Chapter I
Introduction

1.1 Introduction:
e-Governance is a term that leads to the persistent transformation of Governmental processes in the domain of the information society. With the swift growth in the field of Information Communication Technology (ICT), increase in the expectations and awareness levels of the civil citizens, there is a demand for easy access to Government information and an effective digital interface. A more informed citizen is in a better position to exercise his/her rights, and better able to carry out his/her responsibilities within the community. A happy and satisfied citizen is the ultimate goal of any Government.

From the citizen’s point of view e-Governance means active, modern and more citizen-centric administrative processes. From a conceptual view, e-Governance comprises a re-engineering of administrative processes and from a technological perspective; e-Governance is characterized by the governance’s shift towards online services through ICT, an effective service delivery platform. The gesture of ICT application to government service delivery is popularly termed as e-Governance. “Citizen oriented Governance is undoubtedly one of the most important considerations for theGovernances all over the world. Obviously then, more and more citizens these days expect to be involved in the process of governance and to receive a higher standard of service from their Governments.”

In today’s digital age ICT helps in consequent administrative, decisive, managerial, effectiveness in provisioning of public services, promotion of transparency and accountability, quality of decision making, better knowledge management, time and cost savings, etc. “The e-Governance encompasses all the factors like better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, and more efficient government management.”

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e-Governance strives for a collaborative approach in inter and intra-Governmental interfaces and transactions, keeping in view the interests of all the stakeholders. It aims at making available and sharing the information in a trusted environment of transparency. e-Governance is a system that translates sharing of knowledge across the institutions, participating divisions, businesses, user groups and individuals. Efficient governance requires efficient institutions. The efficiency and effectiveness of institutions, in turn, depends on their delivery mechanism and supportive framework of rules and procedures, each of which has to work in harmony with each other to discharge the functions for which the institutions have been formed. The e-Governance institutions, citizens, businesses, employees and political parties all should work in phase to fulfill their state objectives and carry out their assigned responsibilities.

1.2 e-Governance Definitions:
Although the term e-Governance has gained prevalence in recent years, there is no standard definition of this term. Different governments and organizations define this term to suit their own aims and objectives. Sometimes, the term e-government is also used instead of e-Governance. In Indian perspective, e-Governance term is used more popularly and authentically at all levels of government; hence the term e-Governance is used during my research work. Some widely used definitions are listed below:

According to the World Bank, “e-Governance refers to the use by government agencies of information technologies, such as wide area networks, the internet, and mobile computing, that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management.” The end result of this may be in reduction in corruption and increase in transparency of services to citizens.
UNESCO defines e-Governance as “Governance refers to the exercise of political, economic and administrative authority in the management of a country’s affairs, including citizens’ articulation of their interests and exercise of their legal rights and obligations. e-Governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities.” This definition visualizes the use of the electronic medium in the exercise of authority in the management of a country’s affairs along with articulation of citizens’ interests leading to greater transparency and efficiency.

“Basically, e-Governance is generally understood as the use of ICT at all levels of the government in order to provide services to the citizens, interaction with business enterprises and communication and exchange of information between different agencies of the government in a speedy, convenient efficient and transparent manner”. In e-Governance the seamless access and flow of information is the core. Dr. APJ Abdul Kalam, former President of India, has visualized e-Governance in the Indian context to mean: “A transparent smart e-Governance with seamless access, secure and authentic flow of information crossing the interdepartmental barrier and providing a fair and unbiased service to the citizen.”

The US e-Government act of 2002 defines “e-Government to mean the use by the government of web-based Internet applications and other information technologies, combined with processes that implement these technologies, to enhance the access to and delivery of government information and services to the public, other agencies, and other government entities; or bring about improvements in government operations that may include effectiveness, efficiency, service quality, or transformation.” This definition reflects the strategy of the US government regarding the use of ICT in improving government operations on one hand and enhancing the access and delivery of information and services to citizens and government entities on the other.
Von Lucke and Reinermann define e-Governance as “conducting business transactions related to governance and administration (government) with the aid of information and communication technology. This includes the whole public sector which comprises legislature, executive and judiciary as well as companies owned by the state.” Lenk defines e-Governance as the “enactment of processes of public opinion forming, decision making and the provision of services in politics, the state and the administration by use of information technology.”

“Several surveys have been carried out by different international and corporate organizations on e-Government-related efforts, usually addressing such issues as e-Readiness, ICT penetration, digital divide and Internet diffusion. Notable amongst them are the United Nations Department for Economics and Social Affairs, World Bank, American Society for Public Administration, McConnell International and the World Information Technology Service Alliance, Economic Intelligence Unit, IBM Institute for Business Value, Accenture, Mosaic Group, Asia Pacific Economic Cooperation Forum and the Centre for Public Policy, Brown University.” The variety of technologies is being deployed for e-Governance in various countries. “e-Government includes the use of all information and communication technologies, from fax machines to wireless communication devices, to facilitate the daily administration of government. However, like e-Commerce, the popular interpretation of e-Government is one that defines it exclusively as an Internet driven activity, which improves citizen access to government information, services, citizen participation, satisfaction with the government process, and a permanent commitment by government to improving the relationship between the citizen and the public sector through enhanced, cost-effective and efficient delivery of services, information and knowledge.”

In e-Governance, the government uses information technology and particularly the Internet to support government operations, engage citizens, and provide government services. The interaction may be in the form of obtaining information, filings, or making payments and a host of other activities via the World Wide Web. “Any interaction of a Governmental agency (G) with outside constituencies is called e-Government. Outside
constituencies can be Citizens (C), Businesses (B), or other Governmental agencies (G) themselves”. Some researchers and countries have used e-Democracy word in association with e-Governance. e-Democracy refers to online activities of governments, elected representatives, political parties and citizens, specifically for democratic processes. In short e-Democracy is more from political leaders to voters than government to citizens. “Electronic voting machines (EVM) are another important application within the domain of e-Democracy. With the introduction of electronic voting machines in India in all of its 6, 88,000 polling stations, a saving of 8,800 metric tons of security papers for printing the ballots was realized, as well as other substantive cost savings in transporting, storing, and securing those ballots”. During Parliamentary, Assembly or Panchayat elections the mounted voting machines are secured, self sufficient, portable, easy to operate, reliable, tamper-proof and error free. The machines are operated by trained supervised officials at polling stations. The illiterate voters also able to vote based on pictures and logos of the candidates and the party they represented. The use of voting machines has not only saved tons of ballot paper but also reduced the counting process time significantly. “Manual voting processes are subject to error, manipulation, fraud, and rigging leading to losers calling for recounts. Voting faces a broad spectrum of technological and social problems that must be systematically addressed, voter registration to voter authentication to the casting of ballots to the counting and tallying of results”\textsuperscript{14}. The first country to fully computerize balloting, was Brazil, in 2000.

