CHAPTER II
E-GOVERNANCE INITIATIVES IN KERALA

Kerala is a small, fertile and densely populated State in South - West of India on the Arabian sea. It has an area of 38,863 kilometers and is bordered to the north by Karnataka, to the east by Tamil Nadu and separated from both by the Western Ghats. The population of India as per 2001 Census was 102.7 crore comprising of 53.13 crore males and 49.57 crore females. Kerala's population as per Census 2001 was 318.41 lakh consisting of 154.69 lakh males and 163.72 lakh females. Kerala's share in the population of India is 3.1%. In Kerala, 74% of the population lives in rural areas. Projected population of Kerala is 340.63 lakhs in 2009 of which 166.01 lakh males and 174.62 lakh females.  

Table 2.1

<table>
<thead>
<tr>
<th>Kerala : Population and General Data</th>
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<tr>
<td>Area (in Sq. km)</td>
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<tr>
<td>Population</td>
</tr>
<tr>
<td>Males</td>
</tr>
<tr>
<td>Females</td>
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<tr>
<td>Sex ratio : females / 1000</td>
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<tr>
<td>Density of population</td>
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<tr>
<td>Literacy rate</td>
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<td>Principal language</td>
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<td>Parliament Constituencies</td>
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<td>Assembly constituencies</td>
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Source: Department of Information and Public Relations, Government of Kerala.
Kerala has a long history of international trade and was visited by Jews, Egyptians, Roman, Greeks, Arabs, Chinese, Portuguese, Malayans, Filipinos, Dutch, French and British people. After the Portuguese' domination over Kerala in the early sixteenth Century, Catholic missionaries arrived in increasing numbers, till the protestant Dutch defeated the Portuguese in 1663 and ordered the expulsion of all foreigners. The British in 1705, forced the Dutch out of Kerala and took the control until 1947. Kerala under the British Rule was divided into two kinds of jurisdiction that of the Malabar ruled by the British as part of the Madras Presidency and that of the Princely States of Travancore and Cochin. Then, after India attained independence, the Kerala State was formed on 1st November 1956. Until the elections in March 1957, the Kerala State was under President's Rule for a few months. It was in the year 1957 that Kerala elected a Communist Government headed by EMS Namboodiripad and thereafter, the Kerala State is undergoing changes and reforms in both government and governance under competing coalitions and parties.

It was a hectic task of the Government to introduce major reforms in administration and the first Administrative Reforms Committee was set up under the Chairmanship of the Chief Minister. The Committee had major suggestions for democratic decentralisation and for reforming the state administration. It was the first communist government led by E.M.S. Namboodiripad that laid the foundation for creating 'good governance' based on a state level reform agenda.²

With the reorganisation of Kerala State, the way of functioning of the services in the then Madras State was introduced from the cabinet and secretariat down to the district levels - these had slight variations from those in Travancore-Cochin State, but had a better co-ordination. It was the traditional, British introduced, hierarchical system based on orders- efficient in many ways, but unidirectional and non participatory.³ This system was intended to be changed by the Administrative Reforms Committee and the ARC (1957)
suggested the panchayats to function as agents of government, the secretariat work was to be confined to formulate policies, rules and procedures, financial control and general direction resulting in some downsizing after decentralisation.\(^4\)

The ARC recommended the abolition of Directorates of Panchayats and Municipalities. It had another recommendation that the efficiency of the departments was to be judged not by their expenditure but by their output in connection with inputs. The recommendations by both the ARCs in 1957 and 1965 (under M.K. Vellodi) had uniformity in their vision for reform.

The third ARC was set up in 1997 under the chairmanship of the then Chief Minister E.K. Nayanar. The ARC was constituted to come up with recommendations for the improvement of the quality of public service delivery, work discipline and service ethos of public servants. The constitution of the ARC was from a background of the connection of decentralisation to people's plan campaign going on in Kerala at that period. Decentralisation had created new avenues of governance by late 1990s and the ARC had the vision that a lot of development functions and a sizable staff were being sent to lower levels to perform new roles in a different domain, there would be a natural downsizing of state bureaucracy.\(^5\) The ARC with its vision of people-centered governance submitted 15 reports with a wide range of subjects including citizen's charter, transparency and right to information, financial reforms, general governance reforms, personnel reforms and better service delivery. The ARC was entrusted with the responsibility to suggest measures to eliminate delays, lethargy, corruption and nepotism in the administration. Along with people centered governance, the ARC recommended greater professionalism for efficient administration though content training and scientific methods of performance assessment. The reports came out of the state's own past experience in governance and the depth and coverage of issues were much more than those contained in the ADB sponsored Modernising Government Programmes(MGP).
The new paradigm of governance has got special relevance in the State of Kerala which had exhibited a high degree of social and political consciousness, without remarkable economic development. The institution of State has been, traditionally, held in high esteem by the people of Kerala. In turn, this had kept the private initiative and volunteerism at a reasonable distance from the public sphere. The people looked towards government interventions for the betterment of their living conditions alongside infrastructural development. This is evident from the fact that the private sector undertaking and large scale business establishments were not given a prominent place in the Kerala society until recently. The delivery of welfare measures, especially in the fields of primary education and public health was considered to be the exclusive domain of the State.6

