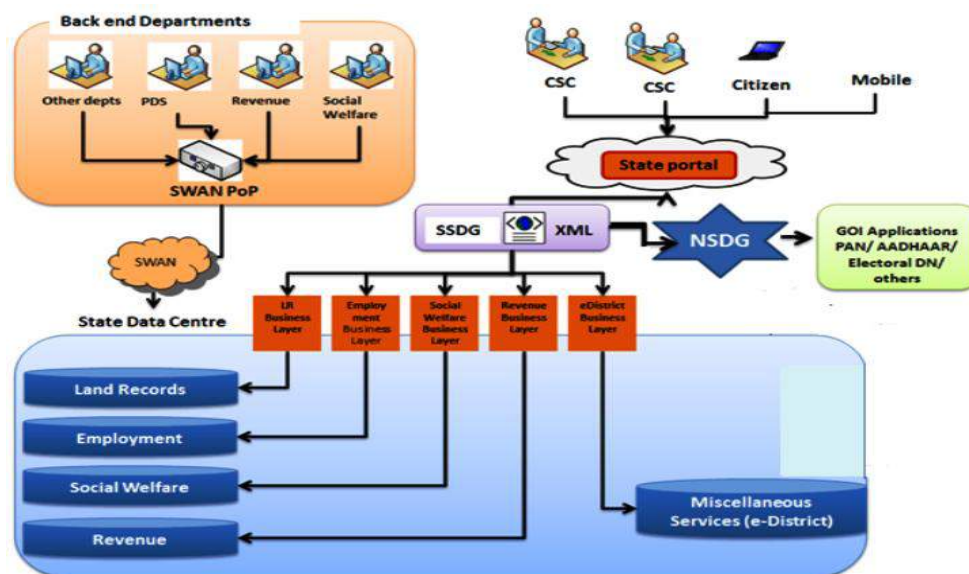


4.3 e-Governance initiatives of Electronics and Information Technology Department, Government of Kerala

Introduction

4.3.1 Electronic governance (e-Governance) is the application of Information and Communications Technology (ICT) to the process of government functioning. The National e-Governance Plan (NeGP), introduced (May 2006) by Government of India (GoI), aimed at making all Government Services⁴⁵ accessible to the common man in his locality through common service delivery outlets. The NeGP was intended to ensure efficiency, transparency and reliability of such services at affordable costs to provide basic services to the common man. NeGP envisaged a three-tier architecture - Common Service Centres (CSC) as the first tier acting as front-end delivery points for citizen services; common and support infrastructure viz., State Wide Area Networks and State Data Centre as the second tier with Mission Mode Projects⁴⁶ acting as the final tier of the architecture. e-Governance architecture can be represented graphically as given in **Chart 4.1**:

Chart 4.1: e-Governance architecture



The first Information Technology Policy of Government of Kerala (GoK), 1998 envisioned to use ICT to deliver Government services in a manner that was affordable, reliable, accessible and delivered to the citizens in a short span of time. Services were envisaged to be provided in an integrated manner to the citizens from single point of access (State portal). As part of the IT policy, GoK implemented e-Governance projects like State Information Infrastructure (SII) (which included State Data Centre), Citizen Call Centres and

⁴⁵ Example: Issue of certificates, utility payment services, services under Right to Information Act, public grievances, etc.

⁴⁶ A mission mode project is a project within the NeGP that focuses on one aspect of e-governance, such as banking, land records or commercial taxes etc. Within NeGP, "mission mode" implies that projects have clearly defined objectives, scopes, timelines and measurable outcomes.

FRIENDS⁴⁷ even before the introduction of NeGP by GoI. Thus, the State of Kerala was one of the forerunners in the implementation of e-Governance initiatives.

NeGP projects introduced by Ministry of Electronics and Information Technology, Government of India (GoI) supplemented the existing SII projects in the State. e-Governance initiative in the State has either been funded from State Plan or as Mission Mode Projects under NeGP. The revised Information Technology Policy, 2012 (IT Policy 2012)⁴⁸ also reiterated GoK's mission of using ICT for the effective, transparent and efficient delivery of services to the citizens seamlessly through an integrated e-Governance framework.

GoK designated (1999) Electronics and Information Technology Department as the authority for coordinating the e-Governance initiatives in the State. Kerala State IT Mission⁴⁹ acts as an autonomous nodal implementation Agency for the IT initiatives of the Department.

4.3.2 Audit examined three⁵⁰ infrastructure and six⁵¹ service delivery projects⁵² in the backdrop of IT Policy, 2012 in order to assess whether:

- IT projects related to e-Governance initiatives were conceptualised and implemented as per IT Policy and GoK guidelines;
- The strategies outlined in the IT Policy were implemented with economy and efficiency; and
- The envisaged levels of service delivery were achieved through e-Governance projects effectively.

4.3.3 Audit criteria derived from the following sources were adopted for the Compliance Audit:

- Information Technology Policy, 2012 of Government of Kerala;
- Relevant Acts and rules of GoK including Right to Services Act, 2012;
- Guidelines and related Government Orders issued by GoK for implementation of e-Governance projects;
- Implementation and operational guidelines issued by Government of India for NeGP projects;
- Guidelines issued by Central Vigilance Commission; and
- Stores Purchase Manual issued by GoK

Audit findings

4.3.4 The e-Governance initiatives implemented in the State resulted in enhanced service delivery and the State ranked⁵³ among the top five in the

⁴⁷ Fast Reliable Instant Efficient Network for Disbursement of Services, a single window “no Queue” integrated remittance centre.

