



Government of Kerala



Digital Kerala

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I. Kerala – Emergence as a Digital society

Kerala is fast emerging as a 'Digital State', a feat realized through the visionary measures of the Government to open up the doors of digital literacy to its citizens to make God's own country the first 'e-literate' State, through launching the Akshaya Project and IT@School project, both in the year 2002. The proactive policy of the State Government in allowing the telecom service providers to network the State through OFC has enabled its citizens to get online, both through broadband and mobile. It was further followed by establishing State Data Centre in 2005 to deliver governmental services through e-governance, at a time when most of the States have not even thought of it.

As a result of these proactive policies and projects, Kerala has the highest mobile penetration with more than 31 million connections for a population of 33 million, with a rapid increase in the usage of smart phones. It also has high internet penetration, covering about 20% of the households through broadband and another 15% through mobile.

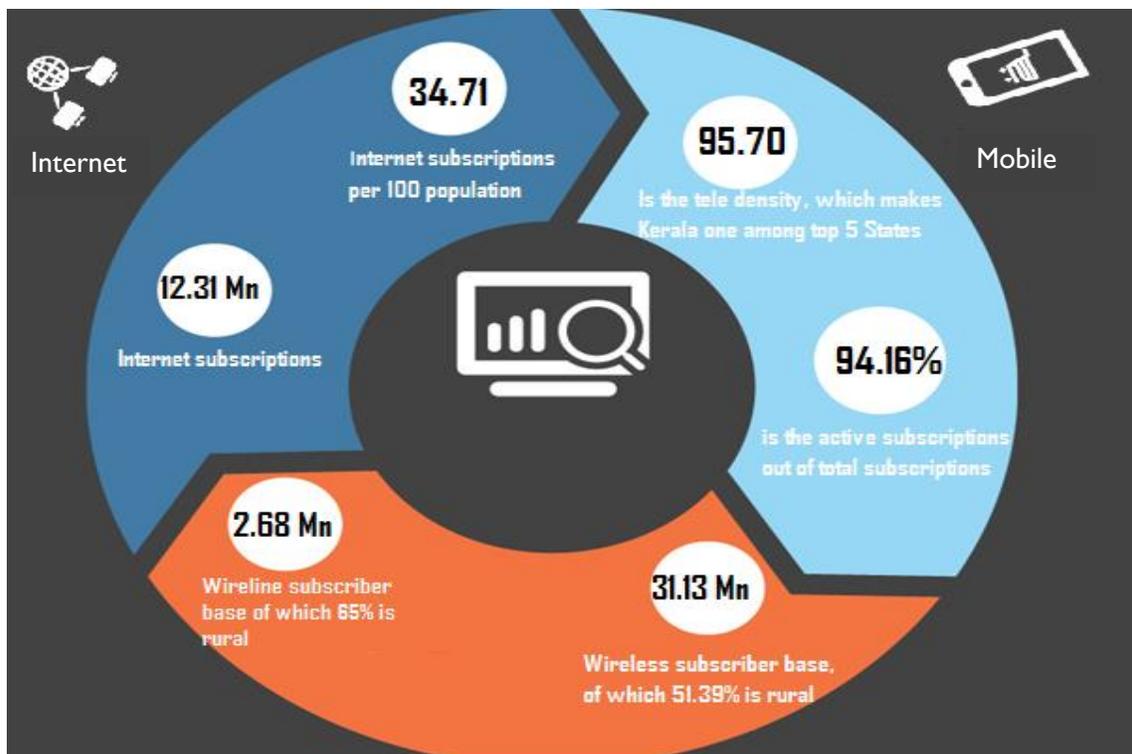


Figure: Internet & Mobile penetration in Kerala¹

The ever-changing technology landscape and the recent growth of internet as well as the smart mobile phones penetration of the State, together with the proactive measures of the Government to digitally empower the citizens had helped the State to make significant strides in turning Kerala a knowledge-powered economy and also in realizing its vision of being the first digital society of the country.

¹ Ref:TRAI Report on The Indian telecom service performance indicators dtd. 8th May 2015
TRAI Press Release No.37/2015 dtd. 16th June 2015

The 4 major pillars contributed to the gradual evolution of Kerala into a truly digital society are; (i) Akshaya Project (ii) IT@School project (iii) digital infrastructure availability and (iv) State Data Centre & allied applications.