Basic goals of e-Governance were exists long before the actual term e-Governance became popular, a term that was coined in analogy to electronic business. However, the use of ICT in the administrative domain is nothing new but has already been practiced for several decades. The evolution of e-Governance started in the 1990’s world wide aimed at providing online services 24 X 7 to the public. During early days the e-Governance services provided were mostly related to information publishing using electronic media. e-Governance involves new styles of leadership, new ways of debating and deciding policy and investment, new ways of accessing education, new ways of listening to citizens and new ways of organizing and delivering information and services.
“e-Government is the application of electronic means to improve the interaction between citizens and to increase the administrative effectiveness and efficiency in the internal government operations. Further it is the application of information technology to the government processes to bring Simple, Moral, Accountable, Responsive and Transparent (SMART) government”.\textsuperscript{15} According to Glassey “the e-Governance services are categorized as informational, communicational, and transactional services”.\textsuperscript{16} e-Governance may be understood as the performance of this governance via the electronic medium in order to facilitate an efficient, speedy and transparent process of disseminating information to the public, and other agencies, and for performing government administration activities. Al-Sebie and others stated following prominent key issues, “technology to deliver government services electronically, transaction processes and the transformation of e-Governance services to citizens as the central focus of service delivery, delivery through a single online point of access”.\textsuperscript{17} The idea behind the establishment of an e-Governance is to provide public services to the public and private sector through a single point of access known as the e-Governance portal. However, because of knowledge explosion and industrial revolution in the late nineties, the concept of e-Governance became an issue of utmost importance for governments worldwide. Many countries have engaged in initiatives to introduce service delivery over electronic channels. This type of service is to be provided to the citizen by so called citizen information systems. The aim of the system was to increase the amount of information readily available about governmental processes and affairs and also to increase the participation of individual citizens in the government process. These goals can still be found in many of today’s definitions of e-Governance. By 1990 use of electronic mail, client server architecture, internet and World Wide Web was stated to deliver information to citizens. “e-Governance initiatives propose to enhance efficiency of government organizations, improve the quality of public sector organization services through quicker transactions, improve accountability, better business processes, and create new services”.\textsuperscript{18} From government’s perspective for intra departmental and inter departmental, it enables the transformation to new e-Governance processes, which emphasizes increased collaboration and cooperation that results impact on the citizen. Also the potential benefits of an e-Governance infrastructure enables public sector
organizations to interact directly and work better with businesses, irrespective of their locations within the physical world. This includes e-Procurement services from and to businesses to improve service quality, convenience, and cost effectiveness. Throughout the 19th and 20th centuries, the Industrial revolution has created industrial society, whereas, the 21st century is the time for technological revolution, mainly ICT. We live in the digital era, and the rapid technological changes that have transformed the economy and society are now reaching and transforming the government as well. The nature of government functioning is also undergoing a rapid transformation due to the impact of technological changes that enabled delivery of services over the Internet. Now, it is obvious that Internet is playing an important role in the transformation of the government structure. With the technological advancements every day a new application is coming up for e-Governance. “The use of latest grid computing standard, open grid services architecture, service oriented architecture, cloud computing are empowering e-Governance development.”

1.3 e-Governance Services:

Services to Citizens as the main objective of any e-Governance system force the governments and information technology departments to redesign their service policies. There are three major categories of e-Governance services.

i. Informative: Primary and basic one way static information for users, employee, business and the system itself.

ii. Interactive: Intermediate two way communication flow from system to user and user to system.

iii. Transactional: Transactional services enable the user to complete entire tasks electronically at any time anywhere on 24X7 bases. Transactional services encompass the information and interaction phases. In this phase, the system should offer options for online payment and grievance tracking, polls, opinions, citizen participation and resolution.
1.4 Core Principles of e-Governance:

Core principles of e-Governance includes following:

- **e-Governance Road-Map:** There needs to be a clear understanding of the need, purpose, objectives and goal to be achieved through e-Governance. Generally, IT projects appear to be based on what technology can achieve rather than what the citizens need. Web based applications are informative than transactions. e-Governance should not be taken up merely to illustrate the functionality and publicity of an existing department/ministry, but the technology should be adopted to solve an existing problem. Citizen-centricity should be at the heart of all e-Governance initiatives.

- **Transparency and Accountability:** e-Governance helps to increase the transparency of citizen transactions, decision-making processes, information accessible, etc. With the proper hierarchy, responsibility and authority set in the system, accountability and citizen charter aspects can be easily achieved.

- **Seamless Public Administration and Services:** e-Government administrative components, such as inter and intra departmental services, information systems, and human resource management systems, lead to greater efficiency in public administration. Government service delivery in the traditional process is time consuming, lacks transparency, and leads to citizen and business dissatisfaction. By putting government services online, e-Governance reduces bureaucracy and enhances the quality of services in terms of time, content and accessibility.

- **Reducing Costs:** Putting services on-line substantially decreases the processing costs of many activities compared with the manual way of handling operations. Also, time, efforts and number of visits incur to a citizen reduces drastically. Efficiency is also attained by streamlining internal processes and by enabling faster and more informed decision making.

- **Mind Set:** There is a need to change the mind-set of all the stakeholders involved in e-Governance, politicians, government officials and civil society at large. This would require a strong will to change. As the task involves redesigning of governmental processes at various levels, implementing e-Governance would require support at all levels.
• Promoting Economic Development: Technology enables governments to create positive business climates by simplifying relationships with businesses and reducing the administrative steps needed to comply with regulatory obligations. There is a direct impact on the economy, as in the case of e-procurement, which creates wider competition and more participants in the public sector marketplace.

• Government Process Reengineering: Main steps of government process reengineering are, for every function a government department, there should be a step-by-step analysis of each process to ensure its rationality and simplicity, such analysis should incorporate the viewpoints of all stakeholders, while maintaining the citizen-centricity of the exercise. After identifying steps redundant, complex, adaptable steps are analyzed over the law, rules, regulations, instructions, codes, manuals etc. Following the exercise, governmental forms, processes and structures should be redesigned to make them adaptable to e-governance, backed by procedural, institutional and legal changes.

• e-Readiness: A certain level of preparedness is essential for any e-Governance project, in the form of existence of basic information and communication infrastructure and human resource. Each organization would have to identify areas/activities falling under its functional domain which could benefit from e-Governance. Every e-Governance initiative would require its own technological solution. The technological solution would have to be modified according to the specific needs of the organization with the help of field experts.

• e-Governance a complete 360° System: Apart from periodic monitoring of e-Governance initiatives in the post-implementation stage, there would also be need for evaluation of the impact of such initiatives against parameters which would determine whether the objectives have been achieved or not. Considering the scale of e-Governance applications, mammoth flow of data, technological architecture, secure and safe mechanisms, it is necessary to design a 360° system. Disaster recovery modules, insulation from the possibility of cyber-attacks, hacking etc needs to be incorporated in the system.

• Sustainability: Once the e-Governance system has been established, it should not be allowed to relapse on grounds of expediency. These systems sustainable, financially
administrative wise, technological, deliverance and code of conduct. Saving of time and money may be the driving force in case of some projects.