But with the advent of the new economic order, it is being increasingly realised that the State though still dominated by leftists ideology cannot withstand global current towards economic integration. As a result, the government has started receiving to the background from many of traditional areas of operation and the non-government organisations, community based groups and paved the way for multinational development agencies to step in to fill that void.7

Civil service acts as the back bone of public administration and has become an inseparable element in modern administration. In the development of physical and social infrastructure and human development Kerala has been in the forefront. Today Kerala finds itself lagging behind in economic growth and employment and has turned out to be a high cost, low productivity, low investment and low employment economy. In order to sustain the Kerala Model of Development, the State government initiated reforms in several sectors including government.8

The Government of Kerala acknowledges the critical importance of 'Information and Communication Technology' as an instrument for the State's overall development and remains deeply committed to its use, both as an
engine of economic growth and as a tool for increasing productivity, speed and transparency in governance and improved quality of life for the common man.⁹

**E-Governance Initiatives in Kerala: The Background**

The Government of Kerala has a comprehensive view of Information and Communication Technologies as the vehicle for transforming Kerala into a knowledge-based, economically vibrant, democratic state where the benefits of information should reach every single citizen of the State.¹⁰ In order to materialise these objectives the State Government has initiated a number of measures.

The Department of Information Technology was established in the year 1998 and a separate Kerala State IT Mission (KSITM) was constituted as an executive wing under the Department and was entrusted with the implementation of various IT initiatives and the promotion of the state as a preferred destination of IT investments.¹¹

The first IT policy of the State was announced in the year 1998 and it contained various aspects related to the development of a vibrant industry, infrastructure, human resources, IT applications in government and social informatics. In consequence to the change of Government in the State, a ’New IT Policy 2001-05’ was announced in the year 2001. The policy supplemented the initiatives of computerisation and automation of government departments which were prioritised on the basis of two parameters namely revenue earning capacity and the degree of citizen interface.¹² The promotion of IT in various spheres of the State economy got accelerated with the implementation of the Modernising Government Programme (MGP) in 2002. MGP seeks to address the core problems faced by the State, ie, decline in performance of public service system and the breakdown of the State Finances.¹³ A series of e-governance initiatives were identified which are believed to support the implementation of MGP.

The announcement of the IT policy in 2007 is the most recent development in the State. The policy document entitled 'Information
Technology Policy: Towards an Inclusive Knowledge Society, 2007' defines the Government's vision, mission and strategy to achieve the same. It is understood from the mission document that the government is also committed to turn Kerala into a knowledge society with sustainable economic growth, social harmony and high quality of life for all. The government also realises the importance of Free and Open Source Software (FOSS) and its usage. To keep the traditions of the world's largest democratic country, the Government will ensure that all sections of the society are included in this process of transformation and will adopt conscious, positive steps to confirm the inclusion of the disadvantaged sections of society in the transformation process. The policy highlights that government will adopt measures necessary to encourage the willing participation of the digitally privileged sections in the efforts to prevent the less privileged sections from getting marginalised in the transformation process.\(^{14}\)

The Government feels that the ability to use ICT is just the basic requirement and not the fully sufficient condition to empower the society through ICT.\(^{15}\) It is envisioned in the policy that the government will make use of ICT to ensure transparency, efficiency and quality of services to the citizens. The State will also try to make maximum use of ICT in governance to provide the best possible services to the citizen. By 2010, every village in Kerala has the internet connection. The policy further states that the state will also try to make maximum use of ICT in governance, to provide the best possible services to the citizen and the State will structure e-governance projects based on the National e-governance plan and suggestions by the National Knowledge Commission, besides locally relevant factors.\(^{15}\)

**Information Technology and Kerala**

Computerization and the development of IT industry have become development vehicles of administration in Kerala. 'Arithma' is believed to be the first computer used in Kerala. It was an electromechanical computer used in the late 1950s in Kerala University.\(^{16}\) It was later exhibited in the Science
and Technology Museum located in Thiruvananthapuram. During 1970s modern computers were installed in VSSC, Kerala University Computer Centre, Police Computer Centre and in College of Engineering, Thiruvananthapuram. At the initial stages there were movements against computerisation in the fear that it would pave the way for unemployment in the state.

It was the changing development agenda that created a space for new technologies in Kerala. From the background of globalisation information technologies could develop at a faster pace and they have got a stabilisation in the field of industries, administration, education etc. The inception of Technopark in Thiruvananthapuram was a milestone in the development of IT in Kerala.  

The government sector recognised the importance of Information and Communication Technologies in order to meet the challenges of liberalisation, globalisation and privatization. Like any other state or nation the e-government inter-relationship includes three main areas in Kerala also.

Government to Citizen (G\textsubscript{2} C) deals with the relationship between government and citizens. E-governance allows government agencies to talk, listen, relate and continuously communicate with its citizens, supporting, in this way, accountability, democracy and improvements to public services.  

Government to Government (G\textsubscript{2} G): refers to the relationship between governmental organisations, as for example, national, regional and local governmental organizations, or with other foreign government organizations. Governments depend on other levels of Government within the state to effectively deliver services and allocate responsibilities. In order to realize a single access point, collaboration and cooperation among different governmental departments and agencies is compulsory. Online communication and cooperation allow government agencies and departments to share databases, resources, pool skills and capabilities, enhancing the efficiency and effectiveness of processes.
Government to Business (G2B): consists of the electronic interactions between government agencies and private business. It allows e-transaction initiatives such as e-procurement and the development of an electronic market place for government. Companies everywhere are conducting business to business e-commerce in order to lower their costs and improve inventory control. The opportunity to conduct online transactions with government reduces red tape and simplifies regulatory processes, therefore helping businesses to become more competitive. The delivery of integrated, single-source public services creates opportunities for businesses and government to partner together for establishing a web presence faster and cheaper.

