt enhanced the economic productivity of Assam, but the money generated was flowing out of the region either to British coffers or to other parts of central India through the Marwaris and other trading communities. Post independence drawing of the international boundary severed the traditional trade routes and cultural linkages of Assam with Bangladesh, Myanmar and China further isolating the region economically (Biswas & Suklabaidya, 2008; Mishra, 2000; Verghese, 1996; Guha, 1983).

The continuous influx of migrants in turn invigorated Assamese nationalism as an ethno-linguistic struggle against being marginalized demographically and linguistically in their own land by the migrant settlers. This linguistic nationalism was embraced by the neo-literate Assamese middleclass with inspiration drawn from the Bengal renaissance

[14] Term used to represent tribal tea garden labourers migrated from Bihar.
[15] Term used to represent government servants and bureaucrats belonging to Bengali community in pre-independent India.

and through it they made an effort to consolidate the Assamese identity within the pluralistic context. But unfortunately it failed to encompass the cultural and ethnic identities of other aboriginal non-Assamese speaking tribal communities like the Bodo, Rabha, Tiwa, Mishing, Sonowal (Kachari), Karbi, Dimasa etc. as part of the broader Assamese fraternity and focussed only on the Brahmaputra Valley. The dichotomy for the middle class was their endeavour to further the cause of Assamese language and culture while keeping the territorial integrity intact (Biswas & Suklabaidya, 2008; Mishra, 2000; Verghese, 1996; Guha, 1983). In the post independence period what followed was multiple communities asserting their linguistic and land rights through various struggles, mostly violent, leading to reorganization of states and a cosmetic federalism institutionalised by the Indian Government more with a concern for national security than being driven by demands for autonomy (Baruah, 2009). This led to the Assam province being broken down to form the different smaller states like Tripura, Nagaland, Meghalaya within the region and Autonomous District Councils within the state of Assam to create space for multiple culture/linguistic groups.

Assam – local governance:

After independence, Assam was one of the pioneer States in India to have legislation on Panchayati Raj. The Assam Rural Panchayat Act was passed in 1948. The Act brought into existence two types of panchayats namely, the primary panchayat and the rural panchayat. A noteworthy feature of this Act was the enumeration of 34 functions covering almost all aspects of rural life. After their establishment, under the Constitution of 1950, autonomous hill districts were exempted from the provisions of the

Assam Rural Panchayat Act, 1948. In the meantime, the Community Development Programme was launched nationwide to accelerate the process of rural development followed by the introduction of National Extension Service and the subsequent constitution of the Balwantrai Mehta Committee to review the working of the Community Development Programme in 1957.

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In conformity with Mehta Committee's recommendations Government of Assam (GoA) enacted the Assam Panchayat Act, 1959. This Act provided for a three-tier structure with Gaon Panchayat (GP) at the base level, Anchalik Panchayat (AP) at the intermediate level and Mahkuma Parishad (MP) at the Sub-divisional level. The Gaon Panchayat was the executive body of the Gaon Sabha.

The Assam Panchayat Act, 1959 was again replaced by the Assam Panchayati Raj Act, 1972. The Act of 1972 abolished the intermediate level AP and introduced a two tier system having MP at the Sub-divisional level and GP at the lower level. The salient feature of the Act has been the extension of Panchayati Raj system to tea garden areas.

The Assam Panchayati Raj Act, 1986 replaced the earlier Act of 1972. The Act of 1986 again reintroduced the three-tier system of GP having a population ranging from 6000 to 8000 at the village level, AP at the intermediate level (co-terminus with the block) and MP at the apex level (co-terminus with the Sub-division).

In keeping with the provisions of the 73rd Amendment Act, the Assam Panchayat Act, 1994 was enacted and it replaced the Assam Panchayati Raj Act, 1986. The first panchayat election in terms of the Act of 1994 was held in October 1996. Subsequent elections were held in December 2001 and December 2007.

Thus it emanates from the above discussion that the pattern of local governance and its institutionalization in Assam has followed a more general trend similar to other states of 'mainland India' as far as its following the Panchayati Raj Act for decentralized development is concerned. This is significantly different from the practice in Nagaland where traditional systems of local governance have marked sustenance even within the modern day framework. The distinctions between the two systems are highlighted in a tabular format in the next section.

Table 8: Comparison of Local self-governance structure at village level for Nagaland and Assam

Nagaland	Assam
'Village' belongs to population of the area and established according to usage and customary practices. Every recognized village has a Village Council.	'Village' is a well-demarcated area as notified by state government. The State Government declares a village or a cluster of villages or an inhabited area having population between 6000 and 10,000 as a Gaon Panchayat.
The Village Council operates only at village level. There is no administrative interaction with the block. It has only	Three tier system – Gaon Panchayat, Anchalik Panchayat, Mahkuma Parishad with well-demarcated roles and

functional linkages with the district office/Deputy Commissioner.	jurisdiction.
Hereditary/ nominated membership from among villagers.	Ten members and a president are directly elected by voters of territorial constituency. The vice-president is elected by the members from among themselves.
All members are local tribals. Women are traditionally not allowed to be members of Village Council. They can become members of VDB	One-third of the directly elected seats are reserved for women. Seats are also reserved for SC/ST depending on population concentration in the village.
Village Council has executive, judicial and administrative functions. Can execute civil and criminal justice within the jurisdiction of the village following customary law. The decision of Village Council is final.	Panchayats have obligatory, discretionary and other duties. No judicial power.
Development function is relegated to Village Development Boards. Deputy Commissioner is the ex-officio chairman of all VDBs in the district.	Panchayat has to discharge development duties within the village. It works through three standing committee viz. Development Committee, Social Justice Committee and Social Welfare Committee. There is no representation of district officials in the local body.
All villagers are members of the General Body of VDB and a Management Committee for the VDB is nominated by the Village Council.	Every Gaon Panchayat has a Gaon Sabha consisting of all persons registered in the electoral rolls of the area to consider the report in respect of the development programme of the previous year and the development programme proposed to be undertaken during the current year. The Gaon Sabha also identifies the

	beneficiaries for government developmental schemes.
VDBs receive funds through grant-in-aid programme, matching cash grant programme and Sampoorna Grameen Rozgar Yojana. The first two are state sponsored while the third is central scheme. Under the matching cash grant programme, the state govt contributes an amount (up to a maximum ceiling of Rs. 2.5 lakh) equivalent to the amount raised by the VDB through community contribution and deposited in a fixed account. This is a one time grant. As per the grant-in-aid programme the development plan fund of the state is allocated to every VDB to undertake development activities at the village/community level. Under this scheme an amount of Rs. 800 per tax-paying household is given to the VDBs. The VDBs do not have any collection from taxes.	Panchayats receive grants from state and central govt, district and other local authority. They also raise fund from taxes and fees levied by it, and income from other resources placed under its control and management. The Panchayats are however not aware of the exact amount of funds being allocated to it in advance.

The Village Councils in Nagaland are thus seen to be vested with some additional financial and judicial powers compared to the Panchayats in Assam. There are provisions created for more proactive Village Councils to be rewarded with better financial support. This creates scope for performance based incentives by encouraging better community participation. Such scopes are not institutionalised in the Panchayat system. The Village

Councils however score low on social justice parameters by not creating provision for participation of women in the decision-making process. The Panchayats have social equality emphasized at the grass-root level by having seats reserved for women members. Both have provisions of social audit as part of General Body meetings and Gram Sabha.

Thus both Assam and Nagaland exhibit significant differences in local governance practices and these differences have been well-articulated and crystallised in the legal and constitutional framework of not only the two individual states but in the national policy as well. The central government, while being extremely sensitive to these distinctions of local ideologies of the two states in formation of its governance policies, seems to have overlooked this factor in the framing of its developmental policies. The developmental needs of the people have been considered to be similar across the region which is evidenced from the Northeast Region Vision Document and uniform centralized structure of operations for CICs discussed earlier in chapter four. By doing this the advantage of having a special development focus for the northeast unfortunately gets lost in the ramification of multiplicity of politico-cultural aspirations, lived realities, and multidimensional poverty of the people. A homogenized approach to development, whether or not ICT mediated, not only infuriates the already sensitive identity crisis of the local communities but also misses out on the quintessential focus that any people centric development initiative cannot afford to miss in a multi-cultural, multi-ethnic society.

The CICs are an ICT mediated developmental project intending to bridge the digital divide and introduce governance reforms for these apparently dissimilar states and their people. An effort to understand the specific achievements of the CICs within the local context of these two states is attempted through six descriptive case studies undertaken is three districts each of Assam and Nagaland in the following section.

Case Study of Community Information Centres in Assam and Nagaland

CASE 1

Dhansiripar Block CIC

Dimapur District, Nagaland

Portal: http://dhansiripar.nic.in

The District: Dimapur is the only district of Nagaland with a sizeable plains area. It is the only point of air and rail connectivity[16] to this hilly state, and the capital town of Kohima at a distance of 74 km can be reached most conveniently from here. It has a mixed population of tribal and non-tribal people. Unlike most of the other districts of Nagland which can be identified with a majority tribe, Dimapur has a mixed population of Ao, Sema, Angami etc. along with a sizeable population of Bengalis and Biharis. The mixed population gives it a cosmopolitan culture and attracts people of all tribes as well as non-tribals to settle down in the town owing to its better connectivity with Assam and through it to the rest of India. It is an urban commercial centre with more than 36% of the state's urban population residing here. Dimapur also has the highest per capita income

[16] The rail network of Nagaland is only 13 km.

(Rs. 16,837) among the districts of Nagaland.The district has literacy rates of 76.82% (Male - 81.05%, Female - 71.76%).

The Block: Dhansiripar is about 50 km from the district headquarter of Dimapur town. Bus connectivity is scarce. Most of the people in the locality belong to the Cachari tribe. The Cachari are not aboriginal Nagas but belong to the border of Assam and Nagaland. They historically have strong socio-political connections with Nagaland and people of the tribe settled in Nagaland consider themselves as Nagas and practise Naga culture.

According to local information the people here are sympathetic to the cause of autonomy for Nagaland and many youth from the area are either active members or have some association with either of the factions of National Socialist Council of Nagaland (NSCN)[17]. During field visit the researcher could see groups of armed youth by the road side.

CIC location and infrastructure: The CIC is located in the premises of the SDO Civil Office. It is housed in a derelict building adjacent to the SDO office which also is in a similar condition. The ceiling of the single room CIC with a partition separating the server room and the PC room, leaks at various places making it inappropriate for the

[17] NSCN was formed in 1980 to establish a 'Greater Nagaland' ('Nagalim' or the People's Republic of Nagaland), a sovereign state comprising the whole of present day Nagaland and the Naga inhabited areas of Manipur, Assam, Arunachal Pradesh and Myanmar. NSCN has later split into two factions, viz. the NSCN-K led by S S Khaplang, and the NSCN-IM, led by Isak Chisi Swu and Thuingaleng Muivah owing to internal dispute between the groups. The outfit has also established a government-in-exile called the Government of the People's Republic of Nagaland (GPRN) which is engaged in extortion from different sections of the population in the name of taxes. Currently both the factions of NSCN are on a Cease Fire with Government of India.

expensive equipment. In 2005, two years prior to the field visit, one computer and one printer were stolen from the CIC which have not been recovered or replaced till date. The VSAT had not been functioning since June 2007 and was not repaired even after several complaints. The CIC as such was practically closed for more than six months at the time of the field visit.

Operational structure: The CIC was being run single-handedly by a lady. She had joined the centre two years after its inception and had not received salary for the last five months due to uncertainty about the status of continuity of the CIC project following completion of the central government funded project period in March 2007. On enquiry by the researcher she revealed that she was not aware about the mandate of the CICs to provide G2C services and thought it was supposed to provide computer training and browsing facilities only. Sub-divisional Officer (SDO) civil was the custodian of the CIC and stayed in Dimapur and came to office once a week.

Services: When operational, the CIC used to provide internet training to school children of the nearby locality and browsing facility to local youth. Both activities have been disrupted since the malfunctioning of the VSAT. The centre never provided any DOEACC training. The Chairman of Village Council, Ringther Jeedun felt that when functional the CIC was beneficial for them as it provided computer training for the children. He however never felt that he could approach the custodian of the CIC to ensure restoration of services. The villagers assumed it to be a government service which the government had decided to discontinue.

CASE 2

Mokokchung CIC

Block: Ongpangkong (North)

Portal: http://ongpangkongn.nic.in

The District: The district of Mokokchung, is 1,615 sq km in area. It is bounded by the State of Assam to its North, Wokha District to its west, Tuensang District to its east, and Zunheboto District to its south. In Nagaland certain tribes are present in majority in certain areas following customary practices of land ownership rights. Mokokchung for instance is dominated by the Ao tribe. Aos are regarded as one of the first tribes to embrace Christianity and with it they were also one of the first to gain widespread literacy. According to 2001 census, Mokokchung has the highest male and female literacy rates of 86% and 82% respectively, which is higher than both the state and national averages. The high literacy rate among Aos is attributed to a head start in education made during the British regime when the Christian missionaries from India entered the Naga province through Mokokchung to spread various social reform initiatives among the locals. Mokokchung also ranks second in HDI after Dimapur (GoN, 2004b).