- **Vertical-Horizontal Scalability:** Traditional infrastructure cannot scale, scalability demands change over time. It has to be frequently upgraded to meet these challenges, thereby making some of software and hardware redundant. A coordinating mechanism is needed to prevent cases of re-inventing the wheel. Cloud computing could be solution and future for e-Governance. Cloud provides a solid foundation for the introduction of widespread provision of services to various stakeholders. Applications designed using the principles of service oriented architecture (SOA: IaaS, PaaS, SaaS) and deployed in cloud architectures will benefit the government in reducing operating costs and increasing the data flow. Cloud helps enabling e-Governing services faster and cheaper thereby accelerating the adoption and use of information technology for e-Services. Cloud architectures allow rapid deployment of turnkey test environments with little or no customized. e-Governance applications face data outburst, cloud computing can scale better. Cloud computing supported e-Governance can provide efficient management, disaster recovery and better integration.

### 1.5 Literature Review:

The primary purpose of governance is the welfare of citizens and e-Governance is its sophisticated path. The broad concept of e-Governance encompasses the whole gamut of Government functioning and the services it provides to citizens. There is a growing amount of literature about e-Governance in terms of books, research papers & articles, research reports and case studies. e-Governance is a multi disciplinary field and thus covers vast area of studies. Many research articles, books and case studies on the e-Governance and applied aspects have been studied during the present research. The review of literature is presented in following paragraphs.

National Informatics Center, Department of Information Technology, Government of India framed “Guidelines for Indian Government Websites”. The document contains recommended guidelines for development and management of government websites and
portals in India. The primary objective of these guidelines is to ensure that Indian Government websites belonging to any constituent of government at any level are citizen centric and user friendly.

Teemu Ilmari Ropponen\textsuperscript{21} from Aalto University in his Master Degree thesis, “Designing e-Government Services for Collaboration between Citizens and the Public Sector”, gave two different e-Government service concepts, collaborative e-government services and the principle of engaging citizens into the processes in an open and transparent way. This was enabled by the use of Web 2.0 technologies and driven by people contributing their knowledge and insight without monetary compensation, sometimes referred to as participatory economics.

Working Paper “Towards Validation of Key Success Factors of e-Government Initiatives”, by R.K. Mitra and M.P. Gupta\textsuperscript{22} from Indian Institute of Foreign Trade, presented fact about capturing success of e-Government initiatives and if so what kind of policy and operational insight can be derived for the benefit of decision makers and project managers responsible for formulating and implementing e-Government initiatives.

Geoffrey Rwezaura Karokola\textsuperscript{23} in his Doctoral thesis entitled “A Framework for securing e-Government Services the Case of Tanzania” encompassed information security as an important role in mitigating security risks and threats posed to e-Government services. It was impetrated that confidentiality, integrity and availability of critical information being stored, processed, and transmitted between G, B and C, become an integral part of e-Government services, from planning, development, implementation, delivery, to maintenance phases. An empirical investigation was conducted in one of the developing regions in the sub-Saharan Africa, Tanzania.

Department of Information Technology, Government of India, in the “Background Papers: National e-Governance Plan”,\textsuperscript{24} illustrated the components of NeGP viz. Common Services Centre, e-District, State Wide Area Network, State Data Centre, e-

Radha Chauhan in her article “National e-Governance Plan in India”, at United Nations University International Institute for Software Technology, presented the National e-Governance Plan in India. She discussed the vision, components, implementation strategies and governance structure of the plan. The report gave some basic facts about India, covering the political, geographical, social, economical and regulatory aspects.

Md. Nazrul Islam in his Ph D Thesis Submitted to University of Mysore entitled “Decentralized Governance and Development in India: A Study in West Bengal”, have described that decentralized governance has been seen as a magical elixir to bring about development involving the local citizenry. Decentralization helps in identifying the needs and preferences of people through their direct participation in plan formulation and implementation. It ensures accountability on the part of the leaders and administrators to the people. Furthermore, it was concluded that, decentralization tends to produce greater transparency.

Vertika Shukla in her M Phil dissertation “Current Status of e-Governance in Healthcare in the Large Hospitals of Bangalore” concluded that, most of the patients still visit to book an appointment and to collect their reports and majority of the doctors are not aware of Telehealthcare.

A Handbook entitled “e-Governance Project Lifecycle” published by National Institute for Smart Government and Department of Electronics & Information Technology, Government of India, has 17 sections. Each section presents information of e-Governance Project Life Cycle for readers with different levels of technical expertise and differing needs. Flow diagrams, tables, graphs & images are used extensively to facilitate easy comprehension and quick recollection of the topics covered therein. A list of useful links
and references that can be read in conjunction with the topics covered is provided at the end of the Handbook.

“The e-Government Handbook for Developing Countries: A Project of Infodev and the Center for Democracy & Technology” compiled by Bruno Lanvin, Infodev Program Manager, World Bank, have attempted to bring together key resources and examples of best practices from around the world and to provide an operational tool to help e-Government practitioners to move as swiftly and efficiently as possible through the three stages namely, publishing, interacting, and transacting.

Kristian Hjort-Madsen of IT University of Copenhagen in his Doctoral Dissertation, “Architecting Government and Understanding Enterprise Architecture Adoption in the Public Sector”, examined that the Enterprise Architecture adoption process in government must be understood as a social production because of cultural and structural forces. The findings alert researchers and practitioners that EA adoption most often will reinforce existing administrative and political arrangements and will not automatically lead to transformation and modernization of government.

“Model RFP Templates for Public Private Partnerships” an advisory document published by Department of Information Technology, Government of India is a Toolkit and Guidance Notes for preparation of RFPs for e-Governance Projects. These templates are based on existing Central Government Guidelines, feedback from stakeholders and prevalent international practices.

“The Role of Enterprise Architecture in Local e-Government Adoption”, a Ph D thesis by Andreas Ask, submitted to Örebro University studied that EA, as a phenomenon, is thought to be, if not a silver bullet, then at least a prerequisite to eGov success. The study identified several critical issues: distinction between administrative and political responsibilities; political mandate; political timing; resource allocation; dependence on providers; and choosing among standards and best practices. This licentiate thesis has shown that the initial use of EA in local government eGov adoption is complex.
Nibal O. Abu Jaber\textsuperscript{33} from An-Najah National University in his doctoral thesis entitled “Strategic Analysis and Development of Electronic Government Strategies for the Palestinian Municipalities”, have developed the strategic framework for e-Government at the municipal level.

“e-Government: Transformation of Public Governance in New Zealand?” by Rose Regina O’Neill\textsuperscript{34} from Victoria University of Wellington in her research work elaborated that technical and ICT innovation shall deliver business benefits and produce radical change in the way that government agencies are organized to service parliament and the public. The thesis examined the concept of transformation in the New Zealand state sector context with a view to determining the form and nature of governance changes that may occur as a consequence of e-Government implementation. A Weberian analytical framework was used to identify the nature of changes that occur as a consequence of e-Government initiatives, and where changes may occur in the current public sector governance model.