**Figure 2.1**

**Model of E-governance interaction**


The chapter focuses on the e-governance initiatives undertaken by the Kerala Government in order to reach the citizens for better delivery of services.

The Kerala State Information Technology Mission (KSITM) is an autonomous nodal IT implementing agency for Department of Information
Technology, Government of Kerala which provides managerial support to various initiatives of the Department. Interfacing with the Government and the industry, interacting with potential investors, ICT dissemination to bridge the digital divide, e-governance, developing human resources to IT and the like are some of the primary responsibilities of Kerala State IT Mission. The KSITM is a team of professionals from the industry and the Government and is headed by the Director, with the Secretary, IT as Chairman. The Governing body of KSITM is chaired by the Minister for IT.

The IT industry in India has been growing at a very healthy rate of 30% per annum. The industry has helped in creating large scale employment opportunities not only for technically qualified professionals in the software sector but also for large number of non-technical personnel in low end activities like back office operations, call centres, transcription services etc. 20

Government of Kerala is keen to play a catalytic role for the development of IT industry within the State, as it is ideally suited for such a densely populated State, having vast multitude of highly qualified and experienced human resources uniformly spread across the State. 21 Unlike the rest of the country, the State is also blessed with quality social infrastructure and excellent physical connectivity, evenly distributed across the fourteen districts of the State, Thiruvananthapuram in the South to Kasargod in the North. Owing to certain inherent strength of the State, Kerala is uniquely placed to emerge as a major IT destination in the country though it has had a late start. 22 The development of Information Technologies in Kerala has close relation with certain advantages of Kerala such as the presence of highest telephone density, highest rural telephone density and higher literacy.

Major E-Governance Initiatives

Majority of the government services have been transformed into the e- mode by this time. It is the Kerala State IT Mission, and autonomous nodal IT implementation agency which provides managerial support to various e-governance initiatives of the Department of Information Technology of the
Government of Kerala. It has been entrusted with the responsibilities of
(a) interfacing between the government and the industry (b) interacting with
potential investors (c) strengthening the IT/ITES industry base
(d) E-governance (e) ICT dissemination to bridge the digital divide
(f) developing human resources for IT and IT Enabled Services and advising
the government on policy matters. The major e-governance initiatives in the
State are the following:

**Akshaya**

The Akshaya initiative was introduced to make at least one person from
each family in the e-literate. In addition, the development of entrepreneurship
is also coming under the domain of Akshaya project. This project is
implemented in Public-Private Partnership model. The Akshaya project had its
project was introduced as an online system, for the collection of various utility
bills and fees. Through Akshaya e-pay, the citizens can remit their bills and
dues to the government. Even though the Akshaya e-literacy programme was
unique in nature, it raised many criticisms due to its failure in the commercial
sustainability. The researcher conducted field study in Malappuram district
and the critical observations are provided in the fourth chapter of this work.

**FRIENDS (Fast, Reliable, Instant, Effective Network for Disbursement of
Services)**

This is a single window 'no queue' integrated remittance centre for
offering the opportunity to the citizens to pay taxes and dues to the government
under single roof and without extra cost. The FRIENDS centre accepts
payment of the Kerala University, Local Body, Electricity Board, Water
Authorities, Land Revenue, Civil Supplies, Motor Vehicles and Electrical
Inspectorate. The Centre works all days in a week from 9 am to 7 pm. All the
counters in the Centre follows a token management system for eliminating the
lengthy queues and delays in remitting the payments. For the citizens who are
not having good awareness with the payment procedures, there is a Help- Desk
at the centre. In order to record suggestions and complaints, facilities are arranged and has regular review on them. Railway reservation facilities are also now started in FRIENDS centres.

Table 2.2

Year Wise Transactions and Collections through FRIENDS centres

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Transaction</th>
<th>Amount Collected in Rs.Lakhs</th>
</tr>
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<tbody>
<tr>
<td>2000-2001</td>
<td>1,23,709</td>
<td>568</td>
</tr>
<tr>
<td>2001-2002</td>
<td>10,26,919</td>
<td>5239</td>
</tr>
<tr>
<td>2002-2003</td>
<td>20,23,811</td>
<td>10,619</td>
</tr>
<tr>
<td>2003-2004</td>
<td>26,32,137</td>
<td>16,000</td>
</tr>
<tr>
<td>2004-2005</td>
<td>34,00,182</td>
<td>20,210</td>
</tr>
<tr>
<td>2005-2006</td>
<td>38,66,948</td>
<td>22,170</td>
</tr>
<tr>
<td>2006-2007</td>
<td>40,28,287</td>
<td>22,747</td>
</tr>
<tr>
<td>2007-2008</td>
<td>34,75,795</td>
<td>22,289</td>
</tr>
<tr>
<td>2008-2009</td>
<td>35,16,571</td>
<td>22,601</td>
</tr>
</tbody>
</table>

Source: FRIENDS Centre, Thiruvananthapuram.