⁴⁸ Previous IT Policies were issued in the years 1998, 2001 and 2007.

⁴⁹ A registered society.

⁵⁰ State Data Centre, State Wide Area Network and Video conferencing.

⁵¹ e-District, State Service Delivery Gateway, Citizen Call centres, e-Office, m-governance and Service Plus.

⁵² Out of a total of 32 projects.

⁵³ Source: www.etaal.gov.in

country in terms of volume of e-transactions. Audit, however, noticed the following issues in areas of planning, infrastructure creation and project implementation relating to e-Governance initiatives.

Planning and Co-ordination of e-Governance initiatives

4.3.5 The Electronics and Information Technology Department (ITD) was the designated authority for coordinating the e-Governance initiatives in the State. As a part of its role, ITD issued guidelines for implementation of e-Governance initiatives in the State in September 2009. The guidelines envisaged avoiding duplication of development of applications by different Government Departments/Agencies, non-compatibility of platforms deployed across organisations and to ensure optimum use of resources used for e-governance initiatives. With this intention, the Guidelines stipulated that the User Requirement Specification (URS), the Functional Requirement Specification (FRS) and implementation plan of all e-Governance initiatives valued at over ₹10 lakh should be approved by ITD.

Audit, however, observed that ITD did not have any comprehensive information about concurrence given on URS and FRS for all the e-Governance initiatives undertaken by various Departments/Agencies in the State. Two State Government agencies⁵⁴ (out of a total of 26 Departments approached) responded to audit enquiries that they did not take concurrence of ITD for implementation (January 2017 and March 2010) of their IT projects under 'Ease of doing Business initiatives⁵⁵' and 'Assurance Implementation Desk⁵⁶', even though their implementation cost exceeded the prescribed limit of ₹10 lakh. This indicated that e-Governance initiatives were being undertaken independently by various Departments/Agencies and ITD did not have an overall control of such implementation as envisaged in the Guidelines.

Audit also observed that though the e-Governance guidelines prohibited planning of common IT infrastructure like call centres and video conferencing facility, 10 government departments/agencies set up separate call centres/helpline as shown in **Table 4.9**:

⁵⁴ Kerala State Industries Development Corporation Limited and Department of Parliamentary Affairs.

⁵⁵ A project intended to improve ease of doing business in the State.

⁵⁶ A Web-enabled System for the monitoring of assurances made in the State Legislative Assembly.

Table 4.9: List of call centres/help lines other than Citizen Call Centre

Sl. No.	Name of the call centre/ Help line	Department/Agency	Phone number
1	Crime stopper	Kerala Police	1090
2	Comprehensive Health Insurance Agency of Kerala	Labour Department	18002002530
3	Food adulteration helpline	Kerala Commissionerate of Food Safety	18004251125
4	Toll free number for complaints	Kerala Water Authority	18004255313
5	MGNREGS Helpline	Rural Development Department	18004251004
6	Norka Roots Call Centre	NORKA Department	18004253939
7	Women helpline	Kerala Police	1091
8	Direct Intervention System for Health Awareness	National Health Mission	1056
9	Farmers call centre and Information Hub	Agriculture Department	18004251661
10	Customer care centre	Kerala State Electricity Board Limited	1912

(Source: Data furnished by IT Department)

The call centres were being operated despite specific GoK directions (June 2015) to refrain from setting up of individual call centres under any circumstances. Also, a separate video conferencing facility at an estimated cost of ₹22.25 lakh was proposed (2017) to be set up in Animal Husbandry Department. These instances pointed to the fact that expensive infrastructure was being duplicated, which was against the guidelines issued by the IT Department.

Independent e-governance initiatives without the knowledge of ITD and duplication of expensive infrastructure in deviation from the stipulated guidelines pointed to lack of co-ordination of e-Governance initiatives.

Preparedness for Disaster recovery

4.3.6 State Data Centre (SDC) is one of the core infrastructure components of e-Governance initiative and host critical data and applications of user departments. Hence, a proper Disaster Recovery and Business Continuity Plan should be put in place against any possible adverse events. Audit, however, observed the following:

a. Non-formulation of Disaster Recovery and Business Continuity Plan

As per the Guidelines for Technical and Financial Support for Establishment of SDC published by Ministry of Electronics and Information Technology, proper planning on Business Continuity⁵⁷ including Disaster Recovery should be formulated and implemented by the State. However, it was noticed that a

⁵⁷ The business continuity planning (BCP) is the creation of a strategy through the recognition of threats and risks facing an entity, with an eye to ensure that personnel and assets are protected and able to function in the event of a disaster.

Disaster Recovery and Business Continuity Plan were not formulated in accordance with the Guidelines.

b. Underutilisation of Disaster Recovery facility

The State of Kerala is provided with a reserved space of 25 Tera Byte at National Data Centre of National Informatics Centre, New Delhi as part of technical assistance provided to State for setting up SDCs under NeGP. SDC is utilising this space for disaster recovery purposes. Audit, however, observed that out of this reserved space, only 11.70 Tera Byte (less than 50 per cent) was allotted (August 2017) based on request by SDC.

Non-formulation of Disaster Recovery and Business Continuity Plan and underutilisation of the available facility indicated under preparedness against any disastrous events.