The block: Ongpangkong North is the district headquarters of Mokokchung district.

CIC location and infrastructure: The CIC is located within the offices of the Deputy Commissioner because the Block Development Officer (BDO) who is the custodian of the CIC has his office there. The CIC does not face the road and the foot trail entry road commonly used by regular visitors is not marked. A signboard hung on what looks the rear of a building from the road marks the location of the CIC. The room is also accessible from the main entry of the DC office complex by following a matrix of corridors and small lanes. One has to enquire for the 'room with computers' to reach the CIC.

It is housed in a fairly spacious airy room partitioned to separate the server room from the client area. Electricity is a problem. The CIC does not earn enough to pay for the generator and there are frequent power cuts. All equipment is otherwise in working condition apart from the fact that most of the PCs are outdated and need hardware up-gradation. Mostly young people come for internet surfing as the speed is better and charges are lower compared to cyber-cafés. However there are only four systems, hence not many people can be accommodated.

Services: The CIC is operated by two women and because there are not many visitors in a day, they usually take turns to come to the centre. The centre also runs a DOEACC programme but few, mostly school students, enrol for the programme as there are other professional institutes within the town to provide advanced computer training.

CASE 3

Mon Block CIC

Mon District, Nagaland

Portal: http://monblock.nic.in

The District: Mon is reported as the most underdeveloped area in the Nagaland HDR with the lowest levels of urbanization and per capita income. Overall literacy rate in the district is 42% of which less than 15% are above matriculate. Accordingly the district gets special assistance under the Development of Underdeveloped Areas Programme of the central government. It is the only district in Nagaland to be implementing the Mahatma Gandhi National Rural Employment Guarantee Scheme MNREGS[18]. The District has also got special assistance under NRHM.

The district is practically land-locked because for most parts of the year Mon remains inaccessible from other parts of Nagaland and can be approached only through Assam. The road through Assam is also not in a motorable condition during rainy season and Mon remains cut off from rest of the world during the monsoon months.

It takes about 10 hours to reach Mon from Dimapur via Assam (290 km) by bus and seven hours by other utility vehicles like Tata Sumo etc. Most part of the journey is through plains of Assam while the hilly track starts after entering Nagaland at Tizit. The single lane road is prone to landslides and is very narrow at places making it difficult for vehicles to cross or overtake each other.

[18] In 2007

Konyaks are the majority tribe for the Mon district. Unlike other parts of Nagaland where most Nagas are more fluent in English apart from the language of their tribe and Nagamese, the Konyaks are very conversant in Hindi and most of them enjoy listening to Hindi film songs. The Konyaks are also the last tribe in Nagaland to have embraced Christianity and it is the only tribe in Nagaland which is not yet 100% Christian. In remote villages of the district still there are people who practice traditional religious practices of animism.

Konyaks also have the unique practice of kingship called Ang. The Ang, who is the hereditary leader of the tribe, has jurisdiction over the villages under his control and collects taxes from his tribesmen. However, with modernity this practice has lost its earlier grandeur though the Angs continue to enjoy sufficient social respectability and honour.

The block: Mon block is the district headquarters of Mon district.

CIC location and infrastructure: The CIC is located in the office of the Youth Resources Officer. The semi-permanent building does not provide the ideal setting for air-conditioning which is usually required for the equipment. It has all the other standard equipment as part of the CIC. The centre however does not use the generator in case of power failure as kerosene oil required for the purpose is not available easily. Even when available the price is very high. The CIC is managed by one male operator who was on

leave during the period of field visit. The second operator had resigned from the job and no replacement was appointed till the time of the study.

Services: The CIC provides only browsing facilities. No ICT training is provided at any CIC in the district. Mon CIC has faced frequent resignation by the operators and then shortage of trained staff to manage the centre. The district also has power problem. There are long hours of the day with power-cut which sometimes stretches over days. In such situations it becomes very expensive to run the centre on generator and hence has to be closed down. Low literacy, poverty and lack of awareness about the centre and its scope and activities also impede revenue generation by the CIC through browsing.

CASE 4

Lala Block CIC

Hailakandi District, Assam

Portal: http://lala.nic.in

The district: Hailakandi is one of the three districts in the Barak Valley Region of Assam situated at the southernmost corner of the state with inter state border of 76 km. with Mizoram to its south and inter district border on other sides with Karimganj and Cachar districts. It is a Bengali dominated area and was part of the Sylhet district of undivided Bengal before independence. Hailakandi was one of the oldest subdivisions in the state of Assam. It was constituted as a civil subdivision on 1st June 1869. Subsequently, it was upgraded to a district in 1989. It has an area of 1326.10 sq km. The district has unemployment rate of 66.67% (Rural – 66.34%, Urban – 70.22%) and ranks low in Human Poverty Index (HPI). Primary health care facilities are scarce in the district

with eight Primary Healthcare Centres available for the rural population which constitutes more than 90% of the total population of the district. In addition to this there are two hospitals in the district headquarters. Women constitute 23% of the total workforce and the district ranks fourth in Gender Development Index (GDI) among the 23 districts of Assam according to the state HDR.

The Block: Lala is 18 kilometers away from the district headquarters of Hailakandi. There are buses and shared taxis commuting between Hailakandi and Lala. However, due to poor road condition, it takes about one hour to reach Lala from Hailakandi. Lala town is a semi-urban locality while the rest of the block is rural. There is a sizeable Manipuri population but the majority of the people are Bengalis.

CIC location and infrastructure: The CIC is housed within the compound of the government higher secondary school of Lala town. The school is situated adjacent to the main road and the location is close to the main market area of Lala town, thus giving better accessibility to the CIC housed there. The CIC room is just across the main gate of the school and visible from the road. However, the signboard has been removed and placed (upside down) on the corridor after it got damaged in a storm a year ago. It has not been repainted in the last five years since installation and most of the paint has peeled off. Thus people would know that the CIC is there only if they already know about it.

It is a single room infrastructure in an Assam type building (concrete structure with tin roof) with a partition separating the server room from the client room. The

standard equipment at the CIC is all in functional condition, though the systems were in need of hardware upgradation after five years of usage.

Operational structure: The headmaster of the school is the custodian of the CIC. There are two operators at the centre – one male, one female. They usually take turns in manning the centre. During the period of visit, the lady was on 15-days leave and the centre was being managed by the lone male operator. The CIC usually does not open before 12 noon. The operator is a resident of Hailakandi town and commutes daily from there. He also usually has some official work at the DC office or at the NIC main office in Hailakandi and comes to Lala after finishing his work there.

Services: The CIC is the only internet facility available in the town with the next nearest facility available only in Hailakandi town. The centre provides basic level DOEACC training apart from browsing facilities and has steady inflow of students for the course. However the exams for the DOEACC course which is to be held online from Hailakandi have not been conducted for past one and half years due to some technical and procedural problem.

Lala block CIC is the highest revenue earning CIC in the district. Incidentally all the CICs in Hailakandi district are located within school compounds and hence give them the advantage of earning revenue by training the students.

CASE 5

Kokrajhar Block CIC

Kokrajhar District, Assam

Portal: http://kokrajhorblock.nic.in

The District: Kokrajhar is the easternmost district of Assam and serves as the rail and road link point for the rest of the state. It is located in the north bank of the river Brahmaputra which flows from East to West to bifurcate the state into two. The district shares an international border with Bhutan to its North, inter-state border with West Bengal to its West and inter-district border with Dhubri and Bongaigaon to its South and East respectively.

Kokrajhar was constituted as a sub-division of undivided Goalpara district in 1957. It was upgraded into Kokrajhar district with headquarter at Kokrajhar town in 1983. The present geographical area of Kokrajhar district is estimated to be 3,169.22 square km.

The Bodo community comprises the majority in Kokrajhar district. It also has a sizeable Rajbongshi and Santhal population. The demand for regional autonomy by the plain tribes of Assam had its impact on the Bodo people living in this district as well. All Bodo Students' Union (ABSU) spearheaded a movement for a separate state of Bodoland. The agitation was vigorous and also violent from 1985 to 1992 till the State Government worked out an accord with the ABSU in 1993 by which the Bodoland Autonomous Council (BAC) came into being. The BAC covered nearly 2,300 sq km spreading over

seven districts of Kokrajhar, Bongaigaon, Barpeta, Nalbari, Darrang, Mangaldai and Sonitpur on the north bank of the Brahmaputra in Lower Assam.

However, BAC failed to meet the aspirations and expectations of the Bodo people and the Bodo Security Force (BdSF), later renamed as National Democratic Front of Bodoland (NDFB), and ABSU continued armed struggle for autonomy citing dissatisfaction with the extent of devolution of financial, political and executive powers to BAC; and demarcation of BAC territory in terms of inclusion/exclusion of mixed (Bodo/nonBodo) areas within its jurisdiction. The Bodo Liberation Tigers (BLT) came out of NDFB in 1996 and continued with its armed offensive demanding a separate state of Bodoland within the Indian Union. After years of armed struggle BLT ultimately declared ceasefire in 2000 giving up its demand for a separate state and after rounds of talks through three years agreed for the extension of the Sixth Schedule of the Indian Constitution to Bodo areas. This empowered them to fulfil their economic, educational and linguistic aspirations and preserve their land-rights, socio-cultural and ethnic identity and also enables them to govern themselves.

This paved the way for a Memorandum of Settlement to be signed between the Government of Assam and BLT in 2003 for creation of Bodoland Territorial Council (BTC), an Autonomous self governing body with jurisdiction over 3082 villages and spread over four contiguous districts of Kokrajhar, Udalguri, Baska and Chirang with legislative, administrative, executive and financial powers over 40 subjects. Kokrajhar is the headquarter of BTC.

It is noteworthy here that various amendments were made to the Sixth Schedule following the memorandum to make it appropriate for extension to a plains area in Assam[19]. Article 4.8 of the memorandum also provides for withdrawal of Panchayati Raj system within the council area; the powers of the Panchayati Raj Institutions in such matters are vested with the Council.

The Block: Kokrajhar district has six development blocks viz. Kokrajhar, Sidli-Chirang, Dotma, Kachugaon, Gossaigaon and Hatidhura. Kokrajhar town is the district headquarters as well as headquarters of BTC. As such the town and adjoining areas are better developed in terms of road connectivity. According to the local people the pace of development work in the block has improved after the constitution of BTC. Connectivity by local bus and other shared services has also improved over the recent years making it comfortable for the local people from nearby villages to reach the town. The population of the block is dominated by Bodo people having higher rates of literacy compared to other tribes of the district.

CIC location and infrastructure: Kokrajhar CIC is located at a distance of about 13 km from the town at Deborgaon. Situated across the Deborgaon HS School on the national highway connecting Kokrajhar to Bongigaon the CIC is easily accessible to all. It is housed in the school property but not located within its premises thus making it easy for outsiders to use the facility without disturbing the academic work of the school. This also however creates a security concern for the expensive equipment of the CIC and it

[19] The Sixth Schedule, contains the provisions for the administration of tribal areas of Assam, Meghalaya, Tripura and Mizoram and was applicable only to the 'hill areas of these States till it was amended in 2003.

has to invest in employing a night guard for a salary of Rs. 800/-per month. The CIC has all standard equipment specified according to module. Due to frequent power-cut in the locality, there is high dependence on generator back-up. The CIC spends on an average Rs.900/- per month on kerosene oil to run the generator. The Deputy Commissioner (DC) during whose tenure the CIC project was launched had made some provision by which the CICs could get kerosene fuel from the public distribution system at subsidized rates, lower than that offered to BPL customers.

Operational structure: There are two CIC operators, one male and one female for the Kokrajhar CIC. They share responsibilities between themselves regarding managing work at the DC's office and manning the CIC. As both of them stay in Kokrajhar town the CIC usually closes down by 5:00 - 5:30 PM. The CIC operators are also usually engaged by the DC's office or the DIO to do computational and digitization work as part of the broader digitization initiative of various government records by the state government. The headmaster of the Deborgaon HS School is the custodian of the CIC but he usually does not engage himself in any matters of the CIC and has rarely visited the CIC during its operational years.

Services: Most of the people who come for training at the CIC are students who have either completed their HSLC or HS exams and are looking for some computer training that would help them in career advancement. Hence the period after the final exams when the students are waiting for their results is the rush time for training at the

CIC. During such times the students are given priority in enrolment over others who come for training.

At a time on an average 20 students are enrolled in a training batch. They pay Rs. 600/- for the three months basic course which familiarises them with DOS, MS Office, Internet and basics of networking. The CIC earns revenue of Rs. 3000/- to Rs. 3500/- during such peak months of training and Rs. 300/- to Rs. 400/-when there are no students for training.