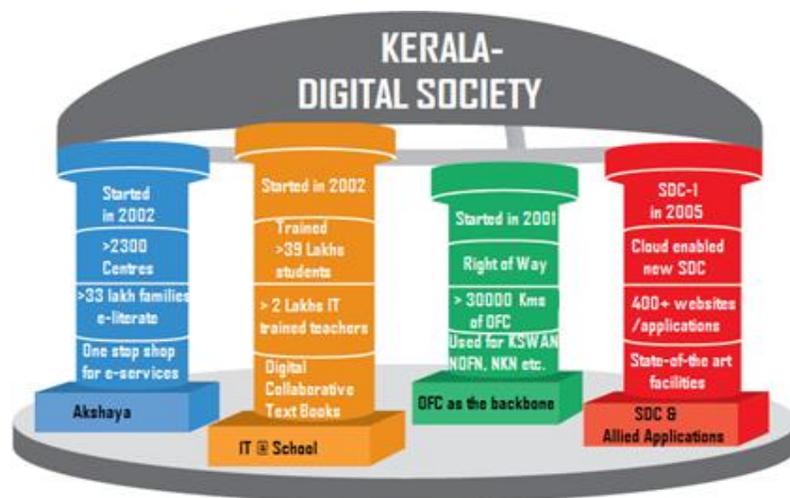


Figure: Kerala Digital Society- major pillars

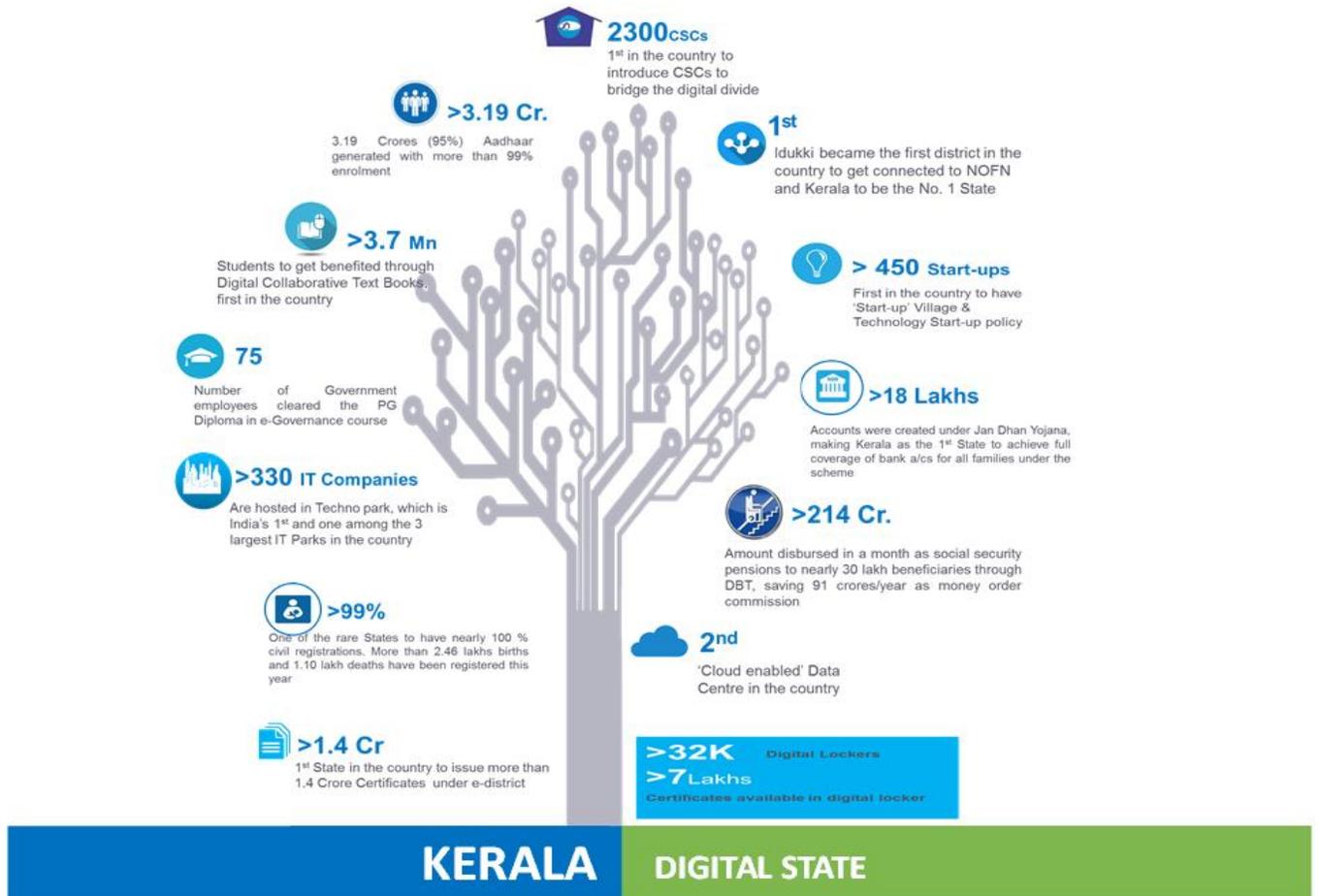
Akshaya project was piloted in Malappuram with the objective of opening the doors of digital literacy to at least one member in each family. Followed by its relentless success it was later replicated to all other districts of Kerala. As on today, Akshaya had turned more than 33 lakhs out of nearly 75 Lakhs households, e-literate. 13 years of IT@School would have covered the rest of the families. Akshayas have grown in stature, with more than 2300 centres across the State covering both rural & urban areas, taking e-governance to citizen's door step.

The IT @ School project started with the objective of making more than 4 lakh students graduating from schools every year a computer literate, had so far turned more than 39 lakhs students spread around 12600 schools of the State with high level of computer literacy. In a major initiative by the State that may revolutionize the school education sector, Kerala became the first state in the country to introduce Digital Collaborative Texts (DCTs) under IT @ School. The DCTs comprise of information contributed by persons around the globe in audio or video formats, besides the scanned copy of normal text books. Over 3.7 million students and about more than 2 lakh teachers in the State-run schools will benefit from this project.

As part of establishment of digital infrastructure, during the period 2001- 2010, the State had provided 'Right of Way' to Telecom players because of which today Kerala is one of the leading States in the country in terms of its Optical Fibre Cable (OFC) coverage, which will ensure the availability of digital infrastructure as a utility to every citizen of the State. Kerala has a vast OFC network, spread across the length and breadth of the State, of which BSNL had contributed majorly covering nearly 20,000 Kms, followed by Reliance (nearly 8500 Kms), and other major players being Airtel, Vodafone, Idea and Tata (nearly 3225 Kms put together).

With rising e- literacy among people and availability of digital infrastructure, there was a rising demand to deliver services through Akshaya Centres/ online. To meet the demand, the Government had built a few e-governance applications and to augment the same, a State Data Centre was established in 2005. National e-Governance Plan (NeGP), initiated by the Government of India in 2006 had provided the much needed impetus to the various e-governance initiatives of the State, as it paved way for a few of the key e-governance initiatives of the State. During the period, over 80 e-Governance applications have been rolled out in the State.

