

**e-Governance: Institutional Capacities and Performance**  
**A Comprehensive Study of India**

*Sponsored by*  
**Department of Science & Technology**  
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**Prof. Y. Pardhasaradhi**

*Principal Investigator*

**Prof. Ravinder Kaur**

*Co-investigator*



**Department of Public Administration**  
**Osmania University**  
**Hyderabad**

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## Acronyms

ACA	:	Additional Central Assistance
AMC	:	Ahmedabad Municipal Corporation
B1	:	Bangalore One
B2B	:	Business-to-Business
B2C	:	Business-to-Citizen
BESCOM	:	Bangalore Electricity Supply Company
BHEL	:	Bharat Heavy Electricals Limited
BOO	:	Build-Operate-Own
BOOT	:	Build Operate Own Transfer
BOT	:	Build-Operate-Transfer
BSNL	:	Bharat Sanchar Nigam Limited
BWSSB	:	Bangalore Water Supply and Sewerage Board
C2C	:	Citizen-to-Citizen
CARD	:	Computer-Aided Administration of Registration
C-DIT	:	Centre for Development of Imaging Technology
CLR	:	Computerisation of Land Records
CMLR	:	Comprehensive Modernisation of Land Records
CPU	:	Central Processing Unit
CRT	:	Cathode-Ray Tube
CSC	:	Common Service Centre
CTC	:	Community Technology Centre
CTG	:	Centre for Technology in Government
DC*Suite	:	District Collectorate Suite

DMRS	:	Document Management and Retrieval Systems
DPAR	:	Department of Public Administration and Revenue
DRO	:	District Registrar Office
EAF	:	E-Governance Assessment Framework
ECIL	:	Electronics Corporation of India Ltd
FIFO	:	First in First Out
FRIENDS	:	Fast, Reliable, Instant and Efficient Network for Disbursement of Services
FTP	:	File Transfer Protocol
G2B	:	Government-to-Business
G2C	:	Government-to-Citizen
G2G	:	Government-to-Government
GBD	:	Global Business Dialogue on Electronic Commerce
GIS	:	Geographic Information Systems
ICSC	:	Integrated Citizen Service Centers
ICT	:	Information & Communication Technology
ICT4D	:	ICT for Development
IIAS	:	International Institute of Administrative Sciences
INR	:	Indian National Rupee
IP	:	Internet Protocol
ISP	:	Internet Service Provider
IT	:	Information Technology
KAVERI	:	Karnataka Valuation and e-Registration
KEeLAN	:	Key Elements for electronic Local Authorities' Networks

LAN	:	Local Area Network
LSG	:	Local Self Government
MIS	:	Management Information System
MoU	:	Memorandum of Understanding
NeGP	:	National e-Governance Plan
NGO	:	Non-Government Organization
NIC	:	National Informatics Centre
NISG	:	National Institute of Smart Government
NKC	:	National Knowledge Commission
NOIE	:	National Office for the Information Economy
OCED	:	Organization for Economic Cooperation and Development
PC	:	Personal Computer
PM	:	Project Manager
PPP	:	Public-Private Participation
PPP	:	Public-Private Partnership
R&D	:	Research and Development
RI	:	Revenue Inspector
RTC	:	Right, Tenancy and Cultivation Certificates
RTI	:	Right to Information
RTO	:	Regional Transport Office
S&T	:	Science and Technology
SARITA	:	Stamps & Registration Information Technology based Administration
SDC	:	State Data Centre

SDP	:	Service Delivery Project
SMC	:	Surat Municipal Corporation
SRO	:	Sub Registrar's Offices
STAR	:	Simplified and Transparent Administration of Registration
SUWIDHA	:	Single User-friendly Window Disposal and Help-line for Applicants
STPI	:	Software Technology Parks of India
SWAN	:	State Wide Area Networks
TSK	:	Touch Screen Kiosk
TSP	:	Total Solutions Provider
TWINS	:	Twin Cities Integrated Network Systems
UNDP	:	United Nations Development Program
UNPAN	:	United Nations' Public Administration Network
VA	:	Village Accountant
WAN	:	Wide Area Network

### **Illustration of Graphs**

CSI	:	Citizen Services from Institutional Perspective
CSC	:	Citizen Services from Citizen Perspective
LRI	:	Land Records from Institutional Perspective
LRC	:	Land Records from a Citizen Perspective
EDI	:	e-district Institutional Perspective
EDC	:	e-district Citizens perspective.

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## Executive Summary

While technology shapes the future, it is people who shape technology, and decide to what uses it can and should be put. This has been a historical progression ever since the discovery of wheel in Ancient China. At the turn of the second millennium, societies, the world over, are being fundamentally changed by the emergence of a new technological paradigm based on information & communication technologies (ICTs).

Technology is a mediating factor in a complex matrix of interaction between social structures, social actors, and their socially constructed tools, including technology. As information and communication are at the core of human action today, the transformation of the technological instruments of knowledge generation, information processing, and communication, has far reaching implications, which add specific *social effects* to the broader pattern of *social causation*.

This new technological paradigm emerged as a systemic feature in the 1970s, expanded throughout the 1980s to the domains of military power, financial transactions, and high technology manufacturing, diffused in the late 1980s in workplaces of all kinds, and deeply penetrated homes and culture in the 1990s, with the explosive diffusion of Internet, and multimedia. New information technologies have diffused much faster than revolutionary innovations of the two industrial revolutions. And yet, countries, cultures, and social groups, are extremely different in their degree of absorption, and utilization of new technologies. But all countries, and all peoples, are directly or indirectly, exposed to the structural transformation mediated by this technological revolution.

### **The New Economy**

Information technologies have been decisive tools in the emergence of a new economy in the last two decades of the 20th century. This is certainly a capitalist economy – indeed for the first time in human history, the entire planet is working along the lines of a capitalist economic system. But it is a new brand of capitalism. It is global, it is informational, and it is based on business networks. A global economy is an economy whose core activities work as a unit in real time on a

planetary scale. Here, core activities include financial markets, science and technology, information and communication, international trade, high-skill labor, and multi-national firms and networks of producers and distributors of high value added goods, and services.

A networked economy is one in which units of production, distribution, and management are organized in networks. A network is a set of inter-related units that depend on each other for the performance of their common task. The networked form of economic units provides the necessary flexibility and adaptation to adjust to constant changes in demand, in technology, in process, and product, in an increasingly globalized economic environment. Networks make possible to bring together resources from different units, and focus these resources on one particular business project without losing flexibility, as it would be the case with gigantic firms organized along traditional standards of large-scale, vertical bureaucracies.

### **From Administration to Governance**

The capacity to govern is one of the ongoing quests of humanity, but that capacity is not equally distributed in space or in time. Some countries in the world can go about the process of governing themselves with little conscious concern about their ability to do so. For the rest of the world governing is a more problematic consideration. Even for those countries that are confident about the capacity to govern, that confidence may in reality be complacency when viewed from a more detached perspective. This is in part because conceptions of “good governance” are culturally and historically contingent and what is functional in one political setting may be in many ways sub-optimal in other settings.

The attempts to reform public administration have been ubiquitous. Even when there have been manifest needs to consolidate democracy and to improve the functioning of the institutions of public participation there also has been a perceived need to put the functioning of the bureaucracy right. This emphasis on administrative reform is well placed given the centrality of administration in implementing programs, and its role as the principal contact between State and society. Citizens may encounter their elected representatives from time to time, but most citizens are in frequent contacts with members of the public bureaucracy, in the form of policemen, tax

officials, social service employees, teachers, and other like. Governance does require more than simply the capacity to implement efficiently and some wider conception of governing needs also to be considered when thinking of the capacity of governments to steer.

Governance can be defined most simply as the process of providing direction to society. Governance is often thought of in terms of “steering”, in which some set of actors (increasingly thought of as involving both public and private actors) attempts to use the instruments at their disposal to get the economy and society to act in a goal-seeking manner. Elements in the civil society can facilitate governance. At the input or design level the crucial activity for governance is adapting to changing environmental conditions and changing demands. Any effective government needs and demands that change constantly, and therefore must make decisions about how rapidly to respond, and conversely how much to emphasize stability of its policy responses. In order to be effective in making that response, governments must be open to inputs from the environment--both technical and political. Governments that choose to govern too much from the top down and lack good links with society are unlikely to be effective in responding to their environment. Such responses as it does make may appear to be groping rather than clear responses to the needs and demands coming from the environment.

### **Institutional Capacities in a Globalized Context**

The greatest disparity between developed and less developed nations is no longer a matter of natural resources, or even of human capital (increasingly mobile as it is), but is the growing divide in access to organizational capacity and the extent to which this impedes the coordination and exploitation of informational resources. This organizational capacity is often directly associated with the ability to embody ICT within networked structures that can link government to economic and social development in new ways.

The webs of power and knowledge that these initiatives enact are often presented as being fundamental to the dynamics of technological, organizational, and social innovation in both developed and developing socio-economic contexts. Mobilizing technological capacity, the diffusion of networking and communication infrastructure, and the establishment of the internet

as the new platform for global communications (telephony, data and images, broadcasting) are often understood as central in this process. Indeed, ICT is often identified as a primary actor in enabling national and regional economies to develop new social and organizational capacity and exploit new knowledge assets. This, it is proposed, can then lead to a better ability to participate in the wider global economy and serves as a primary means to achieve social and economic development.

Typical challenges for developing countries include the creation of institutions in support of the new global and electronic markets as well as establishing an enabling policy environment that supports social inclusion and offers institutional transparency. This must be accomplished while building regimes for foreign investment and participation in global trade. Capacity and capacity building are critical for promoting good governance in any country. Good governance is a major factor in creating an environment of peace, stability and security in which people can pursue various productive and creative activities, creating wealth and employment and thus promoting human development and alleviating poverty. But good governance is a product of deliberate policies.

### **Good Governance through Electronic Governance**

Two parallel evolutions are currently challenging the functioning and the legitimizing of the traditional nation-state: globalization and the rapid development of the information and communication technologies (ICTs). Both come together in the new concept of “electronic governance” or “e-governance.” E-governance is commonly defined as the application of *electronic means* in (1) the *interaction* between *government* and citizens and government and businesses, as well as (2) in internal *government operations* to simplify and improve democratic, government and business aspects of governance.

### **Objectives of the Study**

1. To understand the organizational transformation required for e-governance processes
2. To study the technology management in administrative systems and technical competency among public officials
3. To assess institutional capacities and performance

4. To highlight political initiatives and bureaucratic leadership
5. To study the success or failure of e-governance programmes from both institutional and public perspectives
6. To assess the sustainability of e-governance programmes
7. To have a broader understanding of public trust and participation in e-governance

### **Framework**

- 13 States and 27 e-governance programmes
- 2 to 3 districts covered in each state
- 3,146 respondents, including administrative staff and citizens
- Institutional perspective
- Citizen perspective
- Comparative analysis of projects

### **Key Areas of Study**

1. Organizational transformation
2. Technical capacities of government institutions
3. Technology innovation and adaptation
4. Technical competency among staff
5. Training requirements
6. Sustainability
7. Interactive models
8. Quality of services
9. Financial sustainability of e-governance projects
10. Leadership and ownership of e-governance projects

### **Collection of data**

1. Primary sources
2. Field studies
3. Interview schedules
4. Questionnaires (two frameworks)
5. Informal discussions
6. Secondary sources, including Govt. records, reports, databases, online journals, book and research reports

### **Period of study**

May 2009 to September 2011

### **States Covered**

Andhra Pradesh, Arunachal Pradesh, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Sikkim, Tamil Nadu and West Bengal

### **Type of e-governance projects covered**

1. Citizen services – 13 projects in 10 states
2. Land Records Management – 9 projects in 9 states
3. E-district – 6 projects in 5 states

### **Major Findings**

1. Early successes in e-governance have been sustained in the form of e-Seva, BangaloreOne, FRIENDS, Akshaya, Bhoomi, CARD and STAR
2. Since this study went further to include almost 8 more states in its second edition, more projects have been evaluated with emphasis on institutional capacities and performance
3. There is a major mismatch between pilot successes and subsequent failures in the form of Gyandoot, Warana and common service centres in North-East
4. Majority of the projects rolled out under NeGP could not sustain once central funding was stopped in 2007
5. Only a few state governments have allotted finances to consolidate e-governance projects
6. Sugam in H.P and e-city projects in Surat and Ahmedabad, land records management in H.P., Gujarat and Haryana are fledging with high standards of e-governance
7. Punjab is a slow starter. It has done BPR with front-offices (Suwidha centres) at the district and sub-divisional level. However, the user charges are very high
8. Madhya Pradesh has infrastructure in place, but public staff rarely offer e-governance services to common people
9. Technology proliferation has resulted in automation of many government agencies/institutions, but they are less enthusiastic in going online
10. Institutional capacities have also increased substantially, but that does not reflect in their performance regarding delivery of e-governance services

11. Success of major e-governance projects was on account of personal initiatives and consolidated by political support
12. e-Service delivery in our country is fragmented due to multiple entities. E-Governance initiatives in different departments are carried out independent of each other, which dilutes the overall impact.
13. Failure of some projects is also on this account, since a transfer or replacement of a top official or change in political regime impacts adversely on the sustainability of e-governance projects. Gyandoot, Warana, Thiruvarur, CSCs reflect this trend
14. Interoperability is the major issue. Only two states have achieved interoperability. Bhoomi and Kaveri in Karnataka and Akshaya and FRIENDs in Kerala are the success stories
15. Horizontal integration of e-governance has been achieved in many states in the form of SWAN, state portals and specific project websites. However, vertical integration is limited to only a few states like Kerala, Andhra Pradesh, Tamil Nadu, Karnataka and Gujarat
16. Majority of e-governance portals web content is in vernacular language
17. Many states do not have capacity building programmes in place. Public staff training requirements are very high.
18. Individual departments have different mechanisms of identifying the concerned end users from the same set of citizens. As a result, they are interacting with the same set of users independently multiple times. This is resulting in series of rework loops, duplication of efforts and non-value added works.
19. For a majority of citizen-centric e-gov projects, there is a need for process level reforms with strong backing of automated decision support mechanism
20. Interactive models have to be broadened to mobile technology so as to expand the outreach of e-governance services
21. Lack of internet penetration in the country is the major obstacle for expanding the outreach of online services

### **Limitations of the Study**

1. Vast geographical area (study area)
2. Regional, cultural, social, ethno-linguistic barriers
3. Lack of universal application of e-governance projects
4. Not-so-responsive public staff and officials
5. Lack of access to critical information, especially on financial aspects of e-governance projects
6. Public-private partnerships vary in nature and size
7. Time and cost constraints for taking up this vast study

### **Areas for Further Research**

1. Interoperability and integration of online services
2. Common portals for all government agencies/institutions
3. Flexible websites facilitating access to citizens in local language
4. Project evaluation in the backdrop of lessons learnt
5. Studies on the use of IT at the local governments level – city, municipality, panchayat
6. The possibility of a mobile government
7. Knowledge management information systems at state level
8. E-government and its viability in India



## **Chapter 1**

# **Introduction**

## **Chapter 2**

# **Conceptual Framework & Review of Literature**

## **Chapter 3**

# **Methodology**

**Chapter 4**

# **Citizen Services Projects Assessment**

## **Chapter 5**

# **Land Records Digitization and Property Registration Projects Assessment**

## **Chapter 6**

# **e-District Projects Assessment**

## **Chapter 7**

# **Assessment of Individual Capacities of Government Staff and Citizens Perspective**

## **Chapter 8**

# **Case Studies**



## **Chapter 9**

# **Conclusions & Suggestions**

# **Bibliography**

## Chapter – I

### Introduction

While technology shapes the future, it is people who shape technology, and decide to what uses it can and should be put.<sup>1</sup> This has been a historical progression ever since the discovery of wheel in Ancient China. At the turn of the second millennium, societies, the world over, are being fundamentally changed by the emergence of a new technological paradigm based on information & communication technologies (ICTs). To the convergence of microelectronics-based information technologies (microprocessors, computers, telecommunications, optoelectronics), we must add genetic engineering, which extends the manipulation of information codes to the realm of the living matter, thus ushering in the most fundamental biological revolution.<sup>2</sup>

Technology is a mediating factor in a complex matrix of interaction between social structures, social actors, and their socially constructed tools, including technology. As information and communication are at the core of human action today, the transformation of the technological instruments of knowledge generation, information processing, and communication, has far reaching implications, which add specific *social effects* to the broader pattern of *social causation*.<sup>3</sup>

This new technological paradigm emerged as a systemic feature in the 1970s, expanded throughout the 1980s to the domains of military power, financial transactions, and high technology manufacturing, diffused in the late 1980s in workplaces of all kinds, and deeply penetrated homes and culture in the 1990s, with the explosive diffusion of Internet, and multimedia. New information technologies have diffused much faster than revolutionary innovations of the two industrial revolutions.<sup>4</sup> And yet, countries, cultures, and social groups, are extremely different in their degree of absorption, and utilization of new technologies. But all

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<sup>1</sup> Annan, Kofi, World Youth Report, UNDESA, 2005. p. 1

<sup>2</sup> David J. McKenzie. "Youth, ICT, and Development.", The World Bank, 2006

<sup>3</sup> Castells, Manuel, The Social Implications of Information and Communication Technologies, (1997, second edition, 2004). *The Power of Identity, The Information Age: Economy, Society and Culture Vol. II*. Cambridge, MA; Oxford, UK: Blackwell. ISBN 978-1405107136.

<sup>4</sup> Kanz, J., and Waterhouse, M. F., 1995, "Technology Management: An Escalating Challenge for Business and Academia, *Business & The Contemporary World*, Vol. 2, 79-93.

countries, and all peoples, are directly or indirectly, exposed to the structural transformation mediated by this technological revolution. Because of the speed of change, and the radical novelty of these information technologies, social sciences have been rather slow in their understanding of the precise role of technology.

An understanding of the meaning new technologies have for society must begin with an understanding of the types of actors that employ a given technology. While the Internet has become a rapidly expanding area of inquiry with respect to trends among individual users, there has been little systematic empirical work on the organizational characteristics related to this form of information technology.<sup>5</sup>

### **The New Economy**

Information technologies have been decisive tools in the emergence of a new economy in the last two decades of the 20th century. This is certainly a capitalist economy – indeed for the first time in human history, the entire planet is working along the lines of a capitalist economic system. But it is a new brand of capitalism. It is global, it is informational, and it is based on business networks. A global economy is an economy whose core activities work as a unit in real time on a planetary scale. Here, core activities include financial markets, science and technology, information and communication, international trade, high-skill labor, and multi-national firms and networks of producers and distributors of high value added goods, and services.

A networked economy is one in which units of production, distribution, and management are organized in networks. A network is a set of inter-related units that depend on each other for the performance of their common task. The networked form of economic units provides the necessary flexibility and adaptation to adjust to constant changes in demand, in technology, in process, and product, in an increasingly globalized economic environment. Networks make possible to bring together resources from different units, and focus these resources on one

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<sup>5</sup> Guthrie, Doug, A Sociological Perspective on the Use of Technology: The Adoption of Internet Technology in U.S. Organizations, *Sociological Perspectives*, University of California Press, Vol. 42, No. 4 (Winter, 1999), pp. 583-603

particular business project without losing flexibility, as it would be the case with gigantic firms organized along traditional standards of large-scale, vertical bureaucracies.<sup>6</sup>

The large corporation of the industrial era is no longer the operative economic unit. To be sure, large business conglomerates, particularly multinational corporations, dominate the global economy, but they are internally decentralized as networks, and they connect to a complex set of equally networked, small and medium businesses. Furthermore, large corporations and their ancillary networks build *ad hoc* strategic alliances, thus forming networks of networks, in an economy characterized by variable geometry. While the legal and financial unit of the new economy continues to be the large corporation, the actual operation of economic activities is in the hands of a new economic actor: the network enterprise, made out of different firms, and segments of firms, and constantly redefining its structure and its components. While capital is still accumulated by the corporation, the operating unit is the business project, and the business project is enacted by a network, constituted around this project, and ending its existence with the completion of the project.

A global economy as a planetary unit can only exist because of the worldwide infrastructure in telecommunications, information systems, air transportation, and fast transportation/delivery systems. The speed and the complexity of transactions and communication are only possible because of microelectronics-based technologies. This is why a global economy is a new historical reality, distinct from previous processes of internationalization of the economy. Information and knowledge have always been an essential part of economic growth. But they become the dominant factors for productivity and competitiveness only when new technologies diffuse knowledge-based information processing throughout the entire system of economic activity.<sup>7</sup>

For many, globalisation – the tighter and broader integration of product, service, financial, and labour markets – is at the core of the economic and social transformation of the last two decades.

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<sup>6</sup> Rastogi, P.N., *Management of Technology and Innovation: Competing Through Technological Excellence* (2<sup>nd</sup> edition), Sage Publications, New Delhi, 2009, p.3-5

<sup>7</sup> Singh, Nagendra, P. “Development Leadership in a Knowledge Economy,” in Chandra, Ashoka & Khanijo, M.K., (ed.) *Knowledge Economy: The Indian Challenge*, Sage Publications, New Delhi, 2009, p.242-246

To be sure, the nature and extent of globalisation is new and unprecedented and it is easy to view globalisation as the key mover of change. But while the extension of markets beyond national borders has amplified and accelerated structural economic and social changes, the fundamental driver, of not just globalisation but many of these changes in the economy and society, has been the information and communications technology (ICT) revolution. In just 25 years we went from a world of electric typewriters to one of laptop computers more powerful than the mainframe computers of that era; from one of dial pay phones to GPS-enabled cell phones; from 8-track cassette players to iPods. Without the ICT revolution, globalization, as we know it today, would not have been possible in all its terms.<sup>8</sup>

It was through studying these technology-fuelled revolutions that led noted economist Joseph Schumpeter to argue that the process of economic change is not an incremental and linear one – as most neo-classical economists conceive it to be – but rather a process of revolutionary transformation. Yet, new technologies do not advance incrementally, but rather burst onto the scene irregularly with clusters of breakthrough technologies, and resultant transformations from one kind of society to another.<sup>9</sup>

Growth in information work has contributed to the expansion of the service sector. This was first seen in advanced industrial economies, but is increasingly also emerging in developing countries in South and East Asia through the growing use of electronic networks to provide ICT support, financial services, and call-centre operations that can be accessed from around the world. Indeed, the ICT revolution has enabled an increasing share of information-based services to be physically distant from the customer (e.g., e-banking) or the other parts of the production process (e.g., back office operations) while remaining functionally close.

The new digital economy is transforming economic geography, enabling as many as 12 to 14 million once relatively immobile information-based jobs in the United States to now potentially be located virtually anywhere across the globe. By improving supply chains and information on

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<sup>8</sup> Stephen S. Cohen, J. Bradford Delong, Steven Weber, and John Zysman, *Tracking a Transformation: E-Commerce and the Terms of Competition in Industries*, BRIE-IGCC E-economy Project Task Force (Washington, DC: Brookings Press, 2001).

<sup>9</sup> Richard G. Lipsey, Kenneth I. Carlaw, and Clifford T. Bekar, *Economic Transformations: General Purpose Technologies and Long-Term Economic Growth* (New York: Oxford University Press, 2005).

potential economic opportunities and reducing communication costs, ICT is allowing businesses, and indeed most organisations, to rearrange inputs, labour, and capital as never before. These new globalised production chains allow businesses to specialize in what they are good at, contract out what they are not, and reach scales that minimize costs and maximize innovation.<sup>10</sup>

### **The Changed Scenario of Public Administration**

A knowledge society would be characterized by the application of knowledge not only in business, industry, education and healthcare, but also in governance and public administration. Today, the two important challenges facing many developing countries, including India, are appalling poverty and protection of democracy from terrorism and violence. In India, standards of governance are disturbingly low despite high economic growth. Also, standards of governance in dealing with the above twin challenges are deteriorating because of negligence and indifference of public administration. This daunting challenge can be met successfully through reforms in administration to improve the quality of governance.

Increased emphasis on quality performance, social justice and humane approach would be the important ingredients of public administration in the changed context of economy. Citizens today demand accountability in governance putting pressure on public servants. The Right to Information Act has strengthened the momentum towards public control and scrutiny over administration. Also, NGOs and civil society organizations are taking a lead in the demand for transparency and accountability in the system.

Aspirations of people rise in a knowledge-oriented society resulting in a rising feeling of dissatisfaction especially among the youth. The interacting conflict of changes – both outside the individual and society as well as within the individual and society – are causing frictions that pose challenges to the governments. People are demanding liberty, equality and freedom and their aspirations, in the context of the present knowledge explosion, cannot be ignored by the governments.

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<sup>10</sup> Robert Atkinson and Howard Wial, “The Implications of Service Offshoring for Metropolitan Economies,” (Washington, DC: The Brookings Institution, 2007)

Another dimension is the growing concern among the masses over corruption in public life. Corruption takes a heavy economic toll, affects the operation of markets, constrains economic development and delivery of services and distorts institutions, including bureaucracy. Lack of transparency coupled with secrecy that shrouds government decisions and operations facilitate corruption. People, like never before, are demanding better quality of services from the governments, in the backdrop of awareness and judicial activism. The demands on public administration with regard to delivery of quality services have increased due to improved knowledge and information. Administrators have to blend knowledge power with political power in the interest of social peace and progress. Imperfections and inefficiencies can neither be ignored nor tolerated. Innovations and initiatives for social improvement will have to be given top priority.<sup>11</sup>

### **From Administration to Governance**

The capacity to govern is one of the ongoing quests of humanity, but that capacity is not equally distributed in space or in time. Some countries in the world can go about the process of governing themselves with little conscious concern about their ability to do so. For the rest of the world governing is a more problematic consideration. Even for those countries that are confident about the capacity to govern, that confidence may in reality be complacency when viewed from a more detached perspective. This is in part because conceptions of “good governance” are culturally and historically contingent and what is functional in one political setting may be in many ways sub-optimal in other settings.<sup>12</sup>

The attempts to reform public administration have been ubiquitous. Even when there have been manifest needs to consolidate democracy and to improve the functioning of the institutions of public participation there also has been a perceived need to put the functioning of the bureaucracy right. This emphasis on administrative reform is well placed given the centrality of administration in implementing programs, and its role as the principal contact between State and

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<sup>11</sup> Murthy, Krishna, T.S. “New Public Management in the Emerging Knowledge Economy,” in Chandra, Ashoka & Khanijo, M.K., (ed.) Knowledge Economy: The Indian Challenge, Sage Publications, New Delhi, 2009, p.157-165

<sup>12</sup> Peters, Guy, B. The Capacity to Govern, VIII Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública, Panamá, 28-31 Oct. 2003



society. Citizens may encounter their elected representatives from time to time, but most citizens are in frequent contacts with members of the public bureaucracy, in the form of policemen, tax officials, social service employees, teachers, and other like. Governance does require more than simply the capacity to implement efficiently and some wider conception of governing needs also to be considered when thinking of the capacity of governments to steer.

Governance can be defined most simply as the process of providing direction to society. Governance is often thought of in terms of “steering”, in which some set of actors (increasingly thought of as involving both public and private actors) attempts to use the instruments at their disposal to get the economy and society to act in a goal-seeking manner. Elements in the civil society can facilitate governance. At the input or design level the crucial activity for governance is adapting to changing environmental conditions and changing demands. Any effective government needs and demands that change constantly, and therefore must make decisions about how rapidly to respond, and conversely how much to emphasize stability of its policy responses. In order to be effective in making that response, governments must be open to inputs from the environment--both technical and political. Governments that choose to govern too much from the top down and lack good links with society are unlikely to be effective in responding to their environment. Such responses as it does make may appear to be groping rather than clear responses to the needs and demands coming from the environment.<sup>13</sup>

Governance can be used as a specific term to describe changes in the nature and role of the state following the public sector reforms of the 1980s and 1990s. Generally, these reforms are said to have led to a shift from a hierarchical bureaucracy towards a greater use of markets, quasi-markets, and networks, especially in the delivery of public services. The effects of the reforms were intensified by global changes, including an increase in transnational economic activity and the rise of regional institutions like the European Union. Governance expresses a widespread belief that the state increasingly depends on other organizations to secure its intentions and deliver its policies to citizens and the business.

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<sup>13</sup> *ibid.*

Also, governance can be used to refer to all patterns of rule, including the kind of hierarchical state that is often thought to have existed prior to the public sector reforms. This general use of governance enables theorists to explore abstract analyses of the construction of social orders, social coordination or social practices irrespective of their specific content. This is true for the state, the international system, or the corporation.<sup>14</sup>

The neoliberal concept of governance as a minimal state conveys a preference for less government. Arguably, it often does little else, being an example of empty political rhetoric. Social scientists are of the view that instead of rolling back the state in the form of public sector reforms, neoliberals have in fact made the state more powerful than before. Neoliberal reforms fragmented service delivery and weakened central control without establishing markets. Reforms led to proliferation of policy networks in both the formulation of public policy and the delivery of public services.<sup>15</sup>

A standard response to the hierarchical model of governance has been to alter the manner in which public policies are implemented, and to involve the civil society, and even for-profit organizations, in the delivery of services. The assumption that has been guiding these reforms has been that governments are less capable of actually delivering services than are private sector organizations, and hence government is well-advised to permit those organizations outside government that can perform tasks more efficiently. Another aspect of administrative reform that has emphasized efficiency over involvement has been the creation of agencies and other autonomous and quasi-autonomous organizations, each responsible for delivering a single service. This disaggregation of the public sector has been common in a number of the industrialized democracies and has been adopted in a range of transitional and less-developed societies.<sup>16</sup>

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<sup>14</sup> Bevir, Mark, *Key Concepts in Governance*, Sage Publications, 2009, pp.3-30

<sup>15</sup> *ibid.*

<sup>16</sup> Amin, A. and J. Hauser, *Beyond Market and Hierarchy*. Cheltenham: Edward Elgar, 1997, p.132

## Good Governance

The current interest in governance derives primarily from reforms of the public sector since the 1980s. The new governance refers to the apparent spread of markets and networks following these reforms. It points to the varied ways in which the informal authority of markets and networks constitutes, supplements and supplants the formal authority of government. It has led many people to adopt a more diverse view of state authority and its relationship to civil society.

Good Governance is a concept that has recently come into regular use in political science, public administration and, more particularly, development management. It appears alongside such concepts and terms as democracy, civil society, popular participation, human rights and social and sustainable development. In the last decade, it has been closely associated with public sector reform. The Commonwealth has shown its commitment to good governance through declarations made by Heads of State at their biennial meetings. The Bretton Woods Systems and the Development Agencies have shown their commitment through re-defining their roles and responsibilities in global governance.

The 1991 Harare Commonwealth Declaration, for example, committed member governments to the *democratic process and institutions* which reflect national circumstances, the *rule of law* and the *independence of the judiciary, just and honest government, fundamental human rights*, including equal rights and opportunities for all citizens, regardless of race, colour, creed or political belief. As a goal and vision to be achieved in time, these intentions remain a fundamental milestone in the development agenda of member countries.<sup>17</sup>

Good Governance has been regarded as an aspect of the New Paradigm in Public Administration which emphasises the role of public managers in providing high quality services that citizens and diverse communities of interest, communities of expertise and communities of inter-dependence value; advocates increasing managerial autonomy, particularly by reducing central agency controls, demands, measures and rewards, in relation to both organisational and individual

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<sup>17</sup> Kettl, Donald F., "The Transformation of Governance: Globalization, Devolution, and the Role of Government," *Public Administration Review*, Vol.60, No.6, 2000, pp. 488–497

performance; recognises the importance of providing the human and technological resources that managers require to meet their performance targets; and is receptive to competition and is open-minded about which public purposes should be performed by public servants as opposed to the private sector.

Good Governance can also be conceptualised as part of a development process. Whatever definitional format it may assume, there is general consensus amongst practitioners that Good Governance should, among other things, be participatory, transparent and accountable in characteristic. This provides a framework within which political, social and economic priorities are based on a broad consensus in society, and that the voices of the poorest and most vulnerable are heard in the decision-making processes regarding the allocation of resources. In addition, Good Governance has major implications for equity, poverty and quality of life. In particular, Good Governance may be defined as comprising the processes and structures that guide political and socio-economic relationships, with particular reference to “commitment to democratic values, norms & practices, trusted services and just and honest business”.<sup>18</sup>

Good governance in particular is often identified as an obligatory passage point for access to wider development and aid programs, and thus to participation in the global economy. The term ‘governance’ signifies something specific in terms of the changes that are expected through such programs. International agencies like the International Monetary Fund and the World Bank increasingly made good governance one of the criteria on which they based aid and loans. Other donors followed suit. The concept of good governance was thus defined by institutional barriers to corruption and by the requirements of a functioning market economy. It was defined as a legitimate state with a democratic mandate, an efficient and open administration, and the use of competition and markets in the public and private sectors. In a framework of good governance, government services across administrative levels coordinate their activities in order to enhance the global effectiveness of policies and minimize conflicting action.” Implicit in such a view is a fundamental change in the relationship between state and citizens, potentially increasing the

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<sup>18</sup> Sam Agere (Ed), *Promoting Good Governance: Principles, Practices and Perspectives*, Commonwealth Secretariat, London, 2000, p.7-9

importance of citizens' and other mediating body's participation and feedback, and their role in policy formulation, implementation, and enforcement.

### **Institutional Capacities in a Globalized Context**

The greatest disparity between developed and less developed nations is no longer a matter of natural resources, or even of human capital (increasingly mobile as it is), but is the growing divide in access to organizational capacity and the extent to which this impedes the coordination and exploitation of informational resources. This organizational capacity is often directly associated with the ability to embody ICT within networked structures that can link government to economic and social development in new ways.

Late capitalist societies exhibit such network-based social and economic structures, both within government and in the economy and wider civil society. These structures are increasingly identified as the significant instrument for the expansion of liberal capitalism through innovation and new forms of decentralized concentration, alias new modes of organizing based on digital networks and assembling complex meshes of activities and territories that cross conventional borders.

As a consequence, across the world it is possible to identify a movement, or a strong set of claims, for the introduction of programs to shift from 'government' as a primary responsibility of the unitary state, to 'governance' by and through networks of institutions and individuals acting in partnership, held together by relations of trust, and transcending many old and established boundaries.

The webs of power and knowledge that these initiatives enact are often presented as being fundamental to the dynamics of technological, organizational, and social innovation in both developed and developing socio-economic contexts. Mobilizing technological capacity, the diffusion of networking and communication infrastructure, and the establishment of the internet as the new platform for global communications (telephony, data and images, broadcasting) are often understood as central in this process. Indeed, ICT is often identified as a primary actor in

enabling national and regional economies to develop new social and organizational capacity and exploit new knowledge assets. This, it is proposed, can then lead to a better ability to participate in the wider global economy and serves as a primary means to achieve social and economic development.

Typical challenges for developing countries include the creation of institutions in support of the new global and electronic markets as well as establishing an enabling policy environment that supports social inclusion and offers institutional transparency. This must be accomplished while building regimes for foreign investment and participation in global trade.<sup>19</sup>

This movement can usefully be conceptualized in terms of a new and distinctive 'program of government understood as a specific contemporary problematization of the question of the nature of the State and the drivers of its power and legitimacy. What emerges is a program of government that draws heavily on information and communication technology, and which transcends the widespread commitment of nation states to e-governance, offering a new and distinctive problematization of the nature of citizenship, statehood, and citizen/ state relations.

These are programs of government that express a fundamental commitment to the proposition that ICT and informational resources can significantly increase organizational coordination and effectiveness in government and operate on a scale that takes us beyond the nation state. These programs seek to support transactions taking place among diverse social and economic actors, organizations, and institutions operating in a global space. Examples of such global ICT programs can be found in the widespread commitment to E-Government as a technology of transformation, in the establishment of global electronic markets for primary resources, in health information systems and bio-surveillance, or in the establishment of global projects to address climate change through carbon trading, organic agriculture, and land and water management.

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<sup>19</sup> UNDP Report, 2003

The primary characteristics of this transformational program include:

- The establishment of new networked and distributed modes of organizing mediated by technology and operating in the area of government, policymaking, regulation, and infrastructure development — often on a scale that goes beyond any one country.
- The application of a ‘toolbox’ of policy instruments and guidelines to build and operate such systems, often identified with the general goal of promoting better (or good) governance, harnessing the market and the power of education and information.
- The presence of a common set of institutional and technical actors that operate across multiple levels of contexts and domains, building synergies as they mobilize and develop their technical and managerial knowledge resources.

These are fundamentally global programs. This is not a question of their application going beyond the state (though it often does), but of the character of the mobilization that enacts and sustains them. In this mobilization we see three important drivers that bring a global dimension: first, the technologies applied are universal and generic (e.g. the internet, data management, websites); second, the values and goals they inscribe are universal (e.g., liberal capitalism, good governance, management and planning methodologies); third, the networks of agencies which carry them out are universal (e.g. including bilateral and more often multilateral development and financial institutions such as the OECD, World Bank, and UN bodies, but also business schools, international management consultancies, technology companies, and the institutions of the scientific elites). However, country-specific socio-cultural, politico-economic setting can alter the implementation of these universal themes.

Technology had always been regarded as an internal attribute of the organization, they have proved difficult to combine an interest with technology and innovation and the open systems perspectives that have come to dominate macro-organizational research and especially for the research and study of network forms of organizations. Networks have been studied in different social science disciplines including sociology, information systems, public administration, political science, geography, economics, and geo-information sciences.

New Public Management has historically been associated with the re-definition of the roles and responsibilities of various government agencies and institutions using modern ICT to promote the re-organization of government's internal and external information flows, activities, and functions. Both New Public Management and Transaction Costs approaches advocate that technology works best through the formation of appropriate incentive structures, and via its assumed capacity to increase citizens' choice through contestability (for instance within electronic markets, through informational and interactive resources for citizens/ customers, or by competitive outsourcing). It is interesting, then, that research on processes of ICT development within these theoretical traditions has generally been concerned with the study of how technologies are used to facilitate activities or processes taking place within quite narrowly defined organizational and market boundaries.

Organizational capacity has been identified as one of the missing links in India's development. In the context of governance, capacity entails the ability of an institution of governance—the legislature, executive, judiciary, civil society or the private sector—to perform its constitutionally or politically mandated functions or roles efficiently and effectively. Capacity in our context is about capacity for development: capacity to promote democratic governance, to improve the structures and institutions of economic policymaking, to invigorate the strength of civil society to contribute to national development and to create an environment of social empowerment for the people where they can meaningfully contribute to decisions that affect their lives. This entails the availability of the human, material and financial resources essential for efficiently managing the institution and the identification and recruitment of personnel with the required knowledge, expertise, experience, competence and leadership to manage the institution. Essentially, it is about unbundling the creative energies of the people, improving those energies and providing the legal, institutional and material context in which those energies will flourish.

Capacity and capacity building are critical for promoting good governance in any country. Good governance is a major factor in creating an environment of peace, stability and security in which people can pursue various productive and creative activities, creating wealth and employment and thus promoting human development and alleviating poverty. But good governance is a



product of deliberate policies. It requires all the institutions of governance to function in accordance with a country's constitutional provisions of the rule of law, due process of law, cultures and traditions. And in order for the institutions of governance to perform their functions efficiently and effectively they must be endowed with the appropriate capacities. Good governance is a development issue with capacity-building ramifications.<sup>20</sup>

Capacity development is an ongoing process, requiring the unleashing of a continuous supply of the appropriate legal, institutional, human and material resources and a conducive operational environment. The ingredients of capacity and capacity building come from a wide range of sources in society, including the private sector, civil society organizations, schools, universities, think tanks and research institutes.

These resources need to be mobilized and efficiently managed to build institutional capacities. In essence capacity building is about people – who have to be trained, adequately equipped, sufficiently remunerated and appropriately disciplined in the efficient use and management of resources. Plans have to respond to the changes, needs and aspirations of people, and should adapt and adopt scientific and technological changes, new ideas on governance and productivity-related, organizational and managerial principles and experiences as well as relevant best practices. Means and incentives must be found to stem the brain drain.

The environment in which capacity building takes place is very important. It requires peace and stability and an open and free political atmosphere. Only in this environment would people be free and willing to use their talents, skills and capital for productive and creative activities and in the process create wealth and employment, personal incomes and tax revenue, thereby establishing the basis for the continuous supply of the ingredients for capacity building. Thus, the government must continue to strengthen the democratization process while building the capacity of institutions responsible for supplying essential public goods and services to the people such as education, healthcare and security.<sup>21</sup>

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<sup>20</sup> Institutional Capacity Building for Good Governance, Africa Report, OECD, 2008

<sup>21</sup> *ibid.*

## Good Governance through Electronic Governance

Two parallel evolutions are currently challenging the functioning and the legitimizing of the traditional nation-state: globalization and the rapid development of the information and communication technologies (ICTs). Both come together in the new concept of “electronic governance” or “e-governance.”

Indeed, globalization in all its forms (i.e., financial, economic, cultural, technological, and ecological globalizations) is increasingly putting pressure upon the nation-state. Collective problems, such as climate change or organized crime, can no longer be solved by nation-states only, let alone by one single nation-state. In fact, such problems require not only the supra-national approaches and institutions, but also the involvement of non-state actors, in particular of civil society and the private sector. Simultaneously, the ICTs are gradually penetrating all realms and all levels of society, and as such increasingly affect both production processes and state-society transactions.

If “governance” can be defined as the growing involvement of non-state actors into collective problem-solving at all levels of society (i.e., from the local to the global levels), “e-governance” then means the active usage of the ICTs for such collective problem solving. Globalization is without doubt one of the buzzwords of the late 20th and the early 21st centuries and is considered to bring both successes for national economies as well as an increasing external pressure on the nation-state. States aim at participating in the global process of communication and trade on the one hand, but are on the other hand limited to their national institutions, especially in the fields of fiscal, economic, and social policy. Yet, new collective problems of global (i.e., transnational) nature emerge, such as for example climate change, unemployment, or pollution problems. These problems can no longer be solved by a single nation-state alone. Moreover, such problems affect numerous stakeholders at all levels of society (i.e., from local to global) and as such can only be solved in a joint effort among all stakeholders.<sup>22</sup>

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<sup>22</sup> Streib, Gregory D., and Katherine G. Willoughby, Local Governments as E-Governments: Meeting the Implementation Challenge, *Public Administration Quarterly* Vol.29, No.1, 2005, pp.78 – 110

Thus, in the context of globalization, states increasingly need to share their power with other actors, be they from the private (businesses, business organizations) or the third sectors (civil society, non-governmental organizations). The fact that the state is no longer powerful enough to impose its solution thus is characteristic of the passage from government to governance. In order to understand the evolution of the recent years from government to governance, one has to recall the main functions a state generally performs, namely policy making, service delivery, and regulation.

Indeed, the phenomenon of governance precisely highlights the fact that other—non-state or non-firm—actors are increasingly involved in performing these functions. This has become particularly visible in the case of the policy-making function, where non-state actors (businesses and non-governmental organizations) are now actively involved in shaping state policies, while at the firm level all kinds of stakeholders (as opposed to shareholders) increasingly have their say in company policy. Similarly, the service delivery function is increasingly being outsourced (and even privatized in the case of the public sector). Here too, non-state and non-firm actors increasingly come to play a larger role.

E-governance is commonly defined as the application of *electronic means* in (1) the *interaction* between *government* and citizens and government and businesses, as well as (2) in internal *government operations* to simplify and improve democratic, government and business aspects of governance.<sup>23</sup>

The strategic objective of e-governance is to support and simplify governance for all parties - government, citizens and businesses. The use of ICTs can connect all three parties and support processes and activities. In other words, in e-governance uses electronic means to support and stimulate good governance. Therefore the objectives of e-governance are similar to the objectives of good governance. Good governance can be seen as an exercise of economic, political, and administrative authority to better manage affairs of a country at all levels, national, state and local.

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<sup>23</sup> Backus Michel. E-governance and developing countries; Introductions and examples. Research Report, No.3.2003, p.6

In most cases, governments started with the delivery of online information, but soon public demand and internal efficiency ask for more complex services. Of course this change will take effect gradually; some services will be online earlier than other services. In some cases the public demand is the driving force; in other cases cost saving aspects for the government are leading.

The boundaries between organizations, sectors, and levels of government are becoming more permeable as information is used and reused in interconnected, overlapping organizational networks that often reach deeply into the non-profit and private sectors. Citizens and businesses interact with government much more through e-mail, Web sites, and interactive voice systems, and much less in person or on paper. Government is even beginning to engage in virtual electronic worlds, crossing the boundary between physical and digital communities.<sup>24</sup>

### **Evolution of e-Governance**

The developing countries have inherited a structure of governance that was characterized by large amount of paperwork and file handling, time consuming processes, and many levels of controls and approvals. The governments are responsible for development and addressing citizen welfare. The advances in information and communication technologies (ICTs) along with the Internet are profoundly changing the way economies and societies develop and grow. Developing countries are realizing that one way of becoming part of the global world network is to encourage electronic governance. Failure to be part of this new world network will leave the developing countries further behind.

E-governance requires several elements of good governance, such as transparency, accountability, participation, social integration, public financial management reform and development. It includes a very broad range of services for almost all segments of society.

In the last two decades, a startling progression of technological changes has been absorbed into government and increasingly into daily living. A summary list would include half a dozen major

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<sup>24</sup> Dawes, Sharon S., The Evolution and Continuing Challenges of E-Governance, *Public Administration Review*, Special Issue, December 2008, pp.86-102

developments. An early stage was the convergence of computing and telecommunications, resulting in the widespread adoption of distributed computing on the client-server model. This had the effect of putting personal computers on the desktops and in the travel luggage of a widening circle of public servants and of transforming them into their own typists and file clerks.

This was followed by the adoption of the internet – in particular e-mail — outside academic and military circles. In 1994, the World Wide Web Consortium was launched using technologies involving extensive use of graphical as well as textual material and offering the potential for simpler access to the internet. In short order, there followed the development of government websites and web-based information provision and service delivery, making possible two-way on-line transactions between government and citizens and external access to government databases.

The ‘Millennium Bug’ — more simply known as Y2K, focusing dramatically on the change in year from 1999 to 2000 — was another milestone, forcing governments to take greater notice of their rapidly expanding technology assets and work forces and also to recognize the interdependency that these had created between the public and private sectors and between the two sectors and the public at large. It also focused attention on the importance of national electronic infrastructure. Most recently the technology focus has been on the rapid adoption of wireless communications and the relentless continued convergence between previously unrelated technologies, epitomized by the incorporation of computing, telephone, camera, music, gaming and radio/television in a single hand-held wireless device. The only certainty in this account is that the changes will continue.<sup>25</sup>

There has been a parallel evolution in management thinking, increasingly influenced by the capabilities of ICTs. A foundation was provided by the New Public Management, which emerged in the 1980s and provided different models of the role and instruments of government, emphasizing perspectives imported from the private sector such as empowerment of managers, focus on results and use of benchmarking and best practices in management innovation. This

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<sup>25</sup> Reed , B. J., Information Technology Management . In *Paths to Performance in State and Local Government* . Syracuse, NY : Maxwell School, Syracuse University, 2005, pp.127-38

also led to the perception of the private and not-for-profit sectors as partners to government and as alternative vehicles for delivering public services.

The complexity and risks attached to technology have also created a significant role in the public sector for management consultants, ranging from gurus and major international firms to self-employed individuals providing a spectrum of services from planning to project management, provision of goods to change management, and provision of individual services to outsourcing of entire areas of government administration. They have introduced government to concepts that have been developed in the private sector world of e-commerce, including single-window client-centered service delivery, customer relationship management, supply chain management, business process re-engineering and IT governance models emphasizing project management approaches.

While ICTs focus on infrastructure, hardware and software, both their adaptability and their complexity bring home the reality that they can only be effectively used as a means to the ends of government, requiring care in identifying the objectives that the technology is meant to support. The technologies have also given new prominence to the data, information and knowledge that they carry and that have become a major asset of government, as important a resource as its people and finances and effective only if integrated with them.<sup>26</sup>

In addition to these technology and management factors, other forces that are inherent to the public sector have been important influences in the development of e-government. The first has been government's need to respond to the demands and capacities of the public and of the economy and society. Politicians are also a factor: although cautious about adopting new technologies, especially in the political process itself, they have been attracted by the resource savings and efficiency potential of technology and by the prospect of bringing government closer to the citizen.

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<sup>26</sup> Gudrun Trauner, *E-government – Information and Communication Technologies in Public Administration*, Linz/Brussels: Linz University/IIAS Publication, 2002

Another important driver has been the public service itself, with the recruitment of technologically skilled staff and the carry-over of technological skills from daily life. Finally, an important characteristic of government in the electronic environment has been its generally larger scale and complexity compared to the private sector and the need for lay managers to take decisions and provide leadership in areas with a major technological component.

### **Stages of E-Governance**

The United Nations E-Readiness Survey contemplates the following stages of E-governance as to the online presence of Governments worldwide:

**1. Emerging Presence** – The Stage I i.e. Emerging presence considers online availability of limited and basic information. A basic online presence of an e-government involves an official website and few WebPages. Links to ministries and departments of Central Government, regional/local Government may or may not be available. The website at this stage may also have some archived information such as the head of states' messages or the constitution. However at this stage most of the information remains static without there being any options for citizens.

**2. Enhanced presence** – The Stage II contemplated by UN is Enhanced presence of the Government online. At this stage the Government provides more public information resources such as policies of the Government, laws, regulations, reports, newsletters. This may also be downloadable at this stage. This stage may allow users to search the information within the documents available online. A help and a sitemap feature may also be provided on the website to make navigation of the website simpler. At this stage though there are more number of documents available online, the navigation of the website is still not sophisticated and is unidirectional. There are no interactivity at this stage as the information is only flowing towards the citizens rather than also from citizens to Government.

**3. Interactive presence** – The Stage III of Interactive presence considers Governments to initiate interactivity in their websites. It involves availability of online services of the government to enhance convenience of the consumer. This will include downloadable forms and applications for payment of bills, taxes and renewal of licenses. Government Websites at this stage would have audio and video capability to increase the interactivity with the citizens. At this stage the government officials would be able contacted via email, fax, telephone and post. The website would be updated regularly to keep the information current and up to date for the public.

**4. Transactional presence** – The Stage IV i.e. Transactional presence allows two-way interaction between the citizens and Government. It includes options such as paying taxes, applying for ID cards, birth certificates, passports, license renewals and other similar C2G interactions by allowing the citizen to submit forms and applications online 24/7. The citizens at this stage will be able to pay for relevant public services, such as motor vehicle violation, taxes, fees for postal services through their credit, bank or debit card. Providers of goods and services are able to bid online for public contracts via secure links.

**5. Networked presence** – The Stage V as contemplated by UN Survey is ‘Networked Presence’ which represents the most sophisticated level in the online e-government initiatives. It can be characterized by an integration of G2G, G2C and C2G interactions. The government at this stage encourages citizen participation, online participatory decision-making and is willing and able to involve the society in a two-way open dialogue. Through interactive features such as the web comment form, and innovative online consultation mechanisms, the government will actively solicit citizens’ views on public policy, law making, and democratic participatory decision making. At this stage of E-governance the integration of the public sector agencies with full cooperation and understanding of the concept of collective decision-making, participatory democracy and citizen empowerment as a democratic right, is initiated.

## **Aspects of E-Governance**

1. Information Management
2. Identity and Access Management
3. Content Management
4. Standards Management
5. ICT Legal Framework

### **1. Information Management**

Information management is gathering and storing at one place, the information relating to the Government and Governing process. It is the systematic arrangement/classification of information. If the information of the Government is gathered at one place without any arrangement or management, it would prove difficult for the users to find the required information. Managing information is an important aspect of E-governance. Information



management addresses the issues like – How to provide? What to provide? Whom to Provide? When to provide? Where to provide? Why to provide?

The process of information management may further be divided into three aspects – (1) Database Management, (2) Indicator Management, and (3) Knowledge Management. Database Management involves bare compilation and organisation of data and information at one place. Indicator Management involves storing with the information the catch words, labels, tags, meanings and context relating to the information. Knowledge Management involves managing the skills and know-how of the employees/experts of the Government for benefit of the Government.

Information management is an integral aspect of E-commerce. It also proves essential for E-Governance. It helps transform the governing process in a business-like efficient and cost-effective process. Information management aims at reducing cost, improving performance, differentiating of products and services of Government, specialised/customised information, and citizen focus.

Information management involves following stages –

1. Gathering – gathering all the available information of the government
2. Creating – creating information which is lost or not available
3. Storing – storing the gathered information in one place
4. Accessing – accessing of stored information by the people
5. Distributing – distributing required information to the public
6. Ignoring – ignoring the information not publicly important
7. Discarding – discarding ignored and insignificant information
8. Updating – continuous updating information
9. Securing – securing the information with latest technology so as to give access to information to those who really require it.

## **2. Identity and Access Management**

Identity management is a set of processes and infrastructure for the creation, maintenance and use of digital identities for the purpose of access to E-governance portals and the information on those portals. Well established Identity management system helps setup an Access management

system. The object of Identity Management is to create scalable, extensible and secure standards based framework for identity data acquisition and storage.

Access management involves authentication of identity of the user and giving access to the Government and public information available online. Access management is necessary to give a secure access to information to the public. Securing of public information available online is very important due to recent online piracy and attacks on websites through hacking. E-governance would involve huge of sensitive public information up for grabs for the hackers of other countries. Further there are certain things which require to be accessed by only the Government officials. So online security of information is very necessary which can be done through Access management. Access management is only possible if there is an Identity Management system is already online and running successfully.

**The identities can be classified as follows:** (1) Citizens, (2) Employees, (3) Customers, (4) Organisations, (5) Agencies, (6) Partners, etc.

**The process of Identity Management involves following stages**

**a) Citizen Request** – The first stage is the Citizens' requests for creation of identities. This may be done physically by submitting forms and documents.

**b) Verification** – The second stage is to physically verify the identities by crosschecking various documents, photo identities, etc.

**c) Assignment of identifier** – The Government has to assign a unique identifier which may be a number or a username and password to every citizen so as to eliminate multiplicity of identities. Today according to the emerging technologies the identifiers may also be in the form of biometrics, digital certificates, smart cards, etc.

**d) Storage of Identities in ID stores/databases** – Once an identifier is assigned/username and password is created, the identities are stored in the identity stores.

**The process of Access Management involves following stages:**

**a) Authentication** – Once a user wants to access online portal, he will need to access it through the unique identifier assigned after registration. After the user enters the username and passwords or through any other authentication process like biometrics, digital certificates, etc. his access to the portal is authenticated.

**b) Authorisation** – Authorisation of user depends on the type the user belongs. The user may be administrator, Manager, Author, Creator, user, etc. A user will only be authorised to access the information. The Administrator is authorised to change the information.

**c) Access Control** – Based on the authorisation of the user, his access of information in various areas will be controlled. This will be based on the type of user, i.e. Administrator, user, etc.

**d) Audit and Reporting** – Audit and Reporting involves the monitoring the access of information by users, their authority and access rights. This helps in improving the access security and also the security of the information.

### **3. Content Management**

Content management is the process of organising, distributing and tracking information/data through a website over the internet. It helps to make users more knowledgeable or informed by offering instant access to correct information online. It deals with providing right information, to right people at right time.

Contents of a website can be divided as follows: Text, Graphics, Audio, Video, Diagrams, Links, etc. Managing this various type of content is important. It is necessary to decide where to provide text and where images and graphics.

### **4. Standards Management**

Many countries do not have a uniform national level e-governance standards and computer architecture. Biometrics, telematics, informatics, kiosks, application processing and status, digital records, digital signatures, design of website, etc determine the standards of e-governance. To ensure Interoperability among e-Governance applications, Government of India has setup an Institutional mechanism for formulation of Standards through collaborative efforts of stakeholders like Department of Information Technology(DIT), National Informatics Centre (NIC), Standardization Testing and Quality Certification( STQC), other Government departments, Academia, Technology Experts, Domain Experts, Industry, BIS, NGOs etc. In this process there is a provision of formal Public review also.

## **5. ICT Legal Framework**

Every government should enact a strong legal framework for the effective implementation of e-governance in their countries. India notified the IT (2008) Amendment Act in February 2009 which is tougher than the IT 2000 Act. The IT Act 2000, the first law to address the diverse legal issues emanating from India's phenomena IT growth, proceeded on a fundamental premise in trying to provide an omnibus law to cover e-governance, e-commerce, e-archiving, as well as the basic framework for cyber security and cyber crimes. The platform was deficient, as issues of cyber security, particularly in the context of the proliferation in internet transactions for goods and services, transfer of funds through banks, online credit card payments, which exposed and enhanced the scope of vulnerability to frauds and other crimes, were not addressed.

To an extent, the amendment Act is an updation of the IT Act 2000, differentiating application of digital and electronic signatures in relation to authentication and creation of documents. Definitions have also been introduced to include new technology in communication devices and systems of creation and transmission through various systems. The Act has sought to validate the concept of penalties, compensation and adjudication in dealing with what is popularly known as cyber crimes and in doing so Section 66 and 67 of the existing Act have been enacted.

### **Citizen-centered service**

Perhaps the single most powerful concept inherent in e-government is client-centred service delivery. Borrowed from the private sector, and predating the internet, this concept has come into its own with the World Wide Web. In this view, government services should be designed from the starting point of meeting citizens' needs or of helping citizens to meet their civic obligations. The formal organization of government assumes secondary importance and instead different parts of government or even levels of government are brought together by their common relationship with identifiable communities within the larger population. In the electronic environment, citizen capacity is a factor as well as citizen need and public administration is pulled to present itself where the public is located, physically and on-line.

The approach, then, is for government to be designed from the outside looking in. Such a focus on the citizen/client also highlights the ultimate purpose of the service being provided and the procedures followed by government to achieve those purposes. Technology is seen as an enabler. However, both the logic and the costs of electronic technology-intensive systems call for simplifying the steps involved in service delivery, focusing on ends over means. This has led to an emphasis on service ‘transformation’, using the methodologies and insights of business process re-engineering and continuous improvement.<sup>27</sup>

An integral part of the citizen-centered model is self-service, in which the ‘client’ assumes many of the administrative tasks performed by the service provider. In the context of on-line services, these tasks can be performed on a round-the-clock (‘24/7’) basis. Taken together, these two elements are major sources of cost savings. Experience has shown, however, that not all government services are amenable to delivery only on-line and, by the same token, not all members of the public are willing or able to seek them only electronically. This has given rise to a renewed effort to provide integrated service delivery, bringing together the various ‘channels’ of interaction between government and the public, including in person, by telephone, by mail and through kiosks as well as on-line. The client and purpose orientation has also given renewed emphasis to the proposition that public goals do not necessarily have to be met through public vehicles, leading to the development of alternative instruments for delivering public services, including through other levels of government and even non-governmental actors.

The considerable power of the client-centered service model does have its limitations. It works best in the context of service transactions involving an exchange of information or money for a tangible return, such as a certificate or a reservation. This model, based on electronic commerce, is well suited to local government and areas of national government that have significant interaction with the public. It works less well in areas of government that are oriented towards scientific research — where knowledge management models are more appropriate — or in government’s policymaking activities. Even in these areas, however, adopting a service-oriented approach has provided useful insights for introducing technology tools.

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<sup>27</sup> <http://www.ica-it.org> (accessed 16<sup>th</sup> December 2010)

## Public Information

A second characteristic of public administration in the e-governance context is the emergence of information as a key resource of government, requiring its own legislation, policies and institutions. While activities such as records management and documentation have always been an essential feature of government, it has only been with the development of e-government that the information assets of government have been understood to be as important as the financial and human resources that have been the traditional focus of public administration.<sup>28</sup>

A characteristic of information management in government is that it can be thought of in lifecycle terms, a concept long in use by archivists. The stages of the government's information holdings begin with its collection and production and include use, storage, retrieval, dissemination, protection, disposal and longer-term retention.

Information collected for one purpose can be re-used for other purposes, and storage of information in electronic databases opens up significant possibilities — and related issues — for sharing information and creating new information and knowledge. Such information can be retained as individual data elements, as combinations of data to support decision-making and, with the application of judgment, as accumulated knowledge and wisdom. Information that is gathered and held this way can acquire tangible value, both in a financial sense and in terms of its ability to do good or harm, according to how it is used. From this perspective, information held by government is of particular value, both because of its quantity and because of government's ability to require individuals and businesses to provide reliable information about themselves that they would wish to safeguard in other circumstances. Privacy and the protection of personal and commercially-sensitive information have, therefore, become major public policy issues, together with their companions, security and intellectual property.<sup>29</sup>

As with financial and human resources management, e-governance has fostered its own environment of public administration institutions, laws, policies, procedures and skills. In some cases, these are new; in others, they have provided a new context and importance for existing

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<sup>28</sup> Pardo , Theresa A. , G. Brian Burke , and Hyuckbin Kwon , *Preserving State Government Digital Information: A Baseline Report* . Albany : Center for Technology in Government, 2006 (accessed 12<sup>th</sup> July 2009)

<sup>29</sup> [http://www.oecd.org/topic/0,2686,en\\_2649\\_34129\\_1\\_1\\_1\\_1\\_37405,00.html](http://www.oecd.org/topic/0,2686,en_2649_34129_1_1_1_1_37405,00.html) (accessed 3<sup>rd</sup> January 2011)

institutions. In all cases the environment is evolving and it will be some time before it can be regarded as fully mature as the management of the civil service or of public money.

The new information discipline is itself multidisciplinary, bringing together elements as disparate as archivists and librarians with publishers and marketers, engineers and computer scientists. In the government context, a vital component of information management is its identification as government information (or, when on the internet, as government space) to ensure proper accountability.

In the nature of their public role, governments are concerned with the quality of the information they hold — including its accuracy and availability to the taxpayers who have ‘paid’ for it — and they also have a responsibility to ensure that members of the public have the information they need to fulfill their rights and obligations. This leads to a concern with information dissemination and freedom of/access to information. The collection of sensitive personal and commercial information creates reciprocal obligations between the providers of such information, to be honest and complete in what they tell government, and government, to ensure that it is well managed and with due regard to its sensitivity. The sensitivity of information collected and generated by government is also the basis of approaches to security, both of the information itself and ultimately of the state and society.

### **New Skills and Knowledge**

A third characteristic of e-governance is the role played by technology in shaping the environment in which public administration operates and the knowledge and skills required by public service managers and workers. For practical purposes, the public service workplace is one where there is a computer on every desktop and routine use is made of e-mail, word-processing suites and the World Wide Web. This situation contrasts with the environment of ten or even fewer years ago, where the telephone and the post were primary working tools.

The adoption of electronic technologies in government has been a remarkable story of organizational learning and adaptation that is still unfolding. The networking that is inherent in e-governance has also given a new emphasis to working methodologies that emphasize group

collaboration and information sharing, typically cutting across the vertical division of labour that is a characteristic of classic bureaucracy. From a management perspective, the introduction of electronic technologies has been a major challenge, as lay managers have been called upon to make decisions about costly investments in highly sophisticated information systems. A further challenge is the open-ended nature of the investments — all too frequently the technical and costing assumptions that can be made at the beginning of a major project are overtaken by the time it is completed, with the result that risk management has become a major preoccupation of government decision-makers.<sup>30</sup>

The increasingly technical, multi-disciplinary and risky nature of e-government — or at least of the technologies that are its underpinning — creates a more interdependent relationship within government between policy-makers, program administrators and technical specialists. It also creates a new relationship among the traditional disciplines of public administration: the administrative disciplines are all adopting information technologies for their own purposes and new linkages are developing between them. Perhaps the most significant is the link between information technology and human resources, which in combination provide the foundation for knowledge management.<sup>31</sup>

### **Public-Private Partnerships**

Another feature of e-governance is the relationship between government and the private sector. Unlike other areas of public administration, governments cannot be self-sufficient in their adoption and use of electronic technologies and, of necessity, they have developed a variety of collaborative relationships with the private sector, giving a new context to the traditional issue of 'make or buy'. Although governments can and do develop a significant technological capacity within the civil service, they are typically in the position of responding to the rapidly evolving external environment in acquiring electronic technologies and in thinking about their use. Governments are, therefore, heavily reliant on consultants — ranging from self-employed individuals to multinational firms that, in some cases, are larger than the governments

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<sup>30</sup> Osborne, David , and Ted Gaebler, *Reinventing Government: How the Entrepreneurial Spirit Is Transforming the Public Sector*. Reading, MA :Addison-Wesley, 1992, pp.11-17

<sup>31</sup> <http://www.itu.int/wsis> (accessed 12<sup>th</sup> December 2010)



themselves — for policy advice and for assistance in implementing new systems and technology-enabled programs and services.