Students are not charged for checking examination results online and trainees are not charged for browsing the internet even after training hours as long as they are enrolled in the training programme.

During the ASHA[20] programme there was a lot of enthusiasm seen among the farmers who were brought to the centre by the agricultural extension workers. Many farmers enrolled into the programme and availed the services offered. However the programme eventually had a slow death and all work was stopped without any official communication. All these happened in 2005. The farmers paid Rs. 100/- to Rs. 300/- under this scheme as registration fees. The CIC operators were also trained at the District Agriculture Department Office as partners to the project. However, they were not paid any extra remuneration for facilitating the programme at the CICs.

[20] ASHA is an ICT based agri-business services launched by Assam small farmers agri-business consortium with a mission to maximize farmers' farm income with sustainability in Farmer-Government-Bank-Institution & Private (FGBIP) partnership in a business model and generate more livelihood opportunities. The CICs formed the service delivery platform for the programme.

CASE 6

Majuli Block CIC

Jorhat District, Assam

Portal: http://majuli.nic.in

The District: Jorhat was the last capital of the erstwhile Ahom dynasty (1224-1826) which ruled Assam till they were defeated by the Burmese in 1822. Till 1826 it was a period of turmoil when the British regained the Assamese territory from the Burmese following the treaty of Yandaboo consolidating British supremacy over the region and marking the end of Ahom rule. The name Jorhat signifies a couple (Jor) of marts (Hut) drawn from two parallel marts namely Chowkihut and Macharhut, which lay on the eastern and the western banks of the river Bhogdoi. Jorhat was earlier a subdivision of undivided Sivasagar district and was carved out of it in 1983 with a total area of 2852 sq km.

Jorhat is located on the south bank of Brahmaputra in upper Assam. It shares inter-state border with Nagaland in the south-west and inter-district borders with Dibrugarh and Sivasagar in the north-east, Lakhimpur in the north-west and Golaghat in the south-west. Jorhat ranks highest in human development, health and education index among the districts of Assam. It is second only to Kamrup in terms of income generation index. Jorhat has a high literacy rate of 76.34% (Male: 83.62, Female: 68.49). The lone agricultural university of the NE region is located here. While nearly 70% of the district area is urban more than 80% of the population lives in rural areas. Jorhat however is one of the poorest districts in sex ratio with only 903 females per 1000 male. This skewed sex

ratio, which has worsened further since 1991, may also be due to large scale in-migration of male workers to the oil, tea and other industries.

The Block: Majuli is the largest riverine island/delta in the world situated mid-stream of two arms of the Brahmaputra River. The island today is separated from the mainland of Assam by 2.5 KM. It is approached from Nimati Ghat in Jorhat district by ferry, which is on the south of the island, to reach the Kamalabari Ghat in Majuli. It takes about an hour while going from Jorhat and an hour and a half while returning from Majuli as it is against the current. The island of Majuli today houses a total of 243 small and large villages and two development blocks, Majuli and Ujani Majuli under Jorhat District. Majuli island has great historical and cultural significance being the epitome of Shankarite culture (following the Vaishnavite saint Srimanta Shankardeva) in Assam. There are a total of 22 Sattras[21] in Majuli now with a distinct spiritual influence on the region. Each Sattra, represents a centre for cultural and spiritual activities and even acts as a democratic institution to settle local disputes. Most of the villagers associate themselves with respective Sattra, and are closely involved with all its activities on a daily basis as well as during festivals and occasions. Majuli is being actively considered for recognition by UNESCO as World Heritage Site for its cultural landscape.

People from various ethnic origins like Mishings, Deori, Sonowal Kachari, Koch, Kaivartta and Nath have settled in Majuli. The settlements have their own characteristics and building typologies. The Mishing and Deori population, which is the largest, has a unique house form, which is positioned atop bamboo stilts and located near the riverine

[21] Vaishnavite monasteries institutionalised by Saint Shankardeva.

tracts and wetlands. This is a practical solution to the frequent floods that ravage the river island every monsoon and has been the cause of large-scale erosion of the land mass. Majuli today, along with its cultural heritage, faces a great threat of extinction with the Brahmaputra consistently eroding its banks reducing the total area nearly by half from 1245 sq km in 1915 to only 645 sq km in 1995.

In Majuli, most people subsist on agriculture. There are no industries or private company offices apart from the few government departments housed there. Famous for its topography and Assamese cultural heritage, Majuli attracts a lot of tourists, both domestic and international during the months of October-May. Tourist rush is less during the rainy season due to flooding of the river Brahmaputra. During that time the lone mode of transportation between the river island and the mainland gets disrupted with the ferry service closed down due to turbulent weather and flooding of the river.

Like other parts of northeast, electricity crisis is a problem in Majuli and becomes more acute during rainy/flood season. There are two civil hospitals with 30 and 100 beds at Kamalabari and Gormur respectively. In addition to this there are ten Primary Health Centres (PHCs) in the island. Most of the non-critical health services are available here. In the Kamalabari area under Majuli Block there are five high schools, one college and one junior college. In the whole of Majuli there are five colleges of which three offer only Arts stream and one each offers Science and Commerce along with Arts.

CIC location and infrastructure: The CIC is located within the premises of Auniati Hem Chandra High School, with the headmistress of the school as the custodian. It is located at a central place on way to the Kamalabari Ghat which is the major ferry point for the area. All the equipment is in working condition and the operators have till now received prompt response from servicing and maintenance agents on all complaints launched. There are two male CIC operators who usually stay at Majuli on weekdays and return to Jorhat on weekends. The CIC has all stipulated equipment as per standard specification.

Services: The CIC in Majuli is of great relevance to the educated population of the area because it is the only place in the river island where internet service is available. There are no cyber cafes in the island nor is there any facility for broadband connection. Mostly students, journalists and tourists use the services and it is in great demand. Along with tourists during the peak period, the place is also teeming with the civil society organizations as many of them have a local office there. Students come to check their results, look for scope of higher education etc. Others come to check availability of train reservation etc. apart from regular browsing interest.

The CIC has however not been providing any innovative services with scope for additional revenue generation in spite of some successful example of the post office in Majuli providing railway reservation for citizens for some service charge. The DIO of Jorhat indicated that the operators were not enterprising enough to move out of the set scheme of operations to explore newer opportunities. They probably lacked the

motivation to do so as they were apprehensive about their job guarantee and service confirmation.

It is evident from the case studies illustrated above that though all of them were working within the same operational structure, each of the CICs was functioning within a different social, political and cultural context. And hence the opportunities present, the challenges to be met and the aspirations to be fulfilled were unique for each one of them. The implementation, operation and sustenance of the CICs in both the states was influenced by the governance and social structures existing prior to the launch of the project. The CICs were expected to merge into this existing framework. The availability of infrastructural support beyond the ones provided as part of the project package, vision of the state administration towards optimum utilization of the available ICT resources for public good, and socio-political context of the people for whom the project was being operationalized influenced the running of the project during the trial period.

In the following section the overall operational structure of the CICs in Assam and Nagaland is illustrated to arrive at an understanding of the specific issues of concern associated with the process of project implementation.

Operational Situation in Nagaland

Out of the eight states where CIC project was operational, Nagaland was allotted the third highest number with 63 CICs located in the state. The difficult hilly terrain of Nagaland and the hostile weather conditions posed the primary problem for the operation of the CICs in the state. The next big hurdle was the shortage of both core and support infrastructure at the remote blocks where the CICs were to be located. The various operational problems encountered by the CICs in the state are elaborated in the following section

Maintenance and upkeep:

Security concern in the region was the primary driver behind locating most of the CICs in the state within government premises. In spite of that there were nine incidents of theft across six districts, with Zunheboto alone reporting four of them. The Kiphire CIC was gutted by unknown miscreants along with the ADC office. In most of the cases lost and damaged equipment was not replaced. The Tobu centre in Mon district was closed down in 2003 – 2004 after a component in the VSAT was stolen by some local miscreants. However even after insistence by Mon DC and officials at Kohima, the stolen part could not be replaced and the centre was closed since then. Again incessant rain, frequent landslides and remoteness of the location of the CICs made it difficult to carry out any repair and maintenance work. Hence it used to take long time for the CICs to become functional if any key equipment was damaged or lost.

Shortage of supporting infrastructure:

Poor electrical power condition of the state also made it difficult for the CICs to remain operational as it is very difficult to access kerosene oil[22] to run the generators in far flung areas of Nagaland. Of the six blocks in Mon district (Tizit, Mon, Wakching, Chen, Phomching and Tobu), Chen and Phomching blocks did not have any electricity connection since 2007. The situation in other districts was not much better and hence many of the CICs remained non-operational for large parts of the day when there was a power cut.

In remote blocks of Nagaland there were no good buildings to house the CICs which had to be located in spaces inappropriate for the sophisticated equipment. Many of such CICs stationed in rooms with tin roofs were inadequate to fit the air conditioning systems that were made available as part of the standard CIC equipment. They consumed a huge amount of electricity, shooting up the electricity bills and were mostly not necessary for a hilly terrain like Nagaland with mild temperatures. Some operators suggested that the money spent on ACs could have been utilized to procure high-end inverter or UPS systems to sustain the CICs during frequent power cuts.

Mixed responses:

District administration in many districts which was mostly responsible for making effective use of the CICs to offer citizen-centric services had mixed response towards their utility and adequacy. While some were overtly enthusiastic about the scheme and saw it as a tool for effective governance in an otherwise inaccessible terrain, like the DC

[22] It was mentioned by respondents in Mon that kerosene costs Rs. 25/- for 750ml

of Mokokchung district in Nagaland, Abhishek Sing, who effectively integrated the CICs into a World Bank funded e-governance module called e-Modop and planned for its replication in other districts of Nagaland; others remained sceptical like the DC of Dimapur, Nagaland, Abhijeet Sinha, who believed that "there was no felt-need for e-governance as there was an already established system of governance which was transparent enough in its dealings and required only incremental change". He was of the opinion that central government should invest in building better roads to improve communication facilities rather than e-governance. The IT Project Director of Nagaland, Imsa Naga also felt that the economic condition of the citizen is not robust enough for them to pay the service charge at CIC. Hence it is an improbability that the CICs in Nagaland would be able to become self-sustaining in the event of withdrawal of government support.

Crisis of front-end personnel:

The operators who are the front-end personnel for running the CICs play a significant role in enhancing public awareness about its services. Due to the remoteness of location of the CICs in many districts of Nagaland, it was difficult to find trained personnel for recruitment. And even if they were available, retention in service was also difficult. Moreover, the operators also lacked motivation to deliver quality service proactively as their jobs were not confirmed and most of them were looking forward to be absorbed as full time government employees. According to Imsa Naga absence of competition led to complacency among the operators. In his opinion, had there been

incentives based on competitive performance, it would have prompted the operators to work more sincerely.

Community disconnect:

As discussed earlier, the CICs in Nagaland were primarily located within government premises for security concerns. Moreover, they were also structurally, as discussed in Chapter four, controlled by centralized forces with no institutional scope for community participation in management and operational process.

Had the CICs been located along with community based organizations or at places frequented by different sections of local people like markets, club houses or other popular community meeting places, the appeal and reach of the CICs would have been much better. Within the existing framework the villagers never felt that they could approach the custodian or other officials responsible for maintenance of the CIC to demand for restoration of services in case of prolonged breakdown. Like when asked why they did not approach the custodian SDO Civil to take up the matter at the district level and ensure the smooth operation of the CIC, the VC Chairman of Dhansiripar, Ringther Jeedun says that they never knew that something of that sort can be done. They assumed it to be a government service which the government has decided to discontinue. Local people did not feel connected to the centre which remained as a government enterprise managed by the government and functioning for the government.

Operational Situation in Assam

Assam had the distinction of having the highest number of CICs in the region and hence the opportunities expected to be derived out of the project were also higher. The case studies however bring out various operational problems faced by the CICs in the state. While some of them are specific to Assam, others are generic to the project design.

Lack of back-end preparedness:

Assam had initiated the process of digitization of data in various government departments which is the first step towards facilitating e-governance. Various software applications developed by NIC had been introduced through parent government departments for services like vehicle registration, land registration, issue of Jamabandi certificates etc. However, the intranet infrastructure for sharing of internal data across departments or within different sections of the same department was not in place. In most districts the process was limited to digitization at data entry point only. In some districts a few application forms for birth certificate, caste certificate etc. were available for download from the respective block portals. In some districts the CICs were authorized by the district administration to collect the filled-in application forms and bring them to the respective section of the district office for further processing. The certificates once ready could be collected by the applicant from the CIC. Online transaction and two-way interactivity was not operational in any district of Assam through CICs.

