CHAPTER 3
LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

PART I LITERATURE REVIEW

3.1 Introduction

Past e-governance implementation efforts have focused mainly on internal efficiency, effectiveness and government centric. Currently, e-governance initiatives are more focused on the electronic delivery of service to the stakeholders and citizen centric. The present review includes studies related to e-governance initiatives like Common Service Centre, Public Distribution System and Land Record Management System. This review gives a briefing about especially to selected articles published in journals, conference proceedings, books, technical articles, research articles, the government published reports, government resolutions, policy papers and Ph.D. thesis submitted in various universities.

3.2 Books

1. M. Vinayak Rao et al. (2008) written a chapter named “Public Distribution Monitoring System- e-PDMS” in the book titled “Compendium of eGovernance Initiatives in India” edited by Piyush Gupta, R. K. Bagga [1]. In this chapter the authors explained the e-governance project was implemented with the vision, to uplift the BPL and weaker section of the society and to cover the whole food supply chain under PDS. In this project, initially, two-tier architecture was followed. However, the system needed a lot of manual data transmission intervention, consolidation and web replication. Later, these issues were overcome by re-engineering the process using web-enabled multi-tier architecture with the help of MS .NET Framework. Existing resources of the department of food supply and NIC resources at the state centre like IDC, NICNET, district centres have been used. Video Conference (VC) unit of NIC has been used for monitoring the flow. So that, no funding is required. A weekly monitoring of the project is done by the senior officers of food department along with the districts officials monitor the project, through face-to-face powerful VC studios located at the NIC district Centre.
2. **Subhash Bhatnagar (2009)**, written a chapter named “Case Studies on Government to Citizen Applications in E-Government” in the book titled “Unlocking E-Government Potentials-Concepts, Cases and Practical Insights” [2]. In this chapter, the author has included four case studies of e-government applications covering different types of services to citizens and a variety of benefits that are delivered. According to the author, government learn lessons from both successful and unsuccessful e-government projects. The author has given the cases of four projects namely Land Record System of Karnataka (Bhoomi), Computer Aided Registration of Deeds (CARD) project of Andhra Pradesh, Kalyan Dombivali, Vijaywada and Ahmadabad Municipal Corporation Online Services and E-Seva project of Andhra Pradesh. Study revealed that implementation of the Bhoomi project; there was the reduction in overall cost and bribery. Waiting time was reduced by 30% from an average of 130 minutes in the manual system. CARD project in sub registrar offices has shown the impact of computerized property registration on citizens in the twelve states. It has resulted in the number of trips reduced from an average of 4 to 2.3 and there is significant reduction in bribes in the system. In India, 20 to 30 municipalities have computerized in some departments. E-Seva project was one of the projects of its kind which offering multiple services through the single window. Most of the states in India are following the example of E-Seva project.

3. **Prabhu C.S.R. (2012)**, in his book titled “E-Governance- Concepts and Case Studies” [3]. The author was Deputy Director General and State Informatics Officer, National Informatics Centre, Andhra Pradesh. This book elaborates on case studies and implementation of e-Governance in India. This book focuses on e-governance model, e-governance infrastructure, stages in evolution and strategy for success, applications of data warehousing and data mining in the government. In this book, the case studies of nations India, Brazil, USA, China and Sri Lanka countries are explained in detail. The case studies are useful for future projects, although it is not very constructive; the publication needs more positive and negative points from the experience of past projects. The study focuses on models and theories; giving stages which are not very useful for many governments. The book includes other literature; however, this publication is merely an outline of case studies and needs to include improved guidance for future programmes.
4. Sanjay Jaju, Anoop Singh (2013), author of the chapter named "MeeSeva, Andhra Pradesh" in the book titled "Compendium of Selected e-Governance Initiatives in India-2013"[4]. The authors explained MeeSeva is the integrated service delivery model of Andhra Pradesh government. This project was launched in Chittoor district on the pilot basis. Throughout the state more than 7000 kiosks are providing user-friendly, faster and transparent various G2C services to the citizens. The project was initiated with a seed investment of Rs. 9 crore; the user fee model and 2.6 crore transactions in a day, rising up to 2 lakh transactions in a day, yearly savings to citizens could be whopping Rs. 6000 crore. More than 99% of the transactions have been delivered within the promised citizen’s charter time limits.

3.3 Research Articles and Conference Proceedings

5. Vivek Gupta (2002), in his article titled [5], "E-governance: Lessons from District Computerization" Indian Institute of Management Ahmadabad, NIC and District Collectorate of Durgapur collectively implemented first pilot project of Land Record Computerization of Durgapur district in India in 1980. It took fourteen years to complete first stage. Roles and responsibilities were not defined among the staff. Therefore, there was confusion among the staff. Hence, the pilot project could not take as standard to be deployed in another district. Before implementing the project, define the roles and responsibilities clearly for the staff regarding the project.

6. Ch. Radha Kumari (2003) in her article [6] "Impact of e-Seva in Andhra Pradesh: A Study" the study reveals that the citizens of Andhra Pradesh accepted the implementation of the e-Seva project whole heartedly. E-services have aided the convenience and comfort of all sections of the society irrespective of age, educational background and technical awareness. Citizens are willing to pay the nominal extra charges for improved and cumbersome-free services. The working hours and days of the service centres are providing convenience and benefit, particularly to working or employed citizens. The study revealed that mental maturity of citizens played a vital role in welcoming any new system like e-Seva and in analyzing critically the merits and demerits of the system introduced, since 71% of the people belonging to the age group 40-60 expressed high satisfaction with e-Seva. The study has shown that e-Seva has proved a highly satisfactory method of bringing about e-governance. With the implementation of e-Seva in the state, the vision of e-government in Andhra Pradesh
has seen its reality. This has become a model to be emulated by all other administrative bodies. E-Seva implementation has brought the government of Andhra Pradesh, unparalleled credit for two reasons- firstly, for introducing a project that has brought great convenience and comfort to the citizens and secondly, for innovating and implementing a project of a unique nature.

E-Seva is the largest and most successful integrated services project in India. It is really successful if this service spreading to rural areas by operating the kiosk and SMS-based services like billing information/bill payment.

7. K. M. Baharul Islam (2003) [7], moreover, studying success stories of land record and revenue governance from India, the researcher argued that data entry work was done offline by private agencies. Due to poor knowledge and work culture, the process was very slow and error prone. Data moves through NICNET at different levels from the district level to state level and then to centre so that there is a need of the networking scheme.

8. Bhudeb Chakravarti, M. Venugopal (2008) published a white paper [8] “Citizen Centric Service Delivery through e-Governance Portal-Present Scenario in India”. The study is focused on e-governance service delivery through the web portal. Citizen Centric service delivery involves designing of services from the user's perspective rather than government perspective. The bureaucratic approach cannot provide the expected outcomes from the computerizing the government offices or departments. The main objective of citizen centric solution is to provide the services 24/7 and 365 days. If e-governance portals should be designed in such a way that it is integrated with different government department's applications and services made available through the portal at real time to the citizens and businesses. This scenario will help the citizens to track the service request status and get updated information. It also, reduces their waiting time at the counter and helps them in using the services outside of their working hours. Another objective is to provide transparent, secured and efficient service delivery. The portal also helps the department employees to reduce the time for providing the e-service and it results into efficiency usage of the department resources. In this way, both central and state level e-governance portal achieve the quality of service provided by the government departments.
From above study, it is concluded that e-governance portal reduced service life cycle delivery time. The citizens would avail the services from their home or offices for getting the necessary documents delivered to them.

9. Somayajulu Garimella, Srinivas Kolluru (2011) in their research article [9] on Lokmitra e-Governance project implemented in Himachal Pradesh stated that 97% of the respondents were literate in the state. More than 80% of the respondents had access to computers and 70% of them were using the Internet for accessing various services. Approximately 70% of the users indicated that they have been aware of the project and the services offered.

10. Sam Felix, Pradeep Kumar and N. Vijaykumar (2011), Œe-Governance Projects: Exploring the Way to Success(499,514),(828,543) in this article [10] the researchers attempt to combining of technology and management for e-governance project successful implementation. E-governance projects generally come under the very large and complex category. Clearly stated government vision and political will are the success parameters of e-governance projects. According to these researchers, failure to foresee implementation challenges will most likely cost the governments dearly as inferred from the following data. British government's a single cancelled e-governance project on smart cards resulted in a loss of 698 million Euros. The researcher states the factors responsible for failure of e-Governance initiatives. These factors are classified in two groups- business factors and technical factors. The business factors includes organizational changes, process re-engineering, business model and political and administrative. The technological factors includes stakeholder identification, requirements mismanagement, costing and budgeting, schedule planning, project planning, funding sources and vendor driven initiatives.

Finally the researcher concluded that e-governance projects were strategic to the economic and social development of any society. E-Governance project implementations usually span a long time and touch a large spread of stakeholders. The success or failure of such projects largely depends on the coordination and cooperation between various stakeholders, effective management and optimal use of technology. Usually, it is a combination of all such factors.

11. Sushil Kumar Singla, Himanshu Aggarwal (2011), ŒCitizen’s Satisfaction with SUWIDHA initiatives in the state of Punjab (India)Ô
In this article, the researcher introduced the concept of the single window system to deliver public services called SUWIDHA. SUWIDHA initiative in Punjab state aims to reduce the paper work among the government offices and implement the digital network. The researcher under gone the deep study to bring the real experience at ground level of SUWIDHA initiative. The researcher uses the various techniques to explore how the government officials feel about the SUWIDHA and participation of citizens in digital governance. This research outcome provides the useful information to help state government to take the decision about planning and development to improve the design. The author has given the objectives, architecture and working, monitoring system, list of services provided analysis and findings of the SUWIDHA. The researcher has carried out the analysis of collected data using methodology, conclusions made that SUWIDHA centres running under guidance of Punjab Government has helped in a great way to facilitate citizens of state who had to face many difficulties for every work earlier. Now work is performed in much improved manner. Thus large numbers of people have shown above average response to various questions asked to them about the working procedures of SUWIDHA. Finally, the author specifies the great scope of improvement in service delivery system and time taken for delivery of service; Government can provide better facilities and training to staff. So as such improvements could facilitate citizens to get hassle free service delivery.

12. Ali Rokhman (2011), in his research paper titled E-Government Adoption in Developing Countries; the Case of Indonesia [12]. The research is to find out how the acceptance of Indonesian Internet users to e-government services, in terms of relative advantage, image, compatibility and ease to use variables. Online survey has been published and collected 751 respondents. There are more than 93% of the respondents who have the intention to adopt e-government. Relative advantage and compatibility variable were proven as useful factors to predict the intention of the use of e-government, otherwise the variable of image and ease to use is not proven. This study provides a trigger for the Indonesian central and local government both to develop and implement better e-government since 45 million Indonesian Internet users have been waiting for e-government services. According to this researcher finding, there are 751 Indonesia Internet users who participated in the survey that consist of 705 (93.9%) who have intention to adopt e-government and only 46 (6.1%)
have no intention to adopt the same. This figure indicated that very strong majority of Internet users have high expectation to get the benefit from public service delivery thorough e-government. Further, logistic regression analysis is being conducted to distinguish e-government adopters and non-adopters. Intention to use e-government is the dependent variable and relative advantage, image, compatibility and ease of use are independent variables. The Chi-Square test for full model was significant (X² = 42.275 at p=0.00), suggest that the model is useful. The classification of the full model is correctly predicted e-government adopter and non-adopter about 93.7 percent of original grouped cases were correctly classified, which means that only 6.3 percent of the total cases are not correctly classified. This study has very useful findings for the development and implementation of e-government of Indonesia. Although the global ranking of e-government readiness is in low level, but expectation of Internet users towards e-government is very big, evidenced by the existence of more than 93 percent of the respondents have an intention to use e-government. The presumption is that the Indonesian people have not been ready with e-government through this research is not proven. Segment of society with the status of a middle-high class was very ready to use e-government. Another presumption is that e-government that does not fit with the lifestyles and cultural communities are also indisputable. Through variable compatibility, this research has proved that e-government is compatible with their lifestyles and culture and they are ready when public services are not delivered by face to face. Finally, this research has proven a trigger for the central and local Indonesian government both to develop and implement better e-government since e-government were awaited by about 45 million Indonesian Internet users.