As Kerala offers a perfect blend of ‘Digitally Empowered’ society to demand their rights, a matured ‘e-governed system’ to provide governance and services on demand and a ‘Digitally connected’ eco-system as an enabler to balance the demand and supply; the State is always a front runner in launching various Central as well as State digital initiatives. Some of the remarkable achievements of Kerala as a key contributor towards the emerging into a ‘Digital Society’ are:



Bridging the Digital divide – Vision 2020

Considering the existing digital infrastructure and various ongoing digital initiatives and in anticipation of the planned digital infrastructure and the various digital initiatives, the Government's vision is to further bridge the digital divide by 2020, the key objectives being:

- turn Kerala into a digital knowledge society to achieve sustainable economic growth;
- to bridge the digital divide by making available the digital infrastructure accessible to all at their fingertips at affordable cost, to avail the various e-services offered by the Government;
- to achieve social harmony and high quality of life for all, with inclusion of disadvantaged sections of society;
- to ensure willful participation of all sections of the society, to prevent the less privileged getting marginalized;
- to promote entrepreneurship and generate more employment opportunities for the youth;
- to attract more investments and to promote the IT export of the State.

2. Digital Kerala – Eco-system

The Digital Kerala eco-system of Kerala broadly consists of (i) core digital infrastructure such as State Data Centre and core connectivity infrastructure such as KSWAN, NOFN and NKN, (ii) allied software applications for delivering various e-services, (iii) supporting infrastructure such as video conferencing, mail management system etc. (iv) digital literacy initiatives such as Akshaya and IT @ School (v) other associated infrastructure such as technology Start-ups and IT Parks and (vi) various capacity building initiatives such as virtual IT cadre, courses on e-governance etc. and (vii) institutional mechanism and policy initiatives to augment the same.

The Digital eco-system of Kerala as on today is depicted below:

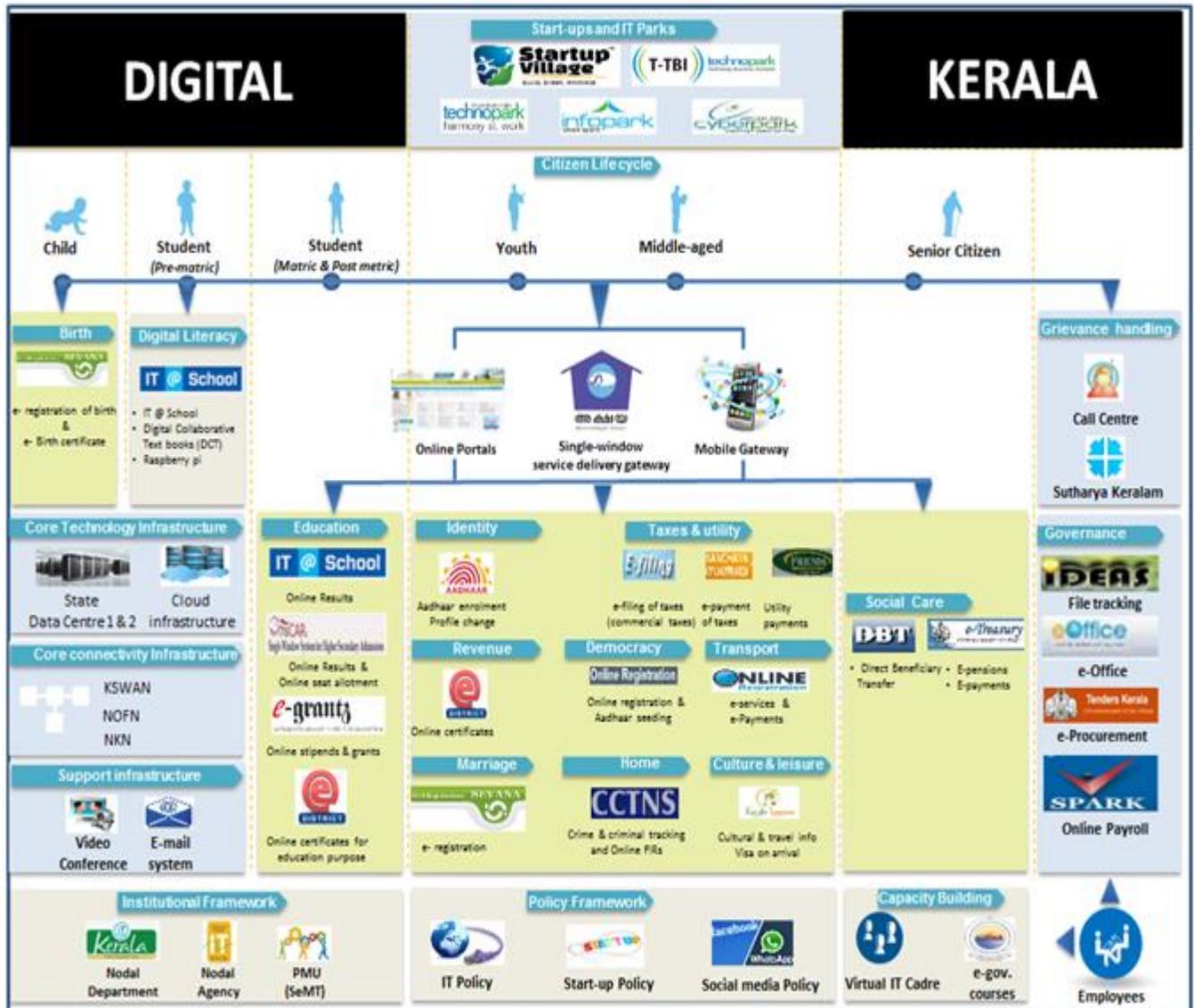


Figure: Digital Kerala eco-system

3. Digital Kerala – Where we stand in e-services



The **eTaal Portal**, developed and maintained by the Department of Electronics and Information Technology (DeitY), Government of India provides a real-time aggregated view of e-services being delivered across different States and levels of Government. eTaal provides an aggregated view of e-Transactions performed through e-Governance applications implemented including, but not limited to, the projects of national importance like 3I Mission Mode Projects (MMPs) defined under National e-Governance Plan (NeGP).