In some cases, government is its own project manager in implementing and operating new systems, in others it relies on the private sector to do so on its behalf through a variety of outsourcing and public–private partnership arrangements. The latter include private firms and other non-governmental organizations providing services to the public on behalf of government. Another facet of the public–private partnership is that government is a major purchaser of technology-related goods and services and, therefore, has a major influence on the nature and development of that sector in the national economy. Governments are subjected to pressures to balance internal efficiency and productivity with national economic development concerns. This frequently involves making choices between established multinational partners offering wide experience and economies of scale and national firms that include the small and medium enterprise sector that in the knowledge economy is regarded as one of the key engines of innovation and wealth creation.<sup>32</sup>

## **E-Governance and Socio-economic Development**

If e-governance has been a major challenge in the developed economies, it is even more so in developing countries. It permeates the four domains of government: its role in fostering economic growth and social cohesion, its relationship with the governed, its internal administration, and its relationship with the international environment. In each of these areas developing countries are faced with limitations on institutional capacity and infrastructure, financial resources and civil service skills that characterize — and prolong — lower levels of development. The gaps between them and the developed economies risk being accentuated as the latter move increasingly aggressively into the knowledge economy, paralleling the ‘digital divide’ that has been identified within developed countries.<sup>33</sup>

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<sup>32</sup> Brown, David, *Electronic Government and Public Administration*, *International Review of Administrative Sciences*, Vol.71, No. 241, 2005, pp.241-254

<sup>33</sup> <http://topics.developmentgateway.org/egovernment> (accessed 12<sup>th</sup> December 2010)

This situation calls for attention to the application of e-governance models to the development context and, in particular, to strategies for development. There is considerable effort being paid to harnessing the potential of electronic technologies in the development process. It is less clear, however, whether the implications have been worked out, for development strategies, of the fact that the post-industrial economies are increasingly defining themselves as knowledge-based economies and societies, with knowledge-based public administration to support and lead them. A working hypothesis is that this points to a need to develop knowledge-based theories of development (i.e. ICT-led development) with technology-literate and enabled public administration playing its appropriate role.<sup>34</sup>

The challenge is compounded by the problems that developing countries face in areas that are central to e-government. For most developing countries, electricity and telecommunications infrastructure (whether land-line based or wireless) are areas of national weakness. The equipment and skills required for e-government to be effective, both internally and in its relationships with the public, are generally expensive — and imported — and not widely available. Local demand, both by the public and by the locally-based private sector, is significantly weaker than in developed countries, while the major international consulting and technology firms are relatively stronger than in developed countries, with fewer counterweights inside government or in the national economy.<sup>35</sup>

While daunting, the situation is not altogether bleak. Many middle developed countries have undertaken ambitious programs to introduce e-government as a driving force in their national development. Even the poorest countries have begun to take basic steps, both in adopting appropriate technologies and in introducing information management practices to underpin their move to e-government. Bilateral and multilateral donor agencies are devoting increasing attention to the use of ICTs in development and harnessing the power of the internet to share best practices and support initiatives on the ground.

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<sup>34</sup> Organisation for Economic Co-operation and Development (OECD), *The Hidden Threat to E-Government: Avoiding Large Government IT failures*, PUMA Policy Brief no. 8, 2001

<sup>35</sup> [http://graphics.eiu.com/files/ad\\_pdfs/ERR2004.pdf](http://graphics.eiu.com/files/ad_pdfs/ERR2004.pdf) (accessed 30<sup>th</sup> January 2011)

One of the most hopeful elements of these developments is that global technologies can reach into local development situations, providing a much richer support base to development efforts at the community level as well as in public administration. Just as the networked environment changes the management and accountability model within governments, it may as well change the relationship between developed and developing countries, in the longer term bringing them closer together, highlighting interdependence and breaking down isolation. This will not be an easy process on either side — and will have profound implications — but it does, more than any other element, suggest that the e-governance story has a good many chapters ahead of it.<sup>36</sup>

### **New Public Service**

The impact of new technology on information access, government service delivery, and public attitudes about government has long been debated by researchers. Each technological innovation—from the movable-type printing press in the fifteenth century, the telegraph in 1844, and the telephone in 1876, to the rise of radio in the 1920s and coast-to-coast television broadcasting in 1946—has sparked speculation about its longer-term social and political impact. Transformationalists often predict widespread consequences arising from new technology, while incrementalists note the constraining influence of social, economic, and institutional forces on the ability of technology to alter behavior.

In the debate over the transforming power of new technology, it is important to remember that change represents a continuum characterized by relative comparisons of time and pace. There are three dimensions of change that are important for new technology: long-term versus short-term impact, big versus little shifts, and technocratic versus political and institutional alterations. Given the complexity of change assessments, it is difficult to determine how much innovation and how long a period of time is required before something can be considered a “complete change in character, condition,” the classic definition of transformation. One thing that is clear about technological change discussions is that they often focus on the endpoints of change comparisons, without looking at the direction and degree of change or identifying which

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<sup>36</sup> [www.unpan.org](http://www.unpan.org) (accessed 12<sup>th</sup> February 2011)

particular dimension of change is being evaluated. Government actions are mediated by a range of factors: institutional arrangements, budget scarcity, group conflict, cultural norms, and prevailing patterns of social and political behavior, each of which restricts technology's ability to transform society and politics.

Like the New Public Management and the old public administration, the New Public Service consists of many diverse elements. It has an impressive intellectual heritage, including in public administration. An increasingly important role of the public servant is to help citizens articulate and meet their shared interests, rather than to attempt to control or steer society in new directions. While in the past, the government played a central role in controlling the society, the complexity of modern life sometimes makes such a role not only inappropriate, but impossible. Those policies and programs that give structure and direction to social and political life today are a result of the interaction of many different groups and organizations, the mixture of many different opinions and interests. In many areas, it no longer makes sense to think of public policies as the result of government's decision-making processes. Public policies today are the outcome of a complex set of interactions involving multiple groups and multiple interests ultimately combining in fascinating and unpredictable ways.<sup>37</sup>

In the changed circumstances, the primary role of the government is not merely to direct the actions of the public through regulation and decree, nor is it to simply establish a set of rules and incentives through which people will be guided in a proper direction. Rather, government becomes another player, albeit an important player in the process of moving society in one direction or another. Government acts, in concert with private and voluntary sectors, to seek solutions to the problems that citizens face. In this process, the role of government is transformed from one of controlling to one of agenda setting, bringing the proper players to the table and facilitating, negotiating, or brokering solutions to public problems.

When traditionally government has responded to the needs by saying 'yes', we can provide that service or "no, we can't," the New Public Service suggests that elected officials and public administrators should respond to the requests of the citizens not just by saying yes or no, but by

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<sup>37</sup> Kaboolian, Linda, The New Public Management, Public Administration Review, Vol.58, No.3, 1998, pp.189-93

saying “let’s work together to figure out what we are going to do, then make it happen.” In a world of active citizenship, public officials will increasingly play more than a service delivery role – they will play a conciliating, a mediating or even an adjudicating role.<sup>38</sup>

In addition to a facilitating role, government has also a moral obligation to assure solutions that are generated through such processes that are fully consistent with norms of justice and fairness. Those solutions should also be consistent with public interest. The government should see to it that the public interest predominates. In short, public servant will take an active role in creating arenas in which citizens, through discourse, can articulate shared values and develop a collective sense of the public interest.<sup>39</sup> Rather than simply responding to disparate voices by forming a compromise, public administrators will engage citizens with one another so that they come to understand each other’s interests and adopt a longer range and broader sense of community and social interests. The public interest results from a dialogue about shared values, rather than the aggregation of individual self-interests. As such, public servants do not merely respond to the demands of the customers, but focus on building relationships of trust and collaboration with and among citizens.<sup>40</sup>

However, with the success of the New Public Management initiatives, more and more governments felt the need to co-opt the private and voluntary sectors in the delivery of public services. Australia, New Zealand, Canada and the United States of America set a new trend in reforming the public service delivery systems in their respective countries. The change under consideration here is the one that sees conventional forms of public assistance to the needy being replaced with ‘third party government’ based upon contracting and competition. The general movement away from a unified public service towards the development of quasi-markets based on the involvement of private firms and non-profit organisations can be viewed as the most important and most radical change to state–society relations since the advent of the modern

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<sup>38</sup> Kettl, Donald F., and Jon J. Dilulio, (ed.) *Inside the Reinvention Machine*, Washington DC: The Brookings Institution, 1995

<sup>39</sup> Denhardt, Robert B. & Denhardt, Janet Vinzant, *The New Public Service: Serving Rather than Steering*, *Public Administration Review*, Vol.60, No.6, 2000, pp.549-559

<sup>40</sup> Gardner, John, *Building Community*, Washington DC: Independent Sector, 1991, p.126

welfare state. It also raises fundamental questions about the role of government in a time 'when boundaries are blurring across the public, private and not-for-profit sectors'.<sup>41</sup>

The third sector comes under various other names, such as the voluntary sector, the (private) non-profit sector, the social economy, civil society, all with slightly different defining characteristics, and with a large degree of overlap. While it is important to be precise, the definitional issue can be crippling to the debate on the third sector. One reason for the growing interest in the third sector is its involvement in the provision of public services. In some countries, the third sector has traditionally played a large role as in Germany and the Netherlands, where it has been an essential part of the construction of the post-war welfare state. In others, like the UK, it took shape in the context of outsourcing in the 1990s and in New Public Management. In addition, there has been the growth of organized initiatives in which citizens play a direct role in the production of the service, so far largely ignored in public management.

Another reason for the surge of interest in the third sector is, paradoxically, that it has been losing some of its distinctiveness. As a result of contracting out, privatization and performance measurement, the traditional boundaries between market, state and third sector have been breaking down, leading to the emergence of a class of organizational hybrids. In concrete terms, it means that the third-sector organizations have taken on more characteristics of state organizations (e.g. in terms of formalization) and of market organizations (e.g. maximizing their income, but without maximizing their profit). Although no organization can be regarded as 'pure', many organizations now reach the point where the ideal types of state, market or third sector no longer help us truly to understand them.

One reaction to such developments has been isolationism: the call for a strict demarcation of the sector, both in a conceptual and a normative sense. For instance, it leads to pleas for third-sector organizations to avoid close association with the state. However, for better or worse, a significant part of the third sector has opted for closer integration with states and markets. In some countries, this dates back to the nineteenth century (e.g. in Germany and the Netherlands), or the

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<sup>41</sup> Mark Considine, Governance and Competition: The Role of Non-profit Organisations in the Delivery of Public Services, *Australian Journal of Political Science*, Vol.38, No.1, 2003, pp.63-77

early twentieth century (as in Sweden), while it came later in others (e.g. the UK in the 1990s). This has undeniably changed them, leading some to claim that they have changed to the point where they have lost their distinctiveness from state organizations. It is even conceivable, although this perspective needs to be further developed, that the third sector can be better understood in terms of certain aspects of public services, rather than as a distinct cluster of organizations. Policymakers are not primarily interested in the third sector per se, but in what it can contribute to the quality of public services. Research can help to determine the exact benefits of its involvement. Precisely, this concerns the relationships between two variables: the role of the third sector in public service provision and the manner in which such services are produced.<sup>42</sup>

### **Institutional Performance**

During the 1990s, in what has become known as the ‘new public sector’, many services in advanced economies, as well as those in the developing world, have come under pressure to become more efficient and effective, so as to reduce their demands on taxpayers, while maintaining the volume and quality of services supplied to the public. To achieve this, they have been subjected to the introduction of various ‘private sector’ management techniques and the frequent adoption of some form of neo-market system in which the purchasers and providers of public services have been split and are frequently required to contract with each other.

The topic of institutional performance measurement has generated much coverage over the years in many disciplines within the private and public sectors. Within the ‘Western world’, the widespread owner–manager split has led to a private sector preoccupation with meeting the information needs of the providers of capital, with a heavy emphasis on accounting information. More recently, it has been accepted that companies do not compete solely on cost and price, and the virtues of various types of non-financial information for meeting the needs of stakeholders other than shareholders, such as customers and employees, have been more widely recognized in the development of various multidimensional models for institutional performance measurement and management.

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<sup>42</sup> Brandsen, Taco & Pestoff, Victor, Co-production, the Third Sector and the Delivery of Public Services: An Introduction, *Public Administration Review*, Vol.8, Issue:4, 2006, pp.493-501

Institutional theories assume that a primary determinant of organizational structure is the pressure exerted by external and internal constituencies on the organization to conform with a set of expectations to gain legitimacy and so secure access to vital resources and long-term survival. A common means of gaining legitimacy is alignment with some rationalized institutional myth, which is occasionally manifested by the adoption of structural attributes displayed by other significant organizations through some isomorphic process.

An important insight from institutional theory is that performance may be viewed as institutionally defined, as institutional factors determine the interests being pursued by organizations. Generally, performance will be defined narrowly to the extent that (a) elites dominate an organization, (b) a high degree of professionalization exists, and (c) the organization performs a technical function, outputs of which are measurable. Performance will be construed much more broadly, by contrast, to the extent that (a) the norm of participative democratic governance operates, sometimes in the formal structure or rules of an organization, (b) the interests of multiple constituencies are given recognition, and (c) the organization's function is non-technical and outputs elude measurement.

In addition to these determinants of what is regarded as 'good' performance, it is important to consider the dependence of the organization on different groups of stakeholders. Even if the existence of multiple and conflicting interests increases the need to balance these by establishing some trade-off between them, organizational dependence on a particular constituency reduces the likelihood of balance. The growing managerialism has been more or less equated with a reconception of performance in terms of 'efficiency', 'economy' and 'effectiveness' at the expense of non-financial, less easily measurable aspects endorsed by professional service providers. Many public sector organizations have a history of resolving the often ambiguous and multifaceted nature of their objectives by reaching some politically negotiated consensus regarding which objectives to pursue. This would suggest that, in practice, performance in public-sector organizations has long been construed more narrowly.

When it comes to introduction and adoption of new information and communication technologies, there are inherent institutional problems. The embeddedness of government actors



in cognitive, cultural, social, and institutional structures influences the design, perceptions and uses of the Internet and the related information technology.<sup>43</sup> The challenge to build a virtual state or a fully developed e-government is not about technological capability but about overcoming entrenched organizational, social, and political institutions. The implication to public administration is clear: Technology, institution, and organization must mutually evolve; as a result, e-government is not simply introducing web-based technologies.

Information architecture is central in the transition from pre-existing information systems, structures, procedures and infrastructure towards a fluid re-design of the flows and databases which will support the process of reform and innovation. Therefore, greater emphasis is placed on the organizational and procedural elements which raise not only awareness, but most importantly usage, acceptance and diffusion of the new ICT being implemented within and across different organizations. E-governance is indicative of this transformation where the interplay of the 'old' and the 'new' is often considered more a technical exercise rather than the expression of contrasting and sometimes contradicting rationalities. Failure to recognize the problematising characteristics of e-government programmes, and an acceptance of the narrow functional efficiency view, may have negative consequences, for example, if it leads to ignoring or overlooking the potential of such programmes to create innovative mechanisms of governance or to support the exploitation (or enforcement) of government's informational capacity in ways that improve policy making and policy execution.

The fact that governments are divided into competing agencies and jurisdictions limits policy makers' ability to get bureaucrats to work together to promote technological innovation. Budget considerations restrict the ability of government offices to place services online and to use technology for democratic outreach. Groups fight over whether online tax filing should be left to the private sector or performed by the government. Cultural norms and patterns of individual behavior affect the manner in which technology is used by citizens and policy makers.<sup>44</sup>

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<sup>43</sup> Fountain, Jane, *Building the Virtual State: Information Technology and Institutional Change*, 2001, p.14

<sup>44</sup> West M.Darell, *E-Government and the Transformation of Service Delivery and Citizen Attitudes*, *Public Administration Review*, Vol.64. No.1, pp.15-27

Institutional theory has not accounted for information technology (IT) and its multifaceted role in changing the contours of the landscape within which rules and structure influence perception and action. Organizational performance is hard to measure in the public sector. There is a lack of consensus as to what constitutes a valid set of organizational performance and organizational effectiveness criteria. Previous research has tended to focus on narrow, efficiency-related measures of performance and to neglect other values such as equity and fairness. Such narrow measures of performance can produce misleading conclusions about organizational effectiveness. The concept of organizational performance refers to whether the agency does well in discharging the administrative and operational functions pursuant to the mission and whether the agency actually produces the actions and outputs pursuant to the mission or the institutional mandate. The agency's internal management and operation have contributed substantially to the achievement of these goals. The dimensions of organizational performance in the public sector are divided into internal and external performance, and each specifies the following performance-related values: efficiency, effectiveness, and fairness. Organizational performance is assumed to be affected by individual-level variables.

Citizens have different expectations of how big government should be and what kinds of services it should provide. As a result, their reactions to the same level of actual performance may be very different. It is not the actual level of performance that matters but the gap between expectations and performance. Citizens may have negative perceptions of government performance regardless of how government is actually performing. Public confidence in government is influenced mainly or entirely by subjective measures or citizen perceptions. Government performance is produced collectively by a number of agencies, and some agencies may be featured prominently in assessment reports, whether internal or external.<sup>45</sup>

The summation argument emphasizes the difference between the whole (regime) and the part (agencies or agency units). It indicates that trust has different levels and means different things in different situations, such as trust in national government, local governments, individual agencies, or agency units. Accordingly, performance should be measured at different levels, such as the

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<sup>45</sup> Yang, Kaifeng & Holzer, Marc, The Performance-Trust Link: Implications for Performance Measurement, Public Administration Review, January/February 2006, pp.114-26

regime, constitution, executive agencies, and public officials. What seems weak in current performance measurement practice is the “jurisdiction” level: the national government, the state government, or the local government, which consists of various agencies.

There are three dimensions in measuring institutional performance: (1) policy processes, with indicators such as political stability, budget promptness, and statistical and information services; (2) policy pronouncements, with indicators such as reform legislation and legislative innovation; and (3) policy implementation with considerable benchmarks. In the present study, factors like technology advancement, political context, resource allocation, institutional arrangements, capacities (like organizational and technical skills) and performance have been taken into account to assess or evaluate the implementation of e-governance projects in various states of India.

### **Research Perspectives in e-Governance**

A variety of approaches have been used to define, build, and assess the development, performance, and consequences of e-governance. These include experimentation with new IT tools, performance and capability assessments and improvement efforts, and model and theory-building work. Taken as a whole, at least some progress has been made toward each of the five e-governance objectives. The most progress by far has been made in enhanced public services and improved management.<sup>46</sup>

Policy development has continued to move forward, although new policy issues continually add to an increasingly complex set of questions. The least progress appears to have occurred in enhancing democracy and exploring the implications of e-governance for administrative and institutional reform.

Government information policies address both the utility of information and requirements for stewardship. The e-governance policy framework today addresses information access, security, privacy, technology management, procurement, commerce and consumers, the digital divide, and

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<sup>46</sup> Dawes, Sharon S., The Evolution and Continuing Challenges of E-Governance, *Public Administration Review*, Special Issue, December 2008, pp.86-102

oversight requirements. The security aspects of access to government information have become an ongoing policy concern as governments at all levels have sought to protect information resources and infrastructures. Considerable resources and attention have been invested in coordinated security measures. By contrast, on the policy front, researchers have concluded that the lack of strong legislative guidance on access to government information has left Central agencies and states to devise their own uncoordinated rules for balancing security concerns with the principles of access and transparency.<sup>47</sup>

At the same time, technology initiatives have pushed the policy agenda forward in some areas, particularly with respect to the digital divide, transparency, and universal access. Enhanced services are inarguably the most advanced dimension of e-governance in any country. The best-known assessments comprise widely publicized studies that rank or grade states or local governments on selected features or indicators of e-government performance. These studies attempt to identify objective measures of progress or performance and typically rely on external observations of Web sites or surveys of government IT officials. Many research studies also assessed states on infrastructure, collaboration, and leadership and concluded that the best performers combine improved service delivery, enhanced capacity, and lower costs.<sup>48</sup>

Capability assessments take a governmental perspective rather than a user or observer perspective. Studies are organized according to the typical functions and services that governments provide (e.g., payments, permits, licenses) rather than the design or organization of state administration Web sites (e.g., navigability, personalization, esthetics or ease of use). On this basis, the states with the highest ratings offered online transactions, access to documents, multimedia features and online participation through surveys, forums and electronic meetings.<sup>49</sup>

Many studies have found that although the vast majority of governments had established Web sites, very little had been done to integrate e-government into their daily affairs because of

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<sup>47</sup> Andersen, David F., Salvatore Belardo and Sharon S. Dawes, Conceptual Frameworks for Strategic Information Management in the Public Sector. *Public Productivity and Management Review*, Vol.17, No. 4, 1999, pp.335-353

<sup>48</sup> Brown, Mary M., Understanding E-Government Benefits: An Examination of Leading-Edge Local Governments. *American Review of Public Administration*, Vol. 37, No.2, 2007, pp.178 – 97

<sup>49</sup> Caudle, Sharon L., Wilpen L. Gorr, and Kathryn E. Newcomer, Key Information Systems Management Issues for the Public Sector, *MIS Quarterly* Vol. 15, No.2, 1991, pp.171 – 188.

marketing, privacy, and funding barriers. Most state and local management improvement work has taken traditional forms. Management policies have generally followed the direction of enterprise IT management, including central leadership, distributed implementation, and shared governance. However, some experiments with new Web tools are also under way using internal wikis (informal online collaborative spaces) and blogs to share ideas and improve collaboration. Management report cards have been used in this area to assign letter grades to state and local performance based on pre-defined indicators.

E-governance, one of many elements of evaluation, is assessed on the basis of public access to information about the state government and the performance of programs and services, as well as the ability of citizens to provide input to policy makers. E-government is part of a larger assessment category called “information” that also includes the role of information in strategic planning, budgeting, performance management, and program evaluation.

Government IT workforce and skills assessments in the United States have addressed state employee decisions about institutional change, the skills profile and future skill needs of an entire state government and the views of IT leaders on the workforce challenges associated with both an aging workforce and changing technologies.<sup>50</sup>

Other research studies look more deeply at certain kinds of capabilities with the goals of improvement and assessment. Extensive action research with criminal justice organizations, for example, has produced multidimensional capability models that assess both individual organizations and multi-organizational projects on such dimensions as readiness, governance, information quality, project management, technical skills, and infrastructure. Related studies have addressed capabilities and strategies for cross-boundary information sharing and inter-organizational collaboration and the roles of leadership and authority in cross-boundary e-governance programs.<sup>51</sup>

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<sup>50</sup> Center for Digital Government, Digital States Survey 2006. <http://www.centerdigitalgov.com/surveys.php?survey=states> (accessed 1<sup>st</sup> May 2009)

<sup>51</sup> Cresswell, Anthony M., G. Brian Burke, and Theresa A. Pardo, *Advancing Return on Investment Analysis for Government IT: A Public Value Framework*. Albany: Center for Technology in Government, 2008, [http://www.ctg.albany.edu/publications/reports/advancing\\_roi](http://www.ctg.albany.edu/publications/reports/advancing_roi) [accessed August 6, 2009].

Other research of this kind addresses access to and preservation of digital government information, development and ongoing use of digital libraries and the importance of business process innovation and change. Work that aims to improve management performance and capability also includes case studies and awards programs that attempt to identify and publicize exemplary practices. Published case studies cover such topics as the management of state Web portals, procurement innovations, mobile technologies, e-government performance measurement and critical success factors.

Awards programs such as Innovations in American Government (Government Innovators Network 2008) highlight technology innovations considered to be exemplary attempts to deal with pressing public problems. Winning programs (selected after nomination, self-assessment, and independently conducted site visits) include CompStat (New York City's widely replicated program of data-driven policing), CitiStat (Baltimore's expansion of the idea to a citywide performance measurement program), and Info/California (a pre-Internet experiment to consolidate government information and services at kiosks in public places).<sup>52</sup>

In terms of explanatory theories and models, maturational perspectives or "stage" models are prominent. These posit that e-governance moves through predictable stages starting with simple presence or publishing on the Web and moving to interactions, transactions, and ultimately "transformation." Another common model focuses on rational planning and advancement through incrementalism, especially to avoid expensive failures. Like rankings and report cards, these maturation models offer the advantage of simplicity and they are easy to communicate. However, they are being challenged by newer research that addresses the complexity and dynamics of e-governance.<sup>53</sup>

The alternative research models include technology enactment which explores the mutual influences of technology development and institutional constraints, and collaborative organizational approaches which actively sense and adjust to the environment. A strengths and

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<sup>52</sup> Government Innovators Network (2008) Innovation Awards Program, Ash Institute, John F. Kennedy School of Government, Harvard University, [http://www.innovations.harvard.edu/award\\_landing.html](http://www.innovations.harvard.edu/award_landing.html) (accessed 1<sup>st</sup> July 2010)

<sup>53</sup> Gore, Al., *From Red Tape to Results: Creating a Government That Works Better and Costs Less*. Washington, DC: Government Printing Office, 1993, pp.7-10.

weaknesses model argues that the ideal conditions for e-government include slack resources, skilled staff, and knowledgeable leaders; a socio-technical view considers both technology tools and bureaucratic characteristics.

Adaptation models account for learning and experience, and strategic choice models focus on choices among internal and external orientations and efficiency versus effectiveness. Service-oriented models emphasize a shift from a bureaucratic paradigm of efficiency, rationality, hierarchy, and centralization to a new paradigm that emphasizes user satisfaction, networked organizations flexibility, and coordination. Work at the local level suggests that maturation plays some role, but choice, external influences, and nonlinear processes of development are more useful in guiding action.

Both scholars and political leaders have argued that IT can lead to radical administrative reform and institutional change. However, empirical research conducted through the 1990s suggests that IT by itself does not drive reform but instead fosters incremental change within traditional structures of power and authority. Productivity, adaptability, and innovation have been part of the legacy of IT in government, but these have played out without radical changes in structure or power relationships, which have received scant research attention.<sup>54</sup>

The constant evolution of the Internet may eventually lead to a different conclusion, but early policy research indicates that Internet-enabled policy networks reinforce existing patterns of influence rather than encourage new voices. Web 2.0 technologies, which are controlled by users and operate outside established structures, may reverse this direction, but more time and experience will be needed to test that possibility. Other research indicates that while technology has some influence over institutional imperatives, those same imperatives clearly limit the applications and uses of IT to those that by and large fit the prevailing institutional framework.

In practical terms, state and local governments have moved back and forth along the centralized – decentralized continuum with respect to structures and policies of IT management. They have

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<sup>54</sup> Jaeger, Paul T., Constitutional Principles and EGovernment: An Opinion about Possible Effects of Federalism and the Separation of Powers on EGovernment Policies, *Government Information Quarterly*, Vol.19, No.4, 2002, pp. 357 – 68 .

also pressed for leadership attention, productivity gains, organizational realignments, and process innovations. All of these represent change, and, in many instances, substantial improvements, but none yet rise to the level of serious reform. However, the emergence of permanent cross-boundary, multi-organizational structures for policy making and action may represent one area in which administrative reform in the more radical sense is unfolding.

In terms of public management, e-governance has evolved rapidly from rudimentary use of ICTs to support for highly structured administrative processes, to infusion of technology throughout government offices, and to reliance on networks and other advanced tools to change the way services are delivered and governmental processes carried out. At the same time, new management approaches and governance structures have been developed to fit better with networked forms of organization. Government has also been made more accessible through investments in usability, accessibility policies and tools, and investments in information-rich Web sites, online transactions, and municipal networks.<sup>55</sup>

Given the nature and pace of technological change, ICT strategies, tools, and innovations will continue to shape the information environment of governance. The inevitable interactions among technology development, social trends, policy responses, and public management adaptations will continue to provide a dynamic field for learning and action.

Consequently, the implications of technological change on the nature, structures, and processes of governance will remain a ripe area for both academic research and government innovation. As technology ceases to be seen as something apart from the normal processes of governance, it is likely that “e-governance” will fade as a term of art. However, a steady stream of questions regarding the nature and impact of ICTs on public services, government administration, democratic processes and the relationships among citizens, civil society, the private sector, and the state is likely to remain.

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<sup>55</sup> Layne , Karen , and Jungwoo Lee . 2001 . Developing Fully Functional E-Government: A Four-Stage Model, *Government Information Quarterly*, Vol.18, No.2, 2001, pp.122 – 36



Despite a popular tendency to assume the existence of a “best” form, many different forms of ICT-enabled governance are possible, and each will have attendant priorities, costs, benefits, and consequences. A future research and innovation agenda that recognizes the complexity and interdependencies of these various choices offers better prospects for understanding these consequences and for weaving salient concepts and tools more usefully into the broad purposes, functions, and performance of government.<sup>56</sup>

### **e-governance in India : An Overview**

E-Governance has the potential to benefit India’s citizens exponentially and maximize the return on the government’s investment in it. The contradiction in India is that the country is rightly recognized a global leader in the delivery of IT services, but it suffers from very little internal IT development in the country. IT initiatives in the government in India have largely been on a piecemeal basis characterized by a lack of vision that has limited the resultant benefits.

The World Economic Forum’s league table measuring the impact of technology on the development of nations, places Denmark at the top of the list for technological advancement with other Nordic countries Sweden, Finland and Norway claiming second, fourth and 10th place respectively. The same report notes that: "Denmark, in particular, has benefited from the very effective government e-leadership, reflected in early liberalization of the telecommunications sector, a first-rate regulatory environment and large availability of e-government services.”

But e-Governance is not just about improving delivery of services to citizens, businesses and government employees. It is also about blending Information and Communications Technology (ICT) with administrative reforms to make government more efficient, drive down costs and increase transparency.<sup>57</sup>

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<sup>56</sup> Computer Science and Telecommunications Board, *Information Technology Research, Innovation, and E-Government*, Washington, DC: National Research Council, 2002, p.67-77

<sup>57</sup> Chakrabarty, Tanmoy, Towards an ideal e-Governance scenario in India, [www.tcs.org](http://www.tcs.org) (accessed 5<sup>th</sup> July 2011)

India's central and state governments have tended to follow a silo approach to e-Governance - some implementation has taken place but has tended to be piecemeal and disjointed and, consequently, having little impact. This has prevented the absolute necessity for the benefits of IT to percolate to the grass root level and has left the disjointed silos ineffective and (relatively) unused. Today, there is a proliferation of portals in India, with many states having their own portals. But most of the portals cannot be considered to be anywhere near the 'one-stop-shops' that should provide end-to-end services to citizens.

Different e-Governance projects have demonstrated that improved access to information and services can yield economic and social development opportunities, facilitate participation and communication in policy and decision-making processes, and help to empower the weakest groups. A number of states and territories in India have pioneered this approach. e-Governance is being positioned as a strategic mechanism for more substantial transformation of government across the country. The task of transforming the largely manual methods and procedures of government service delivery across all tiers of the government is phenomenal.<sup>58</sup>

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<sup>58</sup> Roy, Arup, e-Governance and India, Express Computer, January 11, 2010  
<http://www.expresscomputeronline.com/20100111/gartnerview01.shtml> (accessed 1<sup>st</sup> August 2011)

## **Chapter – II**

### **Conceptual Framework and Review of Literature**

In the present era of technological advancement, a new kind of rationalization has been introduced in the government sector by the use of modern information and communication technologies (ICTs). The increasing use of ICT tool and applications is leading to transformational shifts in public policy, processes, functions and delivery systems. E-governance mechanisms are being deployed not only to provide citizen services but also raise the efficiency levels in the public sector thereby improving transparency and accountability in government functions and allowing for cost saving in government administration. ICTs are changing the ways in which the government deals or interacts with its citizens. The very nature and functioning of the state are being transformed with networked and interoperable e-governance systems taking the place of traditional or bureaucratic administration.

E-governance, meaning ‘electronic governance’ is using information and communication technologies (ICTs) at various levels of the government and the public sector and beyond, for the purpose of enhancing governance. It implies the processes and institutions, both formal and informal, that guide and restrain the collective activities of a group. Government is the subset that acts with authority and creates formal obligations. Governance need not necessarily be conducted exclusively by governments. Private firms, associations of firms, nongovernmental organizations (NGOs), and associations of NGOs all engage in it, often in association with governmental bodies, to create governance; sometimes without governmental authority. Clearly, this definition suggests that e-governance need not be limited to the public sector.<sup>1</sup>

E-governance is a broader concept and includes the use of ICT by government and civil society to promote greater participation of citizens in the governance of political institutions, e.g., use of the Internet by politicians and political parties to elicit views from their constituencies in an efficient manner, or the publicizing of views by civil society organizations.<sup>2</sup>

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<sup>1</sup> Keohane, R. O. and Nye, J. S. Introduction, In Nye, J. S. and Donahue, J.D. (editors), *Governance in a Globalization World*. Washington, D.C.: Brookings Institution Press. 2000.

<sup>2</sup> Backus, M. (2001) E-Governance and Developing Countries, *Introduction and examples*, Research Report, No. 3, April 2001

E-governance is not just about government web site and e-mail. It is not just about service delivery over the Internet. It is not just about digital access to government information or electronic payments. It will change how citizens relate to governments as much as it changes how citizens relate to each other. It will bring forth new concepts of citizenship, both in terms of needs and responsibilities. E-governance will allow citizens to communicate with government, participate in the governments' policy-making and citizens to communicate each other and to participate in the democratic political process. Therefore, in broadest sense, E-governance has more implications than E-Government.<sup>3</sup>

### **Stages of e-Governance**

E-governance has evolved over many stages. Emerging Presence is Stage I representing information which is limited and basic. The online presence comprises a web page and/or an official website; links to ministries/departments of education, health, social welfare, labor and finance may/may not exist; links to regional/local government may/may not exist; some archived information such as the head of states' message or a document such as the constitution may be available on line; most information remains static with the fewest options for citizens.

Enhanced Presence is Stage II in which the government provides greater public policy and governance sources of current and archived information, such as policies, laws and regulation, reports, newsletters, and downloadable databases. The user can search for a document, there is a help feature and a site map is provided. A larger selection of public policy documents exists, such as an e-government strategy, policy briefs on specific education or health issues. The interaction is unidirectional with information flowing essentially from government to citizen.

Interactive Presence is Stage III in which the online services of the government enter the interactive mode with services to enhance convenience for the consumer such as downloadable forms for tax payment, and application for license renewal. Audio and video capability is provided for relevant public information. The government officials can be contacted via email, fax, telephone and mail. The site is updated with greater regularity.

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<sup>3</sup> Blake Harris, E-governance, 2000 (<http://www.iadb.org>) (accessed 1<sup>st</sup> February 2010)

Transactional Presence is Stage IV that allows two-way interaction between the citizen and his/her government. It includes options for paying taxes; applying for ID cards, birth certificates/passports, license renewals and other similar C2G interactions by allowing him/her to submit these online 24/7. The citizens are able to pay for relevant public services, such as motor vehicle violation, taxes, fees for postal services through their credit, bank or debit card. Providers of goods and services are able to bid online for public contracts via secure links.<sup>4</sup>

Networked Presence is Stage V representing the most sophisticated level in governance. It is characterized by an integration of G2G, G2C and C2G services. The government encourages participatory deliberative decision-making and is willing and able to involve the society in a two-way open dialogue. Through interactive features such as the web comment form, and innovative online consultation mechanisms, the government actively solicits citizens' views on public policy, law making, and democratic participatory decision making. Implicit is the integration of public sector agencies with full cooperation and understanding of the concept of collective decision-making, participatory democracy and citizen empowerment as a democratic right.<sup>5</sup>

### **Models of e-Governance**

There are eight models of e-governance. They include

- ❖ Government-to-Citizen (G2C)
- ❖ Citizen-to-Government (C2G)
- ❖ Government to-Business (G2B)
- ❖ Business-to-Government (B2G)
- ❖ Government-to-Government (G2G)
- ❖ Government-to-Nonprofit (G2N)
- ❖ Non-profit-to-Government (N2G)
- ❖ Government-to-Employee (G2E)<sup>6</sup>

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<sup>4</sup> Clift, S. (2003) E-Governance to E-Democracy: Progress in Australia and New Zealand toward Information-Age Democracy <http://www.publicus.net/articles/edempublikenetwork.html> (accessed 12<sup>th</sup> February 2010)

<sup>5</sup> Kettl, D. F. *The Transformation of Governance*, John Hopkins University Press, U.S.A. 2002.

<sup>6</sup> Fang, Zhiyuan, E-Government in Digital Era: Concept, Practice and Development, *International Journal of The Computer, The Internet and Management*, Vol. 10, No.2, 2002, p 1-22

Most governments across the world started their e-governance initiatives with a focus on providing information and services to citizens while service delivery platforms remained separate and parallel across the government agencies. In the initial model, service delivery was built around individual agency functions, structures, information systems and capabilities. With the private IT and ITES sector leading the way, advances in accessibility and a greater use of technology have allowed an expansion of innovative ICT solution. Now citizens and businesses around the world are increasingly demanding that their government follow suit. Citizens have come to expect a 24/7 convenient user interface with ease of use and in a language which they understand. At the government's end, with more services online, has come the realization that continued expansion and improved online services is not possible without the integration of government systems. This process is nothing but interoperability.<sup>7</sup>

As more sophisticated level of e-governance leads to organizational transformation, public agencies begin implementing e-government and governance initiatives, organizational performance will be improved and services delivery will be better equipped to interact with citizens and provide services over the Internet. In addition, the next stage of e-government is transforming organizations, by breaking down organizational boundaries and providing greater access to information, increasing the transparency of public agencies and citizen participation in government, enhancing communications and facilitating democratic processes.

### **Integrated governance**

With an increasing array of services being brought online each year, a service delivery plateau is being reached in many countries around the world. Concomitant with this ongoing development is an increasing recognition that the new technologies need to be diverted towards improvement in service delivery through the integration of government processes which provide these services. The focus on improved and quick service delivery is becoming intertwined with an emphasis on achieving cost savings and enhancing efficiency. The role of ICTs in public service delivery is according being revisited to enable effective inter-organizational linkages and consolidation of government systems. While initially the political and managerial focus was on developing e-services within each public institution with limited consideration being given to

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<sup>7</sup> OECD, e-Government as a Tool for Transformation, 2007, p.16

cross-organizational coherence, the focus now has shifted towards coordinated services offering one-stop shops to citizens and businesses.<sup>8</sup>

Advances in technology have ushered in an era of new thinking about integration in service delivery based on commonality of infrastructures, data and business processes.<sup>9</sup>

The need for integration of government systems also stems from the fact that ICT tools have the ubiquitous power to make time and distance irrelevant thereby increasing manifold efficacy of public service delivery. The Internet and the World Wide Web eliminate boundaries and allow for integrated services to be available 24/7 while promoting faster and efficient connection between agencies, processes and systems.<sup>10</sup>

Technology proliferation has made ICT tools more affordable over the years. The cost of infrastructure and accessibility has drastically been reduced. For example, broadband prices for DSL connections across 30 developed countries fell by around 19 per cent while the speed of connection increased by 29 percent by the end of 2006.<sup>11</sup> Reduction in the costs has led to a jump in the adoption of new technologies in many developing countries, particularly in India and China. Moreover, mobile telephony has increased unprecedentedly, reaching the masses at the grassroots level.

The emerging ICT-for-development approach towards public sector transformation is creating new perceptions about government and governance. The twin objective of achieving further improvements in service delivery and efficacy in government functioning is bringing about a rethinking of the role of ICT. Governments are increasingly looking towards e-governance-as-a-whole concept which focuses on the provision of services at the front-end supported by integration, consolidation and innovation in back-end processes and systems to achieve maximum cost savings and improved service delivery.<sup>12</sup>

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<sup>8</sup> OECD Report, 2007.

<sup>9</sup> E-Government for Better Government, OECD, 2005

<sup>10</sup> Integration and Consolidation are interchangeably used here

<sup>11</sup> BBC News, 16 July 2007. [www.news.bbc.co.uk/2/hi/technology/6900697.stm](http://www.news.bbc.co.uk/2/hi/technology/6900697.stm) (accessed 12<sup>th</sup> December 2008)

<sup>12</sup> UN e-Government Survey, 2008, New York

Back office refers to the internal operations of an organization that support core processes and are not accessible or visible to the general public. These are government functions that normally do not interact with outside entities and involve such diverse tasks as calculating benefits or enforcement of environmental laws. The term front office refers to government as its constituents see it, meaning the information and services provided and the interaction between government and both the citizens and business. In general, front office processes are often labeled as services, though service delivery has both front and back office components. The element of contact in service processes fundamentally distinguishes them from the more production oriented processes in the back office.

The whole-of-government concept refers to public service agencies working across portfolio boundaries to achieve a shared goal and an integrated government response to particular issues.<sup>13</sup> A unique characteristic of this approach is that government agencies and organizations share objectives across organizational boundaries, as opposed to working solely within an organization. It encompasses the design and delivery of a wide range of policies, programmes and services that cross organizational confines. The whole of government concept is a holistic approach to ICT-enabled public sector governance.

Within the ambit of the above approach, the focus of second generation e-governance initiatives has shifted from the *provision* of services to the use of ICTs to increase the *value* of services. The approach to public service delivery has evolved over time from the traditional model of government dispensing service through traditional modes to an emphasis on e-governance and e-services per se, to an integrated approach for enhancing the value of services to the citizen.<sup>14</sup>

A corollary of the focus on the *values for citizen* is the recognition that an increase in the value of services is not possible without consolidating the way the back-end systems and processes work to bring about the front-end of service delivery. The new approach maintains that genuine cost saving and quality improvements will occur only if there is a re-engineering of the internal

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<sup>13</sup> Connecting Government: Whole of Government Responses to Australia's Priority Challenges, Management Advisory Committee Report, 2004

<sup>14</sup> *ibid.*



structures and processes of the administration.<sup>15</sup> There is a growing recognition that using a broader spectrum of delivery channels enabled by ICTs is better suited to delivering individually-tailored, high quality services to users while at the same time, allowing for the harvesting of efficiency gains through effective service delivery.

Despite a shift in the approach, it should be kept in mind, however, that the goal remains the same: better service delivery for the citizen. The emerging paradigm shifts the focus from the provision of service delivery to provision of service delivery with value. Clearly, the new approach is about *government for more with less*. It maintains that to achieve greater value in service delivery and reduce costs, integration and redesign of government organization and processes is a necessity.

### **From e-Governance to Networked Governance**

Advances in technology have led to integration of various services and their provision from a single platform. There is now more commonality between infrastructure, data use and business processes. The focus on strengthening the linkages between e-governance and connected governance is forming the underpinning of the new e-governance strategies in many developed countries. Service innovation is at the corner stone of these new strategies. The emphasis is on putting in place multi-channel service delivery systems and a better use of back-end processes and systems. This is creating a drive towards more collaborative models of service delivery that can be referred to as connected government or networked government. System-orientation is being replaced with chain-orientation in terms of structures, functions, skills and capabilities and culture and management. The concept of connected government is derived from the whole-of-government approach which is increasingly looking towards technology as a strategic tool and as an enabler for public service innovation and productivity growth.

Connected or networked governance involves the governmental promotion of collective action to advance the public good, by engaging the creative efforts of all of society. It is about influencing

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<sup>15</sup> Millard, Jeremy, ePublic Services in Europe: Past, Present and Future, Research Findings and New Challenges, Institute for Prospective Technological Studies, 2004

the strategic actions of other stakeholders.<sup>16</sup> ICT-based networked governance efforts are aimed at an improved cooperation between governmental agencies, allowing for an enhanced, active and effective consultation and engagement with citizens, and a greater involvement with multi-stakeholder regionally and internationally.

A government which strives for excellence needs to undertake a re-engineering of both intra and inter-governmental processes which is likely to lead to a more efficient, responsive and tailored government reflecting the citizens needs. In this context, inter-governmental processes can be vertical with integration between various government agencies and strata, and/or horizontal between agencies at the same level. This should be with the inclusion of private sector and other stakeholders. What is important is to think about connected governance with a view towards the re-engineering of technology, processes, skills and the mindsets of public officials within a holistic framework.

An effective connected government is about a bigger and better front end with a smaller and smarter back-end.<sup>17</sup>

Underlying the concept of connected governance is a systematic approach to collection, reuse and sharing of data and information. The key platform on which connected government is built upon is the concept of interoperability which is the ability of government organizations to share and integrate information by using common standards. Successful service innovation and multi-channel service delivery depend on strategies, policies and architecture that allow data, IT systems, business processes and delivery channels to interoperate, so that services can be properly integrated. If delivery channels and back office processes are integrated, different channels can complement each other, improving the quality of both services and the delivery to government and citizens simultaneously. The ideal is to create an environment in which data, systems and processes are fully integrated and channels become interoperable instead of merely coexisting.<sup>18</sup>

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<sup>16</sup> Robert D. Atkinson, Network Government for the Digital Age, Progressive Policy Institute Report, May 2003

<sup>17</sup> *ibid*

<sup>18</sup> E-Government for Better Government, OECD e-Government Studies, 2005

Information management is another key area in achieving connected governance. A technical interoperability framework outlining the standards, policies and practices to support interoperability between ICT systems and applications is generally part of a holistic strategy. The framework includes citizen access and distribution strategies, including a channel management strategy that takes into account the needs and priorities of citizens and those of the government and encompasses a built-in stakeholder engagement and market research component to enhance government's knowledge of its customers.

Improving institutional capacities to transfer and exchange information is critical and requires improved interoperability between agencies' information systems. In the longer run, it will require agencies to adopt and implement common information policies, standards and protocols. Potential common frameworks, policies and standards will need to be flexible to respond to agencies' varying business requirements.<sup>19</sup>

### **Organizational Issues in e-Governance**

As the e-governance initiatives become a primary access point for millions of citizens to access government, many issues need to be considered like:

- How will e-governance influence the performance of public organizations?
- What are the organizational effects of e-government and information technology?
- What did e-governance change public administration, organization structure and interface in an information age?

These questions have several implications for researchers and practitioners in the field of public administration. There is already evidence to indicate that more and more baseline data needs to be collected to determine the longitudinal effects of e-governance initiatives on public administration.<sup>20</sup>

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<sup>19</sup> Government of Australia, Connecting Government: Whole of government's responses to Australia's priority challenges, 2007

<sup>20</sup> Jeffrey Roy, E-Government: Enabling & Empowering Tomorrow's Public Service, January 31, 2010. ([www.governance.uottawa.ca](http://www.governance.uottawa.ca)).

### **Administrative Interface**

Administrative interface has been transformed from unitary people-people interface into multi-interface such as people-people interface, people-network-people interface, people-network interface, network-people interface, and system-system interface, with different interfaces characteristics, operation procedures and regulations.

In Government the transition to electronic delivery of services will not only involve changes to the systems, procedures and processes of the relevant services but will also affect the way in which the public and the business community deals with the government. Customers will no longer need to interface directly with government officials in order to secure a particular service. They also do not need to know which agency is the service provider, as the service can be obtained through a kiosk or personal computer. What is important to them is to be able to secure the required service speedily and easily. These new trends will influence the nature of government administration and management, thereby reinventing the government to make its experience seamless to the citizens.<sup>21</sup>

### **Various User Interfaces**

Another issue more detail in e-governance is Various User interfaces. The standard user interface and the World Wide Web browser have done much to extend useful computing to every area of our society. The standard interface, commonly based on Microsoft Windows, flattens the learning curve needed for each new application. The Web browser's ease of use and widespread public acceptance has led to use this technology in direct public contact. However, further advances in user interfaces are likely to focus both on simplicity and increased power.

Digital library technologies and data visualization technologies allow users to manipulate large data sets to get a better understanding of the information they contain. Research into the interaction between people and machines, including speech recognition and 3D modeling, will likely lead to innovations in the way people perceive and use the information environment. Finally, there is an issue of effective service delivery. Electronic government will be a seamless

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<sup>21</sup> Jim Melitski, The World of E-government and E-governance, 2001. <http://www.aspanet.org/solutions/The World of E-government and E-governance. htm>.

and comprehensive interface to government, designed and delivered from the citizen's perspective.<sup>22</sup>

### **Digital Administration**

Emerging with E-Government, digitalization of public organization has happened, such as MIS and Web system, Digital Office and E-paper, Knowledge management and sharing system, Structural and Process Change, E-Citizens and ELearning. E-government initiatives includes dozens of digital applications that can be implemented across a broad range of functional government areas – from public health and safety departments to motor vehicle and criminal justice agencies. The digital applications include:

- 1) **Public Access Systems** that satisfy the public's need to know and right to know. These systems make information easily available over the Internet to citizens, businesses, government workers, and other government entities.
- 2) **Knowledge Management Systems** that turn your organization's data into useful, intelligent information and deliver it over intranets, extranets, and the Internet to those who need it, thereby enhancing efficiencies and facilitating the decision making process.
- 3) **Transaction Systems** that encompass public access and knowledge management systems, and also enable end users to submit payments and registrations, obtain certificates, and engage in other transactional processes.
- 4) **E-Government System Infrastructure** that provides many things: session management, systems management (audit and logging), scalability, etc. Yet because the e-government space promises considerable change over the next few years, perhaps the most important quality of an e-government system infrastructure is flexibility.
- 5) **MIS and Web Integration System** that the most effective solution for categorizing information on government Web pages would be to develop a database-driven system, where all information is automatically listed in databases as it is placed online within internet, extranet, and intranet. Web integration is the process of the standardization of data definitions and data structures by using a common conceptual schema across a collection of data sources.

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<sup>22</sup> Mark Cleverley, *e-Government Symposium a Great Success*, May 10, 2001, NYSFIRM.

**6) New models for public-private partnerships and other networked organizational forms.**

Given the diversity of players involved in delivering government services, developing effective IT systems often requires new coalitions of partners at all levels of government, and between government and the private and nonprofit sectors.

**7) Intuitive decision support tools for public officials.** Technologies and data standards that encourage information search, selection, analysis, and sharing can strongly influence the nature and effectiveness of decision making by elected officials, senior executives, and program managers alike.

**8) Archiving and electronic records management.** More and more information now resides in electronic rather than physical files, generating new issues around record definition and content, version control, public access, ongoing preservation, and the ability of government to maintain history and accountability.<sup>23</sup>

### **Virtual Organization and New Capacities**

In an effort to create citizen-focused government, government should create a virtual organizational structure for government services. E-Governmental system has moved the whole government onto the web and networking. Web sites need to be categorized by the function of the service rather than the agency administering them. A well designed portal to all online central information will make citizen-government interaction more efficient and effective.

The most effective solution for categorizing information on government, E-governance should develop a database-driven system, where all information is automatically listed in databases as it is placed online. Implementing this type of system would allow more accurate and efficient searches. There are a number of other applications that could be developed that would make government more customer-centered. Government should develop “information on request” systems to provide people with government information. In addition, government should expand and standardize the number of applications for online forms. All government forms should be publicly available and searchable on a central Web site.<sup>24</sup>

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<sup>23</sup> Rogers W' O Okot-Uma, *Electronic Governance: Re-inventing Good Governance*, 2000

<sup>24</sup> Maria A. Wimmer, *Knowledge Management in e-Government*, 2001. <http://falcon.ifs.uni-linz.ac.at/>

## **The Next Phase of E-Governance and E-Organizations**

Given the extraordinary pace of changes in the IT industry, the term e-governance itself is somewhat outdated and essentially implies upgradation of the efficiency and effectiveness of the administrative machinery through the combination of information technology and sophisticated multimedia to deliver better, cost effective and speedy services to the citizens. Public Administration is, in fact, in the midst of one of the most rapidly changing periods in history.

There has been a shift in importance from the traditional inputs of a production process to the processes involved in the creation, storage, dissemination and use of information. The new technology has already had a profound impact in the manner in which large organizations function. Many of these organizations have had to restructure themselves to create a flatter – less hierarchical - structure. At the same time, one of the principal efforts of all organizations have been devoted to creation and sustenance of an environment of learning in view of the quantum increases in knowledge and changes in technology.

E-Organizations or E-Agencies became a key part of government organization. E-organizations like the e-governance professional department, which is a part of government networking operation entity, is in the process of conducting several research projects at the state, national, and international levels to address many governance issues, but more work is needed. The E-Government organization is currently working to build knowledge about e-government and e-governance, improve the productivity of public agencies and to give managers in public organizations the skills needed to maximize their performance in an information age.<sup>25</sup>

However, more baseline data needs to be collected to determine the longitudinal effects of e-government on public agencies. There is also an ongoing academic debate regarding the structural effects of information technology on public and private organizations. Researchers have debated for long times about whether technological innovations cause centralization or decentralization in organizations. Rethinking the entire organizational structure of public sector bodies, allowing the citizens and representatives to consider and approve a new form of organization (through a popular referendum, convention, or other means), and then designing a

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<sup>25</sup> *ibid.*

digital or virtual network to implement these new forms is also a opportunity to reshape public administration.

Some administrative, political and ethic issues derived from e-governance should be addressed here, such as security, privacy and digital divide. E-governance implementation must consider security and privacy to ensure information systems and holdings are appropriately protected and individual rights are respected. Security generally refers to protection of the information systems assets and controlling access to the information itself. Application of security is specific to the situation and sensitivity of the information.

For example security protection for public information, such as the minutes of council meeting on the web, is not stringent as would information specific to an individual's information. Privacy generally refers to respecting the right to have information attributed to an individual (often called nominal information) be treated with an appropriate level of protection. Information privacy protection laws are often put in place to regulate this.<sup>26</sup>

### **Digital Divide**

Another issue is Digital Divide. At the same time, concerns have already been expressed about the gap between the technology haves and have-nots, and more popularly known as "the digital divide." In order to ensure that countries avoid creating a digital divide and create conditions to ensure that growth of the knowledge economy contributes to carrying out a democratic process of efficient, equitable and sustainable development, expanded dialogue and new patterns of cooperation among public, private and civil society organizations are needed.<sup>27</sup>

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<sup>26</sup> Robert D. Atkinson, *Digital Government: The Next Step to Reengineering the Federal Government*, 2000.

<sup>27</sup> Sharon S. Dawes, Peter A. Bloniarz, Kristine L. Kelly and Patricia D. Fletcher, *Some Assembly Required: Building a Digital Government for the 21st Century*, Report of a Multidisciplinary Workshop Held in October 1998.



A holistic view on administration's processes, communication and information resources may be as below:<sup>28</sup>

- Electronically mediated communication
- Improving communication with the citizen
- Merging external and internal processes
- Improving co-operation between agencies
- Supporting administration and governance processes on different levels and in different stages
- Innovative organizational design
- Cooperation over distances, across organizational boundaries and hierarchical echelons

### **The Transformational State in the Context of Globalization**

Globalization and the subsequent proliferation of information and communication technologies have had serious impact on the nature and functions of the State. In the dominant new economy, which is also labeled as the knowledge economy, the nature and role of the State have undergone a phenomenal transformation. Some nation-states are still in the phase of transition, but most of the developing countries are witnessing transformation on a faster note. More than globalization, ICTs are impacting the State in ways more than one. Moreover, the transformation of State was equated with the modernization of the State operational activities.<sup>29</sup>

At present, the State is challenged with various factors.

**Financial Challenges:** In the past, the State and its administration was more or less accepted by society. Businesses were running great, profits reached ever increasing margins and taxes were being paid. The State had no reasons to complain and did not take care of financial matters. This has changed. Regression and market consolidation in almost every business sector urged society and government to react. Dramatic drops of tax incomes and significant raising costs of political systems and social security networks have put the State under enormous pressure.

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<sup>28</sup> United Nations Division for Public Economics & Public Administration, American Society for Public Global Survey of E-Government, 2000, pp.21-45

<sup>29</sup> Finger, M. and G. Pécoud (2003). "From e-Government to e-Governance? Towards a Model of e-Governance." *EJEG* 2003: 12.

**Legitimation Challenges:** State-run administrations were slow and discouraged citizens and the private sector. Governance mechanisms and public policy systems were being questioned. Driven by economic and political pressures, the State was forced to apply standardized economic methodologies in order to legitimize its existence by improving service delivery to citizens the private sector.

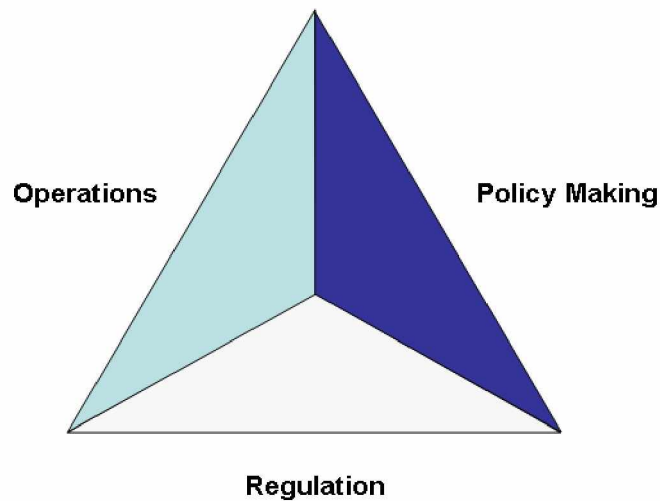
**Competition:** In a global economy, companies aim entering markets in different countries and continents. In order to keep the countries attractive for foreign investors, the State is forced to prepare the political and regulatory framework. The State has to react on multiple cultures and industrial prerequisites, international companies expect to be fulfilled. Next to the private sector, the State is in charge of preparing the economic environment in a globalized world.

**Technology:** The dot-com hype vanished and globalization came up with its more unpleasant side. Second to none, information technology represented by the internet, enables the actors in society and industry to critically asses the role and functionality of governments and administration. Information and technology are forcing governments and administration to question their own structures and procedures. As a reaction on these challenges, the State is rethinking its main functions.<sup>30</sup>

The State is challenged with cost-cutting initiatives and is target of performance improvement and operations management measures. Research on information processing technologies has contributed powerful tools to drive the process optimization in public organization, either internal or external.

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<sup>30</sup> Heath, W. (2000) "*Europe's readiness for e-Government*", Kable Limited, Report, 39



**Figure 1: Challenges to the State**

### **Global competition and Absorption of Information Technology**

Global competition in almost every industry and concentration on innovation require little administrative burdens for entrepreneurs aiming at creating value for industry and society. Currently, governments and public administrations are discovering information technology as means to manage the de-regulation of their intra-societal and industrial relations. Governments and administration are confronted with the question of how to shape the political system according to multi-dimensional requirements of various groups of interest. The public sector steadily discovers the information technology's potential to shape traditional patterns of policy-making.

The implementation of electronic functionalities for governmental service provision enhances the interface between State and society. It solves problems arising from expensive administrative procedures and intransparent rules and regulations. Information technology thus fosters the legitimization of State. More precisely, information technology changes the society's commitment to the State. On the one hand, technology enables the State to pay more attention to the habits and developments in society. On the other hand, technology provides citizens with new methods and tools to make use of their stake in the State, in whatever manner.