In a white paper by Department of Electronics and Information Technology, Government of India, entitled “Framework & Guidelines for Use of Social Media for Government Organizations”,\textsuperscript{35} described the use of ICTs including internet and mobile based communications for e-Governance. Detailed description and explanations were given in the Guidelines section of the document. Social Media being used across the world by different government agencies, the document also illustrated some examples from India as well from other countries to demonstrate the purpose and use of such media.

Aini Aman\textsuperscript{36} in his research paper entitled “e-Government Evaluation and Organizational Learning”, evaluated that, most evaluation processes in e-Government projects are neglected, inefficient or ineffective and tend to focus on narrow aspect of project design and implementation. e-Government evaluation should support organizational learning in order to ensure that errors or mistakes on previous project are not repeated. The paper
presented issues of evaluation in e-Government project; e-Procurement in Malaysia government.

“Measurement and Evaluation Tool for e-Government Readiness: METER2”\textsuperscript{37} is a tool designed and developed by United Nations Department of Economic and Social Affairs. METER is an online, interactive tool to assist governments and decision makers at any level throughout the world in developing, monitoring, refining and improving the context within which information and communication technologies are used to transform government into e-Government. METER consists of five main sections, commitment, legal, vision and policy, organization, and technology. Within each section there are a number of subthemes.

“Impact Assessment of e-Governance Projects”,\textsuperscript{38} a report presented by Ministry of Communications and Information Technology is a summary of the key findings from the assessment studies of impact on citizens/businesses of three national projects focusing on Collection and Processing of Income Tax, Registration of New Companies, and Issue of Passport.

“Framework for Citizen Engagement in e-Governance”\textsuperscript{39} a primer by Department of Electronics and Information Technology illustrated the importance of engaging citizens and other stakeholders in e-Governance projects. The report is an Engagement Framework for a meaningful engagement with citizens, by facilitating to voice inputs/concerns, feedback mechanism, participation in decision making.

“Cloud computing for e-Governance” A white paper Dr. Vasudeva Varma\textsuperscript{40} described the role of cloud computing standards and architectures in framing a good e-Governance strategy to realize e-Government. e-Services are delivering cost-effective services, which can drive the growth of the economy and government productivity. Cloud computing provides a new service consumption and delivery model inspired by Consumer Internet Services. Cloud computing drives down costs and accelerates cost reduction benefit. e-Governance with cloud computing offers integration management with automated
problem resolution, manages security end to end, and helps budget based on actual usage of data.

Dr. Vikram Singh, Subhash Chander, and Amit Kumar in their research paper entitled “e-Governance in Development of Rural Economy” studied the impact of e-Governance on economy of rural people in Punjab. This study reveals that people has to face corruption & harassment while availing these services, however the level of harassment & corruption is different for different services. Paper concludes that e-Governance has increased Transparency & Efficiency.

Annelie Ekelin in his paper, “Working with the Fogbow Design and reconfiguration of services and participation in e-Government” have investigated and evaluated, public internet monitors reflections and discussions about politics, design and democracy. Themes such as accountability, accessibility and participation for utilized for reconfiguration and transformation.

Marcus W. Vogt in his PhD thesis submitted to Bond University, entitled “Aligning IT Initiatives with Emergency Management Objectives Developing and Adapting IT Governance Approaches for the Domain of Emergency Management” identified the benefits of strategic IT alignment in the domain of Emergency Management in order to foster the utilization of IT. He proposed conceptual models and methods, based on contemporary IT Governance frameworks and tools, which will help Emergency Management.

N. S. Kalsi, Ravi Kiran and S. C. Vaidya in their research paper entitled “Effective e-Governance for Good Governance in India” have discussed the need for transformation from traditional governance to e-Governance. It focused on the factors for good governance and addresses the e-Government initiatives that have a direct impact on the citizens and in which the citizens derive benefit through direct transactions with the governmental services.
Mrinalini Shah in her research paper entitled “e-Governance in India: Dream or reality?” have explored four steps of e-Governance Cataloguing, Transaction, Vertical Integration & Horizontal Integration. The paper elaborated the position of India in e-Governance environment and issues and challenges ahead.

“e-Government and Developing Countries: An Overview” a paper by Subhajit Basu has compared citizen interaction with government in developed countries and developing countries. The experience in developed countries shows that it is possible if governments are willing to decentralize responsibilities and processes, and if they start to use electronic means. The paper also examines how far the developing countries have been successful in providing a legal framework.

In the research paper entitled,” An Evaluation of Fiji’s e-Government Status: Assessed According to UN Report on Benchmarking e-Government Progress”, by Sam Goundar explored a method for economic development by putting Fiji government services online to businesses, citizens and government employees. In this research paper, a look at Fiji’s e-Government status and its evaluation against the e-Government Benchmarking that is used by the United Nations has been studied. The Fiji e-Government project covers the following aspects, which are the eGov consulting, applications, data centre, government info-communications, infrastructure, ICT Competency Development and Training. The digital revolution has its potential to strengthen democracy and make governments more responsive to the needs of their citizens.

Lili Wang and Stuart Bretschneider in their research paper “Evaluating Web-based e-Government services with a citizen-centric approach” describes the challenges in delivering e-government services and to design the web sites to make it easier for citizens to find desired information. The model suggested by them not only evaluate their Web-based e-Government services, but also helps them understand why their Web sites succeed or fail.
The Research Article, “Assessing the Impact of e-Government: A Study of Projects in India”, by Subhash C. Bhatnagar reports the development of 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, cost to the client of accessing services, and perception by the client of quality of service and governance.

“A Suggested Framework for Assessing Electronic Government Readiness in Egypt”, an article by Nahed Amin Azab, Sherif Kamel, and Georgios Dafoulas explained a model of Government appraisal framework encompassing several components such as people, technology, processes, and strategic planning. They have also examined the relations and interactions of these components in an emerging e-Government environment using a case study on an agency affiliated to the government of Egypt as a primary step in the process of testing the framework.

Sabri Al-Azazi in his PhD thesis entitled “A Multi-Layer Model for e-Government Information Security Assessment” submitted to Cranfield University, emphasized on the knowledge workers and citizen driven governments towards the transformation into the electronic method. The research reported in this thesis delivers a new model that can be used as a tool to assess the level of security readiness of government departments, a checklist for the required security measures, and as a common reference for the security in the government departments in Dubai.

“Evaluating Federal Websites: Improving e-Government for the People” a research paper by Kim M. Thompson of Florida State University, has suggested that, there is abundant evidence that federal websites need to be improved in terms of usability in order to meet federal policy guidelines, such as accessibility requirements for individuals with disabilities, and to support e-Government initiatives.
“Impact Assessment Study of Computerized Services Delivery Projects from India and Chile”, a research paper by Subhash Bhatnagar, have made a modest beginning for systematic assessment of ICT investments in the public sector in developing countries. The effort was to go beyond the anecdotal assessments that were commonly available. The study was carried out to develop and present a framework to conduct analysis on the impact of public sector investments in ICT applications. Key findings from the study were primarily based on the detailed impact assessment of five Indian projects and two Chilean projects.