According to the SIO Assam, through the CICs the government was trying to replicate Bhoomi[23] – which is more of a front end delivery and digitization. The emphasis of e-governance has to be on business process reengineering (BPR). Implementation of any e-governance module according to him involves –

Technology – 15%
BPR – 35%
Change management – 45%
Luck – 5%

In the CIC project, NIC had the mandate to do only 15% - the technology component. Rest of the 80% were state subjects with NIC having no control over its implementation. The legal infrastructure required before delivery of e-governance services also awaited state approval.

Lack of operational coordination:

The lack of coordination between the state and central governments is exemplified by the fact that in some districts like Sonitpur and Jorhat in Assam the district administration was running parallel e-governance initiatives through service delivery kiosks. In Sonitpur, while the district administration had employed the services of Drishti to run information kiosks at Circle level, in Jorhat the district was running the UNDP funded e-setu[24] project at Block levels. Though the e-setu project was running on with objectives similar to the CIC project, the two were not coordinated or merged at the district level

[23] Bhoomi is a land registration system operational in Karnataka, India
[24] 'Setu' in Assamese means bridge

E-setu was launched in 2003 with UNDP funding in association with AMTRON[25] providing software and equipment support. The goals of the project were public facilitation, public information and to control behind-the-desk corruption. During the course of its operation the project has achieved financial sustainability. The project involves setting up of government and private kiosks (facilitation centres) in different parts of the district. Presently the project runs three kiosks at BDO offices of Tiok, Titabor and Jorhat blocks. Processing of all citizen-centric services like PRC, land record[26] etc. is done through the e-setu counter only. The applicant can collect the requisite forms from the e-setu counter and after completing formalities of collecting relevant documents and approval from other offices wherever required submits the same at the kiosk where s/he is given a receipt indicating a date on which s/he can come and collect the document applied for, which is normally within five days to a week's time. There is also a tatkal scheme whereby the document is delivered within two days of application on the payment of some extra charge.

There was also lack of coordination when it came to delivery of information through the CICs. According to DIO Jorhat, Pranjal Bezbaruah -

> In order to provide information to the public through the CICs there has to be a steady flow of information from the source. But in case of the CICs this source of information was not defined. There was no directive from the state administration asking the DCs to provide information about government schemes and beneficiaries to the CICs for onward communication to the public. (Interview)

[25] Assam Electronics Development Corporation Ltd. (AMTRON) is a government of Assam undertaking.
[26] Jamabandi certificates are provided under a software application developed by NIC called Dharitree.

In the absence of clear directives, many DCs, BDOs and sometimes even DIOs were not very clear about the actual mandate of the CICs or their respective roles in the operational chain.

Lack of sustained effort:

The ASHA project mentioned earlier in this chapter could have provided a viable source of income for the CIC, but unfortunately the initial thrust was not sustained by the different government departments, civil society organizations and private financial institutions involved in the process, which led to its failure. The CICs were chosen as the delivery platform for ASHA intending to help develop a better clientele base for their services in the long run. A self assessment report developed by NIC in 2006 while evaluating the performance of CICs in Assam and drawing a sustainability strategy for future states that –

> A feedback on the status of application software from the District Informatics Officers of NIC who look after the CICs of the respective districts confirms that no worthwhile application software is fully functional in any of the CICs of Assam except for ASHA – the online agriculture information and business portal. This, in spite of the fact, that NIC has many proven G2C software such as e-Suvidha, PGRAMS, Jansewa, Rural Bazaar, etc. Even ASHA's performance is very lack lustre to say the least.

The CIC operators were not provided with any stake or incentive within the programme scheme. Thus, when the ASHA programme stopped, the farmers wanted their kids to be trained in lieu of the registration money paid. But the operators declined saying

that training the kids was not part of the programme and even if it is stopped midway they cannot compensate by training so many kids as they were not paid anything within the ASHA project. Justifying this stand, Pradipta Sarkar of Deborgaon CIC in Kokrajhar says -

> Why should we do all this extra work of training so many kids? It is lot of work and neither there is the infrastructure nor the time to devote to so many kids. We do not have any extra incentive to do all this work. Between the two of us (operators) we have to manage the CIC as well as other official work as and when needed. (Interview)

Thus a viable strategy for sustenance of CICs ran into discontinuation due to lack of constant support from those involved in it.

Human intermediary and trust deficit:

The human intermediary who is the last node of connection between the supply and demand side stakeholders has a crucial role to play in making the ICT initiative successful. This becomes more imperative when the service is being delivered at a kiosk/telecentre beyond the periphery of concerned government department. Trust between citizens and intermediaries at various levels affects the way e-governance services are delivered through telecenters. Drawing from theoretical framework of sociology of governance and taking an institutionalist perspective, existing research highlights that institutional membership of the intermediary is critical for effective e-governance service delivery (Rajalekshmi, 2008).

With multiple development agencies constantly engaged with the rural people, they are often bombarded with overabundance of information from multiple sources like extension workers, anganwadi workers, peer group etc., leaving them at a loss to distinguish one source from the other. The kiosk becomes one among such multiple sources, sometimes more alien than the rest as the available information is neither in their local language nor is it specific to their geographic region (Kurien & Toyama 2007). This creates further mistrust for the information. Under such situation the role of the human intermediary attains significance in bridging the trust deficit. While one's entrepreneurial skill is crucial for financial sustainability of the rural kiosk, the ability to connect with local people sympathetically and resourcefulness in attending to their need supplements its vital developmental focus.

The operators in the CICs under consideration had no entrepreneurial motivation as they drew fixed salaries Rs. 5500/- per moth irrespective of the revenue generated and they did not have any stake in the operation of the project. They functioned like government servants with very little accountability for the success of the project. The rigid structure of operation also left very little scope for innovation for the motivated few. The operators did not have any procedural clearance to collect or ask for information from the Block officials for updating the block portals though in most occasions they were located within the same premises. The Block officials also did not find it binding on them in any way to facilitate easy flow of locally relevant information to the CIC. Wherever the operators managed to get some details during the launch of the project through facilitation of the DIO, the same was rarely updated on a regular basis

subsequently. The portals also lacked interactive features and the operators had been provided with a generic information categorization plan by NIC wherein they only functioned as content managers.

If the operators were expected to generate awareness and motivate the common people to use the services of CIC, they were never trained for the purpose and their technical qualifications did not necessarily equip them with skills of public communication.

According to Mohinuddin, the operator of Hatidura CIC in Kokrajhar district, the absence of e-governance applications did not allow the operators to offer G2C services, while the remote location of the CICs among poor villagers made it difficult to have sustainable revenue generation. Their preoccupation with digitization and other election related work for the district administration coupled with an uncertain contractual job profile left them de-motivated to plan for any B2C services which could have supplemented for the revenue in the absence of the former. Some of the operators, like Ishtiaq Ahmed of Majuli, with degree and diploma in IT found themselves over-qualified for the job which only required minimal skills in basic application software. The uncertain future for the CICs in the event of the state governments not accepting to take over the operations from NIC and irregular salary payments further added to their woes. Most of them had crossed the age limit for government employment during the project period. With families to support and no job guarantee, majority of the operators got busy

in efforts to secure their future through agitation and advocacy with NIC and respective state governments.

Thus motivation for social welfare, incentive based entrepreneurship drive, appropriate selection and training, ownership and stake within a flexible working structure for human intermediaries play a significant role in deciding the sustainability and success of ICT mediated developmental governance.

Locating the CICs:

Following pilot testing, the CICs were located either close to the premises of Block officials or educational institutions like schools etc. Security of the expensive equipment in a trouble-torn region was one of the main drivers for this decision. Both locations in the long run proved to have their own set of advantages and disadvantages. Though many of the CICs in Assam (115 of 219) were located in the BDO premises there was no operational linkage between the two to share locally relevant information for regular update into the block portals. While being close to Block officials gave CICs better visibility and access to government information, it also resulted in the CICs being unduly engaged by the officials thus alienating them from the public. As the CICs never offered any G2C services, by locating them near the Block office rather than bringing any benefit made them miss the opportunity of connecting to a broader public and youth.

Conversely the CICs located in educational institutions managed to get a steady flow of revenue by providing IT training to students within the school. But when the state

governments introduced computer education in schools as part of Rajiv Gandhi Computer Literacy Programme (RGCLP) in High Schools or other similar sponsored schemes, the CICs lost out on their assured source of income. In addition to this, being located within the premises of government institutions, the timings of the CIC were corresponding to official working hours and would remain closed on Saturdays and Sundays making it difficult for the public to utilize the facilities at convenient timings.

From the discussion in the preceding section on the operational problems of the CICs in Assam and Nagland it emerges that while some of them arose from the structural problem inherent within the CIC design vis-à-vis the context within which the CICs were expected to function, others were due to the lack of institutional vision and preparedness.

Looking at Bottlenecks

Heeks (2003) and Keniston (2004) argue that in spite of the 'leapfrogging' and 'empowerment' enthusiasm, majority of the e-governance projects in developing countries, are either partial or total failure, India being no exception. The development focus on northeast necessitated a slotted approach leading to the implementation of CICs as an information, development and governance project. The elements of leapfrogging, modernity and empowerment were conceived into the CIC project as well. However, as a central government initiative its perception as a project never sank in among the state governments, its officials and other local functionaries like the most important last-mile variable – the CIC operators.

The CIC project involved appointment of an operator or functionary who would be responsible for the day to day operations of the CIC at the beneficiary end. Their appointment had led to hopes of sustained funding among the state machinery and expectation of secure jobs among the operators. However at the end of the stipulated project period of five years the central government made it clear during its consultation with various state governments that they will have to take over the management of the CICs from NIC. As such when it was realised that the central government was keen on its plans of cutting the flow of funds, the enterprise and motivation levels of the operators never matched the system expectations leading to a gap that Heeks (2003) refer to as 'design reality gaps'. When the pivot of financial sustainability on which the entire project was designed fell apart, there was panic and confusion about the future of the project. This possibility was not anticipated by NIC at the planning stage and hence there was no contingent plan available at hand other than passing the buck to other agency or mechanism to carry forward the funding. For the state governments it was a missed opportunity in terms of having not utilized the central investment of material and human resources and having to continue beyond five years

The political economy of information delivery within the broad framework of communication for development seems to be skewed in favour of market forces wherein the success and failure of such projects get determined by the robustness of the market in creating and sustaining the demand for its services. In the absence of a strong local market in the northeast region or IT industries or service industries, the demand for informational services and the ability of the citizenry to pay for the same was minimal.

Whether the involvement of such forces within the existing project design alone would have helped in sustaining it, is however a matter of further enquiry. As a preliminary assessment such market forces or actors were not existent. Part of the CIC project endeavour could have been to identify and nurture such entities that in turn could have sustained the project.

The centralised information delivery system embedded in the project saw its extension to the entire northeast as one broad geographic spread. It was built on the notions of information delivery about services when the associated infrastructure for the actual physical delivery of the services was precariously missing. Access to information about health, weather and market can bring about little change when on the ground health care, irrigation and transportation infrastructure are not developed simultaneously and this hierarchy in development was probably what the DC of Dimapur was alluding to when he said that central government should concentrate more on building roads in northeast rather than CICs. Lack of clarity on what essentially constituted the information kernel for CICs is another factor where what should be provided and by whom was itself not clear as articulated by the DIO of Jorhat to the researcher.

The competing and parallel institutional frameworks that emerged on the field was another factor where high visibility support initiatives through World Bank and UNDP perhaps got better attention although they rode high on the CICs' plan and philosophy. The competition between state and central IT wings like AMTRON and NIC to come up with 'indigenous' and 'successful' ICT4D designs probably never allowed

them to share the platform, learning experience or resources at the field level compromising the potential of both in the process.

The one to lose out the most in the failure of the Community Information Centres was probably the community itself whose stake was the highest in this developmental effort. Relegated only to become the users of the services, they were not consulted either during the launch or roll-back of the programme. The costs of these failures were very high in terms of missed opportunities and financial and political loss and most of them never even came to know about it.

However, such failures are usually hushed up and lessons learnt from one project are neither communicated nor consulted during the planning of a similar initiative elsewhere. As Shefali Dash, DDG of NIC admits that the CIC project which she was supervising failed in terms of delivery of e-governance services for not having factored the awareness and sensitivity building measures among the state governments and the public. The MoUs signed with the state governments were expected to be binding documents impressing upon them the commitment to assure the success of the project. In 2002 when the project was launched, ICT was not yet a buzzword in developmental circles of the northeastern states and hence apart from the citizenry the state machinery also needed to be sensitized about the opportunities of the same. She had expressed a hope that future ICT4D projects taken up by DIT do not commit similar mistakes but cannot assure so because NIC may not necessarily be part of the planning process for the new project.