Kerala is among the topmost States in the number of governmental e-transactions.

Sl #	State	No. of e-Transactions	e-Transaction per 1000 Population
1	Andhra Pradesh	60,46,80,792	12222.8
2	Telangana	47,97,01,102	13630.2
3	Kerala	40,29,72,158	12069.5
4	Gujarat	33,71,86,498	5584.1
5	Uttar Pradesh	25,55,88,555	1280.6
6	Madhya Pradesh	22,15,09,954	3051.2
7	Tamil Nadu	15,37,20,387	2130.9
8	Karnataka	4,13,20,900	675.9
9	Maharashtra	3,73,22,926	332.1
10	West Bengal	3,08,31,697	337.5

Figure: Top 10 States - e-transactions²

² Source : www.etaal.gov.in, data for the period 01-01-2015 to 24-07-2015 as on 11:50 am

4. Digital Kerala – Digital Infrastructure

4.1. e-Governance in ‘Cloud’

SDC (2), started as part of DeitY funding in Jan 2012 at Technopark, became the 2nd cloud enabled Data Centre in the country. The cloud infrastructure eliminates need for departments to buy individual servers and enable sharing of information and hosting applications across different platforms. It enables easier back-up and recovery, reduced downtime and automatic software integration.



Figure : Salient features of SDC-2

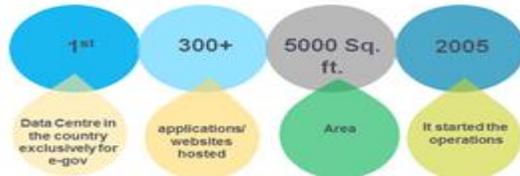


Figure: Salient features of SD C-1

Kerala has one more Data Centre, SDC I (old), located at Co-Bank Towers which is operational since 2005. This was the first of its kind in the country which was built exclusively for e-Governance activities.

4.2. Connecting the Dots

The Kerala State Wide Area Network (KSWAN), the National Optic Fibre Network (NOFN) and the National Knowledge Network (NKN) form the networking backbone of the State.



Kerala State Wide Area Network (KSWAN) is the network backbone of the State connecting 3 Network Operating Centres (NOCs), 14 District Head Quarters, 152 Block Head Quarters and 63 Mini Points of Presence (POPs).

National Optical Fibre Network (NOFN) provides high speed connectivity to all Gram Panchayats. Idukki became the first district in the entire country to have NOFN. Kerala is all set to become the first Digitally connected State under NOFN.

National Knowledge Network (NKN) provides very high bandwidth to around 87 academic institutions across the State.

5. Digital Kerala – Bridging the digital divide



Akshaya, an innovative project implemented in the State aimed at bridging the digital divide, addresses the issues of ICT access, basic skill sets and availability of relevant content. Quality ICT dissemination and service delivery facilities, viz 'Akshaya Centres' are set up within a maximum of 2 kilometers for any household and networked leveraging entrepreneurship. With more than 2300 centres in urban and rural areas, Akshaya Centres are taking e-governance to the citizen's door step. This pioneering initiative was later emulated by other states as Common Service Centres (CSC) as part of a central initiative – National E-governance Plan (NeGP).

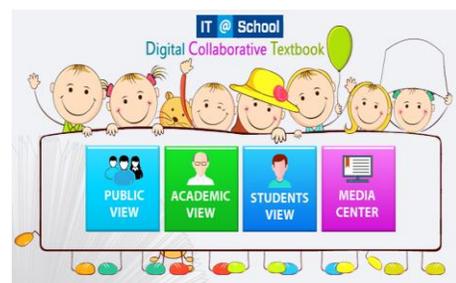
Today, Akshaya is acting as an instrument of rural empowerment. The project is a catalyst in creating economic growth and creation of direct and indirect employment in the State by focusing on the various facets of e-learning, e-transaction, e-governance etc. Thus, the project is having a long-standing impact on the social, economic and political scenario of the State. Some of the key services that are delivered through Akshaya centres are given below:

- AADHAAR enrolment
- CHIAK – under Rashtriya Swasthya Beema Yojana
- Banking & Insurance services
- Online applications (e-Grantz, entrance examination, ration card, election id) etc.
- Utility Bill/Fee-payment services
- Online application for CM's Public Grievance
- Data digitization & Aadhaar seeding
- KNRK(Kerala Non Resident Keralites Welfare Board) services

IT @ School

IT@School Project is the ambitious project of Government of Kerala, under the Department of General Education, setup in 2001 for implementing ICT enabled education in the schools in the State. Some of the notable initiatives of IT@Kerala are:

- Digital Collaborative Text Books (DCTs) to facilitate online and in-depth learning of students
- VICTERS, an exclusive channel for education, aired 17 hrs. a day
- Animation Training & other ICT related training for Students
- Content Development (own Operating System)
- Various Free and Open Source Software(FOSS)initiatives
- School Wiki for collaborative learning purposes
- E-Governance initiatives such as SSLC results online, Single window admission system for +I admissions, online transfer & posting etc.