Information Technology infrastructure in the State for e-Governance Projects

4.3.7 In order to make government services available to the public, NeGP envisaged creation of various Information and Communication Technology (ICT) infrastructures like State Data Centre and State Wide Area Network as tier-II of e-Governance architecture. Audit examined the creation of such ICT infrastructures and the audit findings are discussed below:

State Data Centre

4.3.8 NeGP identified State Data Centre (SDC) as one of the core infrastructure components to consolidate services, applications and data to provide proficient electronic delivery of services. In Kerala, there are two SDCs - Old Data Centre (SDC 1), operational since the year 2005 and New State Data Centre (SDC 2), operational since the year 2011. As of July 2017, the two State Data Centres co-hosted⁵⁸ 541 websites and co-located⁵⁹ 220 servers of 44 Government Departments/Bodies/projects.

Audit reviewed various aspects of functioning of SDC 1 and 2 and observed the following issues:

Implementation of Cloud Hosting in State Data Centre

4.3.9 Cloud hosting refers to hosting of application and websites on cloud computing⁶⁰ infrastructure provided by a cloud service provider. These services provided in remotely located servers can be accessed by users on demand basis over internet. Adoption of cloud computing would enable the

⁵⁸ In co-hosting, user departments are permitted to host their websites/applications on the servers owned by SDC, by allocating a virtual space to the users in an existing server.

⁵⁹ In the case of co-location facility, SDC provides only physical space and other amenities such as power, diesel generator backup, security, etc. to the user departments for co-locating their servers, i.e., providing the physical environment for functioning of servers.

⁶⁰ Cloud computing refers to delivery of shared ICT resources over the internet which can be accessed on demand and elastically provisioned with minimal effort.

departments to increase the number of services to be offered due to on-demand availability of server space, thus, resulting in rapid elasticity.

As per the IT Policy, 2012, GoK affirmed to promote the use of cloud computing to enhance public service delivery for optimal use of resources and maximising public value. Subsequently, GoK approved (September 2013) the proposal (July 2013) of Kerala State IT Mission for enablement of cloud in SDC 2. It was envisaged that with the implementation of cloud infrastructure, additional server purchase from various departments can be reduced. Servers for cloud implementation were procured and commissioned in SDC 2 in April 2015.

Audit observed that:

- Line Departments/Agencies⁶¹ continued to procure servers for co-location even after implementation of cloud hosting in SDC 2 due to which, benefits like better utilisation of available resources, intended to be achieved through a cloud based infrastructure in SDC remained unachieved.

GoK replied (December 2017) that departments were intimated not to purchase additional servers and co-locate in SDC. GoK admitted that there were cases in which certain departments like Treasury, Taxes, Police, *etc.*, continued to co-locate servers to ensure confidentiality and to comply with regulatory requirements. Other than these special cases having concurrence of GoK, all other departments complied with the directions.

Reply of the GoK was not acceptable as Audit observed that other departments/bodies like Registration Department, Kerala Water Authority, Kerala Public Service Commission, National Rural Health Mission, Service and Payroll Administrative Repository for Kerala, *etc.*, also purchased and co-located their servers (July 2015 to June 2017) in SDC after the implementation of cloud in April 2015.

- As per provisions of Request for Proposals (RFP) for implementation of cloud in SDC 2, it was the responsibility of System Integrator who was managing SDC (Sify Technologies Limited) to ensure the backup and restore services (Warm Standby⁶²) of cloud Virtual Machines (VMs). It was also decided (December 2015) that one server from the KSITM server pool would be placed as a Backup Management server (Cold Standby) for Cloud Infrastructure, which would be added to the system only in case of any disaster.

Cloud VMs store critical data of major projects like e-Office (113 VMs), e-Health (31), Kerala Police (12), Finance Department (8), KSITM (23), *etc.* Hence, it was critical that their backups were taken periodically.

⁶¹ Revenue Department (e-District project), e-Office, Kerala Water Authority, Kerala Public Service Commission, Registration Department, Service and Payroll Administrative Repository for Kerala and Health Department.

⁶² Warm standby is a method in which data is backed up at regular intervals from the primary system.

Based on examination of monthly performance reports submitted by Sify Technologies Limited to KSITM (August 2016 to June 2017), Audit, however, observed that such a backup was not being taken. KSITM also failed to initiate any action on these reports to ensure that RFP provisions were complied with. Absence of backup increased the chances of data loss.

GoK replied that new servers and their licenses for Warm Standby were since purchased and backup was being taken. However, the detailed backup plan and latest performance reports of the Operator were not furnished to Audit for verification. GoK admitted that the Cold Standby server, which existed initially for taking backup was diverted to the production environment to accommodate more departments in cloud hosting and for meeting the increased demand for cloud storage. The reply was silent as to whether a Cold Standby was maintained at present and hence, Audit could not make any conclusion as to whether Cloud environment in SDC was adequately prepared against any disasters.

Security Audit of State Data Centres

4.3.10 As per Guidelines for Technical and Financial Support for Establishment of State Data Centre issued by MeitY, the State shall get the security of Data centres audited by third party agency once in six months and also whenever there was significant upgradation of systems which include hardware, software and network resources. Such audit shall bring out confidentiality, security and privacy of data, any apparent risks and extent to which data centre operator complied with laid down policies, standards, *etc.*

SDC 1 provided co-hosting and co-location facilities for citizen-centric and revenue generating departments like Treasury Department, Commercial Taxes Department, Kerala State Public Service Commission, several universities, *etc.* The security audit of SDC 1, conducted by CERT-K⁶³, an internal wing of KSITM reported serious vulnerabilities in December 2013. Audit, however, observed that no security audit was conducted by any third party agency in SDC 1 even though the official website of GoK (hosted in SDC 1) was defaced in January 2014.

GoK replied (December 2017) that a new tender was floated for selection of Third Party Auditor wherein audit of both SDC 1 and SDC 2 was included under the scope of work.