The three core functions of State, namely service-delivery, regulation and policymaking, are mainly affected by the transformation process. Since information technology highly impacts those functions, we consider information technology as one of the key drivers of State transformation. This phenomenon is what we call e-Governance.<sup>31</sup>

## **Survey of Literature**

Danish Dada in his article “The Failure of e-Government in Developing Countries: A Literature Review” provides an insight to the trends that exist within academic writing in the much talked about area of e-government, and the potential they hold for developing countries. While there is much hype about success stories, the bitter truth that presents itself is that the majority of e-government projects in developing countries fail. After an introduction to Ciborra's view on e-government, this paper proceeds to use Heeks' 'archetypes of failure', which are brought about by gaps between the design of the technology itself and reality of the context, to classify some of the current literature. This classification provides a brief overview of themes manifested within this body of knowledge, serving as a useful background for practitioners and implementers of e-government in developing countries.<sup>32</sup>

The Department of Economic and Social Affairs of the United Nations in its report on Public Governance Indicators presents a conceptual view of governance, good governance and electronic governance at the universal plane. It offers new insights into the research done on governance with useful benchmarks and indicators. Particularly, it views the deficit in governance in the developing world seriously and offers a comprehensive methodology to carry out governance studies. It offers core dimensions of governance and economic indicators to monitor the public sector. Efficiency, Transparency and Participation have been hailed as key indicators of public governance.<sup>33</sup>

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<sup>31</sup> Zwahr, Thomas & Finger, Matthias, Critical Steps Towards e-Governance: A Case Study Analysis, Munich, 2007, pp.1-17

<sup>32</sup> Dada, Danish, The Failure of E-Government in Developing Countries: A Literature Review, *The Electronic Journal of Information Systems in Developing Countries*, Vol. 26, No.7, 2006, pp.1-10

<sup>33</sup> United Nations Department of Economic and Social Affairs, Public Governance Indicators: A Literature Review, United Nations, New York, 2007

P N Rastogi in his edited book “Management of Technology and Innovation: Competing through Technological Excellence” lists out the basic requirements of any organization whether public or private in tapping the potential of the latest information and communication technologies to achieve the set goals and innovate in an increasingly globalized world. He offers various suggestions to public organizations to innovate in order to live up to the expectations of knowledge economy. Technological absorption, organizational culture and capacity building for employees have been dealt with elaborately in this book.<sup>34</sup>

In their edited book “Knowledge Economy: The Indian Challenge”, Chandra and Khanijo present an array of essays dealing with the changed nature of the global economy and its impact on Indian political system. The essays essentially focus on mapping the directions of transition from industrial economy to knowledge economy while conceptualizing the dimensions of knowledge management. Further, they deal with the structure and behavior of IT firms in India and India’s transition to knowledge economy giving state by state cases. One of the essays point out to knowledge management initiative and practice for moving towards learning organization and business excellence. Other essays give insight into new public management in the emerging knowledge economy with emphasis on networking and collaborating. Finally, it sums up the aspirations and expectations of knowledge society from the government.<sup>35</sup>

The World Bank in its report on “Reforming Public Services in India” focuses on successful innovations in service delivery across India. The overarching goal of the report is to identify across cases, common factors than explain why innovations worked. In addition, from these innovations, the report draws lessons that might help improve service delivery in other sectors and facilitate the transplanting of success stories to other settings. This study examined 25 cases where major reforms in service delivery occurred. The emphasis was on institutional reform. They study also examined six cases where innovations were attempted but with less success. Fostering competition, simplifying transactions, restructuring agency processes, decentralizing

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<sup>34</sup> Rastogi, P.N., Management of Technology and Innovation: Competing Through Technological Excellence, 2<sup>nd</sup> Edition, Sage Publications, 2009

<sup>35</sup> Chandra, Ashok & Mhanijo M.K., Knowledge Economy: The Indian Challenge, Sage Publications, New Delhi, 2009

teacher management, building political support for programme delivery and strengthening accountability mechanism are the major themes of focus of this study.<sup>36</sup>

The World Bank report on reshaping economic geography points out to the growing concentration of production and population in particular geographical locations across the world. It says production is concentrated in big cities, leading provinces and wealthy nations. Half of the world's production fits onto 1.5 per cent of its land. Cairo produces more than half of Egypt's GDP using just 0.5 per cent of its area. Economic concentration leaves out some populations. In Brazil, China and India, lagging states have poverty rates more than twice those in dynamic state. More than two-thirds of the developing world's poor live in village. A billion people, living in the poorest and most isolated nations, mostly in Sub-Saharan Africa and South and Central Asia survive on less than 2 per cent of the world's wealth. The report stimulates the much needed debate on the desirability of balanced growth.<sup>37</sup>

In his edited book on Globalization and Development Studies, Frans J. Schuurman collates essays on the new challenges of globalization on non-states across the world. One article outlines the challenges of globalization to the discipline of social sciences while other says human rights are being violated at will by the big multi-national corporations, particularly in the poorest of the nations. Another article presents the raging debate over the role of multinationals in socio-economic development of the nations. There is also an article on challenges to environmental security and sustainability on account of crass exploitation of natural resources by big companies. Two articles present the case of globalization from feminist and gender perspectives.<sup>38</sup>

In her edited book Simita Panda says governance has become a buzzword in the current development vocabulary. She claims this is because of the deficient development performance in most of the developing countries on account of mismanaged governance. Governance, according to her, broadly represents two components – capacity and accountability. The capacity of the

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<sup>36</sup> Reforming Public Services in India: Drawing Lessons from Success, The World Bank, Sage Publications, 2006

<sup>37</sup> Reshaping Economic Geography, The World Bank, Washington DC, 2009

<sup>38</sup> Schuurman, Frans J. (ed), Globalization and Development Studies: Challenges for the 21<sup>st</sup> Century, Vistaar Publications, New Delhi, 2002

state is the hardware comprising financial resources, the extent and effectiveness of its physical and administrative infrastructure for distributing public goods, the number and skills of its personnel and the conduct of budgeting and policy-making processes. Whereas accountability represents the software whereby certain actors have the power to demand answers of others aligned towards transparency of the system.<sup>39</sup>

Shefali Kalia in her book on good governance and development says the term good governance has come to occupy an important place in development literature. Bad governance is now regarded as the root cause of all evils in a society. Major aid donors and international financial institutions are basing their loans and grants on the condition that reforms in recipient countries are undertaken to ensure good governance. Governance means the process of decision-making and the process by which decisions are implemented or not implemented. Good governance assures that corruption is minimized, the views of minorities are taken into account and that voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society. The book is an attempt to study the principles of good governance. It has a futuristic approach and is an attempt to build conditions conducive for clean and efficient administration.<sup>40</sup>

In their book on collaborative leadership, Archer and Cameron say that collaboration is an evolutionary adaptation. In this highly interconnected world, collaborations of various kinds are taking place each taking a unique form of its own. Leaders are successful only if they form appropriate partnerships. Not all joint ventures are going to be successful unless they innovate. There has been an explosion in partnerships of all kinds in the last two decades. For example, outsourcing is being done by everybody. Public-private partnerships are reaching a new stage of maturity, no longer aiming solely to cut costs but looking for ways to innovate and improve public services.<sup>41</sup>

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<sup>39</sup> Panda, Smita Mishra, *Engendering Governance Institutions: State Market and Civil Society*, Sage Publications, New Delhi, 2008

<sup>40</sup> Kalia, Shefali, *Good Governance and Development*, New Century Publications, New Delhi, 2004

<sup>41</sup> Archer, David & Cameron, Alex, *Collaborative Leadership: How to Succeed in an Interconnected World*, Butterworth-Heinemann, Elsevier, Great Britain, 2009

In their edited book on ICTs and Indian social change, Saith and others say that the services sector has become the driver of India's growth process since the last few decades. The contribution of IT related services to the phenomenon is widely acknowledged and well documented. India is also home to one of the largest set of civil society and government initiatives to use ICTs to empower and enhance their transformative capabilities and to extend the range of services to the marginalized at reduced costs. They say that there is much hype and many loud claims on these issues raising much dust that tend to cloud the reflective gaze. This book seeks to provide some clarity of vision in this vital contested arena of public policy.<sup>42</sup>

Dilip Mookherjee in his collection of essays says that governments in the bygone era never worked with integrity and intervened in the interests of promoting development. They lacked efficiency and the capability to govern in the larger interests of public good. He claims that the new development economics addresses problems of governance explicitly, combining tools both from political economy and the economics of incentives. This reorients the market versus state debate for those sectors of the economy that can adequately rely on private sector initiative, if there is no scope for an honest and efficient government to improve on the free market outcome, intervention by a less competent and venal state will likely make matters worse. For those sectors where public sector is essential such as collection of taxes, delivery of public services, and administration of anti-poverty programmes, this approach provides constructive discussion of required reforms in governance systems.<sup>43</sup>

Goran Hyden and others in their book on "Making Sense of Governance" define governance in reference to how the rules of the political game are managed. Rules are typically formal but may well be informal. The rules of the regime provide the context in which policy and administration are carried out. In practice, these activities are interconnected, but for analytical reasons they are best separated. They claim that governance refers to the voluntarist intervention at the level of the regime to protect, amend or just sustain specific rules that are important for how the political system functions and the political process operates. They say that the roads to good governance

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<sup>42</sup> Saith, Ashwani, *et al*, (ed.), *ICTs and Social Change: Diffusion, Poverty, Governance*, Sage Publications, New Delhi, 2008

<sup>43</sup> Mookherjee, Dilip, *Market Institutions, Governance and Development*, Oxford University Press, New Delhi, 2006



are not paved in a linear or identical fashion. There are historical differences among various regions, which come in the way of implementing good governance practices.<sup>44</sup>

Frederickson and Smith in their theoretical treatise say that in the past thirty years, public administration has developed more systematic patterns of inquiry about the substance of public organizations behavior, public management and public policy implementation. They explore how the science and art of policy administration is definable, describable, replicable and cumulative. they describe several theories and analytical approaches that contribute to what we know about policy administration. They ask which theories or approaches are the most promising, the most influential. They give a detailed description of key theories in contemporary public administration and thus improve the reliability of our knowledge and our understanding of public administration.<sup>45</sup>

Bidyut Chakrabarty in his book says that four interconnected themes have emerged in the recent years in the discipline of public administration. These are globalization, network administration, governance and democratic participation. He says that globalization has made public administration much more complex than before. He claims that the Indian scenario is perhaps the most appropriate illustration to understand the changing nature of public administration for two reasons: First, as a result of the peculiar historical circumstances in which Indian administration was shaped immediately after Independence, it has characteristics which are neither completely Western nor purely indigenous, and is a unique mixture of both. Second, Indian administration provides a creative response to the neoliberal avalanche by drawing upon India's distinct socio-economic circumstances.<sup>46</sup>

In his edited work, Deepak Nayyar gives his perspective on globalization and its impact on governing institutions across the world. He succinctly narrates the problems – old and new – that the public organizations faced on account of external changes. Poverty, inequality and

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<sup>44</sup> Hyden, Goran, et al (ed.), Making Sense of Governance: Empirical Evidence from 16 Developing Countries, Viva Books, New Delhi, 2010

<sup>45</sup> Frederickson, George H. & Smith, Kevin B., The Public Administration Theory Primer: Essentials of Public Policy and Administration, Rawat Publications, New Delhi, 2008

<sup>46</sup> Chakrabarty, Bidyut, Reinventing Public Administration: The Indian Experience, Orient Longman, New Delhi, 2007

deprivation still persist on account of untamed globalization and concentration of wealth. Those countries in transition towards global economy are faced with a plethora of problems. An emerging institutional gap is discernable in a wide range of symptoms, he says, adding there are conflicts in mandates of international organization and crises-ridden economies. Development of democratic institutions is the prescription offered by most of the donor agencies. Nayyar claims that institutions like the UN have become mere stamping bodies and have no power to intervene in critical areas like government reform and climate change.<sup>47</sup>

In their edited book on ICT infrastructure in Asia, Samarajiva and Ayesha say that economic growth is a necessary condition for the alleviation of human misery and human development. The relationship between the ability to communicate over distance using technological means and economic growth has been much discussed. Correlation is beyond dispute, but the case for causation is unlikely to be fully established. Development requires many inputs, communication and knowledge being only some of them. The editors point that increased investment in telecom in 1990s dipped as part of the overall downturn following the bursting of the IT bubble, overbidding on 3G mobile and overbuilding of optic fiber capacity by early 2000. However, things have improved drastically with IT and ITES sectors emerging as strong points for the economies of Asian nations. This book gives an elaborate account of ICT infrastructure in emerging Asia besides analyzing the policies and regulatory roadblocks.<sup>48</sup>

Avik Ghosh in his book on role of communication technology in development gives a historical perspective on the subject. He says that soon after World War II the importance of mass communication media like newspapers, radio, cinema and television began to be realized. After industrial development and urbanization, expansion of markets and economic growth, communication technology improved like never before with mobile telephony spreading across the world without distinctions of developed or developing nations. Earlier, transfer of technology was limited, but with globalization there has been a proliferation of the Internet and other communication systems. Their role in social and economic development has been recognized not

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<sup>47</sup> Nayyar, Deepak (ed.), *Governing Globalization: Issues and Institutions*, Oxford University Press, New Delhi, 2002

<sup>48</sup> Samarajiva, Rohan & Zainudeen, Ayesha (ed.), *ICT Infrastructure in Emerging Asia, Policy and Regulatory Roadblocks*, Sage Publications, New Delhi, 2008

only by international agencies like the World Bank and the International Monetary Fund, but by individual governments as well. Poverty alleviation is the prime goal of diffusing this communication technology even to the remotest parts of countries.<sup>49</sup>

In his book on e-government, Subhash Bhatnagar says Indian has always been a fertile ground for innovation in ICT applications for rural development. Several successful pilots were developed by entrepreneurs among civil servants. Interest in IT use by government revived in the late 1990s in India and other developing nations. Indian began to emerge as an IT giant by late 1990s. In the last ten years ICT investment by governments in India witnessed a dramatic increase. This book documents the benefits and impact of e-government on different stakeholders, particularly citizens and businesses. It also focuses on governance reforms, institutional capacity and presence of reform-oriented leadership.<sup>50</sup>

In his book on e-government, Richard Heeks brings out the various issues involved in the full realization of e-government across the world. He says that e-government is a rapidly growing phenomenon with serious implications for policy and governance reforms. It has an increasing impact on the work of the public sector. It absorbs an increasing proportion of public sector budgets. It promises a solution to many public sector problems. This book studies the implementation and management of e-government. It defines e-government in a broader sense: from high level strategy to detailed tactics, from the technicalities of data flows and process mapping to the politics of e-government. The book weaves a number of core themes into its discussion.<sup>51</sup>

In his book on public accountability and transparency, former Home Secretary Madhav Godbole looks at the concepts of transparency and accountability, which are critical prerequisites of good governance. Covering a wide range of institutions the precepts of public accountability and transparency are examined in the wider context of parliamentary institutions and their procedures

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<sup>49</sup> Ghosh, Avik, *Communication Technology and Human Development: Recent Experiences in the Indian Social Sector*, Sage Publications, New Delhi, 2006

<sup>50</sup> Bhatnagar, Subhash, *Unlocking E-Government Potential: Concepts, Cases and Practical Insights*, Sage Publications, New Delhi, 2009

<sup>51</sup> Heeks, Richards, *Implementing and Managing e-Government: An International Text*, Vistaar Publications, New Delhi, 2006

and practice, electoral reforms, the executive wing of the government, the corporate sector, the judiciary, the media and civil society. Issues such as right to information, making state budgets transparent and user friendly and the wide and varied connotations of good governance are comprehensively discussed in the Indian context. The present shortcoming and weaknesses and the manner in which these can be overcome are addressed sharply.<sup>52</sup>

Welch and others in their article point out how Internet use, citizen satisfaction with e-government, and citizen trust in government are interrelated. They first review the literature on trust and explore how radical information technologies may work to alter the production or maintenance of trust. They then develop hypotheses about how citizens' experience with e-government, satisfaction with e-government and government Web sites, and trust in government are interrelated. Moreover, the model for e-government and Web site satisfaction incorporates citizen perspectives on electronic transaction, transparency, and interactivity. Using data obtained from the Council on Excellence in Government, they then develop and test a two-stage multiple-equation model that simultaneously predicts experience, satisfaction, and trust. Findings indicate that government Web site use is positively associated with e-government satisfaction and Web site satisfaction and that e-government satisfaction is positively associated with trust in government. They conclude that electronic government strategies—transaction, transparency, and interactivity—are important factors that directly affect e-government satisfaction and indirectly affect trust. Individuals who use government Web sites are not only critical consumers but also demanding citizens.<sup>53</sup>

Malathi and Anupama in their article says that IT enabled e-governance in India seeks to achieve a more equitable, efficient, transparent, speedy, and corruption free service delivery system. But in the Indian context the challenge for e-governance is how to reduce the gap between the rich and poor towards a more inclusive governance system, benefiting particularly the poor in backward regions as in Chhattisgarh State, India. The study aims at assessing some e governance schemes and mechanisms adopted for improving public service delivery in India from the

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<sup>52</sup> Godbole, Madhav, *Public Accountability and Transparency: The Imperatives of Good Governance*, Orient Longman, New Delhi, 2003

<sup>53</sup> Welch W. Eric, et al, *Linking Citizen Satisfaction with e-Government and Trust in Government*, *Journal of Public Administration Research and Theory*, Vol.15, No.3, 2005, pp.371-391

perspective of the citizen. It explores the gap between the stated objectives of the ICT policies and their outcome. The study seeks to examine whether e-governance schemes and mechanisms adopted in public administration in India have improved service delivery systems for the citizens in a backward region.<sup>54</sup>

Esteves and Joseph in their article say that the area of electronic government (eGovernment) has received increased prominence and attention over the last few years. In spite of the current developments, many avenues in the area of eGovernment remain unexplored. One such area is the comprehensive assessment of eGovernment projects. They propose that understanding the value of projects drives the assessment process. Assessment of information technology (IT) initiatives is conducted either as an ex-ante (before implementation) or ex-post (after implementation) procedure. In this study, they present an ex-post framework for the assessment of eGovernment projects. Assessment identifies the value of the eGovernment project post-implementation. They examine a three-dimensional framework for the assessment of eGovernment initiatives. The three dimensions are eGovernment maturity level, stakeholders, and assessment levels.<sup>55</sup>

Shirin Madon and other in their article focus on digital inclusion projects in developing countries and, in particular, on processes of institutionalization of such projects. Three case studies are described and analysed. The first is the Akshaya telecenter project in the state of Kerala in India. The second is a community-based ICT project in a town in a rural area of South Africa. The third is the efforts of various agencies on telecenter projects in the mega-city of São Paulo in Brazil. The cases are analysed through a simple theoretical schema derived from institutional theory. The analyses are used to derive four key processes of institutionalization, which are argued to be of relevance to all digital inclusion projects: getting symbolic acceptance by the community, stimulating valuable social activity in relevant social groups, generating linkage to viable

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<sup>54</sup> Subramaniam, Malathi & Saxena, Anupama, e-Governance in India: From Policy to Reality – A Case Study of Chhattisgarh, *International Journal of Electronic Government Research*, Vol. 4, No.2, April-June 2008, pp.12-26

<sup>55</sup> J. Esteves, R.C. Joseph, A Comprehensive Framework for the Assessment of e-Government Projects, *Government Information Quarterly*, Vol. 25, 2008, pp.118–132

revenue streams, and enrolling government support. The article concludes with some theoretical, methodological, and policy implications.<sup>56</sup>

Brown and Grant in their article argue that existing classifications of the information and communication technology and development literature fail to explicitly acknowledge a fundamental duality between two distinct problem domains found within the research body. Through an extensive review of 184 journal articles and conference proceedings, a framework is proposed that suggests a partitioning of the existing literature into two distinct streams of research: (1) those studies that focus on understanding technology “for development” and (2) those studies that focus on understanding technology “in developing” countries. More than an exercise in semantics, the authors argue that the two streams represent separate sets of research objectives that are currently being conflated and addressed interchangeably within the same research environment. At present, there appears to be little recognition or explicit acknowledgement of this branching of research domains, as well as little reflexive discussion on the epistemological, methodological and theoretical implications of this delineation. A discussion related to the efficacy and relevance of the two separate research agendas is provided, along with recommendations for future research directions.<sup>57</sup>

The base line study on e-district provides some useful insights on the current manual delivery system. A state –wise analysis of delivery performance for six services indicates the need for achieving significant improvement through the implementation of the e-district project on all the performance parameters assessed in the survey. Out of the six services, ration card, caste certificate and birth certificate represent bulk of the transactions across all states with nearly one-fourth of the respondents having obtained ration cards, while 17 to 20 percent had obtained caste and birth certificates. Overall, it takes an average of three to five trips to obtain a particular service. Primarily absence of concerned functionary at the office leads to an increase in the number of trips. Since the bulk of the services are provided at the Tehsil level offices, citizens

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<sup>56</sup> Madon, Shirin, et al, Digital inclusion projects in developing countries: Processes of institutionalization, *Information Technology for Development*, Vol.15 No.2, 2009, pp. 95-107

<sup>57</sup> Allen E. Brown & Gerald G. Grant, Highlighting the Duality of the ICT and Development Research Agenda, *Information Technology for Development*, Vol. 16, No.2, 2010, pp.96-111

have to incur significant travel costs and time to access them. The average waiting time for each trip is nearly an hour.<sup>58</sup>

Governments worldwide are faced with the challenge of transformation and the need to reinvent government systems in order to deliver efficient and cost effective services, information and knowledge through information and communication technologies. Development of Information and communication technologies catalyzed and led up to E-government. What is E-government? In this paper by Zhiyuan Fang, E-government is defined as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. E-government presents a tremendous impetus to move forward in the 21st century with higher quality, cost-effective, government services and a better relationship between citizens and government.<sup>59</sup>

E-government has been recognized as a change agent for public sector reform. Through this change, the public sector organisation plans to increase operating efficiencies, build information-sharing partnerships and improve communication with other organisations, as well as with the public. Several studies have discussed how e-government will transform public sector organisations from traditional paper-based systems to electronic delivery that leads self-service operations that develop efficiently managed internal business process. However, a number of voids exist in the immature e-government literature, regarding its adoption strategy and process. This paper by Ebrahim and others looks at the *implementation* aspect of e-government in public sector organisations. The paper critically reviews the issues of e-government adoption and identifies factors that affect the implementation process, such as, technical, organisational, and environmental. In addition, the authors discuss the benefits and barriers that might influence the decision making process toward the adoption of e-government in public sector. Since, e-government is an emerging research area, there is limited literature explaining the framework of e-government adoption. Therefore, this study suggests a strategic framework for e-government

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<sup>58</sup> Baseline Study of e-District, Indian Institute of Management, Ahmedabad, 2010

<sup>59</sup> Fang, Zhiyuan, E-Government in Digital Era: Concept, Practice, and Development, *International Journal of The Computer, The Internet and Management*, Vol. 10, No.2, 2002, pp. 1-22

adoption that will assist decision makers in public sector organisations to support their e-government adoption strategy and guide the IT developers for implementation process of e-government project.<sup>60</sup>

This study by Centre for Development Studies analyses the institutional and economic constraints that influence the pace of the implementation of e-governance in the local governments of Kerala. The prime concern here is to understand and identify the demand-related aspects that affect the e-governance process. In other words, the study presumes that the technology delivery agency, namely the Information Kerala Mission (IKM), may have taken technological aspects and alternatives into account before proceeding with the plan for computerisation in the local governments. Action research was carried out in two panchayats (namely, Madikkai and Chemnad) and the district panchayat of Kasargode district. A systematic random process was followed to select around 110 local governments for an extensive field survey.<sup>61</sup>

Several E-Government website usability studies in the United States employ content analysis as their research methodology. They use either dichotomous measures or a generic scale to construct indexes to conduct comparative reviews. Building on those studies, this article suggests a content-analysis methodology utilizing Guttman-type scales wherever possible to refine usability assessments. This methodology by David L. Baker advances E-Government performance through enhanced usability benchmarks to stimulate the organizational dynamics that drive performance improvement.<sup>62</sup>

This article by Mete Yildiz claims to be both a review and an agenda-setting piece. It is argued that e-government research suffers from definitional vagueness of the e-government concept, oversimplification of the e-government development processes within complex political and institutional environments, and various methodological limitations. In order to address these issues, the article reviews the limitations in the e-government literature, and it suggests ways

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<sup>60</sup> Ebrahim, Zakareya, et al, A Strategic Framework for E-government Adoption in Public Sector Organisations, Proceedings of the Tenth Americas Conference on Information Systems, New York, New York, August 2004

<sup>61</sup> E-Governance in Local Governments of Kerala: Analysing Institutional Issues, Research Unit on Local Self Government, Centre for Development Studies, Thiruvananthapuram, 2010

<sup>62</sup> Baker L.David, Advancing E-Government performance in the United States through enhanced usability benchmarks, *Government Information Quarterly*, Vol.26, 2009, pp.82–88



forward. To do so, the study critically analyzes the development and various definitions of the e-government concept. After discussing the limitations of the concept, methodological and conceptual remedies such as (i) better examining and explaining the processes of – and participation patterns in – e-government projects within complex political environments, (ii) addressing the problem of under-specification in the e-government literature by the production of more grounded, empirical studies that would create new theoretical arguments and provide new concepts and categories so as to enhance our understanding of e-government policy processes and actors, and (iii) tying the subject of e-government strongly to mainstream public administration research are suggested in the final part of the analysis.<sup>63</sup>

E-government security is considered one of the crucial factors for achieving an advanced stage of e-government. As the number of e-government services introduced to the user increases, a higher level of e-government security is required. This paper by Salahuddin Alfawaz and others firstly presents a review of ICT management in the public sector, information security management and e-government in recent literature by focusing on issues and trends in developing countries. The paper then proposes a conceptual framework for e-government security management within the context of developing countries. The framework addresses relevant variables from security, cultural, managerial and organizational perspectives. This paper contributes to the e-government literature by establishing an analytical framework for understanding, clarification and investigation of the management issues involved in improving e-government security in technologically-developing countries. This is an issue which has not yet been widely addressed in the open literature.<sup>64</sup>

In its eighth benchmark report on e-Government in Europe, the EU says that ICT is no longer the servant to business operations; it has become an integral partner. New devices have become commonplace. Social networking is very much on the rise. We are offered access through multiple (technology) channels that offer substantially lower costs and in many instances better service levels. Such change offers profoundly greater opportunities for active engagement and

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<sup>63</sup> Yildiz, Mete, E-government research: Reviewing the literature, limitations, and ways forward, *Government Information Quarterly*, Vol. 24, 2007, pp.646–665

<sup>64</sup> Alfawaz, Salahuddin, et al, E-government security in developing countries: A managerial conceptual framework, International Research Society for Public Management Conference, 26-28 March 2008., Queensland University of Technology, Brisbane, available at <http://eprints.qut.edu.au/> (accessed 1<sup>st</sup> May 2010)

participation. Technologies enable visibility, structuring and transfer of information that can deliver more seamless services, from need to fulfilment. Business intelligence systems offer the potential to deliver customer insights to support choice and tailoring of services. It will also enable performance to be managed in far better ways. Technology is no longer the inhibitor. It is the mindset and resource of Administration, and of the customer that will make the difference.<sup>65</sup>

The phenomenon of eParticipation is receiving increasing attention, demonstrated by recent technology implementations, experiments, government reports, and research programs. Understanding such an emerging field is a complex endeavor because there is no generally agreed upon definition of the field, no clear overview of the research disciplines or methods it draws upon, and because the boundaries of the field are undecided. Using conventional literature review techniques, the authors of this article identify 131 scientific articles considered important for the field's theoretical development. This sample provides the starting point for a grounded analysis leading to the development of an overview model: the field of eParticipation seen from a researcher's perspective. The model provides structure for understanding the emerging shape of the field as well as an initial indication of its content. It also provides the basis for developing research agendas for the future.<sup>66</sup>

The European Commission, DG Information Society's annual eGovernment benchmark is one of the flagship studies in measuring public sector performance. The benchmark is, notably, a collaborative exercise, designed by and involving both the European Commission and Country Representatives. The benchmark uses a comprehensive ranking system to identify those European countries that have implemented the most mature eGovernment services. The 2010 benchmark includes a considerable increase in scope, including the likes of life-event measurement, regional / local service analysis, and status across nine common horizontal IT-enablers. The benchmark is now part of a continuous improvement cycle, with annual method

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<sup>65</sup> European Union, Smarter, Faster, Better e-Government , 8<sup>th</sup> Benchmark Measurement, 2009

<sup>66</sup> Saebo, Oystein, et al, The shape of eParticipation: Characterizing an emerging research area, *Government Information Quarterly*, Vol. 25, 2008, pp.400–428

reviews, pilot measures (Open Government and Transparency now ongoing), and Action Learning Groups amongst Member State Representatives.<sup>67</sup>

This World Bank paper reports on the 2009 update of the Worldwide Governance Indicators (WGI) research project, covering 212 countries and territories and measuring six dimensions of governance between 1996 and 2008: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. These aggregate indicators are based on hundreds of specific and disaggregated individual variables measuring various dimensions of governance, taken from 35 data sources provided by 33 different organizations. The data reflect the views on governance of public sector, private sector and NGO experts, as well as thousands of citizen and firm survey respondents worldwide. The authors also explicitly report the margins of error accompanying each country estimate. These reflect the inherent difficulties in measuring governance using any kind of data. They find that even after taking margins of error into account, the WGI permit meaningful cross-country comparisons as well as monitoring progress over time.<sup>68</sup>

In recent years, there has been extensive investment in e-government throughout the developing world. Still, little is known about the impact of those investments, partly due to a lack of assessment guidance. This paper by Subhash Bhatnagar and Nurpur Singh develops an assessment methodology that could be used in developing countries to justify investments in e-government, as well as to establish a performance benchmark for future projects. This framework identifies key stakeholders, dimensions on which the impact needs to be measured, and a methodology of measurement. Client value is measured primarily in two dimensions: 1) cost to the client of accessing services, and 2) perception by the client of quality of service and governance. In a limited way, the financial cost-benefit impact to the agency implementing the project is also studied. The paper takes India as its example location for application of the framework, presenting assessment results from eight e-government projects which estimate the difference between client ratings of computerized and (earlier) manual systems. Clients indicated

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<sup>67</sup> Digitizing Public Services in Europe: Putting Ambition into Action, 9<sup>th</sup> Benchmark Measurement, European Union, December 2010

<sup>68</sup> Kaufman, Daniel, et al, Governance Matters VIII: Aggregate and Individual Governance Indicators (1996-2008), Policy Research Working Paper-4978, World Bank, Washington DC, 2009

an overwhelming preference for computerized service delivery, with reports of fewer journeys, less waiting time, and some reduction in corruption (marginal in places). The results provided a tentative affirmation of the improvements that may be possible through the use of ICTs in delivering government services in developing countries.<sup>69</sup>

There are only a few studies on the development of e-government and the use of e-government services in Asia. Whether e-government service can improve service quality is not known. In addition, while scholarly interest has focused on the effect of organizational factors (e.g. size, people, and external environment) on the adoption of IT, the actual impact of some organizational factors (i.e. leadership and stakeholders) on the development of e-government has not been fully researched and thus is still poorly understood. This paper by Sabrina Luk attempts to answer the following research questions: (1) how does leadership affect the success/failure of e-government service and (2) how do stakeholders affect the success/failure of e-government service? This paper applies leadership and stakeholder theories towards examining the impact of these groups on the success or failure of e-government service in Hong Kong.<sup>70</sup>

Information communication technology (ICT) in government agencies as well as educational and research institutions facilitates an efficient, speedy and transparent dissemination of information to the public and other agencies for performance of government administration activities. The importance of ICT in governance has been recognized the world over. E-governance highlights several elements of good governance such as transparency, accountability, participation, social integration, public financial management reform and development. This study by Shampa Paul is based on research and personal interviews of selected representatives of the Government of National Capital Territory of Delhi. The findings of this study highlight the role of Internet, particularly the World Wide Web, which has made it easier for citizens to locate and download official information and to conduct transactions. Information management agencies such as libraries and knowledge centres play a vital role in supporting transparent and accountable governance in this digital era. E-government needs to be integrated into the broader public

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<sup>69</sup> Bhatnagar, Subhash & Singh, Nupur, Assessing the Impact of e-Government: A Study of Projects in India, *Information Technologies & International Development*, Volume 6, Number 2, Summer 2010, pp.109-127

<sup>70</sup> Sabrina Ching Yuen Luk, The impact of leadership and stakeholders on the success/failure of e-government service: Using the case study of e-stamping service in Hong Kong, *Government Information Quarterly*, Vol. 26, 2009, pp.594-604

management framework so as to make a substantial change in the government to citizen (G2C) relationship.<sup>71</sup>

In the context of European policy and strategy for e-Government, Information and Communication Technologies (ICTs) are seen not only as a means of improving public services, but also a way of enabling multi-level governance. This multi-level or - as it is often referred to in EU official documents - pan-European governance, consists of an growing network of local and national administrations across the EU and of the emergence of a new and more integrated European public space. The improvement of public service delivery on the one hand and the support for information sharing between ICT-enabled administrations on the other become fundamental aspects of institutional and policy legitimacy of the administrations themselves. The concept of interoperability is developed mostly at a Community and supranational level in the European e-Government debate. In this paper by Misuraca and others interoperability is predominantly seen as a means of developing the cross-border dimension of e-Government amongst the public administrations of the different Member States.<sup>72</sup>

After introducing the challenges and failures of first generation e-government (identified as e-Gov 1.0), and the rhetoric of the next generation of e-government efforts (identified as e-Gov 2.0), this paper by Gianluca Misuraca presents an analysis of the promises of m-government, a relatively new phenomenon whose potential is largely unknown and unexplored but is already considered by many to be the most important subset of future e-government services. Discussing some cases of m-government technologies and applications worldwide, the paper identifies a number of risks and research questions to be further elaborated. In practice, are we about to go through a major adapting societal move, partly due to information and communication technologies (ICTs) but also to other co-factors likely to influence our near future (socio-political-economic and environmental trends), or are we just passing through a natural evolution (eventually faster than others occurred in the past)? Within this particular dynamic, the paper

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<sup>71</sup> Paul, Shampa, A case study of E-governance initiatives in India, *The International Information & Library Review*, Vol.39, 2007, pp.176-184

<sup>72</sup> Misuraca, Gianluca, et al, Interoperability Challenges for ICT-enabled Governance: Towards a pan-European Conceptual Framework, *Journal of Theoretical and Applied Electronic Commerce Research*, Vol. 6, No.1, 2011, pp.95-111

further addresses the importance of looking at what the various emerging scenarios may be, and which ones have to be considered and eventually deployed in terms of policy-relevant and favourable cost–benefit perspectives.<sup>73</sup>

Information Technology (IT) has played a crucial role in facilitating organizational change programs. Many countries have attempted to implement electronic government (e-government) as the most fundamental infrastructure for such programs. Various famous models have been developed to implement these ideas but such models may not be applicable in developing countries since their technical and non-technical infrastructures are not as mature as those of developed countries. This paper Zarei and others presents a literature review of the popular E-Government Development Models (EGDM), such as Gartner and UN, and explains the Iranian e-government development experiences. More importantly, the paper seeks to propose a national EGDM with respect to Iranian context requirements which might be applicable for other developing countries with some customization. It is concluded that international EGDMs are not fit for developing countries and some localization is required in order to exploit more advantages from IT capabilities in the governments.<sup>74</sup>

The information systems-related sourcing literature currently emphasizes a portfolio approach combining homegrown, hybrid, and outsourced (contracted) systems. This study by Hans Jochen Scholl found similar approaches in the sourcing for electronic government (e-Government, e-Gov). E-Gov-related sourcing mixes potentially create high switching costs and path dependency. They may also severely impact governments' information management capacity and organizational capabilities. Further, e-Government leads to business process change, all of which necessitates an increased understanding of e-Gov-related sourcing and its integration with traditional public management information systems (PMIS). In the absence of an e-Gov-specific sourcing theory, this study explores current sourcing practices and uncovers overlaps in sourcing concepts and also significant differences between private and public sourcing practices. E-Gov sourcing portfolios were found not systematically managed potentially compromising the public

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<sup>73</sup> Misuraca, Gianluca, e-Government 2015: exploring m-government scenarios, between ICT-driven experiments and citizen-centric implications, *Technology Analysis & Strategic Management*, Vol. 21, No. 3, 2009, pp.407–424

<sup>74</sup> Zarei, Behrouz, et al, Towards national e-government development models for developing countries: A nine-stage model, *The International Information & Library Review*, Vol.40, 2008, pp. 199-207

information management capacity. To help public managers design and manage e-Gov sourcing mixes, the article proposes framework for e-Government sourcing for further testing.<sup>75</sup>

The purpose of this study by Evans and Yen is to explore the emerging applications of e-government, both in the United States and in the international community. Technology allows governments to service citizens in a more timely, effective, and cost efficient way. E-government implementation may meet initial citizen resistance, require development expenses, and present certain implementation issues. Domestic and international impacts of e-government implementation are substantial. International impacts include cultural and social adaptation issues, trans-border data flow issues, and the potential for the development of a global digital divide.<sup>76</sup>

In the present paper by Nicolae Costake, e-Governance (eG) is understood as the informatized societal management, a concept complementing the classical enterprise management. E-Government is understood as the set of e-Services delivered by the Public Administration to the citizens and organizations. The specific problems of e-Governance are shortly discussed. The conclusions refer to the need of a specific strategy for e-Governance, supported by the state-of-the-art technology. A framework for such a strategy is proposed.<sup>77</sup>

A few days after the fall of Tunisian President Zine al-Abidine Ben Ali, a Jordanian newspaper printed a joke apparently doing the rounds in Egypt: “Why do the Tunisian youth 'demonstrate' in the streets, don't they have Facebook?” Only six days later, protests across Egypt co-ordinated by a loose coalition of opposition groups – many of which were organized through Facebook – proved this cynicism wrong. Hosni Mubarak has stepped down as President of Egypt, after weeks of protests by anti-government demonstrators in Cairo and other cities. If unemployment and poverty were the causes of the mass uprising in the North African states of Tunisia and Egypt, it was Twitter and Facebook – the two pillars of online social media – that became the

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<sup>75</sup> Scholl, Hans Jochen, Electronic government: Information management capacity, organizational capabilities, and the sourcing mix, *Government Information Quarterly*, Vol.23, 2006, pp. 73–96

<sup>76</sup> Evans, Donna & Yen, David C., E-government: An analysis for implementation: Framework for understanding cultural and social impact, *Government Information Quarterly*, Vol.22, 2005, pp.354–373

<sup>77</sup> Costake, Nicolae, A Possible Strategy for E-Governance, *eGovernment Workshop '05 (eGOV05)*, September 13 2005, Brunel University, West London, UK

drivers of a revolution that shook the conservative Arab world. Social media, Dhirendra Pratap Singh says, has played a crucial role in the unrest in Egypt with many of the protests organized through Facebook. The Egyptian government reacted quickly by blocking social media sites but this act of censorship was spectacularly unsuccessful.<sup>78</sup>

## **Summary**

In the context of the debate on the conceptual framework and the review of literature on e-governance, it is pertinent to note that only a few studies have been carried out with regard to institutional capacities and performance in terms of service delivery. Globalization and information technology have tended to impact on the role and functioning of the state, including organizational transformation and introduction of new electronic services for citizens. The emphasis was on administrative processes and improved delivery mechanisms. Only a few studies concentrated on the institutional/organizational context and the human resources required for achieving the goals of electronic governance. In this backdrop, the present study would go a long way in adding to the literature on the institutional and human resources aspects of e-governance and how citizens perceive the efforts of the government in improving service delivery. The next chapter will elaborate the approach and methodology of the study on institutional capacities and performance with regard to e-governance in India.

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<sup>78</sup> Singh, Dhirendra Pratap, The 2.0 Revolution, e-Gov, September 2011, [www.egovonline.net](http://www.egovonline.net) (accessed 3<sup>rd</sup> October 2011)



## **Chapter – III**

### **Methodology**

The past several decades have seen many studies of the impacts of information technology (IT) in business organizations, and comparatively fewer studies in government organizations. The concerns of researchers have been largely the same across both sectors—effects on efficiency and effectiveness, changes to organizational structure, and impacts on work. Studies in governance, however, have been unique in their concern with whether IT is a catalyst or instrument of administrative reform.

We define administrative reform as efforts to bring about dramatic change or transformation in government such as a more responsive administrative structure, greater rationality and efficiency, or better service delivery to citizens. Towards these ends, governments historically have undertaken structural reforms such as budget reforms, performance and program budgets, financial reforms such as unified accounting, personnel reforms such as merit-based employment and pay, and many others. IT has been viewed as an instrument of such reforms, and also as a reform instrument per se. Such instruments are illustrated by information systems, integrated information systems, computer-based models for policy making, geographic information systems and e-governance. The rhetoric of these IT-based reform efforts has been that e-governance is a catalyst that can and should be used to bring about dramatic change and transformation in government.

The era of e-governance, which can be defined as the use of IT within government to achieve more efficient operations, better quality of service and easy public access to government information and services, is now underway. The IT world that surrounds public administration in India has changed markedly. Technology diffusion within the society has been pervasive, with personal computers and the Internet extending to many households in the country. Internet-based e-business and e-governance services are rapidly connecting businesses, households and governments, thereby creating a much richer and more subtle IT environment. Investment in IT at all government levels has increased, new capabilities are more diffused throughout government agencies and technical expertise is stronger.

Recent advances in ICTs have enabled governments to make tremendous amounts of data in digital form available to the public through Web-enabled platforms and applications. Making such data available to the public is seen as an important first step in achieving greater government accountability through improved transparency.

### **Study Background**

Deployment of Information and Communication Technologies (ICTs) in the processes governing administrative systems across the world has proved to be successful, though organization/cultural differences do act as barriers. The case was no different in India when it accepted the guiding concept of e-governance in the early 1990s. A country as diverse and vast like India can ill-afford to have pan-national governance or administrative structures without hurting the traditional and cultural beliefs of its citizens. Though some mission mode projects under the National e-Governance Plan (NeGP) were successful, they could not be replicated on a large scale in other states. Bhoomi, the land records digitization project of Karnataka, and Akshaya, the e-literacy and e-services project of Kerala demonstrate this drawback in ways more than one.

The preceding project of DST on electronic governance covered many such aspects and suggested unexplored areas of e-governance research. In continuity, the project looks at such areas hitherto untouched by research institutions/academics. Foremost, there has been no estimate or assessment of the technical capabilities of the public personnel in delivering electronic services or understanding the processes associated with e-governance. The broad areas under this framework include technology management ability, administration ability, interpersonal and technical ability of the government staff.

IT capabilities include understanding the usage of the office software such as Excel, PowerPoint, Word, and computer hardware such as PC composition components and correlated equipments and so on. In discussing the IT department and IT workforce ability in the public sectors in Taiwan, Cheng (2006) introduced 15 items of IT workforce ability in the technical dimension: the abilities of maintaining computer and installing programs, project analysis, programming design, system test, security operation and maintenance, software and hardware application, outsourcing, budget setting and interpersonal communication.

### **Structure of IT abilities**

1. Technology Management Skills (knowledge): concerning with where and how to deploy IT effectively and profitably for meeting strategic business objectives. The IT capacities are involved financial management, legal/governmental jurisprudence, planning and evaluation, performance management and so on.
2. Business functional Skill (knowledge): involved the level of knowledge of the various functions within the business and ability to understand the overall business environment, such as problem solving, public safety and security, requirement analysis and so on.
3. Interpersonal relationship skills: including the ability to communicate effectively with staffs in functional areas and to work in a collaborative environment, along with the ability to lead project teams, such as customer services, negotiation, leadership, communication and so on.
4. Technical skills: involving the depth and breadth of the IT technical specialties with the organization, such as data management, hardware, network management and so on.

### **Dimensions of IT capability adopted by Centre for Technology in Governance**

1. Working Model & Architecture Readiness
2. Collaboration Readiness
3. Data Assets & Requirements
4. Governance
5. Information Policies
6. Leadership (political, administrative, technological)
7. Organizational Compatibility
8. Performance Evaluation
9. Project Management
10. Financial Viability
11. Cyber Security
12. Stakeholder Identification & Engagement
13. Technology Acceptance
14. Technology Compatibility
15. Technology Knowledge<sup>1</sup>

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<sup>1</sup> [www.ctg.albany.edu](http://www.ctg.albany.edu) (accessed 12<sup>th</sup> March 2010)

<b>Dimensions</b>	<b>Items</b>
Technology management skills	<ol style="list-style-type: none"> <li>1. Financial Management</li> <li>2. Performance Management</li> <li>3. Information Systems Strategy and Planning</li> <li>4. Total Quality Management (hardware/software)</li> </ol>
Business functional skills	<ol style="list-style-type: none"> <li>1. Organizational Operation Awareness</li> <li>2. Problem Solving</li> <li>3. Public Safety and Security</li> <li>4. Requirement Analysis</li> <li>5. Process control</li> </ol>
Interpersonal Relationship skills	<ol style="list-style-type: none"> <li>1. Customer services</li> <li>2. Cooperation</li> <li>3. Leadership</li> <li>4. Communication</li> <li>5. Sharing</li> </ol>
Technical skills	<ol style="list-style-type: none"> <li>1. Accessibility</li> <li>2. Data/File Management</li> <li>3. Database Management</li> <li>4. Information Assurance</li> <li>5. Information System/ Network Security</li> <li>6. Network Management</li> <li>7. Hardware</li> </ol>

**\*Structure of IT workforce abilities<sup>2</sup>**

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<sup>2</sup> [www.ctg.albany.edu](http://www.ctg.albany.edu)

### **Working model of e-governance project as per the five simple principles of Oracle**

- Simplify
- Standardize
- Web Enable
- Integrate
- Consolidate

### **Government Operational Value (for e-governance)**

- Increased number of people served
- Reduced errors (e.g., erroneous payments, duplication)
- Simplified processing (fewer steps)
- Reduced duplicated effort (collect information once, use many times)
- Increased self-service (fully operative systems for citizens to assess services, info)
- Increased staff productivity
- Channel convergence (seamless services across delivery channels)

### **Foundational Value: (for public personnel)**

- Develop capacity for future (e.g., bandwidth)
- Build workforce of the future (the correct mix of skills for an increasingly digital environment)
- Staff requirement
- Training based on larger and future needs<sup>3</sup>

### **Delivering Public Value through e-Governance**

Transparency, participation, and collaboration are meaningful when they enable groups of people to pursue their objectives. A public value framework can help to determine the value of government activities from multiple stakeholder perspectives. While these three open government principles resonate in familiar and positive ways, it is not obvious how government agencies can best create new systems and services organized around them and ultimately deliver

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<sup>3</sup> Annual Report, Centre for Technology in Governance, University at Albany, State University of New York, 2011

desired and measurable benefits to government and nongovernment stakeholders. Public value, in the most general sense, focuses attention on the collective and societal interests that are served by particular institutional arrangements and actions of government. A public value framework can help to determine the value of government activities and do so from multiple stakeholder perspectives, not just a generalized, and thus ambiguous, citizen viewpoint.<sup>4</sup>

The following variables generate public value for e-governance actions:

- **Efficiency** – obtaining increased outputs or goal attainment with the same resources, or obtaining the same outputs or goals with lower resource consumption.
- **Effectiveness** – increasing the quality of the desired outcome.
- **Intrinsic enhancements** – changing the environment or circumstances of a stakeholder in ways that are valued for their own sake.
- **Transparency** – access to information about the actions of government officials or operation of government programs that enhances accountability or influence on government.
- **Participation** – frequency and intensity of direct involvement in decision making about or operation of government programs or in selection of or actions of officials.
- **Collaboration** – frequency or duration of activities in which more than one set of stakeholders share responsibility or authority for decisions about operation, policies, or actions of government.

Of these variables, transparency is the most important one when it comes to evaluating e-governance in any country. Governments of the world are facing both national and global demands for greater levels of transparency that allow not only citizens but other nations to hold them accountable for their actions. These internal and external pressures and government responses have been fueled in part by innovations in information and communication technologies (ICTs) and the expanding capabilities of governments to use technology effectively. Recent advances in ICTs have enabled governments to make tremendous amounts of data in digital form available to the public through Web-enabled platforms and applications. Making such data available to the public is seen as an important first step in achieving greater government accountability through improved transparency.

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<sup>4</sup> *ibid.*

## **Present Study**

The following are benchmarks set up for the study from institutional and citizen perspectives.

### **Benchmarks**

#### **Institutional Perspective:**

1. Organizational Transformation – Automation of work processes, adaptation of information technology, work culture, organizational networks
2. Computer literacy of employees – Basic education, technical qualifications, computer literate
3. IT skills of employees – Basic understanding of IT, training received, application and upgradation of IT knowledge
4. Awareness of technology in governance (knowledge about front and back-end processes, computer architecture, IT networking)
5. Application of IT skills in work processes – Handling IT tools, online security mechanisms, comfortable with English or local language
6. Technology innovation and adaptation – whether IT department exists in organization/project, technical staff, adaptation of IT by government staff
7. Training requirements – computer components, scanning, downloading and uploading, using digital signatures, understanding LAN, systems security, virus protection
8. Dealing with interactive models: e-mail, internet security, online response, processing applications online, encryption, allotting digital numbers to applicants, updating application status
9. Improved quality of services – Better co-ordination of front-end and back-end functions, token system management, number of counters, single-window system for payment of utility bills, help desk, information kiosk on status of application,
10. Financial sustainability of the project – Funds from centre/state governments, funds from local bodies, collection of user charges from participating departments and agencies/franchisees/customers, project management, increased number of transactions
11. Leadership, ownership of and contribution to e-governance projects – technical management, personal initiatives, employee enthusiasm and turnover, government support (ruling political party), expanding scope of project and services

## **Citizen Perspective**

1. Availability of e-governance services (outreach) – Popularity of the project, points of access (geographical closeness), number of services available, network with participating departments up to higher level
2. Simplified transactions – No paper work, single window system, automation of transactions, online transactions, electronic payment modes
3. Decision-making processes – quick process of applications, time-frame for disposal of cases
4. Business processes re-engineering – Minimizing citizen contact with administrative units, automation, front-end services, single window, public-private participation, project evaluation
5. Information outflow – online response, SMS, online data base, update of project websites, information kiosks, public information officer
6. Cost and time considerations – user charges, time-frame for a transaction, quick processing of applications, travel costs, frequency of visits
7. Quality of services – improved or not improved, inclusion of more services
8. Effective delivery mechanisms (online connectivity, interactive 2.0 models, front office)
9. Transparency – in availing services, and process of applications
10. Accountability and trust in government – Delays in informing status of applications, explaining causes for slow delivery of services, network disruptions – citizens' level of satisfaction with service delivery, trust in administrative and governance processes

## **Data Collection and Field Studies**

For a study of this magnitude, huge sets of data had to be collected. Data was collected through secondary and primary sources. Secondary sources include books, journals, magazines newspapers, reports, government data, published and unpublished works and browsing through the Internet. Primary sources include field studies, questionnaires and non-participant observation.

Some key informants were identified who were involved with the administration of select states and had good knowledge about how e-Governance might affect the social and cultural fabric of that particular state. To ensure reliability of information, triangulation was done with other sources, mainly newspapers and other secondary documents. The key informants actually opened



doors to many other people who provided further information relevant to this research. Thus, the collection of data progressed through chains of conversations. The purpose in this research was to gather qualitative input from government bureaucrats, actual operators and citizens who are equal stakeholders in e-governance.

The following is the break-up of the projects and the respondents covered as part of the study:

Total number of states:	13
Total number of districts:	29
Total number of projects:	26
Total number of officials:	801
Total number of citizens:	2,615
Total sample size:	3,416

### **Stages of service delivery**

#### **6 steps for e-service delivery**

##### **For Citizen**

1. Login through website or visit Common Service Centre.
2. Fill form, give delivery option-post/self collection
3. Provide Documents needed
4. Pay required amount
5. Get Receipt and document delivery date
6. Collect the document on specified date

##### **For Official**

1. Login through website. Go to work list
2. Open file, scrutinize details
3. Record Noting/comments/Additional Requirements
4. Route file on completed Documentation
5. Second level scrutiny
6. File approval to clear service delivery

One of the key aspects missing in all the work so far is the reach of these initiatives to the common man, who is the customer for the services. The fact which stands out is, the service delivery is fragmented with multiple entities as, the e-Governance initiatives in the different departments are carried out independent of each other; as such the impact of the initiatives is diluted for the want of a user-base itself i.e. the citizens who are the customers for the service.

The public sector faces vast technology challenges such as network interoperability, information integration, and the preservation of government records in electronic form. New knowledge is necessary to understand the practices of government and governance in contemporary society. New attention must also be given to questions about how communities can talk to one another more effectively, taking lessons learned from research and bringing them to bear in public sector environments, and conversely, using knowledge and expertise about practice to guide research agendas.

Globalization brings problems and opportunities that demand sharing of knowledge, information, and practices across cultural and national boundaries. Environmental quality, international trade, and response to disasters are just a few of the areas where information and knowledge need to be shared across national borders.

<b>S. No.</b>	<b>State</b>	<b>Districts</b>	<b>Project</b>	<b>Officials</b>	<b>Citizens</b>	<b>Total official/citizens</b>
1.	Andhra Pradesh	Hyderabad Rangareddy	e-Seva CARD	51 26	142 102	77/244
2.	Arunachal Pradesh	Papum Pare LowerSubansiri	Common Citizen Services	08 07	48 39	15/87
3.	Gujarat	Surat Ahmedabad Rajkot Junagarh	e-City e-district e-Dhara	18 16 23 12	57 82 76 67	69/282
4.	Haryana	Rohtak Sirsa	Nayi Disha HALRIS	21 18	96 102	39/198
5.	Himachal Pradesh	Solan Shimla	Citizen services HimBhoomi	34 65	110 98	99/208

6.	Karnataka	Mangalore Bangalore	Bhoomi BangaloreOne	69 42	126 108	111/234
7.	Kerala	Malappuram & Kasargod Palakkad	Akshaya & FRIENDS e-district	69 19	132 82	88/214
8.	Madhya Pradesh	Indore Dhar	Citizen services Gyandoot	26 17	98 54	43/152
9.	Maharashtra	Kolhapur Sangli	Warana SARITA	22 31	86 105	53/191
10.	Punjab	Jalandhar Ludhiana	Suwidha e-Patwari	18 37	118 136	55/254
11.	Sikkim	East district	Citizen services	12 18	67 55	30/122
12.	Tamil Nadu	Krishnagiri & Thiruvarur Tiruchirapalli	e-district STAR	43 19	102 93	62/195
13.	West Bengal	Bardhaman Murshidabad	e-district Bhuchitra	12 48	107 127	60/234

## **Brief Description of the Projects Covered under the Study**

### **1. e-Seva**

Looking at 'service' from the citizens' point of view, the Government of Andhra Pradesh seeks to redefine citizen services through eSeva, using state-of-the-art technologies. The Government of Andhra Pradesh has a clear vision to create a knowledge society by using Information Technology in all aspects of development and governance. Pioneering efforts are being made to reach the benefits of IT to the citizens - urban and rural, rich and poor, literate and illiterate.

eSeva builds on the success of the TWINS pilot project launched in Banjara Hills, Hyderabad, in December 1999. There is integration of departments - central and state governments along with services, G2C and B2C. Efficiency, Reliability, Transparency and Scalability are the watchwords at eSeva.

### **2. CARD**

The Registration Department of the Government of Andhra Pradesh performs the functions of registration of deeds, valuation of immovable property, collection of revenue (stamp duty and registration fee), preservation of copies of documents, issuance of certified copies of documents, issue of encumbrance certificates and registration of societies, firms, marriages etc. The

department has 387 Sub Registrar's Offices (SRO) in 23 districts of Andhra Pradesh. The gross revenue earned by the department is Rs.12 billion. The manual systems in all the activities caused long delays, red-tape and corrupt practices. The Computer-Aided Administration of Registration Department (CARD) project was conceptualized to computerize all the activities and procedures of the Registration Department. A pilot was conducted at two SROs in August-September, 1997. The project was started on 4 November 1998. Presently, the project covers the whole state of Andhra Pradesh.

### **3. Bhoomi**

Sixty-six percent of the population of Karnataka resides in rural areas where the main occupation is agriculture. About 6.7 million farmers own 20 million land holdings. The crucial document which records various parameters and information pertaining to land-holding is the Record of Right Tenancy and Cultivation (RTC). Earlier in the manual system, these records were maintained by 9,000 Village Accountants (VAs or village revenue officials) who served farmers in about 27,000 villages. The RTC is required for land transactions, to obtain crop loans, other loans and concessions linked to the size of the land holding. The manual system of maintaining RTCs was exploitative as the VAs were not easily available and bribes were often extracted. Since the records were not open for public scrutiny, there was considerable scope for manipulation. The land records are the most important testimony of rights to land owners in the huge agro-economy of India. The VAs held a monopoly on all revenue records and were frequently involved in harassing citizens, tampering with the records and other corrupt practices. The Ministry of Rural Development has been providing funds to state governments for computerization of land records since 1988-89. In Karnataka, data entry work started in 1995, but up to 1999 there were few concrete benefits. In 1999-2000, modifications were made in the software and all the databases were updated when the Bhoomi project was launched.

### **4. BangaloreOne**

The Government of Karnataka (GoK) is keen to provide integrated services to the citizens deploying the tools of Information and Communication Technology (ICT) so as to enhance Speed, Convenience, Certainty and Accountability in providing such services through the concept of a 'One-Stop-Shop' facility. Accordingly, GoK decided to implement an e-Governance

project called the Bangalore One or B1 Project on the lines of similar projects implemented elsewhere in India. B1 Project seeks to redefine public service through its focus on the common man. The vision of the B1 Project is to provide to the citizens of Karnataka, all G2C and G2B One-Stop services and information of departments and agencies of Central, State and Local Governments in an efficient, reliable, transparent and integrated manner on a sustained basis, with certainty, through easy access to a chain of computerized Integrated Citizen Service Centers (ICSC's) and through multiple delivery channels like Electronic Kiosks, mobile phones and the Internet.

## **5. Akshaya**

Kerala, as a state, has performed exceptionally well in the past in its National Literacy Mission. It has achieved 94.6 percent literacy (the highest in any Indian state), the highest density of science and technology personnel, 100 percent digital telephone exchanges and the highest telephone density. The people of Kerala are known for their fast learning skills. The aim of this project was to familiarize one person from every family (6.4 million families) in the state with the basic use of computers, empower them to access relevant e-content in the regional language and to provide services such as e-learning, e-transaction, capacity building programmes, e-government services. It was started as a joint venture between local bodies (gram panchayats in rural areas and municipalities in urban areas) and private entrepreneurs to bridge the digital divide by providing community access to computers and the Internet. In November 2002, Dr A. P. J. Abdul Kalam, the President of India, launched the project in Trivandrum whereas the Chief Minister of Kerala started Akshaya centres in Thiruvananthapuram and Malappuram in May 2003.

## **6. FRIENDS**

FRIENDS or “Fast, Reliable, Instant and Efficient Network for Disbursement of Services” was started in 2000 in Thiruvananthapuram by the Kerala State Department of Information Technology with the help of local bodies. The FRIENDS centre, or Janasevana Kendram, (Janasevana means serving people, Kendram means centre) is a one-stop integrated citizen service centre of the Government of Kerala. The centre functions as a single counter to remit utility bill payments, submit applications, seek information on government programmes and

schemes, and provide access to other specialty services. After the success of the pilot, FRIENDS was launched in the remaining 13 District Headquarters in 2001. Now, FRIENDS has been integrated with Akshaya programme right up to panchayat ward level.

### **7. e-district Palakkad**

eDistrict is a mission mode project of Department of Information Technology, Government of India. The software for the same has been designed and developed by NIC Kerala State Centre. The project would allow people to apply and obtain the 23 certificates online from any Common Service Centre (Akshaya Centre) in addition to the Village / Taluk Offices. Digital Signature Certificates issued by NICCA have been allotted to Village/Taluk Officers for secured login and approving the certificates online. All certificates are generated in PDF format with embedded QR code (2D bar code). The pdf certificate is further digitally signed. The signed certificates can be printed and issued to the applicant from anywhere. This way, the public could avail the services from Akshaya centres without going to the Government office.

### **7. STAR (Simplified and Transparent Administration of Registration)**

The Department of Registration, Tamil Nadu, initiated a project to automate some of the processes of the department in select offices to make the system significantly faster and more transparent. The department envisaged a system which helps reducing work load of the department employees by minimizing monotonous and error prone work such as document copying, report generation etc. The traditional method of archiving registration records were also supposed to be done away with new storage techniques using Information Technology as the back bone. By introducing STAR, all offices in the department were to be interconnected allowing the department personnel to search and verify the records which are based in other sub registrar offices. STAR is a G2C-Urban project and spread out over 300 offices of the Department of Registration in Tamil Nadu.

### **8. e-district Thiruvavarur**

Thiruvavarur district of Tamil Nadu was declared the Pilot-e-district by the Government of Tamil Nadu on the 13th June 1999. The largely agrarian district which is located at 350 KMs from

Chennai had accomplished near total automation of the field level government functioning in Taluk offices, District Rural Development Agency (DRDA), Collectorate, Block offices, Town Panchayat Office (local body) and Regional Transport Office. Land record administration, rural development scheme administration, student scholarship administration, public grievances handling, HR administration, Social welfare scheme administration such as National Old Age Pension Scheme, Distress Relief Scheme, Accident Relief Scheme, marriage assistance scheme, Agriculture labourers' Insurance scheme, etc were migrated to manual register free status, thus removing hurdles in getting citizen service delivery. However, nothing exists as of now.

### **9. Gyandoot**

The Gyandoot intranet community network was conceptualized on 1 January 2000, and installed and made operational within less than two months in the tribal dominated, poverty-stricken Dhar district in the Central Indian state of Madhya Pradesh. Gyandoot in Hindi means "purveyor of knowledge". The four pillars on which the Gyandoot community network was established were People, Content, Services and Server. The Gyandoot project was planned using finances from the community as well as from private enterprises. The database and the server were kept at the District council office. It was decided to create an intranet network with dial-up modem connectivity to rural kiosks. The selection of services to be provided on the network was decided on the basis of a participatory rural appraisal. The kiosks and telephone connections were selected at prominent places in the villages. The procurement of hardware was done by the village community and the managers for the kiosks were selected from the community, to work on a profit-sharing basis.

### **10. Warana Wired Village Project, Kolhapur, Maharashtra**

The Warana Wired Village Project was launched by the IT Task Force of the Prime Minister's Office to demonstrate the use of ICT to accelerate socio-economic development of a cluster of 70 villages around Warana in the Kolhapur and Sangli districts of Maharashtra. The Warana complex was selected, as an example of successful integrated rural development through the formation of cooperatives. This complex includes 25 cooperative societies, with an annual turnover of Rs 6 billion involved in the production of sugar and dairy products, poultry, and building construction. The Warana Project is jointly executed by (1) the National Informatics

Centre (NIC), the Planning Commission, GoI, (2) the Directorate of Information Technology, State Government of Maharashtra, and (3) the Warana Sahakari Dugdh Utpadan Prakriya Limited (WSDUPL), Warana Nagar. The total cost of the project is Rs 25 million which was borne jointly by the three agencies in a ratio of 50:40:10.

### **11. SARITA (Stamps & Registration Information Technology based Administration)**

SARITA is a G2C-U project with an aim to design, develop, and implement a computerized application for Registration of documents, received at each Sub-Registrar Office and provide data updation on timely basis to their respective Joint District Registrars and higher offices under the purview of Department of Registration, Pune, Maharashtra State. The project runs on PPP model and covers entire state of Maharashtra covering 405 Sub Registrar Offices, 35 District offices, 8 Divisional offices and 1 Head Quarter in Pune.

### **12. e-dhara, Gujarat**

After digitizing all land records, e-Dhara Kendras(e-DK) have been setup at Taluka Mamlatdar offices to take up day to day activities of land records such as mutations and issue of Record of Rights (RoR). Workflow based software (BhuLekh Soft) has been implemented since 2004-2005. By Integrating BhuLekh Soft with the e Gram Vishwa Gram (eGVG) project, that provides broadband connectivity through VSAT to village Panchayats, farmers can get RoR copies from the Village Panchayat itself. While Talati / Village Computer Entrepreneur (VCE) posts the request on the RoR portal, Deputy Mamlatdar, (e-DK) would process the RoR and upload it on to the Central server so that the print out is taken at the village. Since Jan 2006, RoR@Village has been operational in 2279 villages of 166 Talukas and the facility has been expanding with the availability of broadband under eGVG project.

### **13. SMC Services**

Surat Municipal Corporation has always aspired to achieve total customer satisfaction & has endeavoured the same through various methodologies. With the following objectives in mind, S.M.C. started an E-governance project through 16 city civic centers right now. This is further integrated with an in-house Management Information Systems (M.I.S.) that given an instant and as-is report on all activities of City Civic Center on Municipal Commissioner desktop. All



municipal corporation services including property tax, water tax, professional tax collection, registration of births/deaths, shops and establishments are provided under this e-governance project. Surat, which won the national e-governance award for 2007-08, runs 16 city civic centres. From the date of opening the first civic centre in May 2003 till date, more than 73 lakh transactions have taken place. The procurement of goods and services was brought on to e-tender system in 2007 and about 873 e-tenders have been successfully floated, processed and awarded till date. A special touch screen service is available at 11 locations at public places in English and Gujarati at zero cost to users not familiar with computers.

#### **14. e-City Ahmedabad**

Ahmedabad Municipal Corporation (AMC) is one of the leading municipal corporations in India which has improved the delivery of municipal services such as like birth and death registration, building plan, primary health and education, city cleanliness, water supply, sewage, road, street-lights, parks and garden by providing potential access to 5.6 million citizens by using e-governance. For this purpose AMC has established six City Civic Centers (e-city centres) located in five zones of the Ahmedabad city. Each e-City Center is equipped with 10 nodes and is managed by well trained operators to attend to the need of citizens. Every node is equipped to deliver variety of services such as building plan permission, shops & establishment license, registration of complaints regarding civic amenities, payment of taxes etc. The operator processes citizen's request and issues necessary license or receipts instantly. Thus, it has proved to be a "ONE SPOT- NON STOP" tool to facilitate the citizens of Ahmedabad. Moreover, AMC has also endeavored that a Citizen need not come to the Municipal Office for paying any fee/ taxes which he can pay through net/bank/ cyber café. 24-hour remote access to AMC transactions / services/ information is available on the website [www.egovamc.com](http://www.egovamc.com).

#### **15. Sugam (Citizen Services, Himachal Pradesh)**

i-CoSC (Sugam) plays an important role in providing services at the doorstep of rural community by bringing all citizen related services and information under a single roof cutting across different tiers of administration. The unique feature of this project is that the submission of documents and collection of required certificates/ licences etc. can be done even at a place other than the one where sanction is to be done (except where physical presence is necessary as per

law). Mainly following services are being provided through these centres: Transport: Vahan – Vehicle registration, Saarthi – Driving licence, Bus booking & Time table; Election: Voter registration and Voter Id; e-Praman/Certificates: Caste, Domicile, Senior citizen, Income, Backward area, Legal heir, SC/ST, OBC; Revenue: HimBhoomi-Land records forms, Land record Nakal/ Jamabandi, HimRis-Property registration; Utility: Electricity bills, BSNL telephone bills; REFNIC -Reference Monitoring of Files; Agmarknet- Agriculture commodity prices; District authorities: Arms Licence; Police Complaints; e-Pehchan:Senior citizen identity card, Disability identity card; Labour and Employment: Vacancy listings, Employment exchange registration; Tourism: Hotel reservation, Tourist Information.

## **16. HimBhoomi**

HimBhoomi has been undertaken by Himachal Pradesh State Government under the Centrally Sponsored Scheme of Computerisation of Land Records. This scheme is sponsored by Ministry of Rural Development, Government of India. The HimBhoomi Computerisation of Land Records in all 110 Tehsils of HP under HimBhoomi has been implemented by Himachal Revenue Department. Deputy Commissioners of respective districts have been implementing HimBhoomi in the field. The National Informatics Centre, Himachal Pradesh through its district officers is helping in the implementing of HimBhoomi project. In addition, the Tehsil centres will be also undertaking HimRis (Himachal Registration Information System) Project wherein the deed registration of around 30 different types of deeds would also be computerized.

## **17. Suwidha, Jalandhar, Punjab**

SUWIDHA [Single User-friendly Window Disposal and Help-line for Applicants], designed and developed by National Informatics Centre (NIC) provides convenience to the citizen. It is built to provide the convenience to the citizen by capturing the input at a single point, defining a specified delivery date depending upon the type of service and accepting cash at the counter itself. SUWIDHA 1.x version was initially implemented at Fatehgarh Sahib District in the year 2003 as per directions of the Chief Secretary, Govt of Punjab and then rolled out in all the districts. During its inception, SUWIDHA was mainly conceived for the DC office only, but its successful implementation has generated its demand at the offices at other levels of the district administration such as SDM office, Tehsil etc.

### **18. e-Patwari, Punjab**

In Punjab, Department of Revenue has taken up the Integrated Computerization of Land Records Management System and Registration of Documents. The project includes automation of the process covers, change of ownership (Mutation), Crop updation (Girdawari), modification of field maps, and updation of record of rights (Jamabandi). Pilot implementation of the project at district Kapurthala has been completed. e-Patwari centres have been opened up at all places in the state to issue nakals of land records.

### **19. HALRIS, Haryana**

Haryana Land Records Information System or HALRIS is an inclusive Integrated Workflow Automation system of Land Record components. HALRIS provides a single Window Interface for Deed Writing, Jamabandi, Registration, Mutation, and copy of ROR. The 6917 Jamabandies that are available have been validated by Patwaries and made on-line after mutations have been incorporated in them. Efforts are on for the establishment of HALRIS centres in all the 112 Tehsils and Subtehsils of the state.

### **20. Nai Disha, Haryana**

The project Nai-Disha is a Information Technology (IT) driven electronic interface between the government and the citizens that facilitates the general public to receive effective services on time. This project offers a wide spectrum of services of departments such as the Public Health and Engineering Department, City Corporations/Municipal offices, Road Transport, Registration and Stamps, Revenue, Social Empowerment, and District Administration. These services include issue of various certificates, driving license, vehicle registration, birth and death certificates, passport, arms license and revenue stamps. The provision of providing services from all departments at a single place without the involvement of intermediaries has helped in saving time and effort for citizens. The applicants can also be updated and seek information related to applications online without any hassle. With good infrastructure and human resource support, the nai-disha centres have been instrumental in providing swift and efficient services to the citizens at a minimal cost.

## **21. Bhuchitra, West Bengal**

BHUCHITRA is the application software to manage the land records as well as map data for the state of West Bengal. Apart from creation and maintenance of land records database, this application integrates the vector digitized mouza map with the land record information. The software is capable to analyze the data to generate many kinds of reports that are of great value to the Department and beyond. BHUCHITRA is an upgraded version of BHUMI that was developed earlier without the features of mouza map information. The application provides plot excerpts along with the Record of Rights.

## **22. e-district Bardhaman**

Burdwan has become the country's first district where all the panchayats have been offered a broadband connectivity for communicating with its district and state headquarters. The project is an expansion of the existing State Wide Area Network (SWAN), a Union government initiative under National e-governance plan (NeGP). The project has incurred a cost of Rs 6.2 crore, which includes Rs 4.96 crore from the NeGP. The multi-point connectivity between the panchayats and the respective block-offices has been achieved using wireless data transfer technology that facilitated the completion of the project.

## **23. Citizen Service Centres, Sikkim**

The project of setting up Community Information Centres (CICs) in Sikkim was launched by the Government of India in September 2000. Of a total of 487 such centres in the North Eastern Region of India, Sikkim was allotted 40 centres. A CIC is essentially a computer centre, equipped with six computers (server plus five client machines), printers (one laser and one dot matrix), a generator, and a direct satellite link for accessing the Internet. Two computer operators/instructors have been posted at each centre. The CICs have been set up with a view to spread ICT awareness among the people both at rural and urban level. The intention is to bridge the gap between the connected elite and the non-connected masses. The 40 CICs in Sikkim have been spread over Sikkim at altitudes as low as almost sea level and as high as 10,000 ft above sea level. The users are also equally diverse – from yak herders to the urban elite.