Thus, the wheel is constantly being re-invented when it comes to designing a successful e-governance project. Similar concerns were also highlighted by Sanjay Gaden working with DIT when he voiced his apprehensions about the MIS being planned for delivery of e-governance services in the country. He cautioned about political agenda and target to meet set deadlines taking a toll over comprehensive planning and long-term vision in designing ICT4D interventions.

Most of the e-governance projects in India are planned only for governance reform and take into account the goals articulated by the supply-side stakeholders who are involved in the planning, design, implementation and maintenance of the project. Demand-side stakeholders are rarely involved in project design and usually participate only in assessment studies after project implementation. Unfortunately even the feedback given by them is rarely worked back into project implementation and the reports remain piled up in some obscure corners of government departments. Rahul De` (2006, 2005) argues that if projects were designed with development goals rather than being driven only by governance goals they would have been more successful in improving the 'freedom and capabilities' of the common people or demand-side stakeholders. Looking at the CIC project it can be added that it is also important to see whose development goals get articulated in such projects. It is important to take note of not only what feedback but whose feedback and how that gets worked back into the project design, if at all they ever do. The need of the hour probably is also to create a database where learning experiences from various such projects can be collated and referred to by ICT4D practitioners.

In case of the CIC project various assessment studies undertaken during the project implementation period had indicated towards the shortfalls of the system in spite of it being enlisted as one of the successful cases of e-governance from developing countries by 'UNESCO e-government Toolkit for Developing Countries'. A need assessment study conducted by NEIDS, Shillong for NIC in 2004 provided clear suggestions for improvement of service delivery by facilitating community ownership, de-bureaucratization in operation of the centres, localization of information in block portals and re-appropriation of the organizational structure. It had suggested introduction of services in the sectors of education, agriculture, tourism, banking, local news and grievance redressal. The study also reported abysmally low levels of awareness among the public about CICs, their services and potential benefits. The need assessment study mentioned that nearly 80 per cent of the population were not aware about the existence of the CICs and hence there was no way that they could have any expectations from it or idea about the utility of its services.

Another study on 'Accelerated Provisions of Rural Telecommunications Services' conducted by IIM Ahmedabad for DIT in 2005 did an analysis of the CIC project and indicated towards lack of coordination between different government departments impeding the successful delivery of citizen centric services. It also emphasized on creating an entrepreneurial mindset among the CIC operators as key to success of the CICs in terms of revenue generation and self-sustenance and went on to suggest performance linked incentive pay for them. Unfortunately, none of these suggestions

were found to have been incorporated into project implementation till its withdrawal in 2009.

In the light of the above discussion and the structural parameters discussed in chapter four let us now take a look at the stated objectives of the CIC project and the specific achievements as evident from field observation –

Table 9: Comparing the CIC objectives against achievements

To provide ICT infrastructure at the block level	Each block within the eight states of the northeastern region were provided with the standard ICT infrastructure as part of the CIC scheme
To provide Web Access and Internet Services	The CICs were the first to introduces internet services in many blocks of the region where it did not exist prior to the project period
To create IT awareness among locals	Many people became aware about the possibilities that new age communication technologies have to offer in terms of networking, access to wide variety of information and services
To provide computer training programmes	CICs introduced facilities for basic computer training in sub-urban and rural localities at affordable costs. Youth and children benefited the most
To provide E-learning (Computer-Aided Learning Processes) and E-education	E-learning modules available at CICs pertained to Central Education Board

	syllabus while majority of schools in the states follow the State Board syllabus. Online examination for computer training programmes organized by CICs
To provide E-governance Applications	Not introduced
To provide access to Socio-Economic Databases	Local data not collated to be made available
To provide E-medicine and E-consulting	Few attempts made but not part of sustained exercise
To provide Market Access and E-commerce	Attempted as part of ASHA programme in Assam but discontinued
To provide Weather Information	Attempted as part of ASHA programme in Assam but discontinued
To provide access to Tender Notification	Few attempts made but not part of sustained exercise
To provide E-employment Notification	Not introduced
To provide Edutainment	CICs extensively used to read online newspapers, browse the internet and download music and video

Thus we see that the CICs have met their objectives in terms of providing access to technology and benefits of web access. If not the digital divide in all its manifestations, the CICs did make a dent into the information divide by opening up opportunities for the local youth to keep abreast of international, national and regional developments through reading online newspapers and other news feed. But delivery of e-governance was limited to its basic variant, as referred in chapter two, of providing only static

informational services with no articulated motive of moving to the next interactive and transformational levels of full-fledged democratic participation as part of the project strategy.

The idea of the present study was however not just to draw conclusion about the success or failure of the CIC project but to investigate the potential of such ICT4D interventions for information delivery within the overarching communication for development discourse. In order to understand the potential of such internet based kiosk modules in fostering empowerment, transformation of democratic governance and facilitating participation in community informatics, this analysis of the CIC project needs to go beyond the confines of statistical and economic parameters to interrelate the holistic framework within which the CIC project was conceived and the opportunities articulated by the community. This is attempted in the following chapter.

CHAPTER SIX

Summary and Conclusions

The debate over information and communication technologies serving as a catalyst for development has been divided into two diametric discourses. One asserts on the positive role of technology, specifically the internet, towards transforming poverty in developing societies and the other is sceptical in believing that technologies, if not exacerbate the digital divide, can do little to bridge the gap and bring about social transformation all on their own. While new age information and communication technologies are assumed to have the potential to eliminate poverty, bring about economic development for the underprivileged and allow developing countries to leap-frog into the information age, access to ICTs alone cannot empower the marginalized. ICTs have an enormously important role to play in building the social capability to generate information and to apply knowledge for sustainable development. But with higher potential of the new age ICTs, the challenges posed for bridging the digital divide are also higher.

The present study is motivated with the intention to understand this environment of ICT4D implementation in India through empirical analysis of an important and crucial intervention - the CIC project. The unique geographical, political and cultural context of the northeastern region of the country and its people lent itself appropriately to institutional analysis of ICT policy implementation and ethno-methodological study to analyse how ICT4D initiatives, such as the CICs, can become facilitators of democratic

participation for empowered communities in an emerging knowledge society. In this concluding chapter the CIC project will be analysed with respect to these broad frameworks.

Achieving Empowerment and Development

In the CIC project the empowerment potential of ICT was supposed to be realized through delivery of e-governance services to the citizen. Empowerment is a person's capacity to make effective choices and the capacity to transform these choices into desired actions and outcomes (Alsop & Heinsohn, 2005). Within the e-governance framework this got translated into making government simple, moral, accountable, responsive and transparent – e-governance was supposed to be SMART governance 'available at the doorstep' of the citizen. ICT and e-governance were seen as effective tools to eliminate the middle-man and prevent corruption and facilitate easy access to government services at a location close to home for the rural population. As Reengthar Jeedun of Dhansiripar Village Council of Dimapur articulated the benefit that e-governance can bring if introduced through CICs -

> Most people in the village do not know how to process their papers for different certificates needed from time to time from the DC's office. So we usually pay a person from the village who is aware of the procedure to get the job done and ask him to do it for us. If such certificates are made available through the CICs, then we would not have to go to Dimapur and can get it done ourselves. (Interview)

DC of Jorhat, Changsang, however emphasized that e-governance initiatives should not be limited to providing certificates but should also facilitate information to

people about government schemes and should provide opportunities to the citizen to voice local concerns and issues like need for drinking water, tube-well, road, hospital/medical facilities and the like, so that the district administration and block offices could address them appropriately.

In the IT policy framework, internet enabled information kiosks were seen as a viable means of bridging the information gap for the rural population which would in turn impact both economic and social variables for development. The potential of this 'information for empowerment and economic development' proposition is aptly articulated by Prabharani Das of Karunagaon Mahila Samiti[27] from Lala block of Hailakandi while talking about the potential of e-governance -

> There are instances when our proposals are held up at the district office without any reason and when we go there to pursue the matter, we are not allowed to meet the concerned officials and even if we get to meet, we do not get the appropriate response. Women are not aware of official procedures and hence never come to know what went wrong with their proposals and at what level. It would be very beneficial for us if such procedures are made online whereby we can know the process and progress of our proposals. This will save us from being exploited by the officials due to misinformation. (Interview)

Thus local communities, and more so, the disadvantaged women among them, are capable of articulating the benefits of transparency and accountability in governance which can facilitate their economic independence and empowerment. What is missing is probably the right will to initiate the changes at the right places by the governance machinery. While governments concentrate on managing 'access' and ensuring 'usability' of the ICT4D interventions, the needs articulated by communities can

[27] A local Self Help Group (SHG).

sometimes be very different. Like the man in Leangha village of Mon who, when asked to mention the three most important things he would want to have for his native village, replies –

> We need to create a secure water source, ensure that every child can read the Bible and build better roads for different access points within the village and construct a community gathering place where villagers can meet and discuss issues of common interest. (Interview)

And members of the VDB of Ungma village in Mokokchung, Nagaland, who are planning to install a hydro-electric power plant on the river that flows through the village, feel that internet can provide them access to information for better village planning and sketching of development work based on learning experiences and computers can be useful for digitizing the records of proceedings of their meetings and decisions taken.

It is interesting to note here how both infrastructure and communication needs get articulated by community members within a localized cultural context leaving the scope open for ICT4D enthusiasts to adapt it within their policy framework. What we need to see is whether these information needs which require local treatment and approach can be met within the centralized and homogenized articulation of ICT4D in our policy and project design. The answer is probably 'no', unless the community dimension is carefully and consciously incorporated.

The scope of the CICs or any other ICT mediated development initiative in a resource-crunch region is by and large shaped by the articulation of the goals of development and the possibilities generated through such ICT initiatives. This can be best

understood from the definition of development that emerged during a focus group discussion among some villagers of Leangha village in Mon, Nagaland.

They said, “Development will be achieved when young people from the village get the post-graduate degree, all children in the village are able to read the Bible and the prayer/song book at the church, and all villagers can earn their livelihood without depending on anyone. A lady among the group added - “till now we have survived on aid from outsiders; development would mean to become a provider for others”. And when asked about how one can achieve development, they answered – “by having faith in god and sharing whatever we have.” To a significant extent they were expecting formal and non formal educational linkages and opportunities through the CIC.

Thus, the spirit of participation for community development and faith in one’s social capital form the hallmarks of close-knit village communities like those in Nagaland where interpersonal links are not only a means of community networking but are an essential part of one’s survival strategy. The influence of religious faith on articulation of developmental aspirations is also evinced in the sentiment of the Christian majority Naga people where the Priest of the local Church is usually consulted while framing development plans for the village. When ICT4D interventions within the community remain oblivious of such existing channels of validation and appropriation of development strategies they are bound to be either rejected or ignored by the people.

The CIC framework did not take advantage of this inherent social capital within the community to build on a structure of participatory development articulation. While community informatics emphasizes that the viability of ICT projects depends on sensitivity towards local culture and knowledge within a flexible project design, it was not factored appropriately in the CIC project which concentrated more on making a robust technological intervention. The existing networks of religious, social and cultural groups were neither consulted nor involved as partners in the process. This was an underlying discontentment that was latent in their responses to the study.

Indigenous practices of local self governance in Nagaland like the VDBs have usually been appreciated for their ability to engage the people proactively in community development. The communitisation programme in Nagaland is another unique experiment in self-management where the village community successfully manages its shared local resources of education, health and electricity envisioning the revival and revitalization of the Naga social capital. Though the communitisation project is not uniformly successful across all areas of Nagaland, it would have been interesting to see if it was possible to transfer the management of the CICs to the local community in a similar spirit.

Women's organizations in the northeast like Naga Mothers' Association, Manipuri Meira Paibi, Kuki Women's Association and Assam Mahila Samiti with evidence of having successfully garnered social mobilization to fight for peace, development, anti-alcoholism and drug abuse within their respective communities could

have gone a long way in devising innovative uses of networking and social inclusion through the CIC facilities. As a member of Care Home Miqlat Ministry, a civil society organization in Dimapur opined, CICs could have been used to create awareness about women's trafficking and alcohol abuse by using its premises to hold meetings for women and then by educating them through the internet on the issue. This however could have been possible only within a flexible project design where the communities would have the right to decide how to make best use of the communication technologies made available to them.

This is where Mowlana (2001), while appreciating the versatility of new communication technologies, cautions that they can easily lend themselves to centralized control. He argues that indigenous communication rooted in local knowledge is intimately intertwined with the identity and needs of the people at grassroots and is crucial for survival and growth of the community. Local knowledge and communication systems are holistic and contribute towards improving the quality of life as they are managed by the users themselves. Rather than replacing indigenous communication, the new communication technologies should exist side by side with it and encourage increased participation and equality in communication flows. The direction and content of such flows may be in a constant state of flux, but need to be recognised nevertheless.