State Wide Area Network

4.3.11 State Wide Area Network (SWAN), a part of tier-II of e-Governance architecture, was identified as an element of the core infrastructure for supporting e-Governance initiatives under NeGP. SWAN was envisaged as the converged backbone network for data, voice and video communications

⁶³ Computer Emergency Response Team-Kerala (a security initiative of KSITM).

throughout the State with Point of Presence⁶⁴ (PoP) at State/District/Block Headquarters. Government offices in the vicinity of PoP also could be given accessibility to SWAN through Local Area Network and leased lines.

SWAN was implemented in Kerala under a Build, Own, Operate and Transfer (BOOT) contract through KSITM⁶⁵. United Telecoms Limited, Bangalore (UTL), the BOOT contractor, was selected (2006) through a tendering process and an agreement was entered into with UTL and KSITM in March 2007 for the implementation of Kerala SWAN (KSWAN). As per the agreement, UTL set up (June 2008-October 2009) PoPs at 14 District Headquarters (DHQ) and 152 Block Headquarters (BHQ). UTL was entitled for Quarterly Guaranteed Revenue (QGR)⁶⁶ during the BOOT period. As of May 2017, 3,904 offices were connected to the network using wireless radios, leased lines and Local Area Network⁶⁷.

Failure to assess reasonableness of rates

4.3.12 As per the provisions of SPM, every purchase department shall evaluate the reasonableness of the price to be paid before placing the contract. GoK awarded (January-May 2014) contract for the operation and maintenance of KSWAN project during the post BOOT period (up to June 2014) to UTL, for ₹3.44 crore. The rate was arrived at by charging 10 *per cent* interest at compound rate for 7.5 years on the rate quoted by UTL for operation and maintenance portion of the BOOT contract in 2006. Subsequently, based on the decisions taken in the KSWAN State Implementation Committee meetings from time to time, the contract period was extended every year with an increase of 10 *per cent* on the previous year's contract amount. Total contract amount for the period from June 2013 to July 2017 worked out to ₹18.87 crore. Audit, however, noticed that no effort was made by the committee to ensure reasonableness of the initial contract amount (₹3.44 crore) or the subsequent annual increases thereafter in violation of provisions in the SPM in this regard.

GoK replied (December 2017) that initially, the network envisaged only 1,660 wireless towers for horizontal connectivity to Government offices and now the connected offices were around 3,700 which were more than double the numbers. Rates were increased after taking factors like cost for annual maintenance, which was not included in the initial bid price (2006). Hence, considering the above facts, 10 *per cent* increase was found to be reasonable.

The reply of the Government was not acceptable because only 1,464 offices were connected to KSWAN using wireless towers so far. Other offices were connected using leased lines, LAN, *etc.*, for which provisions were envisaged in the district and block level PoPs as per the RFP. As such, this did not

⁶⁴ Point of Presence mainly refers to an access point that connects to and helps other devices establish a connection with the SWAN.

⁶⁵ In Kerala, SWAN was implemented as an extension of already available State Information Infrastructure from Thiruvananthapuram to Kozhikode.

⁶⁶ QGR is the guaranteed revenue that the operator shall be paid at the end of each quarter as the compensation for implementation and management of SWAN project.

⁶⁷ UTL established connectivity to 1,464 offices using wireless radios which was part of the BOOT contract. Other offices were connected to network using leased lines and LAN.

amount to additional work. Further, KSITM did not make any effort to work out the actual cost of annual maintenance to assess its impact.

Service delivery projects

Online service delivery projects

4.3.13 Online service delivery projects proposed automation of Government process work flow⁶⁸ and back-end digitisation of Government Departments for seamless online delivery of services through a dedicated portal. Citizens could access these services by submitting electronically filled up forms (web forms) either using own computers or through Citizen Service Centres. e-District and State Portal cum State Service Delivery Gateway (SSDG) Project were two major online service delivery projects implemented in the State. State-wide roll out of e-District project was completed in March 2013. Subsequently, State portal and SSDG project went live in June 2014. At present, these two projects were having separate web portals for service delivery. While e-District project was (initially) restricted to Revenue Department, State Portal cum SSDG Project intended to cover thirteen other Government Departments in the State whose services were to be delivered through a State Portal.

Audit reviewed the current state of implementation of the e-District and SSDG projects and observed the following:

Non-alignment with the Integrated Framework and single window delivery goal

4.3.14 As per the integrated framework guidelines issued (August 2012) by MeitY, all e-services were to be ultimately delivered through the single window of the State Portal. For this purpose, MeitY stipulated that services under e-District project, which were not taken up under SSDG should be integrated with SSDG so as to make them available through the State Portal. The IT Policy 2012 of GoK also declared the objective of providing a single unified portal for providing citizen services.

In line with the above, 24 certificate services under e-District project of Revenue Department were integrated and made available through the State Portal on completion of the project. Audit, however, observed that though 23 other services (*Appendix 14*) were subsequently made available through e-District portal (August 2017), they were not integrated with SSDG and made available through State Portal. This included services like Right to Information, posting of public grievances, police department payments, etc. There was also no roadmap to make these services available through State Portal and SSDG leaving the citizens to depend on multiple channels for accessing services.

⁶⁸ Various steps involved in delivery of Government service.

Alternate channels of service delivery also resulted in poor transaction count in State Portal. Since going live in 2014, the platform processed only 1,165 transactions over a period of three years (up to July 2017).

Thus, the ultimate aim of electronic service delivery through a single gateway remained unachieved and the amount of ₹6.52 crore spent on the State portal cum SSDG project remained unfruitful, considering the negligible number of transactions.