#### **24. Common Service Centres, Arunachal Pradesh**

Common Service Centre (CSC) is the primary physical front-end for delivery of Government and Private Services to Citizens. Implementation work of CSC is on-progress and the SNPIU team is fully indulged to work with SCA team for the same. SCA proposed for selling franchise of CSC outlets to the citizens and so far 179 VLE (Village level Entrepreneur) has signed the agreement with SCA. Out of which 123 CSCs are registered and have connectivity. In Anjaw and Upper Dibang Valley districts, not a single CSC is established due to lack of facility for connectivity. Awaiting the installation of VSATs where VLE has problem of connection.

#### **25. Indore Municipal Services**

Indore Municipal Corporation provides an Information Technology (IT) driven electronic interface between the corporation and the citizens of Indore. The services are offered by Public Health and Engineering Department, City Corporations/Municipal offices, Road Transport, Registration and other social welfare department. The services include issue of various certificates, driving license, vehicle registration, birth and death certificates, passport, arms license and revenue stamps, besides redress of grievance on the opening day of a week. The applicants can seek information related to their applications from time to time. With good infrastructure and staff support, the citizen centres have been instrumental in providing services to the citizens at a minimal cost and time.

### **Categorization of Projects:**

For the convenience and better understanding, projects covered under study were further categorized into four groups. They are as follows:

#### **Citizen services:**

<b>S. No.</b>	<b>State</b>	<b>Districts</b>	<b>Projects</b>
1.	Andhra Pradesh	Hyderabad	e-Seva
2.	Arunachal Pradesh	Papum Pare Lower Subansiri	CSCs
3.	Kerala	Malappuram Kasargod	Akshaya & FRIENDS
4.	Gujarat	Surat Ahmedabad	e-city services
5.	Haryana	Rohtak	Nayi Disha
6.	Himachal Pradesh	Solan	Citizen Services
7.	Karnataka	Bangalore	BangaloreOne
8.	Maharashtra	Kolhapur	Warana
9.	Madhya Pradesh	Dhar Indore	Gyandoot Citizen services
10.	Sikkim	East District	CSCs

#### **e-District**

<b>S. No.</b>	<b>State</b>	<b>Districts</b>	<b>Projects</b>
1.	Gujarat	Rajkot	e-district
2.	Kerala	Palakkad	e-district
3.	Punjab	Jalandhar	e-district
4.	Tamil Nadu	Krishnagiri Thiruvarur	e-district
5.	West Bengal	Bardhaman	e-district

#### **Land Records Registration**

<b>S. No.</b>	<b>State</b>	<b>District</b>	<b>Project</b>
1.	Andhra Pradesh	Rangareddy	CARD
2.	Gujarat	Junagarh	e-Dhara
3.	Haryana	Sirsa	HALRIS
4.	Himachal Pradesh	Shimla	Himbhoomi
5.	Karnataka	Mangalore	Bhoomi
6.	Maharashtra	Sangli	SARITA
7.	Punjab	Ludhiana	e-Patwari
8.	Tamil Nadu	Tiruchirapalli	STAR
9.	West Bengal	Murshidabad	Bhuchitra

## Case Studies

Apart from broad categorization of the projects, some have been presented as case studies in the concluding chapters. They denote either the failure or success of e-governance initiatives in India.

<b>S.No</b>	<b>State</b>	<b>District</b>	<b>Project</b>
1.	Kerala	Malappuram	Akshaya
2.	Maharashtra	Kolhapur	Warana
3.	Madhya Pradesh	Dhar	Gyandoot
4.	Tamil Nadu	Thiruvarur	e-district

:

## Chapter-IV

### Citizen Services Projects Assessment

As mentioned in the previous chapter on study methodology, a total of 27 projects were selected in 13 states spread across the country. For convenience of analysis and better understanding, these were further categorized as citizen services, land records digitalization and registration of property and e-district. Apart from this three way classification, there is another distinct project which is the Taschiling Secretariat Online (Sikkim State Wide Area Network).

A majority of the e-governance initiatives in India have been in the form providing online citizen services, beginning with e-Seva in Andhra Pradesh, BangaloreOne in Karnataka and FRIENDS in Kerala. These initiatives were later replicated in other states like Sugam in Himachal Pradesh. The Common Service Centres were the major e-governance initiative in the North-East as well as other states of the country, including Nayi Disha (Ekal Seva Kendra) in Haryana. In this classification, there is also urban e-governance initiative like the e-city projects in Surat and Ahmedabad in Gujarat, besides online municipal corporation services in Indore.

The following table shows the list of projects covered under the category of citizen services along with the sampling size:

**Table No. 4.1**

S. No.	State	Districts	Projects	Officials	Citizens
1.	Andhra Pradesh	Hyderabad West Godavari	e-Seva Rural e-Seva	39 12	78 64
2.	Arunachal Pradesh	Papum Pare Lower Subansiri	CSCs	08 07	48 39
3.	Kerala	Malappuram Kasargod	Akshaya & FRIENDS	69	132
4.	Gujarat	Surat Ahmedabad	e-city services	18 16	57 82
5.	Haryana	Rohtak	Nayi Disha	21	96
6.	Himachal Pradesh	Solan	Citizen Services	34	110
7.	Karnataka	Bangalore	BangaloreOne	42	108
8.	Maharashtra	Kolhapur	Warana	22	86
9.	Madhya Pradesh	Indore	Citizen services	43	152
10.	Sikkim	East District	CSCs	12	67
<b>Total</b>	<b>10 states</b>	<b>14</b>	<b>12</b>	<b>343</b>	<b>1119</b>



## **Citizen Services Projects Assessment Methodology**

To assess the institutional capacities and performance of e-governance projects and their impact on citizens, benchmarks were set from two perspectives – institutional and citizen. Though there is a broad explanation in the chapter on methodology, a brief insight into the major variables of the study is being given below.

From the Institutional Perspective, the following benchmarks were set for the study and also include the sub-themes based on which the project were ranked on the scale of 0 to 10:

1. **Organizational Transformation** – Automation of work processes, adaptation of information technology, work culture, organizational networks, e-governance project goals
2. **IT skills of employees** – Institutional capacities and internal efficiency
3. **Knowledge of e-governance** – Awareness of technology in governance
4. **Application of IT skills in work processes** – Business processes restructuring, web applications and web content
5. **Technology innovation and adaptation** – whether IT department exists in organization/project, technical staff, adaptation of IT by government staff
6. **Training** – Human resources management, organizational learning, knowledge of computer architecture and automation environment
7. **Dealing with interactive models**: Online service delivery mechanisms, front-end and back-end integration, processing applications online and updating application status
8. **Improved quality of services** – More number of services, token system management, number of counters, one-stop shop for payment of utility bills, help desk, information kiosk on services and status of applications, customer service benefits
9. **Financial sustainability of the project** – Funds from centre/state governments, funds from local bodies, collection of user charges, project management, more transactions, cost benefits and self-sustainable
10. **Leadership, ownership of and contribution to e-governance** – Political and bureaucratic leadership, personal initiatives, successful implementation, project tenure, outcomes achieved, expanding the scope and replication of the project and its services

## **Citizen Perspective**

1. **Availability of e-governance services (outreach)** – Popularity of the project, points of access (geographical closeness), number of services available, horizontal and vertical penetration of various services (the last mile connectivity)
2. **Simplified transactions** – No paper work, single window system, automation of transactions, online transactions, electronic payment modes
3. **Decision-making processes** – Quick process of applications, time-frame for disposal of cases
4. **Business processes re-engineering** – Minimizing citizen contact with administrative units, automation, front-end services, single window, public-private participation, project evaluation
5. **Information outflow** – Online response, SMS, online data base, update of project websites, information kiosks, public information officer
6. **Cost and time considerations** – User charges, time-frame for a transaction, quick processing of applications, travel costs, frequency of visits
7. **Quality of services** – Improved quality and inclusion of more services
8. **Effective delivery mechanisms** (online connectivity, interactive 2.0 models, front office)
9. **Transparency** – in availing services, and process of applications
10. **Accountability and trust in government** – Accountability of officials on service delivery issues and citizens' satisfaction with e-governance services, and trust in administrative and governance processes

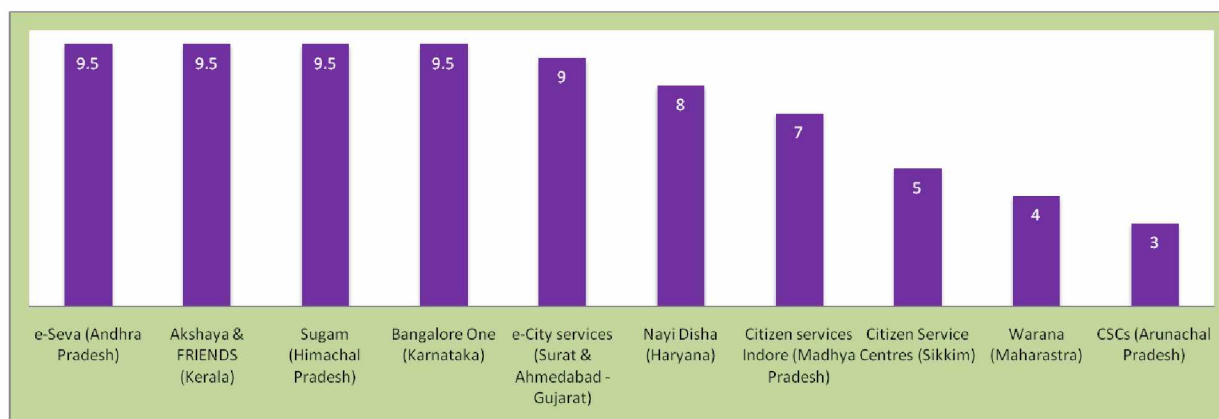
Based on the above benchmarks and the two perspectives, the citizen services projects have been analyzed and assessed in the following pages. The graphs are explained in two categories for clarity of purpose. The graph with CSI number indicates Citizen Services from Institutional perspective and those with CSC indicates Citizen Services from a Citizen perspective.

## Results of the Survey of Citizen Services Projects

### Institutional Perspective

Graph No. CSI 1

### Organizational Transformation



As outlined in the methodology part, organizational transformation for e-governance requires certain institutional changes that include automation of work processes, adaptation of information technology, change in work culture, organizational networks, and innovative IT architecture with clearly laid down project goals and objectives.

The above illustrates that the leader projects that set out as models to other citizen service projects include e-Seva, Akshaya & FRIENDS, BangaloreOne besides Sugam project in Himachal Pradesh score very high at 9.5 on a scale of 0-10. They are followed by e-City service projects in Surat and Ahmedabad in Gujarat at 9, Nayi Disha in Haryana at 8. These are fledging projects with all infrastructural facilities and are expanding in their respective states.

Though the common service centres have been touted as the last mile penetration in terms of e-governance, they have not built on their initial infrastructure. The CSCs in Sikkim and Arunachal Pradesh are virtually dysfunctional with three or four computers connected by BSNL broadband and one or two personnel (mostly employed by technology vendors) taking care of the centre. Warana Wired Village project or simply Warana was supposed to be a model for rural and cooperative e-governance with points of access to every 2-3 villages. It's a cooperative initiative, which has failed to deliver e-governance services to the masses. It is just an intranet project

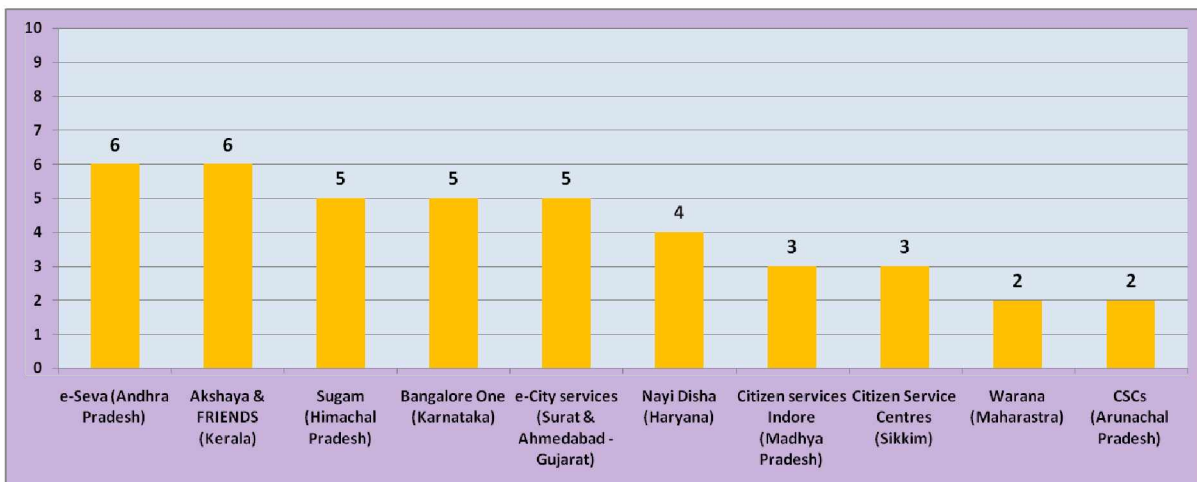
which gives information to sugarcane farmers of the region on prices, cropping pattern, availability of pesticides and insecticides.



A typical Akshaya Centre in Manjeri, Malappuram District, Kerala

Graph No. CSI 2

Computer Literacy of Employees



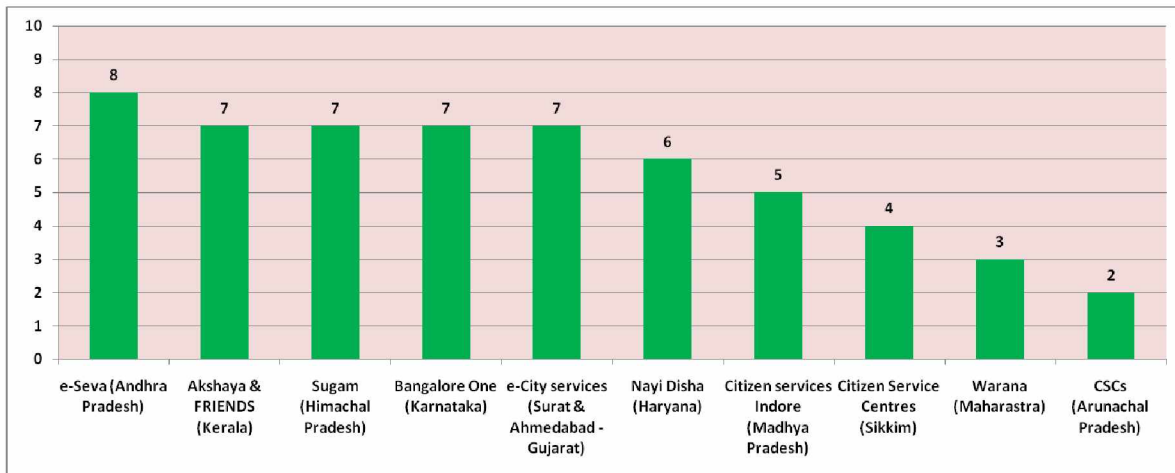
It is a common knowledge that the levels of computer education in India are dismally low compared to other developing countries (give figures). This reality reflects in the levels of computer literacy among government officials who administer e-governance projects. These include people at the middle and higher levels of the departments and agencies and not

necessarily operate at the front end (actual service delivery). The levels of computer literacy is more at the operator level as they are well trained in computer and web operations.

Computer literacy as per the project study benchmark includes basic education, technical qualifications, and computer literate. On this front, the above graph places e-Seva and Akshaya at 6 out of 10, which is above average, as they started quite early with all the requirements for their respective projects. That included giving special training in using computers to deliver services. Akshaya, in fact, is an e-literacy project in its pilot phase.

They are closely followed by followed by Sugam, BangaloreOne, and e-city services in Surat and Ahmedabad at 5 out of 10. Nayi Disha in Haryana scores at 4 which is below average. Warana and CSCs in Arunachal Pradesh are at the bottom scoring only 2 points out of 10.

**Graph No. CSI 3 IT skills of Employees**



As the previous graph illustrated the overall levels of computer literacy, the present one can come quite as a surprise. Though many were not computer literate basically, they were trained in subsequent phases in the use of computers and other e-governance applications. IT skills of employees here include basic understanding of IT, training received and application of IT knowledge in the work processes. This, operationally, reflects internal efficiency and institutional capacity.

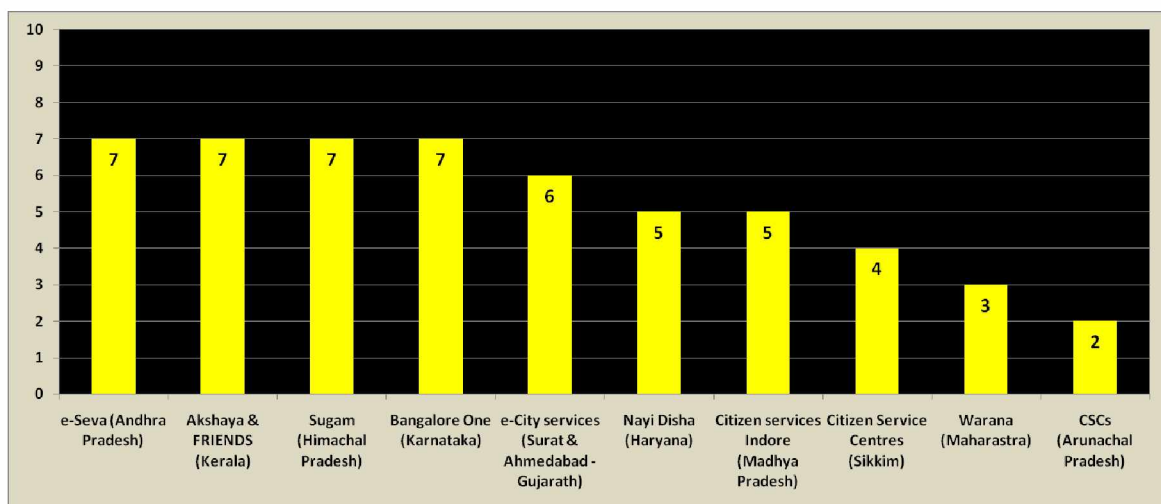
The above graph indicates high levels of IT skills among employees working in e-Seva, Akshaya & FRIENDS, Sugam, BangaloreOne and e-City services in Gujarat followed by Nayi Disha. City corporation services in Indore have average levels of IT skills. CSCs in Sikkim have moderate levels of IT skills whereas those in Arunachal Pradesh have a dismal record.



Citizens availing services at an Akshaya Centre in Malappuram, Kerala

**Graph No. CSI 4**

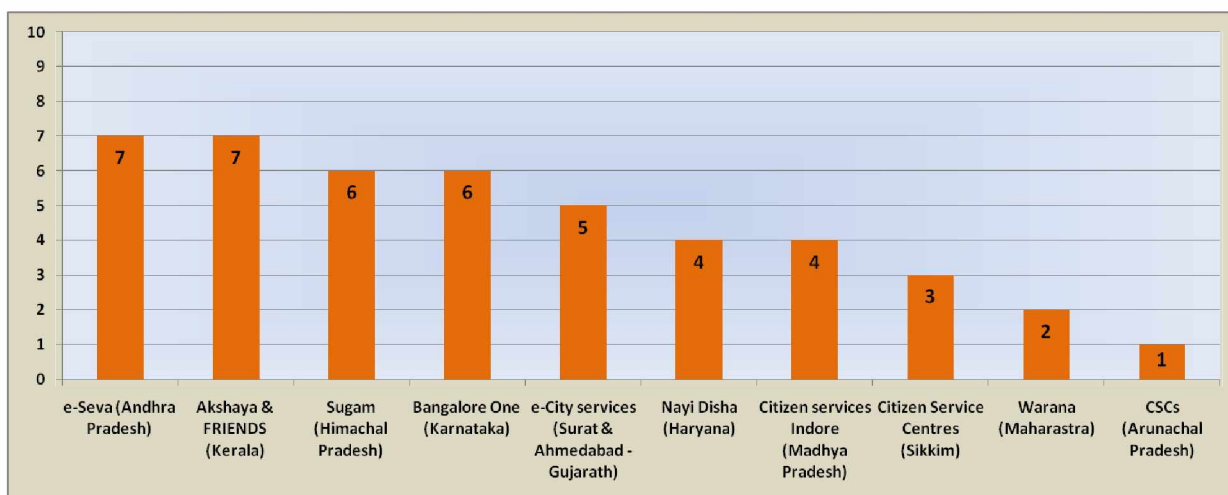
**Awareness of technology in governance**



A critical component of e-governance projects is the IT architecture for delivering online services to citizens at the front-end offices. It is not necessary that officials working in e-governance project or a particular department/agency should be in the know of all things related to this IT architecture. As per the study benchmark, awareness of technology in governance involve knowledge about front and back-end processes, computer architecture, IT networking, database management, online processing of applications, cyber security and GIS and GPS.

The above graph illustrates that though people are well versed in IT skills, they do not have comprehensive knowledge of the use of technology in governance processes. On this front e-Seva, Akshaya & FRIENDS, Sugam, BangaloreOne have officials with above average knowledge of technology use in government. They are followed by the officials of e-city, Nayi Disha and Indore Municipal Corporation. People working with Warana in Maharashtra and CSC project in Arunachal Pradesh have very less knowledge of technology in government.

**Graph No. CSI 5                      Application of IT skills in work processes**



Application of IT skills of employees in work processes signifies complete automation of various government departments/agencies. This is publicly reflected in e-governance projects as business processes reengineering, whereas at the department/agency level, it does not. This core component of e-governance requires a government official to handle IT tools, web applications, and online content on his own without the support of other staff. It also involves downloading and uploading of documents and data, generating digital certificates and digital authentication.

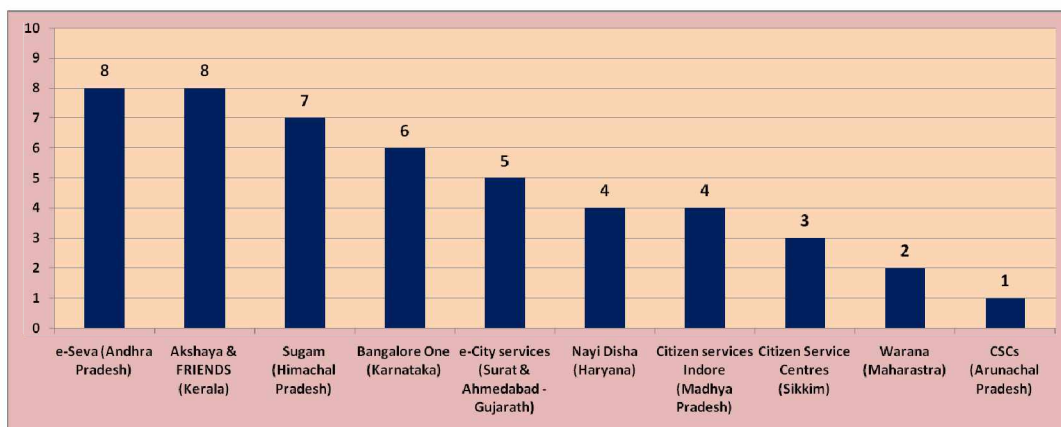
The above graph indicates that staff working with e-Seva and FRIENDS are applying IT skills more than average at 7 on a scale of 0 to 10. They are followed by Sugam, BangaloreOne and e-City project officials in Gujarat. Nayi Disha and Indore Corporation have below average application of IT skills. CSCs in Arunachal Pradesh have very minimal application of IT skills and fare lower than those in Sikkim.



Citizens availing services at a Sugam Centre in Shimla, Himachal Pradesh

**Graph No. CSI 6**

**Technology innovation and adoption**



Technology innovation and the adoption of that innovation turns around the capacity of government departments/agencies at all levels to the next of e-governance, which is e-

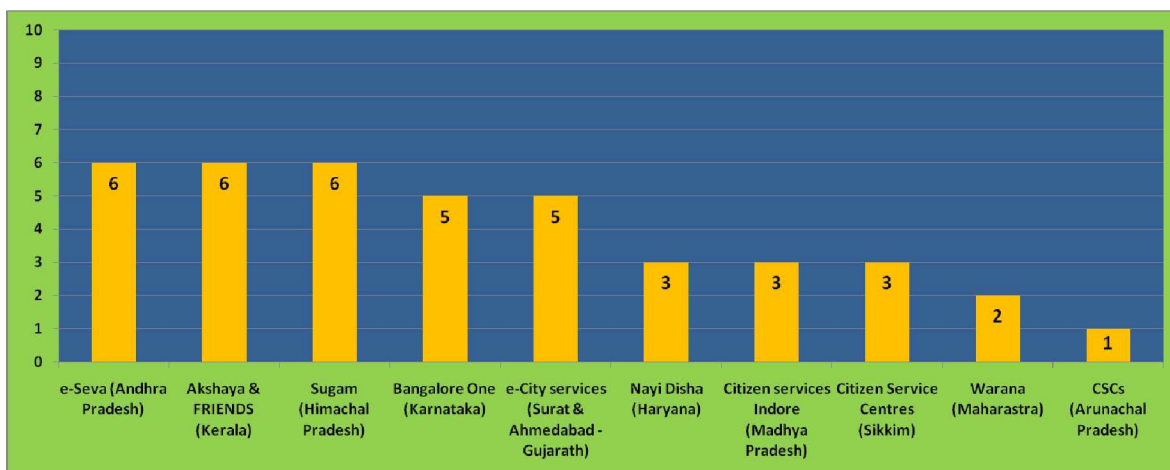


government. Here, the major issue is whether the government department or an e-governance project has an IT department of its own. Also, whether it has technical personnel among them, including software developers and managers of databases. It involved adaptation of new ICT technology innovations by the whole of government staff.

On this count, the above graph rates e-Seva and Akshaya & FRIENDS very high at 8 out of 10 followed by Sugam at 7 and BangaloreOne at 6. The e-City projects in Surat and Ahmedabad have an IT department of their own and are progressing at a good pace on the technology front. Nayi Disha project and Indore Municipal Corporation are below average on this front with CSCs in Arunachal Pradesh are placed at the bottom at 1.

**Graph No. CSI 7**

**Training**

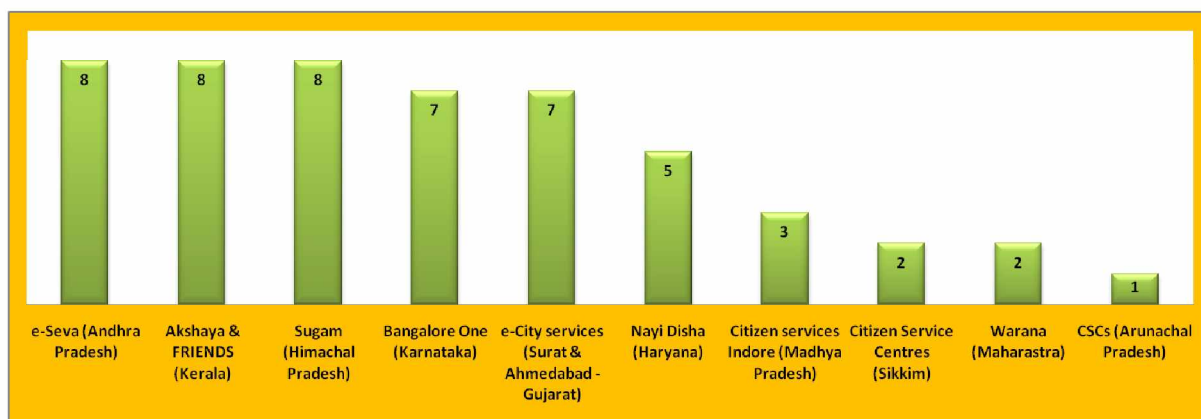


Training and capacity building are a continuous process in interactive organizations of government at all levels. This includes human resources development, education, skills development, orientation and organizational learning. When it comes to implementing e-governance these training requirements are in the fields of knowledge about computer architecture and automation environment, digital processing, database management, systems security and virus protection.

The above graph illustrates that the training for employees of e-Seva, Akshaya and Sugam is above average at 6 on a scale of 0-10. They are followed by the staff of Bangalore One and e-

City projects in Surat and Ahmedabad of Gujarat. The training needs of officials working with Nayi Disha, Indore Corporation and CSCs of Sikkim are being met, but not sufficiently. The case of Warana and CSCs of Arunachal Pradesh is not that inspiring.

**Graph No. CSI 8 Working with interactive models**



Employees' working with interactive models is at the heart of online government services. This applies to employees at all levels of government/administration. This component involves online service delivery mechanisms, front-end and back-end integration, processing applications online and updating application status. The web has to be flexible to allow the citizens to file their complaints, apply for various permissions or pay utility bills without visiting the designated citizen service centres. This 2.0 version of e-governance can be further upgraded to 3.0 version with the 3G technology.

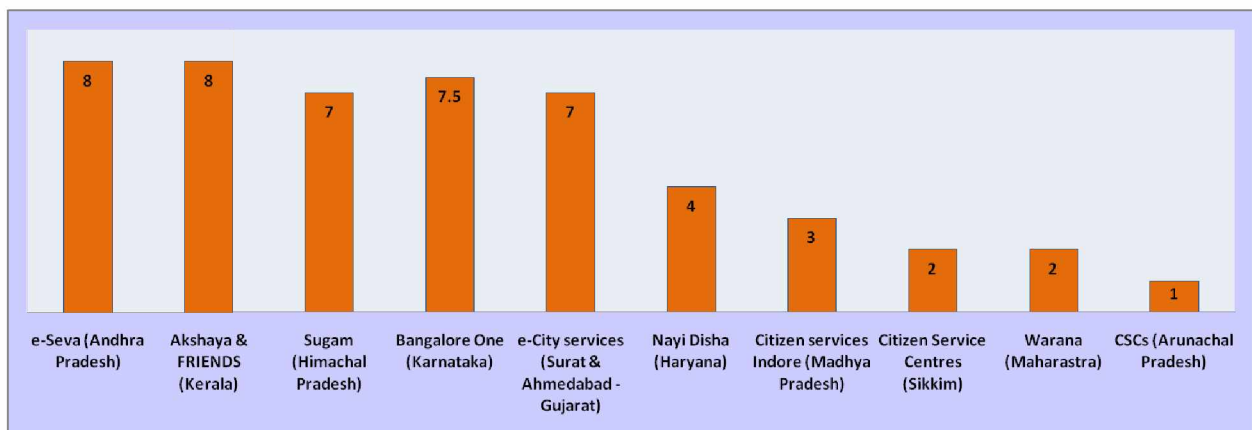
The above illustration shows that interactive models and the employees working with them are at a high level of perfection in the case of e-Seva, Akshaya and Sugam followed by BangaloreOne and e-City Services in Gujarat. Nayi Disha is fledging and is yet to go totally online with regard to payments. Citizen services in Indore are improving by the day. Online services are limited to browsing the Internet at the CSCs in Sikkim. In Arunachal Pradesh, there is a problem of BSNL broadband connectivity due to its harsh mountainous terrain.



A bustling e-City Service Centre in Surat, Gujarat

Graph No. CSI 9

Improved quality of e-services



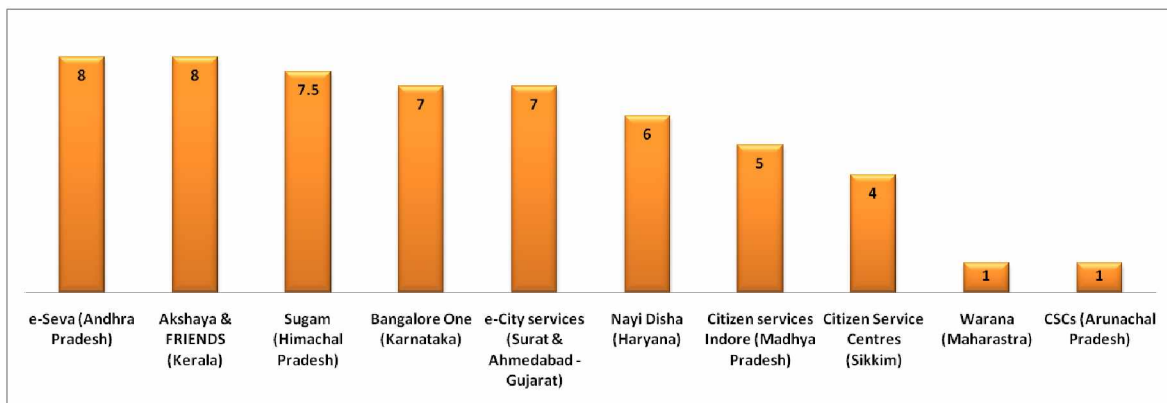
The ultimate objective of e-governance projects providing online services to citizens is to constantly improve and expand the basket of services and products. The services and products can include e-ticketing, e-banking, e-insurance, e-tourism, e-accommodation, integrating with departments/agencies both horizontally and vertically, putting in place a comprehensive common service portal involving government, citizens and businesses. E-Commerce can also be a component of the portal.

Improved quality of service at the citizen centres include perfect token system management, more number of counters, one-stop shop for payment of utility bills, help desk, information kiosk on services and status of applications. There should be incentives so that more number of citizens are encouraged to use online services. Customer service benefits have to be improved.

The above graph shows that though projects like e-Seva, Akshaya & FRIENDS, Sugam and BangaloreOne are offering maximum number of services, they are unable to reach the saturation level. E-City services are offering all the municipal corporation services at their counters spread across the various localities of Surat and Ahmedabad. Nayi Disha in Haryana and city services in Indore are fledging. Warana and CSCs in Sikkim and Arunachal Pradesh have failed to expand their services and outreach.

**Graph No. CSI 10**

**Financial sustainability of the project**

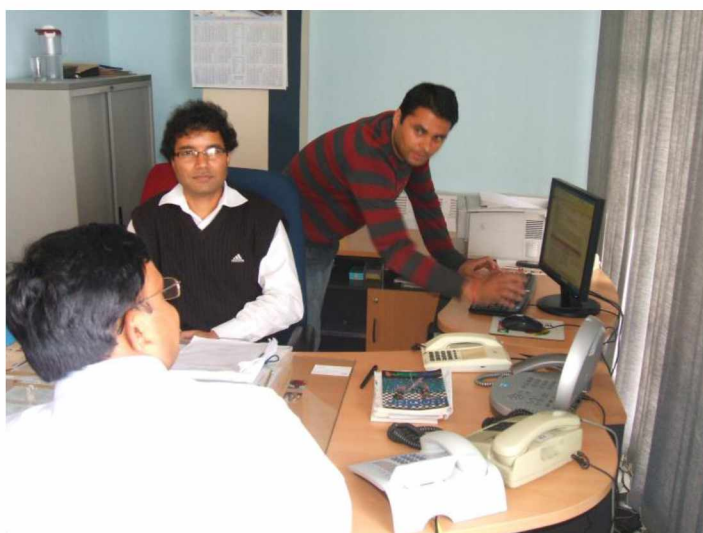


For e-governance projects to survive in the long run, they should attain a semblance of financial self-sustenance. It is also a fact that most of the projects are still dependent on the funds from the Centre, State Governments and Local Governments in urban and rural areas for project management and maintenance besides payment of salaries to private computer operators and technical support staff.

Ideally, financial self-sustenance can be achieved through collection of service charges from participating departments/agencies, private firms, outsourcing project technical management to private technology vendors. The project service centres should also witness increased number of

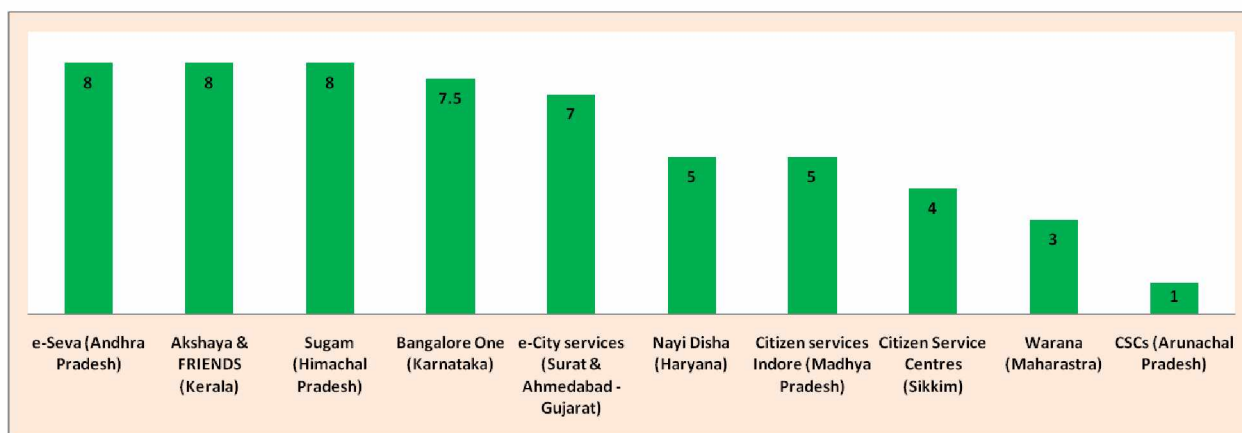
transactions so that they can maximize the service charges they collect from participating departments/agencies.

Most of the citizen service projects have a sound financial record with e-Seva, Akshaya & FRIENDS, Sugam, BangaloreOne, and e-city services leading the pack. It also indicates that fledging projects like Nayi Disha and Indore Municipal Corporation services can have a relatively good financial record for future sustenance. The case of CSCs in Sikkim is not depressing either as they generate a monthly income of Rs. 7 to 10,000 from providing services like browsing, training, downloading of government documents, etc.



Himachal Pradesh State Informatics Officer and Senior Technical Director Mr. Rajesh Bahadur interacting with the research team at the NIC Office, Himachal Pradesh Unit, Shimla

**Graph No. CSI 11 Leadership and contribution to e-governance**



The real success of an electronic service project that specializes in citizen services lies in its leadership and contribution to e-governance as a whole, particularly its outreach to the last mile. This includes services at the neighbourhood level for citizens even in a rural area. Leadership is all about political and bureaucratic commitment to the success and scaling up of the project. It even includes personal initiative at the top level, support irrespective of political affiliation, successful implementation showing the maturity of the project with well definable achievements. The scope of the project has to be expanded tremendously so that it can serve as a replicable model in other parts of the country.

On this count, e-Seva, Akshaya & FRIENDS, Sugam and to a large extent BangaloreOne are project that can be successfully replicated in states where such programmes do not exist. The impact of Akshaya & FRIENDS combination is tremendous after e-Seva. The combination of projects now covers citizens from state to district to panchayat level with access points at the last mile. E-city projects of Surat and Ahmedabad can be replicated in the entire metropolitan and major cities of the country as part of overall efforts to promote urban e-governance as envisaged in the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). Nayi Disha model can be up-scaled to panchayat level with inclusion of more citizen services. CSCs of the North-East need to evolve a Village Level Entrepreneurship model to re-energize the centres offering government services too. Currently, there is no such arrangement.



Citizens queue up at the Indore city centre, Madhya Pradesh, to present their applications on a grievance day

## **Citizens' Perspective on e-Governance Institutional Capacities and Performance**

As discussed earlier, e-governance projects, in this case here, those offering online citizen services, are being rated based on two major perspectives. The earlier one was from an institutional perspective, now it is from a citizens' perception that the projects are being assessed for their capacities and performance.

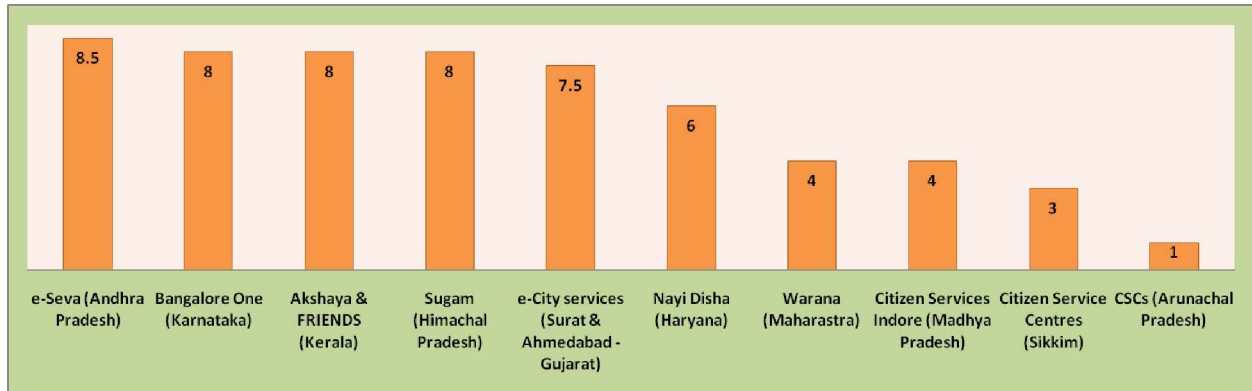
There are 10 major benchmarks, along with associated sub-variables, based on which the projects have been evaluated. The following are the broad parameters:

- 1. Availability of e-governance services (outreach)**
- 2. Simplified transactions**
- 3. Decision-making processes**
- 4. Business processes re-engineering**
- 5. Information outflow**
- 6. Cost and time considerations**
- 7. Quality of services**
- 8. Effective delivery mechanisms**
- 9. Transparency**
- 10. Accountability and trust in government**

The sample size has been at the beginning of this chapter and the following analysis reflects the overall perception of citizens on the functioning of citizen services projects on a scale of 0 to 10.

**Graph No. CSC 1**

**Availability of electronic services**



Generally, e-governance projects, particularly those offering citizen services, are taken into consideration by the common masses based on the availability of electronic services, whether online or at designated centres.

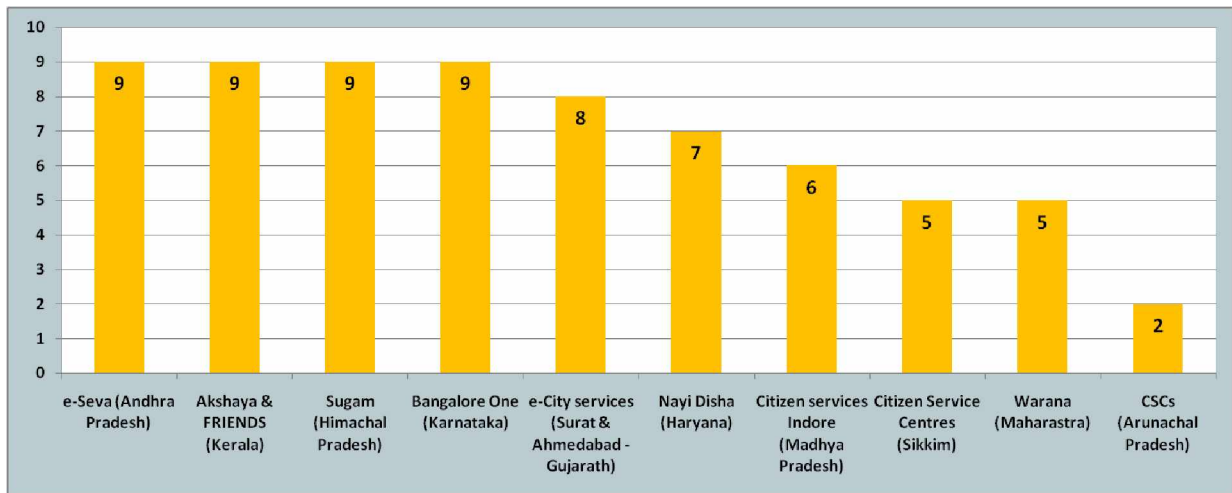
The critical issue here is the popularity of the project, availability of points of access (geographical closeness), the nature and number of services being offered and the horizontal and vertical integration of government departments/agencies that offer their services online.

e-Seva has been hailed as the first successful e-governance projects that offers citizen services, both online and at designated centres. Apart from this, citizens can pay their utility bills at franchise centres in the residential colonies/areas. For its vast penetration and outreach up to block level, it has been rated at first place with 8.5 points out of 10. However, the fact remains that rural e-Seva centres are not performing on par with those in urban areas. Standing very close to e-Seva is the BangaloreOne project which has the same goals and objectives as that of the earlier. Akshaya with its integration with the FRIENDS project and Sugam in Himachal Pradesh also are doing very well offering diverse citizen services. The e-City Services in Surat and Ahmedabad in Gujarat come next for their outreach and popularity among the urban dwellers. Nayi Disha in Haryana offering services up to block level stands next and is above average in terms of availability of services.



**Graph No. CSC 2**

**Simplified Transactions**

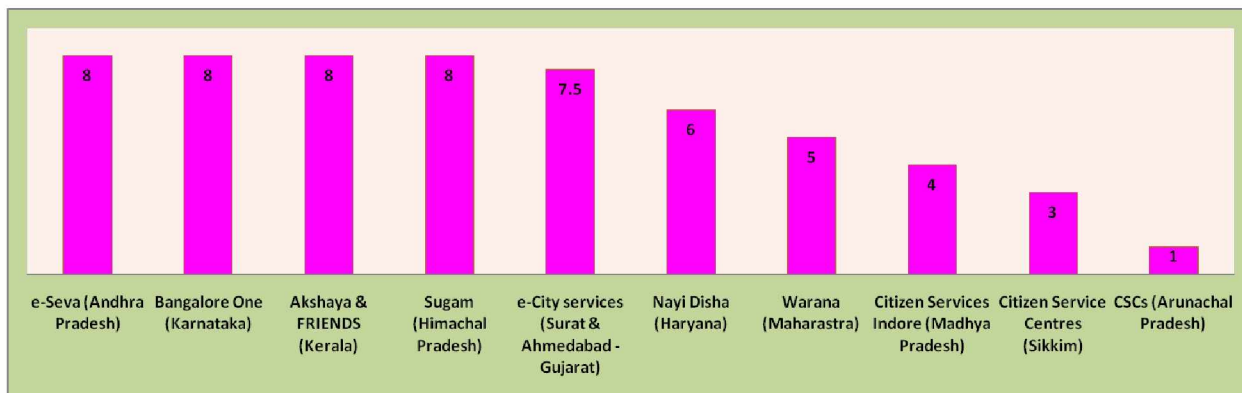


Citizen services through e-governance are mostly single window offerings. They do not involve huge paper work, except generation of payment bills. There is a complete automation of transactions, some even online and electronic payment modes. Therefore, most of them have simplified the nature of transactions between citizens and various departments of the government. For example, one does not require to have a demand bill from departments like electricity, water supply, BSNL, property tax, commercial tax, etc. Based on the customer number, one can know the amount to be paid to a particular agency and remit it, online or at the designated service centres. All kinds of bills can be cleared at the designated centre without moving to various places. Previously, it would require half a day on working days to clear utility bills of each individual department.

The above graph tells us that e-Seva, Akshaya & FRIENDS, BangaloreOne and Sugam are comparatively at equal length for their simplified transactions followed by e-city services in Gujarat and the citizen service centres of Nayi Disha in Haryana and Indore Municipal Corporation in Madhya Pradesh. Warana and Common Service Centres in Sikkim also have a simplified model of transactions, but they do not offer many of the government services. Only birth, domicile and caste/tribe certificates are being offered at the CSCs. Utility bills are still being paid to each individual department. In Arunachal Pradesh CSCs are active only at the

district and divisional level, but do not have online facility on account of poor broadband connectivity.

**Graph No. CSC 3 Decision-making process**



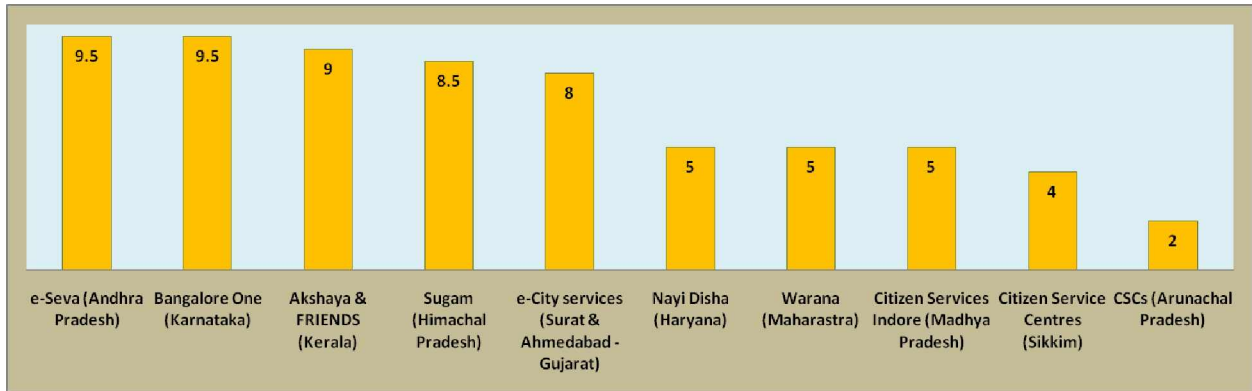
Public grievance redress on a faster note indicates the levels of decision-making of a government department or agency. The process of e-governance is meant to achieve this particular goal for the government at all levels. Online booking of public grievances, applications for permissions (commercial and residential), tax queries, demand bills and other complaints have to be cleared in a given time-frame. The time-frame for disposal of cases/applications is clearly mentioned in the Citizen Charters of various government departments or agencies. E-governance process helps achieve the goals and objectives of Citizen Charters.

From the above graph, it is clear that the leader e-governance projects like e-Seva, BangaloreOne, Akshaya & FRIENDS and Sugam score highly, but the bureaucratic process of clearing some applications still takes days together. For example, police clearance certificates for passports, birth certificates, caste certificates, domicile certificates and property tax clarifications take more than a week to get cleared.

The e-city projects in Surat and Ahmedabad come close to other major service providers in terms of quick disposal of cases related to corporation payments and commercial licences. Nayi Disha centres are in the mid-way of achieving the goal of quick decision-making. Of the remaining

projects, the Indore municipal corporation has successfully transformed itself from traditional functioning to going online.

**Graph No. CSC 4 Business Process Re-engineering**



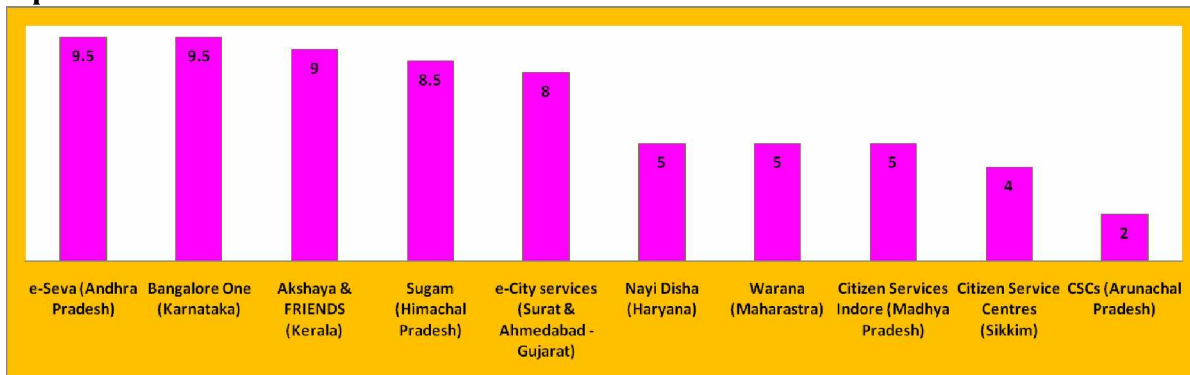
Business process re-engineering is the pre-requisite for e-governance. It is the complete automation of government departments/agencies, often resulting in public-private partnerships (PPPs) for managing front-end offices. Technology providers manage the technical aspects of front offices and the computer operators mostly drawn from open market. At the district level, front offices have been set up on par with citizen service centres. They offer mostly government services rather than payment of utility bills. The transport department is one classic example. It has put up counters at the district and divisional levels to receive applications for driving licences, transport permits and registration of new vehicles.

Citizen services centres have largely reduced citizens' physical interaction with government officials as they also receive applications for government works like passport, transport, commercial licences, permits, etc. Business process re-engineering is the hallmark of e-governance projects that offer citizen services. Project management through the PPP is done in projects like e-Seva, BangaloreOne and Sugam, but the overall supervision is by a government official.

The above graph indicates that all the major citizen services projects have achieved a high degree of business process re-engineering with full automation, front offices and back-end operations. Though front offices are in the PPP mode, the back end operations are controlled by government

departments/agencies. Apart from the citizen services projects, the e-city project in Surat and Ahmedabad have redefined the way a municipal corporation functions and offers services to citizens living under its jurisdiction. Grievance redress is also being taken up at front offices.

**Graph No. CSC 5 Information outflow**



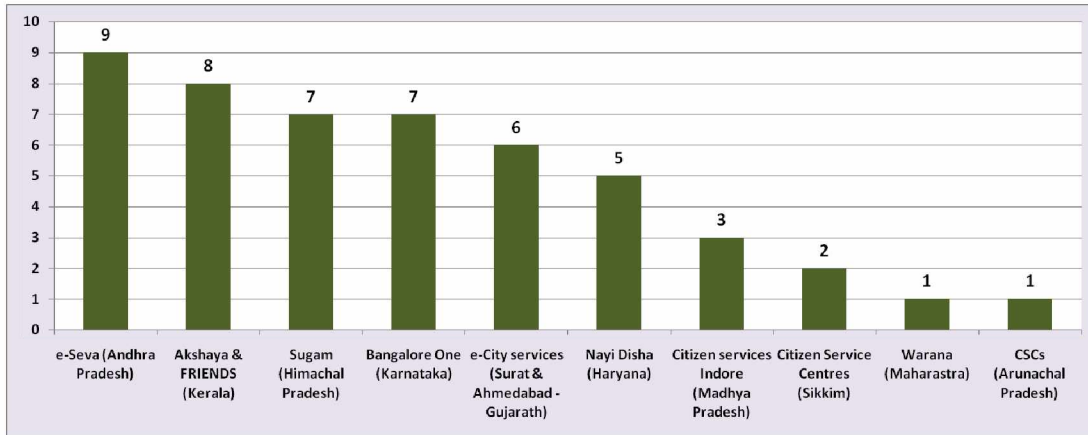
Access to government information is one of the critical issues in e-governance. Most of the government departments tend to hold back critical information that impacts various sections of society. However, the citizen services projects have changed the traditional functioning of government departments at all levels. Information regarding taxes, payments, licence fee, status of applications pertaining to permissions, layouts, electricity, telephone and water connections, etc. is being kept online. This greatly helps citizens from frequently visiting various departments for getting their work done.

Apart from providing information, constant update of project websites also helps citizens in accessing information related to various services, projects and government orders and rules and regulations. Information kiosks and help desks at citizen centres also provide the essential information to citizens.

From the above graph, it is clear that e-Seva, Akshaya, BangaloreOne, Sugam and e-city projects have most of the information outflow that a common citizen requires on various issues. In Sugam project, there is a facility for sending a SMS update on the status of application or disposal of the application from a citizen. In e-City projects, kiosks have been installed to facilitate access to information on municipal corporation services and taxes. Citizens can also view the status of

their application for layouts, commercial licences, etc. on the kiosk. Akshaya and FRIENDS projects also have a similar facility.

**Graph No. CSC 6 Cost and time considerations**



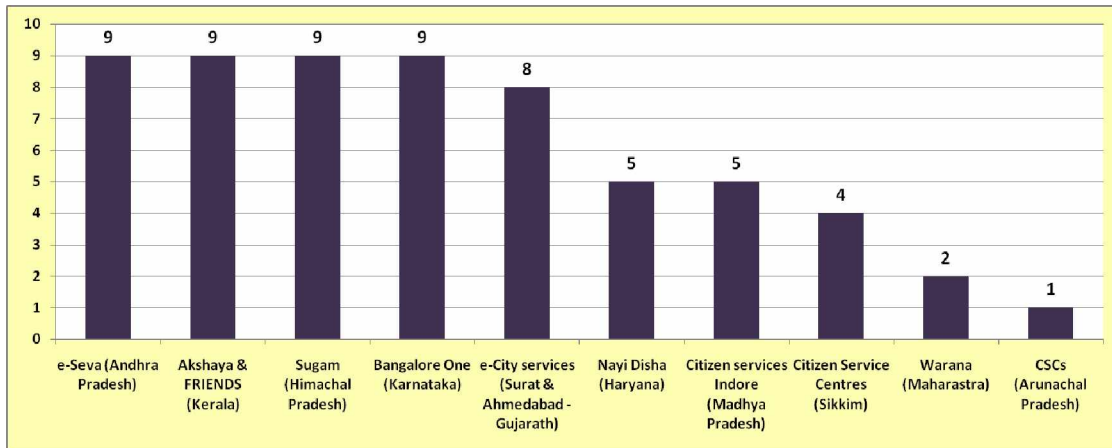
E-governance projects, particularly citizen services projects, greatly help citizens to cut down on their costs and time in availing various government services or for paying utility bills. The geographical proximity of the service centres is also crucial for availing services. The vertical penetration of e-governance projects helps even the rural citizens to pay their utility bills at the neighborhood at times flexible to them (some centres function till 9 pm as in the case of Akshaya, e-Seva and BangaloreOne centres).

Though user charges is not the objective of e-governance, some of the services require charges as in the case of registration, licences and issue of certificates. These services take time for clearance, but processing of applications is done on a faster note. Since many of the service centres are spread across cities and towns, citizens save a lot of time of travel and do not require to visit offices frequently.

The above graph illustrates that e-Seva scores high among the citizen services projects in terms of reducing travel and costs for citizens for availing services, followed by Akshaya & FRIENDS. Sugam and BangaloreOne are expanding their centres considerably. e-City project centres in Surat and Ahmedabad have front offices at corporate division levels. Nayi Disha in Haryana has to be expanded further with more offices at the division and sub-divisional level. Citizen Service

Centres in Indore are confined to district collector and municipal corporation offices. Here, every Wednesday is treated as a grievance day and people visit in big numbers to submit their applications and grievances.

**Graph No. CSC 7** **Quality of services**

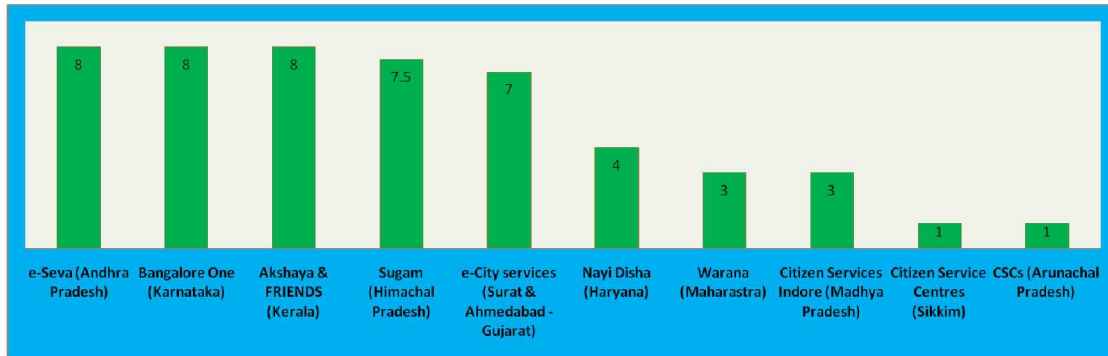


The quality of services offered under e-governance projects is an issue that weighs heavily on the minds of the people. This includes the number of services and the lesser time for completing a transaction. There has to be perfect integration of front-end and back-end operations with information kiosks in place at the service centres. Inclusion of more services, particularly from the private sector, also changes the perception of the people on e-governance. Hospitality, tourism, booking of bus and train tickets, payment of private telephone operators' bills, etc., besides latest information on government programmes can enhance the quality of electronic services.

The above graph indicates that e-Seva, Akshaya & FRIENDS, BangaloreOne, Sugam and e-City projects in Gujarat have largely improved their quality of services from a citizens' perspective. However, citizens think these projects can further expand their basket of services and products. Nayi Disha and Indore municipal corporation services have achieved a fair amount of quality, but need to improve further. Common Service Centres in Sikkim have the potential to improve their quality of services by co-opting various government departments/agencies.

**Graph No. CSC 8**

**Effective delivery mechanisms**

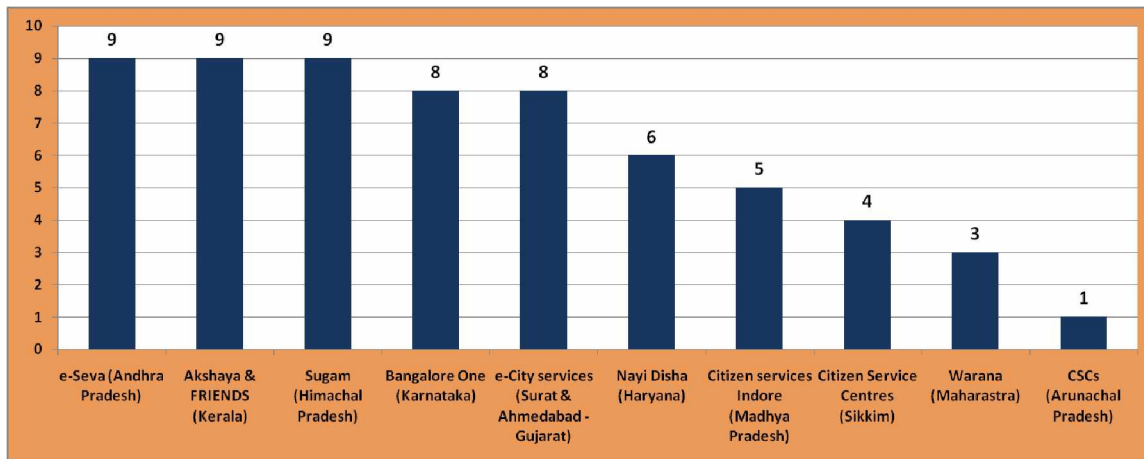


Delivery mechanisms in e-governance generally refer to front offices, project web port, online connectivity, interactive models, online submission of applications and online or electronic payment. Though some of the citizen service projects are being run entirely by the respective state governments, some are in the PPP mode like e-Seva, Akshaya and Common Service Centres in Sikkim. The franchisees do not have a complete hold over the delivery mechanisms, but merely act as collection centres for receiving utility bills payment. Most of the e-governance project that offer citizen services have well established delivery mechanisms at their core front offices, but franchise models have to be improved drastically in terms of receiving and generating official documents.

The graph above illustrates the strength of delivery mechanisms of various e-governance projects from a user perspective. e-Seva, BangaloreOne, Akshaya & FRIENDS score equally in terms of delivery mechanisms with a rating of 8 out of 10, followed closely by Sugam at 7.5 points. The e-City project also has strong delivery mechanisms. Nayi Disha is a fledging project and needs further expansion in terms of service centres. The Indore Municipal Corporation services can have more centres at various localities so that service delivery can be improved. The CSCs in the North-East do not have the mandate of delivering government schemes or services. Though they have infrastructure in place, they are yet to incorporate electronic citizen services.

**Graph No. CSC 9**

**Transparency**



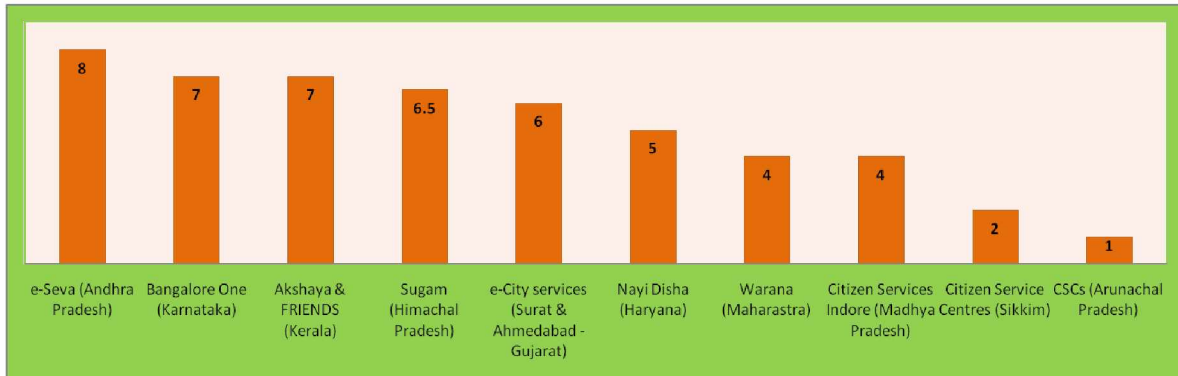
Transparency is one of the core objectives of e-governance. It generates public trust when it comes to dealing with government at all levels. Transparency in processing applications and their timely disposal, allotment of number for application status, payment clearances, receipts, financial transactions, queue and token system etc. enhances citizens trust in e-governance systems. However, some services that require clearance from higher authorities still suffer from lack of transparency. This holds back the entire trust of the citizenry on the transparency of administrative processes. This is reflected in the present study with citizens not expressing full faith in the administrative systems, including those that operate through e-governance route.

The above graph illustrates that citizens have utmost confidence on the transparency in transactions through e-Seva, Akshaya & FRIENDS and Sugam. Following close are the BangaloreOne and e-city services. Nayi Disha and citizen services of Indore corporation enjoy only average trust of the users. Common Service Centres (CSCs) in Sikkim have below the average perception of transparency among their visitors. Warana is an intranet project and the clientele is confined to sugar and milk producers. However, it does not have the image of transparency among its members.