6. Digital Kerala – Fostering Entrepreneurship and IT Exports

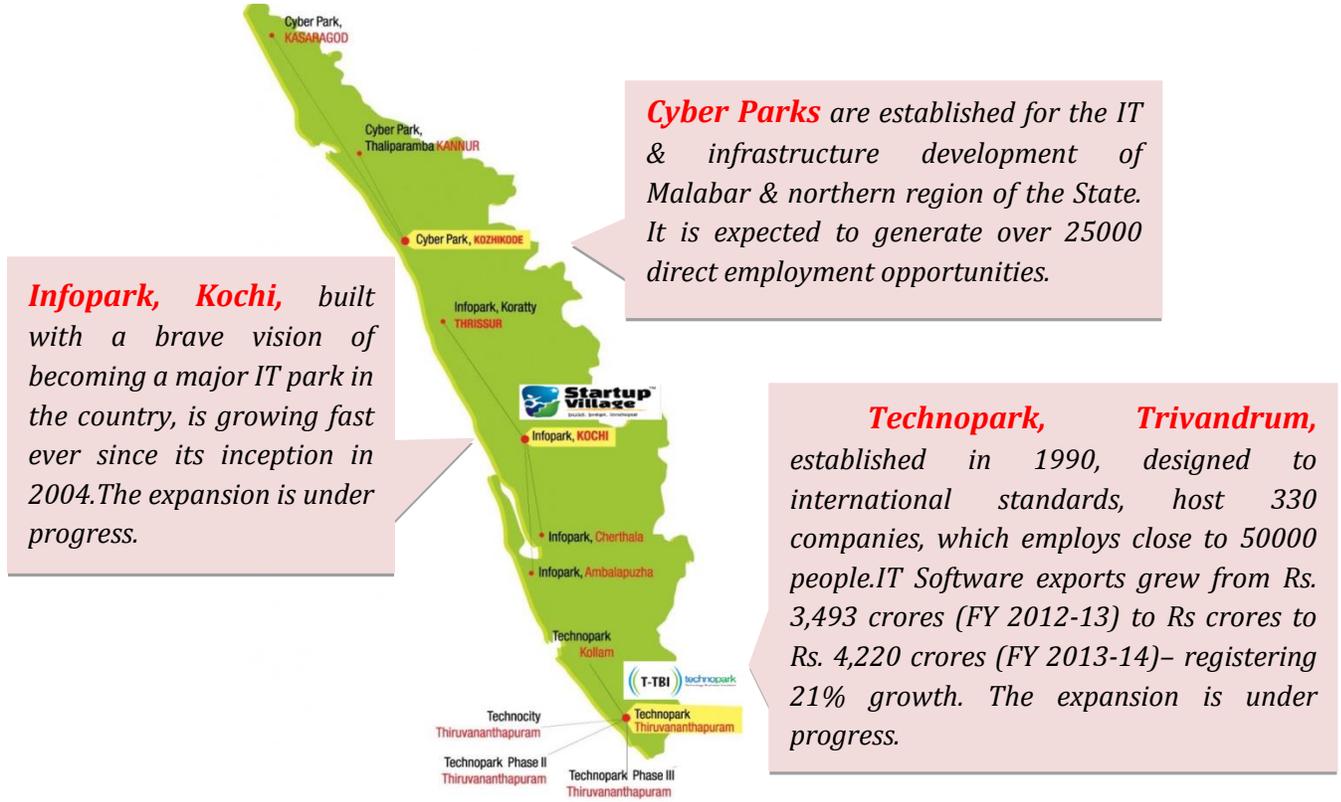


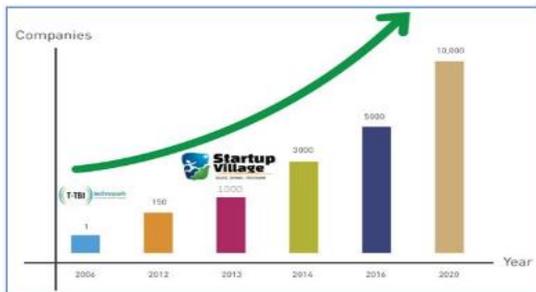
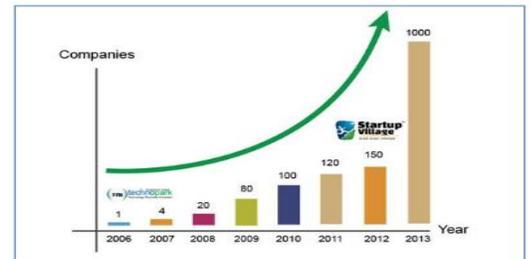
Figure: An overview on IT Parks



“We believe there will be a day when the sun sets at dusk in the valley, it will rise to see the dawn of a Silicon cost in India”

– Start up Village

Start-up Village is India’s first Public Private Partnership incubator with its vision to create 1,000 technology startups over 10 years and begin the search for a billion dollar start up from college campus by the turn of this decade. In a short time, this has become a role model for others to emulate.



KERALA STARTUP MISSION

It is the first non-academic business incubator, functions with a vision to support and nurture start-ups in Kerala. Since its inception in 2006, more than 132 companies have successfully graduated and currently hosts 50 companies physically and 17 companies virtually. Since 2012, this is designated as the nodal agency for establishing startup ecosystem in the state.

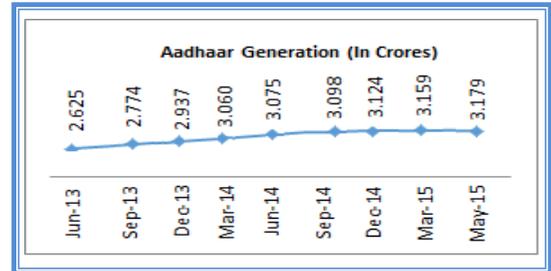
7. Digital Kerala – Recent Digital Initiatives

Strategy



Unique Identification

Aadhaar envisages establishing a system of uniquely identifying the persons normally resident in the State, by assigning a unique identification number. Aadhaar numbers has been issued to more than 95% of the residents of the Kerala state, which helped the State to emerge as the first State to achieve full coverage of bank accounts for all families under Jan Dhan Yojana.