M P Gupta and Jaijit Bhattacharya in their research paper entitled “Evaluating e-Government” described that; return on investment could be one of the parameter for evaluation for overall impact of e-Government on general government functioning, economic development and citizen servicing. They suggested three kinds of approaches of evaluation, e-readiness assessment of states or region, hierarchy of measures taken by the e-Government projects and overall impact of e-Government.

“Evaluations of e-Governance Projects: Studies Conducted by Center for Electronic Governance, Indian Institute of Management, Ahmedabad” for Asia Foundation, USA by Prof. T. P. Rama Rao attempted to study the e-Governance project at the RTO in Gujarat, which has automated three of its major services: Issuing of Driving Licenses, Registration of Motor Vehicles, and Collection of Vehicle Taxes. The evaluation results indicate that the project has successfully offered benefits to its stakeholders and proved to be sustainable. The project have been well conceived, executed and delivered benefits to the stakeholders.

“Toolkit for Monitoring & Evaluation for e-Governance under JNNURM” developed by Ministry of Urban Development, Government of India is a Monitoring and Evaluation framework prepared as a part of e-Governance initiative of JNNURM for e-Governance services which envisages providing effective and efficient citizen-centric services and improving internal functioning of the municipalities. A formal, common, and comprehensive M&E framework has been developed by participating stakeholders which
measures outcome, improves overall effectiveness and provide information for informed decision making.

Subhajyoti Ray and V. Venkata Rao in their paper “Evaluating Government Service: A customers’ Perspective of e-Government” have proposed a method to assess the change in service quality as a result of e-Government project implementation and analytical hierarchy approach as a tool that can be used to assess e-Government induced changes in public service quality.

“Gyandoot: Rural Cybercafés on Intranet Dhar, Madhya Pradesh, India”, is a Cost Benefit Evaluation Study carried out by Centre for Electronic Governance, Indian Institute of Management, Ahmedabad. It is an Intranet based G2C service delivery portal commissioned in Dhar district of Madhya Pradesh. Gyandoot has created a cost-effective, replicable, economically self-reliant and financially viable model for taking the benefits of ICT to the rural masses for enhancing participation by citizens/government in community affairs.

The paper entitled “An Assessment of Jordan’s e-Government Maturity: a User-Centric Perceptive”, by Omar Al-Hujran have provided a qualitative analysis of the current sophistication levels of Jordanian e-Government services in order to establish an understanding of how to offer efficient and effective e-Government services that are tailored to a citizen centric approach.


Prof. T. P. Rama Rao, Prof. V. Venkata Rao and Prof. S. C. Bhatnagar, have designed a methodology “e-Governance Assessment Frameworks (EAF Version 2.0)” for e-Governance (Assessment & Replication) Division, e-Governance and e-Rural Group,
Department of Information Technology, Government of India. The above methodology has been designed to determine whether a project should be selected for replication?

“e-Government Information Systems: Evaluation Led Design for Public Value and Client Trust” a paper published by Mike Grimsley and Anthony Meehan have designed an evaluative framework for e-Government projects that complements traditional approaches to IS evaluation. It focuses upon citizens’ and clients’ experiences of service provision and service outcomes as contributors to the formation of public trust.

1.6 Citizen-Centricity:
Before designing any e-Governance initiatives, diverse needs of the citizens may be given proper consideration from the perspective of the people’s potentialities, needs and aspirations defined by their respective reality. This would result in design of customized e-Governance initiatives that would be more responsive to the contextual reality of its respective areas and hence better utilized by the locales and therefore prove to be more sustainable. Responsiveness of a design approach for e-Governance initiative to such contextual realities of citizens is generally referred as citizen-centric or people-centric approach for designing e-Governance initiatives and is expected to ensure overall acceptability of e-Governance initiatives. Citizen-centricity is about turning the focus of government around core functionalities, so that the needs of the citizen and businesses come first, rather than operational aspects or other imperatives inside the government machine. “Citizen centric approach entails evolving an e-Governance offering that is integrated, citizen driven and citizen sensitive, rather than a mere publishing personal agenda, understanding of technology and its acceptance by users” Citizen centric approach focuses on the citizens needs from the point-of-view of citizens themselves, and therefore citizen-participation and their representatives is the core-essence of citizen centricity in e-Governance. It involves a detailed “understanding of human elements and not conventional technology or bureaucratic parameters, to determine why citizens would bolster their usage of e-Governance initiatives over the prevailing mechanism of fulfilling their governance needs.” Such a citizen-centric approach is expected to retain six guiding principles in its vision, “A holistic approach to customer focus; web-centric
delivery; building a credible brand; value addition by large efficiency gains; continuous improvement, building trust and confidence.”64

1.6.1 Why Citizen Centricity?

The historic focus on technology has overshadowed the organizational, structural, and cultural changes needed in the public sector. In the process of rendering internal government functions and processes efficient and effective, users were often forgotten. This lead to a significant change of focus and approach in the last few years, from government centricity prioritizing outcomes for governments, to citizen centricity prioritizing outcomes for users of public services. “A paradigm shift government centricity to citizen centricity raises the question of whether e-Governance activities contribute to the creation of broader public welfare: does e-Governance create welfare for all?”65

Shifting towards citizen centricity with the goal of increasing user take-up in order to create public welfare is about balancing outcomes with improving the cost-effectiveness of the public sector as a whole. Many philosophers have also recommended need for adopting a citizen-centric approach for designing e-Governance initiatives. It is this aspect of good governance that also sets the tone for imbuing citizen centricity in e-Governance initiatives. Support for citizen centricity also comes from numerous theories drawn from prevailing emerging trends in management, public administration, governance and design realm. “Management gurus insist on ‘Customer relation management’ with customer as the driving force for all the strategies, public administration practices are being influenced by new public management practices where citizen is to be revered as a customer and even good-governance principles insist on citizen as the core-nucleus of all governance activities.

Principles of citizen-centricity are also supported by inclusive ‘bottom-up’ approach and collaborative stake holder management practices.”66 Other stake holders of the studies like researchers, academicians, NGOS, practitioners and Panchayats highlights the need and benefits of bringing citizens to the core centre of the processes of e-Governance.
initiatives. The common underlying principal of e-Governance states that, citizens must be kept at the center while designing and implementing these projects. There might be a motto ‘For the Citizens, Of the Citizens but By the Government’ analogous to democracy, ‘For the People, By the People, of the People’.

In citizen-centric approach citizen is the ultimate beneficiary and also the primary actor in a democracy, therefore all development and governance processes should focus on them only. But despite being the core beneficiaries of e-Governance projects, citizens are generally viewed as passive recipients and not as planners, decision makers, designers in the process of design and implementation of such e-Governance projects. So, it is quite natural and necessary to design an approach that is broader in perspective and not merely based on understanding of technological diffusion or acceptance parameters, but a detail elaboration as to how to design citizen-centric e-Governance project for a developing and diverse country like India, especially with reference to its rural setting.