The FRIENDS centres are often alleged to have a serious shortage of staff. The service has become slow and unreliable. The people have to wait for an unusually long duration and there were times when the computers and token system were not working. A senior official at the FRIENDS centre at Thiruvananthapuram revealed that the Government Departments that have promised the staff have not kept their word. Due to the shortage of staff, if some people take leave or off, things become problematic.

When the FRIENDS was set up, the arrangement was that the government departments involved in the process should provide the centre with the required man power. When the staff got promoted and returned to their departments, these departments did not provide alternative man power. The concerned Department officials have highlighted the recruitment freeze as the basic reason for such a situation.
The level of satisfaction among most of the users is positive only when it comes to few aspects like reduction in time and costs and the usefulness and utility of the e-services project.  

Table 2.3

<table>
<thead>
<tr>
<th></th>
<th>No. of. respondents</th>
<th>Percent</th>
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<tbody>
<tr>
<td>High</td>
<td>88</td>
<td>37.9</td>
</tr>
<tr>
<td>Moderate</td>
<td>86</td>
<td>37.1</td>
</tr>
<tr>
<td>Low</td>
<td>58</td>
<td>25.0</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Efforts have to be made to improve the overall satisfaction levels among the users by addressing the issues raised by them. A complete overhaul cannot be envisaged at this juncture, but a long-term correction course would surely help to boost the image and acceptance of e-services project like FRIENDS.

Citizen's Call Centre

The Citizen's Call Centre is a Government to Citizen (G2C) interface oriented toward single window, IT enabled facility for the quick delivery of critical information which otherwise would be very inaccessible for the citizen. From the background of increasing the focus on e-governance and the Right to Information Act, the relevance of such a Government Call Centre is quite significant. The Citizen's Call Centre is working on all calendar days except national holidays and it has the 24 x 7 working mode. A team of centre executives who are highly experienced and skilled professionals answer the call to the centre. The Centre provides information over telephone, concerned
with common citizen transactions and the Call Centre is located at Thiruvananthapuram.

The Citizen Call Centre was set up in 2005 for rendering information regarding various schemes, activities and programmes implemented by the different government departments and information is accessible from anywhere in the state using the number 15300 at local call charges. The Frequently Asked Questions (FAQs) have been collected and arranged in an electronic database and retrieved easily and promptly from a computer by the call centre agents when information upon them are being asked. The departments and institutions like Civil Supplies, General Education, Kerala State Electricity Board, Kerala Water Authority, Motor Vehicles, Local Self Government, Kerala University, Registration, SC Department, ST Department, Kerala Women's Commission, NORKA, M.G. University, Electrical Inspectorate, Employment and Training Department, Institutional Training Department, Parliamentary Affairs Department and Taxes Department are participating in the information provision services of the Call Centre. In addition, the Centre also acts as a complaint registry for senior officials and ministers of government departments. The registered complaint will then be transferred to the Public Grievance Redressal Cell of the Chief Minister by utilising the online facility.

Sutharya Keralam

This initiative was started with the objective of bridging the gap between the citizen and the Government and with the ultimate purpose of bringing transparency and efficiency in the functioning of the government by redressing the grievances of the citizens. This initiative is operationalised through the Call Centre and an online public interface to collect the petition and an interactive video programme. The citizen can convey their grievances through the Call Centre which is functional from 10 am to 5 pm on all official working days. The received calls will be converted to electronic data and will be sent to the Chief Minister's Grievance Redressal Cell where it will be
recorded in a server placed at the Government Secretariat. The grievances and petition will be selected after scrutiny and the Chief Minister will respond to the selected grievance. The CM's response will be telecasted through the 'Sutharya Keralam' programme on Doordarshan Keralam and the public can understand official response to his grievance by watching the programme. Besides, the citizens can also trace the current status of the petition they have submitted.

**Kerala State Wide Area Network (KSWAN)**

The e-governance implementation of the Government in various departments requires networking of the various offices coming under these departments. Kerala State Wide Area Network is envisaged to be the core common network infrastructure for e-governance, over which all the applications would run.²⁷

The application of KSWAN is very inevitable for departments having a high degree of citizen interaction and the advantages to departments like Revenue, Registration, Local Self Government, Police, Taxes Treasury etc will be enormous. This is necessary for the interaction at G₂C, C₂G, G₂, B₂G and G₂G levels. With a vision to consolidate the requirement and to provide a common infrastructure for all government departments, the State Government is implementing the KSWAN.

The KSWAN is now being implemented in all collectorates, 152 blocks, 129 police stations, all District Panchayats and the Public Office at Thiruvananthapuram. The bureaucracy is not exhibiting the needed promptness even though the technical support is rendering by the concerned team, very effectively.²⁸

**Service and Payroll Administrative Repository for Kerala (SPARK)**

This project was launched with the aim of keeping an up-to-date details regarding the staff and their salary and it includes the web based solution for service and pay roll management which can process and provide
pay bills, reports, orders etc. The preparation of salary bills, service book maintenance etc are easy through the implementation of SPARK. Meanwhile the online data transfer between government departments, treasuries and Accountant General's Office is facilitated through this. The SPARK is working in a way that the digitized service book of the public servants is captured into the system and after that a Permanent Employee Number (PEN) will be given. This number is the important code for identifying the public servant in the database.

The project SPARK was implemented together by Information Technology and Finance Departments, in association with National Informatics Centre through the Kerala State Information Technology Mission. Now the SPARK is online in 10 departments and in good progress in other departments.