GoK stated that efforts were being made for integration of all existing services of e-District with State Portal and SSDG Project and once it became completely operational, public interface of e-District will be closed.

e-District project

4.3.15 On completion of State-wide rollout in March 2013, e-District project offered 24 certificate services of Revenue Department through the e-District portal. At present, the project was offering 47 services (*Appendix 14*). Following audit observations on the project are made:

Enhancing ease of service delivery

4.3.16 As per the guidelines for Integrated Framework for delivery of services issued (August 2012) by MeitY, States should prioritise citizen services by focusing on those services, which can be provided immediately across the counter. This was expected to enhance ease of service delivery and avoid multiple visits to the service delivery outlet. For this purpose, MeitY classified e- services into the following types:

- Type 1 services, which can be provided “instantaneously” across the counter. For delivering these services, an accurate digital database was necessary, *e.g.*, providing copy of land records.
- Type 2 services, which require minimum two visits, but can migrate to Type 1 with due data digitisation, one-time physical verification and digital certification.
- Type 3 services, which require physical presence of citizen/verification/inspection and cannot be delivered across the counter *e.g.*, issue of driving license, *etc.*

The guidelines stipulated (August 2012) identification of at least 3- 4 services, within a period of 6- 9 months, out of the e-District services, which can be provided as Type 1 services.

WIPRO Limited, the State Programme Management Unit of e-District project, conducted (2015) an Impact Assessment and Outcomes Study of e-District project. In its report, WIPRO noted that:

- Presently, the Revenue certificates cannot be issued ‘Over the Counter’ as Type 1 certificates as most of them require at least one-time field verification for its issue. So, the migration strategy recommended was to

convert the certificate services from Type 3 to Type 2 in cases of citizens applying for a certificate for the first time. With effect from the second time onwards, since the digitised database was available, the certificate may be issued 'Over the Counter'- Type 1 Certificate.

- Fifteen out of twenty three types⁶⁹ of certificates issued by the Revenue Department through e-District was valid only for the purpose stated in the certificate. Hence, they were not reusable. In order to avoid the same, WIPRO Limited recommended that validity of the certificate may be fixed for a certain tenure (minimum 6 months) or lifetime rather than for a specific purpose, wherever possible, for migration to Type 2 or Type 1 certificates.

Even though a specific migration strategy for conversion of Type 2/Type 3 to Type 1 services was recommended by the State Programme Management Unit, no service (excluding payment services) was enabled to be provided instantaneously as Type 1.

GoK replied that administrative orders were issued (March and August 2017) designating four certificates (Nativity, Domicile, Caste and Community) as general purpose and also increasing their validity period. The software was since modified for incorporating changes with respect to Caste and Community certificates. Audit, however, observed that none of the certificate was still made available as Type 1.

Low volume of services

4.3.17 The Guidelines for Integrated Framework for delivery of services issued in August 2012 stated that the measure of success of e-District project was the number of e-service transactions, which happen through the project. Accordingly, provisions of the agreement entered into (30 May 2014) with National Informatics Centre (NIC) for State-wide rollout of e-District project in Kerala stipulated that at least 10 services listed under e-District project should attain 'high volume' status of 150 transactions per month per service for the entire district.

NIC rolled out State-wide e-District project in Kerala by March 2013. As detailed in **Appendix 14**, the project offered 47 services. The number of transactions that were recorded under each category during the three-year period covered by Audit is given in **Table 4.10**:

⁶⁹ As referred to in the report of WIPRO Limited.

Table 4.10: Number of transactions in e-District project

Sl. No.	Type and No. of Service	Minimum number of transactions as per the agreement with NIC	Actual number of transactions
1	Certificates (23)	17,38,800	1,80,00,000
2	RTI Normal	50,400	126
3	RTI Appeal	50,400	18
4	Grievance	50,400	24,195
5	Revenue Court Cases (4)	2,01,600	88
6	Forest Department (6) Services	3,02,400	6,191

(Source: Data furnished by Kerala State IT Mission)

Above Table shows that except certificate services, the transactions under other categories were negligible. In this connection, Audit observed that:

- The Guidelines for National Rollout stipulated implementation of ten categories of services, of which, five categories were mandatory and the remaining were optional. Out of the mandatory services identified in the Guidelines (Certificate issue services, Social welfare schemes (like pensions, scholarships, *etc.*), Revenue Court services⁷⁰, Ration card, Grievance redressal and RTI services), Ration card and social welfare schemes were not included in the e-District project because the departments concerned had their own IT initiatives to offer such services with separate websites for service delivery. But, these excluded services were not substituted by optional services like police service, collection of taxes, *etc.*, after assessing their volume of transactions.

Further, even though RTI and Public Grievances were included in the e-District project, there was no Government Order stipulating State Government Departments to compulsorily adopt RTI services through e-District. Hence, only 5 Departments⁷¹ (out of a total of 42) voluntarily subscribed to online RTI service, leaving one of the most important public services with very low volume of adoption among the public.

Thus, due to non-adoption of high volume services and inadequate steps in popularising other existing ones, e-District portal was at present heavily dependent on certificate services to generate high transaction levels.

GoK replied (December 2017) that once a policy decision to implement an online system for RTI across all departments was taken, the same could be extended through the e-District platform without incurring additional costs except for training and awareness activities.

The reply was not acceptable as delay of GoK in taking decision hampered delivery of one of the mandatory services through the e-district platform.

⁷⁰ Services related to revenue recovery and related cases.