13. Amirhossein Alibaygi, Mehdi Karamidehkordi, Esmail Karamidehkordi, (2011), in their research paper titled "Effectiveness of Rural ICT Centres: A perspective from west of Iran" [13]. Assess the effectiveness of rural ICT centres for developing e-governance in the rural section of the Kermanshah Township in Iran. For the purpose of providing ICT services to rural section laying the ground work for the rural ICT centres has been one of the foremost national policies of Iran. The researcher concluded that the ICT centres have less impact on household income changes and have access to information with respect to agriculture input and output prices.
14. Sushil Kumar Singla, Himanshu Aggarwal (2012), in their research paper titled “Impact and Scope of e-Governance Initiatives in State of Punjab (INDIA)” [14], the authors explore the e-governance initiatives taken by the Punjab Government. The research findings elaborate on what are the reasons that e-governance is not properly implemented in rural areas of the state. It highlighted the factors of e-Governance to control the corruption. It also explains knowledge of citizens about the Internet required for effective implementation of e-governance. This study is useful to know the impact of e-Governance projects implemented and to find out the scope of e-Governance in the State of Punjab. The main e-governance initiatives in Punjab are Punjab State Wide Area Network (PAWAN), Property Registration Information System Module (PRISM), Web-based Counselling for PSBTE, Integrated Treasuries Information System of Punjab (ITISP), Transport System, Agriculture Marketing Information Network (AGMARKNET), Single User-friendly Window Disposal Helpline for Applicants (SUWIDHA). In this paper, these authors presented the role of e-Governance in improving service delivery and its impact on citizens’ lifestyle. This research reveals that e-Governance has the potential to control corruption and providing quality service. However, lack of Internet knowledge among the citizens has made poor implementation of e-Governance; hence the computer education is required to create awareness regarding e-Governance projects. This research will be helpful to the Government as well as the software developers to design an architecture which can help in the successful implementation of e-Governance projects. At the end of the research paper, specific recommendations are given for the efficient and effective implementation of e-governance in the state of Punjab. So it can be concluded that proper implementation of e-Governance is the only way to bridge the gap between rural and urban areas.

15. Dr. B. S. Sawant, Rahul J. Jadhav (2013), published paper on “Public Distribution System of Essential Commodities as a Social Security (A Study of Satara District Maharashtra)” [15]. This paper investigates the impact of PDS in the Indian context of social security and poverty alleviation. The researchers found that the needy people did not get food grains which had been allotted based on their poverty. From above study, it is concluded that the researchers have studied the physical distribution of the food grains through PDS in Satara district. There is no communication between distribution centre and the actual needy citizens.
From above study, it is concluded that the researchers have studied the physical distribution of the food grains through Public Distribution System in Satara district. There is no communication between distribution centre and the actual needy citizens. To overcome this, there is a need of ICT based public distribution software system.

16. Puneet Kumar, Dharminder Kumar, Narendra Kumar (2013), in their research paper titled ‘ICT in Local Self Governance: A Study of Rural India’ [16], this paper depicts the journey of local self-governance from antediluvian time to 21st century. Further, in the current scenario Information and Communication Technology (ICT) has emerged as a successful tool for dissemination of various e-governance services and in this regard, the Government of India has formulated NeGP with adequate service delivery mechanism. With the inculcation of ICT, various applications were designed by central as well as state governments which lead towards strengthening of PRIs for rural reform. This paper, along with the some case studies also shades some light on necessity of ICT in self-governance.

The researchers have given the mechanism for service delivery to impart the variety of e-services. A robust service delivery mechanism has been devised. It comprises of various components mentioned as State Wide Area Network (SWAN), State Data Centre (SDC), Common Service Centre (CSC) and National Service Delivery Gateway (NSDG).

The concept of local self-governance is not novel, but it has its existence with veracity even before Mauryan time. Although it was not having any legislative formulation despite that it was functional with varying terminology. After independence with the recommendation of Balwant Rai Mahta committee, local self-governance, especially in rural areas has attained constitutional recognition in the form of an Act. However, in a country like India where 70% of the populace lives in rural areas with great diversification, the factors like rural connectivity, remoteness of the geographical area etc. became major impediments to accomplish desired objectives of decentralized governance. With the advent of ICT, it has been taken a tool for dissemination of information. Finally in the year 2006, the Government of India has formulated NeGP for automation of various mundane tasks and a significant attention will be given towards strengthening PRIs for improving local self-governance. In the current scenario, various state governments have designed various applications for delivering services to citizens at their door step and ICT emerged as a tool for reinforcement of
local self-governance.

17. Raj Kumar (2014), "GUJARAT Model of TPDS Reforms: Biometric Based Bar-coded Coupon System of PDS delivery" [17]. The author of this article is the Secretary of Food, Civil Supply and Consumer affairs Department, Government of Gujarat. In his article, the author focused on the Targeted Public Distribution System (TPDS). TPDS has a policy to provide food security to the socially weaker and vulnerable sections. TPDS reforms seek to address these deficiencies by empowering the beneficiary through the modern ICT and governance processes. For ensuring delivery of food grains and the non-food items to the beneficiary; problems like duplicate ration cards, non-existing beneficiaries must be removed. The government started issuing 2D barcodes ration cards for the delivery of commodities to real beneficiaries. Beneficiary's photo and biometric barcode based PDS will help to resolve the problem of monitoring, grievance redressal or control issues and improving transparency in the PDS system.

3.4 Thesis

18. Swati Prakash Sardesai (2008) in her Ph.D. thesis titled "Study of Citizen Centric E-governance Projects in Maharashtra" [18]. The research is based substantially on Citizen Centric E-Governance project Citizens Facilitation Centers of Kalyan Dombivali Municipal Corporation. According to this research finding, e-governance project gets delayed due to insufficient fund, transfer of project leader or head of the department. Municipal Corporation is the local autonomous body which can implement their e-governance projects in corporation jurisdiction. It means this project is limited to the Municipal Corporation area only where the literacy rate is more than the rural area. The author concluded that the e-governance project gets delayed due to insufficient fund, transfer of project leader or head of department. This study also stated that 7/12 extracts of land are mainly required by farmers i.e. 94.8%. All age group citizens are making immense use of the computerized land records system, but the age group around 40 years are availing maximum services. Citizens require 7/12 extract is average 5 times in a year.

the facilities available, progress, development and strategy for implementation of e-
governance in government organizations in Nashik district. The researcher has
observed the e-governance initiatives have their influence on the citizens of Nashik
District. Citizens Service Centres like SETU helped to promote the transparency and
accountability and also helped to provide a friendly interface to citizens. The
researcher has identified some factors which are affecting the e-governance projects.
By considering these problems, researcher has developed e-governance model for
implementing and successful execution of e-governance. The researcher thought that
if these factors are considered during the implementation phase and execution of the
project, it is sure that e-governance in Nashik District will be more efficient and
effective than the previous ways. In this research, the scope of research is government
organizations which are located in Nashik district and there is a lack of citizen’s
involvement.

rural development in Kerala” [20]. In this thesis, the author stated that the scope for
the advancement in Rural Development in the state is quite vast, in view of the really
appreciable overall achievements of the state in adopting and implementing various
ICT initiatives, despite the low per capita income and considerable financial
constraints that it faces. Information and Communication Technology (ICT) have the
potential to realize the dreams of an ideal state where the citizen-government
relationship is functional and efficient, oriented towards pertinent socio-economic
concerns of the society. With the use of ICT, one can bridge the gap between urban
and rural India and also can develop the whole society.
The Government of Kerala is the pioneer in implementation of citizen-friendly E-
governance projects. These projects help to bridge the gap between urban and rural
society in Kerala.

Implication of e-governance services for effective communication with special
reference to Citizens in Pune City” [21]. The research is based on the ICT and e-
governance initiatives in Pune Municipal Corporation, Pune. The PMC has taken an
initiative for e-governance with their motto “e-governance-to serve citizens better.”
The researcher focused on birth and death certificate registration, Assessment and
payment of property tax, Grievance Information System, e-Procurement (e-Tenders).
Awareness of e-governance services depends on the citizens’ age, education, gender and occupation. It is found that 83.74% young citizens are highly aware about e-governance services and out of them 60% citizens prefer to avail e-governance services through the Internet at home instead of cyber cafe or at the office. 94.75% citizens have preferred to use ‘Assessment and Payment of property tax’ e-governance service as compared to other services.

This research reveals that majority of young citizens are using e-governance services and awareness is dependent on the citizen’s age group. Information technology literacy is one of the reasons for awareness among young citizens.

22. Sushil Kumar (2012), in his thesis titled “Design of Framework to Improve Effectiveness of E-Governance in the state of Punjab”[22]. The study mainly focused on measuring the levels of satisfaction among citizens and government agencies toward e-governance initiatives, particularly SUWIDHA (Single User Friendly Window Disposal Helpline for Applicants) in the state of Punjab. SUWIDHA provides different types of services to the citizens such as registration of marriage certificate, driving licences, issuing of ration cards, passports, registration certificate of vehicles, arm licences, caste certificates, birth certificates, etc. It is based on the single entry point, defining a specified delivery date depending upon the type of service and accepting cash at the counter itself. This study has been conducted with a view to improve the service delivery and increase reach ability of benefits to every section of the society. Keeping it in view the objectives were formulated. To fulfil the objectives, a detailed study on the citizen and employees has been conducted using questionnaire-cum-interview method. The observations of citizens and employees were recorded using a five point likert scale. In order to study the differences in opinion statistical tools have been deployed. Besides, principal component factor analysis has been applied objective-wise in order to reduce the number of factors and to pin point the most important factors involved. Finally, all these identified factors form the basis for the e-Governance model applicable to the services being offered by Suwidha Centres in the state of Punjab. The findings and recommendations of the study will be helpful in the e-Governance development and in improving the public service delivery system. The study concludes that e-governance serves with better efficiency, reduced costs and has a bright future with more satisfied citizens and SUWIDHA employees.
23. Rajeev Kumar (2012), in his research study titled “Towards studying e-Governance strategies in Uttarakhand” [23]. This study aims to propose an ICT based e-governance model which use limited government resources in Uttarakhand. This study elaborates the workflow of the developed services and focuses on e-governance as on demand service stored in ICT environment. The researcher chooses ICT as an emerging computing paradigm which provides the variety of services. After deep analysis of the existing model to propose ICT based prototype model for government services of e-governance using ICT Technology name GICT for Uttarakhand, the expected outcome of this thesis is to find out a novel approach.