**Graph No. CSC 10**

**Accountability and trust**



The electronic interface between government and the citizens has improved the image of government departments/agencies in terms of accountability to a large extent. In the previous traditional models of service delivery, it was not clear to the ordinary citizenry whom to approach in case there was a delay in the processing of applications. With the advent of e-governance and citizen charters, citizens have been empowered to seek information regarding their applications and their status. As discussed earlier, some of the government works require time and this defeats the purpose of quick service delivery even through the e-governance route.

From the graph above, it is clear that citizens still are confused over whom to approach in case of delay in service delivery. This is because of the presence of multiple operators, including private agencies and franchisees. Financial transactions need to have full user confidence, which develops over a period of years. In fact, government operations via the e-governance mode have to be accountable to citizens to generate trust in administration. The graph illustrates that e-Seva enjoys high confidence among its user for being accountable and trust worthy. It is followed by BangaloreOne, Akshaya and Sugam. E-City services come next to Sugam and are followed by Nayi Disha project in Haryana. Warana and citizen services in Indore have less than average confidence of being accountable among their users. The CSCs in the North-East are run by private technology vendors and are less accountable to their users.

## **Chapter-V**

### **Land Records Digitization and Property Registration Projects Assessment**

#### **Introduction**

In present days, e-Governance has become a very common word, wherever governments have harnessed information technology with a range of activities. Considering the importance of e-Governance many countries all over the world have taken up e-governance projects at all levels. Though there are success stories which enthuse e-governance architects but many of them have failed to deliver the expected results. In India, the success percentage of land records digitization has not been uniform due to political culture, geo diversity, lack of public awareness, mindset of the people, and administrative practices. Therefore, it is highly essential for one to study the key factors that contribute to the success or failure of an e-governance project.

In most states land record computerization has been limited to the issue of Record of Rights (RoR). Mutation, which is a more complex process, has been computerized in just five states – Karnataka, Tamil Nadu, Gujarat, Himachal Pradesh and Haryana. No state in India has reached an evolved stage in land record computerization which integrates the functioning of three related agencies – revenue department where land records are maintained; survey department where maps of land parcels are maintained; and registration department where deeds of sale/purchase of land are registered and maintained. In the land records computerization project, emphasis was on digitizing manual records; in property registration, emphasis was on converting the process of manual copying of registered deeds to scanning them

#### **Computerization of Land Records**

The Centrally Sponsored Scheme on Computerisation of Land Records (CLR) commenced in the financial year 1988-89 with 100% funding from the Union Rural Development Ministry as a pilot project in eight districts viz; Rangareddy (Andhra Pradesh), Sonitpur (Assam), Singhbhum (Bihar), Gandhinagar (Gujarat), Morena (Madhya Pradesh), Wardha (Maharashtra), Mayurbhanj (Orissa) and Dungarpur (Rajasthan) to remove the loopholes inherent in the manual systems of maintenance and update of Land Records besides meeting the requirements of various groups of

users. It was decided to computerize core data contained in land records, to assist planned development and make records accessible to people/planners and administrators.

Land records of the farmers have traditionally been maintained in manual registers by a junior functionary of the revenue department known as the village accountant or patwari. Two types of records were maintained: 1) Registers, which indicated the current ownership of each parcel of land, its area and cropping pattern, and 2) village maps that reflected the boundaries of each parcel. Farmers need a copy of the Record of Rights (certifying that a piece of land with specific survey numbers measuring a certain amount is owned by the named person as per the records) for many reasons like obtaining a bank loan or for availing some benefits. RoRs are issued by the village accountant upon receiving an application/ request from the owner. The total number of farm lands can vary from 15 to 20 million in a state.

In case a land transaction (sale or inheritance) takes place, the records need to be modified. The process is known as mutation. An application needs to be made by the involved parties, a public notice is issued inviting any objections and after a period of 30 days if no objections were received, the change is affected in records. All these tasks were performed manually by a revenue inspector.

In the computerized system, any one can get a copy of the RoR from a counter at the departmental offices located at the Taluka by merely providing information on survey number or the name of the owner. In the states that have computerized mutation, owners can file for a mutation of the land record. Each request is assigned a number by the computer. The number can be used to check the status of the application on a touch screen provided on a pilot basis in three of the computerised kiosks. The computer automatically generates notices, which are then handed over to the village accountant stationed in the field who is responsible for servicing the particular village. Most village accountants stationed in the field visit the central taluk office once in two to three days to pick these papers.

The process of issuing notices by village accountants to the interested parties remains the same. And as before, the revenue inspector who is stationed in the field approves changes to the land

record thirty days after the notices are served, provided that there are no objections. A significant change in the process makes it mandatory to stick to a first come-first-serve discipline. It takes a few days for the approval to reach the taluk office, where it is scanned on the day of its arrival. An inward and outward register is maintained. The updated RoR is printed and handed over to the village accountant for her record. The new owner receives a copy on demand. Taluk offices create scanned copies of the original mutation orders and notices to avoid unnecessary litigation due to claims that the notices were not served.

### **Computerization of Property Registration**

In most states offices of the sub registrars located at the taluk level provide services related to registration of deeds, which is a process of recording a copy of a deed document to give it a legal sanctity. Often, a stamp duty needs to be paid for the registration process. Issue of encumbrance certificate indicating if there are claims on the property is another important service which requires a search through a large number of registers going back in time for several years. The targeted beneficiaries include all buyers and sellers of a land or building.

A number of actors are involved in the registration process. Stamp vendors (licensed by the Registration and Stamps Department) sell stamp paper to the public at stamp counters located at the offices of the sub-registrars. Document writers have been given official recognition in several states of India through a system of licensing. Document writers prepared the maps and location sketches to describe the property, filled in various forms and assisted citizens in procuring certificates from various authorities. Registration agents are self-employed individuals and firms who, for a lump sum payment, get a document registered, covering the whole range of services.

Since the stamp duty is linked to property values, valuation procedures are vital. A system of market value guidelines was introduced in 1975, whereby the rate per unit of rural/urban lands is assessed for all villages/towns and incorporated in a register for public guidance. However, the basic value registers usually were not accessible to the public, and even if they were, it was difficult for a common citizen to read them and calculate the amount of stamp duty, transfer duty, registration fee and miscellaneous fee. All this created an impression that the valuation of property was 'flexible' and 'negotiable', prompting a host of corrupt practices and a flourishing

business of brokers and middlemen who exploit the confusion surrounding the registration process.

Tedious back-office functions are carried out such as conventional manual methods of copying, indexing and retrieving documents. These were laborious, time consuming, and prone to errors and manipulations. Also there are difficulties in preserving documents. The registers occupy a lot of physical space, usually in dusty back rooms. These records also deteriorate with age and repeated handling.

In the computerized systems, document registration and copying is completed with the aid of electronic devices like computers, scanners and CDs; and copies are preserved and retrieved with the same tools. Copies of documents registered and stored electronically, retrieved, printed and certified by the sub-registrar are received as legal documents. Photographs of the concerned parties are taken by a web camera and affixed electronically on the document. Few states have streamlined the publication of rated value in web sites.

## **Projects under evaluation**

### **1. Bhoomi**

One of the successful E-Governance Projects in 1991, Government of Karnataka initiated a project for Land Records computerization. Fund was sanctioned and Gulbarga district was selected for pilot implementation, but the project could not succeed due to poor management of the characteristics of the project. Bhoomi was taken up in 1999 and within 2 years of time, it was successfully implemented in the State, overcoming all the challenges. The Bhoomi Project is unique for Karnataka State. It can not be directly implemented in other state without sufficient customization. Land Record system is very sensitive and critical application. Land Records Procedures, Manuals and Acts are strictly followed.

### **2. e-dhara, Gujarat**

After digitizing all land records, e-Dhara Kendras (e-DK) have been setup at Taluka Mamlatdar offices to take up day to day activities of land records such as mutations and issue of Record of Rights (RoR). Workflow based software (BhuLekh Soft) has been implemented since 2004-

2005. By Integrating BhuLekh Soft with the e Gram Vishwa Gram (eGVG) project, that provides broadband connectivity through VSAT to village Panchayats, farmers can get RoR copies from the Village Panchayat itself. While Talati / Village Computer Entrepreneur (VCE) posts the request on the RoR portal, Deputy Mamlatdar, (e-DK) would process the RoR and upload it on to the Central server so that the print out is taken at the village. Since Jan 2006, RoR@Village has been operational in 2279 villages of 166 Talukas and the facility has been expanding with the availability of broadband under eGVG project. Gujarat e-dhara Pilot project was launched in Gandhinagar in 1989. Rollout to all other talukas began in 1995-96.

### **3. HimBhoomi**

HimBhoomi has been undertaken by Himachal Pradesh State Government under the Centrally Sponsored Scheme of Computerisation of Land Records. This scheme is sponsored by Ministry of Rural Development, Government of India. The HimBhoomi Computerisation of Land Records in all 110 Tehsils of HP under HimBhoomi has been implemented by Himachal Revenue Department. Deputy Commissioners of respective districts have been implementing HimBhoomi in the field. The National Informatics Centre, Himachal Pradesh through its district officers is helping in the implementing of HimBhoomi project. In addition, the Tehsil centres will be also undertaking HimRis (Himachal Registration Information System) Project wherein the deed registration of around 30 different types of deeds would also be computerized. HimBhoomi Implementation of the software began in 2003. Most of the computerized delivery centers have been operational

### **4. Bhuchitra**

Bhuchitra is the application software to manage the land records as well as map data for the state of West Bengal. Apart from creation and maintenance of land records database, this application integrates the vector digitized mouza (village) map with the land record information. The software is capable to analyze the data to generate many kinds of reports that are of great value to the Department and beyond. Bhuchitra is an upgraded version of BHUMI that was developed earlier without the features of mouza map information. The application provides plot excerpts along with the Record of Rights. The project began in April 2001 It is currently operational in all 18 districts and 341 blocks of the state covering 40782 mouzas.

## **5. e-Patwari**

Punjab e-Patwari Rollout of project began from Sangrur district in April 2005 while the statewide rollout was done over the next two years. The project has been implemented in more than 130 SRO offices until now. During the first phase that ended in October 2004, District Administrations were responsible for preparing the environment for actual implementation of project (first stage computerization and changing mindset) at 110 out of 153 registration offices.

## **6. HALRIS (Haryana Land Records Information System)**

Computerized service delivery was launched in September 2001 but not statewide at one go. There 112 delivery centers across 20 districts covering 67 tehsils and 45 sub-tehsils. Haryana Land Records Information System (HALRIS) is a complete Integrated Workflow Automation system of Land Record components. HALRIS provides a single Window Interface for Deed Writing, Registration, Mutation, Jamabandi and copy of Record of Rights (RoR). The RoR data is available on Internet website <http://jamabandi.nic.in>. HALRIS received a “Silver Icon national Award” at 8th national e-Gov Conference and “Bronze Icon national Award” at 9th national e-Gov Conference. HALRIS received Quality Certification from STQC. Haryana is one of very few states, where property registration system and Land Records System have been dynamically integrated.

## **7. CARD**

The Registration Department of the Government of Andhra Pradesh performs the functions of registration of deeds, valuation of immovable property, collection of revenue (stamp duty and registration fee), preservation of copies of documents, issuance of certified copies of documents, issue of encumbrance certificates and registration of societies, firms, marriages etc. The department has 387 Sub Registrar’s Offices (SRO) in 23 districts of Andhra Pradesh. The gross revenue earned by the department is Rs.12 billion. The manual systems in all the activities caused long delays, red-tape and corrupt practices. The Computer-Aided Administration of Registration Department (CARD) project was conceptualized to computerize all the activities and procedures of the Registration Department. A pilot was conducted at two SROs in August-September, 1997. The project was started on 4 November 1998. Presently, the project covers the whole state of Andhra Pradesh.

## **8. SARITA (Stamps & Registration Information Technology based Administration)**

SARITA is a G2C-U project with an aim to design, develop, and implement a computerized application for Registration of documents, received at each Sub-Registrar Office and provide data updation on timely basis to their respective Joint District Registrars and higher offices under the purview of Department of Registration, Pune in Maharashtra. The project runs on PPP model and covers entire state of Maharashtra covering 405 Sub Registrar Offices, 35 District offices, 8 Divisional offices with Headquarters in Pune.

## **9. STAR (Simplified and Transparent Administration of Registration)**

STAR began in February 2000. All the 558 SRO offices have been computerized now. The Department of Registration, Tamil Nadu, initiated a project to automate some of the processes of the department in select offices to make the system significantly faster and more transparent. The department envisaged a system which helps reducing work load of the department employees by minimizing monotonous and error prone work such as document copying, report generation etc. The traditional method of archiving registration records were also supposed to be done away with new storage techniques using Information Technology as the back bone. By introducing STAR, all offices in the department were to be interconnected allowing the department personnel to search and verify the records which are based in other sub registrar offices.

## **Land Records and Property Registration Projects Methodology**

### **Benchmarks**

#### **Institutional Perspective:**

1. Organizational Transformation – Automation of work processes, adaptation of information technology, work culture, organizational networks
2. Computer literacy of employees – Basic education, technical qualifications, computer literate
3. IT skills of employees – Basic understanding of IT, training received, application and update of IT knowledge
4. Awareness of technology in governance (knowledge about front and back-end processes, computer architecture, IT networking)



5. Application of IT skills in work processes – Handling IT tools, online security mechanisms, comfortable with English or local language
6. Technology innovation and adaptation – whether IT department exists in organization/project, technical staff, adaptation of IT by government staff
7. Training requirements – computer components, scanning, downloading and uploading, using digital signatures, understanding LAN, systems security, virus protection
8. Dealing with interactive models: Uploading of data, online response, processing applications online, encryption, allotting digital numbers to applicants, updating application status
9. Improved quality of services – Better co-ordination of front-end and back-end functions, token system management, number of counters, help desk, information kiosk on status of application,
10. Financial sustainability of the project – Funds from centre/state governments, collection of user charges from customers, project management, increased number of transactions
11. Leadership, ownership of and contribution to e-governance projects – Political and bureaucratic leadership, personal initiatives, employee enthusiasm and turnover, expanding the scope of project and its replication

### **Citizen Perspective**

1. Availability of land records digitization services (outreach) – Popularity of the project, points of access (geographical closeness), network integration with Registration Department
2. Simplified transactions – No paper work, automation of transactions, online registration
3. Decision-making processes – Quick process of applications, time taken for issue of digital land records and property registration
4. Business processes re-engineering – Minimizing citizen contact with administrative units, automation, kiosks, public-private participation
5. Information outflow – Timely response, status of application, online data base, update of project websites
6. Cost and time considerations – User charges, time-frame for a transaction, quick processing of applications, travel costs, number of visits to taluk office
7. Quality of services – Improved or not improved before and after digitization
8. Effective delivery mechanisms (online connectivity, interactive 2.0 models, front office)

9. Transparency – Accuracy in land records transactions, property registration, and process of applications

10. Accountability and trust in government – Corruption, bribery, middlemen, official apathy, reliable information and data, degree to which officials can be held accountable, citizens’ overall level of satisfaction with land records management and property registration

**Table No. 5.1**

**Land Records Digitization and Property Registration survey sampling**

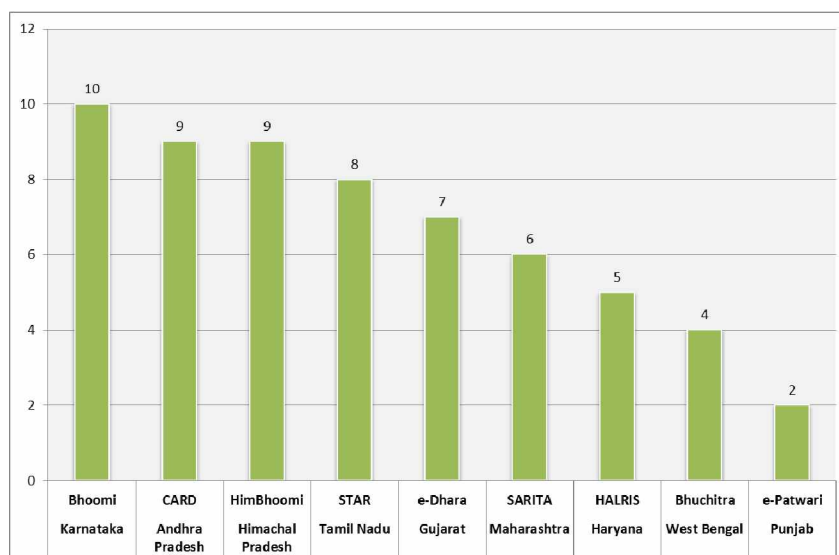
<b>S. No.</b>	<b>State</b>	<b>District</b>	<b>Project</b>	<b>Officials</b>	<b>Citizens</b>
1.	Andhra Pradesh	Rangareddy	CARD	26	102
2.	Gujarat	Junagarh	e-Dhara	12	67
3.	Haryana	Sirsa	HALRIS	18	102
4.	Himachal Pradesh	Shimla	HimBhoomi	65	98
5.	Karnataka	Mangalore	Bhoomi	69	126
6.	Maharashtra	Sangli	SARITA	31	105
7.	Punjab	Ludhiana	e-Patwari	37	136
8.	Tamil Nadu	Tiruchirapalli	STAR	19	93
9.	West Bengal	Murshidabad	Bhuchitra	48	127
<b>Total</b>	<b>9 states</b>	<b>9 districts</b>	<b>9 projects</b>	<b>325</b>	<b>956</b>

Based on the above benchmarks and the two perspectives, the land records and property registration projects have been analyzed and assessed in the following pages. The graphs are explained in two categories for clarity of purpose. The graph with LRI number indicates Land Records from Institutional perspective and those with LRC indicates Land Records from a Citizen perspective.

## Results of the Survey of Land Records and Property Registration Project

### Institutional Perspective

**Graph No. LRI 1: Organizational transformation**

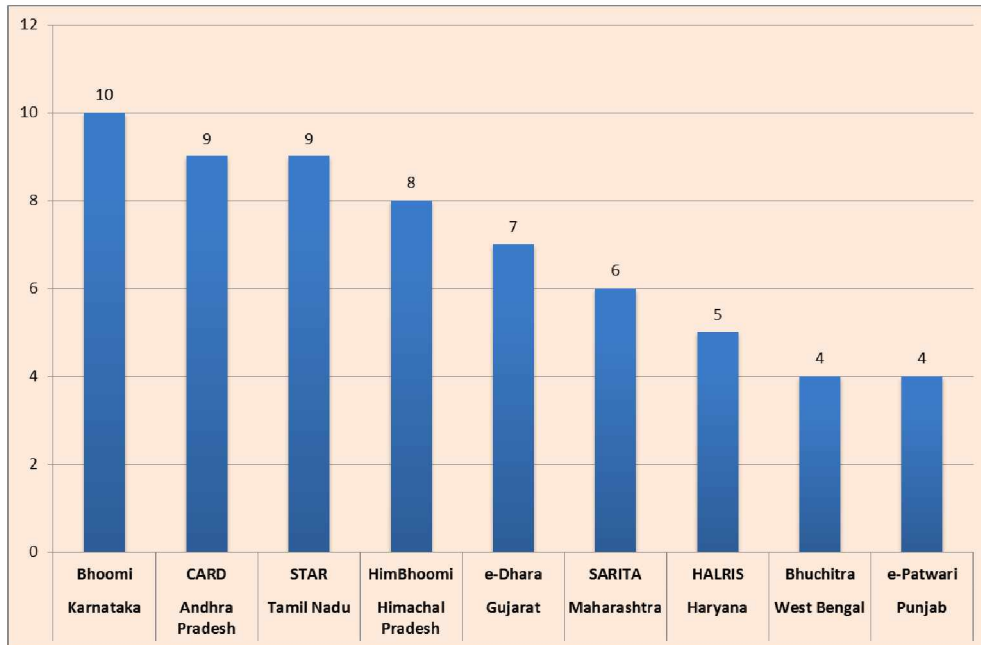


Land records management is a tedious process in India. Many state governments are yet to implement the land records digitization project supported by the Ministry of Rural Development, Government of India. Karnataka and Andhra Pradesh were the first two states to implement the land records digitization project and property registration respectively. The kind of organizational transformation required for land records management and property registration is enormous as it involves huge database, maps, digital record, property records and market value of property. In all, it requires the revenue and registration, which are huge and important departments at the state level, to go digital. However, only a few states could get a head start and many are still in the process of collecting data on land holdings.

The above graph indicates a complete transformation in the case of Bhoomi in Karnataka. CARD in Andhra Pradesh and Himbhoomi in Himachal Pradesh are in the process of achieving the goal of complete digitization. STAR in Tamil Nadu is yet to scale up as some of the sub-registrar offices (SROs) (11 in number) have not been digitized. As regards e-Dhara in Gujarat, some of the districts are in the process of collecting information on land holdings. SARITA in Maharashtra has the entire infrastructure in place, but officials need to be trained further to

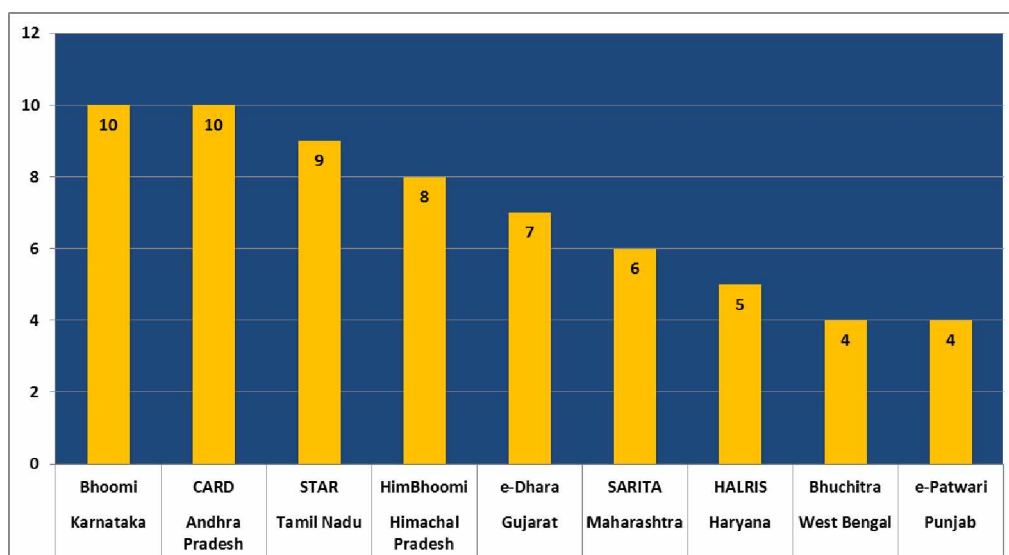
achieve criticality. HALRIS and Bhuchitra are fledging with network integration of land records and property registration while e-Patwari is yet to complete the process of collecting data on land holdings.

**Graph No. LRI 2 Computer literacy of employees**

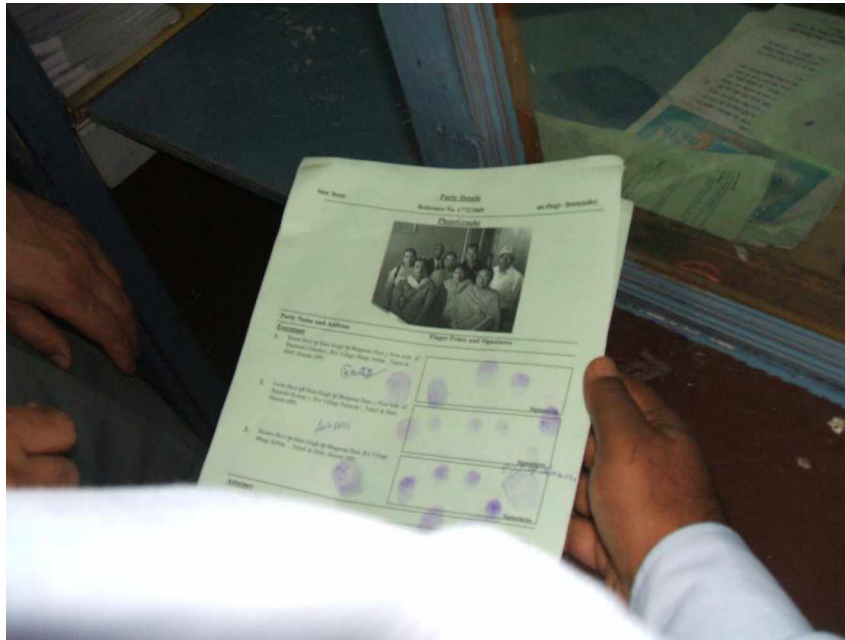


Normally, computer literacy among staff working in departments like revenue and registration will not be up to the mark as they prefer to do the work on paper. However, it came as a surprise that most of the projects have computer literate staff. The above graph shows that staff working with Bhoomi are totally computer literate and they work only on computers. CARD, STAR and HimBhoomi have also computer literate staff among them. Only in the case of Bhuchitra and e-Patwari that we note that the staff are minimally literate in computer operations.

**Graph No. LRI 2 IT skills of employees**

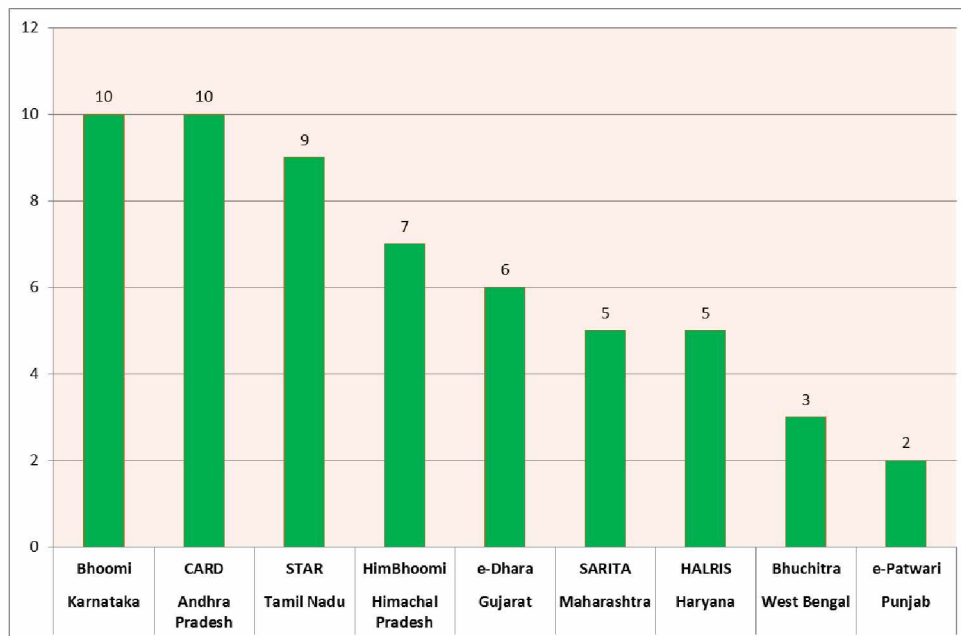


Since most of the land records and property registration projects have been computerized and most of the employees trained in computer literacy and Internet use, we see high levels of IT skills among the staff working in those two departments. The above graph indicates that all employees of Bhoomi and CARD that were surveyed during the study claimed they are deploying IT skills in the official work processes. They were followed by the staff working in STAR in Tamil Nadu. Next comes HimBhoomi and is followed by e-Dhara. SARITA and HALRIS have average levels of IT skills. Bhuchitra and e-Patwari have dismal levels of IT skills among their staff.



A digitized land record carrying the photographs and thumb impressions of the family owning a land being issued at the HimBhoomi Centre in Theog, Upper Shimla, Himachal Pradesh

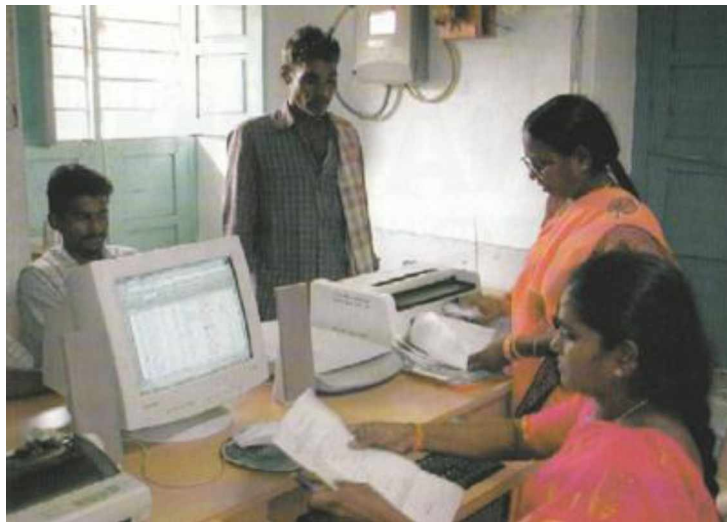
**Graph No. LRI 4 Awareness of technology in governance**



Application of IT skills of employees in work processes signifies complete automation of the land records and registration departments. This is perfectly reflected in most of the established and fledging projects under evaluation. These projects require a government official to handle IT

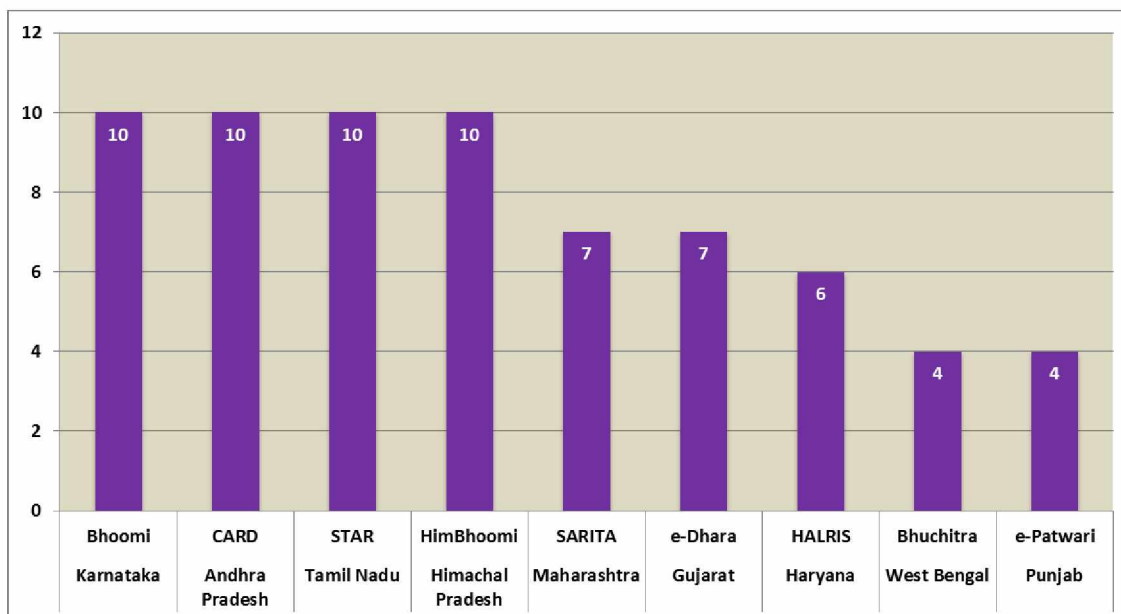
tools, web applications, and online content besides downloading and uploading of documents and data, generating digital certificates and digital authentication. Survey maps have to be scanned and a database created for integration between land records digitization and registration of property.

The graph no. LRI 4 shows that Bhoomi and Card employees are perfectly aware of the use of technology in the administrative processes of their respective departments. They are followed by STAR. HimBhoomi and e-Dhara employees have above average knowledge of technology in governance. They are followed by the staff of SARITA and HALRIS. People working in land records and registration departments in West Bengal are not comfortable with technology use in governance processes.



Farmers availing land records (Bhoomi) services at taluq office in Bantwal, Dakshina Kannada District, Karnataka

**Graph No. LRI 5 Application of IT skills in work processes**

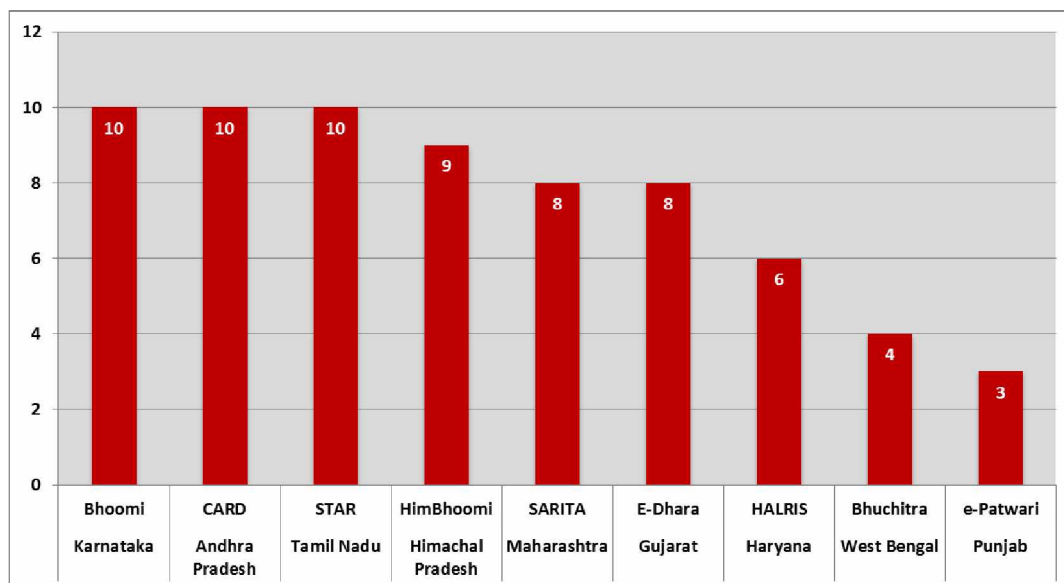


Since Land Records and Registration Departments in most of the states have gone online with complete automation at the office level, the staff has no option but to work with computer. This factor is primarily responsible for the high levels of application of IT skills in work processes, including preparation of maps and generation of electronic certificates. The Registration Departments issue digital encumbrance certificates.

The above graph illustrates that there is complete application of IT skills in the projects of Bhoomi, CARD, STAR and HimBhoomi. They are followed at a distance by the staff of SARITA and e-Dhara. Since HALRIS is a fledging programme in Haryana, officials continue to be trained and show above average performance in the application of IT skills. Bhuchitra and e-Patwari still need strong application of skills in the automated operations.



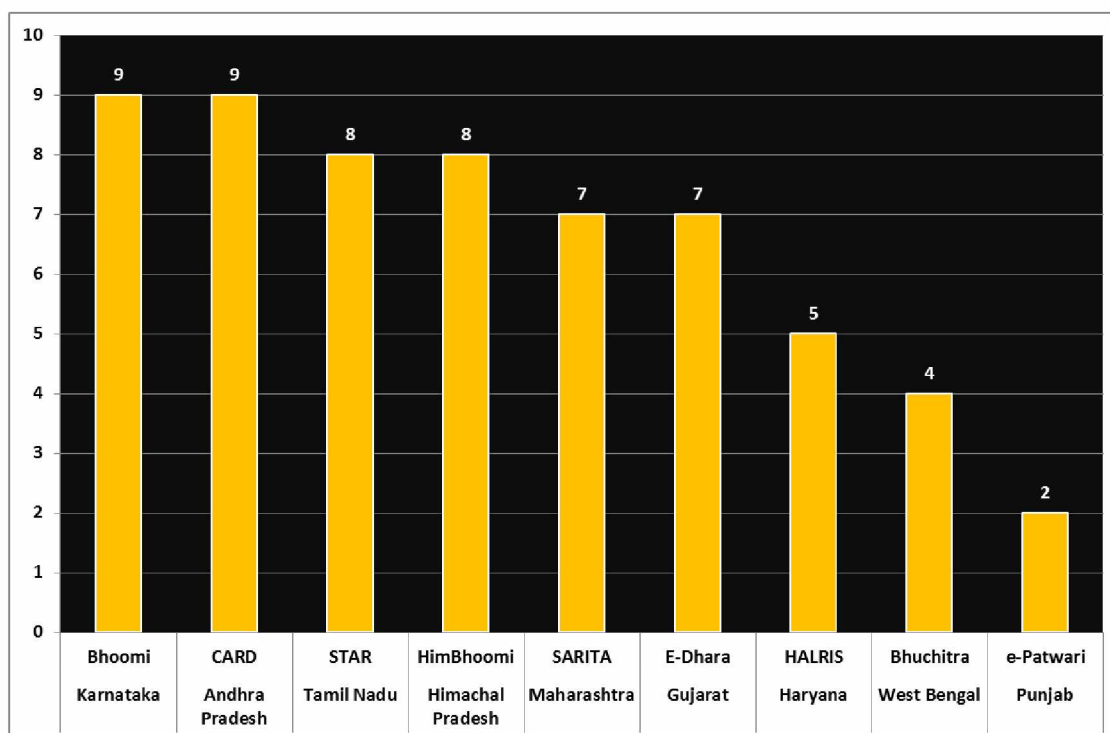
**Graph No. LRI 6 Technology innovation and adaptation**



Land records computerization followed by online registration projects required continuous update of technology, including application software, hardware like drum-scanning, new modes of data and maps transfer. That is the reason behind the top score of technology innovation and its adaptation in the above projects. They are well ahead of other e-governance projects, particularly the citizen services projects. Most of the projects have an IT department of their own, besides hiring software professionals from the open market.

The above graph tells us that Bhoomi, CARD and STAR have high levels of technology innovation of its adaptation at their department level. They are closely followed by the HimBhoomi project in Himachal Pradesh where all the records have been generated with biometric systems and a photograph of the complete family that owns a piece of land. Next come the SARITA and e-Dhara projects. HALRIS is fledging, but the other two projects are still stuck up with old infrastructure.

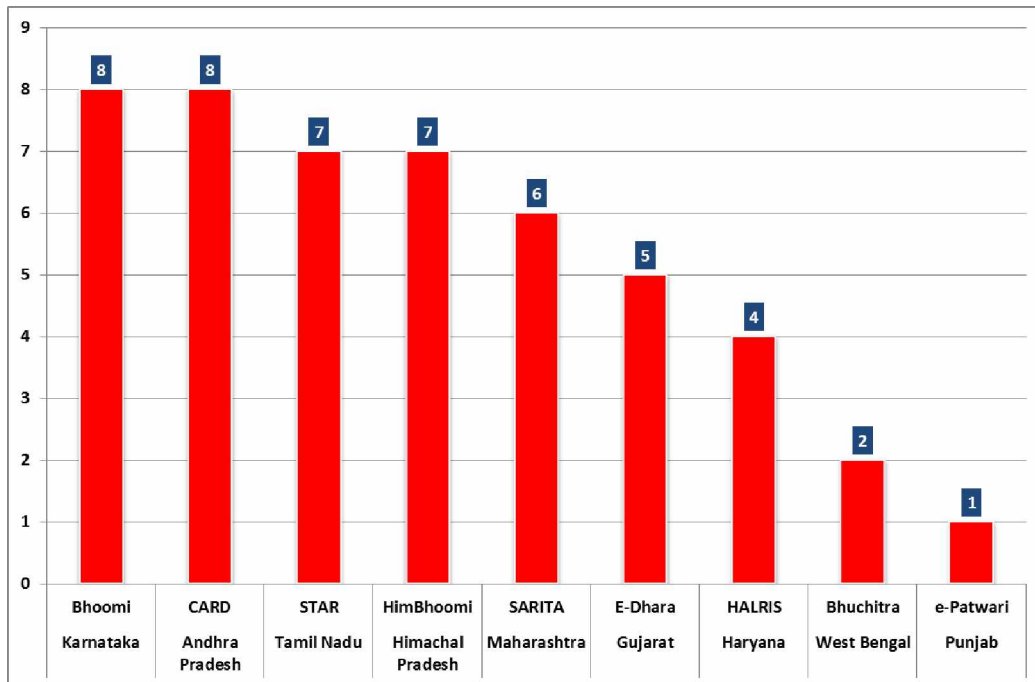
**Graph No. LRI 7 Training for employees**



On the way to automation, most of the land records and property registration departments started training and capacity building programmes simultaneously without waiting for the computer architecture to be installed first. Training components include computer operations, data entry, digitization of survey maps, scanning documents and uploading data and maps to integrate with the registration department. The property registration departments also had a training module in place before they went digital.

The above graph indicates that almost all the employees, except the senior officials had been trained in case of Bhoomi and CARD. They are closely followed by STAR and HimaBhoomi. SARITA and e-Dhara projects score next. HALRIS and Bhuchitra employees still need to be trained further so as to upscale the project. e-Patwari ranks poorly when it comes to training its project employees.

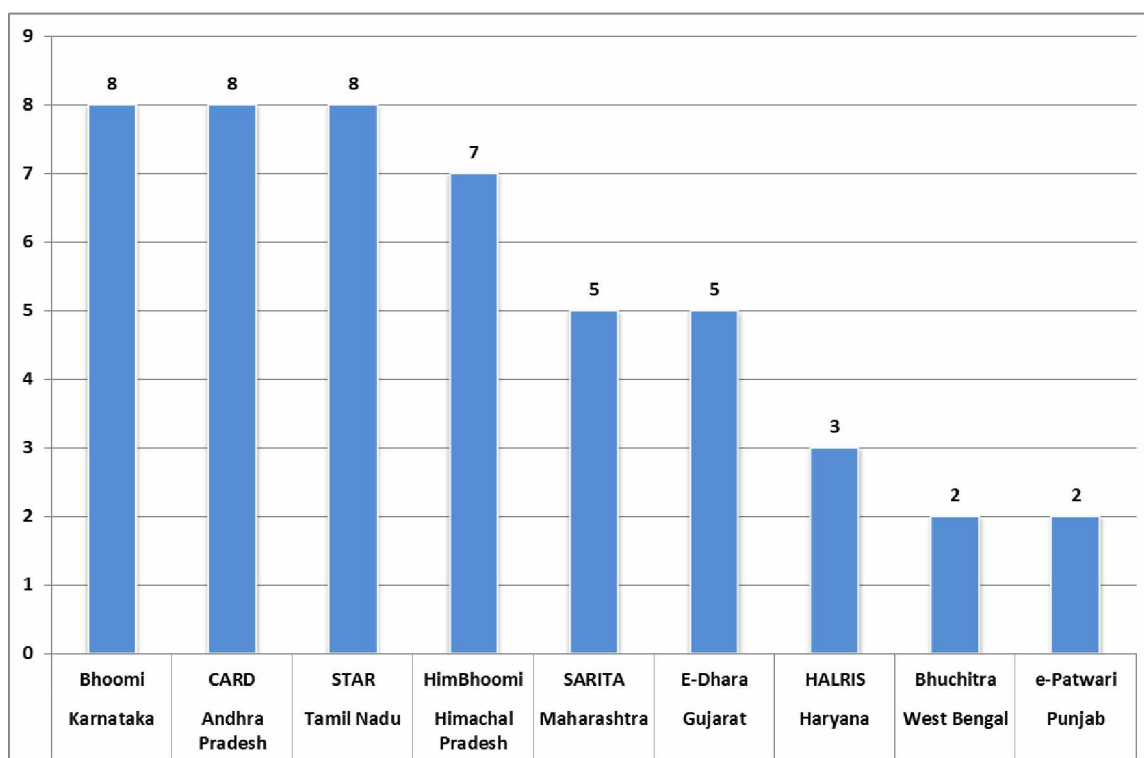
**Graph No. LRI 8 Working with interactive models**



The level and scale of interaction between the land records department and the citizens is almost on par with citizen services. Most of the land records projects have to maintain a front office to deliver digital land records, Record of Rights, Right to Cultivation certificates. On an average 250 to 300 people visit the kiosks at the taluk level for these certificates. Property registration has gone online with data on property units duly updated. People can register their properties online, which needs online interaction between registration officials and the property owner/buyer. And there is horizontal and vertical integration of land records and registration departments, which requires constant information sharing and update of data, maps and certificates.

The above graph indicates that Bhoomi and CARD have high levels of interactive processes followed by STAR and HimBhoomi. SARITA and e-Dhara in Gujarat have average interaction with the citizens. They are followed by HALRIS when there is a spurt in property registration, selling and buying. e-Patwari is still in its infancy stage.

**Graph No. LRI 9 Improved quality of services**

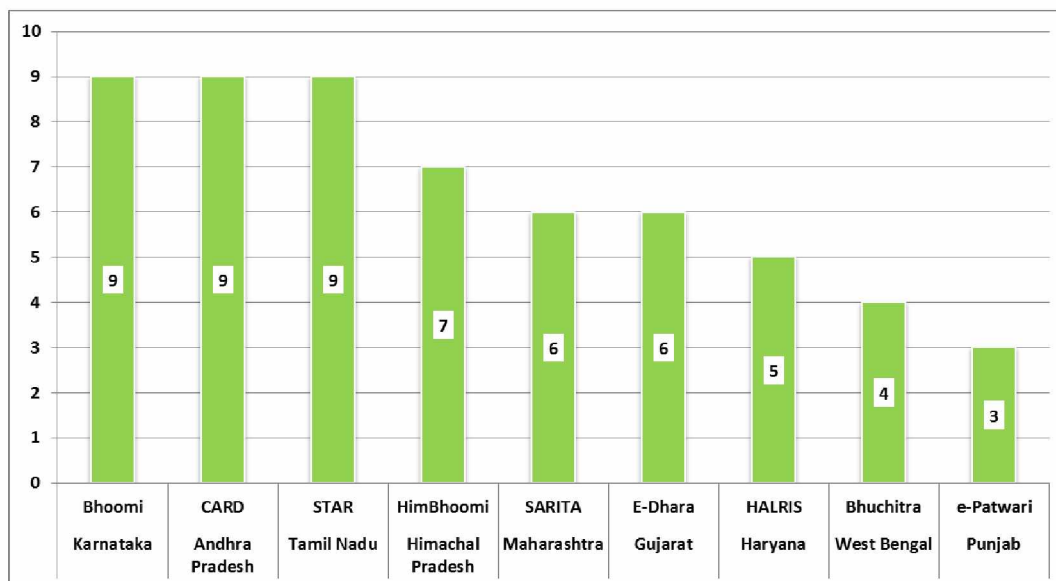


The ultimate objective of e-governance projects providing online services to citizens is to constantly improvise and expand the basket of services and products. The services and products can include digital photographs of lands, properties, GIS and GPS mapping of land and properties. The revenue and agriculture department can also be roped in the case of farm lands with data exchange on levies and land revenue. Farmers can have individual IDs to deal with agriculture department if a common portal is created for land records and cultivation.

The above graphs illustrates that Bhoomi, CARD and STAR have substantially improved their quality of services over the years learning by trial and error. However, complete ratings could not be given as the system of middlemen or agents is not totally eliminated. Only at the front end, that is issue of digital certificates, the service delivery is satisfactory, but not in the entire process in land records mutation and registration. Only HimBhoomi has the next big score and is followed by SARITA and e-Dhara at a half-way mark. The other projects need substantial improvisation.

**Graph No. LRI 10**

**Financial sustainability**

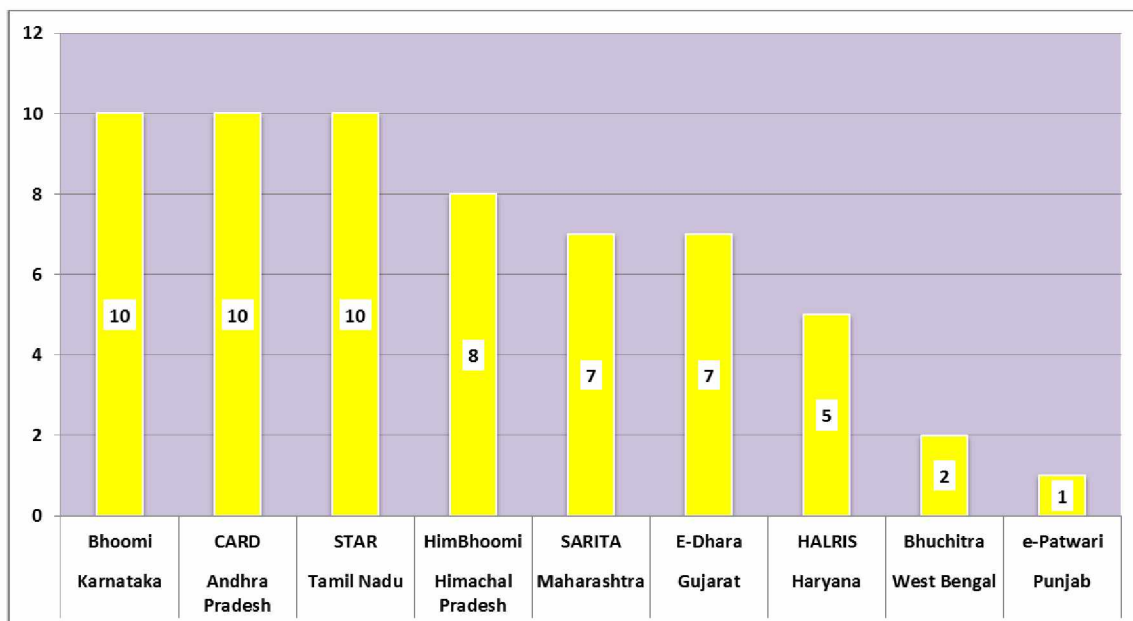


Land records computerization projects are a costly affair. Initially, they were funded by the World Bank and the Union Ministry of Rural Development. Subsequently, it was the turn of the state governments and respective departments to generate funds for the projects so that they sustain financially in the long run. Some projects like Bhoomi and CARD are totally government owned and do not employ private operators. STAR and HimBhoomi too are totally government owned. Projects like e-Patwari, Bhuchitra and HALRIS need further investments by the state governments.

The above graph indicates that Bhoomi, CARD and STAR projects have attained substantial financial stability and are self-sustainable. They do not need the support of the private players to operate their kiosks. HimBhoomi, SARITA and e-Dhara are heading towards self-sustenance with active user charges. HALRIS will join this league in future, but the case of e-Patwari needs a relook by the Punjab government.

**Graph No. LRI 11**

**Leadership and contribution to e-governance**



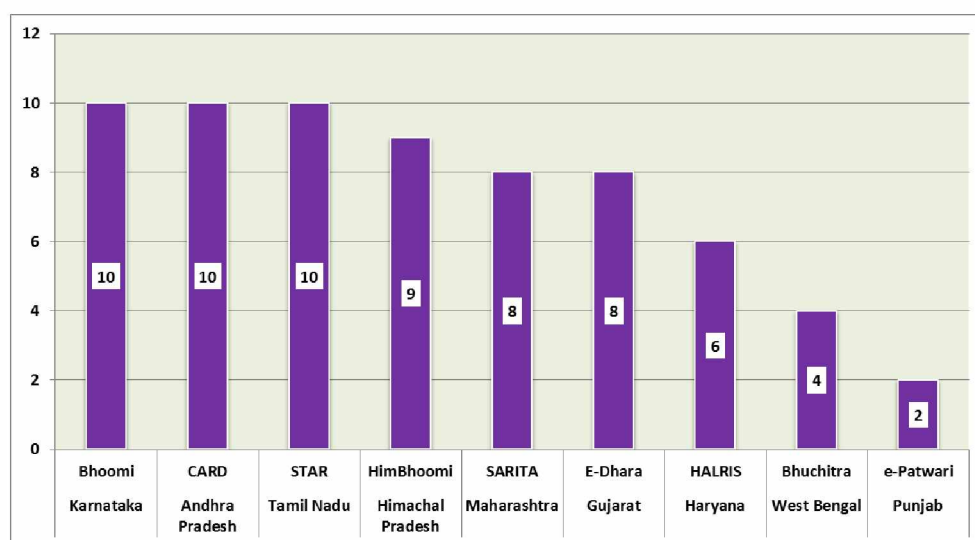
It is hard to succeed in digitization of land records in a country like India where the traditional administrative systems never give way to digital records and accuracy of the records. Property registration over a period of time has become more transparent. In terms of leadership and contribution to e-governance in the country, Bhoomi project of Karnataka and CARD (property registration) continue to be role models. So is the case with STAR. HimBhoomi is also setting new standards in land records management. Generally, the state governments do not have the political will to go for full-fledged automation of land records. This can be seen in the case of Punjab and West Bengal, but HALRIS is fledging in Haryana.

The graph above indicates that Bhoomi, CARD and STAR take the lead in contributing to the success of e-governance initiatives in the country. They are closely followed by HimBhoomi, SARITA and e-Dhara in Gujarat. HALRIS has all the potential to emerge as a model project in both land records and property registration. Bhuchitra and e-Patwari need a drastically make-over if they are to emerge as viable projects, despite the investment risks.

## Results of the Survey of Land Records and Property Registration Project

### Citizens' Perspective

Graph No. LRC 1 Availability of e-services for land records and property registration

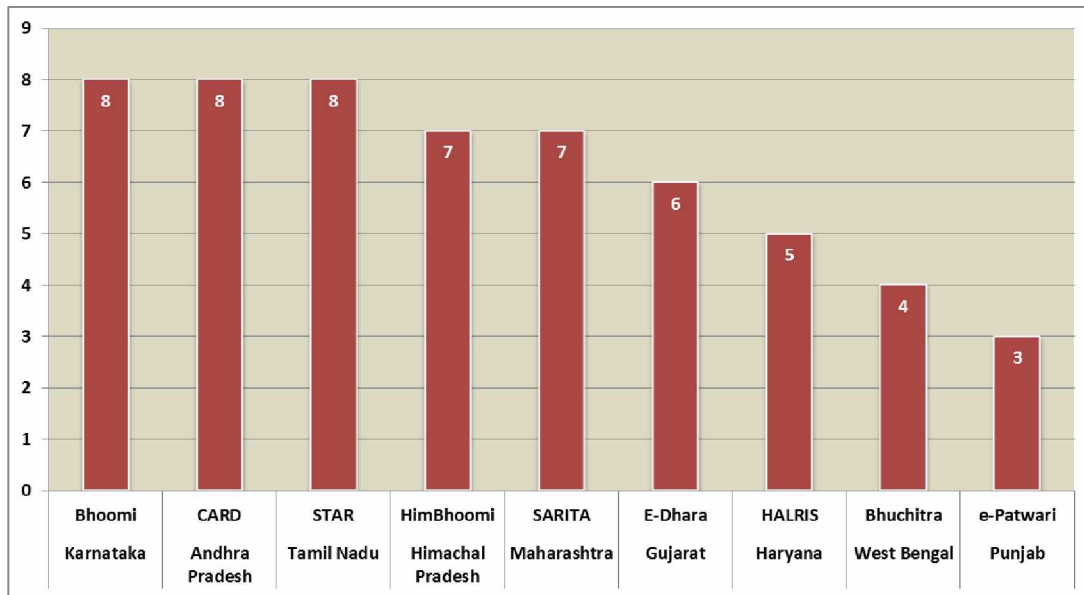


The availability and outreach of digital land records services and property registration is a big issue in e-governance in India. Only a few states have pioneered in this aspect. Among them Karnataka, Andhra Pradesh, Tamil Nadu and of late, HimBhoomi have set up good standards in the delivery of e-services for land records and property registration.

The graph above reflects the availability of electronic services for land records generation and property registration. Bhoomi, CARD and STAR get full scale for their outreach up to taluk level. Earlier, Bhoomi services were available even at the tehsil level in the form of private-run kiosks. Farmers could view the status of their application for mutation or other form of land deal through a coin-operated kiosk. Now, this system has been done away with. Most of the respondents felt that the taluk level office is the hub for availing Bhoomi services for the peasants living under its jurisdiction. Similarly, CARD services are available at all sub-registrar offices in Andhra Pradesh. STAR has penetrated up to taluk level and its services are available to people. HimBhoomi is followed by SARITA and e-Dhara for their penetration. HALRIS is fledging and is expected to go up to taluk level. Bhuchitra and e-Patwari services are available at the district and sub-divisional level, but are confined to a limited number of districts.

**Graph No. LRC 2**

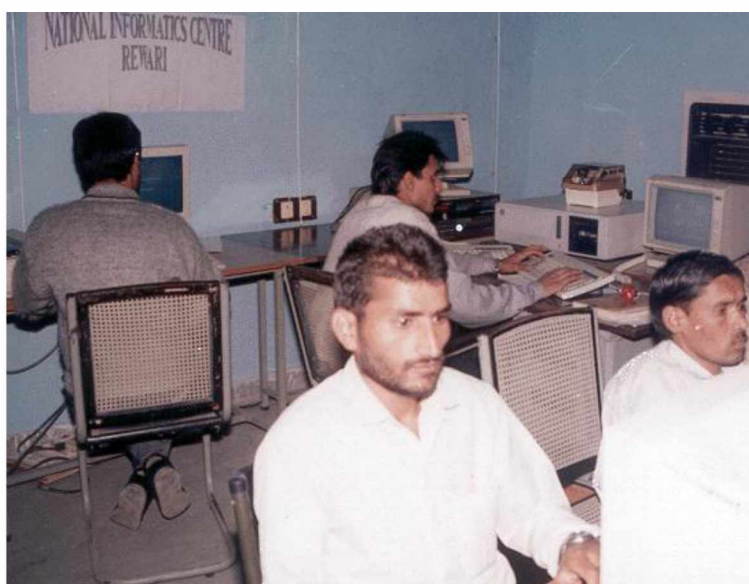
**Simplified transactions**



Except for the generation of digital records, land mutation/division or change of ownership takes its own time. This is due to the procedural and administrative processes which require survey, demarcation, and approval at the taluk level. Property registration is a relatively simple affair requiring not more than a few hours. Here, the details of property are maintained in a database and uploaded on to the web. Therefore, for land records digitalization, citizens have to wait until up to a month for receiving Record of Rights (ROR).

The above graph shows that Bhoomi, CARD and STAR fare highly at 8 points on a scale of 0 to 10 as per the perception of the respondents. Though their work is perfect, the bureaucratic hassles do not go down to well with the citizens who want to use their services. HimBhoomi and SARITA come next at 7 points. The case of HimBhoomi is interesting as it has a complete history of the family that owns a landholding, according to the respondents. Every major in the family has to ratify any change to the ownership of the land or property. e-Dhara and HALRIS are simplifying their procedures, but have a long way to go. Respondent felt that Bhuchitra and e-Patwari are in their nascent stage and their services seem to simplify only at the stage of issuing a digital land records.

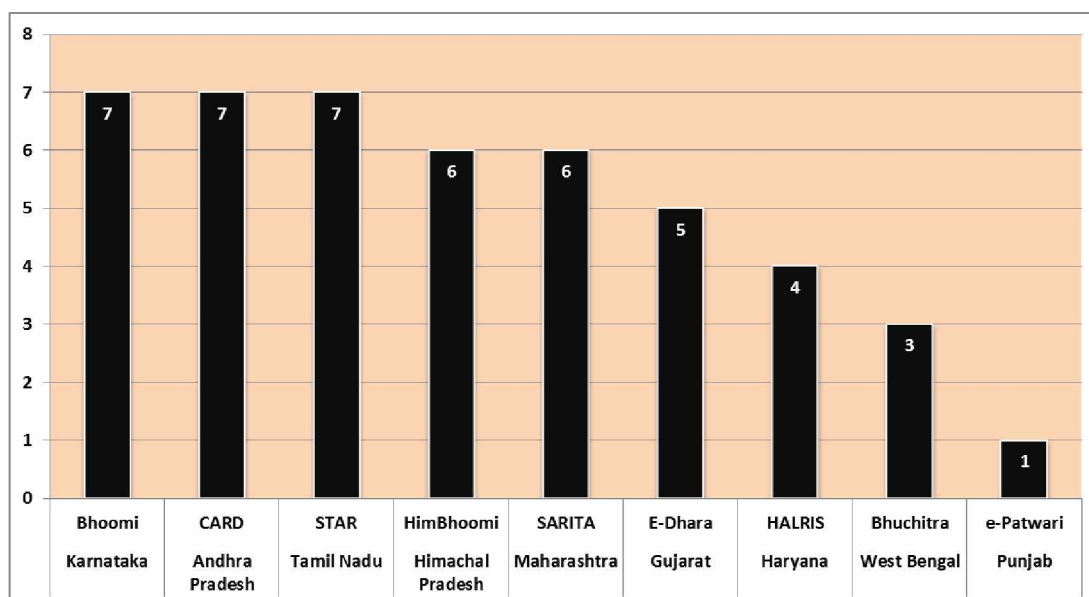




Officials working at a Land Records Office in Rewari, Haryana

Graph No. LRC 3

Decision-making process



As with the availability of the services, the decision making process regarding land ownership is drawn out one. It requires authentication from taluk to village level and vice-versa. A minimum of one to two months is needed to ratify the changes in the ownership or mutation of the land. Revenue levies, judicial litigations over ownership, cropping pattern, tenancy, bank and cooperative loans, etc, have to be taken into consideration by the authorities before disposing the

application for mutation and transfer of ownership of a land. However, in case of property registration, it takes no more than a day or a couple of hours to transfer the ownership.

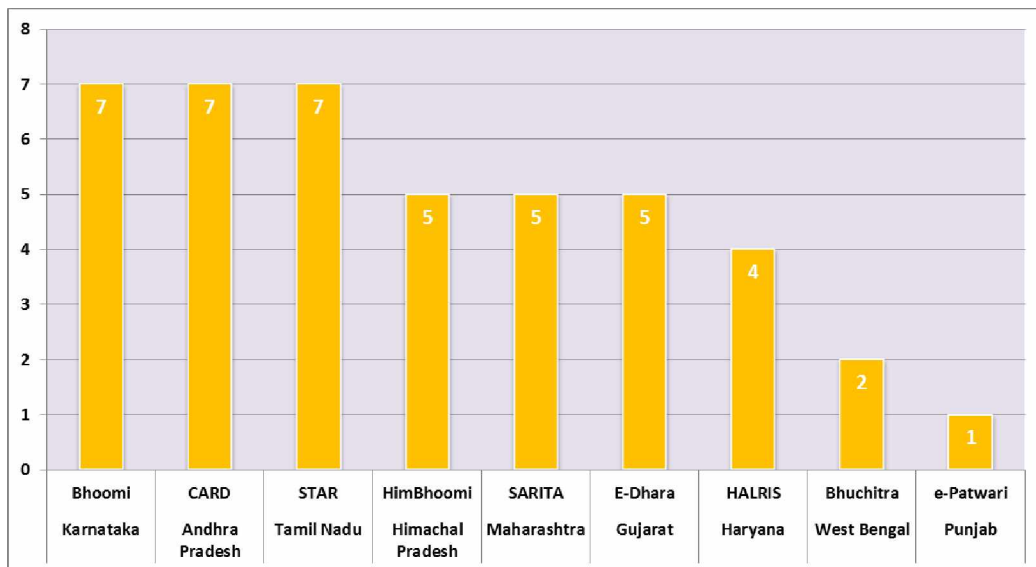
The above graph reflects perception of the citizens on the decision-making process trends among the land records and property registration projects. Bhoomi, CARD and STAR score at the level of 7 on a scale of 0 to 10. At this scale, their decision-making process is faster than other projects under evaluation. They are followed by HimBhoomi and SARITA which are above average in terms of decision-making. e-Dhara is fledging and stands mid-way. HALRIS is the next promising land records project. e-Patwari ranks very low and the process of land records management is still being carried out in a traditional manual way.



People at the e-Dhara centre in Rajkot, Gujarat

**Graph No. LRC 4**

**Business processes re-engineering**



The kiosk or the front office issuing the Record of Rights (RoR) is the only manifestation of business process re-engineering in land records management project. Office automation has been achieved to a greater extent in property registration projects. Earlier, Bhoomi had kiosks manned by private operators at the village level. But that has been done away with and the taluk or block revenue offices are the points where citizens can access services on land records. Similarly, some wings of the sub-registrar offices have been automated for delivering property registration encumbrance certificates.

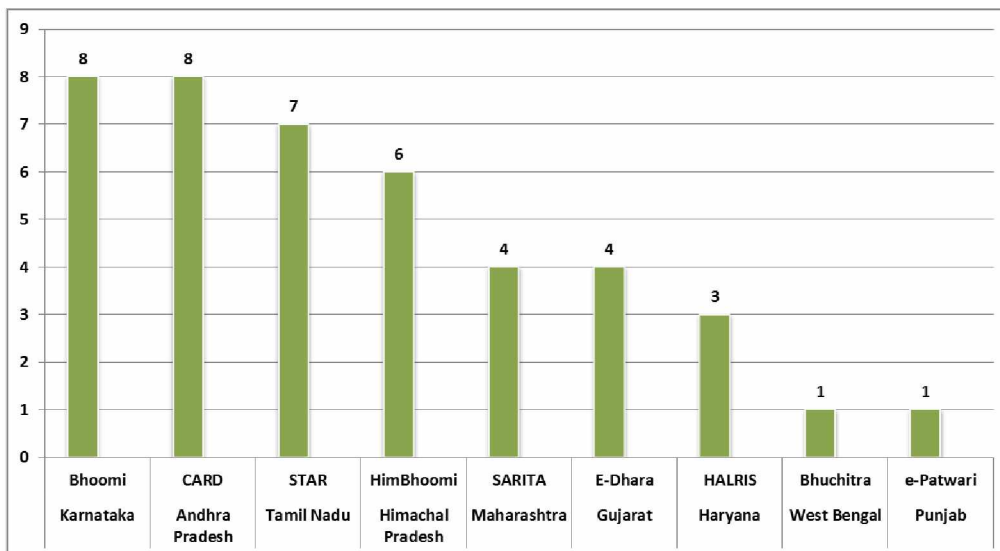
The above graph shows that business processes re-engineering have not been achieved to the fullest extent in all the land records and property registration cases. In the opinion of the respondents, Bhoomi, CARD and STAR score at 7 on a scale of 0 to 10. HimBhoomi, SARITA and e-Dhara are mid way at 5 in terms of achieving BPR. HALRIS has to scale up as it is limited to sub-divisional level. Bhuchitra and e-Patwari do not have adequate score in terms of achieving BPR as they operate out of offices that look traditional.