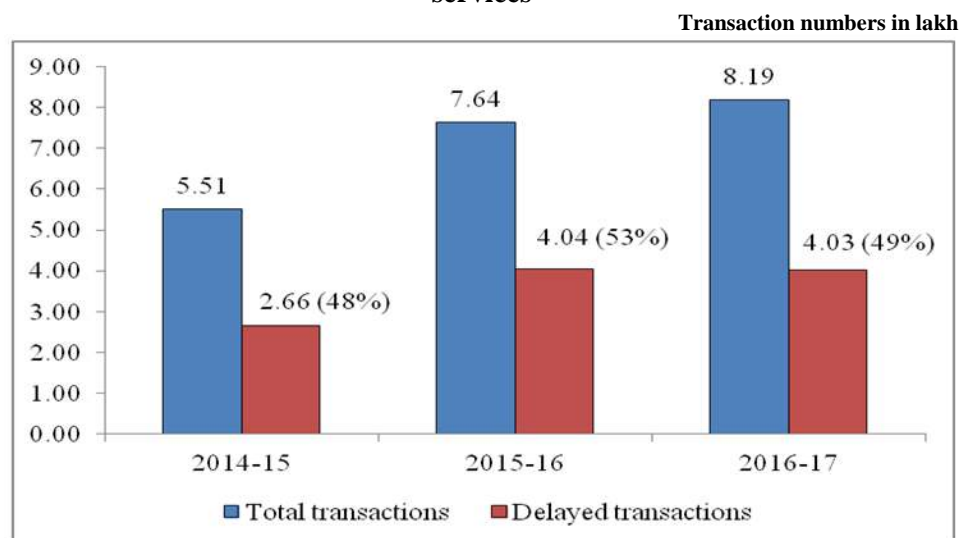
⁷¹ Technical Education, Health and Family Welfare, Higher Education, Information Technology, Non-Resident Keralites Affairs.

Non-achievement of service levels

4.3.18 Under Section 5 of the Kerala State Right to Service Act, 2012 (RSA, 2012), Government Departments are required to redress grievances of citizens and deliver services to the public in a time-bound manner. In order to comply with the RSA, 2012, departments of GoK have prescribed time-limits for delivery of various services.

Audit analysed the delivery of services in respect of 23 certificate services⁷² available in e-District. During 2014-15 to 2016-17, 1.80 crore certificates were issued through e-District. Out of this, 1.49 crore certificates were issued within the prescribed time limit, while the remaining 0.31 crore (17 per cent) certificates were delayed. In case of six certificate services⁷³, the proportion of delayed certificates was much higher as shown in **Chart 4.2**:

Chart 4.2: Number of delayed transactions in respect of six certificate services



Delays in delivery of certificate services pointed to the inadequacies in monitoring and follow up of service levels, which resulted in non-achievement of full objectives of RSA, 2012.

GoK replied (December 2017) that a comprehensive system was since introduced for monitoring e-District project performance at micro level. Accordingly, overall Service Quality (comprising of three factors, namely, reach, quantity and timeliness) for revenue certificate services (2016-17) was measured as 86.56 per cent, which showed improvement in service levels.

Reply was not tenable because timeliness did not improve in case of important certificate services.

⁷² In respect of which data was furnished to Audit.

⁷³ Community, Conversion, Domicile, Inter caste marriage, Location and Residence.

State Service Delivery Gateway Project

4.3.19 The State Portal and State Service Delivery Gateway (SSDG) project was envisaged for creating a single gateway for delivery of government services. The State Portal was meant to act as front-end interface for all State level e-Governance initiatives and to ultimately replace e-District portal. e-forms available for various Government services were envisaged to be made available to citizens through the State Portal. The filled up applications were to be routed through SSDG, a dedicated software, to the respective field offices of the Department for providing the particular service.

Audit observed following lapses in implementation of the project:

Identification and inclusion of services to be delivered through State Service Delivery Gateway

4.3.20 Ernst & Young (EY) was appointed (October 2009) as consultant for SSDG in the State for assisting in selection of an implementing agency through a Request for Proposal (RFP) tendering process. EY identified 57 services across 13 departments to be provided through the State Portal. These services included commonly availed citizen services like issue of birth certificate, encumbrance certificate, building plan approval by Local Self Governments, etc.

In IT Policy, 2012, GoK strategised to provide all services coming under Kerala State Right to Service Act, 2012 (RSA, 2012) electronically, subject to technical feasibility. GoK also notified the Kerala State Right to Services Act 2012 in August 2012. As stipulated in RSA, 2012, 47 Government Departments identified and notified about 900 services coming under their jurisdiction.

It was observed in audit that IT Department did not take any action to explore technical feasibility of adding more services to the SSDG, as of 2017. Thus, only 57 services in 13 departments, representing 6.33 *per cent* of the notified services were proposed for coverage under the SSDG project. Hence, the policy initiative of the Government to bring maximum number of services under a single portal remained unachieved.

GoK replied (December 2017) that even though SSDG covered 57 notified services under RSA, 2012, other services also can be added in a phased manner.

Audit, however, observed that no definite timeline was fixed by Government for adding the notified services under RSA, 2012 to SSDG even after expiry of five years from August 2012.

Execution of selected services

4.3.21 Tata Consultancy Services Limited (TCS) was selected (May 2012) as the lowest bidder for implementing 57 services of 13 departments under the

SSDG project at a cost of ₹13.96 crore. As per the agreement (May 2012) between TCS and KSITM, the project was to be implemented within 8 months (January 2013) followed by three years of maintenance support upto January 2016. According to provisions of RFP forming part of agreement, besides rolling out 57 services under SSDG (*Appendix 15*), TCS was to integrate 24 services delivered through e-District portal with SSDG.