The political economy of the knowledge network also poses challenges in terms of who has control over and access to what knowledge. In the Indian context the same also applies to certain central and peripheral knowledge systems where there are

discrepancies in flow of information to and from certain communities. While some peripheral communities are deemed to be knowledge-poor and hence require more flow of information to them, others are deemed to be knowledge-rich and hence have the capacity to facilitate information flow from them.

The CIC framework of operation was created independent of this local knowledge system. All the articulated objectives of the project were about information delivery with none of it talking about the need to facilitate networking and knowledge sharing. This is where one gets the feeling that technology is being celebrated for its own sake and not for what it is intended to do. Indigenous information on local practices of agriculture like jhoom, local medicines and herbs, festivals and folklore did not find adequate representation. Till the end of the project period no content was provided in local language in any of the block portals in spite of higher literacy rates compared to the rest of India and the fact that many tribes in the region use Roman script to write their language. Assamese and Bengali, two official languages in Assam, have well developed fonts regularly used by online newspapers and other popular websites, but none of the CICs websites in the state used it.

Some scholars argue that ICT mediated proliferation/publication of local knowledge will exhaust the Intellectual Property Rights (IPR) and limit any benefit that the community producing the knowledge may have from it. But the loss of not being a part of the knowledge network is also manifold. Secrecy and confinement to oral traditions not only deprives the local knowledge resources of their due esteem but also

limits their possibility of sustenance, adoption by younger generation and improvement of livelihood for 'knowledge-rich poor communities' who are owners of such knowledge (Gupta, Kothari, Patel; 2000).

Thus, transition from a conventional information and knowledge management system to a modern ICT based system has to follow either a pedagogical, political or an economic paradigm. Evolution of a suitable policy environment in which the delivery of such services is made efficient, location-dependent and without any time restriction using the power of ICT in partnership with the private/public sector is the key to making the transition to a modern ICT based system. It is argued that communication technology policy has to be people centred and therefore requires that whatever instruments used (including privatization) should be subject to public accountability and should ensure realization of the social development potential contained in technology (Hamelink, 2001).

Probably in response to these criticisms and in a bid to involve the corporate sector to invest into the emerging market of e-governance and ICT4D, GoI launched the National e-Governance Plan (NeGP) in all states across a range of government departments in a public private partnership (PPP) mode.

The Way Forward - NeGP

NeGP was approved by the Cabinet in 2006 with a vision is to -

> Make all government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency and reliability of such services at affordable costs to realise the basic needs of the common man.

The three pillar model of NeGP includes setting up of State Wide Area Network (SWAN), State Data Centre (SDC) and Common Service Centre (CSC).

SWAN is being set up to provide seamless 2 Mbps G2G connectivity up to Block level with provision for wireless connectivity from the Block level to the village level. State Data Centres, as the name suggests, would serve as the central repository of data for the state. SDCs would secure data storage and facilitate online delivery of citizen services and information, provide support for disaster recovery and remote management etc. SDCs would also provide better operation and management control and minimize overall cost of data management. SDC scheme has been approved by government with an outlay of Rs. 1623.20 Crores over a period of five years. It is expected that the SDCs shall be set-up and operationalised in all the States and Union Territories by March 2011.

The face of NeGP are the CSCs which are envisioned to serve as the front-end delivery points for government, private and social sector services to rural citizens of India in an integrated manner. By setting up 100,000 CSCs for 600,000 villages of India the objective is to develop a platform that can enable government, private and social sector organizations to align their social and commercial goals for the benefit of rural

population through a combination of IT-based as well as non-IT-based services. The Scheme has been approved at a total cost of Rs. 5742 Crores over four years, of which GOI is estimated to contribute Rs. 856 Crores and the state governments Rs. 793 Crores. The balance resources of Rs. 4093 Crores would be mobilized from the private sector who will be involved in setting up the physical infrastructure at the front-end delivery point.

The CSC Scheme has a 3-tier implementation framework. At the first level would be the local Village Level Entrepreneur (VLE- loosely analogous to a franchisee), to service the rural consumer in a cluster of 5-6 villages. At the second/middle level would be an entity termed the Service Centre Agency (SCA – loosely analogous to a franchiser) to operate, manage and build the VLE network and business. At the third level would be the agency designated by the respective states - the State Designated Agency (SDA) to facilitate implementation of the scheme within the state and to provide requisite policy, content and other support to the SCAs.

Thus, NeGP involves more expansive plan of introducing e-governance across the geographical span of the nation. The PPP model and investment by the corporate sector into the scheme necessitated that the front end delivery nodes deliver B2C and B2B services apart from G2C services to address a viable business opportunity for the VLE.

CIC to CSC – Marking the Changes

The core changes that were incorporated into the CSC scheme, over and above the CIC structure was to introduce the local level entrepreneur who now had a stake in the success or failure of the CSC; institutionalization of the back-end digitization process through SDCs; and involving the state as a financial investor into the project apart from the corporate sector who were supposed to have the biggest share of investment into the project. What gets achieved by this?

By giving a stake to the VLE in the success of the project, the scheme ensures the engagement and commitment of the human intermediary towards efficient service delivery. By formalizing the participation of the state government in terms of its designated agency and financial commitment, the scheme intends to engage the state into a meaningful partnership. And by having the private sector to invest in the scheme, the central government effectively contains its own budgetary commitment towards ICT mediated welfare governance.

But, does the project move towards community informatics? Does it provide better opportunities to the citizenry to interact and participate in the process of deciding what services to be provided and how? Does the project engage more proactively with the local institutions and communities to help them network, sustain and foster their traditional knowledge systems? May be not.

The present study indicates that the chances of success for the new structure are fairly limited. Within the new framework the market forces get to determine the trajectory of growth for the CSCs whereby only those services that will have a business value get prominence. The welfare dynamics intended for the local communities stands to be the loser in this nationalized plan.

Responses from DIT, NIC and IL&FS officials on the institutional articulation of ICT4D approach and how the implementation of the CIC and CSC project were envisioned within this broad framework with special reference to northeast India; the long term development goals outlined in the IT policy of the country; and priorities and perceptions of executives who are responsible for final implementation of the projects in northeast bring to light certain inherent contradictions -

Table 10: Policy and practice in ICT4D initiatives

Units	**Policy**	**Practice**
Development	Outlines development as being associated with wellbeing in agriculture, health, education, employment and other economic opportunities, access to information and easy transaction with government.	**CSC:** Entrepreneurship development and access to government **CIC:** Interventions in agriculture, health, IT education and access to government
Development goals	Infrastructure development in both software and hardware sector coupled with capacity	**CSC:** Generate employment opportunities and improve

	building of the citizen, governance reform	access to goods and services in both government and private sector **CIC:** Provide basic IT training to rural youth and spread awareness about IT opportunities
Target beneficiaries	Citizen: no special categories identified – emphasis on rural areas	**CSC:** National plan implementation including both rural and semi-urban areas **CIC:** Emphasis on rural connectivity in northeastern region
Socio cultural factors towards adoption of technology	Not considered separately	Not considered separately
Stakeholder participation in communication process	PPP model, Central planning with decentralized implementation	**CSC:** No scope identified for citizen participation. Civil society groups are encouraged to come as VLEs **CIC:** No scope for participation in planning and management. Existing scope for citizen and civil society

		participation in content generation not utilized
Gender and empowerment dimension	Not factored in policy	Not identified in implementation

Arun Verma from IL&FS, the private consultancy agency responsible for launching the CSCs, underscores its distinctions from the CICs as follows-

> While the CICs were an entirely government initiative with World Bank funding where internet connectivity and interconnectivity were made into essential features for these centres which were designed to become the last-mile connectivity for the districts, CSCs do not have any such mandate. The CICs had a prescriptive, standard hardware and system specifications. The CSCs put more emphasis on developing a viable business model where more autonomy is given to the local players to identify the best resources available at their end to develop a robust and sustainable business proposition. The CICs largely remained a government initiative with no ownership from the community. The CSCs on the flip side ride on the entrepreneurship of the local operator. (Interview)

It thus emerges that identification of an enhanced role for the local entrepreneur is a significant change under the CSC scheme. However, the dynamics of such local players in a business driven model is perhaps a contentious area given the low market conditions in the region and its conflict with welfare dynamics.

As on 31st October 2010, a total of 85,506 CSCs have been rolled out in 25 states including 5645 in the eight states of the northeast hosted by a range of franchisers serving as SCAs under the NeGP project scheme.

Table 11: SCAs appointed for CSCs in northeast

State	No. of CSCs	SCA appointed
Assam	4375	Zoom Developers Pvt. Ltd., SREI Infrastructure and Wipro
Nagaland	220	Terra Software Ltd.
Arunachal Pradesh	200	Terra Software Ltd.
Manipur	399	Zoom Developers Pvt. Ltd.
Mizoram	36	Zoom Developers Pvt. Ltd.
Meghalaya	225	Basix India Ltd.
Tripura	145	Comat Technologies and Hughes Communications
Sikkim	45	Comat Technologies and Hughes Communications
Total	**5645**	**Total of seven private sector companies engaged as SCAs in NE region**

However, according to data posted on MICT website some of the existing CSCs, nearly 4560 situated across seven out of the 25 states where they have been initialized, have become non-operational due to lack of availability of adequate G2C and other services. This is evident, as sub-urban rural economies around CSCs are not robust enough to help them survive through delivery of consumerist peripheral services alone. It is the quintessential G2C service which can motivate a poor villager to use the kiosk services.

What needs to be seen now is how the structural differences of CICs and CSCs get translated into learning experiences and do not become impediments in successful e-governance delivery. Writing off a Rs. 243 crores worth regional ICT4D project in favour

of a more nationalized approach however has to be evaluated beyond the narrow confines of success and failure to see what changes it can bring into the lives of people and their socio-economic status. In this context giving away of the Community Information Centre to be replaced by Common Service Centre can be termed neither as a success nor failure, but a huge opportunity missed for the communities in northeast.

In India this shift in ICT4D approaches towards sustainable business entities also needs no be seen within the larger context of the growth in telecommunications where managing a communication connect across the span of the country first got prioritized while designing the expansive telecom policy. The ICT policy of India since 1990s underscores efforts to multiply internet access points for common people. While National Telecom Policy (NTP) 1999 recommended converting Public Call Offices (PCOs) wherever possible into Tele-info centres having multimedia capability like ISDN services, remote database access, government and community information systems; the IT Task Force (referred to earlier in chapter four) envisioned conversion of STD/ISD booths in the country into information-kiosks providing internet and other related services. Thus, the strategy for expansion of IT infrastructure to remote rural corners of the country has been primarily similar to that planned earlier for the expansion of rural teledensity. Conversely, the approach towards bridging the digital divide of today has been analogous to that adopted earlier to address concerns of missing link in telecommunication connectivity.

Policies for Communication Connect

The Missing Link identified by Maitland Commission was primarily an infrastructure problem as it was about access to telephone lines. People need not have special training or certain level of education to use a telephone. Hence the problem can be solved after installation of the requisite infrastructure, in this case, the telephone line. Today's technologies are far more complex and demanding and shortage of communication infrastructure is only part of the problem. Availability of a broadband connection does not guarantee that people will be able to make use of the internet or will feel the need to do so. Literacy, language skills and basic education are also factors that influence one's ability to participate in this digital age. Though there are few ICT innovations that offer to overcome these social barriers they are limited in scope and scale. Thus there remains a distinction between 'access' and 'use' in the digital era.

Since its emergence, the concept of digital divide has been identified as a multidimensional phenomenon requiring a multi-pronged approach to bridge the gap between the information-rich and poor. The various digital divides identified are at global, national, social, cultural and individual levels (Keniston 2004, Norris 2001). While some of these are subject to international deliberations, others need to be addressed through national policies ensuring equitable access and democratic participation. Sood (2008) highlights qualitative and quantitative barriers and equates them to be representative of the demand and supply sides of the chain respectively. According to him availability of ICT infrastructure and its price is indicative of the quantitative supply side, whereas the socio-cultural structure and felt needs of the users constitute the

qualitative barriers on demand side. For a country like India where 72 per cent of the population lives in villages, 50 percent of who are illiterate; where 74 per cent of rural households earn less than 700 US dollars per annum; 13 per cent of the villages are yet to be electrified and 25 per cent of the villages do not have any road link, the task for ICT to work as an agent for social change is really formidable.

The IT task force which had been given the mandate to suggest strategies for 'rapid development of IT' in India, though successful in strategizing the emergence of the country into a 'global IT super power', was left calling for more when it came to ensuring 'IT for all' within the country. The national campaign of 'Operation Knowledge' suggested by the task force to 'universalize computer literacy' emphasized more on creating a need for personal computers but had no specific component addressing the issue of extending benefits of IT to the majority of non-literate rural population. Its emphasis on providing the country with IT savvy tech-force through premiere technical institutes like IIIT, IISC and IIT in no doubt propelled the country into the forefront of IT software export market but contributed little in terms of improving the overall IT awareness and skill development of the average Indian population, leave alone rural India.