In this study, researcher proposed the model Cloud Services based ICT enabled e-Governance services called GICT for Uttarakhand State.

24. Sanjay Tejasvee (2013), in his study titled “Implementation of Integrated e-Governance in Bikaner Division” [24]. The researcher provides a comprehensive overview of e-governance and its process builds on experience drawn from actual practice for the better understanding of the various disciplines, tasks and specialties that contribute to the development of integrated environment. According to the researcher, integrated e-governance would be remove a lot of problems but its successful implementation depends on a lot of factors, which is a great concern. The present study provides a technical overview of the rapidly emerging information technology and governance to recent society. The researcher mentioned e-governance metrics, real-time governance, architectural design, quality of service assurance, reliability, risk management, cost and schedule estimation, planning, testing and integration process and technological management. The researcher has contributed in his research work is to recognize and to show tools, which are most relevant to e-governance, can be developed.

The researcher presented the integrated solution architecture and given name e-DISC architecture. The e-DISC stands for effective deliverance of information and services to the citizens. The e-DISC architecture describes how the services and information can be delivered to citizens in effective manner and explains the practical idea and theoretical frame of effective, correct and successful deliverance of services. The researcher concluded with some important findings that e-Disc model presents the better sustain for inter and intra-departmental working flow, and deliver better quality and timely provisional of e-services to the citizens with flexibility with integrating
new applications and services. This conceptual solution model is initiated to be moderately comprehensive describe important features that need to be handles in e-governance projects. The implementation of e-governance projects in Rajasthan and its divisions can be made very successful and effective by accepting this e-Disc model to work with some important consideration in dealing.

3.5 Reports published

25. Second Administrative Reforms Commission (2008), Eleventh Report on Promoting e-Governance ï The SMART Way Forwardô [25]. In this report on e-Governance, the commission has examined various aspects of e-Governance reforms in India. The commission is of the view that even in any e-Governance initiative, the focus has to be on governance reforms with the technological tools provided by ICT being utilized to bring about fundamental change in the government process. In this report, e-governance is examined as the core issue in improving governance as a whole. The report discusses the conceptual framework of e-Governance and looks into some international practices. It also examines some of the e-Governance initiative undertaken in India prior to the formal launch of the NeGP in 2006. The commission outlines ‘Core Principles’ of e-governance in the Indian context. Some of these core principles include a clear understanding and appreciation of the objective to be achieved through e-governance, making governance reforms rather than ICT the key focus for these projects, a step-by-step approach to maximum outcomes and benefits, completing re-engineering of government systems and procedures, constant monitoring and evaluation, and using of local languages for ensuring the citizen-friendly interface. Elaborating the issues involved in implementation of e-Governance reforms on the basis of these ‘core principles’ This report also contains a discussion on some of the issues involved in the implementation of the mammoth NeGP and legal framework required for e-Governance in the country. The Commission has visited several States and Union Territories to elicit the said view of the State Government officials and the public. During these visits, the presentations made by the state government is generally included a presentation on the e-Governance initiatives undertaken by them.

26. NASSCOM (2010), published a report on eGovernance & IT Services Procurement Issues, Challenges, Recommendations ï A NASSCOM Studyô [26]. The
study initiated by NASSCOM in consultation with the Department of IT, is broadly targeted to identify key issues and challenges, faced during the various stages of e-Governance project life cycle. From the conceptualization through the bid process, contracting to execution and Post Go-Live phases. The report has also studied the best practices in India and the overseas. The recommendations of the report outline the key steps that need to be enabled for an effective public procurement process, for IT services, in the country. The NASSCOM Study consulted with a large cross-section of government officers, from both central and state governments. The officers consulted included Department of IT, Government of India, state governments, including IT secretaries and department heads, state IT nodal agencies, central NeGP mission leaders, e-Governance project staff in different departments. The feedback provided by the respondents from the various departments has been grouped under the various stages, related to procurement and execution of IT services projects. Chapter named ‘eGovernance Projects – Government Perspective’ elaborates government perspective on IT procurement but overall issues and challenges in conceptualization and executing e-Governance projects.

27. Maharashtra State e-Governance Policy 2011

Maharashtra State e-Governance Policy was published on September 23, 2011 in both Marathi and English [27]. State government departments may approach e-governance implementation through four ways. First way is that the department may appoint a Project Management Consultant (PMC) to assist the department in the complete execution of the project from the list of empanelled PMC for the state (if there be one) or through an open tender, and PMC shall assist the department in all further areas of the project. Second way, the department can prepare an estimate for manpower need based on the requirements and get the needed manpower vetted by DIT and then hire software manpower for these e-Governance projects based on the Rate Contract. Third way, the department can appoint a software agency/system integrator for the project through an open tender. Fourth way, the department may also appoint the State SETU Society based on the estimates provided by State SETU Society for implementation of projects such as development of generic applications or pilot projects in the state.
The state government shall provide means to encourage the participation of Small and Medium Enterprises (SME) and local entrepreneurs in various e-Governance projects in the state.

28. Directorate of Information Technology, Government of Maharashtra (2014), published a report on "State of e-Governance in Maharashtra 2014." [28]. This report is an outcome of the combined efforts of the Directorate of Information Technology and all other departments which were involved in the process of implementation of e-governance in the state. The Maharashtra state has adopted e-governance and m-governance to reach out to citizens in a more effective manner and the age old conventional functioning is being revamped through exhaustive Business Process Re-engineering and electronic service delivery. Maharashtra is the first state to have a dedicated e-governance policy and today the policy provides seamless guidance to all the Departments and administrative structure as a whole to prepare and take up meaningful citizen centric e-Governance initiatives.

This report is an endeavour to share the path breaking initiatives, schemes undertaken by the State Government and affiliated institution and the best known practices and outcomes in various e-governance initiatives like SETU, Mahaonline, and Centre of Excellence for Computing in Marathi. The state government developed fully functional State Data Centre (Tier 2 Data Centre as per TIA-942 standard). It is the first State Data Centre in the country to have a fully operational Government Cloud. e-District is a Mission Mode Project (MMP) under National e-Governance Plan (NeGP) under the aegis of DeitY, Government of India. E-District aims to provide support to the basic administrative unit i.e. District Administration to deliver Citizen Centric Services. In this report, various success stories of e-office in Maharashtra. DIT team developed varies mobile applications like Survey and Inspection App, GR Mobile App, Mahanews Mobile App and VISHWA Mobile Application.

29. UN Department of Economic and Social Affairs (2014), published report on "United Nations E-Government Survey 2014 - E-Government for the future we want." [29]. In this report, The Republic of Korea ranked first in global e-government having 0.9462 EGDI, due to its continued leadership and focus on e-government innovation. Australia ranked second with 0.9103 EGDI, and Singapore ranked third with 0.9076 EGDI. At the regional level, Europe continued to lead followed by the Americas,
Asia, Oceania and Africa. In European list France topped and fourth in global. The United States led countries in the Americas and ranked seventh overall. Tunisia was the top in Africa and ranked seventy fifth globally. India ranked 118 with 0.3834 EGDI which is less than the World Average 0.4712 EGDI. In E-Participation Index, Netherlands ranked first in global and India ranked fortieth with 0.6274 EPI. These rankings are part of the E-Government Development Index report, which ranks countries by measuring their use of ICT to deliver public services. The Index is a weighted average of three dimensions i.e. scope and quality of online services, status of telecommunication infrastructure and existing human capacity. The report discussed about the global trends in e-governance development. To improve e-governance, the survey suggests countries establish a clear national vision, supported by committed leadership, appropriate policies and collaborative governance frameworks, greater investment in telecommunication infrastructure, human capital and provision of online services. This report serves as a tool for decision-makers to identify their areas of strength and challenges in e-governance and to guide e-governance policies and strategies.

30. WEBLANDS – Web Based and centralized Land Record System is implemented in the Andhra Pradesh/Telangana States [30]. All land records are digitally signed by respective Tahasildar. Web land portal facing various technical issues and it is not working properly. Adangals, Pahani, ROR-1B, FMB, Tippan documents are made available on the web land portal. All these information and documents are provided by Andhra Pradesh Government and Department of Revenue to the common citizens within a state. Various types of certificates can be downloaded from the Web Lands portal. Land related documents can be downloaded in PDF format and that land maps can be downloaded in gif format. The details like Adangals, Pahani can be downloaded in PDF format. The information available on the portal is the clear information in land records and to provide the truthful information without any difficulty. Web land generated reports and documents should not be used as an authenticated copy for producing any legal claims.

3.6 Observation and Usefulness of Literature Review

There must be a single window system where all the citizens related documents, affidavits, certificate can be issued to the common people within a time. The
government should prepare the assessment framework for assessing the e-government projects time to time. Assessment framework should be in terms of the cost for availing the service, overall assessment, quality of service and the quality of governance. Feedback system also plays an important role in impact assessment and sustaining of the e-governance projects in the state. Feedback should take from the end user of the project like citizens, stakeholders, managers etc. Based on the assessment and feedbacks from the projects, the government should take the corrective actions.

PDS in Maharashtra, the entire process is manual and there is no real-time record of the actual distribution, no automated system to track the total number of active ration cards in Food and Civil Supply department. Pilferage may occur at different level in the distribution network. Middlemen typically may try to take advantage of this by procuring on the basis of the registered cards which may not directly correlate with the actual number of active cards. There are massive corruption and pilferages in existing PDS. To overcome these issues, FCS department may use a technology which monitors the real-time data and improves the efficiency of the supply chain like GPS, linkage of UID number with the PDS, use of smart cards for the beneficiary, biometric identification of the beneficiary for authentication. There must be a Public Private Partnership (PPP) to develop the system. The government also needs to check the efficiency and effectiveness of the system from the private agencies.

Several researchers suggested the need for awareness of the initiatives among the citizens and essential training for the stakeholders of the projects. The government should take care while selecting the private agency for implementation of e-governance projects without any political influence. Also, the government should reform the process using ICT and ICT tools. Information and database should be in the digital form not in manual. The information flow among all the government departments and private agencies should be automated. Periodically, government must undertake outcome based assessment of e-governance initiatives. Also, the government need to make the assessment of e-readiness of states and union territories.
3.7 Introduction

The need for e-governance development is widely accepted in India. The challenges before the Government of India are to look at the various ways to improve governance in government departments and offices. ICT is one of the ways to achieve the good governance, an important enabler for the endeavour. NeGP has covered the way for an efficient, systematic and wide scale implementation of e-governance across all the states in the country. However, considering the larger perspective that, most of the departments across the country are still delivering the public services manually and it is also in a largely inefficient manner. There is a need of delivering the public service efficiently, and in time at door step of the citizen. In this chapter, the researcher has thrown light on evolution of the e-governance and basic concepts in the e-governance.

3.8 Evolution of e-Governance

The term governance comes from an ancient Greek word *kebernon*, which means to steer. In current usage, to steer means to control, to influence or to govern from the position of authority. Kofi Atta Annan, former Secretary General of the United Nations, defined e-Governance as "Good governance is perhaps the single most important factor in eradicating poverty and promoting development" [31]. For this reason, governance is practicing of power for steering social systems and processes by which organizations are controlled, directed and held accountable for their service and performance to their society. It is a set of the processes and systems concerned with ensuring the overall control, direction, effectiveness, supervision and accountability of an organization.