Highlights

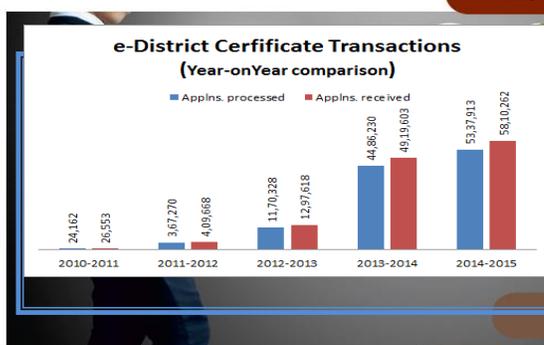
- Around 40 Lakhs authentications
- More than 3.19 Crores (95%) Aadhaar generated and >99% enrolment
- Ranked 1st in the country for biometric data quality
- Aadhaar based Life certificate issuance for Dairy farmers
- Aadhaar enabled DBT for CM's Mass Contact Program
- Aadhaar seeding in advanced stages for 9 departments/Schemes
- Launched Aadhaar based e-KYC



E-District

e-District aims to deliver high volume citizen services either through Akshaya or e-district portal. 24 types of certificates of Revenue Department, online RTI, Public Grievance Redressal, revenue court cases and various payments are available under e-district. So far more than 1.4 Crores of certificates are issued under e-district, the highest no. of transactions by any State.

The 1st public portal under e-district in the entire country



Kerala's 1st portal to integrate with 'PayGov India'

Kerala's 1st portal to integrate for Aadhaar authentication

Integrated with Mobile Service Delivery Gateway (MSDG)

Online database verification facilities of key depts.

Digitally signed certificates with legal validity

State-of-the-Art security features with QR Codes

Online transaction counter with report generation

Strategy



FRIENDS

A single window 'no queue' integrated remittance centre, where citizens have the opportunity to pay all taxes & other dues to the Government under one roof at no extra cost.

"FRIENDS Centres carry out transactions worth around 17 crores/ month"

"Uniquely branded, easy to remember ShortCode 537252 (KERALA)"



Citizen's Call Centre

CCC is a single window facility of Government that enables citizens and Government to interact effectively. Call Centre enables the quick delivery of critical information, which is otherwise either inaccessible or difficult for citizens to trace.

Mobile-Governance



M-Governance Services offered by government depts. thru mobiles are accessible to citizens anywhere on a 24 X 7 basis.

"Call Centre is working on a 24x7 basis except on National Holidays on the helpline number- 155300"

G2C



Local Self Government

Information Kerala Mission (IKM), a society under Govt. of Kerala, had developed & deployed around 16 applications to cover entire e-services of Local bodies, viz; civil registration, e-payment, building permit issue, asset management, GIS mapping, estimate preparation, automated workflow management etc., which are operational in local bodies.

"There are around 16 various applications for providing various e-services of Local bodies"

"Metric and post-metric results, seat allotment, stipends & scholarships, etc. is online"



Employment

Kerala is one of the first States in the country to make online applications mandatory for any jobs notified by Kerala PSC. It also provides online test facilities for selected examinations.

Education



Kerala is one of the first states to come up with facilities for matric and post matric results online. and also to introduce online allotment of seats and online disbursement of grants.

"All KPSC applications are online. Online test facilities are available for selected tests under KPSC"



Land

State offers all land related certificates online. Also piloted transfer of registry online in Palakkad district & set to roll out the same in the State.

“Land related certificates are online. Online ‘Transfer of Registry’ piloted in selected villages”



Taxes

The Government of Kerala is one of the first States to implement the online filing for Commercial Taxes department (KVATIS project). The citizens can make the payment of property taxes online through ‘Sanchaya’.

“Hundreds of traffic violations capture, in a month”

Uses intelligent vehicle enforcement system for automated capturing of offenses, and also provides online facilities for registration, fee payments etc.

“Payment of Commercial taxes and Property taxes for various institutions is online”



Culture & Leisure

The Visa on arrival facility is provided for travellers coming from various countries. All the travel and tourist related information is also made online.

“Direct Beneficiary Transfers are made for most of the Socio-economic schemes of the State”

Entire policing systems are automated with the intelligent traffic offenses capturing system, being implemented by Keltron and through the CCTNS project by the Government of India

“Visa on arrival, Tourist info. Online, e-hotel registrations for the tourists are online”

Social Care

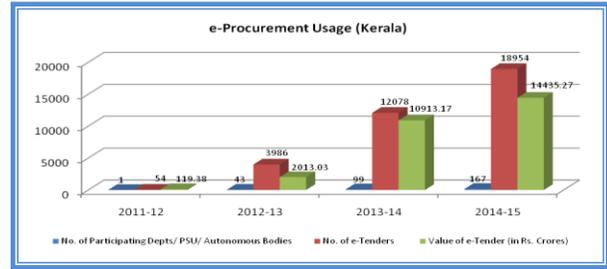


Various benefits are transferred through Direct Beneficiary Transfer (DBT). The pensions are also credited to the bank accounts online to the beneficiaries, under various schemes.