ICT for underprivileged

The INSIGHT is an ICT project undertaken by the Government of Kerala for the differently abled in Kerala and thereby converting Kerala into an inclusive knowledge society. This was started as part of the new ICT policy, 2007. The main objective of INSIGHT is to give training to the visually challenged in technology including web browsing, listening to music, burning CDs etc. The training programme for the first batch of visually challenged teachers was conducted at Thiruvananthapuram from 28th July to 1st August 2009. The initiative is very unique in nature and may hence have far-reaching outputs.

The System for Attumanal Neutral Distribution (SAND)

The SAND is an outstanding technology and it fuelled intervention of the district administration in Thrissur. This software system was created from the background of unauthorized mining of river sand in Kerala. The anti-social elements make advantages through the flourishing building construction by mining river sand in an unauthorized way. The rate of sand is going up and a truck load in the open market costs Rs.15,000 whereas Government received
was only Rs.1,000 per load in which Rs.500 meant for wages. The SAND was started at a time where the ordinary citizens were not getting sand at a reasonable rate.

The software SAND was designed and developed in Thrissur district with the technical support of National Informatics Centre (NIC). This attempt aims to eliminate the influence of middlemen and for providing river sand to the needy at a reasonable rate. The citizens can check the availability of sand through information kiosks and Akshaya Kendras and can verify the consumer list.

Under the system an individual is given sand for only one time for constructing the house and the individuals are identified through election ID cards. Besides, certificate from panchayat / municipality is needed for granting sand to them. The individuals can bring vehicles of his choice for transporting the sand and they are now able to get the sand at Rs.2,450/- from the mining point. The data base includes the information regarding river, sand availability, consumer's requests and details, allotment details, information regarding Panchayat, Municipality, Corporation, District, Taluk or Villages and profiles of operating officers. The Thrissur Collectorate won award from the Kerala Government for its innovative use of Information Technology to facilitate equitable and environmentally sensitive sand mining and distribution within Thrissur District. The initiative SAND is now ongoing in two districts in Kerala-Thrissur and Palakkad.

**Indian Institute of Information Technology and management (IIITMK)**

The IIITMK is a major institution for bringing excellence in Science, Technology related to information that nurtures professionals and leaders of high potential along with ensuring ethics, social responsibility and entrepreneurship. Even though, Kerala has excellent primary and secondary schooling systems along with many outstanding science and arts colleges, in the sphere of technology education, Kerala is somewhat lagging behind other South Indian States. It was under this background that the Government of
Kerala set up the Indian Institute of Information Technology and Management in Kerala (IIITMK) and the inception of the Institute was on 23rd November 2000.

A huge number of trained professionals are needed to manage e-governance projects in Government and software industry. The Kerala Government has taken steps for capacity building in the individual level by starting a Diploma on E-governance. The one year Post Graduate Diploma Course is offered jointly by the IIITMK and the Institute of Management in Government. It has the major objective of capacity building in e-governance through developing foundations in IT, Management, government process reengineering and change management. In addition it is intended to generate human resources with appropriate skills, knowledge, aptitude and leadership qualities for successful implementation of e-governance. Now the institute is offering Master of Science in Information Technology, M.Phil Programme in Eco-Informatics and Post Graduate Diploma in e-Governance.

It can be observed that even after a decade of its inception, the institute has not come up with an outstanding performance owing to certain constraints. Due to limited facility the institute is not in a position to offer M.Tech course and often the institute faces a shortage of permanent staff strength. Besides, the institute does not possess AICTE recognition. All these factors have a retarding role in providing an excellent output by the institute.

E-Governance and Various Government Departments

The Government has been giving much attention to the e-governance projects from their inception and these projects are implemented with a view to empower the citizens in his three major areas of interface with the government, i.e., Right for entitlement, Right for Information and effecting payments. For achieving transparency, correctness, speediness and efficiency, computerisation is on going in a majority of the departments. The e-governance initiatives of various departments are the following.
Agriculture

The Agriculture Department is using the software AIMS (Agriculture Information Management System) for streamlining the agricultural resources available in the State. This is monitored by the Directorate of Agriculture and starts from the 'Krishi Bhavan' at the village level, with the direct information of Agriculture Officers with the farmers. Consequently, the data get consolidated at Block, District and Directorate levels. The major initiatives of the Department are the following:

**e-Krishi**

e-Krishi is an agricultural market driven initiative implemented through IT enabled Agri Business Centres to bridge the existing gap in agriculture information flow and transaction management. The objectives of this initiative is the establishment a connected community of farmers in Kerala and provide an access to information on market demands, prices, agricultural practices through IT enabled transaction platform. Besides, it includes the aggregation of responsive farmer community of 1,00,000 with a cumulative farm land of 100,000 hectares cultivating priority crops as determined by the market demand. In addition, the enrollment of buyers in key markets including manufacturers, agricultural input providers, seeds, plantlets, fertilizers, pesticides, technology/methodology providers and consultants and the like are offered. Besides, documentation support and IT enabled platform where the members can seek information, transact and make or receive electronic payments are arranged. The Akshaya e-Kendras are utilized to reach masses of farming community and others stake holders in agriculture.

The e-krishi project of Kerala bagged the CSI-Nihilent e-governance Award 2008-09 to the project category 'G2B' for excellence.