In the nineties, with the advent of the WWW, world moved towards increased deployment of IT by governments emerged. The technology and e-governance initiatives have come a long way since then. The increased use of the Internet and mobile connections, the citizens are learning to exploit their new mode of access in wide ranging ways. They have started expecting huge information and services online from governments and corporate organizations to further their civic, professional and personal lives, thus creating abundant evidence that the new Še-citizenshipô is taking hold.
3.9 E-Government Vs E-Governance

Government's most important job is to focus on society for achieving the public interest services. Governance is a way of describing the links between government and its broader environment- political, social and administrative.

E-government is ŕthe use of the ICTs in public administration - combined with organizational change and new skills-to improve public services and democratic processes and to strengthen support to public. ŕ

E-governance is ŕthe application of Information and Communication Technology for delivering government services, exchange of information communication transactions, integration of various stand-alone systems and services between government-to-customer (G2C), government-to-business (G2B), government-to-government (G2G) as well as back office processes and interactions within the entire government framework[32].

Followings are the differences between the Government and Governance.

<table>
<thead>
<tr>
<th>Government</th>
<th>Governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decisions</td>
<td>Processes</td>
</tr>
<tr>
<td>Superstructure</td>
<td>Functionality</td>
</tr>
<tr>
<td>Rules</td>
<td>Goals</td>
</tr>
<tr>
<td>Rules</td>
<td>Performance</td>
</tr>
<tr>
<td>Implementation</td>
<td>Coordination</td>
</tr>
<tr>
<td>Outputs</td>
<td>Outcomes</td>
</tr>
<tr>
<td>e-Government</td>
<td>e-Governance</td>
</tr>
<tr>
<td>Electronic Service Delivery</td>
<td>Electronic Consultation</td>
</tr>
<tr>
<td>Electronic Voting</td>
<td>Electronic Engagement</td>
</tr>
<tr>
<td>Electronic Workflow</td>
<td>Electronic Controllership</td>
</tr>
<tr>
<td>Electronic Productivity</td>
<td>Networked Societal Guidance</td>
</tr>
</tbody>
</table>
3.10 E-Governance Models

Through e-governance, government services will be made available to citizens in a convenient, efficient and transparent manner. The three main target groups that can be distinguished in governance concepts are government, citizens and businesses/interest groups. In e-governance, there are no distinct boundaries [33].

A conceptual model for e-Governance (as shown in figure 3.1) is explained about the interrelation between citizens, government and the services accessed by the citizens through ICT followed by the major characteristics of good governance [34].

Generally, three basic models are available in e-governance as follows [33]

- Government-to-Citizen (Customer) (G2C),
- Government-to-Business (G2B) or Business to Citizens (B2C)
- Government-to-Government (G2G)

![Figure 3.1 Conceptual model for e-governance](image-url)
3.11 Phases of e-Government

To measure the progress for e-Government initiatives and to establish a road map to achieve the desired levels of constituency service Gartner Research (2000) study titled "Gartner's Four Phases of e-Government Model" classifies e-Government into four distinct phases. This can serve as a reference to position where a project fits in the overall evolution of e-Government strategy [35].

- Presence:
  Presence stage is classified by a simple informative website of a passive nature, sometimes described as "brochure ware," indicating the same level of functions as a paper brochure.

- Interaction:
  As the name indicates, this stage offers simple interactions between government to citizen (G2C), government to business (G2B) or government to government (G2G). Interaction stage websites provide e-mail, contact and interactive forms that generate informational responses.

- Transaction:
  This stage enables transactions such as paying for online license renewals, paying taxes or fees or submitting the tender for procurement contracts.

- Transformation:
  The highest stage, most closely aligned with the concept of governance, involves a reinvention of how government functions are conceived and organized.

3.12 Concept of Citizen Centricity

Citizen centricity is about turning the concentration of government around looking at the world through the flip side of the telescope, so that the requirements of the citizen and businesses come first, rather than operational or other imperatives inside the government machine. The term citizen centric with respect to ICT-enabled public services has become common parlance in the European Commission. For example, on April 5, 2006 European Union Commissioner Viviane Reding said: "Electronic government is moving beyond online information to fully transactional, citizen-
centric and personalised services that deliver the high value added that citizens expect”.

Some terms are often associated with this trend towards ‘customization’ in the public service provision and they include: user-centric, customer-centric, citizen-centric and personalised. For example, Janssen and Zeef [36] examine the development of a citizen-centric portal in The Netherlands, and make an explicit link between practice in the private/business sphere and its translation into the public sphere, defining it in terms of ‘customer relationship maturity’. Bassara, Andrzej, Marek Wioeniewski and Pawel Zebrowski, these authors refer to the term citizen-centric as requiring re-organisation of processes to allow the re-focusing on real citizen's needs, contrasted with simply providing electronic versions of existing services [37]. In another example, K.B.C. Saxena [38] makes the distinction between inputs and impacts, arguing ‘the governance centric view of e-governance focuses more on its effectiveness rather than its efficiency alone’. The introduction to a World Bank hosted discussion on citizen-centric e-Governance [39] re-emphasises the need for ‘transforming and integrating government processes around the needs of the citizens’, another example of identifying citizens as customers. Citizen Centricity is identified closely with ‘joined-up government’ focusing on effective delivery much more than on citizens’ needs and preferences per se. So the primary job of public administration may be to deliver services more efficiently, effectively and economically affordable to the citizens those who are expected as ‘government’s customers’.

Getting to be a citizen centric is fulfilled in four phases, moving from a citizen neutral to a citizen aware to a citizen inspiration firstly to citizen centric. Execution in these four phases is vital to attain the goal.

1. **Strategy:** The organization has a clear, well-defined strategy for transforming itself as citizen centric.
2. **Organization:** The organization is citizen focused; dedicated team to review citizen feedback and performance is measured consistently against strategic objectives.
3. **Processes:** Processes are designed to involve citizens and businesses and to anticipate their evolving needs.
4. Systems: Citizen’s feedback is systematically captured and analyzed via social media and the Internet; communication with citizens takes place in real time.

**Objective of Citizen Centric Solution:**

1. To design services from citizen’s point of view rather than government agencies.
2. To fulfill the needs of citizens who are the end users of various systems that are developed by government.
3. To remove a known bottleneck for quick delivery of e-governance projects.
4. To establish digital relations between citizens and government departments those are aiming to make processes and information more accessible within the framework of existing paradigms.
5. To design interactive e-government systems based on understanding the citizens as customers of digital communication with the governing bodies.
6. To govern systems, a like commercial ones, must be attentive to their users.
7. To be a user centric where this focus is not only about providing facilities, interactions and making processes and information more accessible to citizens but also it is more about an alignment of government work with the citizen needs to create economic and social welfare.

**3.13 E-Governance in India**

The concept of e-governance in India owes its origin during the seventies with an in-house development of applications for government organizations like planning, economic monitoring, defence and the deployment of IT to manage data and intensive functions related to elections, census, tax administration etc. In the eighties, the efforts of the National Informatics Centre (NIC) to connect all district headquarters through the VSAT. In India, it was a very significant development. However, these efforts were earlier mostly government centric for the automation of internal government functions. In the late eighties, in the government departments a few computerized initiatives started making an impact on citizen services. The most important among these initiatives was the computerization of the Indian Railways passenger reservation system. During this decade, e-governance received a major thrust with the launch of NICNET in 1987, followed by the launch of DISNIC with objective computerization of all the district offices. During the nineties, most of the central and state level
government departments initiated ICT projects for improving citizen services. During the latter half of this decade, some government departments have tried to use the World Wide Web for providing information to the citizens. During the same decade, some states achieved remarkable successes in e-governance initiatives to improve delivery of services to the citizens. During the early years of the last decade, this trend continued for the implementing citizen centric e-governance initiatives by several states across the country. However, these initiatives were fragmented and unreachable to the taluka and village levels due to lack of enough and integrated ICT infrastructure, connectivity, back end computerization, lack of sufficient capacity at all levels of government to efficiently deploy the ICT for improving the quality of governance.

To address all these deficiencies, the Department of Electronics and Information Technology, Government of India approved the National e-Governance Plan (NeGP) in 2006.

3.13.1 National e-Governance Plan

The eleventh report of the Second Administrative Reforms Commission (II ARC), entitled "Promoting e-Governance - The Smart Way Forward", [40] The ARC report was submitted to the Government of India on December 20th, 2008. The report specified several foregoing initiatives including reference to the Singapore ONE program. To pursue this objective, National e-Governance Plan (NeGP) was formulated on 18th May 2006 by the Department of Information Technology (DIT) and Department of Administrative Reforms and Public Grievances (DARPG). The vision statement is “Make all Government services accessible to the common man in his locality, through common service delivery outlets, and ensure efficiency, transparency, and reliability of such services at affordable costs to realise the basic needs of the common man. The program required the development of new applications to allow citizen access to government service through Common Service Centres; it aims to both reducing government costs and making an access to services easier. NeGP lays emphasis on developing the proper governance and institutional framework within India, establish the ICT infrastructure and implement various Mission Mode Projects (MMPs) at the state, central and integrated levels. NeGP’s aim and motto is “Ek Kadam Aapki Oar, Ek Kadam Apke Liye” – Public services closer
home. NeGP consisting originally of 27 MMPs and 8 Components, during July 2011, 4 new MMPs were added. However, the approval of NeGP does not constitute financial approval(s) for all the MMPs and components under it. The existing or ongoing projects in the MMP category, being implemented by various central ministries, states, and state departments would be suitably augmented and enhanced to align with the objectives of NeGP. In addition, it seeks creation of a national e-governance infrastructure of State Wide Area Networks (SWAN), State Data Centres (SDC) and National Service Delivery Gateways (NSDG).

The NeGP focuses on the creation of the fundamental infrastructure required for e-Governance. The NeGP takes a holistic view to initiate e-Governance implementation across the country along with the collective vision. To achieve the vision of NeGP, a massive countrywide infrastructure laid at par of villages, and large scale digitization of records are taking place in most departments in the central and state governments to enable easy, reliable access over the Internet.

Next phase of NeGP is NeGP 2.0 (e-Kranti). The aim of NeGP 2.0 is to bring transformation in e-governance in India to dramatically improve its outcomes. The basic principle of NeGP 2.0 is to focus on transformation in the quality and quantity of service delivery, integration of services, use of mobile and cloud platform, Big Data Analytics and effective use of social media.

3.13.2 Digital India Program

Prime Minister of India was launched the Digital India flagship program on 1 July 2015 with an objective of connecting rural areas with high-speed Internet and improving digital literacy. The Digital India program is a lead program of the Government of India with a dream to change India into a carefully enabled society and learning economy. It has been significantly felt that more push is required to guarantee e-Governance in the nation advance comprehensive development that spreads electronic services, gadgets and openings for work or services, electronic assembling in the nation should be reinforced too. Keeping in mind the end goal to change the whole biological community of open administrations using data innovation, the Government of India has propelled the Digital India program with the vision to change India into a carefully engaged society and learning economy. Vision statement of Digital India is to transform India into a digitally empowered society
and knowledge economy [41]. There are three vision areas of Digital India program as shown in figure 3.2.