To highlight some of the key factors associated with citizen centricity can be summarized as, citizens must know the information about the available e-services, citizens must be aware of the benefits of these services, citizens should be able to locate the e-services easily, e-services must be accessible to all members of the intended target groups, the information from the e-services should be comprehensive, correct, readily available, and easy to understand with respect to language and structure, the provision of e-services should be confidential, and in no way violate the privacy of either party, the ‘value’ of information needs to be protected at all levels.

Further elaborating citizen centricity, in our research, we are proposing Citizen Relationship Management (CzRM) parameter, which should be essentially a basis of design of any e-Governance portal, especially in Indian context. The parameters which we thought could be included in CzRM are, simplicity, user friendliness, citizen registration, password policy, last login details, seamless workflow and navigation, alert (SMS, Email, Phone etc.) management system, mobile apps, regional language support, response time, citizen charter, cost to citizen, portal dynamicity, domain specific citizen
database, uptime and 24X7 availability etc. This CzRM policy and subsequent parameters are discussed in detail in chapter 3.

1.7 Overview of e-Governance Services at Global Level:

Progress in online service delivery continues in most countries around the world. It is observed that many have put in place e-Governance initiatives and information and communication technologies applications for the people to further enhance public sector efficiencies and streamline governance systems to support sustainable development. Among the e-Governance leaders, innovative technology solutions have gained special recognition as the means to revitalize lagging economic and social sectors. “It is also observed that, in today's recessionary world climate, it is important to continue with service delivery, governments must increasingly begin to rethink in terms of e-Governance.”

1.7.1 UN Initiatives and World Ranking 2012 & 2008:

To assess e-Government status, few indices have been developed. One of them is by the United Nations’ Division for Public Economics and Public Administration. This index is an indicator of the progress the UN member countries have made in implementing e-Government services. Several parameters and factors are taken into consideration. These include web presence measures, indicating stages of government websites, telecommunication infrastructure measures which define the capacity of a country’s ICTs (indicators are Internet hosts per 10,000 people, percentage of a nation’s population online, and PCs, telephone lines, mobile phones, and televisions per 1000 people); and human capital measures, using the UNDP Human Development Index, the Information Access Index, and urban/rural population ratio as indicators.

The assessment of e-Government readiness index that included 191 countries was undertaken by the United Nations in 2001, 2003, 2005, 2008 and 2012. The 2001 study used the premise that the state of e-government readiness is a function of the combined level of a country’s state of readiness, economic, technological development and human resource development. A final product of their analysis was the construction of a
synthetic indicator named the e-government Index. “The 2005 readiness index is a composite measurement of the capacity and willingness of countries to use e-government for ICT-led development. It is a composite index comprising the web measure index, the telecommunication Infrastructure index and the human capital index.”

The United Nations e-Governance survey for 2012 analyzed how governments explore the inter-linkages between e-Governance and sustainable development efforts. While presenting the United Nations e-Government development rankings for 2012, it analyses how Governments of the countries are deploying e-Governance policies and programmes to support efficiency, effectiveness, and inclusiveness as the parameters of sustainable development efforts worldwide. It addresses conceptual and analytical issues related to an effective e-Governance institutional framework as the key enabler for the organizational and regulatory environment that is the necessary ingredient for such development to take place.

The UN 2012 survey is built upon first, underscoring the importance of technological advancements and the role of the Government advancements and the role of the government and sustainable development; it highlight the importance of e-Governance and ICT as integral to sustainable development. Second, expanding the concept of e-Governance- it points to the need to place it at the centre of development thinking for a coherent, coordinated and synergistic approach to public sector solutions. And finally, it draws attention to state-of-the art e-Governance approaches that are being deployed in vanguard countries as case studies for a whole-of government framework and inclusion of the disadvantaged in the circle of development. UN e-Governance ranking for worldwide nations for year 2012 and 2010 is listed in table 1.1.
Table 1.1: UN e-Governance Ranking for Worldwide Nations for year 2012 & 2010.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Republic of Korea</td>
<td>0.9283</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Netherlands</td>
<td>0.9125</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>United Kingdom</td>
<td>0.8960</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Denmark</td>
<td>0.8889</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>USA</td>
<td>0.8687</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>France</td>
<td>0.8635</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>7</td>
<td>Sweden</td>
<td>0.8599</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>8</td>
<td>Norway</td>
<td>0.8593</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>9</td>
<td>Finland</td>
<td>0.8505</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>10</td>
<td>Singapore</td>
<td>0.8474</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>11</td>
<td>Canada</td>
<td>0.8430</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Australia</td>
<td>0.8390</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>13</td>
<td>New Zealand</td>
<td>0.8381</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>14</td>
<td>Liechtenstein</td>
<td>0.8264</td>
<td>14</td>
<td>23</td>
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<tr>
<td>15</td>
<td>Switzerland</td>
<td>0.8134</td>
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<td>18</td>
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<tr>
<td>16</td>
<td>Estonia</td>
<td>0.7987</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>17</td>
<td>Croatia</td>
<td>0.7328</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>18</td>
<td>Malaysia</td>
<td>0.6703</td>
<td>40</td>
<td>32</td>
</tr>
<tr>
<td>19</td>
<td>Uruguay</td>
<td>0.6315</td>
<td>50</td>
<td>36</td>
</tr>
<tr>
<td>20</td>
<td>Bulgaria</td>
<td>0.6132</td>
<td>60</td>
<td>44</td>
</tr>
<tr>
<td>21</td>
<td>Turkey</td>
<td>0.5281</td>
<td>80</td>
<td>69</td>
</tr>
<tr>
<td>22</td>
<td>Saint Lucia</td>
<td>0.5122</td>
<td>90</td>
<td>88</td>
</tr>
<tr>
<td>23</td>
<td>Iran</td>
<td>0.4876</td>
<td>100</td>
<td>102</td>
</tr>
<tr>
<td>24</td>
<td>Cuba</td>
<td>0.4488</td>
<td>110</td>
<td>96</td>
</tr>
<tr>
<td>25</td>
<td>Morocco</td>
<td>0.4209</td>
<td>120</td>
<td>126</td>
</tr>
<tr>
<td>26</td>
<td>Botswana</td>
<td>0.4186</td>
<td>121</td>
<td>117</td>
</tr>
<tr>
<td>27</td>
<td>Belize</td>
<td>0.3923</td>
<td>124</td>
<td>120</td>
</tr>
<tr>
<td>28</td>
<td>India</td>
<td>0.3829</td>
<td>125</td>
<td>119</td>
</tr>
<tr>
<td>29</td>
<td>Turkmenistan</td>
<td>0.3813</td>
<td>126</td>
<td>130</td>
</tr>
<tr>
<td>30</td>
<td>Nicaragua</td>
<td>0.3621</td>
<td>130</td>
<td>118</td>
</tr>
<tr>
<td>31</td>
<td>Bangladesh</td>
<td>0.2991</td>
<td>150</td>
<td>134</td>
</tr>
<tr>
<td>32</td>
<td>Pakistan</td>
<td>0.2823</td>
<td>156</td>
<td>146</td>
</tr>
<tr>
<td>33</td>
<td>Myanmar</td>
<td>0.2703</td>
<td>160</td>
<td>141</td>
</tr>
<tr>
<td>34</td>
<td>Timor-Leste</td>
<td>0.2365</td>
<td>170</td>
<td>162</td>
</tr>
<tr>
<td>35</td>
<td>Eritrea</td>
<td>0.2043</td>
<td>180</td>
<td>175</td>
</tr>
<tr>
<td>36</td>
<td>Somalia</td>
<td>0.0640</td>
<td>190</td>
<td>184</td>
</tr>
</tbody>
</table>
1.7.2 World Bank Initiatives:
The World Bank helps client countries to initiate, design, and implement e-Governance projects. Its role can include, Financing e-Governance projects and components, supporting e-Governance approaches through policy advice, strategy formulation, and operational support, establishing a forum for knowledge sharing on e-Governance including, helping clients to create the necessary infrastructure for e-government, providing technical assistance, promoting the use of information technology in public sector reforms. The Practice Group of World Bank e-Governance initiative leads at helping government leaders to access high quality global expertise, appropriate technologies, efficient processes, and necessary financial resources for designing and implementing transformative projects in developing countries. The Practice Group also partners with the e-Development Thematic Group and other relevant groups to deliver a series of seminars, video conferences and training workshops on e-government/ICT. World bank assist client countries to build the necessary institutional capability for developing electronic government applications towards improving government performance and accountability, particularly in the delivery of public services.