The communication infrastructure available for the people of India also projects some disturbing figures. The telecom sector reform in India which started following the National Telecom Policy (NTP) 1999 has been effective in surpassing its target in terms of improving the overall teledensity through various expansion and liberalization policies

but largely failed in minimizing the gap between rural and urban teledensity. According to TRAI records of March 2010, while urban teledensity is at a whopping 119.73 per cent, rural teledensity remains at 24.29 per cent bringing the national average to 52.74 per cent. According to official statistics India also has the unique distinction of having more villages, nearly 97 per cent, connected through satellite based Village Public Telephones (VPTs) compared to the number of villages having electricity connection. There are also many sub-regional variations in teledensity. As for example among the three telecom circles for the northeastern region, NE-I Telecom Circle comprising the states of Meghalaya, Mizoram and Tripura has an overall teledensity of 60.27 per cent compared to NE-II Telecom Circle comprising the states of Manipur, Nagaland and Arunachal Pradesh with overall teledensity of 10.87 per cent and Assam Telecom Circle with overall teledensity of 26.01 per cent. Each of the telecom circles again has wider gaps between rural and urban teledensity (DoT, December 2009). The statistics indicating that the missing link between urban and rural remains far from being eliminated even after the massive telecom drive.

The telecom-centric development and later the informational development approach in India both seem to highlight dichotomies inherent within the ICT4D discourse that raise concerns about whether we are running the risk of putting the cart before the horse in our enthusiasm towards realizing the developmental potential offered by technological innovations. The deployment of national resources to strengthen the communicational infrastructure necessarily follows from expectations of acquiring developmental benefits. But the unequal distribution of this infrastructure across regions,

existing patterns of inequalities evident among different communities and inquiries as to whether such efforts are responsive to the actual needs of the people, calls for constant validation of this developmental paradigm.

Unfortunately in India there is no proper data available on the national income from ICT sector and the relative input and output into the manufacturing and software component of the sector, thus making it difficult to estimate its actual contribution to economic growth and ranking in global competitiveness. Without data on actual access and usage of internet and mobile telephony at sub-national levels (districts and below) it will be difficult to strategize inclusive growth for all communities through deployment of ICT (Narayana, 2007).

Another important phenomenon that factors consideration in this regard is the rapid proliferation of wireless technology and the concomitant growth in mobile telephony in the country over the last few years. There seems to be sharp existing divide between access to internet and mobile based wireless services. It is estimated that only a little over two percent of the Indian population owns a personal computer, 16.18 million people have internet and 8.71 million are broadband subscribers. While fixed line connections have shown a declining trend, the country has marked more than five fold growth in teledensity since 2005 thanks to the growth in wireless connectivity. Out of an overall teledensity of 52.74 per cent, 49.60 per cent is attributed from the 584.32 million wireless subscriptions. According to TRAI data (March 2010) 52 per cent of the population in India are connected by cell phones.

Though there are debates about whether the teledensity figures are indicative of actual ownership of cell phones and whether such ownership have transcended existing barriers of gender and other social inequalities to become drivers of social change (Sridhar and Singh, 2010), it has no doubt marked an exemplary improvement in the possibilities for information sharing. These shifts that have occurred in the telecom profile of the country including northeast indicate spread of cell phone connections faster than landlines with inherent potential of net enabled services as well. Although it is premature to assess the economics of providing information through such devices, it may in due course work out to be a viable option for G2C services. The market has already ventured into this through its B2C operations and there are also a few government initiatives like the Kisan Call Centre which runs a toll free service for agricultural information. In such situation how community based projects or initiatives using kiosk based modules intersect with the increasing potential of mobile hand held devices is an area that calls for further scrutiny.

Thus decisions on the scale and mode of investment in ICT infrastructure should necessarily be induced and guided by the local dynamics so as to meet appropriate development needs of communities. India's enthusiasm for a higher stake in the knowledge economy even with accrued private sector partnership should supplement its commitment to welfare governance through social sector intervention and supplant criticisms of 'ICT fetish' (Sanjay, 2002) through responsiveness to regional dynamics.

In this backdrop the lessons learnt from CICs may be useful for further interventions. The present analysis of the CIC project indicates the need to rethink ICT policy in a manner that the role of market forces and community is defined to complement each other in achieving a mutually beneficial and consensual ICT mediated developmental paradigm that a welfare state desires. It might be useful to draw parallels with the community radio policy in India where clear distinction has been made between business and community driven application of communication technology. However, radio has limitations that ICTs potentially can transcend. A futuristic approach is therefore needed. Community informatics that allows communities to self-manage their informational resources and decide on the extent, nature and purpose of technology mediation no doubt merits serious consideration. Therefore it has been actively debated and advocated in this study. It is by facilitating frictionless knowledge sharing that sustainable learning communities can progress towards innovative knowledge societies.

APPENDICES

Information Technology Landmarks in India

1998

- National Task Force on Information Technology formed

1999

- Task force submits it report in three parts
- Ministry of Information Technology is set up

2000

- Information Technology Act of India is passed by Parliament
- Community Information Centre Project in Northeast is planned
- Working Group on 'IT for Masses' formed to strategize assess to IT for common people

2001

- Ministry of IT is rechristened as Ministry of Information and Communication Technology to mark the increasing convergence of the two fields
- Pilot phase of CIC project launched in northeast in thirty Blocks

2002

- Tenth Five Year Plan takes up IT as a thrust area for development
- All 487 CICs made fully operational in northeast

2006

- National e-Governance Plan launched

2007

- CIC project given extension of two years after completion of five year initial term period to explore sustainability strategy

2008

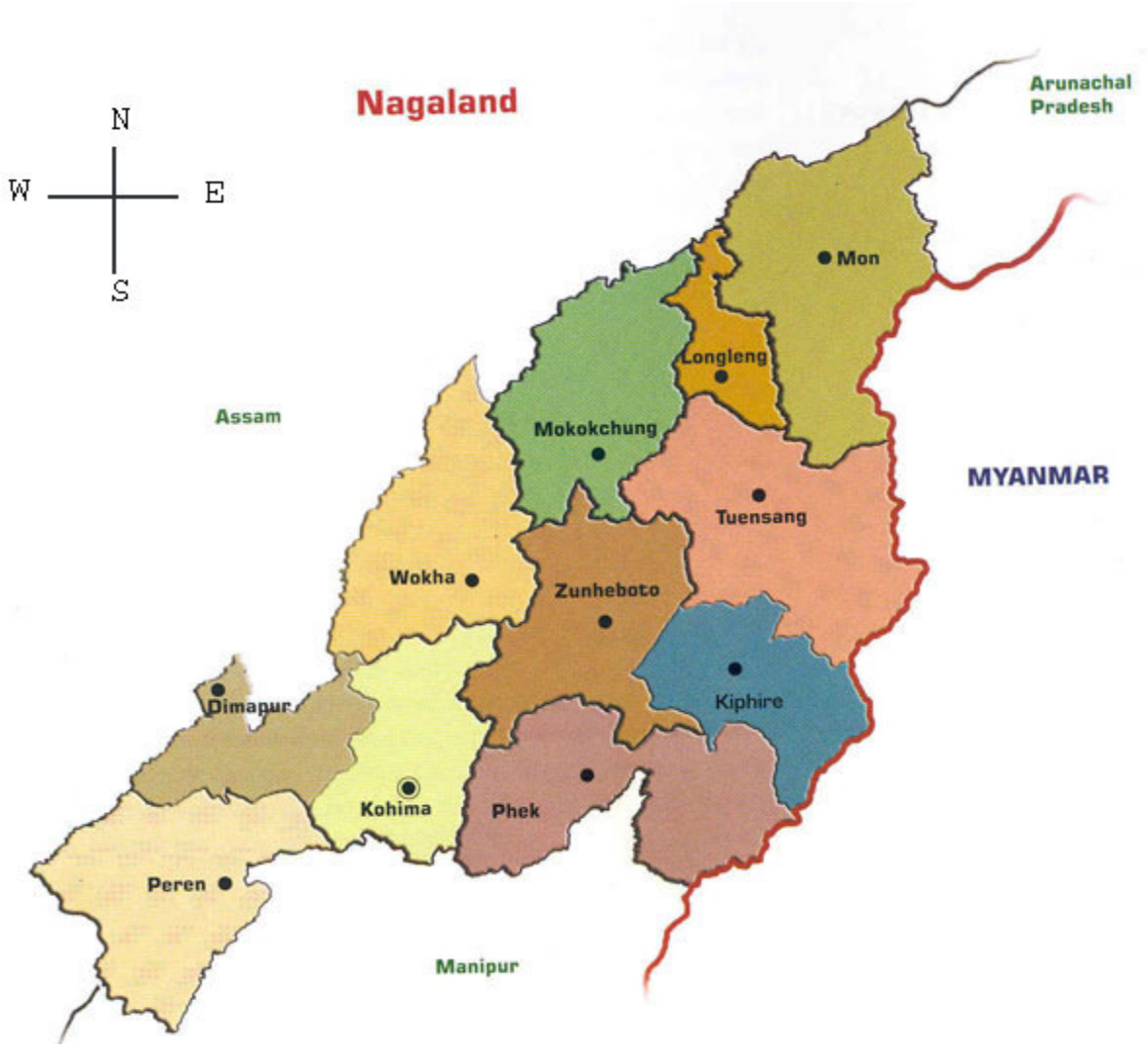
- IT Act amended to include provisions for emerging digital technologies

2009

- Central government support to CIC project withdrawn

Source: Census of India website

Source: Census of India website



Source: Census of India website

INTERVIEW PROTOCOL & SCHEDULE

(A) Interview Protocol for Village Community Members (non-users of CIC):

- Demography –Gender, age, education, profession, village, clan
- Languages you know to read, write and speak?
- What is the highest educational qualification among your family members? What does he/she do now? Where does he/she live? If he/she stays away from this place, why?
- How do you communicate with people/family members living away from you? Do you have a PCO in your locality?
- How do you get information about important things happening in your locality and outside?
- What information would you like to have easy access to? How do you get access to them now?
- Do you have a fixed telephone, mobile phone, radio, television, or computer? If not do you use them at other places? Where and at what cost? For what purpose do you use these communication facilities?
- Are you aware of the functions of a computer? What is a computer used for? Have you used one, when, where and for what purpose? How did you feel when you used it for the first time?
- Do you want to learn using a computer? How do you think it will help you?

- What is your level of interaction with govt offices? When did you last visit the Panchayat office/block office/district headquarter and why? How was the experience? Was your work done? How many visits were required to get the work done?
- Do you think there is a need to improve the delivery of government services to you? How can it be improved?
- Are you aware of the community information centre at the block office?
    - What services does it provide?
    - How did you come to know about it?
    - How far is it from your home?
    - Have you visited it?
    - Why, when, with whom?
- Would you like to have one at your village? How would it benefit you?
- Have you heard of the computer training provided at the CIC? Have you taken it? Yes/No – why?
- What information if provided at CIC will be helpful for you?
- What are the three most important community (development) related problems in your locality? Do you think the CIC can do anything in this respect? How?
- What resources are lacking in your locality that you would like to have access to? How do you get access to them now?

- Do you have a health centre in your village? How far is the nearest health centre from your home? Are adequate services available at times of emergency? Where do you go in case of critical medical condition?
- Do you have a school in your village? What level of education is available there? Are you satisfied with the education facilities available? Where would you want your children to study and why?
- How would you define a good living condition? What are the resources required to have a good living condition?
- What are the various job opportunities in your locality? Are they sufficiently rewarding? What new employment opportunities can be created and how?
- What are the places in the village where people meet regularly?
- How do you interact/network with your community and why? What networking process operates in your community and who are the members?
- Do you participate in community activities? If yes, what sort of activity? If not, why?
- Do women participate in community activities, if yes, to what extent and how? If no, why?
- Do women have equal access to all social utilities like men? Are there any differences? Yes/no, Why?
- Do women have financial independence? Do they have a say in the financial planning of the family?

- If you become a member of the village panchayet/village council/village development board what would you want to do for your locality? How do you think access to better communication and information facilities can assist you in this task?

(B) Interview Protocol for users of CIC:

- Demography – Gender, age, education, profession, village, clan
- How often do you visit the CIC? How far is it from your home?
- How did you come to know about it?
- What services are provided at the CIC?
- Do other members in your family visit the CIC? Who visits and why? If not, why?
- What services have you used here? Is the operation satisfactory?
- How has the CIC kiosk helped you?
- What other services, apart from those being delivered now, do you want to have at the CIC?
- Do you think that the service is useful? How would you feel if the CICs were to be taken off operation? Will it make any difference to you?
- How were you getting this service prior to the establishment of CIC?