Counter system for issuing land records at Jalandhar, Punjab

**Graph No. LRC 5**

**Information outflow**



Land records management consumes lot of administrative time. Here, information outflow is both ways. The applicant has to provide every detail on the past and present ownership, besides clearing assorted issues. The revenue administration, on the other hand, has to provide information to the applicant on the status of his application. Property registration does not entail the applicants to give elaborate information. It issues encumbrance certificates, gives estimation

on the value of properties, sells stamps and deeds, etc. Property registration fee and the time required to conclude a transaction is mentioned in the chart.

Bhoomi and CARD are equal at 8 points on a scale of 10 in terms of information outflow to users. They have information and help desks to clear the doubts of the applicants. Information regarding property value estimation is uploaded on the project website. Respondents felt that STAR has also got a good information outflow system followed by HimBhoomi. SARITA and e-Dhara score below average in this respect. Bhuchitra and e-Patwari rank low in the eyes of their users.

**Graph No. LRC 6 Cost and time considerations**

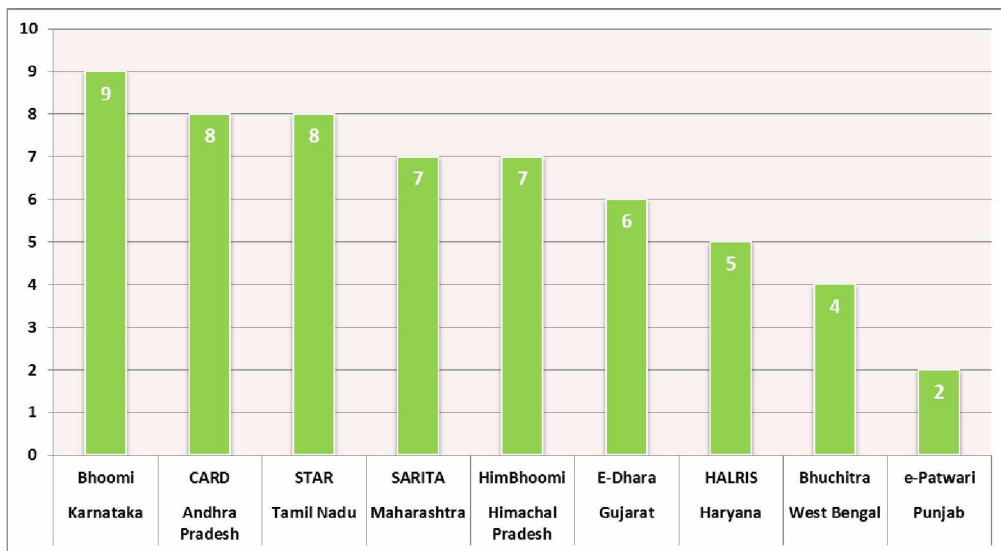


Land records and property registration entails huge costs and longer times. In particular, land ownership records take longer time than property registration. However, property registration entails huge fee, but takes lesser time. Citizens availing these services complain of delays and huge costs. They have to make a number of trips to the taluk and SROs to get their work done. In the process, they also face bureaucratic hassles, resulting in dissatisfaction among them.

The graph above illustrates the mood of the responds on the time and cost factors in availing land records and going for property registration. Bhoomi, CARD, STAR get a maximum score of 7 out of 10 from the users of their services. They feel that a nominal fee of 10 to 20 is needed to

get RTC (Right of Tenancy and Cultivation) certificates. Property registration fee is relatively less in CARD and STAR. The registration department in Maharashtra through SARITA is reasonably economical, according to the respondents. HimBhoomi and e-Dhara score averagely while HALRIS in Haryana is below average. Bhuchitra is more economical compared with e-Patwari as land in Punjab is a costly affair.

**Graph No. LRC 7** **Quality of services**

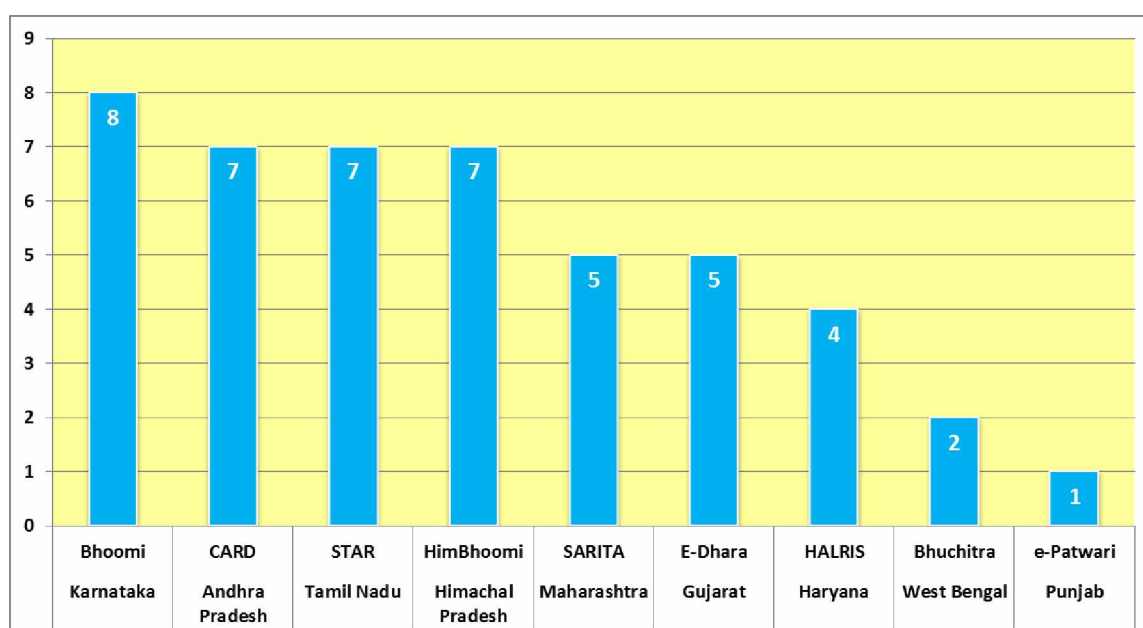


The quality of services offered under e-governance projects is an issue that weighs heavily on the minds of the people. There has to be perfect integration of front-end and back-end operations with information kiosks in place at the certificates issuing kiosk or office. Digital maps, survey records, digital land certificates and digital encumbrance certificates, etc, should go into the database for future use. GPS and GIS systems add quality to land records and property registration services.

The above graph illustrates the response of the users on the quality of services they get from the projects under evaluation. Bhoomi scores high at 9 on a scale of 0 to 10. CARD and STAR are also rated well by their clients. SARITA and HimBhoomi come next with 7 points. e-Dhara and HALRIS are rated above average for their quality of services. e-Patwari is rated very low at 2 points by the respondents in Punjab

**Graph No. LRC 8**

**Effective delivery mechanisms**

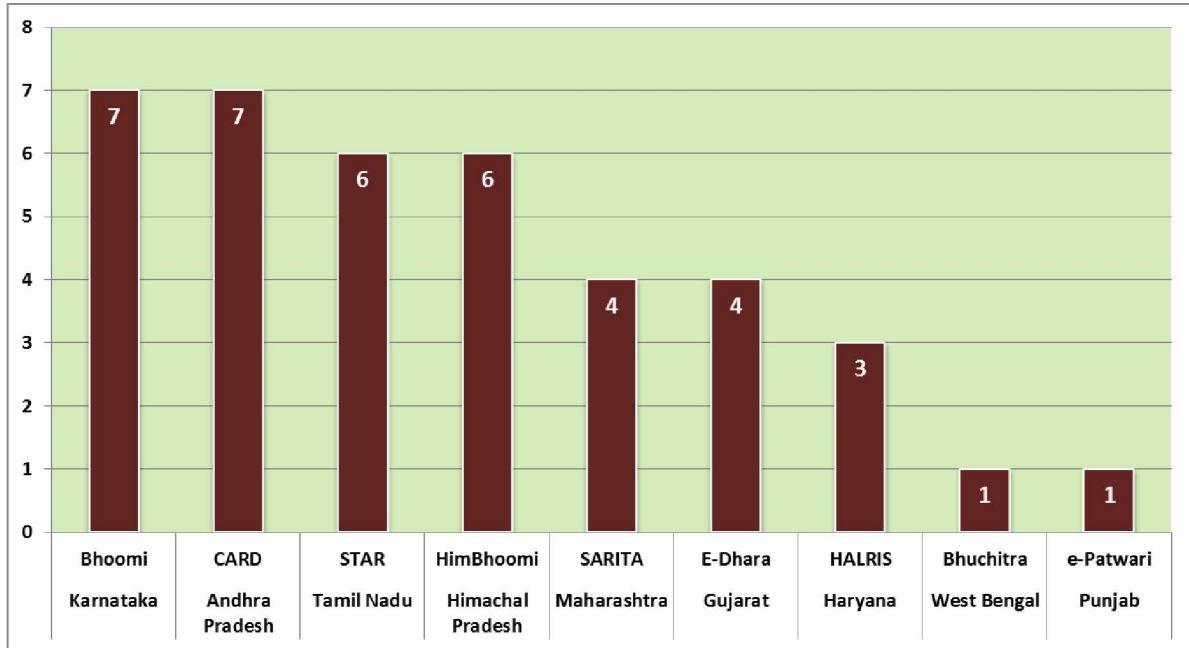


The effectiveness of the delivery mechanisms for land records and property registration has always been since they form the core revenue for the state governments. Registration departments fetches almost Rs.2,000 crore to Rs.5,000 crores per annum in states like Punjab, Andhra Pradesh, Karnataka, Maharashtra and Haryana. Therefore, the traditional departments have transformed their operations with the ever growing annual income. Front offices have been set up in taluk and sub-registrar offices to issue digital land records and encumbrance certificates.

The above graph indicates the users' perception on the effectiveness of the delivery mechanisms in land records and registration departments. According to the respondents, Bhoomi scores high at 8 out of 10 points while CARD, STAR and HimBhoomi follow close at 7 points. SARITA and e-Dhara have average scores with midway ranking. HALRIS can improve its delivery mechanisms further as per the citizens' requirements. e-Patwari ranks poorly for its traditional way of functioning.

**Graph No. LRC 9**

**Transparency in availing services**



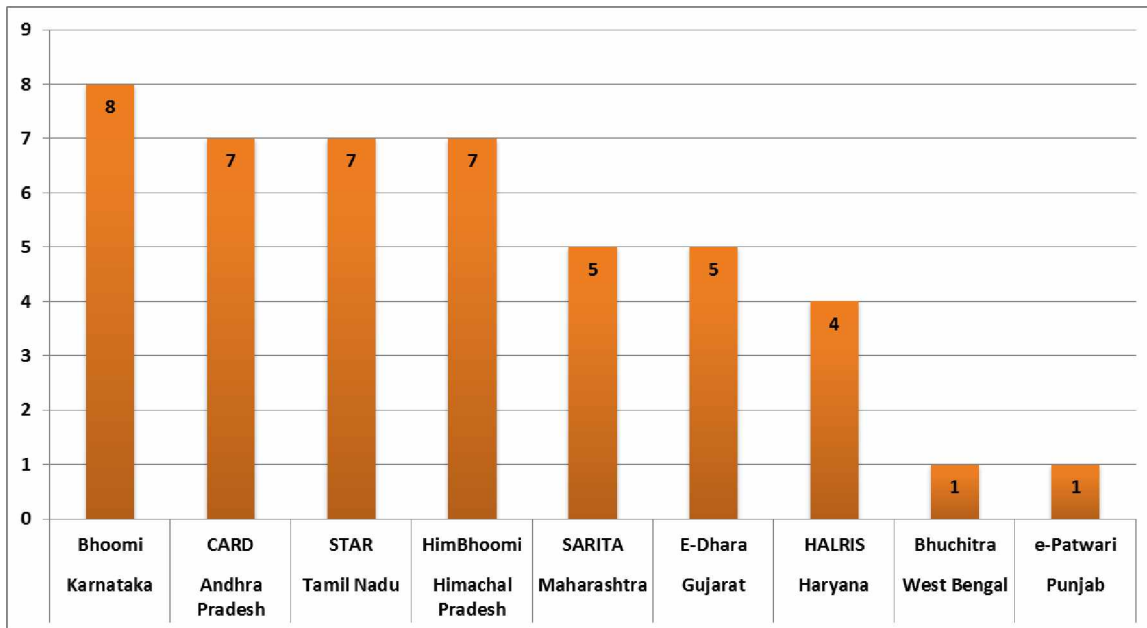
Land records management in India does not inspire the citizens to approach the revenue offices. Even under the electronic service delivery model, people depend upon middlemen, agents or lower level staff to get their work done. Bribery is rampant in states like Gujarat, Haryana, Punjab and West Bengal. Transparency is the last word in revenue departments. This trend is reflected in users' perception of departments that offer services like digital records and encumbrance certificates.

The above graph shows that Bhoomi and CARD offer services transparently to a large extent. STAR and HimBhoomi follow close at 6 points out of 10. SARITA and e-Dhara are under rated and are below averages. So is the case with HALRIS in Haryana. Bhuchitra and e-Patwari are the least transparent projects as per the opinion of the respondents using their services.



**Graph No. LRC 10**

**Accountability and trust**



As we saw it in the previous graph, the levels of accountability and trust in e-governance projects that deal with land records are not high among the citizenry using their services. Only some states have brought reforms in the case of land and property registration. States like Punjab and West Bengal do not inspire the common citizens when it comes to accountability. The administrative practices reflect the colonial rules and procedures. States like Haryana and Gujarat have gone for a image make over due to rise in property registration.

The above graph illustrates the perceptions of the respondents on accountability and trust in the systems that deal with land and property. Bhoomi scores high on this variable with a rating of 8 on a scale of 0 to 10. CARD, STAR and HimBhoomi have fair amount of credibility in this respect as per the opinion of the respondents. SARITA and e-Dhara stand mid way and can improve their image. HALRIS do not have the complete trust of the users while Bhuchitra and e-Patwari do not inspire confidence among the people.

## **Chapter-VI**

### **E-District Projects Assessment**

e-District is a State Mission Mode Project under the National e-Governance Plan. The Project aims to target certain high volume services currently not covered by any MMP under the NeGP and undertake backend computerization to e-enable the delivery of these services through Common Service Centers

The project aims at providing support to the basic administrative unit i.e. “District Administration” to enable content development of G2C services, which would optimally leverage and utilize the three infrastructure pillars, the State Wide Area Network (SWAN) for connectivity, State Data Centre (SDC) for secure and fail safe data storage, and citizen centres as the end points for service delivery.

The objective of the MMP is to target certain high volume services delivered at the District level, but which are currently not covered by any MMP under the NeGP, and undertake backend computerization to e enable the delivery of these services through Common Service Centers in a sustainable manner, within a specific time frame.

In every State, districts are the primary delivery channels for Government administration which delivers a large number of services to the citizens. Therefore automation of the district level administration can significantly contribute and improve government service delivery. Realizing the effectiveness of e-Governance in bringing about marked differences in the quality of services to the citizens and in increasing the internal efficiency of the district administration, government has decided to extensively promote and patronize initiatives that aim at a phased transformation of its largely manual processes to a process driven digital governance system that is user friendly, accountable and transparent in nature. It envisages e-district to deliver majority of services through the district administration with the use of Information, Communication and Technology.

The concept of e-District is a subset of the broader area of e- Governance. It is the application of technology in e-Governance from the district level downwards since 90 percent of services are delivered at the local/district level. District Administration in the context of e-District refers to the administrative set-up led or coordinated by the District Collector including Division/ Taluk / Village level units responsible for service delivery.

The broad objectives of the project include:

- 1) IT enablement of internal processes of District Administration and Subordinate offices to increase functional efficiency
- 2) Automation of workflow and internal processes of District Administration
- 3) Seamless integration of the departments for providing services to the citizens – by integrating various District databases.
- 4) Develop mechanism for maintaining of the departmental electronic database.
- 5) Providing efficient service delivery through channels like common service centres
- 6) To enable easier access to government services.
- 7) Creation of IT infrastructure for rolling out e-Governance plan up to the Sub Division/ Taluk levels
- 8) To provide self-sustainable operational model extending up to Sub Division/ Taluk levels with zero-down failure risk
- 9) Capacity building to empower employees to own and operate the IT enabled systems with confidence.
- 10) To enable the common man's easier access to the bureaucracy.
- 11) To enable the District Collector to carry out tasks with far more efficiency and ensure that the various Departments under him are working optimally.

The basic services envisaged under the e-district project include:

- a) **Issue of Certificates** including Domicile, Nativity, Caste, Marriage, Income, Employment, etc
- b) **Pensions** – Social welfare Pensions (Old age, Widow, Handicap, Destitute)
- c) **Revenue Court** – including Case listing, Case adjournment, Stay orders, Final orders, Status of execution of orders: Information, Tracking, and filing of applications.

- d) **Government dues and recovery** as part of Land Revenue – including Issue of notices, Record payments, Track default processes, Updating of treasury receipts etc
- e) **Public Distribution System**, Ration Card related services –including Registration, Change of address, Addition of members, Issue of duplicates etc.
- f) **RTI services** including redress of Grievances

## **Project Assessment Methodology**

### **Benchmarks**

#### **Institutional Perspective:**

1. Organizational Transformation – Automation of work processes, adaptation of information technology, work culture, organizational networks
2. Computer literacy of employees – Basic education, technical qualifications, computer literate
3. IT skills of employees – Basic understanding of IT, application of IT knowledge in work
4. Awareness of technology in governance (knowledge about front and back-end processes, computer architecture, IT networking)
5. Application of IT skills in work processes – Handling IT tools, online security mechanisms, comfortable with English or local language
6. Technology innovation and adaptation – whether IT department exists in organization/project, technical staff, adaptation of IT by government staff
7. Training requirements – computer components, scanning, downloading and uploading, using digital signatures, understanding LAN, systems security, virus protection
8. Dealing with interactive models: e-mail, internet security, online response, processing applications online, allotting digital numbers to applicants, updating application status
9. Improved quality of services – Better co-ordination of front-end and back-end functions, help desk, information kiosks
10. Leadership, ownership of and contribution to e-governance projects – technical management, personal initiatives, government support expanding scope of project and services

Based on the perspective given above the project evaluation has been done with graphs EDI denoting e-district institutional perspective and EDC reflecting citizens perspective.

The following are the e-districts selected for the study, including sample size:

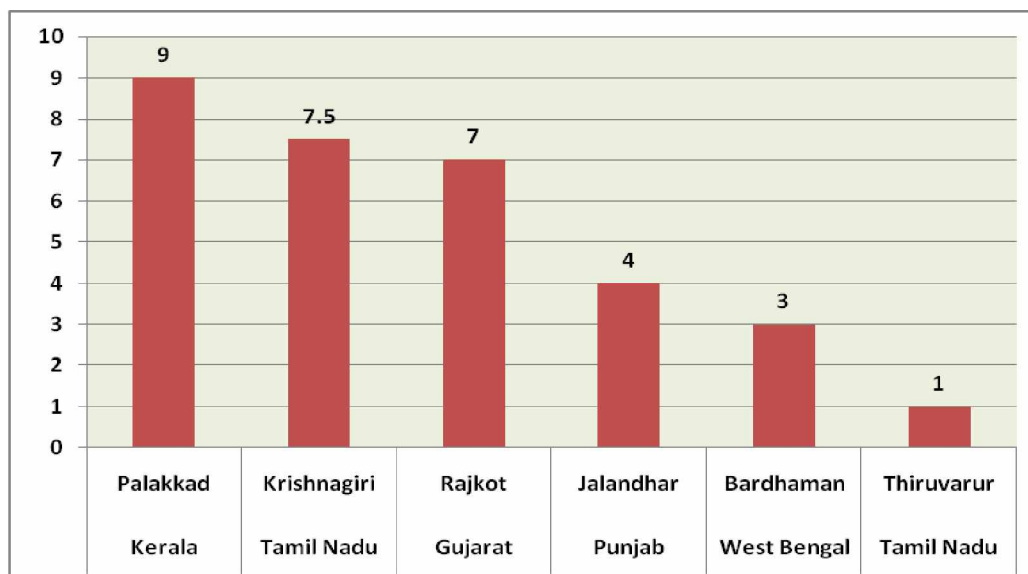
**e-District**

<b>S. No.</b>	<b>State</b>	<b>Districts</b>	<b>Projects</b>	<b>Officials</b>	<b>Citizens</b>
1.	Gujarat	Rajkot	e-district	23	76
2.	Kerala	Palakkad	e-district	19	82
3.	Punjab	Jalandhar	e-district	18	118
4.	Tamil Nadu	Krishnagiri Thiruvarur	e-district	43	102
5.	West Bengal	Bardhaman	e-district	12	107
<b>Total</b>	<b>5</b>	<b>6 district</b>	<b>5 projects</b>	<b>115</b>	<b>485</b>

## Results of Survey of e-district projects

### Institutional Perspective

Graph No. EDI 1: Organizational transformation

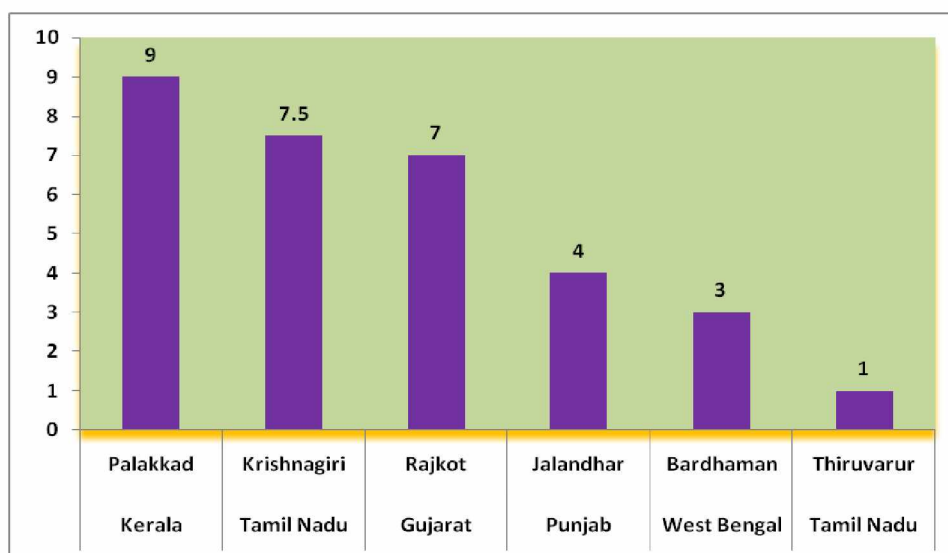


DC Suite was a precursor to e-district in Palakkad and the automation was achieved up to taluk level (taluk suite) by the end of 2005. This was scaled up to panchayat level with complete automation of the Revenue Department. Tapal system has been done away with after this penetration. Now, the district administration functions on intranet without physical movement of files. E-filing system has been perfected. Krishnagiri is one of the pilot districts for the implementation of e-district project under NeGP. The above graph illustrates the organizational strength and readiness for the implementation of the mission mode project.

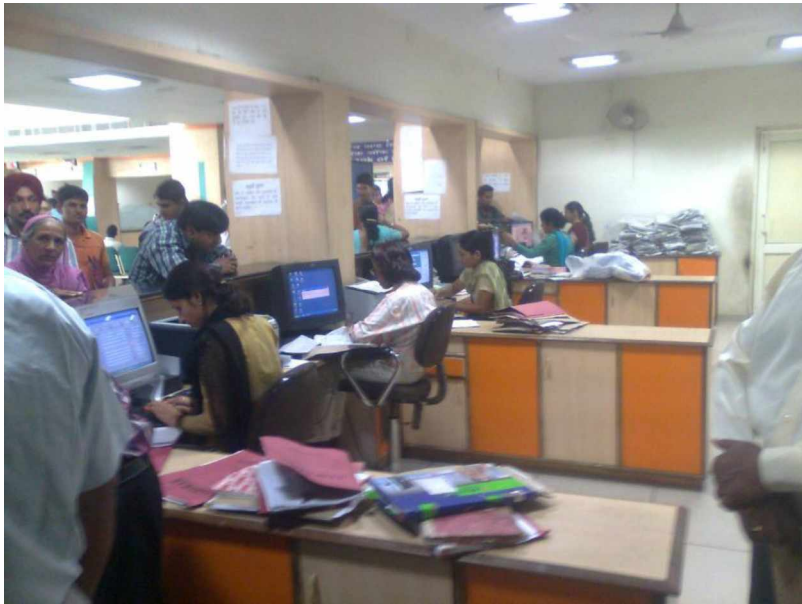
Palakkad tops the ranking at 9 on a scale of 0 to 10 for its penetration and IT architecture. Krishnagiri comes next with 7.5 points for its web design and online application system. All the education and social welfare schemes have to be accessed through the district portal, the content for which is being developed in the regional language Tamil. Presently, it has only English content. Rajkot in Gujarat has a portal in Gujarati language. Its infrastructure is on par with a corporate office at the district level. Counters have been set up at the district collector's office to deliver various government services, including applications for ration cards, scholarships, etc. Jalandhar ranks next, but is confined to district and divisional levels. It has a Suwidha centre on

the premises of the district magistrate's office where citizen services are delivered. However, the user charges for services are very high compared to other states. Bardhaman e-district is functional, but limited to only a few services like transport. Thiruvapur, which was the first e-district in the country before the implementation of NeGP, is a sad story and stands at the bottom of the table. The infrastructure here has become obsolete and there is minimal use of computers even at the district headquarters.

**Graph No. EDI 2 Computer literacy of employees**



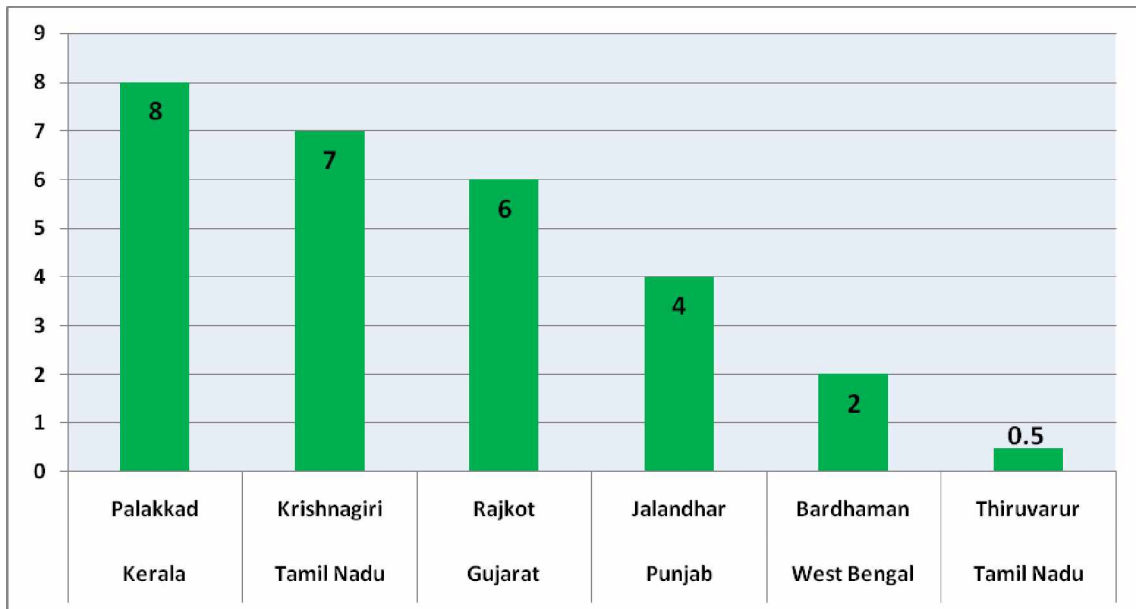
The table above gives a picture on the computer literacy of government officials working in the e-district projects. Palakkad tops the list with 9 points out of 10 for the computer awareness and use by its employees. Krishnagiri comes close at 7.5 points followed by Rajkot. Jalandhar has a PPP model and its employees are drawn from the open market. However, computer education of the core district officials is low. Bardhaman e-district project has below the average literacy. Thiruvapur ranks very poorly with 1 percentage points. In its initial experiment, the then collector Uma Shankar had a perfect plan for the implementation of e-district. However, after his transfer the project watered down with the state government not pitching in with required funds and technology upgradation.



Citizens availing Suwidha services (e-district) in Jalandhar, Punjab

**Graph No. EDI 3**

**IT skills of employees**



As witnessed in the graph above, the IT skills of the government employees in Palakkad are very high. Nearly 80 percent of the officials know how to use IT skills. Krishnagiri comes next with 7 points on a scale of 0 to 10. Rajkot employees have above the average skills in IT usage. Jalandhar ranks below the average. Bardhaman does not have infrastructure in place at the

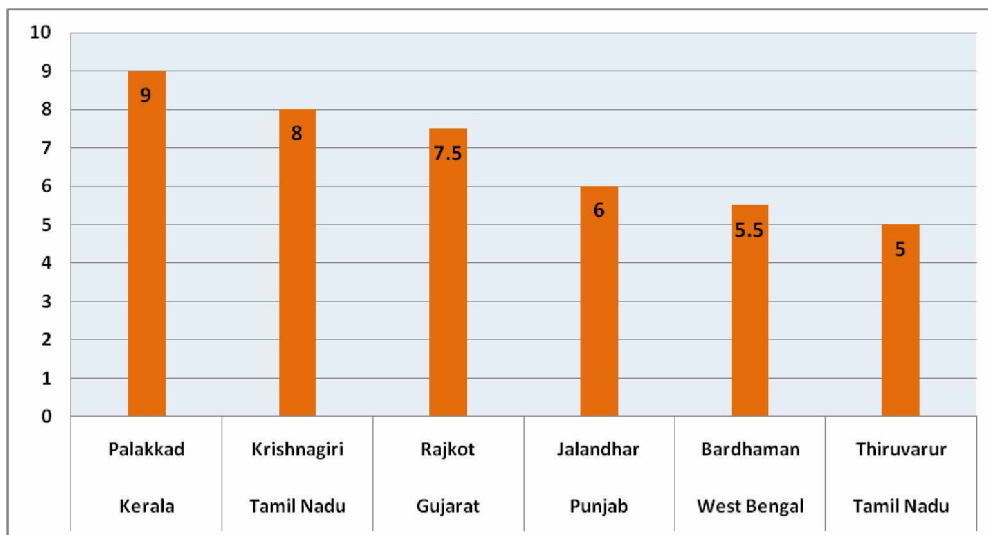


headquarters, but the employees hardly use computer system in their work. As reflected earlier, Thiruvavarur district employees fare very poorly when it comes to IT skills.



Video conferencing facility at Burdwan e-district office

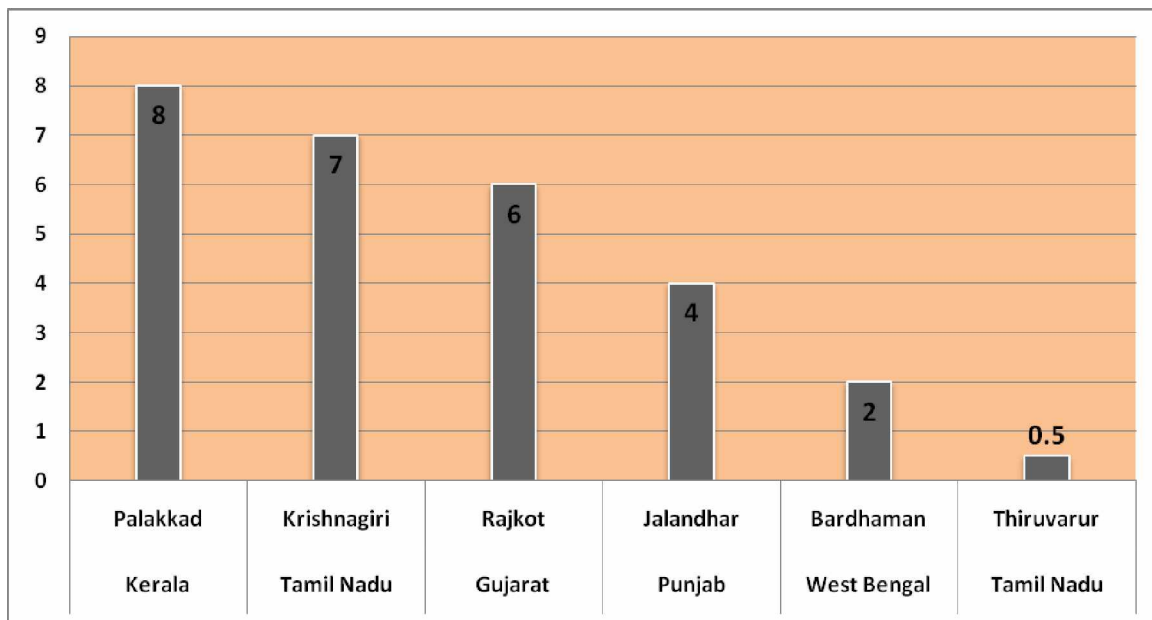
**Graph No. EDI 4                      Awareness of technology in governance**



E-district is a mission mode project, implemented on a pilot basis in select districts of the country. Naturally, the government employees may have been briefed or oriented for e-governance in this case. In practice, the employees of Palakkad and Krishnagiri seem to know more on the use of technology in governance. The above graph underscores this point. Rajkot with a ranking of 7.5 out of 10 points comes next for the employees’ knowledge of technology

adaptation in governance. Jalandhar employees have average levels of understanding in this respect. They are followed closely by Bardhaman and Thiruvarur e-district employees. Thiruvarur, again, is a strange case where the e-district was first conceived and implemented in 1997. The employees know that technology can be used in district administration, but hardly practice it.

**Graph No. EDI 5                      Application of IT skills in work process**

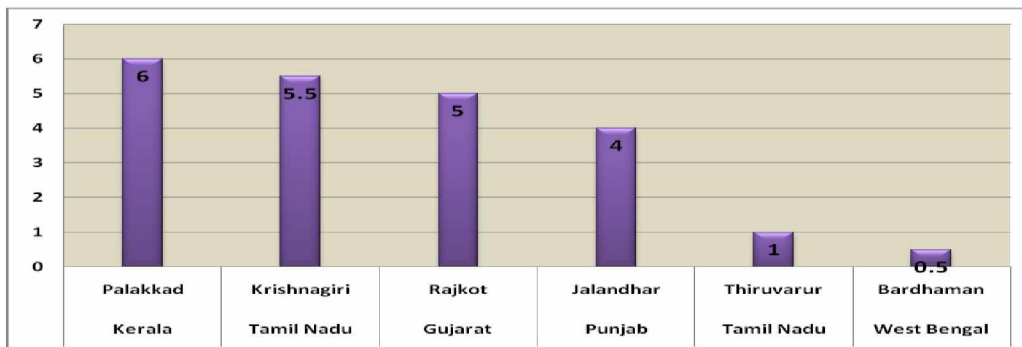


Application of IT skills by employees in delivering government services to common citizens is the basic objective of e-district project. However, in practice, that does not seem to happen at all in most of the districts. The above graph illustrates the responses of the government staff on the application of IT skills in workflow. Flowcharts have been drawn for most of the districts, but the e-filing system is not in place. The employees of Palakkad have a strong orientation towards using IT skills in their dealing with the hierarchical order. They are closely followed by Krishnagiri officials. Rajkot employees have above average skills in applying their IT skills in work processes. Jalandhar employees are employing IT skills, but that is only at the district headquarters level. Bardhaman ranks low with only 2 points on a scale of 10. Thiruvarur has only a couple of employees using IT in their work.



A view of the Krishnagiri e-district facilities

**Graph No. EDI 6                      Technology innovation and adaptation**

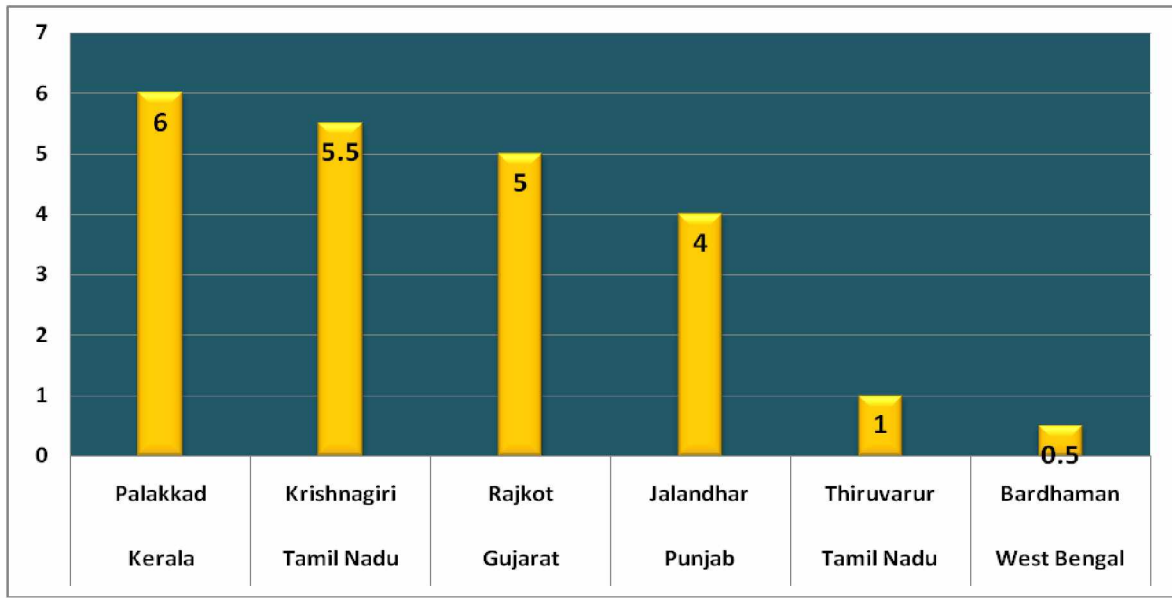


Since e-district is a completely government owned project, we see less of technology innovation. All the applications have been developed by National Informatics Centres (NIC) in conjunction with the Central and state governments. The above chart tells us that Palakkad has the highest innovation when it comes to technology in administration. It is closely followed by Krishnagiri. Rajkot scores averagely while Jalandhar has a mix of public-private partnership in technology management. Thiruvarur with its earlier experimentation has been left with remnants of technology while Bardhaman has little or no adaptation of technology. Innovation has never been a hallmark in e-district project except in the case of Palakkad where kiosks have been installed at

the district, taluk and now at the panchayat level for citizens to see their status of application for various availing various government services.

**Graph No. EDI 7**

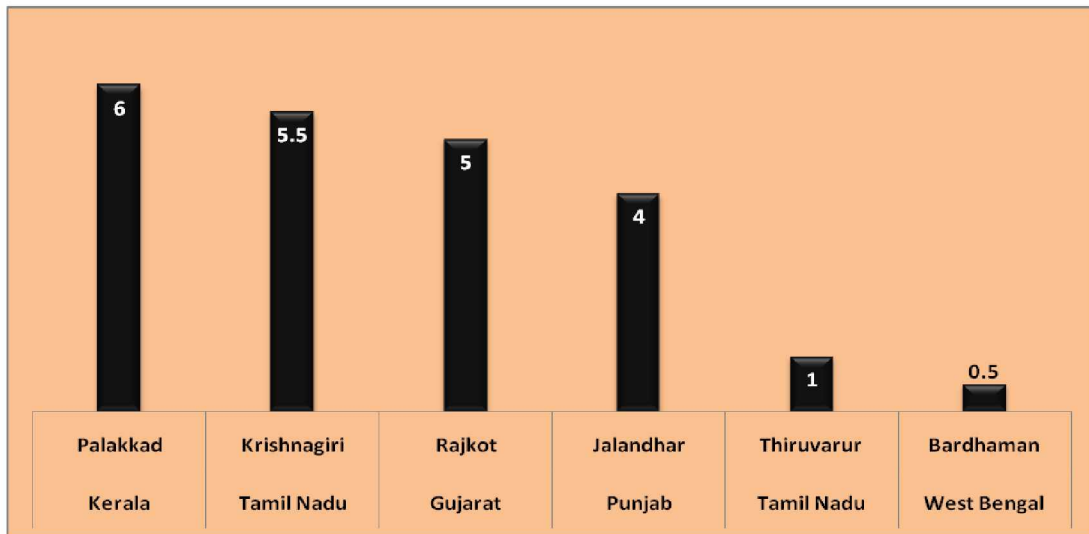
**Training**



Initially, all the employees were briefed on the e-district project before it was rolled out in the select districts of the nation. Training modules were in place along with capacity building plans. However, the motivation levels were too high for even a highly literate Palakkad district. The above graph shows that Palakkad is just above average when it comes to training employees and scores at 6 points on a scale of 10. Krishnagiri follows closely at 5.5 percentage points. Rajkot ranks mid way at 5 while Jalandhar has 4 points. Thiruvarur and Bardhaman fare at the bottom with low rankings of 1 and 0.5.

**Graph No. EDI 8**

**Dealing with interactive models**



Employees' working with interactive models is one of the basic objectives of the e-district mission mode project under the National e-Governance Plan. This applies to employees at all levels of government/administration, from district to divisional level to block and panchayat level. This component involves online service delivery mechanisms, processing applications online and updating application status. The web portal has to be flexible to allow the citizens to file their applications for various government services and should have local content.

The above graph shows that Palakkad e-district is moving up the ladder with each passing year taking technology to the panchayat level. Following closely is the Krishnagiri e-district project where all applications for social welfare programmes, housing, education, scholarships are uploaded and processed online for clearance. Rajkot scores at an average of 5 points for its service delivery at the district headquarters level. Jalandhar with its Suwidha centres has 4 points on a scale of 10 for its interactive models. Once again, Thiruvarur and Bardhaman fare poorly in the use of interactive models by their employees.



Only a board proclaims that Thiruvarur is the first e-district in the country

**Graph No. EDI 9**

**Improved quality of services**

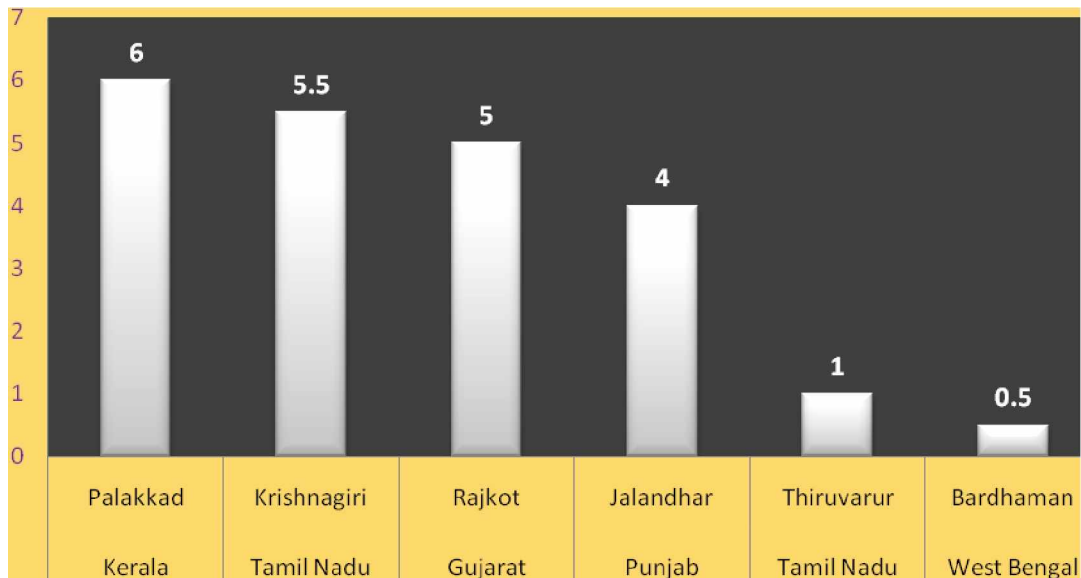


Improvisation is the ultimate goal of e-governance projects particularly that involves G2G and G2C services. The e-district was meant to provide all government services to citizens at the last mile delivery systems. However, the project goals are yet to be fully realized in most cases as the traditional system of working with manual files has not been done away with.

The above graph illustrates this trend. Palakkad has above the average quality of government services it delivers through the Akshaya and FRIENDS centres. Though a perfect connectivity is in place for Palakkad e-district project, the levels of government services offered through them have not gone up. Krishnagiri comes close with 5.5 points for improvisation. Rajkot and

Jalandhar e-district projects are constantly innovating to introduce more number of services. The case of Thiruvarur and Bardhaman is depressing and the governments need to take relook and redesign the whole concept of e-district.

**Graph No. EDI 10 Leadership and contribution to e-governance**



Generally, pilot e-district projects are implemented to have a clarity of thought and purpose before rolling out across the entire country. They are meant to give some blueprint or viable model to the central and state governments. However, in practice, the e-district has not given demonstrable outcomes except in a few cases.

The above graph tells us that Palakkad, Krishnagiri and Rajkot e-district models can be replicated taken into consideration the lessons learnt in their implementation and scaling phases. Jalandhar e-district is actually a business process reengineering model meant to keep out the citizens from interacting with the government officials at the district magistrate and sub-divisional offices. It is more of citizen services project rather than e-district project. Thiruvarur and Bardhaman e-district projects are a disaster. The governments can re-invent the project with the latest technology and infrastructure. They have to be scaled up for outreach to common masses at the block level.

## Results of Survey of e-district projects Citizens' Perspective

Graph No. EDC 1 Availability of e-district services



E-district services have not been expanded to the panchayat level in most cases. Citizens complain that they have to visit either the taluk office or the revenue division office to get their things. Though infrastructure penetrated to the panchayat level the e-district project in Palakkad could score only 6 points on a scale of 10 as per the opinion of the citizens in that district. Krishnagiri has a rating of 5.5 on a scale of 10. This project can further expand its services to the last mile. Rajkot e-district mostly attracts citizens at the district headquarters level. So is the case with Jalandhar according to the respondents. Thiruvarur and Bardhaman are confined to the district collector office and citizens complained they do not have adequate services in these districts.





A view of the automated district collectorate in Palakkad, Kerala

**Graph No. EDC 2                      Simplified transactions**



E-District was supposed to be the graphical interface between the district administration and citizens to avail all government services at designated service centre. In Palakkad, the DC Suite has penetration up to the panchayat level and can offer government services through FRIENDS and Akshaya centres. Applications and procedures have been simplified to the level of an information kiosk. However, not all services are included in this project. Hence it scores above average at 6 points out of 10 on the minds of the citizens using its services. ‘

Krishnagiri has outreach up to block level and its website gives employees a user ID for logging in and uploading the documents and applications. Rajkot and Jalandhar follow each other at 5 and 4 points respectively for their simplified transactions. Thiruvarur and Bardhaman still operate in the manual way at the counters set up on the premises of the district collector.

**Graph No. EDC 3** **Decision-making process**

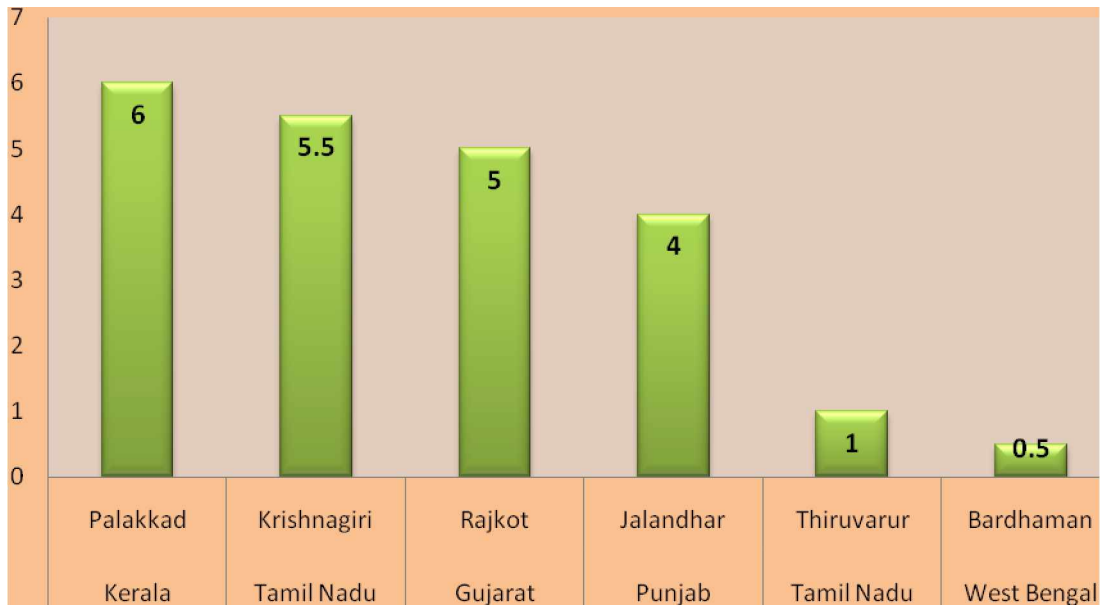


Decision-making process in district administration is the prime mover for policy intervention by the state government. The hierarchical system of district, divisional, block and village level takes its own time to look into the applications of the citizens. E-District project has to operate in automated environment, but there is a little enthusiasm among the government officials. According to the opinion of the citizens, Palakkad has a quicker decision making mechanism than other e-district projects. However, the ranking is a notch up an average of 6 on the scale of 10 as most of the departments still follow the *tapal* (courier) system to move files from one level to another.

Krishnagiri comes close at 5.5 points, followed by Rajkot at 5. Both these e-district projects are concentrated at the district headquarters level. Jalandhar Suwidha system has audio-visual systems in place to facilitate citizens' interaction with officials on delay in provision of services or clearance of applications. Thiruvarur and Bardhaman fare poorly for lack of quick decision making mechanisms.

**Graph No. EDC 4**

**Business process reengineering**



e-District is a one time effort at business process reengineering with emphasis on automation of office at the district collectorate, front office with information kiosks, followed by broadband connectivity and computer architecture up to block and panchayat level. In most case, the project has not penetrated beyond block level.

The above graph illustrates the perceptions of the citizens on the levels of BPR achieved in the e-district project. Palakkad ranks high among the e-district projects for its automation and integration with lower levels of administration. Krishnagiri has achieved BPR at the district level with efforts being made to automate the block offices. Rajkot and Jalandhar have achieved business process reengineering at the district headquarters offices. Jalandhar's Suwidha system has a public-private partnership model. Thiruvarur and Bardhaman do not have front offices or any kind of business process reengineering.

**Graph No. EDC 5**

**Information outflow**

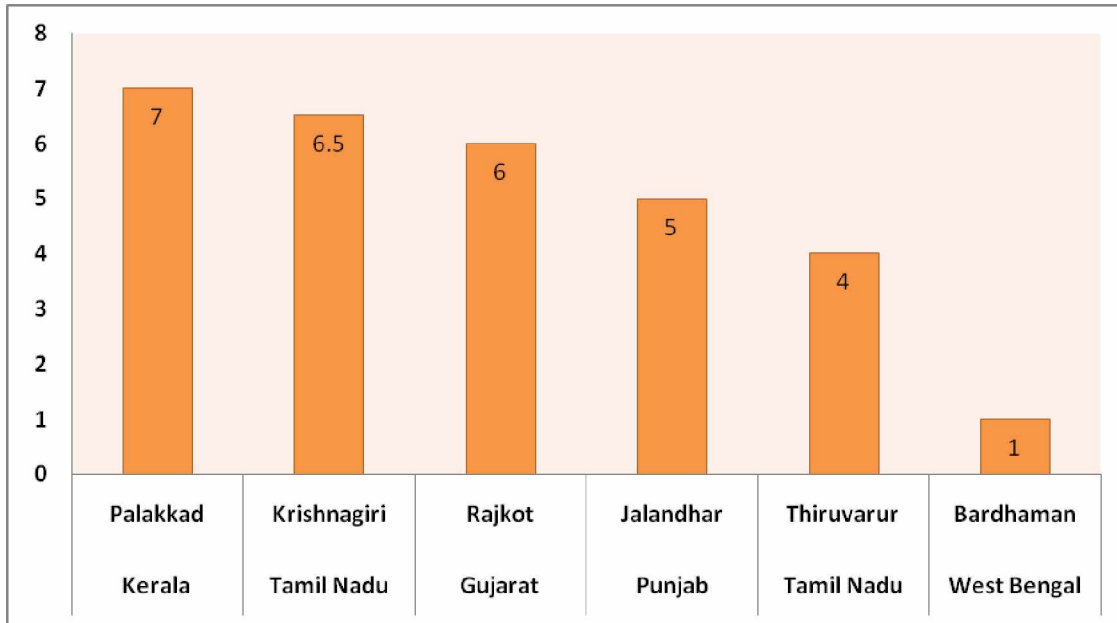


Information outflow in the case of e-district projects is very low compared to citizen services and land records projects. The only source of information is the district website where users are given an ID to track the status of their application as in the case of Krishnagiri. Palakkad also has information kiosks at the district and taluk level where citizens can know the status of their application.

The above graph denotes the citizens' opinion on the levels of information outflow in the e-district projects. Palakkad ranks high with 6 out of 10 points, followed by Krishnagiri. Rajkot and Jalandhar (Suwidha) fare well with 5 and 4 points respectively. Thiruvarur and Bardhaman rank very on this count.

**Graph No. EDC 6**

**Cost and time considerations**

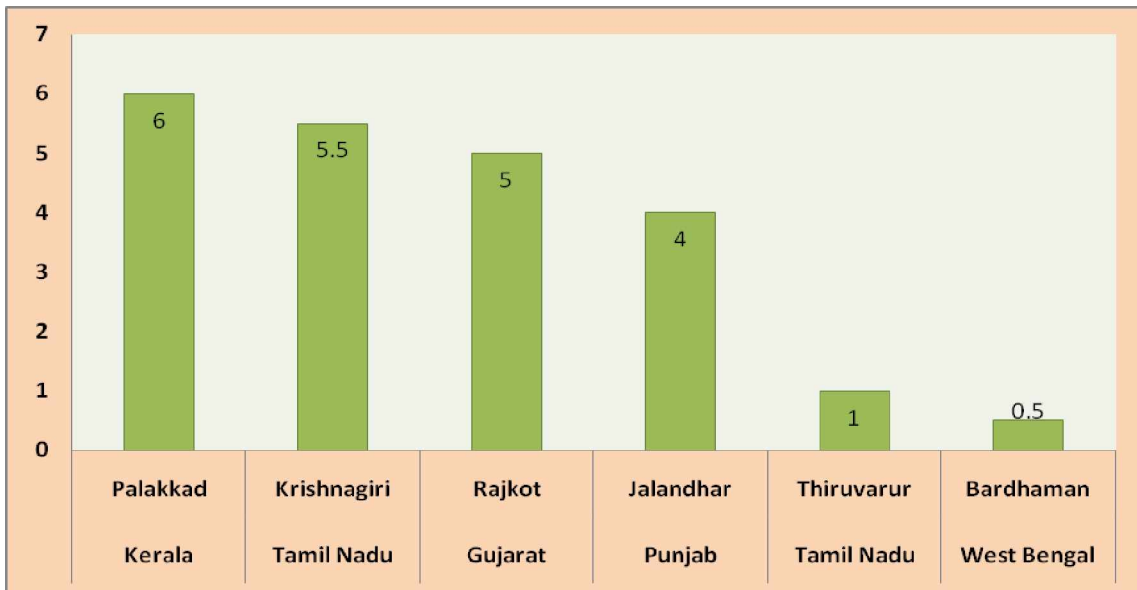


E-district project is confined to a limited geographical area, but citizens are forced to travel to division and district headquarters for most of the works. The administrative procedures are normally rigid and take a lot of time to clear even simple issues like pensions and scholarships. Naturally, there are bound to be cost and time considerations in these projects too.

The above graph indicates the citizens' perception on the cost and time considerations for availing e-district services. For its penetration up to panchayat level and integration with FRIENDS and Akshaya Palakkad is the most economical and time saving project. It is followed by Krishnagiri and Rajkot. Suwidha in Jalandhar has outreach only up to sub-divisional level in the form a service centre. Its user charges are very high and people have to travel a lot of distance to avail Suwidha services. Bardhaman has counters at the district magistrate office and people have to travel to the district headquarters to avail government services.

**Graph No. EDC 7**

**Quality of services**

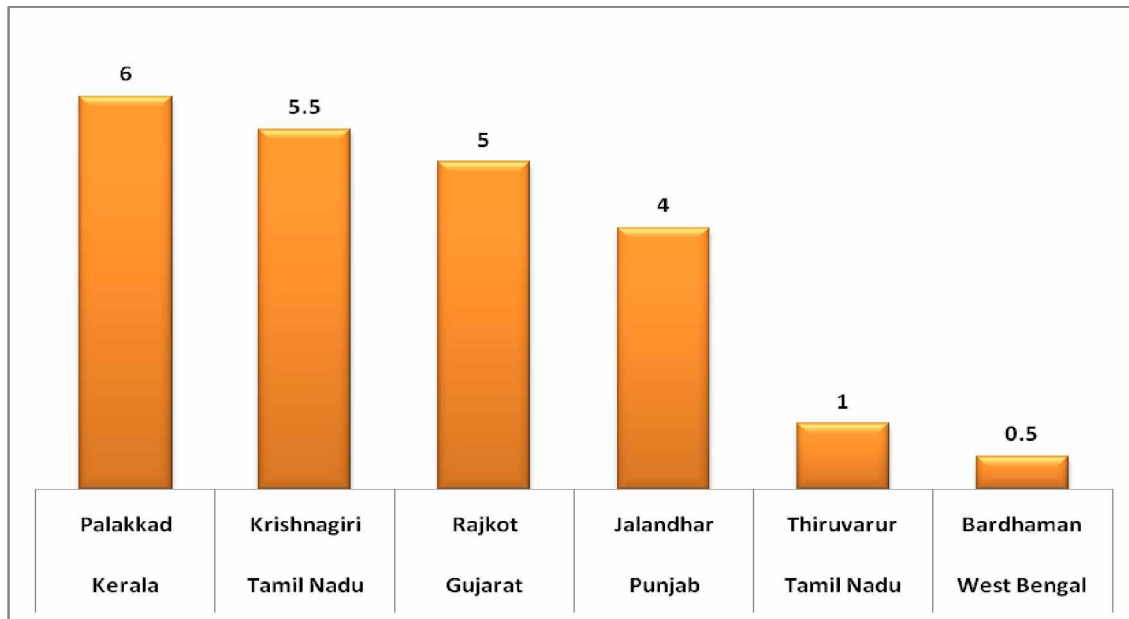


There is no such thing called quality in the services of e-district except for Palakkad and Krishnagiri and to some extent in Rajkot and Jalandhar. Only the mode of application is online, but all the processing is done manually by the administration and officials at various levels. The quality in services include online response, short message system, front office with amenities like waiting hall, water supply, adequate ventilation and emergency medical facilities. Only in Palakkad, the quality of services seems to be improving.

The above graph illustrates users' perception on the quality of e-district services. Palakkad has a rating of 6 on a scale of 0 to 10. This indicates that people still go personally to the concerned departments and officials to get their work done. Krishnagiri comes next with 5.5 points out of 10, but the district collectorate is located way outside the district headquarters. Jalandhar has a better front office and environment for delivering government services, including transport.

**Graph No. EDC 8**

**Effective delivery mechanisms**

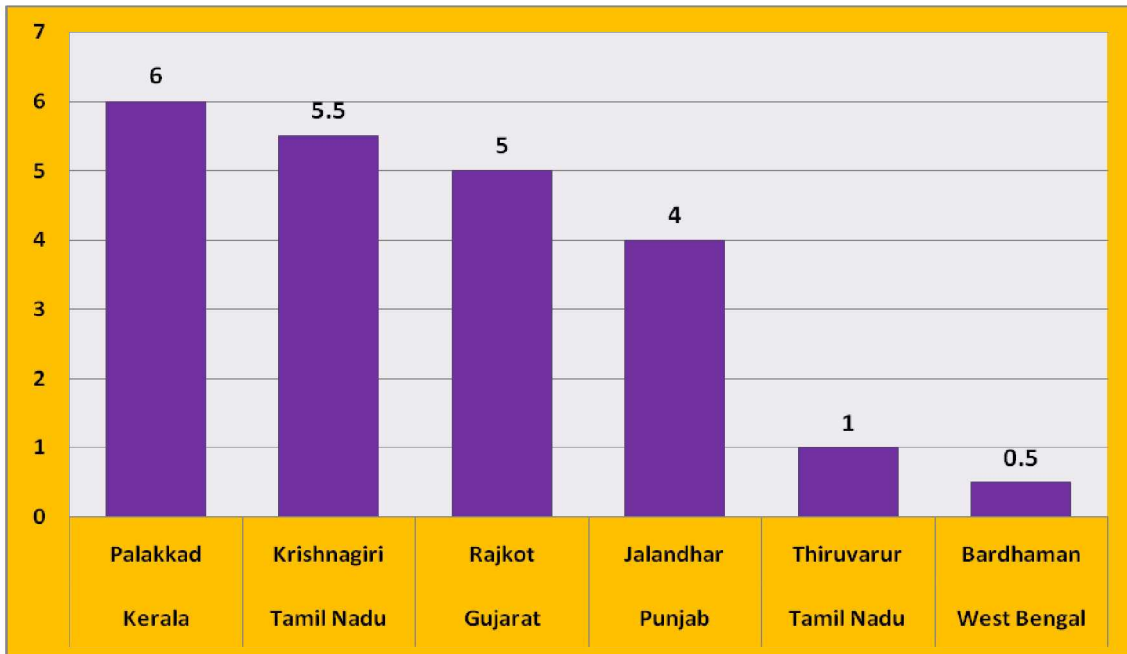


There are no additional effective delivery mechanisms for e-district except for a website and a front office. But even these are lacking in the case of Thiruvarur and Bardhaman. Therefore, we do not see higher rankings in this aspect.

The above graph indicates that citizens have given moderate ratings for projects that are functioning well. Palakkad is rated at 6 on a 10 points basis for its front office, DC Suite information kiosks, etc. Krishnagiri has an active web interaction with the citizens, particularly students and the youth. Rajkot and Jalandhar have front offices that offer various government services. There is no facility in Thiruvarur for delivering e-district services.

**Graph No. EDC 9**

**Transparency**



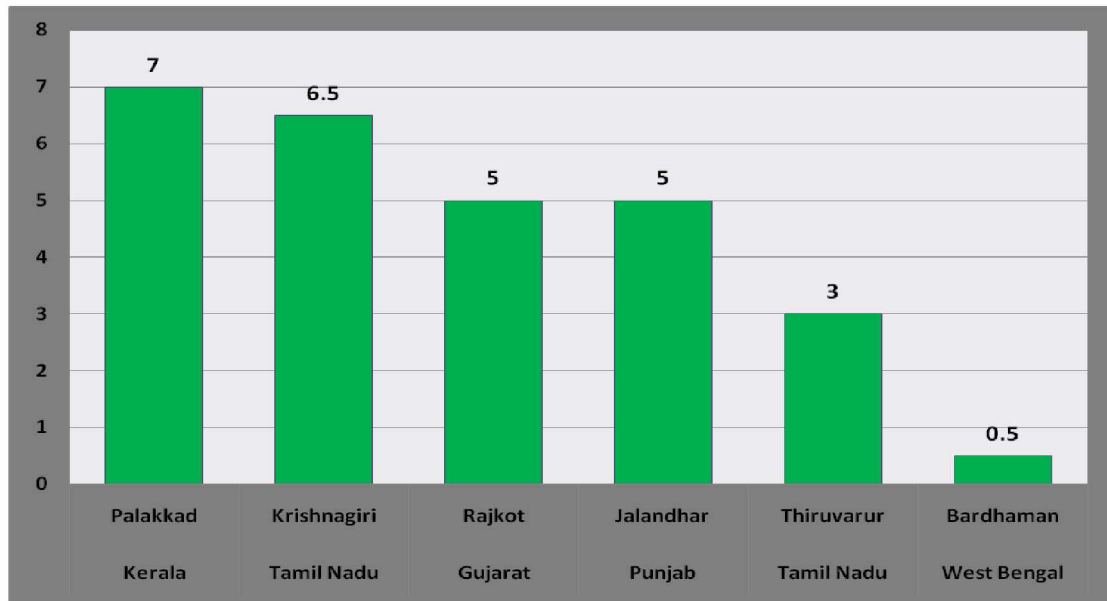
Transparency is one of the basic objectives of e-district project as envisaged by the National e-Governance Plan (NeGP). However, efforts have not been made to that effect in most of the e-district projects. Transparency is limited to applying online and getting certificates, but the processing is in a traditional bureaucratic way.