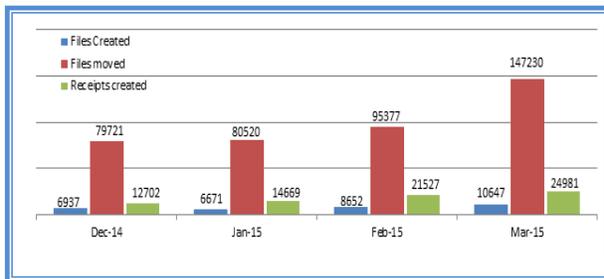
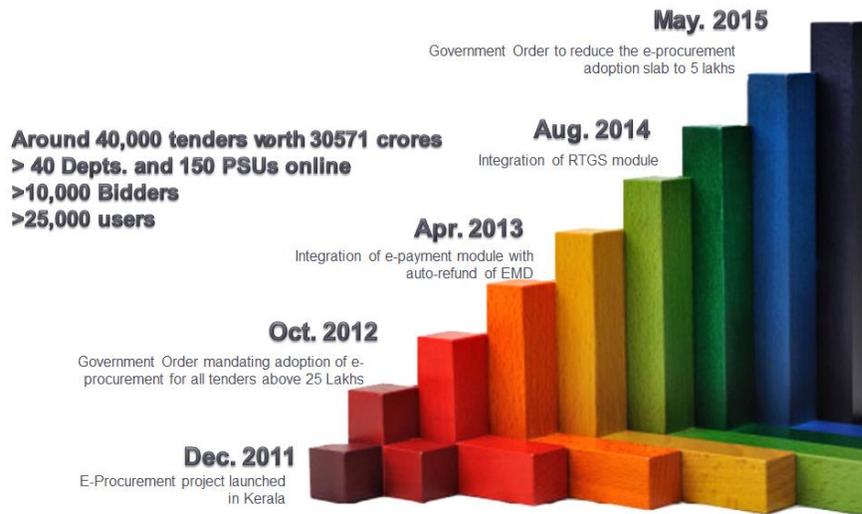
e- Procurement

Government of Kerala has implemented e-Procurement to enhance transparency and efficiency in Public procurement activities and monitor the same on a real-time basis. Government had made it mandatory for all Govt. Departments/ PSUs/ Autonomous Bodies to adopt e-Procurement for all tenders above Rs. 5 lakhs.



Growth in the no. of participating depts., no. of e-tenders & value

The e-procurement project had crossed many milestones since its introduction in Kerala. Some of the key milestones achieved by the e-procurement project since its inception are given below:



No. of file creations and movements – Dec-14 to Mar-15

A prestigious e-governance initiative of the Government of Kerala to bring in more efficiency, speed and transparency in the way the files are being managed at the various Departments of the Government of Kerala. e-Office is being implemented in various departments at Kerala Secretariat and also at Directorates.



SPARK

Service and Payroll Administrative Repository for Kerala (SPARK) is an Integrated Personnel, Payroll and Accounts information system, implemented for all the employees in Kerala. In this centralized system, each employee is allotted with a unique Permanent Employee Number (PEN) through which departments get details of any employee instantly.

“More than 5 Lakhs government employees do e-submission of salary bills every month”

IDEAS



“IDEAS is Implemented in offices of all Ministers & all Secretariat Departments”

IDEAS' is a web based online File, Petition and G.O. tracking system which facilitates tracking & monitoring of Government documents, serves as a mechanism for reminding the Government departments about the pending status of files and also provides a real-time status of Government files/ petitions.



Video Conferencing

Currently, the facility is available in Secretariat, all 14 District Collectorates, AG's office Kochi, Kerala House, New Delhi & IT Mission, Public Office & Vikas Bhavan, Thiruvananthapuram.

“Sutharya Keralam program of the Hon'ble Chief Minister uses this VC facility for redressal of grievances”

e-Mail Management System (EMS)



“>15,000 email ids were created for various government dept. officials”

An email solution & associated infrastructure for providing & managing email-ids to selected Government employees.

Virtual *IT* Cadre



Virtual IT Cadre is an in-house team equipped to deal with the complexities in managing e-governance projects. It is envisaged for better implementation of e-governance projects and to reduce dependency on external agencies.

“Around 60 Government Govt. employees got trained in Virtual IT Cadre”

Course on e-Governance



“More than 75 Govt. officials passed the PG Diploma in e-Governance course and are working in various departments”

The Institute of Management in Government (IMG) and Indian Institute of Information Technology and Management -Kerala (IITM-K) jointly conducts a one year Post Graduate diploma in e-Governance which aims at high standards in Information Technology, Management & Governance.



State e-Mission Team

A State e-Mission team assists the Government in providing overall strategic directions to the IT Department, for the implementation of various strategic projects.

“State e-Mission team is in place to provide strategic direction to the Government”

9. Institutional Mechanism



Department of Electronics & Information Technology (DeitY), Ministry of Information Technology(Mol), Government of India(Gol) is the parent agency for funding and providing operational guidelines for implementing most of the strategic projects of the State. The various ICT initiatives for the State of Kerala is being implemented under the aegis of National e-Governance Plan (NeGP) and Digital India campaign formulated by the DeitY,Mol, Gol.



The IT Department, Government of Kerala is the nodal department for implementing various Information, Communication & Technology (ICT) related initiatives in the State. The IT Department is also responsible for drafting the various ICT related policies for the State. The Honb'le Minister, IT is responsible for providing overall directions in the area of IT, inline with the vision of the State of Kerala. The IT Department is headed by the Principal Secretary, IT.



Kerala State IT Mission, popularly known as KSITM, a Society registered under the Travancore Cochin Literary Scientific and Charitable Societies Registration Act (Act 12 of 1955), is a team of professionals from the industry and the Government, with the Secretary(IT) as the Chairman. The Governing body of KSITM is headed by the Hon. Minister for IT and Director KSITM is the convener of the meetings of General Body and Executive Committee. It is an autonomous nodal IT implementation agency for Department of Information Technology, Government of Kerala which provides managerial support to various initiatives of the Department.

Some of the other Total Solution Providers (TSPs), in charge of implementing various ICT related projects in the State are

- National Informatics Centre,
- Keltron
- C-DAC
- C-Dit
- IKM and
- IITM-K

10. Policy Framework

The Government of Kerala had introduced a start-up policy to unfold the broad framework for creation of a startup ecosystem in technology based startups across sectors in state of Kerala.