However, TCS was able to integrate only 24 e-District services of Revenue Department and ten other services from five Departments. Thus, out of 81 services proposed to be covered under SSDG project, only 34 services were currently available in SSDG even though GoK spent ₹6.52 crore on the project as of February 2017.

Short completion of the project was due to the following reasons:

- MeitY, GoI while sanctioning (March 2009) SSDG and State Portal project for the State stressed on commitment of departments in execution of the project. This was to be ensured through formal agreements laying down the duties and responsibilities of each department in respect of services to be made available electronically. Co-operation of departments was required because the integration process of SSDG with departmental applications/e-District called for parting of Application Programming Interfaces⁷⁴ (APIs) by application developers of the departments concerned (major Departments had NIC as their software developer). KSITM was able to smoothly integrate e-District services with SSDG because e-District project was implemented by it through NIC. However, it could not complete such integration with other departmental applications including high volume services of Motor Vehicles Department and Local Self Government Department (LSGD) because the departments failed in ensuring that their software developers provided the required APIs.
- MeitY also suggested formation of an Apex committee headed by Chief Secretary to ensure departmental co-operation. Scrutiny of minutes of the meetings of the Apex Committee revealed that it failed in its role as a coordinating agency. For instance, in case of LSGD, even though the necessity to integrate high volume citizen-centric services⁷⁵ was taken up by the Committee in its meeting held on 16 July 2015, specific decision to direct the NIC to share the APIs of all applications developed by them was taken only in April 2017.

Thus, non-cooperation of departments and failure in effective monitoring resulted in short-completion of the project.

GoK replied (December 2017) that there was delay in implementation of the project because during the course of implementation, there was change of leadership and priorities and some of the departmental applications underwent

⁷⁴ A software that acts as an interlink between two different applications.

⁷⁵ Issue of birth and death certificates, Assessment of property tax, Application and renewal of driving license etc.

upgradation and modifications. It was also stated that some of the departments did not co-operate with the project.

Audit, however, observed that the above issues were not taken up for discussion in the Apex Committee even though it was a mechanism to ensure departmental co-operation.

Irregular payments

4.3.22 As per terms of Request for Proposal, implementation cost was payable to TCS in stages, on completion and acceptance of System Requirement Specifications (20 per cent), User Acceptance Testing (20 per cent), STQC⁷⁶ Certification (15 per cent), Go live (15 per cent) and for post commissioning maintenance for 3 years (30 per cent). Further, operational cost amounting to ₹27.56 lakh per annum was payable for three years. However, KSITM made payments (February 2014 to September 2015) to TCS on *pro rata* basis for completed number of services for the stages of User Acceptance Testing, STQC Certification and Go Live.

Audit observed that:

- As per terms of RFP, 57 services deliverable under SSDG was over and above the 24 e-District services, which were to be integrated with SSDG. Thus, total number of deliverable services was 81. However, KSITM considered the 24 e-District services as part of 57 deliverable services and made irregular *pro rata* stage payments to TCS.

KSITM also accepted the claim of TCS that the stage payments may be bifurcated into fixed (60 per cent) and variable portions (40 per cent) and the *pro rata* may be applied only on the variable portion and that the entire fixed portion may be paid in full. As there was no bifurcation of fixed and variable portions in the RFP, the payment on *pro rata* basis as per the claim of TCS was irregular.

- Despite the fact that only 34 services out of a total of 81 services⁷⁷ were made available through SSDG (including 24 e-District services), KSITM paid the entire amount of ₹27.56 lakh as maintenance charges for first year without limiting the payment on *pro rata* basis for live services.

Above considerations given to TCS were against the provisions of RFP and the agreement and resulted in extra stage payments which worked out to ₹40.17 lakh.

GoK replied (December 2017) that due to non-availability of APIs pertaining to some of the 57 services, certain services were swapped with 24 e-District services and TCS was directed to develop APIs for 24 e-District services. This was based on directions from MeitY, in a meeting held on 09 January 2014.

⁷⁶ Standardisation, Testing and Quality Certification.

⁷⁷ 24 e-District and 57 other services.

Reply was not acceptable as swapping of services was a major deviation from approved RFP and amounted to change in scope after award of work. Such a major change was done without any formal approval by Apex Committee and revised agreement. Hence, the payment effected based on such deviation was irregular. The reply regarding direction from MeitY for altering scope of work was also not supported by any documentary evidence.

Citizen Call Centre

4.3.23 Citizen Call Centre (CCC) is a single window IT enabled facility of GoK that acts as an interface between citizens and Government to interact effectively through telephone/mobile phone. Commissioned in May 2005, CCC acts as an information desk regarding Government services. Knowledge data bank of 64 Government departments/agencies are accessible by CCC. However, the existing CCC was facing the following limitations. There was:

- no toll-free number and calls were charged at local tariff;
- low awareness among the public about CCC and the services provided;
- absence of a feedback mechanism from users;
- absence of a Customer Relationship Management software;
- no automatic maintenance and tracking of complaint number and
- no intelligent handling of call details using technology.

Therefore, IT Policy, 2012 envisaged to transform the existing voice based CCC setup into a state-of-the-art Call Centre with multi modal access like phones, interactive voice response, internet, e-mail, *etc.*

GoK accorded (June 2015) administrative sanction amounting to ₹1.00 crore to revamp CCC. However, no bidders responded to the Request for Proposal (RFP) floated in September 2015. The project was retendered in December 2015 with modifications in the pre-qualification criteria. Three bidders participated in this tender. Tender evaluation committee, however, observed that all three bidders did not meet the pre-qualification criteria. The pre-qualification criteria were again modified before inviting another RFP in April 2017. However, no response was received for this tender also, which resulted in cancellation of RFP for the third time in a row.