The above graph illustrates the perceptions of the citizens on transparency in e-district services. Palakkad scores at 6 on a 10 point basis followed by Krishnagiri and Rajkot. This average rating reflects the level of transparency only at the front end. Jalandhar is next with 4 points where processing is done in a traditional way. Bardhaman has counters with a computer operator to receive and dispose applications.



**Graph No. EDC 10**

**Accountability and trust in government**



An accountable and trustworthy district administration is one of the core objectives of e-district mission mode projects under the National e-Governance Plan. Automation and online submission of applications tend to increase citizens' trust in district administration. The above graph gives a picture of citizens' trust in district administration. Palakkad ranks high with 7 points out of 10 followed by Krishnagiri in Tamil Nadu at 6.5. However, Thiruvarur in the same state is perceived low on accountability and trust issues in e-district services. Rajkot and Jalandhar are mid-way through at 5 points. This underscores the need to expand and popularize the e-district services and overhaul the image of the district administration with common service centres as the access points.

## **Chapter-VII**

### **Assessment of individual capacities of government staff and citizens perspective**

#### **Introduction**

For the past twenty years, several trends have converged to strongly influence the workforce dynamics of business and government. First, nearly every aspect of work has been affected by the introduction of information technology (IT) into our society, economy, and workplaces. Second, relentless demands for efficiency and continuous improvements in information technologies have combined to reshape both business models and modes of operation, as well as relationships with customers and citizens. As one consequence, government increasingly relies on information technologies to deliver all kinds of programs and services. At the same time, availability of skilled government staff to deal with the information society have created serious concerns about recruitment, retention, and succession planning for the government IT workforce. Over the last ten years, both central and state governments have become concerned about the effects of losing institutional knowledge and critical skill sets to retirement. These concerns are exacerbated by the burgeoning growth of IT use in the private sector which poses strong competition for skilled IT professionals.

#### **Governance and Technology**

\Gradually throughout human history, the power to steer society has diffused away from the chieftain or king towards a broader base of elected representatives, managers, bureaucrats and interest group leaders. Movement along this long-run trend has been far from linear or painless, and no one decision-making model has prevailed. Over time, however, economic growth has combined with changing values and institutions to reshape the nature, scope and means of exercising authority throughout society – in government, corporations, associations and community groups.

Recently, there has also been a growing recognition that the ability or power of collective institutions to chart a particular course depends to an increasing degree on the active involvement

of the governed – that is citizens. Looking to the future, there are signs that the governed of yesterday could become the governors of tomorrow. This does not mean that every citizen or worker would become a politician or manager. Instead, tomorrow's dynamic societies, less governable by the old methods of command and obedience, may set and achieve both individual and broad social goals by enhancing decision-making capacities generally – as in the case of social movements through alternative media and the Internet.

Such a change would mean a radical break with past as well as with most prevailing governance models. Traditionally, decisions have been made and implemented using centralised, top-down and predetermined structures operating in rigidly defined fields of action. Despite today's general tendency to assign formal power to citizens and shareholders, in practice, the choice of goals and of the means for reaching them remain largely delegated, centralised and hierarchical. It is plausible and even desirable to consider the longer-term prospects for a major transition in the institutions, rules and culture that shape practical governance in all parts of society using the latest information and communication technologies.

Prospects for such large-scale transformation of the ways in which freedom and responsibility are distributed will depend on a broad, interlocking set of changes in underlying technological, economic and social conditions.

The prospect of discontinuity across so many dimensions is not unprecedented. There have been similar periods in human history, such as the transition from agricultural to industrial society. However, what distinguishes these shifts from previous ones is that they will largely depend on the emergence of a mutually reinforcing relationship between, on the one hand, a significant diffusion throughout society of governance capacities and, on the other, higher degrees of technological, economic and social dynamism. These two sets of developments could give rise to a powerful virtuous circle.

At the root of this symbiosis is the expectation that desirable changes will be both a consequence and a cause of the diffusion of power and responsibility. Consequence, because unlocking the positive potential of tomorrow's technological breakthroughs, deeper economic interdependence

and greater social diversity seems unlikely to occur without a much broader dispersion of initiative and accountability. Cause, because the technological, economic and social changes that seem best suited to fulfill society's aspirations also seem likely to provide many of the tools and experiences needed to enhance governance capacities.

Looking at governance as the general exercise of authority, it seems that over the long run there has been a clear reduction in the absolute or unconstrained power of those in positions of power. This has been a marked trend both at the macro-political level, where the state attempts to effect society-wide governance, and at the micro level, where corporations and community groups have experienced important changes in the exercise of authority.

At the macro level, determination of the objectives, laws and methods meant to direct the collective future of society has, in most parts of the world, moved away from absolutism, authoritarianism and even the closed society conception – like in the case of North Korea. The decay of traditional notions of sovereign authority has now reached the point where in many circumstances universal principles, such as those of human rights and environmental sustainability, are becoming both more legitimate and more effective than rules imposed by appealing to national prerogatives. Similarly, the trend at the micro level of corporations and community groups has been away from the unconstrained authority of the management and leadership over employees and societal groups.

In broad strokes, four sets of historical developments have influenced these profound shifts in authority relationships. First is the direct impact of struggles to introduce greater democracy and competitive markets. The second set concerns the ways in which changes in economic productivity and material wealth alter both the aims and methods of governance – in the household, enterprise or government. A closely related third category of forces involves the rules and belief systems that serve as the implicit and/or explicit guides to decision making and implementation in all parts of society. And the fourth category of general factors that alter governance systems relates to innovations and/or transformations in institutional design, organisational structure and administrative operation – in the post industrial economy.

Recently, considerable interest has been expressed in the topic of governance or to be precise, in e-governance. Most often the focus is on the role and methods of governments. Understandably, parallels are drawn between the changes taking place in the private sector, such as the advent of e-business models facilitated by the Internet, and what might be done to improve the delivery of government services – including electoral politics.

“Reinventing government” or how to set up and realise the potential of e-government is certainly an important issue. However, the question here is: how might societies in the future become more effective in arriving at desirable collective outcomes or national interests. The general impression is that creating a desirable future will depend on provoking a virtuous circle between new forms of governance and technological, economic and social dynamism. Historically, it would not be the first time changes in governance were intimately tied with fairly sweeping societal transformation. What does distinguish the current conjuncture is the nature of changes in governance that will be needed. Establishing the cohesion between future dynamism and new forms of governance entails two major interdependent shifts in how decisions are made and implemented throughout society.

The first, more macro-level dimension involves replacing predetermined and rigid organisational schema with much more spontaneous, fluid and task-based approaches. The second, more micro-level dimension concerns the need to overcome the hierarchical relationships, habits and traditions that have been so ingrained in how people behave and think.

Both of these changes will call for major advances in the practical skills and rules used in daily life by organisations and individuals, whether operating alone or in concert, locally or globally, in a government, workplace or household context. The use of social media is a case in point. Thus, the common challenge for policy makers, in public and private sectors, is to ensure that people will have the capacity to exercise their liberty and to manage the constraints that come with the adoption of a common set of basic principles or values. Furthermore, policies will need to address the interdependency of the micro and macro dimensions of this challenge that arise, because the requisite skills and institutional frameworks are the outcome of efforts at both the collective and individual levels.

Despite the extremely wide disparities between different parts of the world, two basic and overlapping policy thrusts are likely to be crucial for improving governance capacities in the 21st century. The first approach is relatively indirect since it depends on encouraging technological, economic and social dynamism. The second, more direct approach involves efforts to upgrade the primary ingredients – the skills, infrastructure, frameworks, values and goals – that determine individual and institutional capacity to make and implement the decisions that govern the future.

With information travelling at the speed of a mouse-click, good practices are not the only things that are now spread more efficiently. New technology gives new powers to governments – but also to the organisations and individuals they endeavour to control. In mobilised societies, group interests are pursued with great vigour and sophistication. This presents new challenges to governance in the present times. Mitigating group tensions was always a cardinal function of political institutions, but governments also face the subtler task of dealing with internal contradictions, i.e. the conflicts of interest inherent in every society.

Below is a broader classification what technology has to do with governance in contemporary societies:

Governance *of* technology refers to the work of the public executive to:

- Encourage the invention, development and deployment of existing and new technologies (technology refers to both physical (technological) tools and the skills required for their effective use).
- Assist producers and consumers in identifying opportunities for the use of existing and new technologies and those that are expected in the near future.
- Identify, and help producers and consumers to identify, risks (as perceived by experts) potentially associated with the development and deployment of existing and new technologies, and identify and develop strategies (themselves often both skills and tools) to manage those risks.
- Identify patterns of and conflict between different societal groups, common citizens' perceptions of risks associated with the development and deployment of new technologies, and develop strategies for managing those conflicts.

Governance *with* technology refers to the:

- Development, deployment and use of existing and new technologies to enhance the governing capabilities of executive, legislative and judicial public agencies and authorities.
- Identification of opportunities for the use in governance of existing and new technologies, and those expected in the near future.
- Identification of risks (as perceived by experts) potentially associated with the development and deployment in governance of existing and new technologies, and identification and development of strategies (themselves often both skills and tools) to manage those risks.
- Identification of patterns of and conflict between different groups on the risks associated with the development and deployment of new technologies in governance, and development of strategies for managing those conflicts.

*Governance of technology* requires the capabilities of decision making, oversight and programme delivery and the selection and deployment of tools appropriate and sufficient to secure common national goals – about which there will inevitably be some conflict – that have to do with the reaping and the distribution of the benefits, and the control and distribution of the risks, that arise from the deployment of technologies.

*Governance with technology* requires the intelligent use of technologies to enhance the capabilities of decision making, oversight and programme delivery throughout government.

Strategies for both governance of and governance with technology have a wide range of intended and unintended – and sometimes, unforeseeable longer term – consequences for societies, economies and politics, and these are not confined within the formal jurisdictions of the particular agencies of governance deploying those strategies. In turn, these consequences create new challenges, opportunities, risks and technologies for governance. They include actual harm and benefits; changing patterns of public acceptance or fear of governance agencies or particular strategies; reorganisation in the mobilisation of social movements; different patterns of investment and economic activity; altered social structures of ties and networks; and cultural effects ranging from new systems of classification (e.g. what is counted as “acceptable” risk or what is deemed to be “irreversible”) to the adoption or abandonment of cultural rituals; capabilities, metaphors, recognitions, commitments and practices.

Some technologies seem to be more important than others in human history. Everyone agrees that fire-making and the wheel were important. There would probably be general agreement that the propelling pencil, although useful and not to be despised, did not cause fundamental changes in how we organise our social life. Thus, some technologies appear to be transformative – that is, involved in large-scale discontinuous change to societies.

Of course, technologies by themselves do not transform societies; people do. People invest in research and development, regulate, and buy and so on – all for social cultural, ritual, religious, financial and political reasons. These actions transform the ways in which societies organise, look and work. Technologies are implements by which people transform societies. On the other hand, there are as many unintended as intended consequences of deploying and using new technologies: some can have large consequences. However when science and technology, used or developed in response to these pressures, deliver new opportunities to do things very differently rather than merely incrementally differently, it is not unreasonable to talk of transformative technologies. Although technology is not the sole or fundamental cause of social change, it is a proximate and mediating force that has social and political consequences.

Judgement and appreciation are the craft skills of governance. One way to tell the history of technology is to describe the mechanisation and then the automation and finally the replacement of craft skills generally and skills of thought in particular. The argument is made that the modelling of decisions in automation has removed arbitrariness and particularism by representing decision grounds on objective, general abstract rules. This can be equally implied to citizens who are more knowledgeable than they were previously. Demand for government services and products is on the same length as that of from the market. Governments are constantly striving to improve their delivery mechanisms through institutional building (skilled organizations), transparency, accountability, and improving citizens' trust in governance.

With the above yardsticks, the present chapter will try to present the changed circumstance in which the individual government servants and citizens perceive e-governance on the whole. Only key attributes are being presented here.



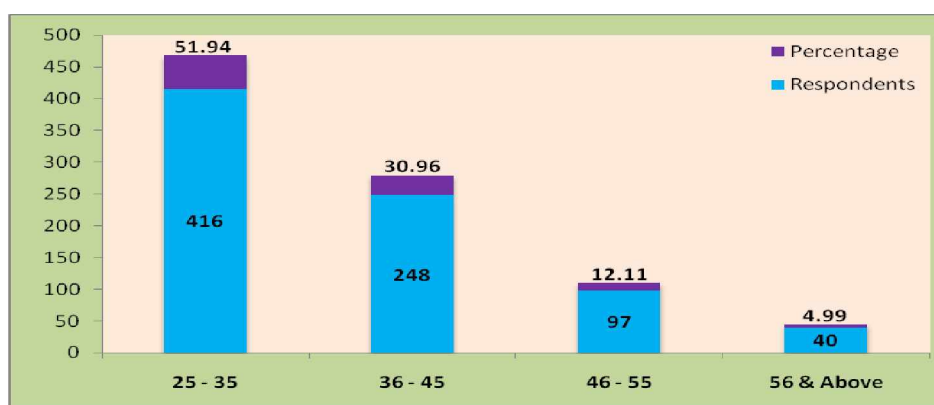
### Sample design of the present study:

Total number of states:	13
Total number of districts:	31
Total number of projects:	28
Total number of officials:	801
Total number of citizens:	2,615
Total sample size:	3,416

The standard deviation has been rounded off for academic convenience and broader understanding

### Results from the Survey of Officials Understanding of e-Governance

**Graph No. 7.1** Age composition of employees

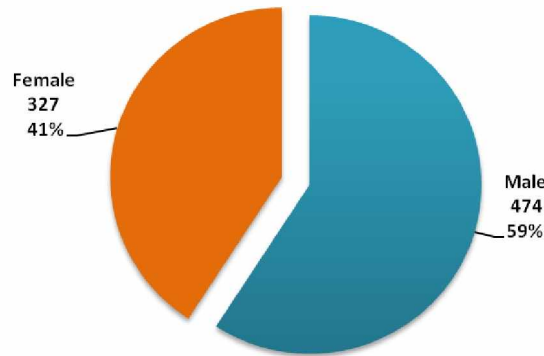


Of the total 801 employees approached for responses on their capacities and performance in e-governance projects, more than half of them fall in the age group of 25-35 years. This is in tune with the current demographic profile of the nation where the young dominate the population. Also, some of them are project officials and have been hired from the open market. The next big group is in the range of 36-45 years. These are mostly government officials and have been trained specifically for administering e-governance projects. More than 12 % of the respondents

are in the age group of 46-55 years. They represent senior officials and supervisors. Only less than 5 % of the employees are over 55 years of age and this group represents the top level administrative leadership.

**Graph No. 7.2**

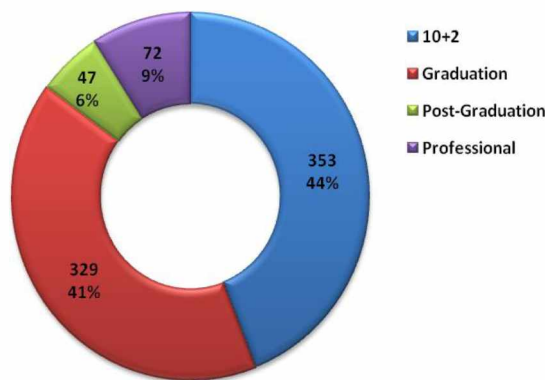
**Gender composition**



The above graph illustrates the gender composition of the employees surveyed for the study. Almost 60 % of the respondents are male while the rest are female. The gender factor here assumes significance as we can find nearly 40 % of women working in e-governance projects. The unusually high side of female employees is due to their presence at front offices, counters, help desks, etc.

**Graph No. 7.3**

**Education profile of employees**

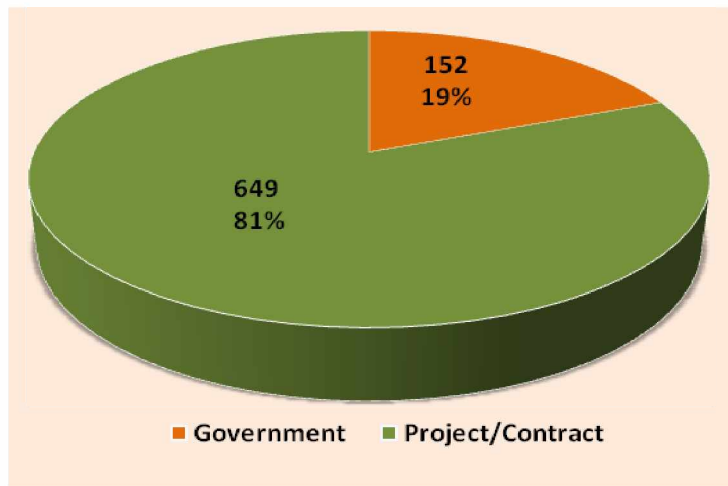


The graph above gives the educational profile of the employees surveyed. All those working in e-governance projects are literate, but their levels of education differ significantly. Almost 44 % of the employees had their Plus Two education completed while 41 per cent of them hold a bachelor’s degree. Nearly 9 per cent of the employees have professional qualifications like

engineering and business management. Only 6 per cent of the employees have done post-graduation. Those with Plus Two education are those employed at the front offices and are a mix of both government and private sectors. All the government employees are either graduates or post-graduates. Those with professional education form the technical and managerial staff of various e-governance projects.

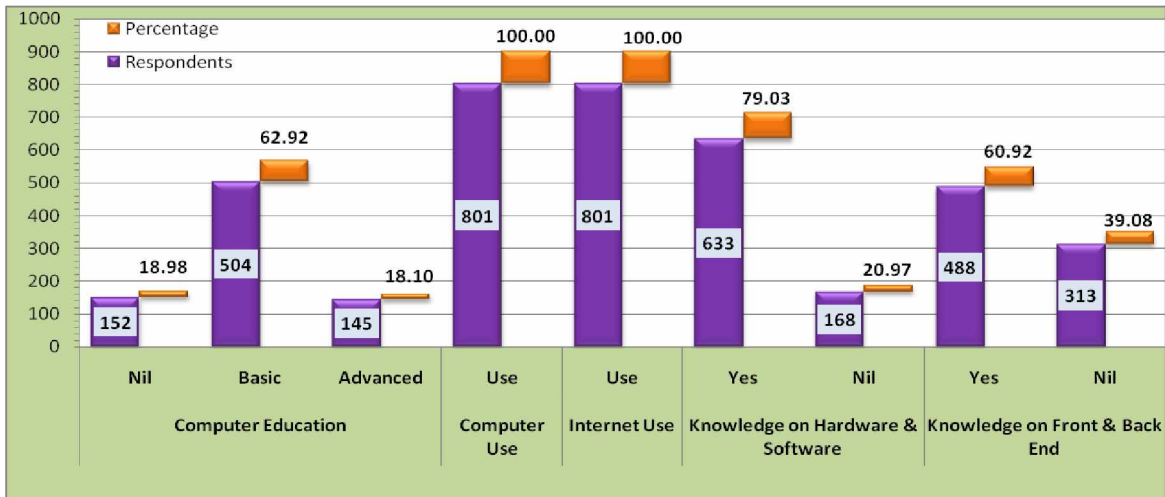
**Graph No. 7.4**

**Type of employment**



The above graph explains the background of the employees questioned for this study. Less than 20 per cent of the respondents are government officials. Many of these officials come from their parent departments like electricity, water supply, revenue, agriculture, public distribution system, registration, district collectorates, etc., on deputation. After a designated tenure, they go back to their parent departments. These officials are particularly trained in managing front end services to citizens. They are mostly supervisors and project leaders. The remaining 81 % of the respondents are project employees drawn on contract from the private sector. They are the data entry operators and deliver the actual e-governance services at the front end. Most of the technical staff is also from the private sector representing various technology vendors.

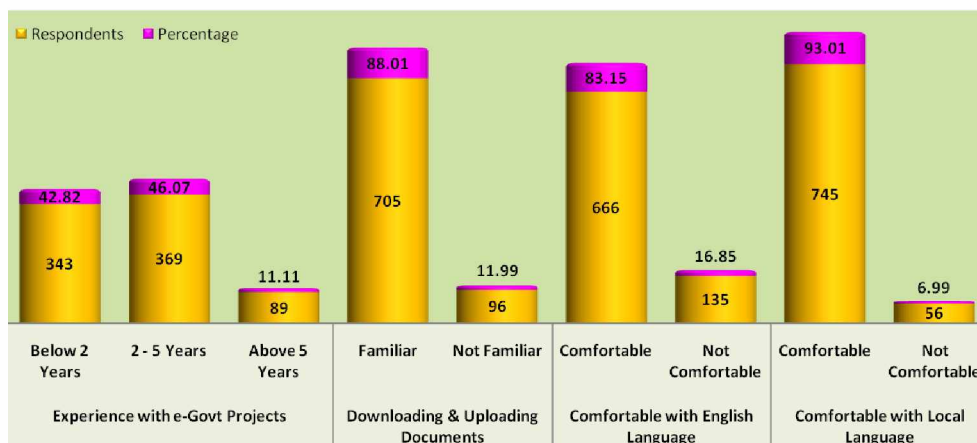
**Graph No. 7.5 Technical skills of the employees**



The above composite graph gives us a clear picture on the technical skills of the employees working with-governance projects. Nearly 63 % of the respondents have basic computer education while more than 18 % have an advanced diploma in computers. Those having basic computer education are higher in number on account of their young age and training at various computer institutes. Those having advanced degrees or diplomas in computer education are the technical and engineering staff working with e-governance projects. Nearly 19 % of the employees do not have any computer education and they are mostly senior government officials, who still prefer the manual mode of operations.

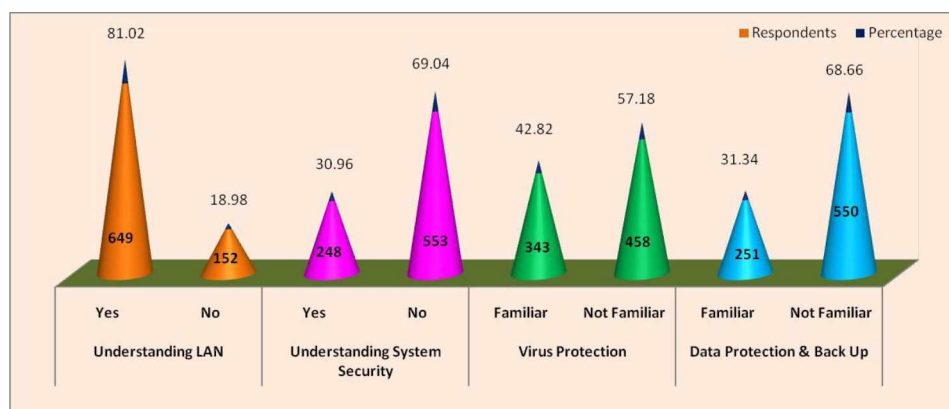
However, in the e-governance mode, every official has to use the computer as well as the assorted Internet network. The graph illustrates that all the respondents are using computers and Internet. More than 79% of the employees have basic knowledge of the software and hardware components of the computer architecture. However, when it comes to the back-end integration of data and services, only 61 % of the employees said they are aware of them. Though there is knowledge of front-end operations, many do not know the back-end office management as it is done in the core government departments.

**Graph No. 7.6 Managing e-governance services**



The above graph illustrates the actual management skills of the employees working with e-governance projects. Nearly 43 % of the employees are fresh entrants and have less than 2 years of experience in working in e-governance projects while over 46% of the respondents have experience ranging between two and five years. Only 11 per cent of the employees have experience of more than five years and these are all government officials deputed from various departments. Likewise, nearly 88 % of the respondents can download and upload documents and data and over 83 per cent of them are comfortable with English content of the e-governance websites. However, 93 per cent of the respondents felt that they are more comfortable with the local language too.

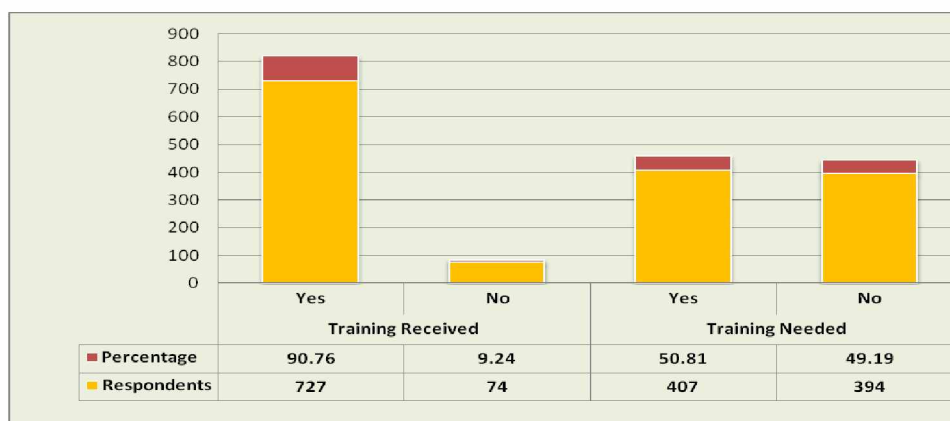
**Graph No. 7.7 Knowledge on computer architecture**



Graph No. 7.7 illustrates the respondents' knowledge on the computer architecture and systems security. Nearly 81 percent of the employees understand the local area network, but only 31 per

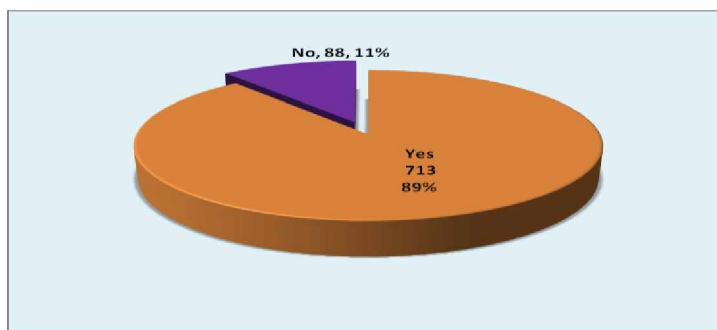
cent of them have knowledge of systems security. Over 57 per cent of the respondents are not familiar with virus protection mechanisms and nearly 69 per cent of them are not aware of data protection and back up systems.

**Graph No. 7.8 Training requirements**



The above graph explains the training component of the e-governance projects staff across the country. Over 90 per cent of the staff received training in handling online services while nearly 51 per cent of the respondents said they need further training to cope up with the latest developments in the information technology sector in terms of both software and hardware customization.

**Graph No. 7.9 Regular use of Internet and e-mail in Personal Life**

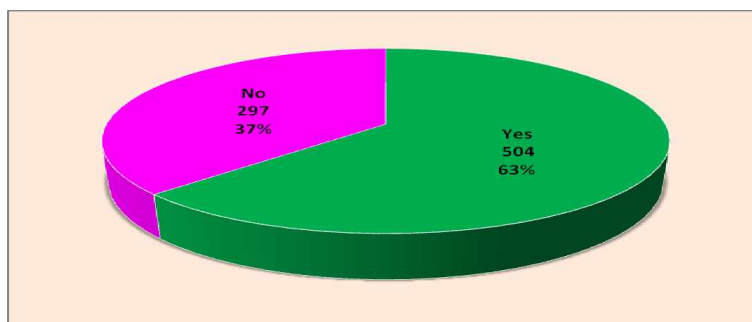


The above graph presents the pattern of Internet use among the government officials and other employees working in e-governance projects in various states of the country. Of the 801 staff surveyed, 89 per cent of them use Internet. This is on the high side on account of demographic

change and the imperatives of working with information technology at office and home. The contractual staff is well trained in computers and Internet usage. Only 11 % said they were not using Internet and e-mail in personal life.

**Graph No 7.10**

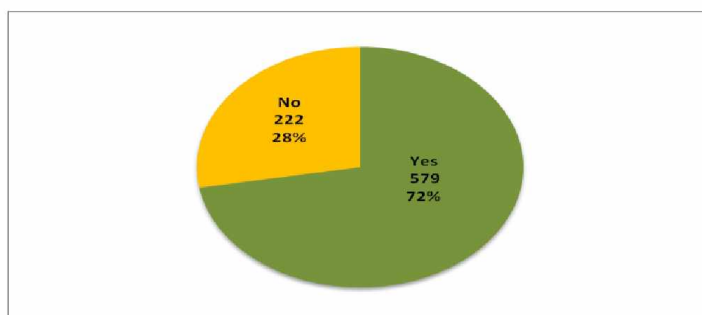
**Awareness on NEGP**



It is a general perception that government/contract staff should be well aware of the National e-Governance Plan on account of training and capacity building programmes for e-governance. However, it was surprising to know that only 63 % of the respondents were in the know of NeGP while the rest claimed they do not any such plan. The NeGP is not a holistic concept that the state governments look to for conceiving their own projects. Also, the NeGP had mission mode projects as various components like e-district and land records management. Therefore, the employees were aware of the project description rather than the NeGP itself.

**Graph No. 7.11**

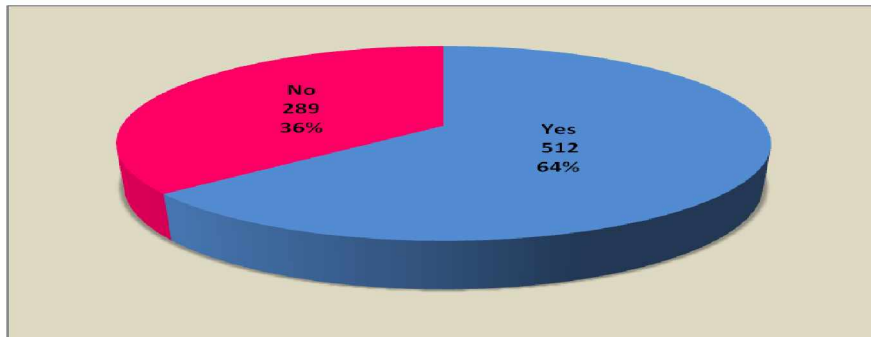
**Awareness on IT Act**



The above graph illustrates the overall awareness of employees on the National Information and Technology Act, both in the original and amended forms. Nearly 72 per cent of the respondents claimed they were aware of the Act while the rest said they do not have knowledge of the Act.

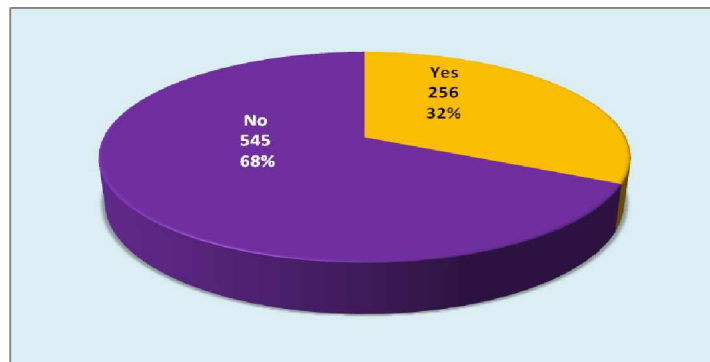
Government and contract staff seem to be more aware of the IT than the NeGP on account of their penchant for procedural forms of administration. The contractual add to this because they have sufficient exposure to IT tools and related issues.

**Graph No. 7.12**                      **Awareness on State e-Governance Plans**



The above graph indicates the awareness levels of the government/contract/project staff on the respective State e-Governance Plans and Acts. Nearly 64 per cent of the respondent said they were aware of the e-Governance Plan of their States while the rest said they have no knowledge of such plans. This awareness is a little higher than that of the NeGP as the respective state government brief their employees on their e-governance plans at a regular interval through orientation and capacity building activities.

**Graph No. 7.13**                      **Ever gave suggestions for Improvements in e-governance projects?**



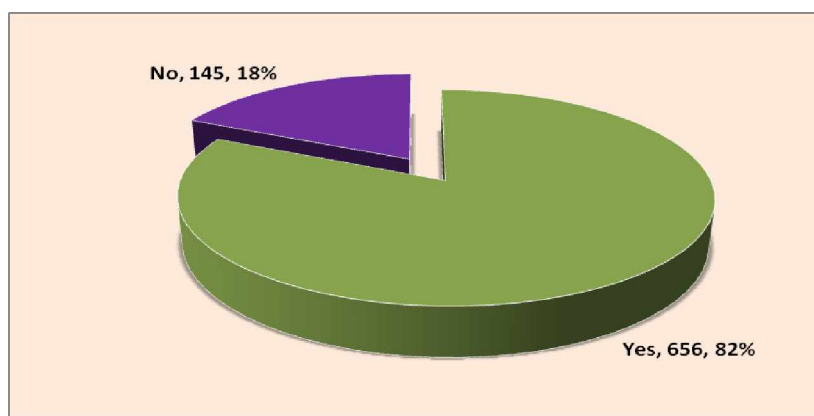
The above graph reflects the maturity and understanding of e-governance projects by the employees of the government and other contractual staff. Nearly 32 per cent of the employees



claimed to have given inputs and feedback on improving e-governance services to citizens while 68% of them said they have never done any evaluation for improving the project services in which they work.

The claim of nearly one-thirds of respondents claiming to have given inputs/feedback on e-governance services to their higher ups or other research agencies is quite significant as the governments do evaluation at the state level and not necessarily at the district level. And, no government official will be ever critical of the broad programmes he is associated with on account of bureaucratic control and administrative procedures.

**Graph No. 7.14** **Is there any Cyber Protection for Project?**

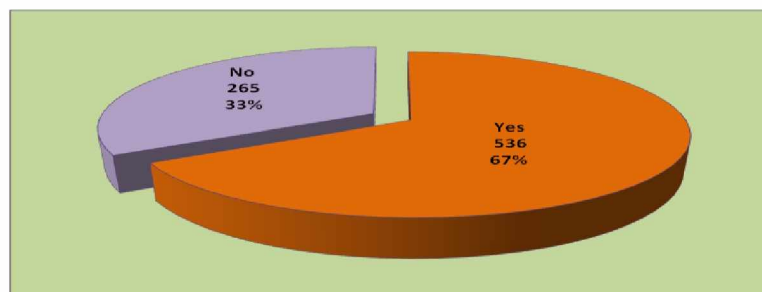


The above graph illustrates the awareness of the respondents on cyber protection and assorted activities in their respective projects. Almost 82 per cent of the respondents said they were aware of cyber security issues and claimed that their respective projects have a cyber protection. Those claiming to be not knowing anything about cyber security form 18 per cent of the sampling size, which is quite a significant number as e-governance involves passwords, uploading documents, data, payment details, citizen database etc.

Cyber protection is critical to the front end office as it maintains huge databases and those operating at the front-end level should be well aware of system protection devices, software and passwords. Since the sampling size also involves those working at the back office and

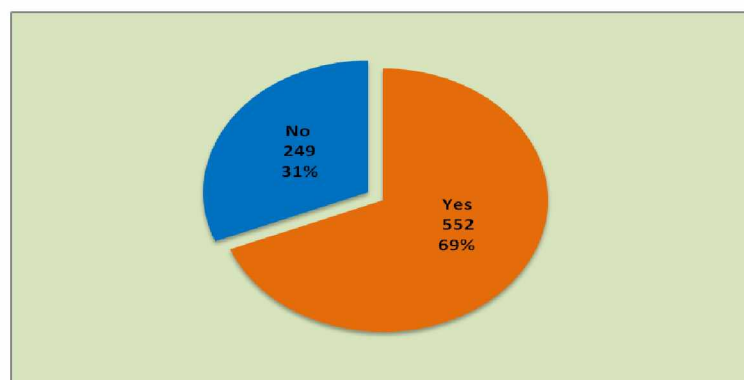
department levels, the number of people not aware of cyber protection is huge by e-governance standards.

**Graph No. 7.15 Do you support PPP Model?**



The above graph indicates that only 67 % of the employees surveyed are ready to work in a public-private partnership model of e-governance projects for reasons of technology vendor, software professionals and better project management. Nearly one-third of the employees strongly opposed any PPP model for e-governance projects. They claimed that e-governance projects should be in the domain of respective state governments only.

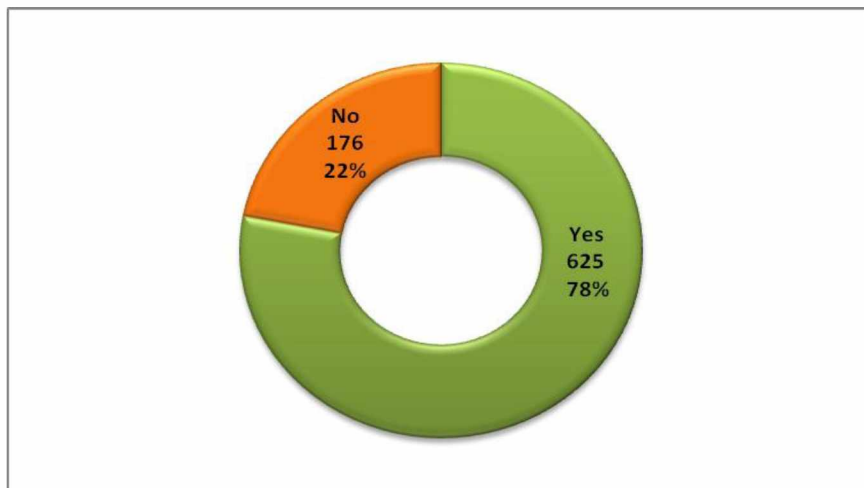
**Graph No. 7.16 Satisfaction with Technology and Management**



The graph above illustrates the satisfaction levels of the respondents with technology and management of e-governance projects. Almost 69 per cent of the respondents said they were satisfied with the project management and the technology being used. The remainder said they were not satisfied as the technology is old and the project management is being compromised by

higher officials. These are the new generation employees who have perfect understanding and knowledge of the new technologies and the upgrades software applications.

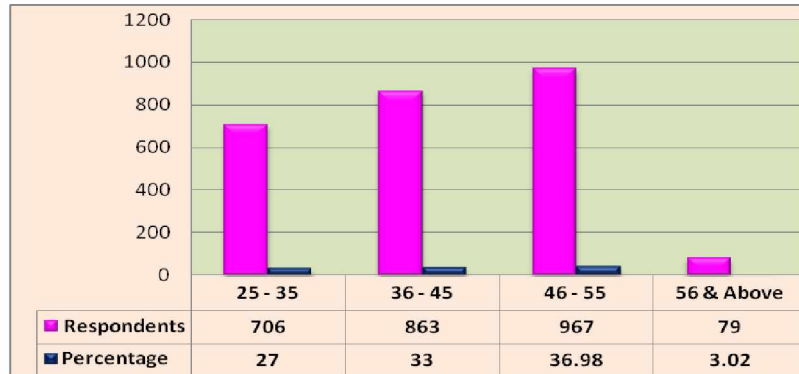
**Graph No. 7. 17**                                      **Comfortable with Interactive Models**



The above graph shows that a majority of the employees are comfortable working with interactive models. They form 78 per cent of the total sampling size. The remaining 22 per cent of the respondents said they are facing problems in working with the interactive models. These dynamic models include online transactions, generation of automated bills, downloading and uploading data, documents, online response to citizen queries etc. Those not comfortable with interactive models include mid and higher level senior officials.

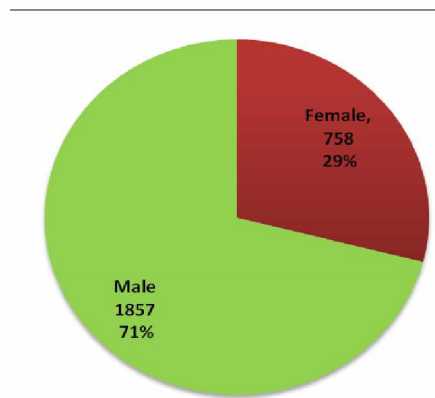
## Results from the Survey of Citizens' Understanding of e-Governance

**Graph No. 7.18      Age composition of citizens/respondents**



The above graph gives the age composition of the citizens who were surveyed during the study. Nearly 27 per cent of the citizen respondents fall in the age group of 25-35 years whereas 33 per cent of them are aged between 36 and 45 years. A majority of the citizens are in the age group of 46-55 years and they form nearly 37 % of the sample size. Those above 56 years of age are minimal at a little over 3 per cent.

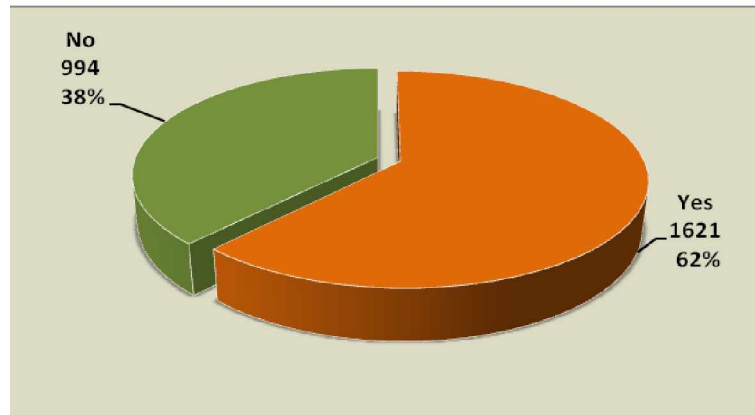
**Graph No. 7.19      Gender composition of users**



The above graphs shows the gender composition of the respondents who use e-governance services or have heard about them. Nearly 71 per cent of the visitors to e-governance citizen services are male while the rest are the fairer sex. The low levels of female citizens use of e-governance usage is due to the fact that most of them are from rural areas and the traditional culture of the man doing all the things for the family.

**Graph No. 7.20**

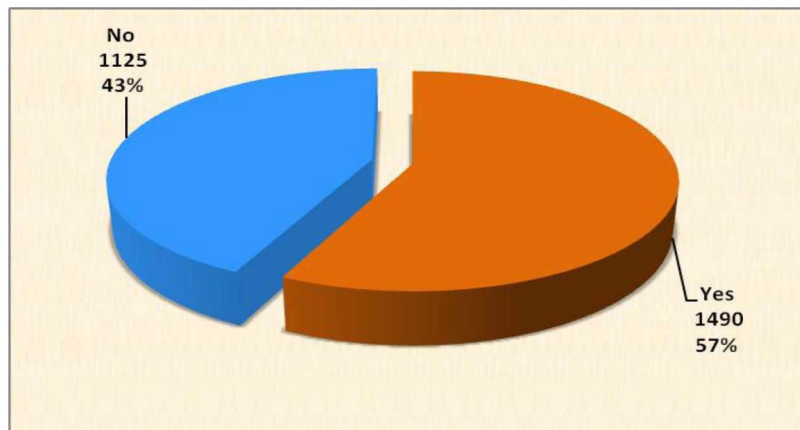
**Computer Awareness**



There is a relatively high level of computer awareness among the citizens on account of demographic profile (see Table No.7.1). Of the total sample size of 2,615, nearly 62 per cent of the respondent said they are aware of computers in administration and personal work. Those claiming they are not aware of the systems are also significant in number. They form 38 % of the total sample size. However, they are getting benefited on account of computers in administration.

**Graph No. 7.21**

**Computer Use**

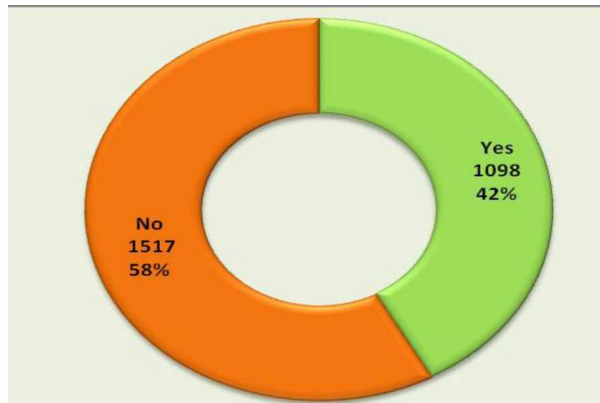


Though many people are aware of computers, those using them are less in number. Of the total respondents surveyed, only 57 % of them use computers at home or work. Those not using computer are also significant in number at 43 percent of the sample. This actually does not

reflect the general pattern of computer use as the number may be much less at around 15 to 20 per cent of the population. Demographic profile of the country also has contributed to growing levels of computer usage. Majority of the new generation people use advance technology for telephony and computing.

**Graph No. 7. 22**

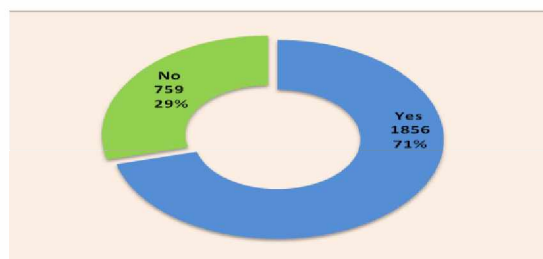
**Use of Internet**



The above graph illustrates the use of Internet by the respondents of the study. Though the previous graph indicates that 57 % of the respondents use computer, the graph under analysis shows that only 42 % of the respondents actually use Internet. This shows the low levels of broadband penetration and lack of access to Internet to a majority of the population. Almost 58 per cent of the respondents said they do not use Internet. This reflects the general trend of Internet use in the country. The latest statistical figures put internet use in India at 10 per cent.

**Graph No. 7. 23**

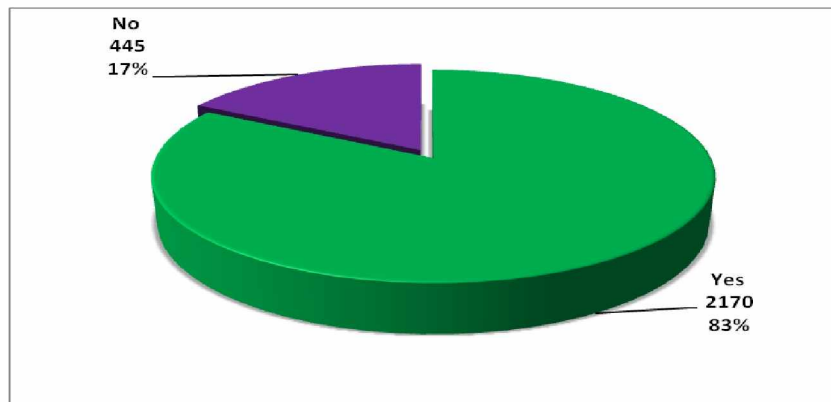
**Awareness on e-Governance**



Computer and Internet use has nothing to do with citizens' awareness on e-governance and the related projects. Of the total respondents surveyed, almost 71% claimed they are very aware of e-governance and the related projects. This has to do mainly with expansion in the number of

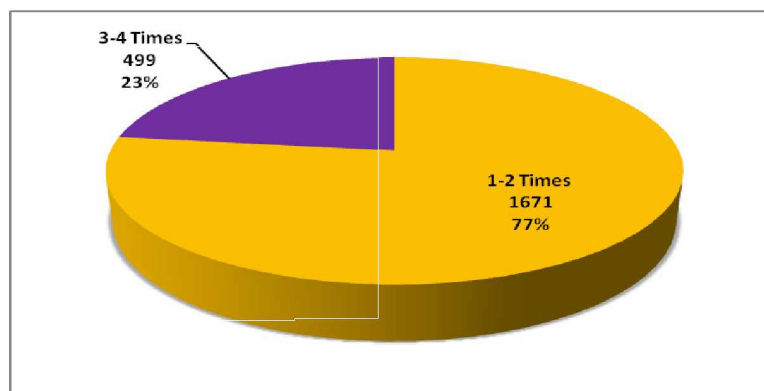
citizen services projects and the related citizen services centres in the country. Those who claimed they are not aware of e-governance stand at 29 per cent.

**Graph No. 7.24 Do you visit Citizen Service Centers?**



The number of people visiting citizen service centres is increasing by the day as most of the payment of utility bills is being done at these points. Though only 71 % of the respondents claimed they are aware of e-governance, here we can see that 83 % of them visit citizen service centres for various services like payments, filing applications etc. Lack of education and exposure to media may be the reasons for not knowing anything about e-governance. Only 17 % of the respondents said they have not visited citizen service centres so far.

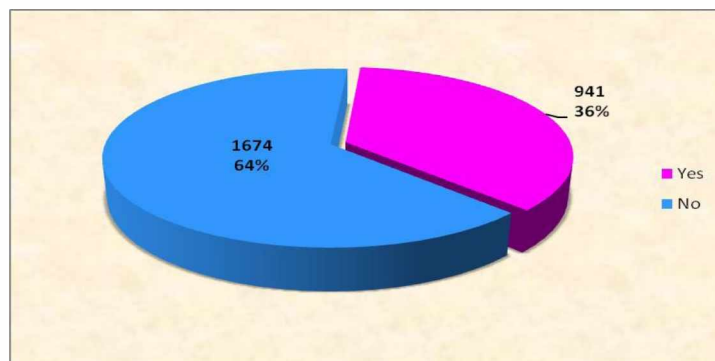
**Graph No. 7.25 How many times do you visit citizen center in a month?**



The graph 7.25 illustrates the growing number of trips by the citizens to various centres offering e-governance services. Multiple bills can be cleared at one go, but the bills come in various dates forcing citizens to visit at least two times in a month. Also, other services like submission of forms require additional trips to the centres as they have been made designated points by

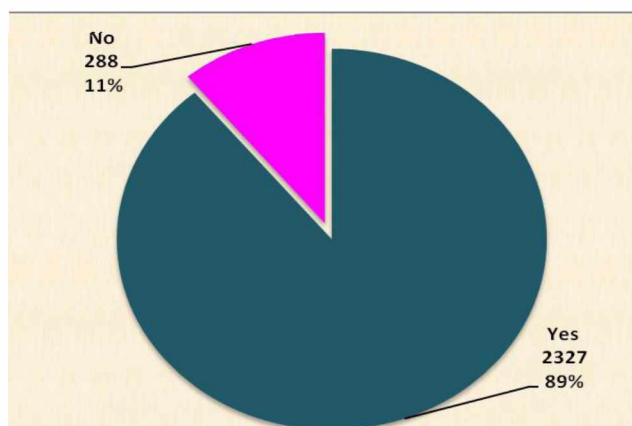
departments and agencies of the government. Of the total respondents, nearly 77 per cent claimed that they visit the service centres once or twice a month, but those visiting 3 to 4 times also are significant in number. They nearly form one-fourth of the sample size.

**Graph No. 7.26 Do you use Government Portals?**



Though 42 % of the total respondents claimed they are using Internet, the above graph shows that only 36 % of them are visiting government web portals for access to online services and information.

**Graph No. 7.27 Transparency in Online Services**

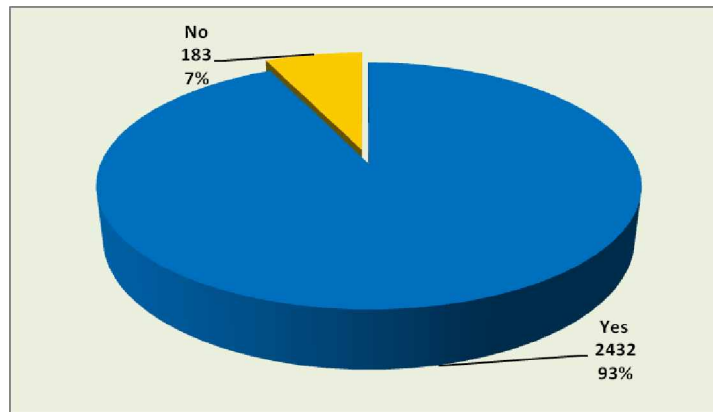


Transparency is the basic reason for the huge success of e-governance projects, particularly those offering citizen services. The graph above illustrates that 89 % of the citizens believe there is transparency in online services in the form of queue and token system, open counters and digital bills. Only 11 % of the users said there is no transparency in online services as they are supervised by government officials.



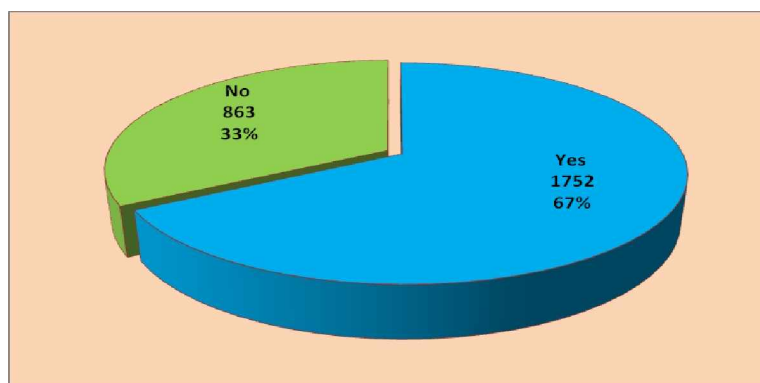
**Graph No. 7.28**

**More Services to be added**



There is a growing demand from the citizens from including more services in the e-governance projects. The above graph tells that a majority of the respondents wanted more number of services to be included in the current e-governance projects, particularly those offering citizen services. There is also a demand to include more private sector bills.

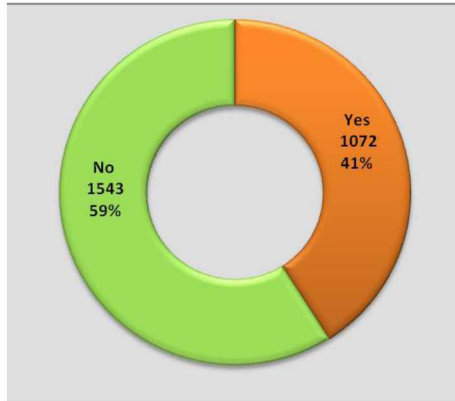
**Graph No. 7.29 Apart from service centers, do you visit government offices?**



Though e-governance has largely reduced physical interaction between government officials and citizens, other administrative issues force the latter to visit government departments for getting their work done. These include applications for ration cards, housing units, scholarships, etc. Some works demand the physical presence of a citizen before the designated official. The above graph shows that 67 % of the respondents visit government offices for getting their various works done.

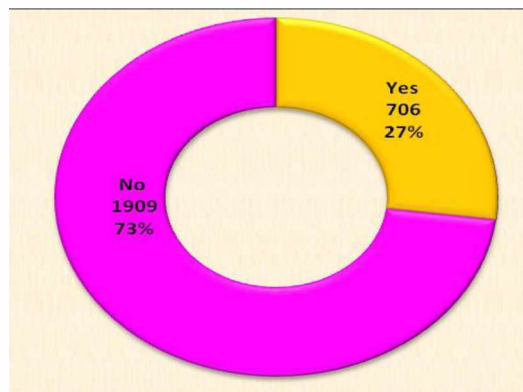
**Graph No. 7.30**

**Are you paying user charges?**



Levying of user charges for citizen services has not been the idea of e-governance, but on account of maintenance problems and a tie-up with a technology vendor or a private agency, user charges become inevitable. Of the total respondents surveyed 41 % said they are paying user charges. The case here is that the business process re-engineering required some states to invest heavily in infrastructure and to recover those costs, user charges were levied. However, nearly 59 per cent of the respondents said they are not paying any user charges. This bodes well for e-governance projects as the citizens are encouraged to avail them at no costs.

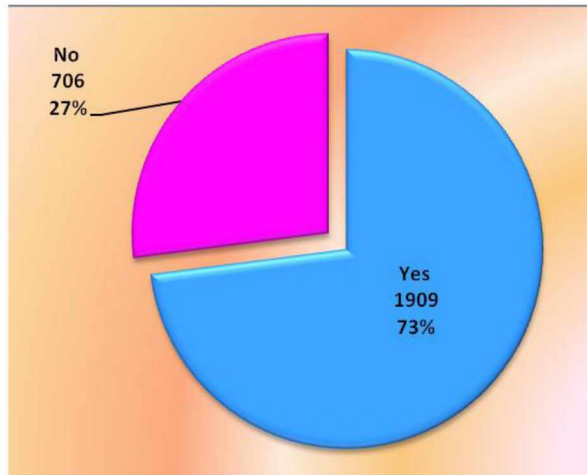
**Graph No. 7.31 Is there a decrease in official corruption after online services?**



Indian society never seems to come to grips with the problem of corruption in administration and governance. Officials and bureaucrats are basically regarded as corrupt by a majority of the population. This is despite the fact that e-governance has somewhat improved the image of the government departments. The above graph illustrates that nearly 73 per cent of the respondents

believe there is no decrease in the levels of official corruption even after the implementation of online services. Only 27 per cent of them felt that there has been a decrease in corruption in the post e-governance phase.

**Graph No. 7.32 Are you satisfied with e-Governance services?**



User satisfaction is the ultimate goal of any service, more so, in the case of e-governance service. The successful implementation of e-governance projects largely hinge on provision of quality services to the citizens resulting in their satisfaction. Though satisfaction levels are high among the respondents, those currently not satisfied with e-governance services are significant at 27 % of the sample size. There are administrative and bureaucratic reasons for this. Many of the core government services are still done through standard procedures though the delivery is online. The processing work, clearances, sanction everything has to be done through laid down procedures. Naturally, this affects the speed of service delivery resulting in lot of dissatisfaction among the citizens. Efforts have to be made to simplify the administrative procedures in cases related to land records, property registration and other government works.

This chapter effectively puts out a strong case for more e-governance projects and services and further improvement of the existing services.

## **Chapter-VIII**

### **Case Studies**

Technology is most effectively deployed in pursuit of some predefined developmental outcome, rather than as an outcome itself. Accordingly, development problems and the strategies to overcome them should be clearly articulated before technological solutions are determined. Technology is decided upon and then a development opportunity is sought to which it can be applied. Often this leads to the deployment of inappropriate technologies, say computers and the Internet, when simpler alternatives such as radio and television would have been more appropriate. In addition, computers and the Internet tend to deliver maximum output when they are appropriated by the organization and the community to provide assistance with problems that they themselves have identified and sought solutions for, and project promoters should adopt measures, including education and awareness, to encourage this form of technology adoption to take place.

With the rapid advancement of information and communication technologies, the importance and the need of e-Governance is also gaining significance. These developments have impacted all aspects of life globally. Information technology has facilitated better interface between the citizens and the governments. Recognised as the best effort to diminish the digital divide and the rural-urban divide, especially in the developing countries, the aim of e-Governance is to ensure transparent, smart, seamless, secure and authentic flow of information, thus extending fair and quick services to the general public. India has 6.41 lakh villages and 66 % of Indians live in rural areas and hardly 5% of them can speak English. Therefore e-Governance models which do not support the rural delivery system in the local language will not adequately contribute towards the good governance. Therefore, the goal of e-Governance should be in directions which can benefit rural India also. Case studies covered in this chapter will help to understand the strength and weaknesses of the projects which can further be used for the progress of e-Governance initiatives, formulations of certain critical factors and framing guidelines for new projects. These case studies reveal, exemplify and illustrate advantages as well as new challenges which need to be encountered while planning new projects and adopting new technologies.

The case studies presented in the subsequent pages give an overall insight into the functioning of e-governance projects in terms of internal as well as external validity – organizational capacities and peoples’ adoption of electronic services.

<b>S.No</b>	<b>State</b>	<b>District</b>	<b>Project</b>
1.	Kerala	Malappuram	Akshaya
2.	Maharashtra	Kolhapur	Warana
3.	Madhya Pradesh	Dhar	Gyandoot
4.	Tamil Nadu	Thiruvarur	e-district
5.	Sikkim	East District	Common Service Centres

## **Case Study – I**

### **Akshaya, Kerala**

#### **Introduction**

Kerala is one of the most developed states of Indian Union with its unique achievements in universal literacy, Physical Quality of Life Index (PQLI), international standards in social development, health care, education and public distribution system. In a knowledge based economy like Kerala, Akshaya found instant success with the common masses lapping up the latest information and communication technologies in their every day life.

Akshaya is a social and economic catalyst focusing on the various facets of e-learning, e-transaction, e-governance, information and communication. It focuses on the development of the state through effectively using the tools of Information and Communication Technologies (ICTs) for addressing major issues like, creation of ICTs access points up to village level through public participation, providing the skill sets necessary to the population to improve their job prospects, provide ample content in local language relevant to citizens, and to use the centres for the delivery of a variety of services and applications including e-governance, e-transaction and e-commerce. Akshaya opens up a world of seamless opportunities by effectively deploying ICTs for socio-economic development.

The project was launched as a pilot in Malappuram district. The district has an area of 3,372 sq km and a population of 3.7 million (of which more than 70 percent are Muslims), 600,000 families in the district live in 102 panchayats and five municipalities. The district is administratively divided into 137 villages, 14 blocks and six talukas. It has a satisfactory penetration of landline and mobile phones (250,000 phones). It also has 3,500 voluntary organizations.

In order to bridge the digital divide<sup>1</sup>, on 18th November 2002, the then President of India, Dr. APJ Abdul Kalam launched Akshaya, an initiative to usher in e-society. The project involves setting up of about 10,000 multi purpose community information kiosks called Akshaya e-kendras across Kerala run by private entrepreneurs to provide ICT access to the entire population of the state, starting from the district of Malappuram. The other objectives of the programme are at least one person in each of the 65 lakhs of families in the state to be made IT-literate and empowered to access innumerable services that ICT offers, and enhancing the quality of available IT infrastructure in the state.

Through achieving the above-mentioned objectives, the programme was expected to achieve the following:

- create and expand economic opportunities in the knowledge economy
- bridge the gap between the ‘Information Poor’ and the ‘Information Rich’
- empower individuals and communities through enhanced access to information, education and communication facilities
- modernize and upgrade skill sets of rural people
- create awareness of ICT tools & usage among rural people
- generate locally relevant content
- generate over 50,000 direct employment opportunities in 3 years
- generate direct investment of over Rs. 500 crores in 3 years

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<sup>1</sup> The term “digital divide” refers to the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ICTs) and to their use of the Internet for a wide variety of activities (*Understanding the Digital Divide, Organisation for Economic Co-operation and Development, 2001*)

- integrate communities through creation of e-networks and development of the core sectors like Agriculture, Health, Education, Industry and Resources

The programme was implemented in four phases as given below:

**Phase-I** (December 2002 - May 2003): Conception of Akshaya Programme and the Akshaya Centres were perceived as community kiosks for serving the community and a storehouse of information for study and research activities.

**Phase-II** (May 2003 - December 2003): The concept was brought before the panchayat. Initially, there was disenchantment among panchayat members of giving priority to IT over other basic amenities such as water, shelter etc. However, by constant engagement of the Akshaya officials with the panchayat, block and district level workers, misconceptions about IT cleared out. Efforts were made to build capacity for IT usage.

**Phase-III** (January 2004 - June 2004): During the 3<sup>rd</sup> phase, applications were invited from the potential Akshaya entrepreneurs. Out of 2,000 applicants, 630 were selected after the interviews. Initially VSNL (Videsh Sanchar Nigam Limited) was chosen to give the Internet connection to the Akshaya entrepreneurs. But after three months of delay, the contract was given to Tulip (a Delhi based Network Company). For the starting Akshaya Centres, collateral free loans were arranged for the entrepreneurs. During this phase, e-literacy campaigns were undertaken by the entrepreneurs. At least one member from each household was identified and each one was given 10 lessons, each costing Rs. 2/-. An advanced level training course was which cost around Rs. 450 for 50 hours of training was also provided at some of the Akshaya centres.

**Phase-IV**: The phase-IV was started from June 2004 where the Akshaya Centres provide services like information on health, literature, education, law, career training centres etc. During the IV phase, a survey was undertaken by the officials in order to know the community's demand for important ICT services to be provided in Akshaya centers. Such services include registration for birth, death and marriage certificates, payment of electricity and water bills etc. Around 45 such services were given by the Akshaya Centres depending on the communities' preferences.

Under the 4<sup>th</sup> phase, Akshaya built a partnership with Intel to provide a short-term IT course, costing Rs. 450. The grassroots-level data fed into the Akshaya info bank helps in policy interventions of the state government as well as health mapping of the entire community.

The Akshaya ICT access points provide G2C, G2G, C2C and G2B information interchange and dissemination. These centres are being connected through high speed broad band Wireless Network. These centres cater to citizen needs in terms of offering services in communication, e-education, e-Governance and other services. Akshaya centers function as decentralized information access hubs that cater to a range of citizen needs that has an inbuilt integrated frontend. All Government Information and application forms are provided in the Akshaya centres. One of the most significant steps in the e-service delivery phase is the launching of e-pay services. The existing ICT enabled single window payment facility of all payables to Government by citizens can be paid through the Akshaya centres. The leading nationalised bank, SBIONline, Friends and the Akshaya centres are the partners in the project. Akshaya with the integration of Friends Services, enables easy and hassle free bill Payment. With the launch of these services Akshaya has virtually bring the government to the doorsteps of the citizens.