![Figure 3.2 Digital India program vision areas](image)

### 3.13.3 E-Governance Projects in India

<table>
<thead>
<tr>
<th>Project Name: e-DISHA</th>
<th>URL: <a href="https://edisha.gov.in/">https://edisha.gov.in/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State &amp; Department Name:</strong> Government of Haryana</td>
<td><strong>Status:</strong> Active</td>
</tr>
<tr>
<td><strong>Technology:</strong> Microsoft SQL Server, VB, ASP and MS Windows Client, Server OS and MS IIS Web Server.</td>
<td><strong>Scope:</strong> State</td>
</tr>
<tr>
<td><strong>Project Description:</strong> E-DISHA project is an e-District project of Haryana Government. This interface is between that facilitates to receive effective and timely services between the government and the citizens. E-DISHA offers a wide range of citizen-centric services to save them and</td>
<td><strong>Impact:</strong> Time-bound service delivery has resulted in improving the efficiency of delivery of the services. Elimination of corruption and middlemen from the process. Provision of a wide spectrum of services at a single place has helped in</td>
</tr>
</tbody>
</table>


the bother of running around various departments to avail different services. Around 39 G2C services of departments such as the Public Health, Engineering Department, city corporations/municipal offices, RPO, Road Transport, Registration and Stamps, Revenue, Social Justice and Empowerment, District Administration has been covered and one district level e-DISHA centre has been established in district mini secretariats of Haryana in the first phase.

<table>
<thead>
<tr>
<th>Project Name: SUWIDHA-Web</th>
<th>URL: <a href="http://suwidhaonline.punjab.gov.in/">http://suwidhaonline.punjab.gov.in/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; Department Name:</td>
<td>Government of Punjab</td>
</tr>
<tr>
<td>Status:</td>
<td>Active</td>
</tr>
<tr>
<td>Technology: HTML</td>
<td>Scope: State</td>
</tr>
<tr>
<td>Project Description: SUWIDHA means Single User-friendly Window Disposal and Help-line for Applicants designed and developed by NIC. It is built to provide the convenience to the citizen by capturing the input at a single point, defining a specified delivery date depending on 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, Government of Punjab and then rolled out in all the</td>
<td>Impact: Available Services: Affidavit Issuance System (AIS). Arms License Issuance System (ALIS). Bus Passes Issuance System (BPIS). Identity Card Issuance System (ICIS). Handicap Certificate Issuance System (HCIS). Copy Information System (COPIS). Certificate Issuance System (CIS). Government Dues and Recovery. Form Inventory Modules. Marriage Registration Certificate.</td>
</tr>
<tr>
<td>Project Name:</td>
<td>SWAGAT (State Wide Attention on Public Grievances by Application of Technology)</td>
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<tr>
<td>--------------</td>
<td>--------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>State &amp; Department Name:</td>
<td>Chief Minister’s Office, Government of Gujarat</td>
</tr>
<tr>
<td>Technology:</td>
<td>HTML</td>
</tr>
<tr>
<td>Project Description:</td>
<td>SWAGAT operated by the Gujarat CM Office for effective, transparent and speedy grievances redressal of the common man at various levels of the government throughout the Gujarat state including that at the highest level by direct interaction with the CM. This project is an ICT based interactive application to improve the public grievances. Government of Gujarat has started Ñansampark Cell where grievances were received, processed, forwarded and monitored. The CM has to involve directly once in a month in the process of solving the Ñong pending grievances. Citizens can register a grievance at any time and 365 days and most should be resolved without assistance from the SWAGAT mechanism.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Name:</th>
<th>FRIENDS Re-engineered and Enterprise Enabled Software- (FREES)</th>
<th>URL:</th>
<th><a href="https://edistrict.kerala.gov.in/FREES/">https://edistrict.kerala.gov.in/FREES/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; Department Name:</td>
<td>Government</td>
<td>Status:</td>
<td>Active</td>
</tr>
</tbody>
</table>
**Project Description:** The word "FRIENDS" here is an acronym for Fast Reliable Instant Efficient Network for Disbursement of Services. FREES - is a "Single Window Scheme" where citizens can pay all the taxes and other dues to the government. The salient feature of this project is the effective integration of IT and logistics for citizen services.

**Impact:** Anywhere and anytime any payment- Citizen able to pay various utility payments and other taxes and fee at any FRIENDS centre using a single collection module which supports all the services, all transaction types and associated transactions.

<table>
<thead>
<tr>
<th>Project Name: Anytime/Anywhere e-Services- Land Records</th>
<th>URL: <a href="http://eservices.tn.gov.in/">http://eservices.tn.gov.in/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; Department Name: Revenue Department, Government of Tamilnadu</td>
<td>Status: Active</td>
</tr>
<tr>
<td>Technology: Java, HTML</td>
<td>Scope: State</td>
</tr>
<tr>
<td>Project Description: Entire state’s land records data has been available with the NIC Data Centre. 3.4 crores plot details records and 2.5 crores owner details records are available. This data center offers several citizen services like plots details and ownership details of rural areas are online available to the citizens. It was launched on 15th May 2008. Data from talukas is being updated in the data centre using TNSWAN.</td>
<td>Impact: Following services are provided by the land records system. Chitta extract of owner and land details. A register extract of land details relating to the plot of land classification. Verify the land ownership of a given survey number/subdivision. Citizen able to verify a given extract by using the unique reference number.</td>
</tr>
<tr>
<td><strong>Project Name:</strong> MeeSeva</td>
<td><strong>URL:</strong> <a href="http://www.meeseva.gov.in/">www.meeseva.gov.in/</a></td>
</tr>
<tr>
<td>---------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td><strong>State &amp; Department Name:</strong> Government of Andhra Pradesh and Government of Telangana</td>
<td><strong>Status:</strong> Active</td>
</tr>
<tr>
<td><strong>Technology:</strong> VB, MS SQL Server, Bio-metric</td>
<td><strong>Scope:</strong> State</td>
</tr>
</tbody>
</table>

**Project Description:** In Telugu, ‘MeeSeva’ means, ‘At Your Service’ that means service to the citizens. Currently, this portal Andhra Pradesh and Telangana state governments are jointly giving services to the both state citizens. It is a good governance initiative that incorporates the vision of NeGP ‘Public Services Closer to Home’ and facilitates single entry portal for entire range of G2C and G2B services. The main objective of MeeSeva is to provide the citizen centric, smart, ethical, efficient and effective governance through the latest technology. Such initiative involves non-discriminatory and universal delivery of all government services to citizens and businessmen of all strata and improved efficiency, transparency and accountability in the government.

**Impact:** The kiosks are run by self-employed youth in the remote areas of the states.
Citizens can avail the services 24/7 across the globe.
Avail the services directly without visiting departments or Meeseva centres.
Applicant will get SMS about the application status and also he can check the status online.
The payments can be made securely using multiple payment gateways.
Electronic fund transfer.

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<table>
<thead>
<tr>
<th><strong>Project Name:</strong> Bhoomi</th>
<th><strong>URL:</strong> <a href="http://www.bhoomi.karnataka.gov.in/">www.bhoomi.karnataka.gov.in/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State &amp; Department Name:</strong> Revenue Department, Government of Karnataka</td>
<td><strong>Status:</strong> Active</td>
</tr>
<tr>
<td><strong>Technology:</strong> VB, MS SQL Server, Bio-</td>
<td><strong>Scope:</strong> State</td>
</tr>
</tbody>
</table>

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### Bhoomi

**Project Description:** Bhoomi is the first land records management project which is successfully implemented for the benefits of the common citizens of the Karnataka state. Bhoomi, a flagship project jointly developed by the Government of Karnataka and NIC, Karnataka and launched in 2000 years. Bhoomi has been providing service to more than 70 lakh farmers of Karnataka since the last four years. Bhoomi has become the role model for replication in many other states of the country. This project has received wide spread recognition by public and also won international award Silver of CAPAM 2002. Citizen can verify the reality of RTC by sending SMS to 51969 as KA Bhoomi to 51969.

**Impact:** land records Kiosk setup in each taluka to issue the land records documents to citizens on their demand.

- Bio-metric finger print authentication is used to ensure full proof system.
- Easy and quick access to land records documents and status of mutation, using Touch Screen Kiosk.
- Mutation requests processed based on First-In-First-Out.
- Citizen can verify the reality of RTC by sending SMS to 51969 as KA Bhoomi to 51969.
- Citizen can register their Aadhar number and mobile number to get SMS alerts about mutations on Agricultural land.
- Workflow based online system to carry out mutations on land records data.
- PKI enabled Bhoomi & integration with Sub-registrar data are on the pilot run.

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### WEBLAND

<table>
<thead>
<tr>
<th>Project Name: WEBLAND</th>
<th>URL: <a href="http://www.webland.ap.gov.in">www.webland.ap.gov.in</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State &amp; Department Name:</strong> Revenue Department, Government of Andhra Pradesh.</td>
<td><strong>Status:</strong> Active</td>
</tr>
<tr>
<td><strong>Technology:</strong> Web based</td>
<td><strong>Scope:</strong> State</td>
</tr>
<tr>
<td><strong>Project Description:</strong> WEBLAND, Web based land records management systems is one of the e-governance projects successfully implemented for the benefits of the common man. The state government</td>
<td><strong>Impact:</strong> 4.25 Crore agricultural land records belonging to 1.50 Crore land owners are ported to SDC and each record is manually verified and digitally signed by Tahasildar to give legal status</td>
</tr>
</tbody>
</table>
has introduced WebLand, software that is designed to help the registration and revenue departments to maintain land records in synchronise with the change of ownership. As per the procedure, the Tahasildar is the authority to update the records. When the land owner applies for a change or correction of records, the Village Revenue Officer (VRO) submits a ground report and the Tahasildar takes a decision on the changes. Usually, the process takes seven to ten days. Interfaces are designed in Telugu Unicode i.e. ranges from U+0C00 to U+0C7F (128 code points). Citizens can take service at the MeeSeva centre across the state.

as per Andhra Pradesh ESD Rules, 2011. Similarly 80 lakhs FMBs/Tippons are uploaded and digitally signed. Each Government land is uniquely identifiable using unique code given to 34 different categories of Government Land. Provision is made to carry out on-demand mutation and for data entry of crop details. 96 Lakh Adangal/Pahani certificates, 11.5 Lakh RoR-1B certificates, 1.5 Lakh Mutations, 0.25 Lakhs FMBs/Tippons are given so far since 04 November 2011.