The Government of India received a loan from the World Bank towards programme management and financial support for the National e-Governance Plan (NeGP) for an amount of US$ 150 million (about Rs 700 crore). “The loan is referred to as India e-Delivery of Public Services Development Policy Loan and is envisaged to support NeGP’s countrywide plans of increasing online services for citizens in their locality, to improve the quality of basic governance in areas of concern to the common man”[69].

Department of Electronics & Information Technology (DeitY) has issued detailed guidelines to support other Ministries/Departments as well as States/UTs in formulation, development and funding of suitable project proposals. These guidelines provide a comprehensive framework including a detailed Project Report template for submission of proposals based on indicative policy areas such as, institutional strengthening of state governments, Public Private Partnerships (PPP) to improve service delivery, use of open standards to ensure interoperability and avoid vendor lock in, inter-agency coordination
and monitoring & evaluation, access to citizen services through mobile platform and increasing the pace of broadband penetration, mandating increased participation of users, service orientation for government processes and officials, electronic service delivery act, uniform and predictable verification of e service users, development of technical standards for e-Governance

1.7.3 An Overview on Indian e-Governance Initiatives:
Being the largest democracy and having one of the largest government set-ups in the world, India offers a vast potential for effective implementation of e-Governance. The number of internet users in India is constantly on the rise and with the focus shifting on providing more and more governance services electronically; the citizen charters of the governance departments are assuming a whole new meaning. The State Governments in India, woken up to the need of the hour, have become aware of the hidden costs in not adopting e-Governance, such as delay in processes, uncertainty, lack of transparency and corruption.

A closer look at the Indian Government websites, belonging to both central and state government reveals that most of the important government entities have already made headway in establishing their presence on internet. However, after having established the website, the impact and fruitfulness needs to be analyzed. A study of some of the important government websites in the state of Maharashtra reveals that most of the governance websites are providing basic information about the concerned department/entity. Some of these websites are also being updated quite regularly. However, many of them are still far from contributing in a true sense, to the concept of e-Governance.

The government India kick started the use of IT by launching number of initiatives like establishment of the national taskforce of information technology and software development in May 1998, “Adoption of information technology (IT) Act, 2000 by the Government of India to provide legal framework to facilitate electronic transactions.” Launching of National e-Governance Plan in 2003 laid the foundation and observing
impetus for long-term growth of e-Governance within the country. Set up a High Powered Committee (HPC) with cabinet secretary as its chairman to improve administrative efficiency in 2005. Instituting websites by almost all Ministries and Departments and providing information on aspects such as their objectives, policies and decisions, contact persons, etc.

1.7.3.1 Some National e-Governance Projects:
State/Union Territory Initiatives covering departmental automation, user charge collection, delivery of policy/programme information and delivery of entitlements.

Table 1.2 Some National e-Governance Projects in India

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>State</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh</td>
<td>e-Seva, SMART CARD, VOICE, MPHS, FAST, e-Cops, AP online</td>
</tr>
<tr>
<td>2</td>
<td>Bihar</td>
<td>Sales Tax Administration Management Information</td>
</tr>
<tr>
<td>3</td>
<td>Chhattisgarh</td>
<td>Chhattisgarh Infotech Promotion Society, Treasury office, e-linking project</td>
</tr>
<tr>
<td>4</td>
<td>Delhi</td>
<td>Automatic Vehicle Tracking System, Computerization of website of RCS office, Electronic Clearance System, Management Information System for Education etc</td>
</tr>
<tr>
<td>5</td>
<td>Gujarat</td>
<td>Mahiti Shakti, request for Government documents online, census online, tender notice</td>
</tr>
<tr>
<td>6</td>
<td>Haryana</td>
<td>Nai Disha</td>
</tr>
<tr>
<td>7</td>
<td>Himachal Pradesh</td>
<td>Lok Mitra</td>
</tr>
<tr>
<td>8</td>
<td>Karnataka</td>
<td>Bhoomi, Khajane, Kaveri</td>
</tr>
<tr>
<td>9</td>
<td>Kerala</td>
<td>e-Srinkhala, RDNet, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services (FRIENDS)</td>
</tr>
<tr>
<td>10</td>
<td>Madhya Pradesh</td>
<td>Gyandoot, Gram Sampark, Smart Card in Transport Department, Computerization MP State Agricultural Marketing Board (Mandi Board) etc</td>
</tr>
<tr>
<td>11</td>
<td>Maharashtra</td>
<td>SETU, Online Complaint Management System</td>
</tr>
<tr>
<td>12</td>
<td>Rajasthan</td>
<td>Jan Mitra, Raj SWIFT, Lokmitra, RajNIDHI</td>
</tr>
<tr>
<td>13</td>
<td>Tamil Nadu</td>
<td>Rasi Maiyams–Kanchipuram; Application forms related to public utility, tender notices and display</td>
</tr>
<tr>
<td>14</td>
<td>Arunachal Pradesh</td>
<td>Community Information Center</td>
</tr>
<tr>
<td>15</td>
<td>Mizoram, Nagaland</td>
<td>Social welfare, food civil supplies and consumer affairs, housing transport</td>
</tr>
</tbody>
</table>
1.7.4 Maharashtra State e-Governance Policy 2011:
Government of Maharashtra is one of the pioneers in promotion of e-Governance in India. GoM has initiated and drafted e-Governance policy\(^1\) in 2011. Focus on citizens’ needs, service delivery, transparency and access to information has been centered as the thrust area of e-Governance. To promote service delivery government of Maharashtra has planned to prepare a legislation named as Maharashtra Mandatory Electronic Delivery of Public Services - MMEDPS act. The act will make mandatory for all government offices/departments to provide certain citizen centric services electronically to citizens. The act will force to government departments to provide time-bound delivery of public services, like information availability, issuing of forms and applications, licenses, permits, certificates, sanctions or approval & receipt or payment of money, application submission, application status tracking, transactions, etc. The Maharashtra State-wide Area Network connects State Head Quarters with all Districts, Talukas and Divisional Head Quarters and provides a secure network for data, voice and video interaction. Horizontal connectivity is being provided to other offices from the nearest POP. VSAT Connectivity for facilitating Disaster Management and Disaster response is maintained.