Government interface for payment related transactions. Akshaya entrepreneurs were engaged in data digitisation of over 30 lakh birth and death records in Malappuram. A proposal to issue birth and death Certificates through Akshaya centres is under consideration. e-cop the interactive Police portal of Malappuram Police will have smooth interface between the law enforcers and the public. The networking of the Police Stations in Malappuram is also progressing.

eNRICH the community network interactive platform exclusively designed for Akshaya, with support from NIC is an added facility for citizens to interact with Government and access they key information resources. e-parathi, Collector's Online Greivance Redressal is also being initiated through Akshaya Centres. Akshaya centers serves as an information hub by providing relevant information to the public . A well-managed e-library is a specialty of Akshaya centers. And most of them are exclusive and custom designed for Akshaya. Already several contents have been identified and designed in this respect. Exhaustive information-base on five core areas as Health, Agriculture, Career, Education and Laws and regulations is available in the centers.



Currently, all the Akshaya centres in the state have been upgraded to the level of designated centres that offer various citizen services. From its initial phase of e-literacy project to currently serving as citizen services centre, Akshaya has come a long way in Kerala since its pilot phase in Malappuram in the year 2002. It achieved 100 % percent e-literacy in that district. Later, the project re-defined many a governance indicators leading to extensive community involvement. Local entrepreneurship with social responsibility and community linkages has sustained the project, though the actual revenue for the private operators from Akshaya income alone is not sufficient. Many services have now been included under the Akshaya platform. They include E-Filing, E- Consignment, E- Grantz, Ration Card, E- District – Piloting, MVD – Piloting. The Unique Identity Authority project will be implemented through Akshaya centres at the panchayat level. Currently, there are 2,000 Akshaya centres offering citizen services across Kerala.

### **Rural Connectivity Infrastructure established in Malappuram**

When Akshaya was launched in Malappuram, one of the important tasks was to provide connectivity facility to all the Akshaya Centres including the most rural ones. Various options including dial up, VSAT, Cable and Wireless were examined. Rural Connectivity infrastructure based on Wireless Technologies covering 3,500 square kilometers in Malappuram was implemented by August 2004. More than 400 Akshaya centers, 47 police stations and 50 government offices were connected to this network.

Akshaya Network in Malappuram district consists of two parts i.e, Backbone Network and Access Network. Backbone Network starts at 8 Mbps. unlimited expandability, ability to add additional backbones for greater bandwidth if and when required. Access Network is used for providing connectivity from the backbone network to the subscribers i.e., entrepreneurs, Point to multi-point radios used, last mile bandwidth of 4 MBPS, shared, ability to limit bandwidth to each subscriber as per requirement, products selected to minimise recurring costs.

The network is capable of the following:

- High Bandwidth Scalability – Starting as low as 16 Kb and scale up to unlimited bandwidth and number of users.

- Voice enabled from Day One – Voice services in the CUG can be made available immediately
- Supports Streaming Video – E Learning programs/e-health/e-governance initiatives can be implemented
- Bandwidth on Demand

### **Delivery of Services**

**Connectivity to all:** Malappuram district has over 3 lakh people working outside the district. A large number of people also work in the Gulf countries. Therefore there is a huge potential to use this network for communication through Internet. Many people are using Akshaya centres for e-mail, chatting, etc. Akshaya network is like a cellular data network, just like a cell phone over the entire district. Any authorised subscriber anywhere in the district can connect and avail data services.

**Intranet services:** Apart from the Internet based services, the network is also used for offering a number of Intranet-based solutions, especially in the education sector. Many programmes including local events, school festivals etc are broadcasting through Akshaya network. Tuitions for Public Service Examinations are also offered through the intranet solution. A series of educational/ informative digital extension programmes are planned through the network.

**Connectivity to Government:** All the 47 Police Stations of the district are connected through Akshaya network. Kerala Police Department is running their applications through a VPN created in the network. More than 50 other government offices including Kerala State Electricity Board, Rural Development Departments, and Revenue offices are also connected in the network. Presently, all the government offices have been integrated into the Akshaya network and are implementing e-governance/ e-agriculture/ e-commerce / e-health services through the network.

### **Services offered at Akshaya Centers<sup>2</sup>**

Several services relating to agriculture information, health, education, etc are offered at the Akshaya Centers. The detailed information of the services offering at Akshaya centers are as follows:

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<sup>2</sup> [www.keralaitmission.org](http://www.keralaitmission.org) (accessed January 16, 2010)

- **Agriculture Information System (e-Krishi):** The basic objective of this system is to provide an effective knowledge management and smart information dissemination system that provides linkages among farmers, public research institutions, administrative and private entrepreneurs to share the information and knowledge. The Akshaya e-kendras are equipped to provide agriculture information to farmers and have linkages to prominent research institutions.
- **Implementation of Health Data Acquisition System:** One health kiosk in every local body is being implemented through selected Akshaya e-kendras. The health data thus made available through the Akshaya e-kendras is being utilized for creation of health information data base pertaining to the citizens in the district.
- **Government Services:** Akshaya e-kendras have been transformed as the interface for citizen-to-government interactions. The various services of Government, which are of relevance to the citizens, are being provided through Akshaya kendras. Various remittances due to the Government can be made and forms of various Government schemes and for availing of certificates / entitlements are available at these e-kendras. The entrepreneurs also started to carryout the data-entry work of the Local Self Governing bodies for issuing birth and death certificates.
- **e-Education:** In the Akshaya centers office packages are made available for advanced learners and course content CDs of the e-literacy programme are made available for distribution among the public. Content CDs covering all science subjects of class 1 to 10 with State curriculum are being supplied to all entrepreneurs. Career guidance and info on jobs, Resource CDs of the IT@School programmes are also made available at the kendras for reference by students.
- **Merit Exam conducted and certificate issued by Computer Society of India:** Those citizens, who want to possess a merit certificate based on the Akshaya e-literacy campaign content, can attend the merit examination conducted by the Computer Society of India. All the trainees of Akshaya e-literacy programme are eligible to attend the exam and the certificates, thus, issued by the CSI are recognised by the Government of Kerala.

- **Vocational Courses:** In association with National Institute of Design, Ahmedabad, IT enabled course packages in Garment and Toy making is being developed exclusively for Akshaya. The training programme is aimed at providing self employment opportunities for women.
- **Knowledge Centres:** Resource CDs on four major subjects, viz., Health, Agriculture, Education, Acts/Rules (in Malayalam) are made available at the Akshaya e-kendras. Apart from this, resource CDs on other major subjects are also made available at subsidised rates.
- **Communication Centres:** With the availability of broad band connectivity at Akshaya e-kendras, opportunities for communication using internet, net chat, voice chat, e-mail etc. have opened up for the common man. In addition, these centres also function as communication hubs by providing services like e-courier, audio-video-CD libraries etc.

### **Project Outcomes**

There are a number of benefits from the Akshaya programme. The resulted direct benefits from the implementation of the Akshaya programme are as follows:

- This programme made at least one computer literate person in every house of the Malappuram district
- The common man in the rural areas of the Malappuram district is availing convenient access to government information services
- Through providing the relevant information like government schemes, educational and employment opportunities, empowered the local community
- Generated locally relevant content in their own language of Malayalam
- Generated over 15,000 direct employment opportunities in three years from starting date
- Akshaya centres have now been upgraded as designated centres for offering online government services

The other benefits resulted from implementation of the programme are:

- The common man availing cheaper communications through Internet telephony, e-mail, chat, etc in Akshaya centers
- Enhanced ICT demand in Tele-medicine/e-Commerce/e-Education

- Enlarged marketing opportunities for agricultural/traditional products/artifacts
- Improved delivery of public services through Akshaya centers

### **Project Milestones**

With the implementation of the Akshaya programme in Malappuram district, the following are the important achievements:

- First district in India with 100% household e-literacy
- All villages in the district linked by broadband
- 356 e-centres function as manpower training centres
- All the centres have been transformed into front end for Government service delivery with electronic payment of utility bills facility
- Nearly 6 lakh people have been imparted training in handling computers for their basic needs

### **Problems and Challenges**

Though, the programme is being implemented successfully, there are few problems. They are:

- The Akshaya entrepreneurs complained of disruption in internet connectivity which affects the transaction process of public services through web. Power cuts are a common phenomenon in the district.
- Sustainability of the Akshaya centers is one of the problems of the programme. A centre cannot sustain itself offering only government services and the village level entrepreneur has to offer other services and courses to generate income.
- Many of the previous centres have been closed down by the entrepreneurs for lack of adequate income.

### **Summary**

The project has shown that the PPP model can be effectively mobilized to launch this type of project, helping to bridge the digital divide. The community has largely accepted Akshaya as centres for communication and e-literacy. The project has proved the fact that e-literacy is a precursor in a developing e-community. The project emphasized that People's Action Plan is more important than the Technology Action Plan.

Akshaya is a social and economic catalyst focusing on the various facets of e-learning, e-transaction, e-governance, information and communication. It focuses on the development of the state through effectively using the tools of Information and Communication Technologies (ICTs) for addressing major issues like, creation of ICTs access points up to village level through public participation, providing the skill sets necessary to the population to improve their skills and to use ICTs in their daily life, provide ample content in local language relevant to citizens, and to use the centres for the delivery of a variety of services and applications including e-governance, e-transaction and e-commerce. Akshaya opens up a world of seamless opportunities by effectively using ICTs for development, including social, cultural and economic progress.

## **Case Study – II**

### **Warana Wired Village, Kolhapur, Maharashtra**

The primary objective of the Wired Village project is to demonstrate the effective use of information technology infrastructure in the accelerated socio-economic development of 70 villages around Warana Nagar in the Kolhapur and Sangli districts of the state of Maharashtra.

The Warana Project is jointly carried out by the National Informatics Centre (NIC), the Government of Maharashtra and the Warana *Vibhag Shikshan Mandal*. The estimated cost of the project is around Rs 2.6 crores. Of the total cost of the project 50 percent was borne by the Central Government, 40 percent by the Government of Maharashtra and the remaining 10 percent by the Warana *Vibhag Shikshan Mandal*. It came into force in

The Warana Co-operative Sugar factory initiated this movement that has resulted in the formation of over 25 cooperative societies related to sugar, milk, and poultry production. The total annual turnover of these societies exceeds Rs 6.5 crores. Most of the societies are located within a radius of 4 kilometers. Initially in 1998, nearly 70 facilitation booths have been set up in 70 villages in and around Warana to give local citizens information about various public services

as well as information regarding sugar prices, loans for cultivation of sugar cane, marketing of various goods produced by women's cooperatives, etc.

### **Objectives of the Project**

- To provide computerized facilitation booths in 70 villages, which are linked up to the central computer network at Warana Nagar
- To bring Warana Nagar on NICNET
- To increase the efficiency/ productivity of the existing cooperative societies by providing state-of-the-art computer communication network and latest database technology
- To create a database of villagers on various socio-economic aspects
- To provide tele-education to both primary and higher educational institutes by developing IT centres at most populous points.
- To establish GIS of 70 villages
- To create greater transparency in the functioning of the cooperative society

The Warana Wired Village Project was launched as a first wired village pilot with the joint effort of Government of India, Government of Maharashtra and a sugar cooperative. It was expected to wire 70 villages of Kolhapur and Sangli district of Maharashtra so as to establish a rural network connecting these villages with a computer network. Primarily, the project planned to provide IT facilities to sugarcane growers and members of the sugar cooperative societies. During the implementation of the project, various other services, like land records, prices of agricultural commodities in different markets and knowledge about various agricultural practices were provided. Some of the centres were linked with a VSAT and others were provided connectivity with dial-up modems.

The system includes web-based and intranet-based applications. The web-based applications are the agriculture produce market information system, agricultural schemes and crop technology information system, computer learning aids, village information systems, educational and vocational guidance systems, government documents and procedures systems, and computerization of the local cooperative market. Intranet-based systems include the wired management of sugarcane cultivation, land records, the computerization of the Warana Milk Dairy, and a Grievance Registration and Redress System.

The target beneficiaries were farmers, sugarcane growers and other villagers. It is intended to serve the information needs of farmers for cultivation practices, pests and disease control, marketing information and information on processing, bill payment position of sugarcane and dairy products.

The kiosk managers are usually government servants who are officially allocated the management of kiosks in rural areas. The content has been created in the local Marathi language by the NIC office in Pune, Maharashtra, through extensive interactions with the cooperative societies. The content is regularly maintained and enhanced at the location of the central system within the local university.

### **Project Outcomes**

The applications related to agriculture produce, schemes and crop technology as well as for education are not being used fully. One reason is the slow access to the Internet, insufficient awareness creation among the villagers, and the low levels of literacy in the area in spite of high levels of income. Although a number of different products and services were promised, this enormous infrastructural investment currently serves only as a distributed accounts system for the Warana sugarcane cooperative. The multiple utility card could not be made operational. There is no such thing called computerization of land records in the upscale phase. The GIS has become obsolete, to a large extent, due to lack of updation of the database. Windows-based applications like crop guide, schemes of agriculture department, employment schemes, collectorate procedure, and vocational guidance are non-interactive and are rarely updated.

The market rates of the agriculture produce have been dysfunctional and lie unused due to poor information management. The network has been reduced to computerization of the sugar cooperative, mostly due to non-participation of the local villagers. Not even a fraction of the project cost could be recovered. In Warana, the information kiosks are mostly accessed by members of the cooperative societies and farmers who own their land. The poorest, landless



labourers and tribal groups currently do not have a reason to visit the information kiosks because they do not need the services connected with sugarcane growing and harvesting. Also, no government services are being offered through the Warana platform.

### **Summary**

Warana is largely a intranet system that offers limited services to its target group of sugarcane growers and suppliers. It is mostly an inventory that shows market prices, cropping pattern, availability of information on insecticides and pesticides, credit accounts, etc. related to the Warana Sugarcane Co-operative Society. As said earlier, the pilot phase was inaugurated with a lot of fanfare and the wired village project was touted as the best solution to offer government services through ICTs to people in rural areas. However, the information kiosks could not deliver anything related to government services except for providing information on sugarcane prices at various markets in Sangli and Kolhapur. The e-governance component has not been added to the project at any stage. The infrastructure has gone waste and the technology tools used have become obsolete. During the study, it was found that the main centres of the Warana sugarcane and dairy cooperative society maintain database of cooperative members, including the land and credit details. There is no interactive model in this project and the users get information from the data maintained at the local cooperative offices. These offices have three to four villages under their jurisdiction. The Warana cooperative bazaar has inventory for its products with bar codes and the accounts are maintained using Tally software. Warana is presently an intranet-based technology project which is confined to the needs of cooperative society members.

### **Case Study – III**

#### **Gyandoot, Dhar, Madhya Pradesh**

In India, as in much of the developing world, it is not uncommon for rural villagers to travel long distances to government district headquarters to request copies of public records, submit applications, meet officials, or seek information regarding prevailing prices in commodity markets. This involves the loss of a day's income as well as the cost of transportation. Once at

the government office, the relevant record, information, or official may not be available. This results in repeated visits and additional expenses for the rural people. In effect, government staff working with paper records enjoys a monopoly over information. Citizens may also face discomfort, harassment, and corruption from public officials, or are often given incorrect information about government programs or market prices. In many cases, the illiterate rural masses end up paying bribes for getting their work done.

In this backdrop, Gyandoot project in Dhar district of Madhya Pradesh was introduced in January 2000 to reduce the amount of time and money people spend trying to communicate with public officials besides providing immediate, transparent access to local government data and documentation through a network of telekiosks (*soochanalayas*).

Information and services are offered for minimal fees and include the list of people living below the poverty line, prices of several agricultural products in various cities beyond the local market, a public complaint line for reporting government-related problems, as well as applications for caste, income, and domicile certificates. Kiosks are placed in villages which hold weekly markets, or are located on major roads, to facilitate access by people in neighbouring villages.

Dhar district is located on the south western corner of the central India and has a population of 1.7 million, with 54% population being tribal (*Bhils, Bhilalas, patleiyas*) and 60% population living below poverty line.

In January 2000, an Intranet network was developed whereby computers were installed in twenty village panchayat centres in five blocks of the district. These were wired through an Intranet network and connected to the District Rural Development Authority (DRDA) at Dhar town. This Intranet system was named Gyandoot, a Hindi term meaning Purveyor of Knowledge. Local rural youths were selected to operate the initial twenty cyber kiosks, without a fixed salary or stipend. The computers in the network were established in Gram Panchayats and were called *Soochanalayas* (Information Kiosks), with operators known as *Soochaks*.

Each *Soochanalaya* aims to cover twenty-five to thirty villages with total population of 20,000 to 30,000. The Gyandoot Intranet covers eight of the thirteen blocks in the district; consequently a

total population of over half a million is covered by this network. Every *Soochanalaya* has telephone connectivity. The Gram Panchayat provided the building, telephone, electricity connection and furniture in the *Soochanalaya* they opened. The *Soochanalayas* act as information centres in the villages and provide a whole range of facilities under the Gyandoot network.

The majority of the private kiosks also house facilities such as State Trunk Dialling (STD), photocopying and Internet connectivity, in order to make the centre more economically sustainable. The server or hub of the Gyandoot Intranet network is called *Soochana Kosh* (Store of Information) and is a Remote Access Server (RAS), placed in the Zila Panchayat (District headquarters).

The following were the objectives of Gyandoot project:

- To ensure equal access to emerging technologies for marginalized segments of the society
- To create a cost-effective, replicable, economically self-reliant and financially viable model to take the benefits of IT to the rural masses
- To implement a new grass-roots entrepreneurial model with the participation of groups of non-traditional entrepreneurs.
- To provide self-employment through entrepreneurship to local rural youth
- To improve the quality, speed and sensitivity of the state delivery apparatus towards the needs of local citizen-customers
- To impact IT on the government-citizen interfaces as the thrust area, so that the benefits of the knowledge economy directly reach the marginalized have-nots and know-nots
- To search for the potential of rural markets in the digital domain
- To analyze the processes and modalities involved in the socio-cultural environment while taking technology to the deprived communities

### **Operating Model**

The community network is owned by the district council and the kiosks are managed by village councils. A project manager maintains the database and the server room in the district council. He is supported by four assistant managers, who are government servants. The kiosk managers

are village volunteers, who were selected by the community and who manage the kiosk on a profit sharing basis. Various departments of the state government provide logistical support and databases for the network.

Initially, 21 community-owned client sites/ nodes working as rural cybercafé and cyber offices were established in 21 remote villages. Later, 19 privately-owned kiosks were added to the network.

The person operating the kiosk is a local matriculate operator and is called *soochak*. A *soochak* is not an employee but an entrepreneur. *Soochak* only needs maintenance and numeric data entry skills. He needs very limited typing skills since most of the Intranet software is menu-driven. He bears the cost of stationery, maintenance and electric and telephone bills. He pays 10% of income as commission to the *Zila Panchayat* (District Council) for maintaining the net.

The services offered under the Gyandoot network are:

- Commodity marketing information system (Mandi Bhaav), where grain prices are updated on a daily basis
- Income certificate
- Domicile certificate
- Caste certificate
- Landholder's passbook of land rights and loans
- Rural Hindi email (Gram Daak)
- Public grievance redress
- Forms for various government schemes
- Below poverty line family list
- Employment news
- E-education (Shiksha Gyandoot)

#### **Agriculture Produce Auction Centres Rates:**

The variety-wise current and prevailing rates of prominent cereal crops of the district like wheat, gram, soybean, etc. at local and other prominent auction centres of the country are available on-

line. Other statistics of the auction centres e.g. the volume of incoming agricultural produce, previous rates etc., are also provided on demand. The facility is available at a nominal charge of Rs. 5. Horticulture crops like tomato, potato, peas, green chillies, guava etc. are also produced in substantial quantity in the district. The rates of these commodities are also available.

#### **On-line Registration of Applications:**

So far, the villagers had to go to the local revenue court to file applications for obtaining income / caste / domicile certificates or for getting demarcation done or for obtaining landholder's loan passbook, etc. For this, they would again made repeated visits to the court to enquire about the progress of the application as well as to finally collect the prepared document. Now, through *Soochanalayas* they may send the application at a cost of only Rs. 10 and thereafter, in a maximum period of 10 days, preferably less, an intimation of the readiness of the certificate is sent back to them through e-mail at the concerned *Soochanalaya*. Thereafter, they may go to the concerned court to collect the certificate.

#### **Online Public Grievance Redress:**

Wherever there is some problem in the delivery of services, the villagers travel at the cost of time, money and livelihood to Block, *tahsil* or district headquarters without any certainty that they would even be able to meet the officer concerned. Now through the *Soochanalaya*, a villager may send his / her complaint with assurance of reply within a maximum period of seven days, preferably lesser, at a charge of Rs. 10. The reply to his complaint after redressal is sent back at the *Soochanalaya* through e-mail. Complaints available on the intranet include complaints regarding drinking water, scholarship sanction / disbursement, quality of seed / fertiliser, employee establishment matters (like leave or provident fund sanction) queries, functioning of school, public distribution system, beneficiary oriented schemes, functioning of village committee etc.

#### **Rural e-mail facility:**

A fee based e-mailing facility, which is provided in the intranet, and it has all the features and facilities of a state-of-the-art web based e-mail.

**Free E-mail facility on social issues:**

Free of cost option are available to the villagers to inform regarding child labour, child marriage, illegal possession of land belonging to Scheduled Tribes etc. Besides they can send e-mails to others connected through the net with the help of this facility in Hindi.

**Avedan Patra:**

This facility provides on-line application formats required by local administration and departments of the state government. Thus, application forms are available at the doorsteps of the villagers and avoid their running from pillar to post for these application forms.

**Gaon ka Akhabar (Village Newspaper):**

A local web-based newspaper is available to cater to the rural people. The newspaper delivers micro-news about the happening around the villages where *Soochaks* act as correspondents.

**E-education (*shiksha gyandoot*):**

This site contains reading material to supplement and help the students in understanding and learning their subjects in a better way. It contains things like syllabuses of various subjects taught in class X and XII, question banks developed by a team of experts to help in preparation of exams, chithi to help them keep in touch with other schools connected to the intranet etc.

**Village auction site:**

This facility is started since July 2000 where auction facilities are available to farmers and villagers for land, agricultural machinery, bullocks or equipment or other durable commodities. It opens a new horizon of e-transactions in the rural areas. The middlemen involved in the rural commodity transaction market are sought to be eliminated through this facility. One can put one's commodity on sale for charges of Rs. 25/- for three months. One can browse the list of salable commodities for Rs. 10/-.

**Global recognition**

Gyandoot has been the recipient of several awards, including The Stockholm Challenge Award 2000 and the Computer Society of India – Tata Consultancy Services (CSI-TCS) National IT award. The Stockholm Challenge IT Award 2000 was awarded on 6th June 2000.

### **Implementation challenges**

The biggest stumbling block in the creation of a community network was the bureaucratic procedures. The resistance from different departments of the state government was quite evident. Although it was easy to convince the district councils to provide funds for the server room and the village councils to provide funds for the rural kiosks, it was difficult to standardize the databases in different departments and to convince their staff to upgrade and update the databases. Power cuts in rural areas also hinder the usage of the kiosks. Telephone connectivity in rural areas is poor and has resulted in unstable and unreliable Internet connectivity. Existing laws, rules and regulations also created obstacles in the implementation of the project. Interdepartmental coordination, database management and streamlining departmental procedures became important challenges.

### **Present Situation**

At present the connectivity at the *Soochanalayas* is poor and the Gyandoot service stands largely under-utilised. Though WiLL (Wireless in Local Loop) has been introduced, there are no web-based services. There is not great awareness about it among the villagers. Hardly any user will arrive at the kiosk; even if they do come, it is for their personal work, but not government related.

Gyandoot has computerized only the front-end of government services; in most cases, citizens submit applications online and have to go back to the telekiosk for a response. Back-end processes, at government department levels, are not computerized. Printouts of the applications, requests, and grievances are sent to government departments for further action. Data entry operators then enter responses from departments into the Gyandoot Intranet. Citizens get a response in a maximum timeframe of seven days. In the case of grievances, the central Gyandoot office follows up to see whether grievances are being addressed. Licenses and certificates have

to be collected from the government departments or are mailed to the citizen, and the *soochaks* help citizens in the collection process.

The technology which was introduced in 2000 has become outdated and is unable to offer any government services, except for birth, caste and domicile certificates. Privately-owned kiosks can improve their range of services like linking up with banks for collection of deposits. The limit for such collections can be Rs.5,000 per day per customer. Many of the 39 centres have been closed for lack of adequate generation of income. Presently, only 8 to 9 centres are operational, but that involves private services like photocopying, typing of documents, booking of tickets and accommodation, private telephone top-ups, etc. The whole project needs a relook and re-design from the grassroots level as it has not achieved its stated objectives. They can be transformed into citizen service centres if they are to sustain in the long run.

## **Case Study – IV**

### **e-District, Thiruvarur**

#### **Genesis of the Project – The Tiruvarur Initiative**

**E-district** is a Mission Mode project under National e-Governance Plan (NeGP) initiated by Department of Information Technology (DIT), Government of India. It proposes to adopt an integrated approach for delivery of citizen services by district administration through automation of backend, workflow based on process redesign and data digitization across participating departments. District Administration in the context of e-District refers to the administrative set-up led or coordinated by the District Collector / Magistrate including Subdivision / Tehsil / Block / Village level units responsible for service delivery.



It may be mentioned that the scope of this project will not include the Panchayati Raj services, as this is being addressed as a separate Mission Mode Project under the NeGP. However pilot projects of Panchayati Raj institutions may be aligned in the same pilot districts taken up under the e-District program in order to synchronize both the initiatives.

The initial phase of the project would involve establishment of a pilot for an effective model for delivery of citizen services for the district administration. In the long run, the services are expected to be delivered via the proposed Common Services Centres (CSCs) scheme under the National e-governance Plan (NeGP) of the Government of India. Therefore, the service delivery strategy should be oriented in such a way that the individual departments would use the CSCs as the primary front-end channels to the citizen as envisioned under the NeGP. This will be over and above any channel that Government could maintain to meet legal requirements.<sup>3</sup>

The objectives for implementing the project as mentioned in the Request for Proposal Document (RFP) are as follows:

- Districts are the primary delivery channel for Government Administration and electronic delivery of large number of services at the district would improve the quality of life of the citizens
- Significant improvement in delivery of Government services by integrating other e-Governance initiatives by different departments (Land records, Property Registration, Agriculture, Passport, Police etc.) could also be provided
- Establishing a multi-disciplinary centre for information accessibility for capacity building of the district administrative processes would also be created
- Formulation of strategies for creating a Central data repository at the district level for all associate activities for improving district administrative processes by ensuring data and information are collected, stored, retrieved, used and exchanged in an efficient manner at all levels from ‘top to bottom’.

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<sup>3</sup> Study Report on the Assessment of Model e-Districts, Department of Information Technology, Government of India, 2011

- Leverage and integrate core e-Governance infrastructure initiatives of the Government such as State Data Centres (SDC) Common Service Centres (CSC) and State Wide Area Networks (SWAN).

The e-district was launched on a pilot basis in all the states taking one district from each state. However, the e-district initiative does not come under the ambit of the National e-Governance Plan as it was launched much ahead of it in 1997 with the personal initiative of the then district collector Mr. C. Uma Shankar.

Tiruvarur, a riparian district in the Cauvery delta, was carved out of Thanjavur and Nagapattinam districts on 1<sup>st</sup> January 1997. Agriculture is the backbone of the economy in this district which has a population of about 1.1 million, and a very high level of poverty and associated backwardness. But this has not come in the way of e-Governance initiatives, particularly the e-district project. The transformation from manual governance to e-Governance began in February 1999. The district did not receive any funds from the state budget for this initiative. A non-profit organization, District Welfare Committee was floated to mobilize funds worth Rs. 2.5 crore. The Members of State legislature (MLAs) and Members of Parliament (MPs) contributed nearly half the sum mentioned above from their Local Area Development funds. Four software development centres were set up in the District Collector's office itself employing around 30 software professionals. The district also had ushered in a Wi-Fi revolution by setting up the first wireless LAN (on 802.11b standard) connecting all the 20 offices in 14 different locations.

Staff training was provided at the centralized training facility on a continuous basis and majority of the training sessions were conducted by the senior officials including the District Collector himself. To administer the Taluk/Block computer systems, clerical grade employees from each of the 20 offices volunteered to undergo training to act as software administrators. Two staff members per office were identified for intensive training on server administration.

By the end of the 2nd year of commencing the e-governance initiatives, the district reached a very high level of e-governance thus enabling citizen services online in the Revenue and rural development areas almost to the tune of 85-90%.

The major beneficiaries were agriculturists, land owners, students, widows, agricultural labourers above 65 years of age, schools, local body population, rural population, and people benefiting from social welfare schemes. The following were the project outcomes:

- The entire land record transactions have been made online thus providing up-to-date electronic records related to land purchases recorded in the Taluk and village land record registers.
- Birth and death certificates provided within 10 minutes for the period 1997-2001.
- The acknowledgement and follow-up of Public grievance redress mechanism was facilitated through a software application to enable citizen response within two weeks.
- Prompt dispatch of Old Age Pensions (OAP) to beneficiaries within the first week of each month.
- Disbursal of scholarships to eligible Pre & Post Matric students within one week after receipt of fund allocation from the Government
- Annual accounts settlement (Jamabanthi) completed on time, every time.
- Monitoring of development programmes.

To educate the citizens on online services, a special campaign was organized in the year 2000. The promise was that the services would be provided within a maximum of 2 hours, including enquiry time, if any, and that no paper would be used in the whole exercise. In 2000, Tiruvarur conducted its first online annual audit of village accounts. In February 2001, an online data warehouse containing all local land records, as well as information for the public on the old age pension scheme, cultivation and harvest details, and other data were developed. Krishnagiri district in Tamil Nadu is also taking steps to become the first comprehensive e-district in the country<sup>4</sup>.

### **Implementation Challenges**

The first e-district project in the country is now only on the paper and boards. There is no online interface between the citizens and the district administration. Land records registration and adangal extraction are being done through computers, but that is only the revenue component of

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<sup>4</sup> Move afoot to make Krishnagiri first e-district in the country, 11<sup>th</sup> Nov 2006, *The Hindu*

the district administration. The software and the hardware tools have become outdated and need to be replaced with latest technological tools. Software was developed by an in-house application development team; all the programmers involved have left the district administration. Since NIC was not involved in the application development, it is not able to provide the software troubleshooting and maintenance. Common software has to be designed to achieve common e-governance standards. The district collectorate which is the hub for technology interface is only a ghost reflection of the past glory. Top officials here do not use technology or computers in their daily work. Implementation of e-district with information technology is not their current priority.

There is a need to standardize the processes and re-design the e-governance initiatives by providing full commitment (technical and financial resources) from the state and district administration.

## **Case Study – V**

### **Common Service Centres, East District, Sikkim**

The concept of telecentres emerged in the 1990s offering ICT access to the public at large. They were devised as a practical tool to deliver ICT and connectivity to all social groups, particularly middle and low-income families or those in rural areas with no access to such facilities. Over the years, telecentres became more of a worldwide phenomenon that varies in outlook, design and outcomes. Numerous models with a variety of names have emerged based on the design of the telecentre, its target beneficiaries, and list of services or activities: Internet café, cyber café, multipurpose centre, and mobile Internet unit are all names describing a similar basic model of a telecentre. The central design of a telecentre encompasses a set of personal computers, printing and scanning equipment, a set of software applications, and an Internet connection. Other services offered by multipurpose community centres require such additional equipment as that for telemedicine. These telecentres were known as Community Information Centres at first in India. After the pilot phase, they were renamed as Common Service Centres (CSCs). In the phased roll out some government online services were added to many of these CSCs, but most of them remain basically as training and printing centres. In all, 97,439 CSCs were rolled out by the

end of the year 2011.<sup>5</sup> In Sikkim, 45 CSCs were rolled out by the same time. However, the earthquake in the third week of September 2011 has left many of these centres in rubble especially in the upper reaches of Sikkim. As things stand now, only a few centres in the East District, including Gangtok city, are operational. The CSCs are located at the entrance of the Secretariat in Gangtok, at the district headquarters of East District a few kilometers away from the Secretariat.

East Sikkim, Gangtok city and South Sikkim were covered in the north-eastern state of Sikkim to study the functioning of the Citizen Service Centres (CSCs), formerly known as Citizen Information Centres (CICs). The research made several visits to the CSCs located at the Taschiling Secretariat in Gangtok, Rangpo in East Sikkim and Namchi in South Sikkim.

The Citizen Service Centres were rolled out at 45 places in this tiny Himalayan state in the year 2001 with full funding by the Central Government under the National e-Governance Plan. The central funding was stopped totally in mid 2007 as the duration of the pilot project came to a close. Thereafter, the State Government of Sikkim involved a private player, Comat Technologies, to run the centres. The private absorbed nearly 107 existing employees. Each centre is equipped with a V-Sat, 6 Computers with Internet connectivity besides a printer and a scanner. There are two operators working at each centre besides a *chowkidar* (security guard cum attendant). The major stakeholders in this e-governance project include the gram panchayats, school teachers, students and the communities at large. There are a total of 500 panchayats and 166 Gram Panchayat Unions (GPUs) in Sikkim, which has a population of approximately 620,000. Gangtok alone has a population of 150,000.

The services provided are wide and varied. All the government welfare programmes and services are delivered through these centres besides training people in soft skills, running educational programmes for school students, BPOs, and providing career guidance and placement services. Documentation, data outflow (regarding govt. schemes) and provision of business to citizen services are the other activities of these centres. However, e-payment is yet to start.

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<sup>5</sup> CSC Implementation Status Report, Department of Information Technology, Ministry of Communication and Information Technology, New Delhi, November 2011

Much has been said and written about the success story of Citizen Information Centres (CICs) when they were implemented as part of the NeGP between 1997 and 2002. However, the case is totally different now what with the private operator Comat backing out in 2007. During the initial phase, 45 CICs were started at state, district and block levels. Only some panchayats had CIC in their offices. After the Central government stopped funding the CSCs, the government of Sikkim has not been able to either sustain or replicate the model up to panchayat level. The technology that is being used has become obsolete. Even the infrastructure is outdated. Comat could not manage the centre due to lack of financial viability. Later, Infrastructure, Leasing and Financial Services (ILFS) Limited stepped in to run the centres that were renamed as Common Services Centres (CSCs). There is not much activity at the CSCs. ILFS is incurring a loss of Rs. 5 to 6 lakh every month in the maintenance of the centres. The centre funds each centre to the tune of Rs. 7,000 every month. The staff is recruited and paid by the ILFS. There are no private operators in the project. At present, 2 to 3 people work in each centre besides the chowkidar. People visit the centres mainly for browsing, computer training and taking print outs of documents and applications of various government departments. Each centre hardly earns Rs. 2,000 per month. Clearly, there is no financial viability for the CSC project unless the state government goes in for local entrepreneurship.

The CSCs are meant to provide high quality and cost-effective video, voice and data content and services, in the areas of e-governance, education, health, telemedicine, entertainment as well as other private services. A highlight of the CSCs is that it will offer web-enabled e-governance services in rural areas, including application forms, certificates, and utility payments such as electricity, telephone and water bills. The Scheme creates a conducive environment for the private sector and NGOs to play an active role in implementation of the CSC Scheme, thereby becoming a partner of the government in the development of rural India. The PPP model of the CSC scheme envisages a 3-tier structure consisting of the CSC operator (called Village Level Entrepreneur or VLE); the Service Centre Agency (SCA), that will be responsible for a division of 500-1000 CSCs; and a State Designated Agency (SDA) identified by the State Government responsible for managing the implementation over the entire State.

As per the primary understanding of the e-governance scenario in the tiny state, it was observed that all the governmental, departmental activities have been automated and websites designed to cater to their needs. However, there is no online connectivity for these websites. Only the VAT project is online as it is funded by the central government. Land records, treasury and registration departments have been computerized, doing away with manual records. As said earlier, citizens can't assess their applications online. The basic problem is the lack of infrastructure in the hilly terrain. Only BSNL operates the OFC lines in the state. Connectivity at Gangtok is well on account of private internet service providers. There are hardly 20 to 25 transactions per day related to land records at the district level. Sikkim has only four districts – East, West, North and South – of which the East District is the most populous one.

As regards the common services centres, there is no facility for payment of utility bills as yet. Most of the government websites are hosted in New Delhi as the Siliguri-Gangtok OFC line goes offline due to natural hazards every now and then. The research visited the East District Collectorate and evaluated the functioning of the CSC there. There are 5 to 6 computers in the centre which is used mainly for training and taking print outs.

The research team visited CSCs at Rangpo, Tadong, Pangthang and Namchi blocks in the state. Questionnaires were administered to the staff as part of data collection from the field. Though all departments have been computerized and cables laid out, back-end operations have not been completed yet. The State Data Centre would start functioning in about two months from now. Another major e-governance project, SWAN, is facing teething problems as back-end operations have not been put in place. Connectivity up to block level is a major problem. Connectivity breaks down for days on end. BSNL has been asked to provide alternate line to the government. Microwave does not give proper connectivity while the V-SAT technology is very costly. Funding from the centre for e-governance initiatives have come down drastically over the last few years. SWAN penetration is primarily up to the district level. Block and panchayat level connectivity is being planned next year. All the state government employees have been trained in using computer and information technology. Nearly 7,000 employees have undergone training in the last seven years. The government has made a degree in basic computing mandatory for those applying for government jobs. The Department of IT issues these certificates.

## Chapter – IX

### Conclusions and Suggestions

Technology is a mediating factor in a complex matrix of interaction between social structures, social actors, and their socially constructed tools, including technology. As information and communication are at the core of human action today, the transformation of the technological instruments of knowledge generation, information processing, and communication, has far reaching implications, which add specific *social effects* to the broader pattern of *social causation*.

This new technological paradigm emerged as a systemic feature in the 1970s, expanded throughout the 1980s to the domains of military power, financial transactions, and high technology manufacturing, diffused in the late 1980s in workplaces of all kinds, and deeply penetrated homes and culture in the 1990s, with the explosive diffusion of Internet, and multimedia. New information technologies have diffused much faster than revolutionary innovations of the two industrial revolutions. And yet, countries, cultures, and social groups, are extremely different in their degree of absorption, and utilization of new technologies. But all countries, and all peoples, are directly or indirectly, exposed to the structural transformation mediated by this technological revolution.

Information technologies have been decisive tools in the emergence of a new economy in the last two decades of the 20th century. This is certainly a capitalist economy – indeed for the first time in human history, the entire planet is working along the lines of a capitalist economic system. But it is a new brand of capitalism. It is global, it is informational, and it is based on business networks. A global economy is an economy whose core activities work as a unit in real time on a planetary scale. Here, core activities include financial markets, science and technology, information and communication, international trade, high-skill labored, and multi-national firms and networks of producers and distributors of high value added goods, and services.

A networked economy is one in which units of production, distribution, and management are organized in networks. A network is a set of inter-related units that depend on each other for the



performance of their common task. The networked form of economic units provides the necessary flexibility and adaptation to adjust to constant changes in demand, in technology, in process, and product, in an increasingly globalized economic environment. Networks make possible to bring together resources from different units, and focus these resources on one particular business project without losing flexibility, as it would be the case with gigantic firms organized along traditional standards of large-scale, vertical bureaucracies.

The capacity to govern is one of the ongoing quests of humanity, but that capacity is not equally distributed in space or in time. Some countries in the world can go about the process of governing themselves with little conscious concern about their ability to do so. For the rest of the world governing is a more problematic consideration. Even for those countries that are confident about the capacity to govern, that confidence may in reality be complacency when viewed from a more detached perspective. This is in part because conceptions of “good governance” are culturally and historically contingent and what is functional in one political setting may be in many ways sub-optimal in other settings.

The attempts to reform public administration have been ubiquitous. Even when there have been manifest needs to consolidate democracy and to improve the functioning of the institutions of public participation there also has been a perceived need to put the functioning of the bureaucracy right. This emphasis on administrative reform is well placed given the centrality of administration in implementing programs, and its role as the principal contact between State and society. Citizens may encounter their elected representatives from time to time, but most citizens are in frequent contacts with members of the public bureaucracy, in the form of policemen, tax officials, social service employees, teachers, and other like. Governance does require more than simply the capacity to implement efficiently and some wider conception of governing needs also to be considered when thinking of the capacity of governments to steer.

Two parallel evolutions are currently challenging the functioning and the legitimizing of the traditional nation-state: globalization and the rapid development of the information and communication technologies (ICTs). Both come together in the new concept of “electronic governance” or “e-governance.”

If “governance” can be defined as the growing involvement of non-state actors into collective problem-solving at all levels of society (i.e., from the local to the global levels), “e-governance” then means the active usage of the ICTs for such collective problem solving. Globalization is without doubt one of the buzzwords of the late 20th and the early 21st centuries and is considered to bring both successes for national economies as well as an increasing external pressure on the nation-state. States aim at participating in the global process of communication and trade on the one hand, but are on the other hand limited to their national institutions, especially in the fields of fiscal, economic, and social policy. Yet, new collective problems of global (i.e., transnational) nature emerge, such as for example climate change, unemployment, or pollution problems. These problems can no longer be solved by a single nation-state alone. Moreover, such problems affect numerous stakeholders at all levels of society (i.e., from local to global) and as such can only be solved in a joint effort among all stakeholders.

E-governance is commonly defined as the application of *electronic means* in (1) the *interaction* between *government* and citizens and government and businesses, as well as (2) in internal *government operations* to simplify and improve democratic, government and business aspects of governance.

The strategic objective of e-governance is to support and simplify governance for all parties - government, citizens and businesses. The use of ICTs can connect all three parties and support processes and activities. In other words, in e-governance uses electronic means to support and stimulate good governance. Therefore the objectives of e-governance are similar to the objectives of good governance. Good governance can be seen as an exercise of economic, political, and administrative authority to better manage affairs of a country at all levels, national, state and local.

The adoption of electronic technologies in government has been a remarkable story of organizational learning and adaptation that is still unfolding. The networking that is inherent in e-governance has also given a new emphasis to working methodologies that emphasize group collaboration and information sharing, typically cutting across the vertical division of labour that is a characteristic of classic bureaucracy. From a management perspective, the introduction of

electronic technologies has been a major challenge, as lay managers have been called upon to make decisions about costly investments in highly sophisticated information systems. A further challenge is the open-ended nature of the investments — all too frequently the technical and costing assumptions that can be made at the beginning of a major project are overtaken by the time it is completed, with the result that risk management has become a major preoccupation of government decision-makers.

Higher proficiency ratings are evident in the competency areas we call management, systems and databases, technical support services, and legacy technologies. Lower proficiency ratings are evident in the competency areas of infrastructure, web computing, and management and use of information as an asset. Training demand is higher in management, web computing and infrastructure competencies, and lower in systems and databases, management and use of information as an asset, technical support services, and legacy technologies.

Skill proficiency affects many aspects of IT workforce development. These aspects include assessing the relationship between job advancement and technical proficiency as well as the roles education and skills assessments could play in recruitment. Other topics include the usefulness of a skills orientation to IT succession planning and better understanding of the relationships among training, employee satisfaction, and retention.

Training and other professional development programs would benefit from further evaluation. Future considerations for the design of learning opportunities include determining the effectiveness of formal education compared to skill-oriented training, as well as understanding the effectiveness of various methods and combinations of methods for achieving different competency goals. Another consideration is the possibility of identifying core competencies and ideal specialization profiles to help set priorities for future skill investments. In addition, consideration could be given to policies and methods for coordinated purchasing of professional development programs.

An important relationship exists between skills and the effectiveness of the IT enterprise. Future exploration in this area might include better understanding of how organizational culture and

policies affect proficiency levels, consideration of current and needed skills in the process of selecting agency and statewide IT standards, and explicitly incorporating skills considerations into organizational strategies for moving to higher levels of IT effectiveness.

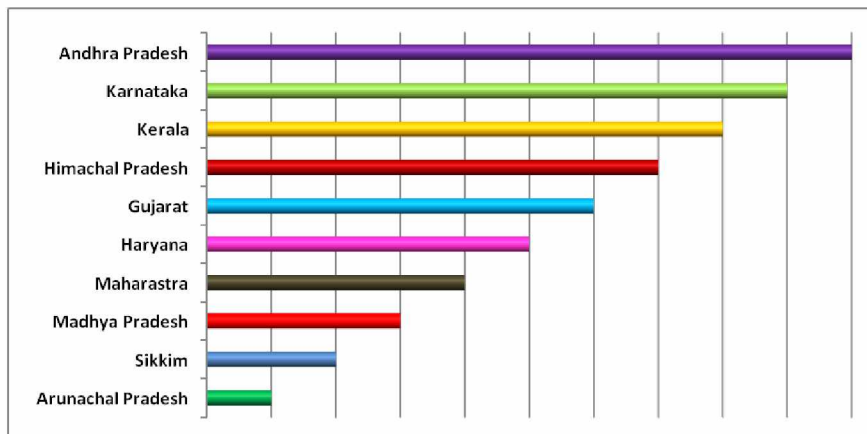
From the above background, this study was undertaken to assess the institutional capacities and performance of e-governance projects in India with equal emphasis citizens' perception on online and e-governance services. The broad categories of e-governance services undertaken for evaluation include citizen services, land records management and e-district.

The following are the major findings of the study:

**Major Findings**

1. Early successes in e-governance have been sustained in the form of e-Seva, BangaloreOne, FRIENDS, Akshaya, Bhoomi, CARD and STAR

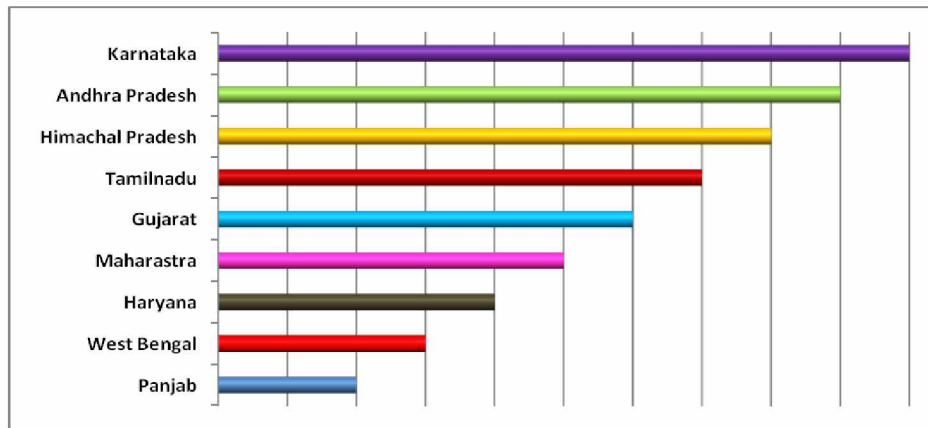
**Graph No. 8.1 Citizen Services and States Performance**



2. Model citizen services projects include e-Seva, Akshaya & FRIENDS, BangaloreOne besides Sugam project in Himachal Pradesh. They offer a wide range of services with a perfect business processes re-engineering and back-end integration. They are followed by e-City service projects in Surat and Ahmedabad in Gujarat and Nayi Disha in Haryana. These are fledging projects with all infrastructural facilities and are expanding in their respective states.

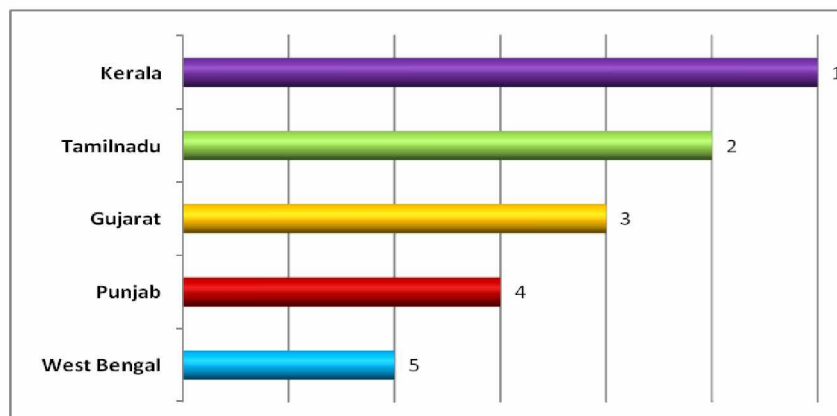
3. Though the common service centres have been touted as the last mile penetration in terms of e-governance, they have not built on their initial infrastructure and project goals. The CSCs in Sikkim and Arunachal Pradesh are virtually dysfunctional with three or four computers connected by BSNL broadband and one or two personnel (mostly employed by technology vendors) taking care of the centre. They are only cybercafés and do not offer any e-governance services, except for downloading some government applications.
4. There is a major mismatch between pilot successes and subsequent failures in the form of Gyandoot, Warana and common service centres in the North-East.
5. Warana Wired Village project or simply Warana was supposed to be a model for rural and cooperative e-governance with points of access to every 2-3 villages. It's a cooperative initiative, which has failed to deliver e-governance services to the masses. It is just an intranet project which gives information to sugarcane farmers of the region on prices, cropping pattern, availability of pesticides and insecticides.
6. Employees working in e-Seva, Akshaya & FRIENDS, Sugam, BangaloreOne and e-City services in Gujarat followed by Nayi Disha have high levels of IT skills. City corporation services in Indore have average levels of IT skills. CSCs in Sikkim have moderate levels of IT skills whereas those in Arunachal Pradesh have a dismal record.
7. e-Seva and Akshaya & FRIENDS followed by Sugam and BangaloreOne have good record of technology innovation and adaptation.
8. Though projects like e-Seva, Akshaya & FRIENDS, Sugam and BangaloreOne are offering maximum number of services, citizens want more number of services to be added. E-City services are offering all the municipal corporation services at their counters spread across the various localities of Surat and Ahmedabad. These can be emulated in other big cities of India.
9. Most of the citizen service projects have a sound financial record with e-Seva, Akshaya & FRIENDS, Sugam, BangaloreOne, and e-city services leading the pack. Fledging projects like Nayi Disha and Indore Municipal Corporation services can have a relatively good financial record for future sustenance.
10. e-Seva, Akshaya & FRIENDS, BangaloreOne, Sugam and e-City projects in Gujarat have largely improved their quality of services from a citizens' perspective.

**Graph No. 8.2 Land Records Management and States Performance**



11. Bhoomi, CARD and STAR have substantially improved their quality of services over the years. However, the system of middlemen or agents is not totally eliminated. Only at the front end, that is issue of digital certificates, service delivery is satisfactory, but not in the entire process in land records mutation and registration. HimBhoomi has a perfect procedure in place.
12. In the perception of citizens, there is a good deal of transparency in Bhoomi and CARD services. STAR and HimBhoomi follow close.
13. e-District is a State Mission Mode Project under the National e-Governance Plan. The Project aims to target certain high volume services currently not covered by any MMP under the NeGP and undertake backend computerization to e-enable the delivery of these services through Common Service Centers.

**Graph No. 8.3 e-Districts and States Performance**



14. DC Suite was a precursor to e-district in Palakkad and the automation was achieved up to taluk level (taluk suite) by the end of 2005. This was scaled up to panchayat level with complete automation of the Revenue Department by the July 2011. Tapal system has been done away with after this penetration. Now, the district administration functions on intranet without physical movement of files. E-filing system has been perfected. Krishnagiri is one of the pilot districts for the implementation of e-district project under NeGP.
15. Rajkot in Gujarat has a portal in Gujarati language. Its infrastructure is on par with a corporate office at the district level. Counters have been set up at the district collector's office to deliver various government services, including applications for ration cards, scholarships, etc. Suwidha centres at district and sub-divisional levels in Punjab has a good business processes re-engineering model for delivering e-district and citizen services.
16. Majority of the projects rolled out under the National e-Governance Plan (NeGP) could not sustain once central funding was stopped in 2007
17. Only a few state governments have allotted finances to consolidate e-governance projects
18. Technology proliferation has resulted in automation of many government agencies/institutions, but they are less enthusiastic in going online.
19. Institutional capacities have also increased substantially, but that does not reflect in their performance regarding delivery of e-governance services.
20. Of the total 801 employees approached for responses on their capacities and performance in e-governance projects, more than half of them fall in the age group of 25-35 years. This is in tune with the current demographic profile of the nation where the young dominate the population. Also, some of them are project officials and have been hired from the open market.
21. Almost 60 % of the respondents are male while the rest are female. The gender factor here assumes significance as we can find nearly 40 % of women working in e-governance projects. The unusually high side of female employees is due to their presence at front offices, counters, help desks, etc.
22. Nearly 63 % of the respondents have basic computer education while more than 18 % have an advanced diploma in computers. Those having basic computer education are

higher in number on account of their young age and training at various computer institutes. Those having advanced degrees or diplomas in computer education are the technical and engineering staff working with e-governance projects. Senior government officials rarely use computers and take the help of the support staff in performing e-governance operations.

23. Nearly 81 per cent of the employees understand the local area network, but only 31 per cent of them have knowledge of systems security. Over 57 per cent of the respondents are not familiar with virus protection mechanisms and nearly 69 per cent of them are not aware of data protection and back up systems.
24. Over 90 per cent of the staff received training in handling online services while nearly 51 per cent of the respondents said they need further training to cope up with the latest developments in the information technology sector in terms of both software and hardware customization.
25. Nearly 89 % of the e-governance projects staff uses Internet in personal life regularly.
26. Nearly 72 per cent of the respondents claimed they were aware of the Information Technology (IT) Act while the rest said they do not have knowledge of the Act.
27. On the feedback front, less than one-thirds of the employees seem to have given suggestions on improving the quality of e-governance services.
28. Almost 82 per cent of the respondents said they were aware of cyber security issues and claimed that their respective projects have a cyber protection.
29. Only 63 % of the respondents were in the know of National e-Governance Plan while the rest claimed they do not any such plan. The NeGP is not a holistic concept that the state governments look to for conceiving their own projects. Also, the NeGP had mission mode projects as various components like e-district and land records management. Therefore, the employees were aware of the project description rather than the NeGP itself.
30. Government employees strongly oppose the idea of Public-Private Partnerships as they believe that e-governance projects should be only in the public domain.
31. More than two-thirds of the employees are comfortable in working with interactive models. Senior government officials complained of high technology in the work processes.



32. More than half of the e-governance service users are aware of computers and use them, but only 42 % of them (out of a sample size of 2,615) browse the Internet.
33. Nearly 71% of the citizens are aware of e-governance plan and related projects, but the number of users is high at 83 per cent.
34. The frequency of visits to e-governance project offices or service centres is generally 1-2 times a month, but other procedural works require a minimum of 3 to 4 visits to various government offices.
35. Though 42 % of the total respondents claimed they are using Internet, only 36 % of them visit government web portals for access to online services and information.
36. Transparency in online services is very high with 89 % of the citizen respondents suggesting a changed scenario. In fact, they want more number of government services to be made online.
37. Officials and bureaucrats are basically regarded as corrupt by a majority of the Indian population. This is despite the fact that e-governance has somewhat improved the image of the government departments. In the study, 73 per cent of the respondents believe there is no decrease in the levels of official corruption even after the implementation of online services. However, they are satisfied with e-governance services.
38. Success of major e-governance projects was on account of personal initiatives and consolidated by political support
39. E-service delivery in our country is fragmented due to multiple entities. e-Governance initiatives in different departments are carried out independent of each other, which dilutes the overall impact.
40. Failure of some projects is also on this account, since a transfer or replacement of a top official or change in political regime impacts adversely on the sustainability of e-governance projects. Gyandoot, Warana, Thiruvarur, CSCs reflect this trend.
41. Interoperability is the major issue. Only two states have achieved interoperability. Bhoomi and Kaveri in Karnataka and Akshaya and FRIENDs in Kerala are the success stories
42. Horizontal integration of e-governance has been achieved in many states in the form of SWAN, state portals and specific project websites. However, vertical integration is

limited to only a few states like Kerala, Andhra Pradesh, Tamil Nadu, Karnataka and Gujarat

43. Majority of e-governance portals web content is in vernacular language
44. Many states do not have capacity building programmes in place. Public staff training requirements are very high.
45. Individual departments have different mechanisms of identifying the concerned end users from the same set of citizens. As a result, they are interacting with the same set of users independently multiple times. This is resulting in series of rework loops, duplication of efforts and non-value added works.
46. For a majority of citizen-centric e-governance projects, there is a need for process level reforms with strong backing of automated decision support mechanism
47. Interactive models have to be broadened to mobile technology so as to expand the outreach of e-governance services
48. Lack of internet penetration in the country is the major obstacle for expanding the outreach of online services

### **Failure Stories**

1. **Gyandoot:** Politically sold, but failed to move ahead. Lack of initial enthusiasm, tribal population, not fulfilling the stated goals of the project are the other reasons
2. **Warana:** Only a sugar cooperative initiative. It failed to include e-governance services. Now it's purely an organizational intranet dealing with accounts and prices of sugar factory
3. **Common Service Centres in North-East:** Lack of financial viability. Structures of governance do not match the other parts of country. Whatever was shown to the world is in reality, not there on the ground. Only a few CSCs are functional, but do not offer any e-governance services
4. **E-District in Thiruvavur:** This was the first e-district country way back in 1997 – before one can conceptualize the national e-governance plan. Now nothing remains in place. All the infrastructural facilities installed earlier have now become obsolete.

**Major suggestions of the study:**

1. There is need to set up State e-Governance Mission Teams (SeMTs) to monitor, assess and evaluate the functioning of e-governance projects.
2. Imparting specialised training, organising orientation programmes for State e-Governance Mission Teams and decision makers.
3. Government Staff Training Institutions in States have to be strengthened and upgraded for developing capacity building in e-governance.
4. Presently, a Capacity Building Management Cell (CBMC) has been set-up in National e-Gov Division (NeGD) for overall coordination and implementation
5. Positioning Professional Resources for State Governments under Capacity Building Scheme
6. A purely academic body like Centre for Technology in Government of the State University of New York, Albany, can be set up in a premium university in the country.
7. Knowledge sharing across departments to avoid duplication of data and software.
8. Undertaking technical appraisal of all NeGP projects to examine issues such as overall technology architecture, framework, standards, security policy, service delivery mechanisms, sharing of common infrastructure, etc.,
9. The intent of e-Governance is to accelerate the current processes by automating the same and making them accessible to the end-user.
10. The National e-Governance Plan launched has induced a wave of automation in procedures in government departments. IT implementation has found a place on agenda of almost every department.
11. The individual service providing departments have already initiated various e-Governance projects. Most common of which is the hosting of city website which intends to serve as source of information to the users. NeGP has adequately considered these initiatives and ensured that all these get integrated to the State Service Delivery Gateway (SSDG) to provide single channel of information to end-user.
12. The fact remains that the individual departments have different mechanisms of identifying the concerned end users from the same set of citizens. As a result, the individual service provider departments are interacting with the same set of users independently multiple times, further the processes followed result in series of rework loops, duplication of efforts and non-value added works.

13. These steps are preliminary ones for any electronic service delivery mechanism; additional steps, multi-level authorization etc are the other complexities which vary from application to application. However for a majority of citizen-centric ones, there is a need for process level reforms with strong backing of automated decision support mechanism to be successful.

14. As per the latest (2011) report of the Internet and Mobile Association of India, there are 112 million people in India who use Internet on and off. Of them 88 million are from urban areas while the rest are from rural areas. Of the total internet users in India, only 65 million are active users of Internet – they browse at least once in a month. The penetration of Internet in villages is very low at 3 per cent. More than 75% of the active users are young men, school and college going students. However, their use of Internet is confined to emailing, social networking, music, text chatting, and education related activities. In such a scenario, the extent of success of e-governance initiatives can easily be gauged. However, government has taken steps to induce the concept of citizen facilitation centers / Citizen Service Centers (CSC) to take the e-Enabled services closer to the masses, especially in the rural areas. The most telling effect is visible among public Internet access points such as cyber café and CSCs. Given the nature of these installations, a single broadband connection provides a large base of users to accessing Internet. CSCs provide an effective option in rural areas and through this avenue a large pool of villagers could get digitally literate. The Akshaya concept in Kerala was largely successful on account of bottom to top approach.

15. Failure modes of e-governance like (1) re-works on account of resubmission of documents; (2) no optimization of documents; (3) need to visit office to close the process; and (4) personal follow-ups.

16. In some cases of failure there is no apparent cause, it is simply on account of non translation of Voice of Customer (user requirements) in to system requirements

17. CTQ (critical to quality) – VOC (Voice of Customer) Link is a key to success for any online service delivery initiative. Some of the VOCs are (1) easy access to process information; (2) availability of assistance for document submission; (3) minimal travel / trips to offices; (4)

assured cycle time; (5)real time update on status; (6)availability of information on "How to" and "why" etc. requirements to be fulfilled for a service to be delivered; and (7) whom to reach for questions.

18. The intent of e-Governance is to accelerate the current processes by automating the same and making them accessible to the end-user. The part of making the processes accessible to end-user is at infancy stage in majority of cases. However this very aspect if coupled with inter-departmental information sharing has a potential to transform the process performance. The catalytic effect induced with this shall lead to value enhancement for both process owner department and the customer of the process.

19. The portability of data across departments is important for efficient e-Governance mechanism with scalability to cover variety of services for citizens across the country.

20. The ground work for the type of data exchange visualised here is reasonably in place with IT implementation across majority of departments providing citizen service. The need of the hour is to bring these services under one single window for user to avail those.

21. Successful implementation is a key to the realisation of benefits of concepts like the one proposed which brings in multiple stakeholders on a single forum. Careful planning, selected piloting and ease of replication of solution are the key success factors.

22. The dynamic nature of demographics is a challenge for all the major service delivery providers worldwide. The portability of data across departments is important for an efficient e-Governance mechanism with scalability to cover variety of services for citizens across the country.

23. The fact is that the national e-Governance plan, without sufficient focus on the needs and concerns of the rural citizens, has actually exacerbated digital divides further in the country, except in some states.

24. To accomplish the transformation for e-governance, governments are introducing innovations in their organizational structure, practices, capacities, and in the ways they mobilize, deploy and

utilize the human capital and information, technological and financial resources for service delivery to citizens. (General comment)

25. The task of changing the administrative culture is enormous in most of the states in India.

26. Data on computer access can be misleading since it hardly reflects the different socio-economic compositions of the particular nation.

27. Factors like gender, context, income, IT literacy and skills may affect the abilities of the people to take advantage of e-Governance initiatives in less developed countries.

28. Having access to computers through the common service centers does not necessarily mean that all the people have the skills, opportunities, motivations and permission to use them in some meaningful manner.

29. Cyber Capability Framework has six different dimensions: i) information; ii) technology; iii) process; iv) objectives and values; v) skills; and vi) management systems. These six dimensions help in understanding different ways of enhancement or deprivation of a person's cyber capabilities

30. The skills dimension tells us that e-literacy does not end in just learning to access certain information through search engines and website browsing only. It extends using the internet for enhancing individual capabilities to be able to perform activities of one's preferred choice. Through this process a person can effectively contextualize and integrate the electronic service delivery centers with his/her activities to enhance his/her cyber capabilities.

31. Back-end integration of the government services is utterly lacking in many states in the country.

32. The mission mode projects never bothered to change or at least question many of the existing regulations that hindered information dissemination through public service delivery mechanisms.

33. The major concern in West Bengal was the lack of interest among government employees in automating the existing manual processes. Unless all the line ministries and departments agree to support automation it is difficult to effectively implement online services under the national e-Governance plan in West Bengal.

34. Data standards are necessary, but data governance is just as important.

35. Promote practices and a culture shift focused on information stewardship.

36. New policies, procedures, and work processes across all levels of government will need to be worked out.

37. Government institutions are staffed by civil servants who are often the key implementers and policy experts for emerging networked governance. Yet civil they may be intractable points of resistance to technology in governance. Public-private partnership and citizen engagement supplement but do not replace civil servants. Attracting and developing civil servants for networked governance will require cultural change, incentives, new professional education and training.

38. Thanks to the Internet and social networking revolution, the future of government is less and less in the hands of governments alone. Technology has empowered ordinary citizens by offering them a way to make their voices heard and challenge government leaders about their ability and willingness to address public concerns and requests.

39. In this backdrop, governments need to adapt and continuously evolve to create value for public service. Citizens are demanding more visibility on the allocation of public resources and challenging governments to be more efficient and equitable through accountability and transparency. What is needed today is a flatter, agile, streamlined and tech-enabled (FAST) government, which is the evolved stage of e-governance.

40. The effective sharing of best e-governance practices can speed innovation globally. Currently, best practices are gathered, but efforts are fragmented across regions and managed by different entities. Bringing these efforts together would speed up the transmission of knowledge and capacity for innovation. Several regional and global benchmarking efforts exist, but attention to best practice for networked governance still lags.

41. Governments must be fully tech-enabled with a tech-savvy workforce. Policy, legal and regulatory frameworks and processes must be redesigned to align with the dynamics of the networked world. Information infrastructures must support new modes of collaboration and intensive governance. Even in the poorest regions, brilliant examples of service innovation have been driven through the use of cheap mobile and wireless technologies.

### **Areas for Further Research**

1. Interoperability and integration of online services
2. Common portals for all government agencies/institutions
3. Flexible websites facilitating access to citizens in local language
4. Project evaluation in the backdrop of lessons learnt
5. Studies on the use of IT at the local governments level – city, municipality, panchayat
6. Knowledge management information systems at state level
7. The possibility of a mobile government (m-Government)
8. E-government and its viability in India



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