**Karshaka Information System Services and Networking (KISSAN)**

The KISSAN is an outstanding e-governance project by the Department of Agriculture of the Kerala Government. The objectives of this initiative
include development and deployment of information system, network, processes and services for agriculture which may lead to amelioration of farmers' distress and their welfare along with increased farm productivity and better return for farm produce and products. The Indian institute of Information Technology and Management-Kerala (IIITMK) is the nodal point of this project by offering a technological support. With the help of IIITMK, the KISSAN initiative is undertaking social networking and video sharing to address the agriculture community in the state.

The multilingual portal based online advisory service facilitates an online platform for the farmers to interact with the scientists and agricultural extension officers. The portal also provides daily market information, GIS based weekly weather advisory, expert system on fertilizer recommendation etc. The initiative has generated more than 15,000 fertilizer recommendations and had responded to more than 16,000 queries from the farmers across the state.

A weekly agriculture television programme, Kissan Krishideepam on Asianet, provides selective information of best practices, success stories, departmental news, market analysis etc. The program content is produced by a team of professionals from the field of agriculture, Information Technology and media.

The KISSAN project has launched the country's first branded internet video channel in agriculture. It renders a platform for providing access to a number of videos on agriculture, animal husbandry, fisheries, best practices, scientific methods and the like. Besides, the project provides telephone based agri advisory services to farmers. Through this facility the farmers can ask questions to the agricultural scientists regarding their crops. For providing a location specific advisory service, the project has developed a detailed crop data base across the state.

The KISSAN project has won many awards including the E-India Award for best ICT enabled Agricultural Initiative of the year 2009, the
Manthan Award South Asia 2008 instituted by World Summit Award and Digital Empowerment Foundation, the PC QUEST Best IT Implementation for 2007 and the like.

**Commercial Taxes Department**

Computerisation of the Commercial Taxes Department was started in 1998, when the State Government decided to implement a comprehensive Kerala Commercial Taxes System (KCTS) under the General Sales Tax Act. From 1998 onwards, the KCTS is going through various phases of implementations. The different software modules such as the 'Dealer Registration', the 'Returns', the 'Clerk Post', the 'Tax accounting' and the 'Enforcement' deal with the electronic functioning of the Department in a variety of ways.

The Kerala Government implemented the electronic filing of Value Added Tax (VAT) in January 2009. Kerala is the first State in India in shifting commercial tax collection to a paperless, online way. If the dealers are not having internet facility, the Akshaya centre will help e-filing free of cost. The transaction can be done through the Akshaya centre across the state as e-filing facilitators, allocating IDs and passwords to each centre. The centre will help Login to e-filing application under the dealer's TIN and help dealer file Return details, upload sales/purchase invoice data and provide print out of the Returns. For facilitating e-payments, the Commercial Taxes Department has tied up with the State Bank of India and the State Bank of Travancore. On 1st December 2009, another milestone in e-filing regime was crossed, ie., e-filing of products coming under the Kerala GST-mainly beverages and petroleum products.

**Finance Department**

The Finance Department initiated the computerisation in 1998 when the State decided to computerise the preparation of the annual budget. The software 'BOUGETTE' helps in preparing the budget. The preparation of budget without computers will be a hectic task since it involves manipulation
of huge volume of data, complex calculation, high accuracy and limited time. The collection and consolidation of data from various departments, planning and budget document preparation by the Department need a wide application of e-governance.

Effective Management of LC Issuance (EMLI), the web-based application of the Department is for automating the Issuance of Letter of Credits (LOC) based on the bill submitted by the work executing Departments. In addition the Department has proposed the adoption of e-stamping for issuing e-stamps for denomination above Rs. 20,000/- The e-stamp is a technology based application and the electronic way of stamping documents replacing the conventional stamp paper/ franking. Over all, the Department has an informative and interactive website based on a content management framework which is properly maintained updated by the Department itself.

**General Education Department**

The *IT @ school* project is a school level computerisation initiative under the General Education Department of the Kerala State. The project was launched in the year 2000 for strengthening the school system by the implementation of Information and communication Technologies. The project is now running over 5,000 schools in the state and this includes a network of 200 master trainers and 5600 school IT co-ordinators in the State. The major e-governance initiatives under taken by the project include a single window admission system for Plus One admission. This system brings more transparency, efficiency and social equity to the entire process with the help of ICTs. The *Noon Meal Computerisation* is another initiative to implement the management of noon meal distribution programme in all schools properly by using the online system. The project has also a Youth Festival Software for a better co-ordination of activities for the State School Festivals in Kerala. Further, there is a centralised online Textbook intend system for facilitating timely distribution of all text books before the opening of schools.
The IT @ School Project dominates the free software initiatives in the State and with the implementation of free software based IT practical examination in Std 8,9 and 10, it has become the single largest simultaneous deployment of Free and Open Source Software (FOSS) based IT education in the world. From the year 2007 onwards, the practical examination in the Std X is conducted in free software prepared by IT @ School.

The IT @ school project in a backward region of Pathanamthitta District, Kalloopara has received national recognition in the educational history of India. The project named IT @ Kalloopara.all schools includes, the IT education from the primary level onwards. This initiative was implemented in 83 primary schools and 23 High Schools in Kalloopara Constituency. The IT @ Kalloopara.all schools has in its computer curriculum Malayalam Computing, C.D. library, e-learning, LCD projector etc which has the potential to complete with the IT education conducted in cities. By this time Rs.2.35 crore was spent for this project among which the lion share of the contribution was from the M.L.A Fund. Even though Kallopara is a remote area, it has become a role model in implementing effectively the benefits of ICTs by crossing the regional constraints through the co-operative efforts from academicians, politicians and bureaucrats.