<table>
<thead>
<tr>
<th>Project Name: HIMBHOOMI</th>
<th>URL: <a href="http://lrc.hp.nic.in/lrc/">http://lrc.hp.nic.in/lrc/</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>State &amp; Department Name: Revenue Department, Himachal Pradesh</td>
<td>Status: Active</td>
</tr>
<tr>
<td>Technology Used: Web based</td>
<td>Scope: State</td>
</tr>
<tr>
<td>Project Description: HIMBHOOMI is the land records management system in Himachal Pradesh developed by NIC, Himachal Pradesh. It is the land record solution for urban and rural areas. Use of bottom up approach of decentralized planning at the cadastral level by using Musavi maps. It is linked with the banking system for issuing loans. Citizens can avail the service by visiting the CSC.</td>
<td>Impact: Above 100000 copies of RoR (Jamabandi) issued through CSC in 2 months. 50% of households in the state have taken the benefit within a year. Online dashboard displayed for services being provided. Any witness is not required during registration. Easy loan process for the agricultural purpose.</td>
</tr>
</tbody>
</table>
Table 3.1 E-Governance initiatives in some Indian States/UT

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>States / Union Territory</th>
<th>E-Governance Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Andhra Pradesh/Telangana</td>
<td>E-Seva, MeeSeva, KM-ATOM, eProcurement, AP State Portal, VOICE, CARD</td>
</tr>
<tr>
<td>2</td>
<td>Bihar</td>
<td>Vasudha Kendras (CSC), VAT MIS, BSWAN, Sales Tax Administration MIS</td>
</tr>
<tr>
<td>3</td>
<td>Delhi</td>
<td>ECS, MIS for Education, Automatic Vehicle Tracking System</td>
</tr>
<tr>
<td>4</td>
<td>Goa</td>
<td>Dharani, Integrated Information Infrastructure (i-3), LokSeva Kendra</td>
</tr>
<tr>
<td>5</td>
<td>Gujarat</td>
<td>GSWAN, SWAGAT, ONLINE, E-GRAM, E-DHARA</td>
</tr>
<tr>
<td>6</td>
<td>Karnataka</td>
<td>Bhoomi, Khajane, Kaveri</td>
</tr>
<tr>
<td>7</td>
<td>Kerala</td>
<td>e-Srinkhala, RDNet, Fast, Reliable, Instant, Efficient Network for the Disbursement of Services (FRIENDS)</td>
</tr>
<tr>
<td>8</td>
<td>Maharashtra</td>
<td>Maha E-Seva Kendra CSC/SETU, MIS for various Departments., E-Tenders, MAHAKOSH</td>
</tr>
</tbody>
</table>

3.14 Status of e-Governance in Maharashtra State

3.14.1 Maharashtra State at a Glance

Maharashtra is the second most populous state in the India with 112.4 million populations and the literacy rate is 82.34%. 45.2% share of urban population in the state [42]. The Maharashtra has 6 divisions and these are further divided into 36 districts, 109 Sub-Divisions, 357 Talukas. There are 534 towns and 43665 total villages in Maharashtra. Marathi is the official language of Maharashtra and is written in Devanagari script. Apart from this official language, speaks Hindi, Konkani, Gujarati, and English languages [43].
3.14.2 Directorate of Information Technology

The Directorate of Information Technology, Government of Maharashtra (GoM), was established in 1998 to achieve the goals to develop ICT and e-Governance in the state. DIT is liable for designing the policy, supervising the state government’s e-governance projects and acts as coordinator to coordinate among departments to achieve the vision of the GoM. The DIT is also responsible for

- Statewide establishment of core infrastructure like State Data Centre (SDC), State Wide Area Network (SWAN) and Common Service Centres (CSC)
- E-Enablement of services
- Designing and implementation of in-house and development of common applications for improving efficiency in government functioning
- Act as technical advisory and support among various activities.

Maharashtra is the pioneer state in the adoption of technology that supplements improvement in transparency and accountability of the government. The efforts of the state have been focused on cutting edge technology initiatives with the overall administration, intention to take the government to the citizens’ doorsteps as an usher in a digitally inclusive society [44].

3.14.3 Maharashtra State e-Governance Policy

Maharashtra is the first state in the country to have an exclusive e-governance policy published on 23 September, 2011 in local language i.e. Marathi and also in English language. Maharashtra e-Governance Policy plan and timeline was published on 10 April, 2012. The e-governance policy objective is to ensure seamless and standardized implementation of e-governance projects across the state. Policy issued several guidelines about use of UID, use of Marathi language in e-governance implementation, utilization of multiple service delivery channels to provide citizens services at their doorsteps. Various citizen services shall be made available online through the state portal to be developed in-line with the national portal and through other channels like CSC (Maha E-Seva Kendra), SETU, Common Facilitation Centre (CFC), Kiosk etc. State Service Delivery Gateway (SSDG) shall act as a hub for all the interaction between service seekers and providers, capacity building, joint venture, collaboration and partnership with private companies [45].
3.14.4 Vision of e-Governance of Maharashtra

The Maharashtra state’s vision is “Transforming Governance and Enriching lives through Information and Communication Technology”.

![Six Pillars for achieving the vision of e-Governance](image)

**Figure 3.3 Six Pillars for achieving the Vision of e-Governance**

The policy provides seamless guidance to all the departments and administrative structure as a whole to prepare and take up meaningful citizen centric e-governance initiatives. To achieve the e-governance goals, GoM has laid down six pillars (shown in figure 3.3) which will facilitate departments to use e-governance as a tool to develop the more proactive and responsive system [44].

The state government has adopted e-governance to reach out in a more effective manner to the people and the conventional functioning is being modernized through the exhaustive business process reengineering (BPR) and electronic service delivery. The useless steps in the workflow are being thrown away to ensure faster decision making and service delivery complimented by back office and workflow automation.

The Maharashtra government wants to achieve following goals through the vision are:

- Essentially improve the delivery of government services and developing e-Services without any borders
Accredition, transparent, open and inclusive governance
Developing affordable and efficient governance
Motivating the citizens to participate in policy making
Ensuring an evolution and continuous innovation

3.14.5 Major E-Governance initiatives in Maharashtra

Maharashtra state government initiated various e-governance projects in the state (shown in Table 3.2). Most of these projects are governed by the Collector Office of each district. District Collectorate is responsible for implementing central and state level e-governance projects through their subsidiary offices or officers like Deputy Collector Office, Tahasil Office and Talathi Office. In this study, there is a focus on three main citizen centric e-governance initiatives i.e. Common Service Centre (CSC)/SETU, Public Distribution System (PDS) and Land Records (LR).

Table 3.2 Major e-Governance projects in Maharashtra state

<table>
<thead>
<tr>
<th>Government Services</th>
<th>Citizen Services</th>
<th>Business Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Service Centre (Maha E-Seva Kendra)</td>
<td><a href="http://www.mahaonline.gov.in">www.mahaonline.gov.in</a></td>
<td></td>
</tr>
<tr>
<td>Public Distribution System</td>
<td><a href="http://www.mahafood.gov.in">www.mahafood.gov.in</a></td>
<td></td>
</tr>
<tr>
<td>Land Record</td>
<td><a href="http://www.mahabhulekh.maharashtra.gov.in">www.mahabhulekh.maharashtra.gov.in</a></td>
<td></td>
</tr>
<tr>
<td>e-Courts</td>
<td><a href="http://www.ecourts.gov.in">www.ecourts.gov.in</a></td>
<td></td>
</tr>
<tr>
<td>Police</td>
<td><a href="http://www.mahapolicenew.gov.in">www.mahapolicenew.gov.in</a></td>
<td>Employment Exchange</td>
</tr>
<tr>
<td>Treasuries</td>
<td><a href="http://www.mahakosh.gov.in">www.mahakosh.gov.in</a></td>
<td>Road Transport</td>
</tr>
<tr>
<td>e-Office</td>
<td><a href="http://www.eoffice.gov.in">www.eoffice.gov.in</a></td>
<td>Commercial Taxes</td>
</tr>
</tbody>
</table>

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3.14.6 Core e-Governance Infrastructure in Maharashtra

Requirement of adequate infrastructure for the service delivery system is the way to core fruitful execution of any e-governance initiative. Aside from improvement of imperative computing and software systems for managing the governmental business processes, prerequisites of communication and networks system, security framework tools and supporting services and so on, must be set up before implementation or deployment of any e-governance application. The core infrastructure and human asset necessity should be resolved and gained for effective e-governance implementation.

A. Maharashtra State Data Centre (MH-SDC)

The State Data Centre (SDC) scheme of government of India is one of the important elements of the core infrastructure for supporting e-governance initiatives of NeGP. Under NeGP, state data centre is being created for the state to consolidate services, applications and infrastructure to provide efficient electronic delivery of services. The services can be core connectivity, infrastructure such as State Wide Area Network (SWAN) and Common Service Centre (CSC) extended up to village level. The State Data Center would provide much functionality like central repository of the state secure data storage, citizen information/service portal, state intranet portal, disaster recovery, remote management and service integration.

The Maharashtra state government operates a fully functional tier II data center as TIA-942 standard SDC spread over 1450 square feet area and the first of its kind in India to have a fully operational on government cloud [46]. The main objective of this service is to reduce the cost of data center and optimizing the IT capacity. The SDC has 39 rack servers with up to 86 TB storage capacity and has over 150 applications running on it.
Figure 3.4 Schematic view of the Maharashtra State Data Centre

The MH SDC offers following services to the government’s departments as

- Cloud Services
- Co-location Services
- Managed Hosting

The MH SDC is a member of Asia-Pacific Network Information Centre (APNIC) and only of its kind in India and to have its own pool of APNIC/IRINN IPv4 and IPv6 addresses. As there is a global crunch for IPv4 addresses, there has been a mandate from Department of Telecommunication (DoT) for enabling IPv6 addresses. To adhere to the mandate, MH SDC has successfully deployed end to end IPv6 along with IPv4. MH SDC is the first in the country to enable IPv6 at the MH SDC. As a part of Business Continuity Planning (BCP) and Disaster Recovery (DR), the GoM has created a facility at BSNL Internet Data Center fort as an extension centre to the MH SDC for storing the vital data and also providing collection services to the departments.

MahaGov Cloud Service

MahaGov Cloud is an initiative by DIT, Government of Maharashtra to provide Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as a Service (SaaS) Cloud service to various departments in Government of Maharashtra. The MahaGov Cloud is implemented in State Data Center and is extensively used by
many departments for website and application hosting. The availability of MahaGov Cloud and ease of provisioning infrastructure has encouraged departments to host their application in SDC. SDC is envisioned as the shared, reliable and secure infrastructure services centre for hosting and managing the e-governance applications of state and its constituent departments. SDC is envisaged to establish a robust infrastructure to enable the government to deliver the services quickly and effectively to its stakeholders. Continuing to the shared service centre, during the implementation of Maharashtra state data centre, the state has conceptualized on implementing virtualization for efficient utilization of the infrastructure in SDC. The objective of this initiative is to reduce data centre cost drastically while increasing the IT capacity with maximum flexibility.

![Virtualization Diagram]

**Figure 3.5 MahaGov Cloud**

A Proof of Concept (PoC) on virtualization using VMware and Microsoft Hyper V was started in November, 2011 leading to implementation of fully operational Cloud commissioned in May 2012. MahaGov Cloud is the only government cloud setup in India which is running on production environment with such high volume of servers and applications.

The services will be offered through SETU and Mahaonline through the SDCs. While SETU would provide IaaS, PaaS and SaaS, Mahaonline would offer SaaS, Business Intelligence as a Service (BIaaS), GIS as a Service (GISaaS), API as a Service (APIaaS) and Survey as a Service (SyaaS).

Uniqueness of MahaGov Cloud:

- Only of its kind government cloud setup in India
- First state in India who enable IPv6
- High performance and volume of servers and its applications
- Own block of 4 B ASN number and IPv4 and IPv6
- Membership in APNIC/IRINN this makes it vendor independent
- Cloud services offered by the government and for the government
- High availability and load balancing at ISP level
- The rate chart serves as a benchmark for the user departments

**B. Maharashtra State Wide Area Network (MSWAN)**

The MSWAN is anticipated as the backbone network to carry data, voice and video throughout the state. It brings the information and communication requirements of the entire state government and among its departments. The MSWAN consists of the III tier structure. These three tiers are State Headquarter (SHQ), District Headquarter (DHQ) and Taluka Headquarter (THQ).