1.8 Problem Statement:
Parametric Evaluation of e-Governance Systems- a Case Study of Selected Web Portals from the State of Maharashtra.

1.9 Objectives of Study:
This research focuses on Parametric Evaluation of e-Governance Systems of selected Web Portals from State of Maharashtra.

- To Study the Existing e-Governance Web Portals in the State of Maharashtra,
- To Study and Analyze the Parameters to be taken for Evaluation,
- To Study, Analyze and Select Web Portals from State of Maharashtra which are Citizen Centric and with Versatile Domain Applications,
- Evaluation of Domain Specific e-Governance Portals on the Basis of Selected Parameters,
1.10 Hypotheses:

- **Hypothesis 1:**
  - **Null Hypothesis:** $1H_0$: e-Governance Web Portals in Maharashtra are Citizen Centric.
  - **Alternate Hypothesis:** $1H_1$: e-Governance Web Portals in Maharashtra are not Citizen Centric.

- **Hypothesis 2:**
  - **Null Hypothesis:** $2H_0$: e-Governance Web Portals in Maharashtra are Intelligent and Dynamic System.
  - **Alternate Hypothesis:** $2H_1$: e-Governance Web Portals in Maharashtra are not Intelligent and Dynamic System.

- **Hypothesis 3:**
  - **Null Hypothesis:** $3H_0$: e-Governance Web Portals in Maharashtra are Fully Functional.
  - **Alternate Hypothesis:** $3H_1$: e-Governance Web Portals in Maharashtra are not Fully Functional.

- **Hypothesis 4:**
  - **Null Hypothesis:** $4H_0$: e-Governance Web Portals in Maharashtra are Secured.
  - **Alternate Hypothesis:** $4H_1$: e-Governance Web Portals in Maharashtra are not Secured.

- **Hypothesis 5:**
  - **Null Hypothesis:** $5H_0$: e-Governance Web Portals in Maharashtra provide Transparent Quality Services.
  - **Alternate Hypothesis:** $5H_1$: e-Governance Web Portals in Maharashtra do not provide Transparent Quality Services.
• **Hypothesis 6:**
  o **Null Hypothesis:** $^6H_0$: e-Governance Web Portals in Maharashtra are User Friendly.
  o **Alternate Hypothesis:** $^6H_1$: e-Governance Web Portals in Maharashtra are not User Friendly.

• **Hypothesis 7:**
  o **Null Hypothesis:** $^7H_0$: e-Governance Web Portals in Maharashtra have reached every nook and corner.
  o **Alternate Hypothesis:** $^7H_1$: e-Governance Web Portals in Maharashtra have not reached every nook and corner.

• **Hypothesis 8:**
  o **Null Hypothesis:** $^8H_0$: e-Governance Web Portals in Maharashtra are Efficient Governance and have Decision Support System.
  o **Alternate Hypothesis:** $^8H_1$: e-Governance Web Portals in Maharashtra are not Efficient Governance and do not have Decision Support System.

**1.11 Research Methodology:**

The research scholar has selected a research methodology mixing the quantitative and qualitative methods. The questionnaire has been designed for collecting open-and-closed ended questions to obtain both quantitative and qualitative data for the analysis. The web portals to be analyzed were selected from versatile domains from State of Maharashtra.

The present study is based on the following:

a. Data collection from Citizens who have some awareness about e-Governance systems and web portals. 200 respondents have been selected from different parts of State of Maharashtra on convenience sampling basis. In the present study a sample of following e-Governance Portals from the State of Maharashtra have been taken:
   i. For G2C Category : 80 e-Governance Portals
   ii. For G2B Category : 19 e-Governance Portals
   iii. For G2E Category: 14 e-Governance Portals
The study is limited to the geographical area of the state of Maharashtra. Respondents are identified from various backgrounds including:

- Citizens who have some awareness about e-Governance systems and web portals, and/or,
- Citizens who have used any e-Governance website, and/or,
- Citizens who have participated in the design of e-Governance web portals, and/or,
- Citizens who are using e-Governance web portals as an employee of Government and/or,
- Citizens who are computer literate, with BE, MCA, etc. educational background and/or,
- Citizens who are working in software development / IT organizations.

b. After obtaining the responses the data was classified, tabulated and analyzed for deciding the weightages to be given to the various parameters. The maximum weightage to be allotted to all 10 major parameters was set as 50. After analysis the weightages were finalized along with sub parameters totaling to 125, for construction of matrix for evaluation for e-Governance portals.

c. For selection of e-Governance web portals from the state of Maharashtra the sampling technique used was criteria based sampling. The selection includes the web portals of G2C, G2B and G2E categories from the State of Maharashtra. Thereafter analysis matrix was framed containing 10 parameters with 125 sub parameters for evaluating the selected web portals. The scores were finalized and the portals were ranked according to the compliance of parameters. Each parameter ranged from 0 to 1 with an interval of 0.5. The software tool is also developed for evaluating any e-Governance portal.

d. A suggestive e-Governance portal has been designed having very high compliance rate of parameters.

An extensive literature review of existing e-Governance models has been carried out. Topics like ICT, e-Governance Models, e-Governance Evaluation Frameworks both at National and International Level, Citizen Charter, Office Management System, Public
private Partnership, Software Engineering and Software Project Management, Management Support System, Decision Support System, Data Mining, Data Warehousing Network and Internet Security, Human Behavioral Aspects and Cybercrimes etc. are thoroughly studied.

1.11 Scope and Limitations of Study:
The present study is limited to the geographical limits of State of Maharashtra. It covers selected web portals of e-Governance. The study has covered all the aspects of each individual web portal and the entire domain. The parameters and data for evaluation have been taken from input from cluster of citizens. The study is limited to 113 e-Governance web portals from the State of Maharashtra.

1.12 Period of Study:
The period of study is from 2011 to 2014.

1.14 Chapter Scheme:
   1. Introduction
   2. e-Governance Models and Plans
   3. e-Governance Evaluation Frameworks
   4. Profile of Selected e-Governance Web Portals
   5. Parameters for Evaluation of e-Governance Systems
   6. Data Analysis and Interpretations
   7. Conclusions and Suggestions
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