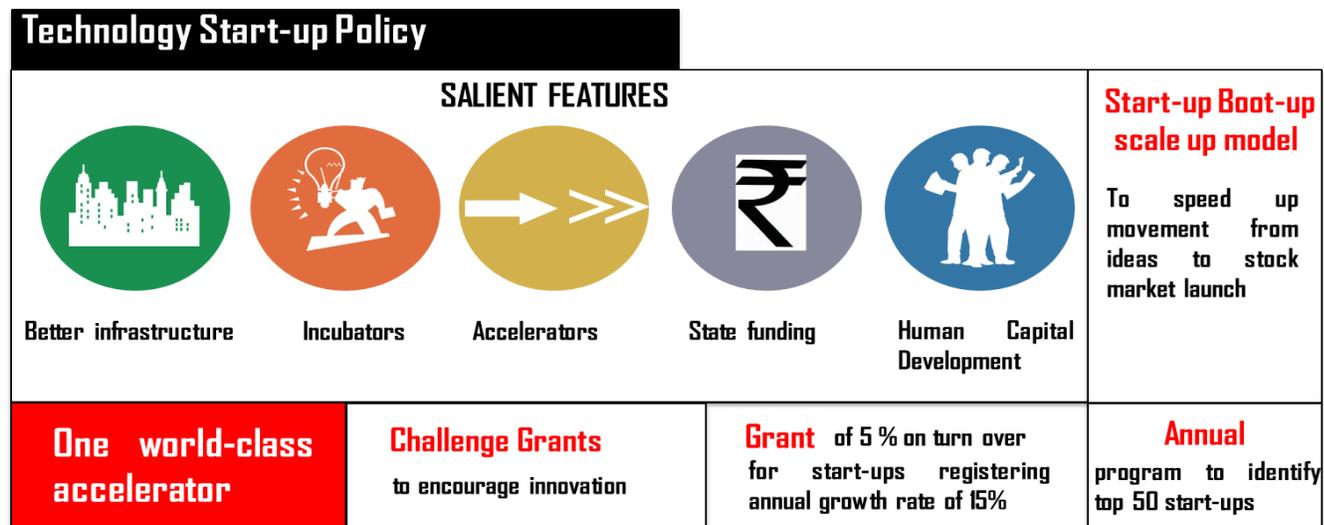


Figure: Technology start-up policy –salient features

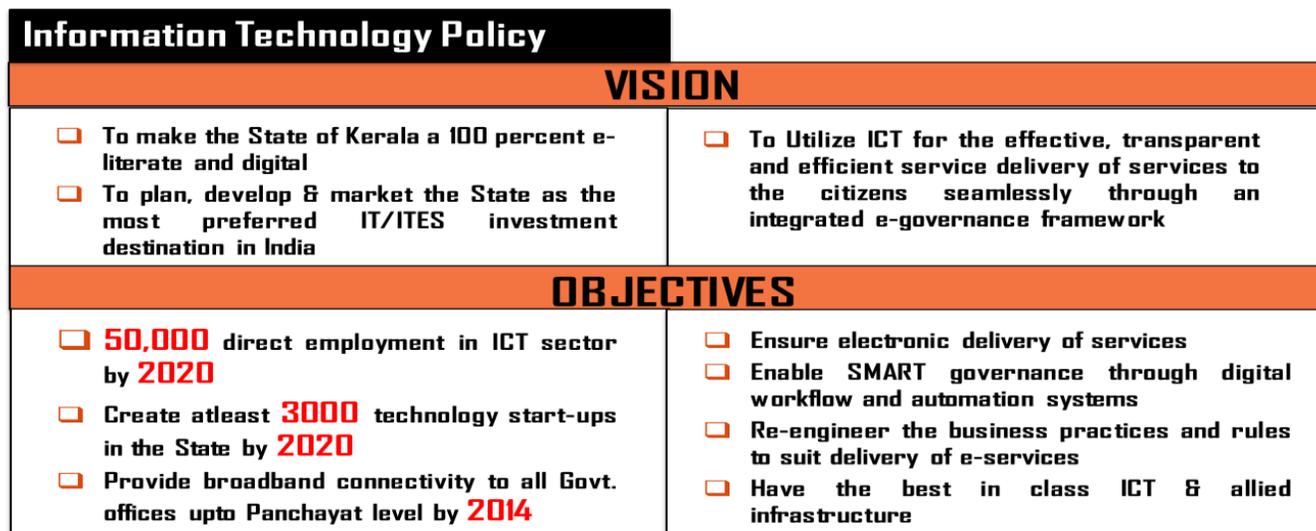


Figure: Information Technology policy -2012 –vision & objectives

II. Digital Kerala – Way Forward

Some of the prestigious ongoing/planned initiatives of the Government of Kerala to achieve 'Vision 2020' are:



Bharat Net

“A project of Government of India, to establish, by 2017, a highly scalable network infrastructure accessible on a non-discriminatory basis, to provide on demand, affordable broadband connectivity of 2 Mbps to 20 Mbps for all households & on demand capacity to all institutions”

Mobile Governance

“A single Mobile application covering a variety of Govt. services shall be developed and the users can avail any Government service using this mobile application”



Wi-Fi Hot spots in Govt. schools

“Government Schools in the State shall be provided with high speed internet and Wi-Fi services. Those who live near schools can access Wi-Fi free”

Government offices to be paper-less

“e-Office shall be implemented in all the Government offices across the State in 2015-2016FY”, which will increase efficiency and transparency in file movements”



Digital Literacy – Phase II

“Various programs implemented by multiple agencies in the direction of achieving digital literacy in the State will be extended in its full swing and will be organized under a common umbrella programme “Digital Literacy to Masses in Kerala”



Electronics @ School

“A unique and the first of its kind of initiative in the country wherein the IT Department of the State Government will provide to class 8 and 9 students at School, a kit consisting of switches, batteries, different types of sensors etc. which will enable the students to make electronic equipments on their own using the kit”

Akshayas as e-Banking Kiosks



“Akshaya centres shall connect the rural households to banking services offered by certain banks such as SBT etc. The kiosks will facilitate a gamut of banking services such as opening of bank accounts, deposit money, with draw from accounts, money transfer to other bank account holders etc.”

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