![Diagram of Maharashtra State Wide Area Network](image)

**Figure 3.6 Maharashtra State Wide Area Network**

These tiers have Point of Presence and Point of Interconnectivity for various horizontal offices. The MSWAN envisages the establishment of an intra-government network with a minimum of 2 Mbps connectivity to connect 35 District Headquarters to the State Headquarter (SHQ), 358 Taluka Headquarters and 6 Divisional Headquarters to District Headquarters.
C. Common Service Centre (CSC)

The GoM is operating the CSCs scheme under the umbrella of NeGP, funded by central government as one of its MMPs for delivery of G2C and G2B services at the citizen’s doorstep. These centres are called Maha e-Seva Kendras in Maharashtra. The CSCs are envisioned as the front-end delivery points for government, private and social sector services to rural citizens of India. The idea is to develop a platform that can enable government, private and social sector organizations to integrate their social and commercial goals for the benefit of rural populations in the remotest corners of the country through a combination of IT as well as non-IT services.

The CSC scheme is anticipated to be a bottom-up model for delivery of content, services, information and knowledge. It can allow like-minded public and private enterprises - through a collaborative framework - to integrate their goals of profit as well as social objectives, into a sustainable business model for achieving rapid socioeconomic change in rural India. The CSC network would be a cost effective distribution pipe through which the government can distribute its various schemes and offer its services directly to the rural consumer, in a cost-effective manner. Apart from e-government services, the CSCs can deliver the mechanism for offering services like education, adult literacy, telemedicine, agriculture extensions, community health and hygiene, critical data on weather, disaster management, entertainment, communication, awareness, vocational training, etc. In short, the CSCs would be positioned as the platform for fundamental transformation of the various ways in which development challenges would be met their realistic solutions in rural India.

Maha e-Seva Kendra (CSC) scheme anticipates the establishment of a network of 11,818 centres together with a well developed transaction oriented portal throughout the Maharashtra state. As of October 2012, 10518 CSCs have been rolled out across Maharashtra delivering billing, application, railway reservations and other G2C services, 26 G2C Services being delivered from these centres. In Maharashtra, Maha e-Seva Kendras are successfully giving various services at the citizen’s doorstep.

SETU Centres

SETUs are the Citizen Facilitation Centres (CFC) established at Tahasil and district level. SETU offers e-services like certificates and licenses. In Maharashtra state,
SETU centres started operations in 2001 and managed by SETU Society. Generally, the SETU centres are located in Tahasil and Collector office premises or around the premises. To bring benefits of ICT to common citizens and as a part of e-governance initiative, the GoM started a unique project that seeks to redefine citizen’s services. In Marathi language SETU means ’bridge’ a bridge between the citizens and the government. The main objective of the SETU is to provide the services and information of the various departments to the citizens and this to be achieved through a chain of SETU centres.

The SETU society has been setup at two levels. First level is the state level society i.e. State SETU Society is an apex body registered at the state level. It guides and monitors the district level bodies. The state level society has the Chief Secretary as Chairman, Principal Secretaries of Administrative Reforms, Finance, Planning, Revenue departments, Secretary of IT as permanent members and Director IT as a member Secretary. The second level is the district level society. In district level society, District Collector as its Chairman and the other members are head of the different departments of major offices at the district level.

**Sangram Kendra (SK)**

Sangram means ‘Sanganakiy Gramin Maharashtra’. All Zilla Parishads, Panchayat Samitis in Maharashtra are equipped with computer, printer, scanner and Internet connections under the e-Panchayat project. These citizen service delivery centres have been named as Sangram Kendras. The key features of the Sangram Centres are:

- SKs have been designated as CSCs, with Mahaonline as a SCA.
- SKs are offers G2B services in rural areas
- The operators of SKs are being appointed as Banking Correspondents (BCs) to facilitate financial inclusion in the state.
- About 2000 of the SKs are being established as permanent UID enrolment and updation stations.
- Maharashtra is the first state to take this forward looking decision of establishing permanent centres on such a large scale basis.
3.14.7 Integrated Framework

GoM has developed an integrated framework for delivery of services. This framework combines the capabilities of State Service Delivery Gateway (SSDG) and e-District mission mode project of the state. Joint venture formed between GoM and TCS, has developed Mahaonline portal and it is responsible for maintenance and middleware that act as a hub for all the interactions between service seekers and various service providers. Mahaonline provides integrated and seamless delivery of citizen services by district administration through automation of workflow, back end digitization, integration and process redesigning across participating sections/departments for providing services in the most efficient manner to the citizens. Mahaonline portal is providing more than 35 online services. These services can be availed using CSCs where VLE/operator assists for filling forms, printing and scanning of the documents and for cash payments. Citizens can avail these services from kiosk, Internet cafes, houses or offices and payments can be made using net-banking and credit cards, debit cards.

3.14.8 Land Record System

According to Maharashtra Land Revenue (MLR) Code 1966, "land records" means records maintained under the provisions of, or for the purposes of, this Code includes a copy of maps and plans or a final town planning scheme, improvement scheme or a scheme of consolidation of holdings which has come into force in any area under any law in force in the state and forwarded to any revenue or survey officer under such law or otherwise [47]. Land record department is controlled by the Director of Land Record and Settlement Commissioner at the state level. This work is done by the District Inspector of Land Record and Taluka Inspector of Land Record at the District and Taluka level respectively.

Here some functions of Land Record department are:

1. To supervise the preparation and maintenance of Record of Rights periodical inspection and maintenance and repairs of the boundary marks of individual fields.
2. To maintain all survey, classification and settlement records updated by keeping a careful note of all changes by conducting filed operations preliminary to incorporation of the changes in survey records.
3. To organize and carry the out survey of village sites on an extensive scale and arrange for their proper maintenance.
4. To simplify the procedure and reduce the cost of litigation in revenue and civil courts by providing reliable survey and other land record purpose.
5. To collect and provide statistical information necessary for the sound administration of all matters connected with land.
6. To maintain updated village maps by incorporating necessary changes as and when they occur.
7. To maintain all taluka maps updated, to print them and to arrange them for their distribution to various departments for administrative purposes and for sale to public.
8. To conduct periodical revision settlement operations.
9. To train revenue officers in survey and settlement matters.

Followings are the list of Land Records:

1. All records maintained under various “Village Forms” are land records.
2. Map or plan of survey number or subdivision of the survey number prepared under the MLR Code 1966.
3. Town Planning Records: Maps of town planning scheme, improvement scheme etc.

A. Land Records in Maharashtra

National Land Record Modernization Programme (NLRMP) was formed by merging two existing government of India sponsored Computerization of Land Record (CLR) and Strengthening of Revenue Administration and Updating of Land Records (SRA & ULR) with adding new components like registration and titling system. The aim of this modernization is to minimize the scope of land/property disputes by enhancing the transparency in the land record management system and to facilitate guaranteed conclusive titles to immovable properties in the country. The main components of this programme are computerization of all land records, including mutations, digitization of textual and spatial data, survey/resurvey and updating of all survey and settlement
records, including creation of original cadastral records wherever necessary, computerization of registration and its integration with the land records maintenance system, development of core Geospatial Information System (GIS) and capacity building.

In financial year 2008-09, NLRMP project started under the original scheme of CLR and SRA & ULR which was started in 1988-89. All components of NLRMP have been started in the Maharashtra state. Each component’s timeline is different and will be giving services to the citizens till a new guideline regarding the specific component is issued.

Objectives of NLRMP:

1. To usher in a system of real-time land records
2. To have automatic mutation
3. To provide integration between textual and spatial records
4. To have inter-connectivity between land records and registration systems
5. To have presumptive title system to the conclusive titling system

NLRMP based on four basic principles:

1. The “Mirror” principle: The mirror principle refers to the fact that cadastral records mirror the ground reality.
2. The “Curtain” principle: The “curtain” principle indicates that the record of title is true a depiction of the ownership status, mutation is automatic following registration and the reference to past records is not necessary.
3. A Single Integrated Window to handle land records: A single window for updating and maintaining of textual records, maps, survey and settlement operations and registration of immovable property.
4. Title Insurance: Title insurance, which guarantees the title for its correctness and the title holder against loss arising on account of any defect therein.

Benefits of the programme to the citizens:

The citizens would get benefits from NLRMP in following ways;

1. Real time records of land ownership will be available to the citizens.
2. Since the records will be put on the sites with legitimate security IDs, property proprietors will have free access to their records with no trade off as to privacy of the data.

3. Free openness to the records will lessen interface between the citizen and the government functionaries, consequently decreasing rent chasing and provocation

4. Public-private partnership organization method of administration conveyance will additionally decrease native interface with government hardware, while adding it to the convenience.

5. Elimination of stamp papers and installment of stamp obligation and enrolment expenses through banks, and so forth will likewise lessen interface with the Registration apparatus.

6. With the utilization of IT bury linkages; the ideal opportunity for acquiring RoRs, and so forth will be definitely decreased.

7. The single-window administration or the web-empowered anytime-anywhere access will save the time and effort of the citizens in obtaining RoRs, etc.

8. Automated mutations will altogether reduce the scope of fraudulent property deals.

9. Conclusive titling will also essentially reduce litigation.

10. These types of records will be tamper-proof.

11. This strategy will permit e-linkages to credit facilities.

12. Market esteem data will be accessible on the site to the native.

13. Certificates in light of land information like residence, caste, income, and so forth will be accessible to the native through PCs.

14. Information on qualification for Government projects will be accessible, in light of the information.

15. Issuance of land passbooks with important data will be encouraged

**Benefits of the programme to the government:**

The government would get benefits from NLRMP in following ways;

1. Transparent, extensive and modern land record management system in the country.
2. A single window for updating and maintaining of textual records, maps, survey and settlement operations and registration of immovable property.

3. Giving the title guarantee by implementing the conclusive land-titling system.

4. Land data and details are user friendly interface to the citizens, land administrators and planning authorities.

5. Ensuring effortless access to information and controlling corruption by automation of various land records department services.

6. Development of a reliable, authenticate and secure system to handle confidential land record data.

7. Delivery of services to various stakeholders in a modern, efficient and client-service oriented manner for ensuring faster and better services.

8. Minimizing problems in the system for ensuring availability of requested data easily.

9. Increasing officials' efficiency by enhancing the access to land records data.

10. Developing the uniformity of data and coding scheme across the country.

Maharashtra is the leading state in implementation of NLRMP. Under NLRMP, various components are implemented in various modes as pilot basis or state wide. Many NLRMP projects have been successfully implemented in pilot locations and now they are on the borderline of the state wide rollout. Comprehensive land records modernization and management system is proposed under programme called "eMahabhoomi" by the Maharashtra State.

- **eMojani**

  eMojani web based application is developed by NIC Pune. It is hosted on SDC of Maharashtra. Deputy Superintendent of Land Record (DySLR) and City Survey Officer (CTSO) handles eMojani back office workflow of land measurement cases. This application helps to the department officials for processing the survey request by the citizens and gives the details like fees, time, date of survey and name of a surveyor. Citizens or land owners approach the office with application to apply their land measured. The office staff entered the application details using eMojani. The eMojani software automatically calculates appropriate fees and generates the treasury challan or cash receipt depending on fees. Application acknowledgement printout and receipt of the same is given to the citizens or land owners. This eMojani
software has been implemented throughout the Maharashtra from 1st January 2012. Tracking of the status of the application is provided to the citizens. Manual maintenance of measurement registers, manual calculation of the fee and individual survey has been ceased by department.