EDUSAT and ViCTERS initiatives

The project IT @ school is the nodal agency for EDUSAT operations in the State. The EDUSAT is the satellite launched by India for the exclusive purpose of imparting education. The IT @ school project has successfully implemented different activities based on EDUSAT including the launch of the channel, ViCTERS (Virtual Classroom Technology on Edusat for Rural schools) for educational purpose. This channel was started in 2006 and a number of schools in the State are now able to access ViCTERS Channel. It can also be transmitted through the local cable networks and covers majority of the households in Kerala. Apart from academic contents oriented
programmes, general topics and spoken English classes and face to face with eminent personalities, quiz time etc. have also started on this channel.

**Health Department**

Proper and timely implementation of e-governance can do a lot in rejuvenating the health sector since the health issue is very critical in Kerala. A project named *Dr. SMS* was started in 2008 to enable people to use their mobile phones to receive information on health resources. This provides a list of medial facilities available in the locality, hospitals having expertise in various medical specialities, doctors in the locality etc.

A telemedicine software *e-Dhanwanthari* was deployed by the C-DAC for offering variety of functionalities for consulting from remote hospitals to speciality. It includes the modules like EMR (Electronic Medical Record creation), Telepathology, Teleradiology, Tele - ECG etc. Now the hospital management system is also done through the computerization of the Health Department. Computerization of medical colleges facilitates better out patient management, in patient admission, ward management, lab management, resources scheduling, pay ward reservation, enquiry etc.

The researcher could observe that the computerization of Medical Colleges needs more enthusiasm on part of policy makers and bureaucrats. The plight of Medical Colleges have raised many criticisms and under this circumstance the researcher suggests the implementation of an efficient online interactive public grievance redressal cell for each medical college rather than depending on the conventional complaining method. The effective utilization of both this grievance redressal cell and Right to Information Act can take a corrective effort for better service delivery. Another observation made by the researcher is that in a situation where ordinary citizens depend more on government medical colleges, the e-governance implementation should be in an accessible way. There are a lot of middlemen between government doctors
and ordinary people. A proper touch screen facility which can be easily understood should be arranged in the Medical College Hospitals regarding the availability of doctors, experts on different fields of medicine, status and availability of wards, paywards etc. This to a large extent can eliminate corruption in the hospitals and justice can be assured to the needy.

**Law Department**

The computerisation of the Law Department was conducted in two phases. The automation of generalized functions of the department comprising of modules like *Notary Management, Law library, Law publication, Establishment and payroll, Law Administration, Court Administration and Assembly* was covered in the first phase. The second phase constituted the development of software modules for conveyancing, subordinate legislation, suits with interface to file management system and installing computer aided translation and its tools in the Translation section. All functions of the Law Department have been automated including its critical knowledge-based functions. The Law Department became the first fully computerized department of the Government of Kerala on 26th March 2008.

The digital file flow system called *Law Information Management System* (LIMS) helps to manage various activities within the organization effectively. The functioning of the Law Department is closely integrated into five components of the LIMS such as Worklist, Recordroom, Knowledge Management System, Dashboard and Reports. The officials of the Law Department were included to form a comprehensive network of users who facilitate the processing of file in the automated environment.

Eventhough the Law Department has become noteworthy in computerization, the District Courts and Sub Courts have not yet completed the process. In these courts data entering only up to the year 2007 was done. The data entering process was entrusted to the members from Kudumbasree
but the Government was not giving adequate payment to them. Hence they have given up the job. Only some of the Bench Clerks in the courts were given training in computerization process and majority of the employees are not having good awareness in handling the computers. This plight highlights the superficial effort on part of the Government in implementing e-governance. The Government is now in an effort to make all courts online.

**National Employment Services**

The *Thozhil* is the software developed as part of the total computerisation of employment exchanges of Kerala, which encompasses the registration as well as selection processes in the employment exchanges. This software is able to do all the activities of the employment exchanges. The exchanges are having computerised counters to eliminate delay and for facilitating the registration, renewal and placement activities promptly. There is an online interactive website to develop a data bank of highly qualified, marketable candidates from the Live Register of the employment exchanges in Kerala to allow an easy access for private sector employees and others. In addition, the data bank also contains the data regarding persons with professional, executive and engineering diploma and degrees. It further provides online information to the registered candidates to review their registration and to add their additional experience and details.

The computerisation of the employment exchanges will make radical changes in the employment scenario compared to the delayed services in previous decades. Now the present status regarding the employment opportunity of a registered member can easily be found out.

**SC/ST Department**

A unique e-governance initiative is implemented in the SC/ST Department. The project *E-Grantz* aims to leverage ICT for timely disbursement of financial aids to students. Here, the e-governance is playing a
The E-Grantz system makes the whole process of sanctioning and disbursement of grants and stipends online.

The E-Grantz system was implemented as a pilot project in 52 post metric colleges in Alappuzha and now this is rolling out the entire state of Kerala. It has the provision to transfer fund to bank directly, avoiding all delays in the transaction of funds from the treasuries to the students. The students can collect money from any SBI/SBT ATM counters.