Audit observed that even after two years of approval, work for revamping of CCC could not be awarded.

e –Office

4.3.24 e-Office is a mission mode project aimed at improving efficiency in Government processes and service delivery mechanism. GoK decided (August 2013) to implement e-Office in all departments in the Secretariat by entrusting the entire task of implementation with NIC and gave (October 2014) the overall project management to KSITM. Later, GoK also decided (July 2015) to implement e-Office in all the collectorates and sub-collectorates.

As per the guidelines for implementation of e-Governance initiatives issued (September 2009) by GoK, a Service Level Agreement (SLA) should be entered into with the Total Service Provider (TSP) before taking up a project. SLAs are agreements entered into with a TSP, which allows users to specify the levels of service, in terms of quantity and quality, they should receive. Audit noticed that no SLA was executed with NIC, the TSP, though the implementation started in August 2013. Due to absence of SLA with NIC, KSITM could not enforce customisation of e-Office so as to meet 10 requirements/issues raised by the customer Departments (*Appendix 16*).

GoK replied that NIC supports the Government as a partner rather than a profit oriented organisation and hence, NIC did not enter into SLAs. The Government order, which entrusted the task of implementing e-Office to NIC was considered as the initial work order. It was also stated that some of the requirements were rejected by NIC, primarily because incorporating the change would affect the generic nature of the software. NIC maintains only a single version of the software and therefore, does not undertake to address customisations that are very specific to the State.

The reply that NIC did not enter into SLAs with Government agencies was incorrect since NIC entered into agreement with GoK in May 2014 for State-wide rollout of e-District project. Further, absence of SLA was in violation of the GoK's e-Governance guidelines and best practices.

Government process re-engineering and sharing of data base

4.3.25 The e-Governance guidelines issued by the Government in 2009 specifically stipulated that the aim of e-Governance initiatives was not automation of existing processes, but included process reforms, which were technically feasible. However, audit could not find evidence of any specific effort by departments in initiating process reforms as part of e-Governance initiatives undertaken under IT Department except in case of e-District.

The Apex Committee on e-Governance in its meeting held on 24 February 2015 decided to implement Government Process Reengineering as part of e-Governance initiatives and that a Committee of Secretaries to be formed to give 25 e-Governance Process recommendations to be implemented in the year 2016-17. Except for formation of the Committee, there was no further action in this regard. The Committee also approved the decision to enable databases⁷⁸ of six departments to be shared across platforms for use by any other departments. However, no definite road map or action plan was prepared to carry forward this initiative.

During Exit Meeting, officials of KSITM pointed out that process reforms happened in Police Department and stated that sharing of database was being planned and would be implemented soon. However, the fact remains that the decision of Apex Committee in this regard was not followed up.

⁷⁸ *Aadhar*, Elector Photo Identity Card, SSLC certificate, Ration Card, License & Vehicle Registration and Birth & Death certificates.

Conclusion

The e-Governance initiatives implemented in the State enabled it to be ranked among the leading States in the Country in terms of volume of transactions. However, inadequacies in coordination of e-Governance initiatives of various departments/agencies by IT Department resulted in duplication of expensive infrastructure. There were deficiencies in ensuring security of data hosted by State Data Centre due to non-formulation of Disaster Recovery and Business Continuity Plans and absence of independent security audit of SDC 1. Aim of electronic service delivery through a single gateway remained unachieved as only 34 services were available through the State Portal.

Kerala State Industrial Development Corporation Limited

4.4 Failure in implementation of Enterprise Resource Planning system

Failure to provide required inputs for implementation of ERP system and to protect financial interest of the Company while entering into agreement resulted in idling of investment amounting to ₹1.39 crore.

Kerala State Industrial Development Corporation Limited (Company) decided (2009-10) to implement Enterprise Resource Planning⁷⁹ (ERP) system with the aim of automation of business processes. The Company awarded (April 2010) the consultancy work for implementation of ERP system to Network Systems & Technologies (P) Ltd. (NEST) for ₹16.05 lakh. As per the Work Order, responsibility for preparation of User Requirement Specification, preparation of contract agreement with the selected ERP implementer, overseeing the implementation of ERP system right from inception till the final delivery of ERP system, *etc.*, was vested with NEST.

The Company invited (December 2010) Expression of Interest for selection of ERP implementer⁸⁰ and selected (September 2011) CMC Limited (lowest bidder) at a cost of ₹1.40 crore with scheduled period of completion of nine months. The agreement for implementation of ERP system was executed (October 2011) between the Company and CMC Limited.

As per the agreement between the Company and CMC Limited, 13 Modules⁸¹ were to be installed by CMC Limited. CMC Limited was also to incorporate all functionalities of Finance Accounting and Loan Accounting Software in the existing IT system into the Finance and Accounts Module of the new ERP system. CMC Limited was to make the ERP system 'go live' by end of July 2013⁸². The Company was to provide all relevant information and necessary

⁷⁹ Enterprise Resource Planning (ERP) is a process by which a company manages and integrates the important parts of its business.

⁸⁰ Study, design, development, integration, testing, commissioning and maintenance of ERP system.

⁸¹ Each module is focussed on one area of business process.

⁸² Extended from the original scheduled completion time of July 2012.