- **eMutation**
  Changing the details of ownership in Record of Right (RoR) is called mutation. Online mutation application i.e. eMutation is developed by NIC, Pune. All the process starts at the registration department where the citizen gets his/her documents registered at SRO. Once the process is over SRO office uploads the details of the registration on SDC. The mutation number is automatically given to the application itself. Notice no. IX is generated with digitally signed which is sent immediately to SRO office for serving to all interested parties. At the same time, SMS is sent to concern citizens and Talathi for taking the note in respective register and fifteen days notice period is given to the citizens to raise objection if any. If there is no objection from citizens, the mutation is certified and the name of the person is entered in RoR automatically with this application. Through this application, bank impediment, legal hairs are also initiated at the village level. Initially this project was implemented in Mulshi taluka, Pune district in October, 2010.

- **eRecord**
  Land record department is the custodian of huge old textual land records like RoR, mutation, khata register, akarband, tippan, akarphod patrak etc. These old records have been turning progressively worse in their physical condition because of various changes within environment and continue handling of these records by officials. These old records can be preserved by applied digitization. On pilot basis, eRecord project is implemented in Mulshi and Haveli Taluka, Pune district.

- **eChavdi**
  eChavdi portal is developed by NIC Pune with the help of Settlement Commissioner and Director of Land Record, Maharashtra State, Pune. It is a web based application for Talathi. Talathi maintains various land revenues related forms. For this purpose, Talathi uses a laptop and the data card for connecting to the SDC. A strong database is maintained by the SDC officials
and it will be helpful to reduce data redundancy. This application is tested and is being ready for its implementation in all districts in the state.

B. Organization of Land Record Department

Land revenue system is organized on the basis of demarcation of land as belonging to territorial units of villages grouped into talukas, districts, divisions and the state. All aspects of land revenue system like the collection of the land revenue, disposal of government lands, compulsory acquisition of land for development and public purposes, land reforms, relief operations and related matters are dealt in revenue and forest department of government at state level. There is one principal secretary among three secretaries each in charge of land and its revenue matters, forest and relief operations. On the territorial basis specified by government in the official Gazette, down below, land record department is organised around graded administrative units comprised in revenue division namely Aurangabad, Amravati, Mumbai, Pune, Nasik and Nagpur. Each division has 4 to 6 districts; each district comprises 3 to 4 sub divisions divided into 3 to 4 talukas. Each taluka has five to six circles having 1 to 8 villages. There are 35 districts, 359 talukas and 44549 villages. Organization of the land record department is as shown in following figure.

![Figure 3.7 Organization of the Land Record Department](image-url)
3.14.9 Public Distribution System

Public Distribution System was introduced in India during the Second World War to address food security concerns in the face of shortage. The PDS is a national program that distributes subsidized food and non food items to the needy population of the country at cheap prices. Under this system, major food item like rice, wheat, sugar and non food item like kerosene distributed to poor people. This is the largest public distribution system network in the world. Its focus on distribution of food grains in urban poverty areas. The distribution of subsidised food grains through PDS had substantially contributed to the containment of the rise in food grains prices and ensured access of food to urban consumers. In green revolution, as the agricultural production had grown, the outreach of PDS was extended to tribal blocks and areas of high incidence of poverty in the year 1970s and 1980s. PDS, till 1992, had been a general entitlement scheme for all consumers without any specific target. The revamped PDS was launched in 1775 blocks through the country in June 1992. The Targeted PDS (TPDS) was introduced with effect from June, 1997. The scheme when being introduced, was intended to benefit about 6 crore poor families, for whom a quantity of about 7.2 million tonne of food grains was earmarked annually. TPDS also envisaged subsidized distribution of food grains to poor families classified as Below Poverty Line (BPL), Above Poverty Line (APL) and the poorest of poor families identified as Antyodaya Anna Yojana (AAY). For ensuring uninterrupted supplies of food grains and ensuring buffer stocks, the Food Corporation of India (FCI) was established under the act in 1964 which procure the food grains. The goal of the FCI was to ensure effective price support operations for safeguarding the interest of the farmers through providing minimum support price to the farmers. Since its inception, FCI has played an important role in India’s success in transforming the crisis management oriented food security into a stable security system.

These commodities reach the needy through Fair Price Shop (FPS) located across the state. The government currently allocates grain to 6.52 crore BPL families beside 2.43 crore chronic-poverty-affected families under the AAY families under TPDS. The TPDS also covers around 8 crore APL families. The system is often blamed for its inefficiency and rural-urban bias. It has not been able to fulfil the objective for which it was formed. Moreover, it has frequently been criticized for instance of corruption and black marketing.
3.15 Satara District Administration

Satara district is in Sahyadri mountain range of the Western Ghats under Pune administrative division in the Maharashtra state in India. Geographical location of the district is on north latitude 17.5° to 18.11° and east longitude 73.33° to 74.54° [48]. This district spread across 10475 km² area surrounded by Pune district to the north, Raigad district to the north-east, Ratnagiri district to the west, Sangli district to the south and Solapur district to the east [49]. The population of the district is 3003741 of which 14.17% were urban and the literacy rate is 82.87% [46]. The Satara district has 4 sub-divisions namely Satara, Phaltan, Karad, Wai and 11 talukas namely Satara, Karad, Koregaon, Khatav, Patan, Phaltan, Man, Wai, Khandala, Mahabaleshwar and Jaoli. There are 8 assembly constituencies, 15 towns and 1739 villages [48]. Following figure depicts the e-governance project organizational structure.

![Figure 3.8 E-Governance Project Organizational Structure](image)

3.16 E-Readiness

ICT is not just buying relevant software and installing on the hardware. In order to realize the benefits of the ICT, its stakeholders i.e. citizens, business and government must be e-ready for skilfully exploiting various opportunities provided by ICTs. Over the last decade or so, learn the lessons from e-governance initiatives in the country at the national, state, district and even taluka level. Some initiatives are sustained and
some of them are failed to provide the services. Through these initiatives, the states gain a head start in e-Readiness. Objective of the assessment of e-Readiness helps the states for framing the proactive policies and having robust ICT infrastructure, making the country giant strides towards developed information societies and participating in knowledge economy. The value of the e-Readiness Index at the state level reflects the capacity of a state to participate in the networked economy in relation to the country at large.

3.16.1 E-Readiness Definition

Budhiraja and Sachdeva are defined the e-Readiness as “the degree in which a community is qualified to participate in the networked world. It is measured by the judging the relative advance of the most important areas for the adoption of the ICTs and their most important applications” [50].

3.16.2 E-Readiness Assessment

Assessment of E-Readiness Index Framework of the Indian States-2005 is based upon three important stakeholders to consider in the use and development of ICT in the country, i.e. individual’s readiness, business readiness and government’s readiness. The degree of usage of ICT by the three stakeholders is linked with their degrees of readiness to use and to have benefit from ICT. There is a general macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles. National Council for Applied Economic Research (NCAER) collaboration with the DEITY has assessed the e-readiness of the states and the union territories of India six times since 2003. This apex body defines e-readiness as the ability to pursue value-creation opportunities for inclusive economic development facilitated by ICT. The e-Readiness Index is composed of variables that fall into three broad categories: Environment, Readiness and Usage as shown in following figure.
3.16.3 Objectives of E-Readiness

- **E-Infrastructure:**
  The institution should focus on procurement of appropriate hardware and its software. Hardware and network access are required to be e-ready and bridge the digital divide, and government and private initiatives should supply them.

- **E-Economy:**
  The institution should be focused on ICT business. Here e-readiness equals computers, access, and economy. Computer hardware and network access are required for e-readiness, but the market will solve this problem on its own.

- **E-Society:**
  E-readiness requires basic literacy, health, poverty and other social issues to be addressed first. Computers are useful, however nothing will make a society e-ready and bridge the digital divide until basic literacy, poverty, and healthcare issues have been addressed.

- **E-Governance:**
  E-governance focus should be on GPR and faster, transparent delivering of government services to the doorstep of a citizen. In this, e-Readiness equals the computers, access, and effective usage of computers. Hardware and access are not enough for real e-readiness, there must be extensive training programs, locally relevant content, and a local ICT sector; and a BPR along with.
3.16.4 Networked Readiness Index

Networked Readiness Index (NRI) is released by World Economic Forum annually as a part of Global Information Technology Report (GITR). This index basically measures the impact of information and communication technology (ICT) on a country and also calculates how much a country has used the ICT to grow. In the Networked Readiness Index 2016, India has been ranked at the 91st position out of 139 countries. The ranking has come as a shock because the flagship project Digital India had supposedly raised the digital drive of the country. The top ten countries that have appeared in the NRI are Singapore (1), Finland (2), Sweden (3), Norway (4), United States (5), Netherlands (6), Switzerland (7), United Kingdom (8), Luxembourg (9) and Japan (10). Among BRICS countries (association of five major emerging national economies), Russia was ranked the highest and India was ranked the lowest at 41st position. The other rankings are: China (59), South Africa (65) and Brazil (72). Comparing India's position last year with this year's, India has come down for the fourth consecutive year in a row. It was ranked 89th in 2015, 83rd in 2014 and 68th in 2013. India has scored better in terms of political and regulatory environment at 78th position. India earned the 8th place in the parameter of affordability. In online services, India stands at 57th and in allowing e-participation, at 40th. The country stood at the 110th position in business and innovation environment, and 114th in terms of infrastructure.

3.17 Challenges in E-Governance

- **Funding**
  The funds are the major problem of e-governance projects. The funds are allocated initially but afterwards, funds for the maintenance or extension of the project are not sufficient.

- **Infrastructure**
  For any projects, the infrastructure is necessary for their smooth delivery of the services. It includes the high performance servers, network to each and every village in the state, high speed internet connection etc.
Key Person

In e-governance projects, there is a huge lack of technical or trained personals. Key Person who understands project management and has sufficient skill getting transferred and that is quite frequent, due to this, so many ongoing projects are suffering, hence are incomplete.

Politics

In the state, political willpower is necessary to implement the e-governance projects. A strong and visionary political leadership is essential.

Integration of Services

Most of the e-governance initiatives are being offered by the Central or State government. At many occasions or on many projects, there is a lack of coordination between these two levels of governments. As a result, new projects could not be started or ongoing projects could not become successful.

Language

The local language is mandatory for official communication in the India. Therefore, the delivery of e-governance services in local language is necessary.

Resistance to Change

Every organization is against the change. The employees are worried of their jobs. The employees or official who are directly or indirectly involved in e-governance initiatives are opposing for such sudden change in the existing system.

Capacity Building

The government must put certain efforts to enhance the capacities and empowering stakeholders, their capacity at all levels within the government for the effective implementation of any e-governance program. There is also need to change management training to the staff, officials who are directly or indirectly involved in e-governance initiatives.
• **Measuring the success of initiatives**

There is a great need to develop and adopt the measurement of success of e-governance to deliver smoothly to the citizens.

**Conclusion**

This chapter has divided into the literature review and conceptual framework. Researcher gone through the various literature available on the e-governance in the form of books published, thesis submitted in various universities, research article published by the journals and conferences. Also, the reports, policies and frameworks published by the government departments and agencies. The researcher thrown light on evolution of the e-governance system especially CSC, PDS and Land Record System related basic concepts are presented in this chapter.

**References**


[27] Maharashtra State ePrashasan Policy 2011