Public Works Department

Conventionally, the Public Works Department in Kerala has been evoking many allegations due to its ineffective way of functioning irrespective of the ministry in power. It was due to the cumbersome jobs, lack of transparency, corruption and overall red-tapism. This is one of the departments where the introduction of technology can make a revolutionary change in the mode of functioning.

It was in 2002 that a web-based e-governance system was decided to create in all the wings of the public works Department. The IT Department and Kerala IT mission jointly provide adequate guidance for the e-governance initiatives of PWD. The major initiatives under IT implementation in the Department are Web based Information and Governance System (WINGS), Road Maintenance Management System (RMMS), Road Information Management System (RIMS) and Financial Management System (FMS).

The different modules incorporated in the e-governance activities of the Department are the following:

File tracker : This helps the PWD officials to track documents in different PWD offices and help them to monitor the functions effectively along with providing facilities to store, retrieve and track documents and files. The system helps in the maintenance of files shown in the personal register kept by
clerks, which includes the details such as owner of the file, origin of the file, present status of the file, tapal documents etc.

The *Projects Management* helps in the proper management of projects related information and monitoring of major events in implementation. The module *communication* allows faster communication between various offices and provides system generated alerts regarding the progress in work. The *E-knowledge* is the module which provides a data base of orders, circulars, Acts, PWD codes, manuals etc. This supports the department for reference by acting as source of knowledge. The *Assets* is a data base concerning the assets of the Public Works Department such as roads, bridges, building etc. The module *e-tendering* covers the aspects such as preparation of tender schedule, publishing of tender online submission of bid by the bidders, opening of tender, evaluation of tender bids etc. The module *grievance redressal* helps public to post complaints and grievances related to the working of PWD to take remedial measures.

The researcher could observe that even if the above mentioned facilities are there in the IT implementation of the Department, it often cannot raise upto the expectations and needs of the public. The conventional bureaucratic lethargy still exists in the Department and the construction, repairing and maintenance of roads are often done very promptly only when there is a visit by a VIP under 'Z' category. Due to poor conditions of the roads, two wheeler and four wheeler accidents are very common in Kerala. Besides, collapse of roads due to improper maintenance, is frequently happening during Monsoons. Lack of co-ordination and lapse of funds are very visible in the Department functioning.

**Kerala Public Service Commission**

Apart from the implementation in the Departments, the e-governance activities in the Kerala Public Service Commission have received much
recognition. The government recruitment agency now takes up procedures very fast with the help of ICTs. The Public Service Commission has processed more than 10 million applications in the last ten years and the web window of the KPSC was launched in the year 2003.

The site has outstanding hit record and before the website came into being, announcing the result of a departmental test was time-consuming effort since the hard copy of results took many weeks to reach other offices. But now with the advent of technology, marks are displayed online along with an e-version of the answer manuscript. This transparency can reduce nepotism in the recruitment process and thereby only the qualified candidates will be getting absorbed in the public service.

The ensurance of Right to Information Act is also done through the portal with a single click into many pages. The e-governance activities in the Kerala Public Service Commission is a landmark in improving the quality and efficiency of public service in Kerala.

The e-governance activities in the Motor Vehicles, Higher Education, Registration, Revenue and Local Self Government Departments are discussed in the upcoming chapter since the researcher conducted field study in these departments.

It is to be noticed that despite of Kerala's literacy rate and adaptability to technology, it has 18th rank in the score card in the IDC- Dataquest Best e-governed states ranking, 2008-09. Tamil Nadu, Himachal Pradesh, Delhi, Haryana and Andhra Pradesh emerged the five best e-governed states of 2008-09, according to a study by leading IT publication Dataquest and the top technology research firm IDC (International Data Corporation).
Table 2.3

The Indian States' e-governance scorecard

<table>
<thead>
<tr>
<th>States</th>
<th>Rank 2008-2009</th>
<th>Rank 2007-08</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamilnadu</td>
<td>1</td>
<td>4</td>
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<tr>
<td>Himachal Pradesh</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Delhi</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Haryana</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Chattisgarh</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td>Gujarat</td>
<td>8</td>
<td>19</td>
</tr>
<tr>
<td>Maharashtra</td>
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<td>6</td>
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<tr>
<td>Assam</td>
<td>11</td>
<td>12</td>
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<tr>
<td>Uttarakhand</td>
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<td>Kerala</td>
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<td>Jharkhand</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Bihar</td>
<td>21</td>
<td>New Entrant</td>
</tr>
</tbody>
</table>

Source: 5th Dataquest - IDC E-Governance survey 2008-09

The states of Tamil Nadu and Andra Pradesh climbed three spots each over last year's ranking to reach at No.1 and No.5 respectively. Karnataka and Kerala record the highest drop in e-governance satisfaction even if they are considered as India’s 'silicon valley' and most literate State respectively.
While global policy mandates encourage to consider the achievement of 'good governance' in terms of rolling back the State, a long-term survival of e-services interventions in Kerala appears to depend crucially on the continued involvement of the government, although the nature of its role may change. As of now, e-governance projects are being run very effectively in certain departments only. But this is now gradually extended to all departments leveraging the power of ICTs to enhance administrative functions and increase transparency. A detailed study of selected departments from a popular perception will be discussed in the next chapter.

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