- Have you used (the e-governance service/s delivered in that district)? How has the service delivery changed due to introduction of CIC? Do you think use of computers has improved the delivery of service? If yes, in what way? If no, why?
- Is the service charge at CIC appropriate?
- Would you be willing to pay more if better (faster, easier) services are delivered to you through the CIC? In such case what services would you expect to be delivered to you and at what cost?
- Do you use the computer yourself or take assistance from the operator? Why?
- Did you take training in computer from the CIC or you were already trained? Where were you trained and when?
- How does the CIC operator help you? Does he give enough attention to you during your visit to the CIC?
- Is the content available on CIC website adequate in terms of details, language, accuracy, immediacy, comprehensibility? How can the content be improved?
- Do you think the CIC can provide any help in terms of heath and education facilities? How? Would you be willing to pay for such services if available?
- Is the location of the CIC appropriate for you? If no, where would you want it to be located and why?
- Do you think that the CIC can become a viable node for social networking for the community? How?

- What are the existing nodes of social networking for your community? How do they operate? Who initiates the communication and how? How does the networking progress?
- What are the primary issues discussed in such social networks/meetings? Who decides the agenda and how?
- Do you think access to communication technologies like the computer or the internet can help in this process? How?

(C) Interview Protocol for village opinion leader: (Village School Master, Panchayet Member, Progressive Farmer, Member of Village Council, Member of Village Development Unit)

- Comment on the current role of CIC
- Have you used it and motivated others to use it? Why? How?
- Comment on delivery of government services through CIC
- What facilities can be improved and what additional services can be provided to make it more beneficial for the public?
- How can it help in community networking?
- How can it benefit the youth and women?
- If there was to be one CIC located in your village where would you want it to be located and what services can be provided there? Why?

- Would you like to suggest an alternative model for CIC operation? What is it and how is it better?
- Do you think access to communication technologies can improve the social and developmental scenario in your village? Yes, How – No, why not?
- How can these technologies help in the process of 'communitization'? (Nagaland only)

(D) Interview Protocol for CIC operator:

- What is your role as the CIC operator? What is your motivation and incentive for taking up this job?
- Were you provided any training before taking up this job? What training was provided and how did it benefit your service delivery? Do you feel the need for any further training and in what aspect?
- Does your block have a website of its own? Who has designed it and who updates it?
- How is the block website content decided, collected and updated? What has been the feedback about the website from visitors?
- What is the profile of the CIC visitors?
- Does the educational qualification of the user impact their usage of the services? How? What other factors affect usage- age, gender, occupation, social position?

- How many people have you trained in computer application since inception?
- What services do you provide at your CIC and which among these are most popular among the public? Why?
- Was there request for any additional service delivery from the public? What was it about and how has it been addressed?
- How according to you can the CIC benefit the local people? Is it delivering its full potential? Yes/no, why?
- What government services are provided through CICs in this district and what has been the response of public in your block to the e-delivery?
- How has the new system affected the delivery chain of government service? What are the improvements and short-comings and reasons thereof?
- What are the most pertinent development problems of your block? Can it be addressed by the CIC? Does it require up-gradation of the services or can be fulfilled with the existing mechanism? How?
- According to you what other services if provided by the CIC will be beneficial for the public and also provide financial viability for you?
- Have you tried suggesting it to the concerned district/block official? What was their response?
- What are the matters in which you need to have liaison with the block and district office? How frequently do you interact with them?

- What future do you see for the CICs? Do you think that this effort will be sustainable?
- What changes do you foresee with the coming of NeGP and the setting up of CSCs in addition to the CICs now operational?
- Would you consider shifting to a CSC when it becomes operational? Why?
- Do you think the CIC or the forthcoming CSC initiative can be made financially viable in the long run? How? How do you see your role in such a situation? Will it be different from now and in what respect?
- Have you attempted to develop liaison with any civil society organization functioning in your area? What has been the response?

(E) Interview Protocol for District Informatics Officer (NIC person associated with Deputy Commissioner's office):

- The DIO operates as a connecting node between the centre and state government at the last level of delivery of ICT mediated services. How do you see your role as a central govt functionary operating within the state government administration?
- What G2C services have been launched at your district? How does the administrative mechanism of the district/state facilitate delivery of G2C services?

- How is the responsibility of service delivery shared between your office and DC's/BDO's office? How do you collaborate?
- Your position as the DIO entrusts you with the responsibility of looking after the performance of CICs in the entire district. How would you rate the performance of your district as compared to other districts in the state? What is the reason of differential performance of districts in implementing this project?
- What factors affect the delivery and operation of the CIC project at the district level?
- The CICs were launched in 2002 as a five-year centrally sponsored scheme with two broad objectives of providing some G2C services and making the people ICT enabled. How would you rate the success of this scheme on these two parameters at the end of project period in 2007?
- The entire CIC project is conceived riding on the notion of ICT4D. For a state like Assam/Nagaland where primary infrastructure like road, health facilities and employment opportunities are missing, how do you think ICTs can make a difference in the overall development scenario?
- What are the most pertinent development issues in your district? How can ICTs play a role in this regard? Is there a possibility of integrating any such issues into the CIC structure at the district level? How can it be achieved?
- The CICs were mandated to make interventions in the areas of health, education, and ICT training. How far it has been achieved in your district?

- How do you think the CIC project has benefited the public and which section of the public has been benefited?

(F) Interview Protocol for Deputy Commissioner(s):

- Government of India has taken up IT in a big way and is putting consistent emphasis on making the entire nation IT enabled in terms of giving access to e-governance services as well as other web enabled information services. How would you respond to this entire effort and what specific plans do you have for your district?
- The entire CIC project is conceived riding on the notion of ICT4D. For a state like Assam/Nagaland where primary infrastructure like road, health facilities and employment opportunities are missing, how do you think ICTs can make a difference in the overall development scenario?
- What are the most pertinent development issues in your district? How can ICTs play a role in this regard? Is there a possibility of integrating any such issues into the CIC structure at the district level? How can it be achieved?
- What G2C services have been introduced in the district and what has been the response of the public? How would you rate the achievement?
- What problems does the district administration encounter in rolling out G2C services? How have you coped with it?

- What will be your suggestion to make the CICs a financially viable model? Have you conducted any need assessment at your district? If yes, results thereof.
- Do you think with the coming of NeGP and establishment of CSCs service delivery across the country/state will be homogenized and you will lose freedom of deciding your priorities? How do you plan to cope with the situation?
- First it was the CICs and now it is the CSCs with a different plan of operation. It seems too many projects are rolled out without proper evaluation of the field realities and user estimation. Don't you think such measures will make the public sceptical about the viability and trustworthiness of such ICT mediated service delivery options? What measure would you suggest to draw user attention?
- What is the scope of integrating education and health services into the CIC/CSC structure in your district? Do you have plans of doing so in future? How?
- How according to you can ICTs (in this case the CIC/CSC framework) become an empowering agent for women and other disadvantaged sections?
- What is the scope of delegating the responsibility of managing the CIC/CSC to the local people through process of community ownership? Can that work out as a viable model?

- Has any civil society organization approached you for integrating their networking services with the CIC framework? Did you take any initiative to involve them in the process?

(G) Interview Protocol for local NGO, Civil Society Group:

- What is your area of operation and focus of community intervention?
- Are you aware of the CICs in your area and services they deliver? What is your opinion about the utility of these services for the public?
- Would you like to suggest an alternative model for the operation of CICs/CSCs in your locality? What services would be most utilitarian for the public?
- Have you considered making the CIC a node of your operation? Yes, How?/ No, why not?
- Do you think such kiosks can become the hub for community interaction and develop to become viable sources of information and communication? How?
- How can ICT facilities become an empowering agent for women and the disadvantaged in the society?

(H) Interview Protocol for State Informatics Officer:

- The SIO functions as an intermediary between the centre and state government. How do you see your role as a central govt functionary operating within the state government administration?
- What G2C services have been launched in the state? How does the administrative mechanism of the state facilitate delivery of G2C services and how responsibilities are shared between NIC and the state officials?
- Your position as the SIO puts you in charge of all CICs operating in different districts of the state. What factors affect the delivery and operation of the CIC project at the district level? What is the reason for differential performance of districts in implementing this project?
- The CICs were launched in 2002 as a five-year centrally sponsored scheme with two broad objectives of providing some G2C services and making the people ICT enabled. How would you rate the success of this scheme on these two parameters at the end of project period in 2007?
- The entire CIC project is conceived riding on the notion of ICT4D. For a state like Asom/Nagaland where primary infrastructure like road, health facilities and employment opportunities are missing, how do you think ICTs can make a difference in the overall development scenario?
- The CICs were mandated to make interventions in the areas of health, education, and ICT training. How far it has been achieved?
- How do you think the CIC project has benefited the public and which section of the public has been benefited?

- Will the new CSC structure be better equipped to address these issues compared to the CIC? Does the dislodging of the CIC interface indicate failure of the initiative?
- A need assessment study for CICs conducted by NEIDS, Shillong for NIC indicates lack of awareness (80%) about the initiative as the primary reason for non-use. What initiatives were undertaken to create awareness about advantages of ICT usage among grassroots people and did it increase the usage subsequently?
- Do you think that the content developed and hosted over the CIC web network is adequate to serve the information need of the local people? How have you assessed the adequacy?
- What factors handicapped success of the CIC initiative according to you? How could they have been rectified?
- What IEC initiatives have been undertaken to create awareness about advantages of ICT usage among grassroots people in NE? What has been the response thereof?
- What pertinent development issues of the state can possibly be addressed by the upcoming CSC structure? What steps have been initiated towards identification of such issues and developing human and technological resources for the same?

(I) Interview Protocol for State IT Department: IT Commissioner/Director of the state

- Government of India has taken up IT in a big way and is putting consistent emphasis on making the entire nation IT enabled in terms of giving access to e-governance services as well as other web enabled information services. How would you respond to this entire effort and what opportunities do you see for Asom/Nagaland in this regard?
- The CIC project was conceived riding on the notion of ICT4D. For a state like Asom/Nagaland where primary infrastructure like road, health facilities and employment opportunities are missing, how do you think ICTs can make a difference in the overall development scenario?
- Have you identified priority areas and services for IT intervention in the state? What are they and how have you identified them?
- Do you think that the content developed and hosted over the CIC web network is adequate to serve the information need of the local people? How have you assessed the adequacy?
- Very few e-governance services are delivered over the CIC network in the state? Is it due to the inability of the state government to develop the IT interface? What measures have now been taken to initiate the process as the state prepares to launch the CSCs?
- The CSC plan in Assam/Nagaland intends to replace the current CIC initiative of the central government? Does it mark a failure in implementing and

maintaining the ongoing initiative and how do you plan to overcome the same hurdles in the new initiative?

- What are your plans of involving other community stakeholders like civil society groups and local self-governance bodies like panchayets/village councils into the ICT operational framework?
- The national e-readiness report puts Assam as a below average achiever/ Nagaland as a least achiever state consistently for three years in a row. Would you subscribe to that report and what according to you is the reason for this poor performance? What steps have been taken to make the state more adapt to changes in the IT environment?
- What are the primary administrative hurdles faced in implementing the digitization of government departments and creating appropriate technical and human resources?
- What are your plans of integrating health and education services into the IT domain? Do you have plans of developing an IT interface for delivery of these services?
- The Assam state human development report indicates substantial degree of gender disparity in the state. How can the upcoming ICT network in the state be employed to make interventions in gender empowerment?

(J) Interview Protocol for NIC/DIT official at New Delhi:

- CIC project in northeast was launched with two broad objectives of bridging the digital divide and facilitating e-governance. Were any specific targets set to be achieved within a time frame? How far do you think it has been successful in meeting its goals?
- There are words about scrapping the CIC project and merging it with the proposed CSCs of NeGP. What modalities have been worked out for the merger? Does it not hamper the northeast specific development emphasis which was the underlying purpose of the CIC project?
- How important do you think it is to conduct a need assessment among target citizenry before planning and designing an ICT4D project? Was any such study conducted in NE and what are the findings?
- Some say that e-governance is more about technology and less about governance. Do you think that there is need to restructure our ICT4D policy from being a technology driven initiative to become a need/usage/utility driven initiative?
- E-governance projects across the country have shown differential levels of success and utility. How would you define and assess success or failure of any project and how does the learning experience get consolidated into the planning of new initiatives?

- NeGP has been launched in our country with some ambitious goals. The progress and response across states have been varied. What factors according to you will be significant in deciding the success of the project in northeast?
- What factors affect ICT adoption by a state – the administration and the public? What can be done to boost adoption and maximise benefit in the northeast context?
- How can e-governance initiatives empower the traditional institutions of local self governance in the northeast?

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